Level C Data Package Deliverables

Metals

Applied P & Ch Laboratory

6555

Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Collection Date:	05/13/2003
Project ID:	JPL GW Mon-2Q03	Service ID:	33130	Collected by:	
		Lab Sample ID:	03M1458-MB-01	Received Date:	05/13/2003
Sample ID:	**03M1458-MB-01**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Method Blank				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
ARSENIC	7440-38-2	μg/L	5	< 5	U	F		03M1458E	05/13/03	05/13/03	1	200.9
CALCIUM	7440-70-2	μg/L	200	117	B	P		03M1452L	05/12/03	05/12/03	1	200.7
IRON	7439-89-6	μg/L	50	< 50	U	P		03M1452L	05/12/03	05/12/03	1	200.7
MAGNESIUM	7439-95-4	μg/L	100	< 100	U	P		03M1452L	05/12/03	05/12/03	1	200.7
POTASSIUM	7440-09-7	μg/L	400	64.7	B	P		03M1452L	05/12/03	05/12/03	1	200.7
SODIUM	7440-23-5	μg/L	2000	1040	B	P		03M1452L	05/12/03	05/12/03	1	200.7

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Collection Date:	05/08/2003
Project ID:	JPL GW Mon-2Q03	Service ID:	33130	Collected by:	
		Lab Sample ID:	03-3130-1	Received Date:	05/08/2003
Sample ID:	**EB-12-5/8/03**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
ARSENIC	7440-38-2	μg/L	5	< 5	U	F		03M1458E	05/13/03	05/13/03	1	200.9
CALCIUM	7440-70-2	μg/L	200	< 200	U	P		03M1452L	05/12/03	05/12/03	1	200.7
IRON	7439-89-6	μg/L	50	31.4	B	P		03M1452L	05/12/03	05/12/03	1	200.7
MAGNESIUM	7439-95-4	μg/L	100	20.7	B	P		03M1452L	05/12/03	05/12/03	1	200.7
POTASSIUM	7440-09-7	μg/L	400	93.5	B	P		03M1452L	05/12/03	05/12/03	1	200.7
SODIUM	7440-23-5	μg/L	2000	1240	B	P		03M1452L	05/12/03	05/12/03	1	200.7

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Collection Date:	05/08/2003
Project ID:	JPL GW Mon-2Q03	Service ID:	33130	Collected by:	
		Lab Sample ID:	03-3130-2	Received Date:	05/08/2003
Sample ID:	**MW-22-1**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
ARSENIC	7440-38-2	μg/L	5	<5	U	F		03M1458E	05/13/03	05/13/03	1	200.9
CALCIUM	7440-70-2	μg/L	200	108000		P		03M1452L	05/12/03	05/12/03	1	200.7
IRON	7439-89-6	μg/L	50	115		P		03M1452L	05/12/03	05/12/03	1	200.7
MAGNESIUM	7439-95-4	μg/L	100	39100		P		03M1452L	05/12/03	05/12/03	1	200.7
POTASSIUM	7440-09-7	μg/L	400	3110		P		03M1452L	05/12/03	05/12/03	1	200.7
SODIUM	7440-23-5	μg/L	2000	30700		P		03M1452L	05/12/03	05/12/03	1	200.7

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Collection Date:	05/08/2003
Project ID:	JPL GW Mon-2Q03	Service ID:	33130	Collected by:	
		Lab Sample ID:	03-3130-3	Received Date:	05/08/2003
Sample ID:	**MW-22-2**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
ARSENIC	7440-38-2	μg/L	5	<5	U	F		03M1458E	05/13/03	05/13/03	1	200.9
CALCIUM	7440-70-2	μg/L	200	35000		P		03M1452L	05/12/03	05/12/03	1	200.7
IRON	7439-89-6	μg/L	50	81.3		P		03M1452L	05/12/03	05/12/03	1	200.7
MAGNESIUM	7439-95-4	μg/L	100	16800		P		03M1452L	05/12/03	05/12/03	1	200.7
POTASSIUM	7440-09-7	μg/L	400	2360		P		03M1452L	05/12/03	05/12/03	1	200.7
SODIUM	7440-23-5	μg/L	2000	30400		P		03M1452L	05/12/03	05/12/03	1	200.7

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Collection Date:	05/08/2003
Project ID:	JPL GW Mon-2Q03	Service ID:	33130	Collected by:	
		Lab Sample ID:	03-3130-4	Received Date:	05/08/2003
Sample ID:	**MW-22-3**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
ARSENIC	7440-38-2	μg/L	5	< 5	U	F		03M1458E	05/13/03	05/13/03	1	200.9
CALCIUM	7440-70-2	μg/L	200	29500		P		03M1452L	05/12/03	05/12/03	1	200.7
IRON	7439-89-6	μg/L	50	130		P		03M1452L	05/12/03	05/12/03	1	200.7
MAGNESIUM	7439-95-4	μg/L	100	14500		P		03M1452L	05/12/03	05/12/03	1	200.7
POTASSIUM	7440-09-7	μg/L	400	2360		P		03M1452L	05/12/03	05/12/03	1	200.7
SODIUM	7440-23-5	μg/L	2000	36800		P		03M1452L	05/12/03	05/12/03	1	200.7

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Collection Date:	05/08/2003
Project ID:	JPL GW Mon-2Q03	Service ID:	33130	Collected by:	
		Lab Sample ID:	03-3130-5	Received Date:	05/08/2003
Sample ID:	**MW-22-4**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
ARSENIC	7440-38-2	μg/L	5	< 5	U	F		03M1458E	05/13/03	05/13/03	1	200.9
CALCIUM	7440-70-2	μg/L	200	29400		P		03M1452L	05/12/03	05/12/03	1	200.7
IRON	7439-89-6	μg/L	50	53.8		P		03M1452L	05/12/03	05/12/03	1	200.7
MAGNESIUM	7439-95-4	μg/L	100	8450		P		03M1452L	05/12/03	05/12/03	1	200.7
POTASSIUM	7440-09-7	μg/L	400	1700		P		03M1452L	05/12/03	05/12/03	1	200.7
SODIUM	7440-23-5	μg/L	2000	26900		P		03M1452L	05/12/03	05/12/03	1	200.7

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Collection Date:	05/08/2003
Project ID:	JPL GW Mon-2Q03	Service ID:	33130	Collected by:	
		Lab Sample ID:	03-3130-6	Received Date:	05/08/2003
Sample ID:	**MW-22-5**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
ARSENIC	7440-38-2	μg/L	5	< 5	U	F		03M1458E	05/13/03	05/13/03	1	200.9
CALCIUM	7440-70-2	μg/L	200	4580		P		03M1452L	05/12/03	05/12/03	1	200.7
IRON	7439-89-6	μg/L	50	57.5		P		03M1452L	05/12/03	05/12/03	1	200.7
MAGNESIUM	7439-95-4	μg/L	100	625		P		03M1452L	05/12/03	05/12/03	1	200.7
POTASSIUM	7440-09-7	μg/L	400	1130		P		03M1452L	05/12/03	05/12/03	1	200.7
SODIUM	7440-23-5	μg/L	2000	70200		P		03M1452L	05/12/03	05/12/03	1	200.7

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

FORM-2A Metal

Applied P & Ch Laboratory

Initial and Continuing Calibration Verification

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Lab Code:	APCL
Project Name:	JPL GW Mon-2Q03	Service ID:	033130	Sequence No.:	03M1452L
		Instrument:	ICP -L	Method:	200.9
Batch No.(s):	03M1452				

Analysis Date: **05/12/03** Concentration Units: **UG/L**

#	Analyte	ICV 12:49 True	Result	%R	CCV 13:05 True	Result	%R	CCV 13:47 True	Result	%R	CCV 14:30 True	Result	%R
1	Aluminum	10000.0	9971.26	99.7	5000.0	4968.25	99.4	5000.0	5032.85	100.7	5000.0	5093.25	101.9
2	Antimony	4000.0	3933.95	98.3	2000.0	1911.54	95.6	2000.0	1981.39	99.1	2000.0	1989.65	99.5
3	Arsenic	1000.0	992.16	99.2	500.0	496.86	99.4	500.0	503.27	100.7	500.0	510.76	102.2
4	Barium	10000.0	9983.63	99.8	5000.0	4598.13	92.0	5000.0	4998.30	100.0	5000.0	4980.00	99.6
5	Beryllium	1000.0	975.87	97.6	500.0	463.44	92.7	500.0	488.99	97.8	500.0	487.32	97.5
6	Cadmium	2000.0	2000.64	100.0	1000.0	953.29	95.3	1000.0	995.82	99.6	1000.0	1003.45	100.3
7	Calcium	100000.0	97268.01	97.3	50000.0	48119.15	96.2	50000.0	50239.37	100.5	50000.0	50757.96	101.5
8	Chromium	1000.0	1005.01	100.5	500.0	464.10	92.8	500.0	496.19	99.2	500.0	495.53	99.1
9	Cobalt	4000.0	4023.16	100.6	2000.0	1879.05	94.0	2000.0	1986.95	99.3	2000.0	1972.56	98.6
10	Copper	4000.0	4031.21	100.8	2000.0	1870.91	93.5	2000.0	1954.75	97.7	2000.0	1961.78	98.1
11	Iron	10000.0	10026.26	100.3	5000.0	4767.28	95.3	5000.0	4969.23	99.4	5000.0	4966.22	99.3
12	Lead	1000.0	980.22	98.0	500.0	477.15	95.4	500.0	501.76	100.4	500.0	509.28	101.9
13	Magnesium	50000.0	50688.56	101.4	25000.0	23165.49	92.7	25000.0	24804.51	99.2	25000.0	24777.11	99.1
14	Manganese	4000.0	4010.00	100.3	2000.0	1854.90	92.7	2000.0	1984.66	99.2	2000.0	1959.68	98.0
15	Nickel	4000.0	4038.54	101.0	2000.0	1913.00	95.7	2000.0	1994.38	99.7	2000.0	1996.29	99.8
16	Potassium	30000.0	28900.23	96.3	15000.0	14904.84	99.4	15000.0	15526.90	103.5	15000.0	15606.02	104.0
17	Selenium	1000.0	982.48	98.2	500.0	483.08	96.6	500.0	501.21	100.2	500.0	510.78	102.2
18	Silver	2000.0	2027.10	101.4	1000.0	927.66	92.8	1000.0	980.31	98.0	1000.0	987.77	98.8
19	Sodium	200000.0	195310.22	97.7	100000.0	97679.50	97.7	100000.0	107540.84	107.5	100000.0	106394.91	106.4
20	Thallium	1000.0	983.05	98.3	500.0	475.36	95.1	500.0	507.20	101.4	500.0	509.38	101.9
21	Vanadium	4000.0	4011.74	100.3	2000.0	1879.82	94.0	2000.0	1992.04	99.6	2000.0	1989.58	99.5
22	Zinc	4000.0	4031.40	100.8	2000.0	1945.57	97.3	2000.0	1982.54	99.1	2000.0	2002.68	100.1
23	Molybdenum	4000.0	4026.90	100.7	2000.0	1885.93	94.3	2000.0	2006.03	100.3	2000.0	2024.31	101.2

(a) ICV Control Limit 95-105%; For Hg, 90-110%.

(b) CCV Control Limit 90-110%; For Hg, 80-120%.

FORM-2A Metal

Applied P & Ch Laboratory

Initial and Continuing Calibration Verification

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Lab Code:	APCL
Project Name:	JPL GW Mon-2Q03	Service ID:	033130	Sequence No.:	03M1452L
		Instrument:	ICP -L	Method:	200.9

Batch No.(s): 03M1452

Analysis Date: **05/12/03** Concentration Units: **UG/L**

#	Analyte	CCV True	15:04 Result	%R	CCV True	15:41 Result	%R	CCV True	16:51 Result	%R	CCV True	17:21 Result	%R
1	Aluminum	5000.0	5020.90	100.4	5000.0	4826.65	96.5	5000.0	4812.73	96.3	5000.0	5115.32	102.3
2	Antimony	2000.0	1861.92	93.1	2000.0	1874.85	93.7	2000.0	1991.76	99.6	2000.0	2057.32	102.9
3	Arsenic	500.0	485.72	97.1	500.0	477.65	95.5	500.0	536.62	107.3	500.0	517.60	103.5
4	Barium	5000.0	4847.02	96.9	5000.0	4684.24	93.7	5000.0	4532.10	90.6	5000.0	5035.18	100.7
5	Beryllium	500.0	476.69	95.3	500.0	462.96	92.6	500.0	454.20	90.8	500.0	490.76	98.2
6	Cadmium	1000.0	937.19	93.7	1000.0	927.84	92.8	1000.0	984.86	98.5	1000.0	1006.97	100.7
7	Calcium	50000.0	48197.91	96.4	50000.0	46396.52	92.8	50000.0	50277.04	100.6	50000.0	50681.31	101.4
8	Chromium	500.0	457.94	91.6	500.0	453.70	90.7	500.0	469.85	94.0	500.0	498.37	99.7
9	Cobalt	2000.0	1925.45	96.3	2000.0	1871.10	93.6	2000.0	1903.41	95.2	2000.0	2033.06	101.7
10	Copper	2000.0	1926.89	96.3	2000.0	1870.35	93.5	2000.0	1899.53	95.0	2000.0	1995.48	99.8
11	Iron	5000.0	4853.37	97.1	5000.0	4702.96	94.1	5000.0	4682.53	93.7	5000.0	5064.92	101.3
12	Lead	500.0	482.53	96.5	500.0	468.97	93.8	500.0	511.30	102.3	500.0	512.98	102.6
13	Magnesium	25000.0	24130.69	96.5	25000.0	23313.06	93.3	25000.0	23309.07	93.2	25000.0	25211.54	100.8
14	Manganese	2000.0	1902.17	95.1	2000.0	1847.41	92.4	2000.0	1845.72	92.3	2000.0	2027.06	101.4
15	Nickel	2000.0	1965.23	98.3	2000.0	1910.48	95.5	2000.0	1949.68	97.5	2000.0	2036.48	101.8
16	Potassium	15000.0	15465.96	103.1	15000.0	14932.53	99.6	15000.0	14622.86	97.5	15000.0	15057.02	100.4
17	Selenium	500.0	489.04	97.8	500.0	494.11	98.8	500.0	544.37	108.9	500.0	511.98	102.4
18	Silver	1000.0	974.31	97.4	1000.0	943.97	94.4	1000.0	930.92	93.1	1000.0	986.90	98.7
19	Sodium	100000.0	102101.83	102.1	100000.0	98824.82	98.8	100000.0	92495.88	92.5	100000.0	102369.23	102.4
20	Thallium	500.0	476.86	95.4	500.0	482.95	96.6	500.0	491.20	98.2	500.0	510.91	102.2
21	Vanadium	2000.0	1950.97	97.5	2000.0	1891.11	94.6	2000.0	1875.19	93.8	2000.0	2025.70	101.3
22	Zinc	2000.0	1989.42	99.5	2000.0	1933.75	96.7	2000.0	2013.24	100.7	2000.0	2033.11	101.7
23	Molybdenum	2000.0	1910.53	95.5	2000.0	1877.52	93.9	2000.0	1912.50	95.6	2000.0	1998.55	99.9

(a) ICV Control Limit 95-105%; For Hg, 90-110%.

(b) CCV Control Limit 90-110%; For Hg, 80-120%.

FORM-2A Metal

Applied P & Ch Laboratory

Initial and Continuing Calibration Verification

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Lab Code:	APCL
Project Name:	JPL GW Mon-2Q03	Service ID:	033130	Sequence No.:	03M1458E
		Instrument:	GFAA-E	Method:	200.9
Batch No.(s):	03M1458				

Analysis Date: **05/13/03** Concentration Units: **UG/L**

		ICV	11:10		CCV	12:27		CCV	13:42		CCV	14:59	
#	Analyte	True	Result	%R	True	Result	%R	True	Result	%R	True	Result	%R
1	Arsenic	50.0	51.40	102.8	50.0	56.60	113.2	50.0	55.60	111.2	50.0	64.60	129.2

(a) ICV Control Limit 95-105%; For Hg, 90-110%.

(b) CCV Control Limit 90-110%; For Hg, 80-120%.

FORM-2A Metal

Applied P & Ch Laboratory

Initial and Continuing Calibration Verification

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Lab Code:	APCL
Project Name:	JPL GW Mon-2Q03	Service ID:	033130	Sequence No.:	03M1458E
		Instrument:	GFAA-E	Method:	200.9
Batch No.(s):	03M1458				

Analysis Date: **05/13/03** Concentration Units: **UG/L**

#	Analyte	CCV True	15:15 Result	%R	CCV True	16:06 Result	%R	True	Result	%R	True	Result	%R
1	Arsenic	50.0	51.00	102.0	50.0	49.70	99.4						

(a) ICV Control Limit 95-105%; For Hg, 90-110%.

(b) CCV Control Limit 90-110%; For Hg, 80-120%.

FORM-2B Metal

Applied P & Ch Laboratory

CRDL Standard For AA and ICP

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Lab Code:	APCL
Project Name:	JPL GW Mon-2Q03	Service ID:	033130	Sequence No.:	03M1452L
		Instrument:	ICP -L	Method:	200.9
Batch No.(s):	03M1452				

Analysis Date: **05/12/03** Concentration Units: **UG/L**

#	Analyte	True	12:57 Found	R%	Time Found	R%
1	Aluminum	200.0	119.50	59.7		
2	Antimony	20.0	20.27	101.3		
3	Arsenic	20.0	18.22	91.1		
4	Barium	10.0	7.25	72.5		
5	Beryllium	4.0	3.58	89.4		
6	Cadmium	5.0	3.78	75.5		
7	Calcium	1000.0	875.42	87.5		
8	Chromium	10.0	6.89	68.9		
9	Cobalt	20.0	13.23	66.1		
10	Copper	10.0	8.36	83.6		
11	Iron	50.0	39.88	79.8		
12	Lead	10.0	7.41	74.1		
13	Magnesium		29.34			
14	Manganese	10.0	6.26	62.6		
15	Nickel	20.0	14.67	73.4		
16	Potassium		71.92			
17	Selenium	10.0	10.51	105.1		
18	Silver	10.0	8.25	82.5		
19	Sodium		1103.41			
20	Thallium	10.0	9.05	90.5		
21	Vanadium	10.0	7.09	70.9		
22	Zinc	20.0	17.89	89.4		
23	Molybdenum	15.0	11.91	79.4		

FORM-3 Metal

Applied P & Ch Laboratory

Metal ICB/CCB Summary

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Lab Code:	APCL
Project Name:	JPL GW Mon-2Q03	Service ID:	033130	Sequence No.:	03M1452L
		Instrument:	ICP -L	Method:	200.9
Batch No.(s):	03M1452				

Analysis Date: **05/12/03** Concentration Units: **UG/L**

#	Analyte	ICB Result	12:54 C	CCB Result	13:12 C	CCB Result	13:56 C	CCB Result	14:43 C	CCB Result	15:12 C
1	Aluminum	6.80	B	9.24	B	5.60	U	5.60	U	5.60	U
2	Antimony	2.70	U	2.70	U	3.60	B	2.70	U	2.85	B
3	Arsenic	1.90	U	1.90	U	1.90	U	1.90	U	-2.67	B
4	Barium	1.20	U	1.20	U	1.20	U	1.20	U	1.20	U
5	Beryllium	0.06	U	0.06	B	0.06	U	0.06	U	0.06	U
6	Cadmium	0.24	B	0.32	B	0.13	B	0.15	B	-0.18	B
7	Calcium	70.73	B	81.17	B	136.33	B	59.00	U	158.98	B
8	Chromium	0.14	U	-0.22	B	0.14	U	0.14	U	0.14	U
9	Cobalt	0.49	U	0.49	U	0.49	U	0.49	U	0.49	U
10	Copper	1.70	U	1.70	U	1.70	U	1.70	U	1.70	U
11	Iron	1.50	U	1.50	U	1.50	U	1.50	U	1.50	U
12	Lead	1.30	U	1.30	U	1.30	U	1.30	U	-2.18	B
13	Magnesium	9.70	U	14.65	B	9.70	U	9.70	U	19.93	B
14	Manganese	0.16	U	0.27	B	0.26	B	0.45	B	0.66	B
15	Nickel	-0.59	B	-0.46	B	0.46	U	0.46	U	0.46	U
16	Potassium	62.13	B	70.47	B	75.05	B	74.01	B	87.28	B
17	Selenium	2.30	U	2.30	U	2.30	U	2.30	U	2.30	U
18	Silver	-2.21	B	0.61	U	0.61	U	-1.20	B	0.84	B
19	Sodium	979.83	B	985.41	B	772.32	B	985.80	B	1087.80	B
20	Thallium	1.60	U	1.60	U	1.60	U	1.60	U	1.60	U
21	Vanadium	0.35	B	0.55	B	-0.27	B	0.13	U	0.13	U
22	Zinc	2.20	U	2.20	U	2.20	U	2.20	U	2.20	U
23	Molybdenum	0.32	U	0.45	B	0.89	B	0.34	B	0.78	B

FORM-3 Metal

Applied P & Ch Laboratory

Metal ICB/CCB Summary

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Lab Code:	APCL
Project Name:	JPL GW Mon-2Q03	Service ID:	033130	Sequence No.:	03M1452L
		Instrument:	ICP -L	Method:	200.9
Batch No.(s):	03M1452				

Analysis Date: **05/12/03** Concentration Units: **UG/L**

#	Analyte	CCB Result	15:45 C	CCB Result	16:54 C	CCB Result	17:24 C	CCB Result	Time C	CCB Result	Time C
1	Aluminum	5.60	U	5.60	U	30.40	B				
2	Antimony	2.70	U	2.70	U	2.70	U				
3	Arsenic	1.90	U	1.90	U	1.90	U				
4	Barium	1.62	B	1.20	U	1.62	B				
5	Beryllium	0.20	B	0.09	B	0.16	B				
6	Cadmium	0.19	B	0.38	B	0.30	B				
7	Calcium	62.81	B	59.00	U	227.84					
8	Chromium	0.26	B	0.14	U	0.14	U				
9	Cobalt	0.49	U	0.73	B	0.52	B				
10	Copper	1.70	U	1.70	U	1.70	U				
11	Iron	1.50	U	1.50	U	19.77	B				
12	Lead	1.30	U	1.30	U	-2.18	B				
13	Magnesium	16.17	B	9.70	U	25.97	B				
14	Manganese	1.18	B	0.54	B	1.06	B				
15	Nickel	0.46	U	0.46	U	0.46	U				
16	Potassium	72.47	B	115.69	B	110.28	B				
17	Selenium	3.81	B	2.73	B	2.30	U				
18	Silver	-1.59	B	0.91	B	0.61	U				
19	Sodium	973.29	B	1265.55	B	1314.67	B				
20	Thallium	4.33	B	3.16	B	3.47	B				
21	Vanadium	1.04	B	0.13	U	0.13	U				
22	Zinc	2.20	U	2.20	U	2.20	U				
23	Molybdenum	2.34	B	2.30	B	2.04	B				

FORM-3 Metal

Applied P & Ch Laboratory

Metal ICB/CCB Summary

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Lab Code:	APCL
Project Name:	JPL GW Mon-2Q03	Service ID:	033130	Sequence No.:	03M1458E
		Instrument:	GFAA-E	Method:	200.9
Batch No.(s):	03M1458				

Analysis Date: **05/13/03**

Concentration Units: **UG/L**

#	Analyte	ICB Result	11:17 C	CCB Result	12:34 C	CCB Result	13:49 C	CCB Result	15:06 C	CCB Result	15:21 C
1	Arsenic	2.10	U	2.10	U	2.10	U	2.10	U	2.10	U

FORM-3 Metal

Applied P & Ch Laboratory

Metal ICB/CCB Summary

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Lab Code:	APCL
Project Name:	JPL GW Mon-2Q03	Service ID:	033130	Sequence No.:	03M1458E
		Instrument:	GFAA-E	Method:	200.9
Batch No.(s):	03M1458				

Analysis Date: **05/13/03**

Concentration Units: **UG/L**

#	Analyte	CCB Result	16:12 C	CCB Result	Time C	CCB Result	Time C	CCB Result	Time C	CCB Result	Time C
1	Arsenic	2.10	U								

FORM-4 Metal

Applied P & Ch Laboratory

ICP Interference Check Sample

Client Name: GEOFON, Inc.
Project Name: JPL GW Mon-2Q03

Project No: 04-4428.10
Service ID: 033130
ICP ID Number: ICP -L

Lab Code: APCL
Sequence No.: 03M1452L

Batch No.(s): 03M1452

Analysis Date: **05/12/03**

Concentration Units: **UG/L**

#	Analyte	Expected Sol. A	Expected Sol. AB	Initial 12:59 Sol. A	Found 13:02 Sol. AB	%R	Final 17:15 Sol. A	Found 17:18 Sol. AB	%R
1	Aluminum	500000	500000	415714	457650.0	91.5	418470	466762.8	93.4
2	Antimony	0	1000	6	924.7	92.5	-12	967.9	96.8
3	Arsenic	0	1000	-2	930.4	93.0	1	982.9	98.3
4	Barium	0	500	0	475.7	95.1	0	485.9	97.2
5	Beryllium	0	500	1	475.6	95.1	1	474.4	94.9
6	Cadmium	0	1000	0	942.4	94.2	-1	968.5	96.9
7	Calcium	500000	500000	436983	477053.1	95.4	456328	508772.8	101.8
8	Chromium	0	500	7	490.0	98.0	5	492.7	98.5
9	Cobalt	0	500	4	466.0	93.2	4	470.6	94.1
10	Copper	0	500	7	500.2	100.0	7	512.3	102.5
11	Iron	200000	200000	166368	177664.4	88.8	166632	179210.3	89.6
12	Lead	0	1000	3	910.5	91.1	0	930.0	93.0
13	Magnesium	500000	500000	432782	468407.6	93.7	435952	470768.9	94.2
14	Manganese	0	500	-1	477.1	95.4	-1	484.8	97.0
15	Nickel	0	1000	2	914.5	91.4	3	923.2	92.3
16	Potassium	0	0	91	89.4		128	132.9	
17	Selenium	0	1000	9	931.2	93.1	10	971.6	97.2
18	Silver	0	1000	4	994.1	99.4	7	1009.1	100.9
19	Sodium	0	0	898	1080.9		803	1051.3	
20	Thallium	0	1000	-9	869.1	86.9	-2	917.6	91.8
21	Vanadium	0	500	-3	477.5	95.5	-4	484.4	96.9
22	Zinc	0	1000	10	970.1	97.0	11	1003.2	100.3
23	Molybdenum	0	1000	4	921.3	92.1	0	930.9	93.1

FORM-5A Metal

Applied P & Ch Laboratory

Matrix Spike/Matrix Spike Duplicate Recovery for Method 200.9

Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		Service ID:	33130
Project ID:	JPL GW Mon-2Q03	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03M1458E		
MS Filename:	-	Date Analyzed:	051303	Time Analyzed:	12:01
MSD Filename:	-	Date Analyzed:	051303	Time Analyzed:	12:08
MS Sample No:	**MW-11-3**	Sample Lab ID:	03-3082-4		

Spiked Components	Unit	Spike Added	Concentration Unspiked	Concentration MS	MS Rec% #	QC Limit, % REC
ARSENIC	μg/L	50	0	54.9	110	75-125
# of Out-of-control					0	

Spiked Components	Unit	Spike Added	MSD Concentration	MSD Rec% #	RPD% #	QC Limit, % RPD	QC Limit, % REC
ARSENIC	μg/L	50	55.0	110	0	20	75-125
# of Out-of-control				0	0		

Column to be used to flag recovery and RPD values:

* – Values outside of contract required QC Limits D – Spiked components diluted out

Comments: _____

FORM-5A Metal

Applied P & Ch Laboratory

Matrix Spike/Matrix Spike Duplicate Recovery for Method 200.7

Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		Service ID:	33130
Project ID:	JPL GW Mon-2Q03	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03M1452L		
MS Filename:	-	Date Analyzed:	051203	Time Analyzed:	13:39
MSD Filename:	-	Date Analyzed:	051203	Time Analyzed:	13:42
MS Sample No:	**MW-22-1**	Sample Lab ID:	03-3130-2		

Spiked Components	Unit	Spike Added	Concentration Unspiked	Concentration MS	MS Rec% #	QC Limit, % REC
CALCIUM	μg/L	20000	108000	133000	125	75-125
IRON	μg/L	1000	115	1070	96	75-125
MAGNESIUM	μg/L	10000	39100	53800	147 *	75-125
POTASSIUM	μg/L	5000	3110	9070	119	75-125
SODIUM	μg/L	40000	30700	77400	117	75-125
# of Out-of-control					1	

Spiked Components	Unit	Spike Added	MSD Concentration	MSD Rec% #	RPD% #	QC Limit, % RPD	QC Limit, % REC
CALCIUM	μg/L	20000	126000	90	5	20	75-125
IRON	μg/L	1000	1010	90	6	20	75-125
MAGNESIUM	μg/L	10000	51500	124	4	20	75-125
POTASSIUM	μg/L	5000	8890	116	2	20	75-125
SODIUM	μg/L	40000	73700	108	5	20	75-125
# of Out-of-control				0	0		

Column to be used to flag recovery and RPD values:

* – Values outside of contract required QC Limits D – Spiked components diluted out

Comments: _____

FORM-5B Metal

Applied P & Ch Laboratory

Post Digest Spike Sample Recovery

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Lab Code:	APCL
Project Name:	JPL GW Mon-2Q03	Service ID:	033130	Sequence No.:	03M1452L
		Batch No.:	03M1452	Method:	200.9
Spike Sample No. :	03-3130-02	Matrix:	WATER	Instrument:	ICP -L
Client Sample No.:	**MW-22-1**	Analysis Date:	05/12/03		

Concentration Units: **UG/L**

#	Analyte	Spiked Sample Result(SSR)	13:45 C	Sample Result(SR)	13:30 C	Spike Added(SA)	% Rec.	Control Limit	Q
1	Aluminum	1852.6040		12.7526	B	2000.00	92.0	75-125	
2	Antimony	463.4429		7.4045	B	500.00	91.2	75-125	
3	Arsenic	489.2482		-0.4512	U	500.00	97.8	75-125	
4	Barium	3734.5156		88.7251	.	4000.00	91.1	75-125	
5	Beryllium	172.1157		0.1102	B	200.00	86.0	75-125	
6	Cadmium	235.4077		1.0622	B	250.00	93.7	75-125	
7	Calcium	129244.1406		107992.0547		20000.00	106.3		
8	Chromium	904.9807		8.7595		1000.00	89.6	75-125	
9	Cobalt	900.9261		-0.1176	U	1000.00	90.1	75-125	
10	Copper	897.4900		5.4562	B	1000.00	89.2	75-125	
11	Iron	1029.8873		115.1744		1000.00	91.5	75-125	
12	Lead	2819.9768		1.6943	B	3000.00	93.9	75-125	
13	Magnesium	48935.4648		39087.8008		10000.00	98.5	75-125	
14	Manganese	843.7136		27.6662		1000.00	81.6	75-125	
15	Nickel	907.8880		4.4787	B	1000.00	90.3	75-125	
16	Potassium	8431.8789		3111.4026		5000.00	106.4	75-125	
17	Selenium	488.7188		3.0440	B	500.00	97.1	75-125	
18	Silver	892.9365		0.7159	B	1000.00	89.2	75-125	
19	Sodium	69012.2734		30696.1758		40000.00	95.8	75-125	
20	Thallium	479.9632		0.5902	U	500.00	96.0	75-125	
21	Vanadium	1763.5845		2.8254	B	2000.00	88.0	75-125	
22	Zinc	489.8489		17.6908		500.00	94.4	75-125	
23	Molybdenum	1956.8752		3.8302	B	2000.00	97.7	75-125	

FORM-5B Metal

Applied P & Ch Laboratory

Post Digest Spike Sample Recovery

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Lab Code:	APCL
Project Name:	JPL GW Mon-2Q03	Service ID:	033130	Sequence No.:	03M1458E
		Batch No.:	03M1458	Method:	200.9
Spike Sample No. :	03-3082-04	Matrix:	WATER	Instrument:	GFAA-E
Client Sample No.:	MW-11-3	Analysis Date:	05/13/03		

Concentration Units: **UG/L**

#	Analyte	Spiked Sample Result(SSR)	12:14 C	Sample Result(SR)	11:42 C	Spike Added(SA)	% Rec.	Control Limit	Q
1	Arsenic	56.4000		0.9000	U	50.00	112.8	75-125	

FORM-6 Metal

Applied P & Ch Laboratory

Duplicates Verification

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Lab Code:	APCL
Project Name:	JPL GW Mon-2Q03	Service ID:	033130	Sequence No.:	03M1452L
		Batch No.:	03M1452	Method:	200.9
Spike Sample No.	03-3130-02	Matrix:	WATER	Instrument:	ICP -L
Client Sample No.	**MW-22-1**	% Solid:	0.00	Analysis Date:	05/12/03

Concentration Unit: **UG/L**

#	Analyte	13:30 Sample(s)	C	13:33 Duplicate	C	RPD(%)	Q
1	Aluminum	12.7526	B	11.9653	B	6.4	
2	Antimony	7.4045	B	3.7321	B	66.0	
3	Arsenic	-0.4512	U	0.6600	U		
4	Barium	88.7251		90.2903		1.7	
5	Beryllium	0.1102	B	0.0176	U	200.0	
6	Cadmium	1.0622	B	0.8392	B	23.5	
7	Calcium	107992.0547		109638.2813		1.5	
8	Chromium	8.7595		8.8449		1.0	
9	Cobalt	-0.1176	U	-0.2775	U		
10	Copper	5.4562	B	5.2974	B	3.0	
11	Iron	115.1744		117.4338		1.9	
12	Lead	1.6943	B	2.1477	B	23.6	
13	Magnesium	39087.8008		40505.9375		3.6	
14	Manganese	27.6662		28.2460		2.1	
15	Nickel	4.4787	B	4.6103	B	2.9	
16	Potassium	3111.4026		3132.7891		0.7	
17	Selenium	3.0440	B	1.7055	U	200.0	
18	Silver	0.7159	B	2.3257	B	105.9	
19	Sodium	30696.1758		32320.1172		5.2	
20	Thallium	0.5902	U	-1.1092	U		
21	Vanadium	2.8254	B	2.4893	B	12.6	
22	Zinc	17.6908		17.6131		0.4	
23	Molybdenum	3.8302	B	2.7063	B	34.4	

FORM-6 Metal

Applied P & Ch Laboratory

Duplicates Verification

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Lab Code:	APCL
Project Name:	JPL GW Mon-2Q03	Service ID:	033130	Sequence No.:	03M1458E
		Batch No.:	03M1458	Method:	200.9
Spike Sample No.	03-3082-04	Matrix:	WATER	Instrument:	GFAA-E
Client Sample No.	**MW-11-3**	% Solid:	0.00	Analysis Date:	05/13/03

Concentration Unit: **UG/L**

#	Analyte	11:42 Sample(s)	C	11:48 Duplicate	C	RPD(%)	Q
1	Arsenic	0.9000	U	0.5000	U		

FORM-7 Metal

Applied P & Ch Laboratory

Lab Control Spike/Lab Control Spike Duplicate Recovery for Method 200.9

Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		Service ID:	33130
Project ID:	JPL GW Mon-2Q03	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03M1458E		
LCS Filename:	-	Date Analyzed:	051303	Time Analyzed:	11:29
LCSD Filename:	-	Date Analyzed:	051303	Time Analyzed:	11:36

Spiked Components	Unit	Spike Added	Concentration Unspiked	Concentration LCS	LCS Rec% #	QC Limit, % REC
ARSENIC	μg/L	50	0	56.8	114	80-120
# of Out-of-control					0	

Spiked Components	Unit	Spike Added	LCSD Concentration	LCSD Rec% #	RPD% #	QC Limit, % RPD	QC Limit, % REC
ARSENIC	μg/L	50	57.1	114	0	20	80-120
# of Out-of-control				0	0		

Column to be used to flag recovery and RPD values:

* – Values outside of contract required QC Limits D – Spiked components diluted out

Comments: _____

FORM-7 Metal

Applied P & Ch Laboratory

Lab Control Spike/Lab Control Spike Duplicate Recovery for Method 200.7

Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		Service ID:	33130
Project ID:	JPL GW Mon-2Q03	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03M1452L		
LCS Filename:	-	Date Analyzed:	051203	Time Analyzed:	13:24
LCSD Filename:	-	Date Analyzed:	051203	Time Analyzed:	13:26

Spiked Components	Unit	Spike Added	Concentration Unspiked	Concentration LCS	LCS Rec% #	QC Limit, % REC
CALCIUM	μg/L	20000	0	21300	107	80-120
IRON	μg/L	1000	0	1020	102	80-120
MAGNESIUM	μg/L	10000	0	9460	95	80-120
POTASSIUM	μg/L	5000	0	5570	111	80-120
SODIUM	μg/L	40000	0	44900	112	80-120
# of Out-of-control					0	

Spiked Components	Unit	Spike Added	LCSD Concentration	LCSD Rec% #	RPD% #	QC Limit, % RPD	QC Limit, % REC
CALCIUM	μg/L	20000	20500	103	4	20	80-120
IRON	μg/L	1000	975	98	4	20	80-120
MAGNESIUM	μg/L	10000	9030	90	5	20	80-120
POTASSIUM	μg/L	5000	5460	109	2	20	80-120
SODIUM	μg/L	40000	42000	105	6	20	80-120
# of Out-of-control				0	0		

Column to be used to flag recovery and RPD values:

* – Values outside of contract required QC Limits D – Spiked components diluted out

Comments: _____

FORM-9 Metal

Applied P & Ch Laboratory

Serial Dilution

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Lab Code:	APCL
Project Name:	JPL GW Mon-2Q03	Service ID:	033130	Sequence No.:	03M1452L
		Batch No.:	03M1452	Method:	200.9
Dilution Sample No.:	03-3130-02	Matrix:	WATER	Instrument:	ICP -L
Client Sample No.:	**MW-22-1**	Analysis Date:	05/12/03		

Concentration Units: **UG/L**

#	Analyte	Initial Sample Results(I)	13:30 C	Serial Dilut Results(S)	13:37 C	% Diff.	Q
1	Aluminum	12.75	B	73.88	B	479.4	
2	Antimony	7.40	B	22.66	B	206.0	
3	Arsenic	-0.45	U	-6.17	U		
4	Barium	88.73		87.30		1.6	
5	Beryllium	0.11	B	0.08	U	100.0	
6	Cadmium	1.06	B	1.85	B	74.3	
7	Calcium	107992.05		108495.02		0.5	
8	Chromium	8.76		8.22	B	6.1	
9	Cobalt	-0.12	U	-1.40	U		
10	Copper	5.46	B	9.66	B	77.1	
11	Iron	115.17		121.96	B	5.9	
12	Lead	1.69	B	-2.86	U	100.0	
13	Magnesium	39087.80		34874.37		10.8	E
14	Manganese	27.67		28.80		4.1	
15	Nickel	4.48	B	17.50	B	290.7	
16	Potassium	3111.40		2753.40		11.5	E
17	Selenium	3.04	B	17.57	B	477.2	
18	Silver	0.72	B	1.00	U	100.0	
19	Sodium	30696.18		29670.45		3.3	
20	Thallium	0.59	U	10.49	B		
21	Vanadium	2.83	B	2.84	B	0.6	
22	Zinc	17.69		47.57	B	168.9	
23	Molybdenum	3.83	B	5.57	B	45.5	

FORM-9 Metal

Applied P & Ch Laboratory

Serial Dilution

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Lab Code:	APCL
Project Name:	JPL GW Mon-2Q03	Service ID:	033130	Sequence No.:	03M1458E
		Batch No.:	03M1458	Method:	200.9
Dilution Sample No.:	03-3082-04	Matrix:	WATER	Instrument:	GFAA-E
Client Sample No.:	**MW-11-3**	Analysis Date:	05/13/03		

Concentration Units: **UG/L**

#	Analyte	Initial Sample Results(I)	11:42 C	Serial Dilut Results(S)	11:55 C	% Diff.	Q
1	Arsenic	0.90	U	-0.50	U		

FORM-13 Metal

Applied P & Ch Laboratory

Preparation Log

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Lab Code:	APCL
Project Name:	JPL GW Mon-2Q03	Service ID:	033130	Sequence No.:	03M1452L
		Batch No.:	03M1452	Method:	200.9
Preparation Matrix:	WATER	Instrument:	ICP -L		

#	Client Sample No.	APCL Sample No.	Preparation Date	Weight (gram)	Volume (ml)
1	1990-065-208	03-3113-02	05/12/03		50.0
2	1990-065-213	03-3113-07	05/12/03		50.0
3	MW-22-1	03-3130-02DM	05/12/03		50.0
4	EB-12-5/8/03	03-3130-01	05/12/03		50.0
5	MW-22-2	03-3130-03	05/12/03		50.0
6	MW-22-3	03-3130-04	05/12/03		50.0
7	MW-22-4	03-3130-05	05/12/03		50.0
8	MW-22-5	03-3130-06	05/12/03		50.0
9	Composite	03-3132-01	05/12/03		50.0
10	Composite	03-3135-01	05/12/03		50.0
11	S-5	03-3143-01	05/12/03		50.0
12	030507002	03-3144-01	05/12/03		50.0
13	030507004	03-3144-02	05/12/03		50.0
14	030507006	03-3144-03	05/12/03		50.0
15	030507018	03-3144-04	05/12/03		50.0
16		03M1452MB	05/12/03		50.0
17		03M1452LCS	05/12/03		50.0
18		03M1452LCSD	05/12/03		50.0
19	MW-22-1 Dup.	03M1452MD	05/12/03		50.0
20	MW-22-1 MS	03M1452MS	05/12/03		50.0
21	MW-22-1 MSD	03M1452MSD	05/12/03		50.0

FORM-13 Metal

Applied P & Ch Laboratory

Preparation Log

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Lab Code:	APCL
Project Name:	JPL GW Mon-2Q03	Service ID:	033130	Sequence No.:	03M1458E
		Batch No.:	03M1458	Method:	200.9
Preparation Matrix:	WATER	Instrument:	GFAA-E		

#	Client Sample No.	APCL Sample No.	Preparation Date	Weight (gram)	Volume (ml)
1	MW-11-3	03-3082-04DM	05/13/03		50.0
2	EB-10-5/6/03	03-3082-01	05/13/03		50.0
3	MW-11-1	03-3082-02	05/13/03		50.0
4	MW-11-2	03-3082-03	05/13/03		50.0
5	MW-11-4	03-3082-05	05/13/03		50.0
6	MW-11-5	03-3082-06	05/13/03		50.0
7	DUPE-6-2Q03	03-3102-01	05/13/03		50.0
8	EB-11-5/7/03	03-3102-02	05/13/03		50.0
9	MW-12-1	03-3102-03	05/13/03		50.0
10	MW-12-2	03-3102-04	05/13/03		50.0
11	MW-12-3	03-3102-05	05/13/03		50.0
12	MW-12-4	03-3102-06	05/13/03		50.0
13	MW-12-5	03-3102-07	05/13/03		50.0
14	EB-12-5/8/03	03-3130-01	05/13/03		50.0
15	MW-22-1	03-3130-02	05/13/03		50.0
16	MW-22-2	03-3130-03	05/13/03		50.0
17	MW-22-3	03-3130-04	05/13/03		50.0
18	MW-22-4	03-3130-05	05/13/03		50.0
19	MW-22-5	03-3130-06	05/13/03		50.0
20		03M1458MB	05/13/03		50.0
21		03M1458LCS	05/13/03		50.0
22		03M1458LCSD	05/13/03		50.0
23	MW-11-3 Dup.	03M1458MD	05/13/03		50.0
24	MW-11-3 MS	03M1458MS	05/13/03		50.0
25	MW-11-3 MSD	03M1458MSD	05/13/03		50.0

FORM-14 Metal

Applied P & Ch Laboratory

Analysis Run Log

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Lab Code:	APCL
Project Name:	JPL GW Mon-2Q03	Service ID:	033130	Sequence No.:	03M1452L
		Instrument:	ICP -L	Method:	200.9
Batch No.(s):	03M1452	Start Date:	05/12/03	End Date:	05/12/03

#	APCL Sample No.	D/F	Time	Al	Sb	As	Ba	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Hg	Ni	K	Se	Ag	Na	Tl	V	Zn	Mo	Sr	Ti	Sn	Li	B	Si
1	Calib Blank	1.00	12:39	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
2	STD1 1423A	1.00	12:41	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
3	STD2 1423B	1.00	12:44	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
4	STD3 1423C	1.00	12:46	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
5	ICV 1447A	1.00	12:49	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
6	ICB	1.00	12:54	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
7	CRI A1432	1.00	12:57	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
8	ICSA 1441	1.00	12:59	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
9	ICSAB 1443	1.00	13:02	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
10	CCV 1447B	1.00	13:05	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
11	CCB	1.00	13:12	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
12	M-BL 03M1452 W	1.00	13:17	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
13	LCS-03M1452	1.00	13:24	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
14	LCSD-03M1452	1.00	13:26	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
15	3130-2 S F=1	1.00	13:30	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
16	3130-2 D F=1	1.00	13:33	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
17	3130-2 1/5 F=5	5.00	13:37	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
18	3130-2 MS F=1	1.00	13:39	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
19	3130-2 MSD F=1	1.00	13:42	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
20	3130-2 PS F=1	1.00	13:45	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
21	CCV 1447B	1.00	13:47	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
22	CCB	1.00	13:56	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
23	3130-1 F=1	1.00	14:00	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
24	3130-3 F=1	1.00	14:03	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
25	3130-4 F=1	1.00	14:06	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
26	3130-5 F=1	1.00	14:10	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
27	3130-6 F=1	1.00	14:13	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
28	3144-1 F=1	1.00	14:17	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
29	3144-2 F=1	1.00	14:20	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
30	3144-3 F=1	1.00	14:24	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
31	3144-4 F=1	1.00	14:28	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
32	CCV 1447B	1.00	14:30	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
33	CCB	1.00	14:43	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
34	3143-1 F=1	1.00	14:47	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
35	3113-2 F=1	1.00	14:50	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
36	3113-7 F=1	1.00	14:54	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
37	3132-1 F=1	1.00	14:57	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
38	3135-1 F=1	1.00	15:01	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
39	CCV 1447B	1.00	15:04	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
40	CCB	1.00	15:12	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						

FORM-14 Metal

Applied P & Ch Laboratory

Analysis Run Log

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Lab Code:	APCL
Project Name:	JPL GW Mon-2Q03	Service ID:	033130	Sequence No.:	03M1452L
		Instrument:	ICP -L	Method:	200.9
Batch No.(s):	03M1452	Start Date:	05/12/03	End Date:	05/12/03

#	APCL Sample No.	D/F	Time	Al	Sb	As	Ba	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Hg	Ni	K	Se	Ag	Na	Tl	V	Zn	Mo	Sr	Ti	Sn	Li	B	Si
41	M-BL 03M1453 W	1.00	15:15	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
42	LCS-03M1453	1.00	15:18	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
43	LCSD-03M1453	1.00	15:20	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
44	3141-2 S F=1	1.00	15:24	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
45	3141-2 D F=1	1.00	15:27	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
46	3141-2 1/5 F=5	5.00	15:31	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
47	3141-2 MS F=1	1.00	15:33	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
48	3141-2 MSD F=1	1.00	15:36	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
49	3141-2 PS F=1	1.00	15:39	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
50	CCV 1447B	1.00	15:41	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
51	CCB	1.00	15:45	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
52	3141-1 F=1	1.00	16:16	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
53	3141-3 F=1	1.00	16:19	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
54	3141-3 F=2	2.00	16:23	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
55	3141-4 F=1	1.00	16:26	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
56	3141-5 F=1	1.00	16:29	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
57	3141-6 F=1	1.00	16:33	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
58	3141-5 F=2	2.00	16:35	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
59	3141-7 F=1	1.00	16:42	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
60	3141-8 F=1	1.00	16:46	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
61	CCV 1447B	1.00	16:51	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
62	CCB	1.00	16:54	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
63	3141-9 F=1	1.00	16:57	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
64	3141-9 F=2	2.00	17:00	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
65	3141-10 F=1	1.00	17:04	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
66	3141-11 F=1	1.00	17:09	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
67	3141-12 F=1	1.00	17:13	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
68	ICSA 1441	1.00	17:15	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
69	ICSAB 1443	1.00	17:18	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
70	CCV 1447B	1.00	17:21	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
71	CCB	1.00	17:24	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
72	DLC A1427	1.00	17:28	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						

FORM-14 Metal

Applied P & Ch Laboratory

Analysis Run Log

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Lab Code:	APCL
Project Name:	JPL GW Mon-2Q03	Service ID:	033130	Sequence No.:	03M1458E
		Instrument:	GFAA-E	Method:	200.9
Batch No.(s):	03M1458	Start Date:	05/13/03	End Date:	05/13/03

#	APCL Sample No.	D/F	Time	Al	Sb	As	Ba	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Hg	Ni	K	Se	Ag	Na	Tl	V	Zn	Mo	Sr	Ti	Sn	Li	B	Si
1	AS Position 002	1.00	10:17	√																													
2	AS Position 001	1.00	10:25	√																													
3	Calib. Blank	1.00	10:34	√																													
4	1/2 STD1 1472A	1.00	10:40	√																													
5	STD1 1472A	1.00	10:46	√																													
6	STD2 1472B	1.00	10:53	√																													
7	STD3 1472C	1.00	10:59	√																													
8	ICV A1474	1.00	11:10	√																													
9	ICB	1.00	11:17	√																													
10	M-BL 03M1458	1.00	11:23	√																													
11	LCS-03M1458	1.00	11:29	√																													
12	LCSD-03M1458	1.00	11:36	√																													
13	3082-4 S F=1	1.00	11:42	√																													
14	3082-4 D F=1	1.00	11:48	√																													
15	3082-4 1/5 F=5	5.00	11:55	√																													
16	3082-4 MS F=1	1.00	12:01	√																													
17	3082-4 MSD F=1	1.00	12:08	√																													
18	3082-4 PS F=1	1.00	12:14	√																													
19	3082-1 F=1	1.00	12:21	√																													
20	CCV A1474	1.00	12:27	√																													
21	CCB	1.00	12:34	√																													
22	3082-2 F=1	1.00	12:40	√																													
23	3082-3 F=1	1.00	12:46	√																													
24	3082-5 F=1	1.00	12:52	√																													
25	3082-6 F=1	1.00	12:59	√																													
26	3130-1 F=1	1.00	13:05	√																													
27	3130-2 F=1	1.00	13:17	√																													
28	CCV A1474	1.00	13:42	√																													
29	CCB	1.00	13:49	√																													
30	3130-3 F=1	1.00	14:08	√																													
31	3130-4 F=1	1.00	14:14	√																													
32	3130-5 F=1	1.00	14:21	√																													
33	3130-6 F=1	1.00	14:27	√																													
34	3102-1 F=1	1.00	14:34	√																													
35	3102-2 F=1	1.00	14:40	√																													
36	3102-3 F=1	1.00	14:47	√																													
37	3102-4 F=1	1.00	14:53	√																													
38	CCV A1474	1.00	14:59	√																													
39	CCB	1.00	15:06	√																													
40	CCV A1474	1.00	15:15	√																													

FORM-14 Metal

Applied P & Ch Laboratory

Analysis Run Log

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Lab Code:	APCL
Project Name:	JPL GW Mon-2Q03	Service ID:	033130	Sequence No.:	03M1458E
		Instrument:	GFAA-E	Method:	200.9
Batch No.(s):	03M1458	Start Date:	05/13/03	End Date:	05/13/03

#	APCL Sample No.	D/F	Time	Al	Sb	As	Ba	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Hg	Ni	K	Se	Ag	Na	Tl	V	Zn	Mo	Sr	Ti	Sn	Li	B	Si
41	CCB	1.00	15:21	√																													
42	3102-5 F=1	1.00	15:27	√																													
43	3102-6 F=1	1.00	15:33	√																													
44	3102-7 F=1	1.00	15:40	√																													
45	CCV A1474	1.00	16:06	√																													
46	CCB	1.00	16:12	√																													

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
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Digest-026

Metal Digestion (3010/3050) Worksheet

Batch # 03M1452 Matrix: W Method used: 3010A Date: 5/12/03 Digested by: [illegible] Diluted by: _____

Lot #: ASTM Type I water RW1411 HNO3 1102120 H2SO4 _____ HCl 4102050 H2O2 _____

OP #	Type	Samp ID /Lot #	X (g or mL)	$V_{digest}/X = f_1$	$V_f/V_i = f_2$	$V_f'/V_i' = f_3$	$F=f_1 f_2 f_3$	Note
1651	Method Blank	Bl. Lot RW1411	50	50 /X= 1	/ =	/ =		23me
1652	LCS1	Bl. Lot: "		/X=	/ =	/ =		TO 952
1653	Sample-1	3130-2		/X=	/ =	/ =		
1654	MS1 on S-1	-2		/X=	/ =	/ =		
1655	MS2 on S-1	-2		/X=	/ =	/ =		
1656	Sample 2	-1		/X=	/ =	/ =		
1657	Sample 3	-3		/X=	/ =	/ =		
1658	Sample 4	-4		/X=	/ =	/ =		
1659	Sample 5	-5		/X=	/ =	/ =		
1660	Sample 6	-6		/X=	/ =	/ =		
1661	Sample 7	3144-1		/X=	/ =	/ =		
1662	Sample 8	-2		/X=	/ =	/ =		
1663	Sample 9	-3		/X=	/ =	/ =		
1664	Sample 10	-4		/X=	/ =	/ =		
1665	LCS2	Bl. Lot RW1411		/X=	/ =	/ =		
1666	Sample 11	3143-1		/X=	/ =	/ =		
1667	Sample 12	3113-2		/X=	/ =	/ =		
1668	Sample 13	-7		/X=	/ =	/ =		
1669	Sample 14	3132-1		/X=	/ =	/ =		
1670	Sample 15	3135-1		/X=	/ =	/ =		
1671	Sample 16			/X=	/ =	/ =		
1672	Sample 17			/X=	/ =	/ =		
1673	Sample 18			/X=	/ =	/ =		
1674	Sample 19			/X=	/ =	/ =		
1675	Sample 20	[illegible] 5/12/03		/X=	/ =	/ =		
1676	Duplicate	3130-2	50	50 /X= 1	/ =	/ =		

Specification of matrix spike and lab control spike

QC Type	Spiked Element *	Spike Stock Solution Lot #	Spike Stock (Rep.) Conc. C_s, µg/mL	Spike Stock Volum Used V_s mL	Spike Level $T'=C_sV_s/V$ ppm or mg/L	Sample Spike T, ppm
MS1	/AsSe/Sb/M_{20}	AA- /AA- /AA- /AA 1403	/ / / 25	/ / / 2	/ / / 1	
MS2	/AsSe/Sb/M_{20}	AA- /AA- /AA- /AA- "	/ / /	/ / /	/ / /	
LCS1	/AsSe/Sb/M_{20}	AA- /AA- /AA- /AA 1492	/ / /	/ / /	/ / /	
LCS2	/AsSe/Sb/M_{20}	AA- /AA- /AA- /AA- "	/ / /	/ / /	/ / /	

* Notation: T = rep. sample spike level. T' = digest solution spike level. $T=f\ T'=C_sV_s/X$. M20 (or Mj) represents 20 (or j) metals, (see STD logbook).
If digest needs dilution for different metals, use dilution worksheet.

APCL form 6-116 April. 03, 1996. Ver. 4.0 No pencil. Use blue pen for record. Use red pen for correction.
Root-File:[CUST.DOC.AA]DIGEST_ROOT.TEX File:[CUST.DOC.AA]DIGEST .TEX

Supervisor Initial 6589

Applied P & Ch Laboratory
7700 Magnolia Ave. Chino CA 91710
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Digest-030

Metal Digestion (3010/3050) Worksheet

Batch # 03M1458 Matrix: W Method used: 3020A Date: 5/13/03 Digested by: [illegible] Diluted by: _____

Lot #: ASTM Type I water RW1611 HNO_3 110220 H_2SO_4 _____ HCl _____ H_2O_2 _____

OP #	Type	Samp ID /Lot #	X (g or mL)	$V_{digest}/X = f_1$	$V_f/V_i = f_2$	$V_f'/V_i' = f_3$	$F=f_1f_2f_3$	Note
1755	Method Blank	Bl. Lot: RW1611	50	50 /X= 1	/ =	/ =		GFAA/As
1756	LCS1	Bl. Lot: "		/X=	/ =	/ =		T=95°C
1757	Sample-1	3082-4		/X=	/ =	/ =		
1758	MS1 on S-1	-4		/X=	/ =	/ =		
1759	MS2 on S-1	-4		/X=	/ =	/ =		
1760	Sample 2	-1		/X=	/ =	/ =		
1761	Sample 3	-2		/X=	/ =	/ =		
1762	Sample 4	-3		/X=	/ =	/ =		
1763	Sample 5	-5		/X=	/ =	/ =		
1764	Sample 6	-6		/X=	/ =	/ =		
1765	Sample 7	3130-1		/X=	/ =	/ =		
1766	Sample 8	-2		/X=	/ =	/ =		DUP/MS
1767	Sample 9	-3		/X=	/ =	/ =		
1768	Sample 10	-4		/X=	/ =	/ =		
1769	LCS2	Bl. Lot: RW1611		/X=	/ =	/ =		
1770	Sample 11	-5		/X=	/ =	/ =		
1771	Sample 12	-6		/X=	/ =	/ =		
1772	Sample 13	3102-1		/X=	/ =	/ =		
1773	Sample 14	-2		/X=	/ =	/ =		
1774	Sample 15	-3		/X=	/ =	/ =		
1775	Sample 16	-4		/X=	/ =	/ =		
1776	Sample 17	-5		/X=	/ =	/ =		
1777	Sample 18	-6		/X=	/ =	/ =		
1778	Sample 19	-7	↓	↓ /X= ↓	/ =	/ =		
1779	Sample 20		5/13/03	/X=	/ =	/ =		
1780	Duplicate	3082-4	50	50 /X= 1	/ =	/ =		

Specification of matrix spike and lab control spike

QC Type	Spiked Element *	Spike Stock Solution Lot #	Spike Stock (Rep.) Conc. C_s, µg/mL	Spike Stock Volum Used V_s mL	Spike Level $T'=C_sV_s/V$ ppm or mg/L	Sample Spike T, ppm
MS1	/AsSe/Sb/M_{20}	AA- /AA-(97)/AA- /AA-	/5/ /	/0.5/ /	/0.05/ /	
MS2	/AsSe/Sb/M_{20}	AA- /AA-4 /AA- /AA-	/ / /	/ / /	/ / /	
LCS1	/AsSe/Sb/M_{20}	AA- /AA-(97)/AA- /AA-	/ / /	/ / /	/ / /	
LCS2	/AsSe/Sb/M_{20}	AA- /AA-4 /AA- /AA-	/↓/ /	/↓/ /	/↓/ /	

* Notation: T – rep. sample spike level. T' – digest solution spike level. $T=f\,T'=C_sV_s/X$ M20 (or M_j) represents 20 (or j) metals, (see STD logbook).
If digest needs dilution for different metals, use dilution worksheet.

APCL form 6-116 April. 03, 1996. Ver. 4.0 No pencil. Use blue pen for record. Use red pen for correction.
Root-File:[CUST.DOC.AA]DIGEST_ROOT.TEX File:[CUST.DOC.AA]DIGEST .TEX

Supervisor Initial [illegible]

Level C Data Package Deliverables

Wet Chemistry

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6591

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Wet Analysis Results for Method SM2320B

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Anal. Method	SM2320B
Project ID:	JPL GW Mon-2Q03	Service ID:	33130	Collected by:	

Component Name: Bicarbonate
CAS No:

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
03-3130-1	EB-12-5/8/03	Water	05/08/03	05/08/03	05/10/03	03W2817	mg/L	2	<2	U
03-3130-2	MW-22-1	Water	05/08/03	05/08/03	05/10/03	03W2817	mg/L	2	271	
03-3130-3	MW-22-2	Water	05/08/03	05/08/03	05/10/03	03W2817	mg/L	2	148	
03-3130-4	MW-22-3	Water	05/08/03	05/08/03	05/10/03	03W2817	mg/L	2	130	
03-3130-5	MW-22-4	Water	05/08/03	05/08/03	05/10/03	03W2817	mg/L	2	114	
03-3130-6	MW-22-5	Water	05/08/03	05/08/03	05/10/03	03W2817	mg/L	2	49.9	
03W2817-MB-01	03W2817-MB-01	Water	05/10/03	05/10/03	05/10/03	03W2817	mg/L	2	<2	U

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Note: Q - Qualifier.
Qualifier: U - Not Detected or less than MDL
B - Less than RL (PQL, EQL or CRDL), but greater than MDL.

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Wet Analysis Results for Method SM2320B

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Anal. Method	SM2320B
Project ID:	JPL GW Mon-2Q03	Service ID:	33130	Collected by:	

Component Name: Carbonate
CAS No:

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
03-3130-1	EB-12-5/8/03	Water	05/08/03	05/08/03	05/10/03	03W2817	mg-$CaCO_3$/L	2	<2	U
03-3130-2	MW-22-1	Water	05/08/03	05/08/03	05/10/03	03W2817	mg-$CaCO_3$/L	2	<2	U
03-3130-3	MW-22-2	Water	05/08/03	05/08/03	05/10/03	03W2817	mg-$CaCO_3$/L	2	2.6	
03-3130-4	MW-22-3	Water	05/08/03	05/08/03	05/10/03	03W2817	mg-$CaCO_3$/L	2	5.2	
03-3130-5	MW-22-4	Water	05/08/03	05/08/03	05/10/03	03W2817	mg-$CaCO_3$/L	2	2.6	
03-3130-6	MW-22-5	Water	05/08/03	05/08/03	05/10/03	03W2817	mg-$CaCO_3$/L	2	76.6	
03W2817-MB-01	03W2817-MB-01	Water	05/10/03	05/10/03	05/10/03	03W2817	mg-$CaCO_3$/L	2	<2	U

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Note: Q - Qualifier.

Qualifier: U - Not Detected or less than MDL

B - Less than RL (PQL, EQL or CRDL), but greater than MDL.

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Wet Analysis Results for Method 9040B

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Anal. Method	9040B
Project ID:	JPL GW Mon-2Q03	Service ID:	33130	Collected by:	

Component Name: pH
CAS No: 10-29-7

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
03-3130-1	EB-12-5/8/03	Water	05/08/03	05/08/03	05/08/03	03W2790	pH unit	0.01	7.31	
03-3130-2	MW-22-1	Water	05/08/03	05/08/03	05/08/03	03W2790	pH unit	0.01	7.64	
03-3130-3	MW-22-2	Water	05/08/03	05/08/03	05/08/03	03W2790	pH unit	0.01	8.21	
03-3130-4	MW-22-3	Water	05/08/03	05/08/03	05/08/03	03W2790	pH unit	0.01	8.18	
03-3130-5	MW-22-4	Water	05/08/03	05/08/03	05/08/03	03W2790	pH unit	0.01	8.07	
03-3130-6	MW-22-5	Water	05/08/03	05/08/03	05/08/03	03W2790	pH unit	0.01	9.23	
03W2790-MB-01	03W2790-MB-01	Water	05/08/03	05/08/03	05/08/03	03W2790	pH unit	0.01	6.89	

Note: Q - Qualifier.
Qualifier: U - Not Detected or less than MDL
B - Less than RL (PQL, EQL or CRDL), but greater than MDL.

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Wet Analysis Results for Method 160.1

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Anal. Method	160.1
Project ID:	JPL GW Mon-2Q03	Service ID:	33130	Collected by:	

Component Name: Solids, Total Dissolved (TDS)
CAS No: 10-33-3

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
03-3130-1	EB-12-5/8/03	Water	05/08/03	05/08/03	05/09/03	03W2800	mg/L	10	<10	U
03-3130-2	MW-22-1	Water	05/08/03	05/08/03	05/09/03	03W2800	mg/L	10	646	
03-3130-3	MW-22-2	Water	05/08/03	05/08/03	05/09/03	03W2800	mg/L	10	287	
03-3130-4	MW-22-3	Water	05/08/03	05/08/03	05/09/03	03W2800	mg/L	10	287	
03-3130-5	MW-22-4	Water	05/08/03	05/08/03	05/09/03	03W2800	mg/L	10	213	
03-3130-6	MW-22-5	Water	05/08/03	05/08/03	05/09/03	03W2800	mg/L	10	208	
03W2800-MB-01	03W2800-MB-01	Water	05/09/03	05/09/03	05/09/03	03W2800	mg/L	10	<10	U

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Note: Q - Qualifier.
Qualifier: U - Not Detected or less than MDL
B - Less than RL (PQL, EQL or CRDL), but greater than MDL.

Applied P & Ch Laboratory

Wet Analysis Results for Method 7196

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Anal. Method	7196
Project ID:	JPL GW Mon-2Q03	Service ID:	33130	Collected by:	

Component Name: Chromium (VI)
CAS No: 1333-82-0

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
03-3130-1	EB-12-5/8/03	Water	05/08/03	05/08/03	05/08/03	03W2788	mg/L	0.01	<0.01	U
03-3130-2	MW-22-1	Water	05/08/03	05/08/03	05/08/03	03W2788	mg/L	0.01	<0.01	U
03-3130-3	MW-22-2	Water	05/08/03	05/08/03	05/08/03	03W2788	mg/L	0.01	<0.01	U
03-3130-4	MW-22-3	Water	05/08/03	05/08/03	05/08/03	03W2788	mg/L	0.01	<0.01	U
03-3130-5	MW-22-4	Water	05/08/03	05/08/03	05/08/03	03W2788	mg/L	0.01	<0.01	U
03-3130-6	MW-22-5	Water	05/08/03	05/08/03	05/08/03	03W2788	mg/L	0.01	<0.01	U
03W2788-MB-01	03W2788-MB-01	Water	05/08/03	05/08/03	05/08/03	03W2788	mg/L	0.01	<0.01	U

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Note: Q - Qualifier.
Qualifier: U - Not Detected or less than MDL
B - Less than RL (PQL, EQL or CRDL), but greater than MDL.

Applied P & Ch Laboratory

Wet Analysis Results for Method 314.0

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Anal. Method	314.0
Project ID:	JPL GW Mon-2Q03	Service ID:	33130	Collected by:	

Component Name: Perchlorate
CAS No:

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
03-3130-1	EB-12-5/8/03	Water	05/08/03	05/08/03	05/14/03	03W2866	μg/L	4	<4	U
03-3130-2	MW-22-1	Water	05/08/03	05/08/03	05/14/03	03W2866	μg/L	4	3.2	B
03-3130-3	MW-22-2	Water	05/08/03	05/08/03	05/14/03	03W2866	μg/L	4	1.6	B
03-3130-4	MW-22-3	Water	05/08/03	05/08/03	05/14/03	03W2866	μg/L	4	1.8	B
03-3130-5	MW-22-4	Water	05/08/03	05/08/03	05/14/03	03W2866	μg/L	4	<4	U
03-3130-6	MW-22-5	Water	05/08/03	05/08/03	05/14/03	03W2866	μg/L	4	<4	U
03W2866-MB-01	03W2866-MB-01	Water	05/14/03	05/14/03	05/14/03	03W2866	μg/L	4	<4	U

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Note: Q - Qualifier.
Qualifier: U - Not Detected or less than MDL
B - Less than RL (PQL, EQL or CRDL), but greater than MDL.

Applied P & Ch Laboratory

Wet Analysis Results for Method 300.0

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Anal. Method	300.0
Project ID:	JPL GW Mon-2Q03	Service ID:	33130	Collected by:	

Component Name: Chloride Cl^-
CAS No: 16887-00-6

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
03-3130-1	EB-12-5/8/03	Water	05/08/03	05/08/03	05/08/03	03W2777	mg/L	0.25	0.27	
03-3130-2	MW-22-1	Water	05/08/03	05/08/03	05/08/03	03W2777	mg/L	2.5	107	
03-3130-3	MW-22-2	Water	05/08/03	05/08/03	05/08/03	03W2777	mg/L	1	34.7	
03-3130-4	MW-22-3	Water	05/08/03	05/08/03	05/08/03	03W2777	mg/L	1	33.9	
03-3130-5	MW-22-4	Water	05/08/03	05/08/03	05/08/03	03W2777	mg/L	0.4	11.8	
03-3130-6	MW-22-5	Water	05/08/03	05/08/03	05/08/03	03W2777	mg/L	0.4	8.1	
03W2777-MB-01	03W2777-MB-01	Water	05/08/03	05/08/03	05/08/03	03W2777	mg/L	0.2	<0.2	U

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Note: Q - Qualifier.

Qualifier: U - Not Detected or less than MDL

B - Less than RL (PQL, EQL or CRDL), but greater than MDL.

Applied P & Ch Laboratory

Wet Analysis Results for Method 300.0

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Anal. Method	300.0
Project ID:	JPL GW Mon-2Q03	Service ID:	33130	Collected by:	

Component Name: Nitrate as N
CAS No: 14797-55-8

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
03-3130-1	EB-12-5/8/03	Water	05/08/03	05/08/03	05/08/03	03W2777	mg/L	0.05	0.087	
03-3130-2	MW-22-1	Water	05/08/03	05/08/03	05/08/03	03W2777	mg/L	0.5	9.1	
03-3130-3	MW-22-2	Water	05/08/03	05/08/03	05/08/03	03W2777	mg/L	0.2	6.8	
03-3130-4	MW-22-3	Water	05/08/03	05/08/03	05/08/03	03W2777	mg/L	0.2	6.9	
03-3130-5	MW-22-4	Water	05/08/03	05/08/03	05/08/03	03W2777	mg/L	0.08	4.1	
03-3130-6	MW-22-5	Water	05/08/03	05/08/03	05/08/03	03W2777	mg/L	0.08	0.11	
03W2777-MB-01	03W2777-MB-01	Water	05/08/03	05/08/03	05/08/03	03W2777	mg/L	0.04	<0.04	U

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Note: Q - Qualifier.
Qualifier: U - Not Detected or less than MDL
B - Less than RL (PQL, EQL or CRDL), but greater than MDL.

Applied P & Ch Laboratory

Wet Analysis Results for Method 300.0

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Anal. Method	300.0
Project ID:	JPL GW Mon-2Q03	Service ID:	33130	Collected by:	

Component Name: Sulfate SO_4^{--}
CAS No: 14808-79-8

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
03-3130-1	EB-12-5/8/03	Water	05/08/03	05/08/03	05/08/03	03W2777	mg/L	0.63	0.69	
03-3130-2	MW-22-1	Water	05/08/03	05/08/03	05/08/03	03W2777	mg/L	6.3	138	
03-3130-3	MW-22-2	Water	05/08/03	05/08/03	05/08/03	03W2777	mg/L	2.5	29.7	
03-3130-4	MW-22-3	Water	05/08/03	05/08/03	05/08/03	03W2777	mg/L	2.5	34.6	
03-3130-5	MW-22-4	Water	05/08/03	05/08/03	05/08/03	03W2777	mg/L	1	7.6	
03-3130-6	MW-22-5	Water	05/08/03	05/08/03	05/08/03	03W2777	mg/L	1	22.0	
03W2777-MB-01	03W2777-MB-01	Water	05/08/03	05/08/03	05/08/03	03W2777	mg/L	0.5	<0.5	U

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Note: Q - Qualifier.

Qualifier: U - Not Detected or less than MDL

B - Less than RL (PQL, EQL or CRDL), but greater than MDL.

FORM-3

Applied P & Ch Laboratory

Lab Control Spike/Lab Control Spike Duplicate Recovery for Method 300.0

Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		Service ID:	33130
Project ID:	JPL GW Mon-2Q03	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03W2777		
LCS Filename:	-	Date Analyzed:	050803	Time Analyzed:	11:25
LCSD Filename:	-	Date Analyzed:	050803	Time Analyzed:	11:38

Spiked Components	Unit	Spike Added	Concentration Unspiked	Concentration LCS	LCS Rec% #	QC Limit, % REC
CHLORIDE CL^-	mg/L	4.0	0	4.25	106	80-120
NITRATE AS N	mg/L	1.5	0	1.58	105	80-120
SULFATE SO_4^{--}	mg/L	15	0	15.7	105	80-120
# of Out-of-control					0	

Spiked Components	Unit	Spike Added	LCSD Concentration	LCSD Rec% #	RPD% #	QC Limit, % RPD	QC Limit, % REC
CHLORIDE CL^-	mg/L	4.0	4.04	101	5	20	80-120
NITRATE AS N	mg/L	1.5	1.58	105	0	20	80-120
SULFATE SO_4^{--}	mg/L	15	17.1	114	8	25	80-120
# of Out-of-control				0	0		

Column to be used to flag recovery and RPD values:

* – Values outside of contract required QC Limits D – Spiked components diluted out

Comments: _____

FORM-3

Applied P & Ch Laboratory

Matrix Spike/Matrix Spike Duplicate Recovery for Method 300.0

Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		Service ID:	33130
Project ID:	JPL GW Mon-2Q03	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03W2777		
MS Filename:	-	Date Analyzed:	050803	Time Analyzed:	15:06
MSD Filename:	-	Date Analyzed:	050803	Time Analyzed:	15:18
MS Sample No:	**MW-22-1**	Sample Lab ID:	03-3130-2		

Spiked Components	Unit	Spike Added	Concentration Unspiked	MS	MS Rec% #	QC Limit, % REC
CHLORIDE CL^-	mg/L	100	107	209	102	75-125
NITRATE AS N	mg/L	37.5	9.1	47.7	103	75-125
SULFATE SO_4^{--}	mg/L	375	138	540	107	75-125
# of Out-of-control					0	

Spiked Components	Unit	Spike Added	MSD Concentration	MSD Rec% #	RPD% #	QC Limit, % RPD	REC
CHLORIDE CL^-	mg/L	100	211	104	2	20	75-125
NITRATE AS N	mg/L	37.5	47.7	103	0	20	75-125
SULFATE SO_4^{--}	mg/L	375	532	105	2	25	75-125
# of Out-of-control				0	0		

Column to be used to flag recovery and RPD values:

* – Values outside of contract required QC Limits D – Spiked components diluted out

Comments: _____

FORM-3

Applied P & Ch Laboratory

Lab Control Spike/Lab Control Spike Duplicate Recovery for Method 314.0

Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		Service ID:	33130
Project ID:	JPL GW Mon-2Q03	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03W2866		
LCS Filename:	-	Date Analyzed:	051403	Time Analyzed:	24:44
LCSD Filename:	-	Date Analyzed:	–	Time Analyzed:	–

Spiked Components	Unit	Spike Added	Concentration Unspiked	Concentration LCS	LCS Rec% #	QC Limit, % REC
PERCHLORATE	μg/L	25	0	24.4	98	80-120
# of Out-of-control					0	

Column to be used to flag recovery and RPD values:

* – Values outside of contract required QC Limits D – Spiked components diluted out

Comments: _____

FORM-3

Applied P & Ch Laboratory

Matrix Spike/Matrix Spike Duplicate Recovery for Method 314.0

Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		Service ID:	33130
Project ID:	JPL GW Mon-2Q03	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03W2866		
MS Filename:	-	Date Analyzed:	051403	Time Analyzed:	15:25
MSD Filename:	-	Date Analyzed:	051403	Time Analyzed:	15:44
MS Sample No:	**MW-22-1**	Sample Lab ID:	03-3130-2		

Spiked Components	Unit	Spike Added	Concentration Unspiked	Concentration MS	MS Rec% #	QC Limit, % REC
PERCHLORATE	μg/L	50	3.2	57.3	108	75-125
# of Out-of-control					0	

Spiked Components	Unit	Spike Added	MSD Concentration	MSD Rec% #	RPD% #	QC Limit, % RPD	QC Limit, % REC
PERCHLORATE	μg/L	50	54.1	102	6	20	75-125
# of Out-of-control				0	0		

Column to be used to flag recovery and RPD values:

* – Values outside of contract required QC Limits D – Spiked components diluted out

Comments: _____

FORM-3

Applied P & Ch Laboratory

Lab Control Spike/Lab Control Spike Duplicate Recovery for Method 160.1

Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		Service ID:	33130
Project ID:	JPL GW Mon-2Q03	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03W2800		
LCS Filename:	-	Date Analyzed:	050903	Time Analyzed:	10:38
LCSD Filename:	-	Date Analyzed:	050903	Time Analyzed:	10:38

Spiked Components	Unit	Spike Added	Concentration Unspiked	Concentration LCS	LCS Rec% #	QC Limit, % REC
SOLIDS, TOTAL DISSOLVED (TDS)	mg/L	400	0	390	98	88-108
# of Out-of-control					0	

Spiked Components	Unit	Spike Added	LCSD Concentration	LCSD Rec% #	RPD% #	QC Limit, % RPD	QC Limit, % REC
SOLIDS, TOTAL DISSOLVED (TDS)	mg/L	400	386	97	1	20	88-108
# of Out-of-control				0	0		

Column to be used to flag recovery and RPD values:

* – Values outside of contract required QC Limits D – Spiked components diluted out

Comments: _____

FORM-3

Applied P & Ch Laboratory

Matrix Spike/Matrix Spike Duplicate Recovery for Method 160.1

Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		Service ID:	33130
Project ID:	JPL GW Mon-2Q03	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03W2800		
MS Filename:	-	Date Analyzed:	050903	Time Analyzed:	10:38
MSD Filename:	-	Date Analyzed:	050903	Time Analyzed:	10:38
MS Sample No:	**MW-22-1**	Sample Lab ID:	03-3130-2		

Spiked Components	Unit	Spike Added	Concentration Unspiked	Concentration MS	MS Rec% #	QC Limit, % REC
SOLIDS, TOTAL DISSOLVED (TDS)	mg/L	400	646	1030	96	80-119
# of Out-of-control					0	

Spiked Components	Unit	Spike Added	MSD Concentration	MSD Rec% #	RPD% #	QC Limit, % RPD	QC Limit, % REC
SOLIDS, TOTAL DISSOLVED (TDS)	mg/L	400	1010	91	5	20	80-119
# of Out-of-control				0	0		

Column to be used to flag recovery and RPD values:

* – Values outside of contract required QC Limits D – Spiked components diluted out

Comments: _____

FORM-3

Applied P & Ch Laboratory

Lab Control Spike/Lab Control Spike Duplicate Recovery for Method 7196

Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		Service ID:	33130
Project ID:	JPL GW Mon-2Q03	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03W2788		
LCS Filename:	-	Date Analyzed:	050803	Time Analyzed:	14:43
LCSD Filename:	-	Date Analyzed:	050803	Time Analyzed:	14:43

Spiked Components	Unit	Spike Added	Concentration Unspiked	Concentration LCS	LCS Rec% #	QC Limit, % REC
CHROMIUM (VI)	mg/L	0.25	0	0.222	89	80-115
# of Out-of-control					0	

Spiked Components	Unit	Spike Added	LCSD Concentration	LCSD Rec% #	RPD% #	QC Limit, % RPD	QC Limit, % REC
CHROMIUM (VI)	mg/L	0.25	0.239	96	8	19	80-115
# of Out-of-control				0	0		

Column to be used to flag recovery and RPD values:

* – Values outside of contract required QC Limits D – Spiked components diluted out

Comments: _____

FORM-3

Applied P & Ch Laboratory

Matrix Spike/Matrix Spike Duplicate Recovery for Method 7196

Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		Service ID:	33130
Project ID:	JPL GW Mon-2Q03	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03W2788		
MS Filename:	-	Date Analyzed:	050803	Time Analyzed:	14:43
MSD Filename:	-	Date Analyzed:	050803	Time Analyzed:	14:43
MS Sample No:	**MW-22-1**	Sample Lab ID:	03-3130-2		

Spiked Components	Unit	Spike Added	Concentration Unspiked	MS	MS Rec% #	QC Limit, % REC
CHROMIUM (VI)	mg/L	0.25	0	0.227	91	78-115
# of Out-of-control					0	

Spiked Components	Unit	Spike Added	MSD Concentration	MSD Rec% #	RPD% #	QC Limit, % RPD	REC
CHROMIUM (VI)	mg/L	0.25	0.219	88	3	19	78-115
# of Out-of-control				0	0		

Column to be used to flag recovery and RPD values:

* – Values outside of contract required QC Limits D – Spiked components diluted out

Comments: _____

Wet Chemistry QC Report B
Duplicate Results

Matrix: Water

APCL Service ID: 03-3130

Analysis	Batch ID	Analysis Date	Sample Name	Unit	Result	Duplicate Result	RPD %	RPD Control limit
Bicarbonate	03W2817	5/10/03	03-3082-2	mg/L	208	210	1	20
Carbonate	03W2817	5/10/03	03-3082-2	mg-$CaCO_3$/L	ND	ND	NC	20
pH	03W2790	5/8/03	EB-12-5/8/03	pH unit	7.31	7.36	1	20

Note: N/A = Not applicable; NR: Not requested; NC= Not Calculated; ND: Not detected.

6A

INITIAL CALIBRATION DATA

Lab Name: Applied P & Ch Lab Contract: _____

Analysis: Chromium (VI) Calibration Date: 1/29/03

Concentration (mg/L)	0.000	0.0125	0.050	0.125	0.250	0.50
Absorbance	0.000	0.006	0.041	0.109	0.214	0.415

A= 0.000 + 0.836C

A=Absorbance

C=Concentration (mg/L)

r= 0.9997

DIONEX METHOD PARAMETERS - E300-063.MET

Method Comment: APCL EPA 300 ANALYSIS DX-100
Column ID: Dionex AS4A-SC
Analyst ID: David

System Parameters

System Name: DX-100
Number of Detectors..... 1
Run Time (minutes)..... 10.00
Sampling Rate (seconds)..... 0.20

Detector 1 Type..... COND
Detector 1 real time plot scale maximum (uS)..... 30.000
minimum..... -3.000
Detector 1 Output Equivalent to 1 Volt (in uS) 30.00
Detector 1 ACI Analog Input Connection DET1
Save Data File..... Yes
Data File Name: C:\DX\DATA\03W1991\W1991Q01.D10

-- DETECTOR 1 PARAMETERS --

Report Options

Create ASCII Report File..... No
Print Report..... Yes
Print All Components..... Yes
Print Components Found..... No
Print Missing Components..... No
Print All Peaks..... No
Print Unknown Peaks..... No
Print Chromatogram..... Yes
Autoscale Chromatogram Maximum..... No
Autoscale Chromatogram Minimum..... No
Fill Peaks with Color ..... No
Draw Grid Lines on Chromatogram..... No
Show Component Fraction Numbers..... No
Label with Peak Number..... No
Label with Retention Times on Chromatogram..... Yes
Label with Component Name..... Yes
Format File Name: C:\DX\METHOD\DEFAULT.PRF

Integration Parameters

Starting Peak Width (seconds)..... 10.0
Peak Threshold 2.000
Peak Area Reject..... 1000
Area Reject for Reference Peaks..... 1000

Data Events

Time	Description
0.13	Start peak detection
10.00	Stop peak detection

Calibration Parameters

Number Of Levels for Calibration	6
Force Calibration Curve Through Origin	No
Calibration Fit Type	Linear
Replace Or Average Calibrations	Replace
External or Internal Calibration	External
Calculate Unknowns by Area or Height	Area
Default Sample Volume	1.0
Default Dilution Factor	1.0
Default Response Factor for Unknown Peaks	0.0
Calibration Standard Volume	1.0
Internal Standard Amount in Samples	1.0
Amount Units	ppm

Component # 4 Bromide Retention Time 3.45
Reference Comp. Nitrate-N Window Size 0.20 min.
Amount = K0 + K1*Area
K0 = 4.58974E-002
K1 = 4.83279E-006

Level	Amount	Area	Height
1	7.50000E-002	13830	1488
2	1.50000E+000	298206	30100
3	3.00000E+000	591234	61776
4	6.00000E+000	1219933	128845
5	7.50000E+000	1559887	166594
6	0.00000E+000	0	0

Component # 5 Nitrate-N Retention Time 3.87
Reference Comp. Nitrate-N Window Size 0.25 min.
Amount = K0 + K1*Area
K0 = 4.24689E-002
K1 = 8.05553E-007

Level	Amount	Area	Height
1	3.75000E-002	40157	3802
2	7.50000E-001	849179	77129
3	1.50000E+000	1713421	152776
4	3.00000E+000	3610927	313707
5	3.75000E+000	4688990	396441
6	0.00000E+000	0	0

Component # 6 Phosphate-P Retention Time 6.38
Reference Comp. Phosphate-P Window Size 0.60 min.
Amount = K0 + K1*Area
K0 = 8.68926E-002
K1 = 2.12227E-006

Level	Amount	Area	Height
1	7.50000E-002	24783	1450
2	1.50000E+000	642376	38579
3	3.00000E+000	1301126	79971
4	6.00000E+000	2756481	168994
5	7.50000E+000	3546397	217521
6	0.00000E+000	0	0

Component Table -- Last Modified: 17:42 on Fri, 21 Mar 2003

Component # 1 Fluoride Retention Time 1.32
Reference Comp. Fluoride Window Size 0.15 min.
Amount = K0 + K1*Area
K0 = -9.62851E-004
K1 = 1.37614E-006

Level	Amount	Area	Height
1	2.50000E-002	28534	2732
2	5.00000E-001	373164	44629
3	1.00000E+000	707646	82595
4	2.00000E+000	1435865	173007
5	2.50000E+000	1837162	220914
6	0.00000E+000	0	0

Component # 2 Chloride Retention Time 1.97
Reference Comp. Chloride Window Size 0.15 min.
Amount = K0 + K1*Area
K0 = 1.28188E-001
K1 = 1.95287E-006

Level	Amount	Area	Height
1	1.00000E-001	51206	7044
2	2.00000E+000	909455	126181
3	4.00000E+000	1856586	261681
4	8.00000E+000	3987563	585791
5	1.00000E+001	5142155	754321
6	0.00000E+000	0	0

Component # 3 Nitrite-N Retention Time 2.33
Reference Comp. Chloride Window Size 0.15 min.
Amount = K0 + K1*Area
K0 = 2.38085E-002
K1 = 9.76240E-007

Level	Amount	Area	Height
1	3.75000E-002	30884	3582
2	7.50000E-001	734006	79701
3	1.50000E+000	1468106	162005
4	3.00000E+000	3021523	336616
5	3.75000E+000	3856614	429219
6	0.00000E+000	0	0

Component # 7 Sulfate Retention Time 7.92
Reference Comp. Sulfate Window Size 0.90 min.
Amount = K0 + K1*Area
K0 = 5.32283E-001
K1 = 2.53252E-006

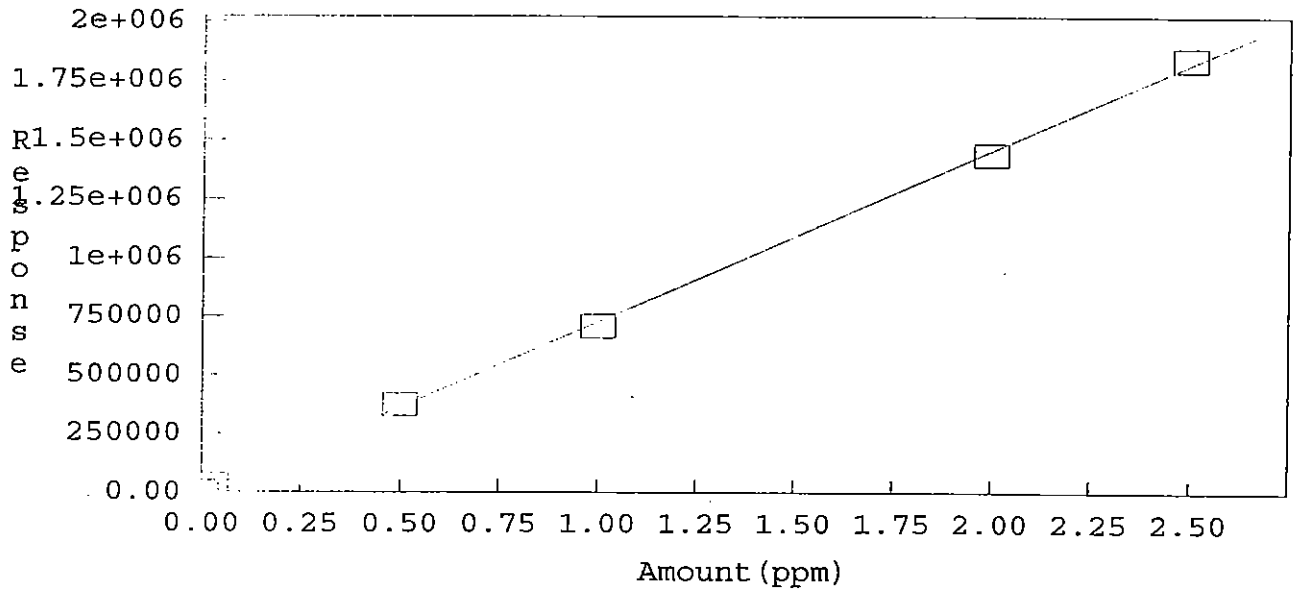
Level	Amount	Area	Height
1	3.76000E-001	129999	6524
2	7.50000E+000	2598757	138579
3	1.50000E+001	5330209	287851
4	3.00000E+001	11507107	615917
5	3.75000E+001	14859049	776426
6	0.00000E+000	0	0

Timed Events File: C:\DX\METHOD\W761CAL.TE

Step	Time	Description
Init		ACI Autosmp OFF
Init		ACI pump st ON
Init		ACI inject OFF
Init		ACI auto zer OFF
Init		ACI TTL 1 OFF
Init		ACI TTL 2 OFF
Init		ACI TTL 3 OFF
Init		ACI TTL 4 OFF
Init		ACI OFF
Init		ACI OFF
1	0.0	ACI Autosmp ON
1	0.0	ACI auto zer ON
2	2.5	ACI Autosmp OFF
2	2.5	ACI inject ON
2	2.5	ACI TTL 1 ON
2	2.5	Start Sampling

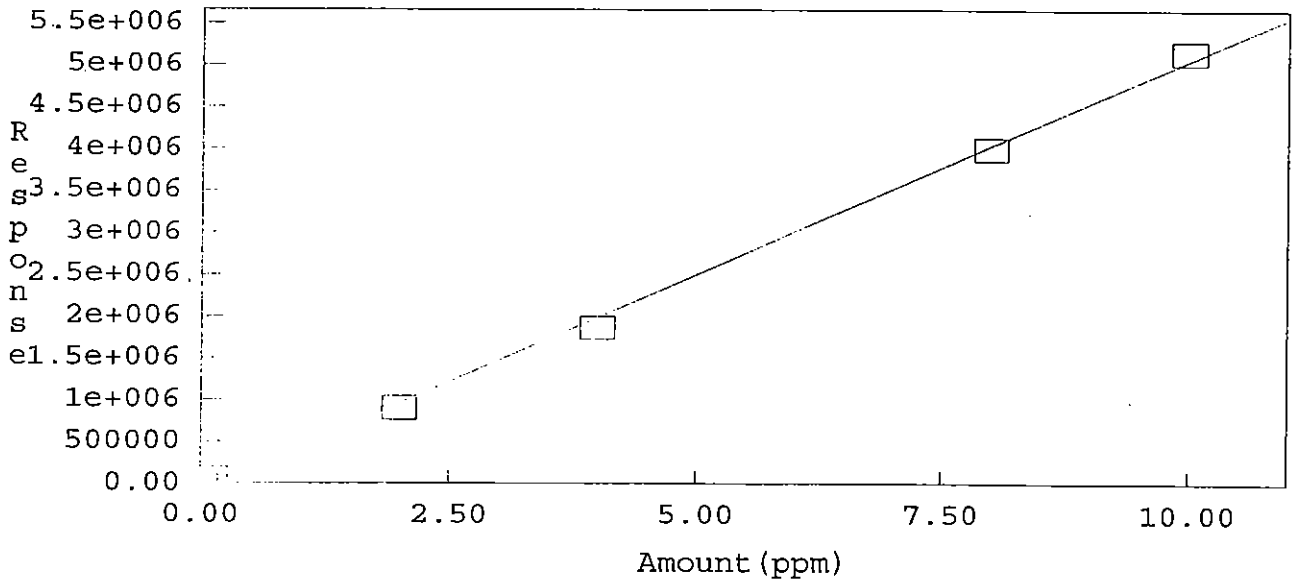
Method: E300-063.MET - Last Updated: 17:42 on Fri, 21 Mar 2003

Component: Fluoride
Fit Type: Linear
r^2 = 0.999552
Amt = Resp * 1.376e-006 + -0.000962
Resp = Amt * 7.267e+005 + 699.7
Standardization: External
Calibration: Area



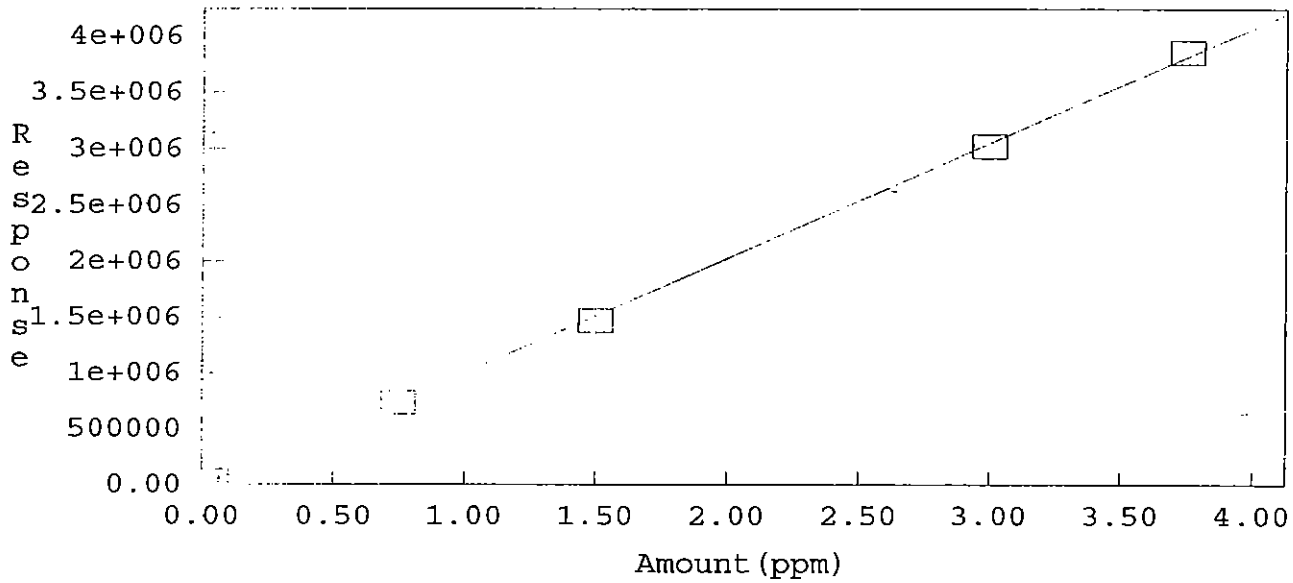
Method: C:\DX\METHOD\E300-063.MET

Component: Chloride
Fit Type: Linear
r^2 = 0.998409
Amt = Resp * 1.953e-006 + 0.1282
Resp = Amt * 5.121e+005 + -6.564e+00
Standardization: External
Calibration: Area



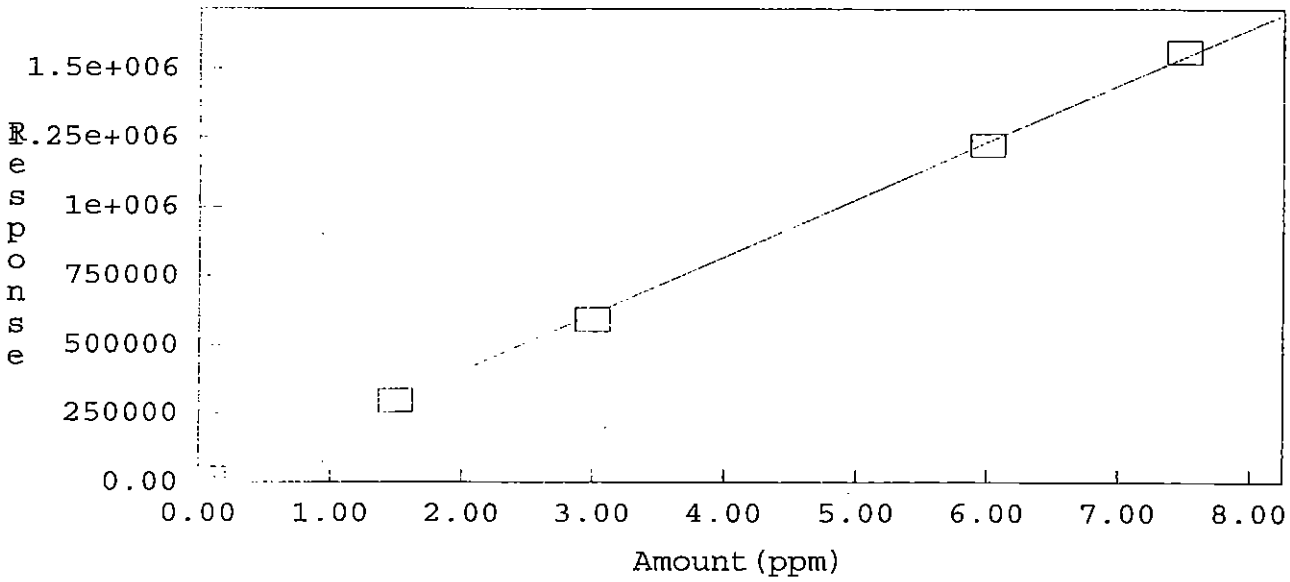
Method: C:\DX\METHOD\E300-063.MET

Component: Nitrite-N
Fit Type: Linear
r^2 = 0.999594
Amt = Resp * 9.762e-007 + 0.02381
Resp = Amt * 1.024e+006 + -2.439e+00
Standardization: External
Calibration: Area



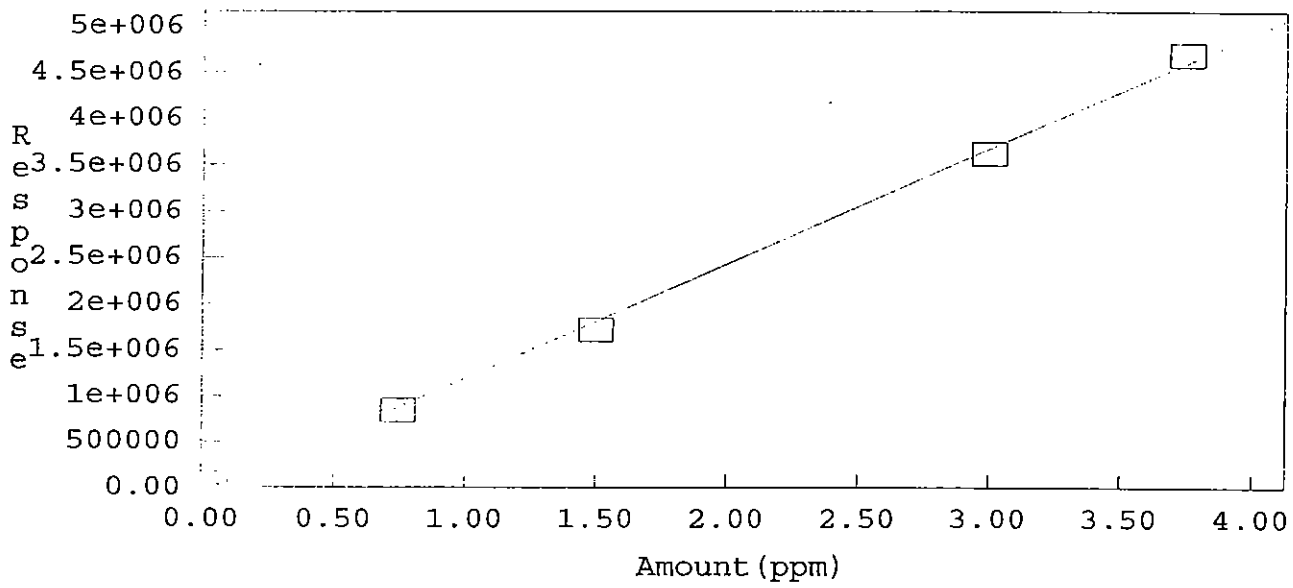
Method: C:\DX\METHOD\E300-063.MET

Component: Bromide
Fit Type: Linear
r^2 = 0.999518
Amt = Resp * 4.833e-006 + 0.0459
Resp = Amt * 2.069e+005 + -9497
Standardization: External
Calibration: Area



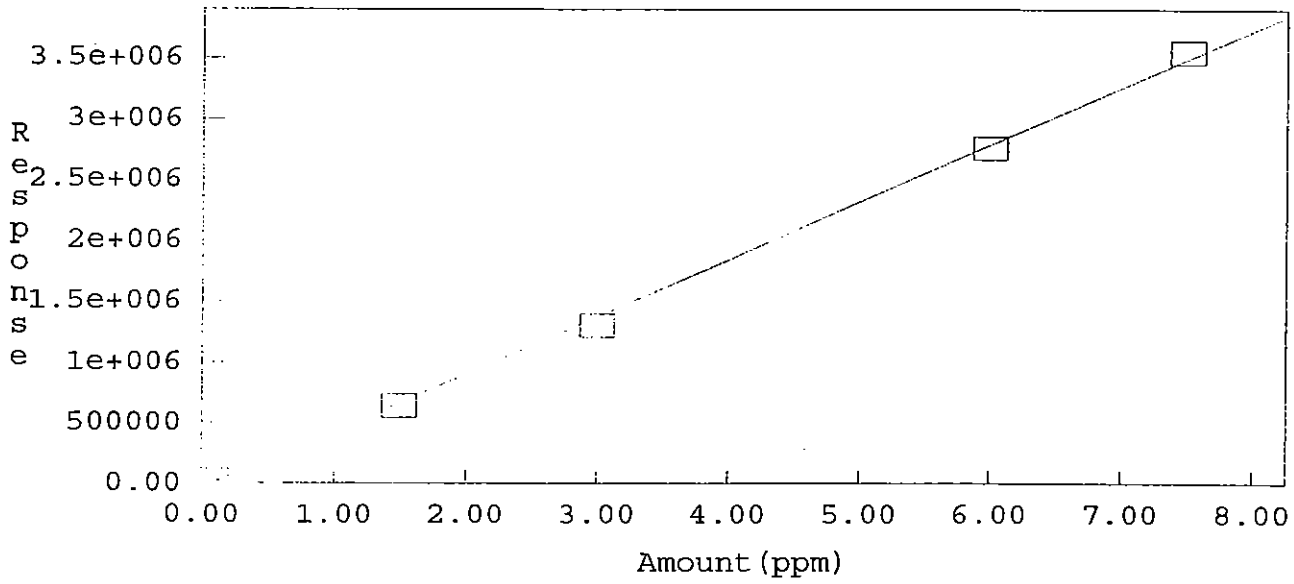
Method: C:\DX\METHOD\E300-063.MET

Component: Nitrate-N
Fit Type: Linear
r^2 = 0.998618
Amt = Resp * 8.056e-007 + 0.04247
Resp = Amt * 1.241e+006 + -5.272e+00
Standardization: External
Calibration: Area



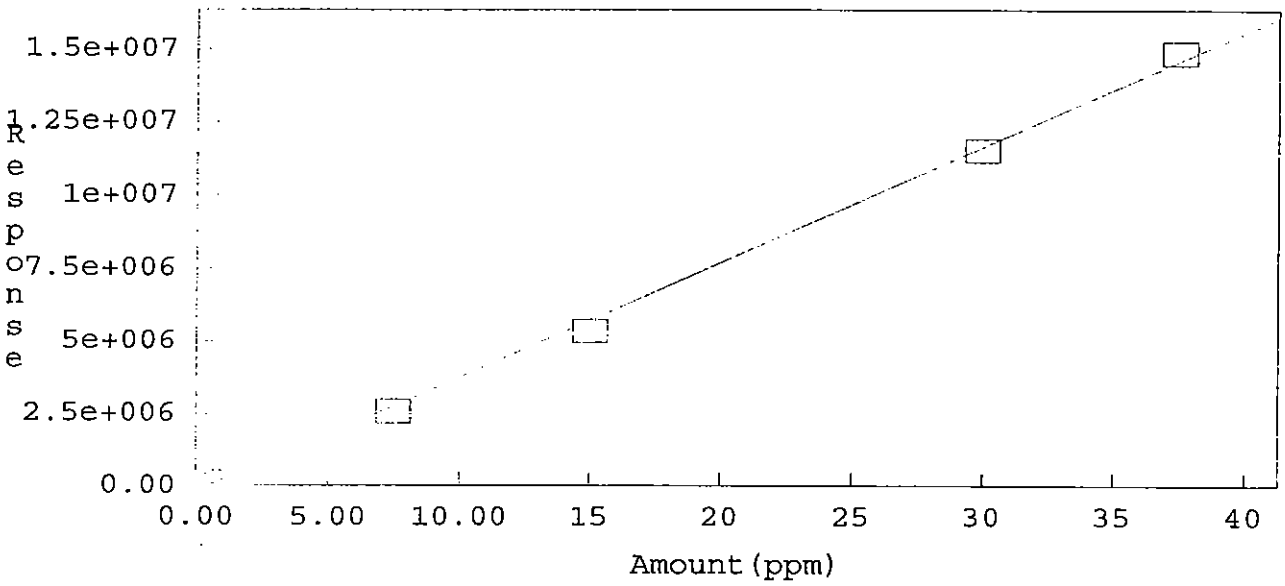
Method: C:\DX\METHOD\E300-063.MET

Component: Phosphate-P
Fit Type: Linear
r^2 = 0.998898
Amt = Resp * 2.122e-006 + 0.08689
Resp = Amt * 4.712e+005 + -4.094e+00
Standardization: External
Calibration: Area



Method: C:\DX\METHOD\E300-063.MET

Component: Sulfate
Fit Type: Linear
r^2 = 0.998245
Amt = Resp * 2.533e-006 + 0.5323
Resp = Amt * 3.949e+005 + -2.102e+00
Standardization: External
Calibration: Area

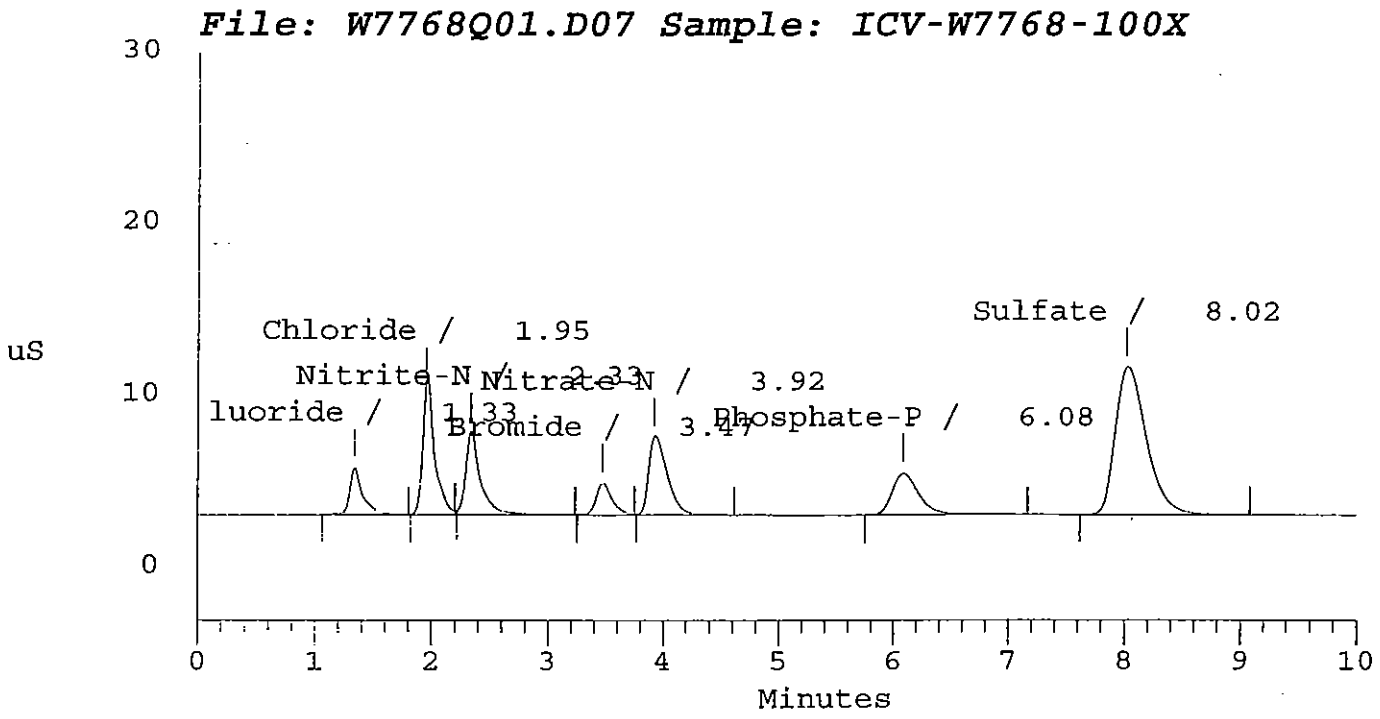


```
==========================================================================
| Sample Name: ICV-W7768-100X                  Date: 03/21/2003 17:56:33  |
| Data File  : C:\DX\DATA\e300-063\W7768Q01.D07                          |
| Method     : C:\DX\METHOD\E300-063.MET                                 |
| ACI Address: 1  System: 1  Inject#: 7                  Detector:COND   |
| Analyst    : David          Column: Dionex AS4A-SC                     |
==========================================================================
```

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	1	3000	5Hz	0.00	10.00	1000	

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration ppm	Height	Area	Bl. Code	%Delta
1	1.33	Fluoride	0.999	89896	726672	2	0.00
2	1.95	Chloride	3.767	248158	1863483	2	0.00
3	2.33	Nitrite-N	1.445	160603	1455681	2	1.17
4	3.47	Bromide	2.881	61007	586729	2	-0.71
5	3.92	Nitrate-N	1.410	149958	1697030	2	0.00
6	6.08	Phosphate-P	2.852	79916	1302965	1	0.00
7	8.02	Sulfate	13.993	285121	5314983	1	0.00
		Totals	27.347	1074659	12947545		

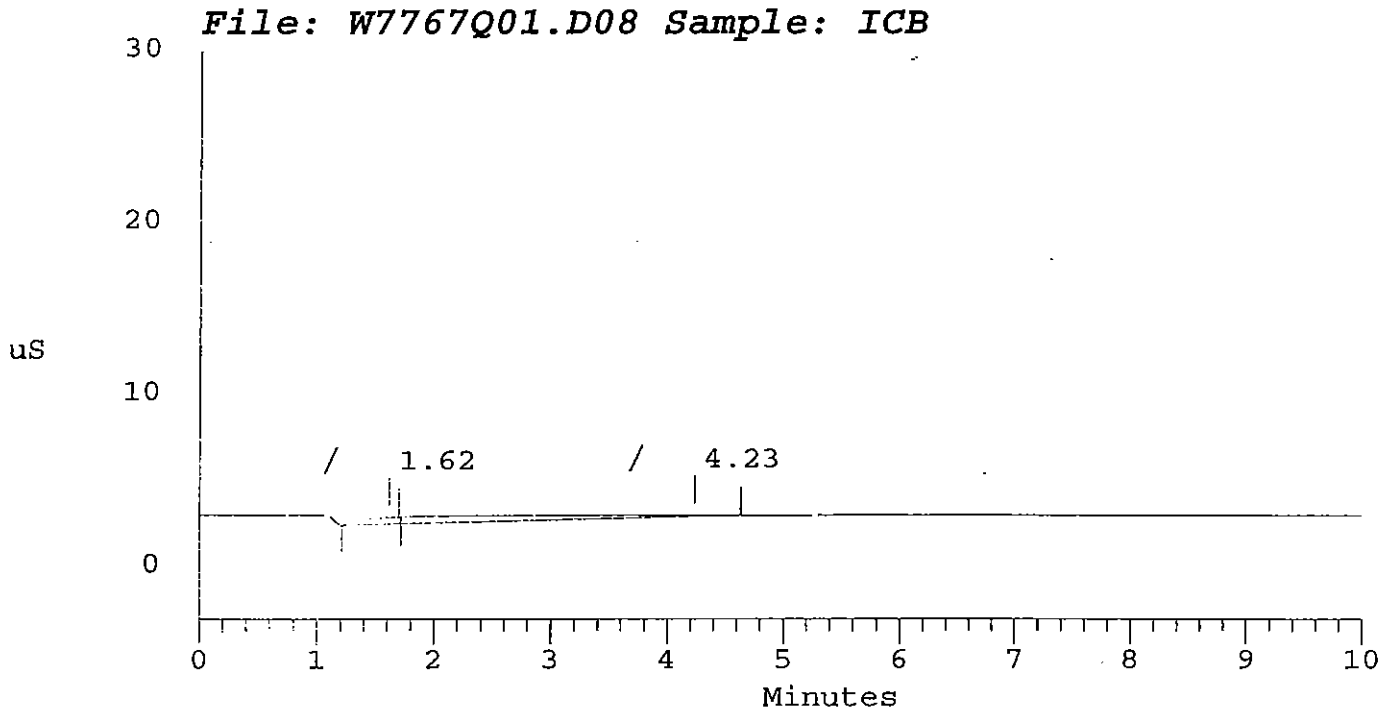


```
==========================================================================
| Sample Name: ICB                          Date: 03/21/2003 18:21:00     |
| Data File  : C:\DX\DATA\E300-063\W7767Q01.D08                           |
| Method     : C:\DX\METHOD\E300-063.MET                                  |
| ACI Address: 1  System: 1  Inject#: 8                Detector:COND      |
| Analyst    : David          Column: Dionex AS4A-SC                      |
==========================================================================
```

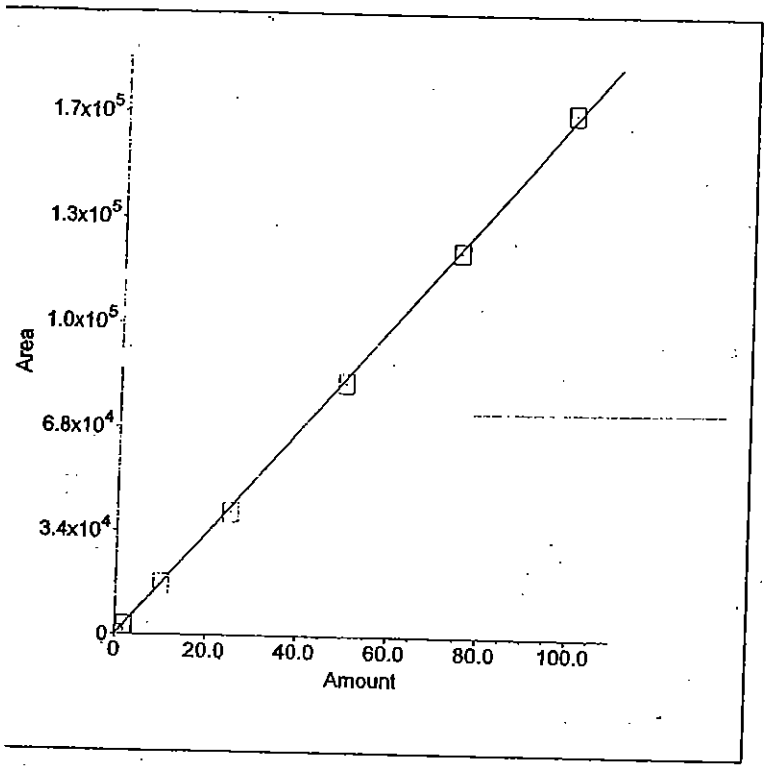
Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	1	3000	5Hz	0.00	10.00	1000	

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration ppm	Height	Area	Bl. Code	%Delta
0	0.00	Fluoride	0.000	0	0	0	0.00
0	0.00	Chloride	0.000	0	0	0	0.00
0	0.00	Nitrite-N	0.000	0	0	0	0.00
0	0.00	Bromide	0.000	0	0	0	0.00
0	0.00	Nitrate-N	0.000	0	0	0	0.00
0	0.00	Phosphate-P	0.000	0	0	0	0.00
0	0.00	Sulfate	0.000	0	0	0	0.00
		Totals	0.000	0	0		



Component:perchlorate
Standard:External Fit Type:Linear
Origin:Force Calibration:Area
r^2=0.999492
Amt=0.0005893*Resp+0



Calibration : 7 points , 0, 2, 10, 25, 50, 75, 100 ppb

Analyst C. W
Date 03/12/03
Instrument IC-1c

APCL Perchlorate Analysis Report

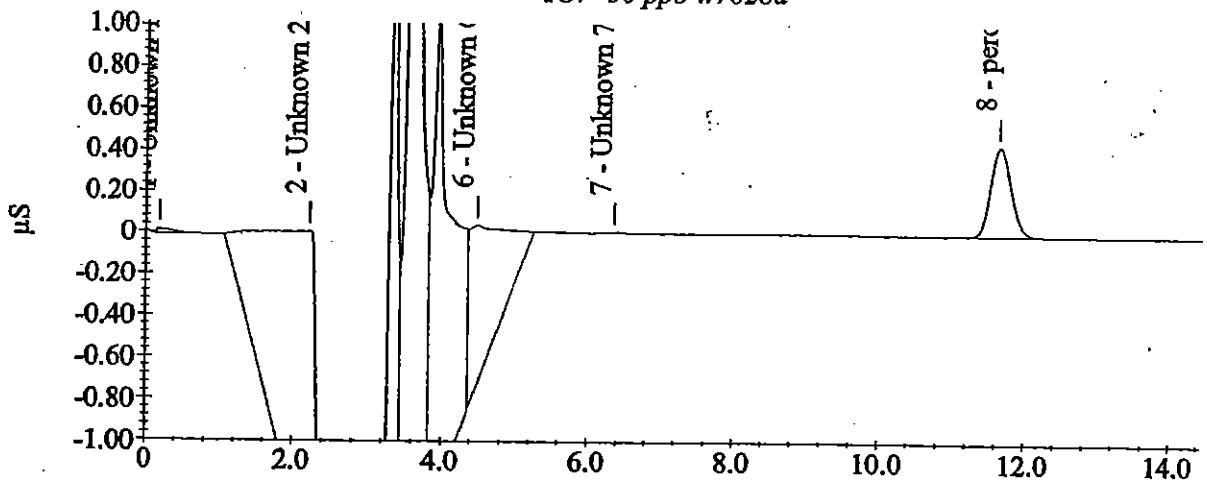
Sample Name : ICV 50 ppb w7828a
Data File Name : C:\DATA\E314-011\icv-50pb_009.DXD

Method File Name : C:\PEAKNET\METHOD\E314-011.met
Date Time Collected : 03/12/2003 8:16:15 PM
System Operator : wei wang
Dilution Factor : 1.00

Peak Information : All Components

Peak #	Component Name	Retention Time	Amount (ppb)	Peak Area	Peak Height
8	perchlorate	11.65	49.49	83990	4321

ICV 50 ppb w7828a



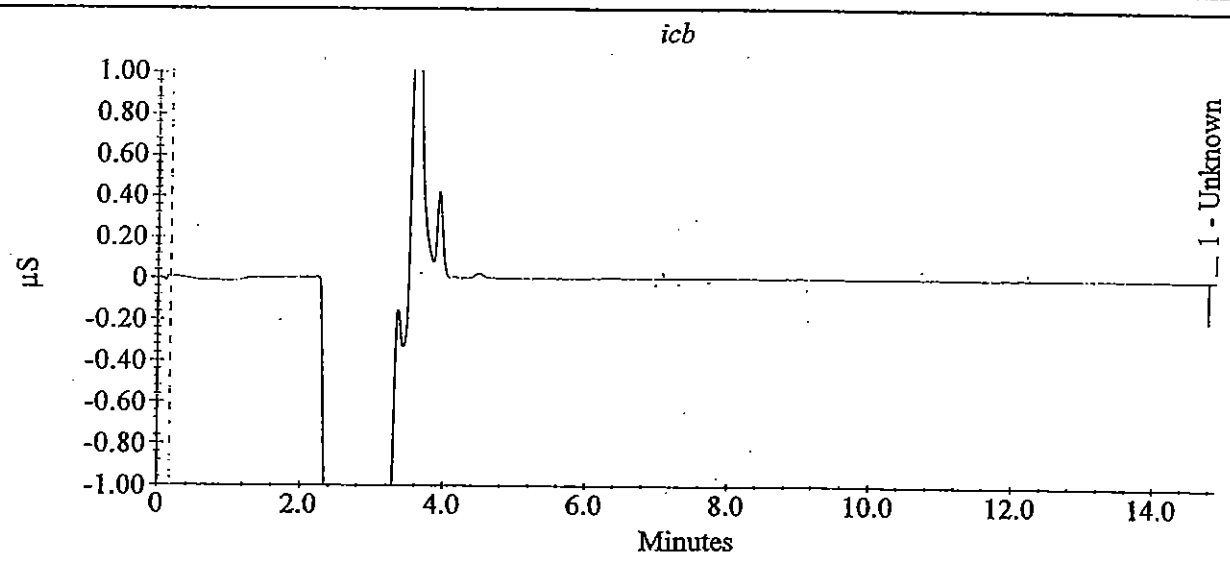
APCL Perchlorate Analysis Report

Sample Name : icb
Data File Name : C:\DATA\E314-011\ICB_010.DXD

Method File Name : c:\PeakNet\method\E314-011.met
Date Time Collected : 03/12/2003 8:33:51 PM
System Operator : wei wang
Dilution Factor : 1.00

Peak Information : All Components

Peak #	Component Name	Retention Time	Amount (ppb)	Peak Area	Peak Height



FORM-7

Applied P & Ch Laboratory

CCV Recovery for Wet Analysis

Client Name: GEOFON, Inc. Contract No.: Lab Code: APCL
Case No: SAS No.: Service ID: 33130
Project ID: JPL GW Mon-2Q03 Project No.: 04-4428.10

#	Component Name	Method	Batch No.	Unit	Expe-cted	Test Result	Rec. %	Dev. %	Flag	Control Limit, %	Test Date
1	Chloride Cl^-	300.0	03W2777	mg/L	4.0	4.04	101	1	√	90-110	05/08/2003
	NITRATE as N-NO_3^-, BY	300.0	03W2777	mg/L	1.5	1.57	104	4	√	90-110	05/08/2003
	SULFATE SO_4^{--}, BY I	300.0	03W2777	mg/L	15	15.6	104	4	√	90-110	05/08/2003
	Chloride Cl^-	300.0	03W2777	mg/L	4.0	4.05	101	1	√	90-110	05/08/2003
	NITRATE as N-NO_3^-, BY	300.0	03W2777	mg/L	1.5	1.56	104	4	√	90-110	05/08/2003
	SULFATE SO_4^{--}, BY I	300.0	03W2777	mg/L	15	15.4	103	3	√	90-110	05/08/2003
	Chloride Cl^-	300.0	03W2777	mg/L	4.0	4.10	103	3	√	90-110	05/08/2003
	NITRATE as N-NO_3^-, BY	300.0	03W2777	mg/L	1.5	1.57	104	4	√	90-110	05/08/2003
	SULFATE SO_4^{--}, BY I	300.0	03W2777	mg/L	15	15.5	103	3	√	90-110	05/08/2003
2	Perchlorate	314.0	03W2866	μg/L	50	49.5	99	-1	√	90-110	05/14/2003
	Perchlorate	314.0	03W2866	μg/L	50	50.1	100	0	√	90-110	05/14/2003
	Perchlorate	314.0	03W2866	μg/L	50	51.2	102	2	√	90-110	05/14/2003
	Perchlorate	314.0	03W2866	μg/L	50	48.7	97	-3	√	90-110	05/14/2003
3	Chromium (VI)	7196	03W2788	mg/L	0.25	0.242	97	-3	√	90-110	05/08/2003
	Chromium (VI)	7196	03W2788	mg/L	0.25	0.255	102	2	√	90-110	05/08/2003

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Tel: (909) 590-1828 Fax: (909) 590-1498

Balance Daily Calibration Worksheet

Weight Set S/N: 12006 9629

Calib. Date	Lab Balance Balance #	1 g ±0.05g	10 g ±0.1g	200 g ±0.5g	Note (C)	Digital Balance Balance #	1 g ±0.02g	10 g ±0.05g	200 g ±0.10g	Note (D) (C) (AR)	Analytical Balance Balance #	1 g ±0.0002g	10 g ±0.0005g	200 g ±0.0010g	Note (D) (C) (AR)	Calib. by
5/7/03	A-01	not	in	use	✓	B-01	1.00	10.01	200.00	✓✓✓	C-01	1.0000	10.0001	200.0000	✓✓✓	1/2
	~~A-02~~					B-05	1.00	10.00	200.01	✓✓✓	C-02	1.0001	10.0000	200.0001	✓✓✓	
	A-03	1.00	9.99	200.00	✓	B-06	1.00	9.99	200.00	✓✓✓	C-					
	A-04					B-07	1.00	10.00	200.00	✓✓✓	C-					
	A-		5/7/03			B-			5/7/03		C-		5/7/03			
	A-					B-		5/7/03			C-					
5/8/03	A-01	not	in	use	✓	B-01	1.00	10.01	200.00	✓✓✓	C-01	1.0000	10.0001	200.0000	✓✓✓	1/2
	~~A-02~~					B-05	1.00	10.00	200.00	✓✓✓	C-02	1.0001	10.0000	200.0000	✓✓✓	
	A-03	1.00	9.99	200.00	✓	B-06	1.00	9.99	199.99	✓✓✓	C-					
	A-04					B-07	1.00	10.00	200.00	✓✓✓	C-					
	A-		5/8/03			B-			5/8/03		C-		5/8/03			
	A-					B-		5/8/03			C-					
5/9/03	A-01	not	in	use	✓	B-01	1.00	10.01	200.00	✓✓✓	C-01	1.0000	10.0000	200.0001	✓✓✓	1/2
	~~A-02~~					B-05	1.00	10.00	200.00	✓✓✓	C-02	1.0001	10.0001	199.9999	✓✓✓	
	A-03	1.00	9.99	200.00	✓	B-06	1.00	9.99	199.99	✓✓✓	C-					
	A-04					B-07	1.00	10.00	200.00	✓✓✓	C-					
	A-		5/9/03			B-			5/9/03		C-		5/9/03			
	A-					B-		5/9/03			C-					
5/12/03	A-01	not	in	use	✓	B-01	1.00	10.01	200.00	✓✓✓	C-01	1.0000	10.0000	200.0001	✓✓✓	1/2
	~~A-02~~					B-05	1.00	10.00	200.00	✓✓✓	C-02	1.0001	10.0001	199.9999	✓✓✓	
	A-03	1.00	9.99	200.00	✓	B-06	1.00	9.99	199.99	✓✓✓	C-					
	A-04					B-07	1.00	10.00	200.00	✓✓✓	C-					
	A-		5/12/03			B-			5/12/03		C-		5/12/03			
	A-					B-		5/12/03			C-					

Notation: (C) – Cleanliness; (D) – Display; (AR) – Auto Rezeroing.

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Alkalinity/OH/CO_3/HCO_3 (310.1/SM2320B) Worksheet

Batch # 03W2817 Matrix: W Titrant H_2SO_4 Lot # W7900 Concentration (C) 0.02555 N; Test Date: 1/16/03 Analyst: [illegible] SOP: G-51

#	Sample ID	Dilution $V_f/V_i=f_1$	Smpl Amnt V, mL	H_2SO_4 (mL) by Phnln S_A	E_A	A	H_2SO_4 (mL) by MR-BCG S_B	E_B	B	Phnln-Alk., P (in unit of mg$CaCO_3$/L)	Tot. Alk., T (in unit of mg$CaCO_3$/L)	OH^- (in unit of mg$CaCO_3$/L)	CO_3^{2-} (in unit of mg$CaCO_3$/L)	HCO_3^- (in unit of mg$CaCO_3$/L)	Note & Anomaly
1	MB: T1116	1 =	100			0			0		0	0	0	0	
2	LCS	1 =	100						7.90		100.9				
3	LCSD	1 =	100						7.90		100.9				
4	3082-1	1 =	50.0			0			0		0	0	0	0	
5	-2	1 =	50.0			0			8.15		208.2	0	0	208.2	
6	-3	1 =	50.0			0.05			6.75	1.3	173.7	0	2.6	171.1	
7	-4	1 =	50.0			0			6.90		176.3	0	0	176.3	
8	-5	1 =	50.0			0.40		3.55 1/16/03	~~7.50~~	10.2	100.9	0	20.4	80.5	
9	-6	1 =	50.0			0.10			4.55	2.6	118.8	0	5.2	113.6	
10	3130-1	1 =	50.0			0			0		0	0	0	0	
11	-2	1 =	50.0			0			10.60		270.8	0	0	270.8	
12	-3	1 =	50.0			0.05			5.85	1.3	150.7	0	2.6	148.1	
13	-4	1 =	50.0			0.10			5.20	2.6	135.4	0	5.2	130.2	
14	-5	1 =	50.0			0.05			5.70	1.3	146.9	0	2.6	114.3	
15	-6	1 =	50.0			1.50			3.45	38.3	126.5	0	76.6	49.9	
16		1 =													
17		1 =													
18		1 =													
19		1 =													
20		1 =													
Dup.	3082-2	1 =	50.0			0			8.20		209.5	0	0	209.5	

Titration Results	OH^- ($CaCO_3$ mg/L)	CO_3^{2-} ($CaCO_3$ mg/L)	HCO_3^- ($CaCO_3$ mg/L)
P=0	0	0	T
P<T/2	0	2P	T-2P
P=T/2	0	2P	0
P>T/2	2P-T	2(T-P)	0
P = T	T	0	0

Calculation:

$A=S_A \cdot E_A$

$B=S_B \cdot E_B$

$P=50{,}000\ f_1\ A\ C\ /V$

$T=50{,}000\ f_1\ (A+B)\ C\ /V$

APCL Form 5-101, Nov. 29, 1999 Ver 3.2

Using blue pen. Correcting by red pen.

File: [CUST.DOC.WET]ALK.TEX

Root-File: [CUST.DOC.WET]ALK.ROOT.TEX

1-Page-File: [CUST.DOC.WET]ALK1.TEX

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Tel: (909) 590-1828 Fax: (909) 590-1498

pH (150.1/9045B) Worksheet

Temperature compensation must be performed by the instrument automatically. Analyst DC SOP: G-44

Batch # 03W2790 Analysis Date: 1/8/03
Starting Time: 16:27 Ending Time: ___:___
Matrix ☒ Aaueous ☐ Soil

Standard	4.00	7.00	10.00
Lot #		030660-24	030659-24
Temperature °C		23.8	23.8
pH Reading		7.01	10.02
T-corrected pH		7.00	10.01
Control Limit	±0.05 pH unit		

#	Sample ID	Pre-treat	pH	Note
MB	T116		6.89	
1	3130-1		7.31	
2	-2		7.64	
3	-3		8.21	
4	-4		8.18	
5	-5		8.07	
6	-6		9.23	
7	3132-2		9.08	
8	3135-2		9.76	
9				
10				
11				
12		1/8/03		
13				
14				
15				
16				
17				
18				
19				
20				
Dup.	3130-1		7.36	

Batch # 03W2793 Analysis Date: 1/8/03
Starting Time: 18:05 Ending Time: ___:___
Matrix ☒ Aaueous ☐ Soil

Standard	4.00	7.00	10.00
Lot #		030660-24	030659-24
Temperature °C		24.0	24.0
pH Reading		6.99	10.00
T-corrected pH		7.00	10.01
Control Limit	±0.05 pH unit		

#	Sample ID	Pre-treat	pH	Note
MB	T116		6.92	
1	3143-1		8.29	
2	3141-1		6.89	
3	-2		7.12	
4	-3		6.79	
5	-4		6.85	
6	-5		6.80	
7	-6		6.80	
8	-7		6.97	
9	-8		7.00	
10	-9		6.78	
11	-10		6.97	
12	-11		7.87	
13	-12		7.54	
14				
15				
16				
17				
18				
19				
20				
Dup.	3141-1		7.57	

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Chromium (VI) (7196) Worksheet

Batch # 0311278 Matrix: W [Holding Time: 24 hours!!] Test Date: 5/8/03 Analyst: [illegible]

Lot #: Reagent Water _____ Diphenylcazide solution _____ Test Time: 14:42 SOP: G-

Calibration	STD Lot #	$C_{std} \times V_{std}/V_f = C_i$	A_i	$RF_i = A_i/C_i$	Calibration results	Note
STD-1	W-	× / = mg/L			Least Square [RF]=	Cal. Code:
STD-2	W-	× / = mg/L			Average $\bar{RF}$=	
STD-3	W-	× / = mg/L			C.C.=0.997 (≥ 0.995)	
STD-4	W-	× / = mg/L			RSD= % (≤ 15%)	
STD-5	W-	× / = mg/L			Ref. page	
STD-6	W-	× / = mg/L			A=0.000+0.836C	

Analysis Type	Sample ID or Lot #	Samp. Amnt X_0 (g or mL)	Dilu./Ext $X/X_0=f_1$	Treat. Ratio $V/X=f_2$	540 nm A	Concentration $C'=A/\bar{RF}$	C (Sample) $C=f_1 f_2 C'$	Anoma Note
CCV	Lot: W-7853	Expected Conc.:	×	/ =0.25 mg/L	0.202	0.242 mg/L	REC. %	90-110
Method Blank	Bl. Lot: T1116		$/X_0$ = 1	95.0/ =	0.000	mg/L	0.000 ppm	
LCS1	Bl. Lot: "		$/X_0$ =	95.0/ =	0.186	mg/L	0.222 ppm	
Sample-1	3130-1		$/X_0$ =	95.0/ =	0.000	mg/L	0.000 ppm	
MS on S-1	2		$/X_0$ =	95.0/ =	0.190	mg/L	0.227 ppm	
MSD on S-1	2		$/X_0$ =	95.0/ =	0.183	mg/L	0.219 ppm	
Sample 2	2		$/X_0$ =	95.0/ =	0.000	mg/L	0.000 ppm	
Sample 3	3		$/X_0$ =	95.0/ =	0.002	mg/L	0.002 ppm	
Sample 4	4		$/X_0$ =	95.0/ =	0.001	mg/L	0.001 ppm	
Sample 5	5		$/X_0$ =	95.0/ =	0.002	mg/L	0.002 ppm	
Sample 6	6		$/X_0$ =	95.0/ =	0.000	mg/L	0.000 ppm	
Sample 7			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 8			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 9			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 10			$/X_0$ =	95.0/ =		mg/L	ppm	
Blank	Lot:		$/X_0$ =	95.0/ =		mg/L	ppm	
LCS2	Bl. Lot: T1116		$/X_0$ = 1	95.0/ =	0.200	mg/L	0.239 ppm	
Sample 11			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 12			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 13			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 14			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 15			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 16			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 17			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 18			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 19			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 20			$/X_0$ =	95.0/ =		mg/L	ppm	
MTX Dup.	closing 0.25 mg/L		$/X_0$ =	95.0/ =	0.213	0.255 mg/L	ppm	

Type	STD Lot #	$C_{STD}(\mu g/mL) \times V_{STD}(mL)/X(g \text{ or } mL) = T$	Spike Rec.	Ctl Limit (W/S)
MS	W-7853	× / = 0.25 ppm	%	80-120 %/80-120 %
MSD	W- "	× / = ppm	%	.. ..
LCS	W-7759	× / = ppm	%	80-120 %/80-120 %
LCSD	W- "	× / = ppm	%	.. ..

PQL/MDL (in ppm)	
PQL(w)	0.01
PQL(s)	0.05
MDL(w)	0.005
MDL(s)	0.025

APCL form 5-155 May 08, 1996. Ver. 3.1 No pencil. Use blue pen for record. Use red pen for correction.
File:[CUST.DOC.WET]CR6.TEX Root-file: CR6_ROOT.TEX 1-Page-File: CR61.TEX
Control limits are subjected to change. The updated values are given in the latest version of APCL Technical Handbook Vol. 2

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Chromium (VI) (7196) Worksheet

Batch # 03W1295 Matrix: W

[Holding Time: 24 hours!!]

Test Date: 1/29/03 Analyst: BN

Test Time: _____ SOP: G-22

Lot #: Reagent Water _____ Diphenylcazide solution _____

Calibration	STD Lot #	$C_{std} \times V_{std}/V_f = C_i$	A_i	$RF_i = A_i/C_i$	Calibration results	Note
STD-1	W-7191	× / =0.000mg/L	0.000		Least Square [RF]=	Cal. Code:
STD-2	W-	× / =0.012mg/L	0.006		Average RF=	A=0.000+0.836C
STD-3	W-	× / =0.050mg/L	0.041		C.C.=0.9977 (≥ 0.995)	
STD-4	W-	× / =0.125mg/L	0.109		RSD= % (≤ 15%)	
STD-5	W-	× / =0.250mg/L	0.214		Ref. page	
STD-6	W-	× / =0.50mg/L	0.415		A=0.003+Bn'Kg/03	

Analysis Type	Sample ID or Lot #	Samp. Amnt X_0 (g or mL)	Dilu./Ext $X/X_0=f_1$	Treat. Ratio $V/X=f_2$	540 nm A	Concentration $C'=A/\bar{RF}$	C (Sample) $C=f_1\ f_2\ C'$	Anomaly Note
CCV	Lot: W-7076.	Expected Conc.:	×	/ =0.25 mg/L	0.216	0.258 mg/L	REC. %	90-110 %
Method Blank	Bl. Lot: T1115		/X_0 = 1	95.0/ =	0.000	mg/L	0.00 ppm	
LCS1	Bl. Lot: "		/X_0 = 1	95.0/ =	0.204	mg/L	0.244 ppm	
Sample-1	1369-1		/X_0 =	95.0/ =	0.000	mg/L	0.00 ppm	
MS on S-1	6		/X_0 =	95.0/ =	0.223	mg/L	0.266 ppm	
MSD on S-1	6		/X_0 =	95.0/ =	0.230	mg/L	0.275 ppm	
Sample 2	2		/X_0 =	95.0/ =	0.004	mg/L	0.005 ppm	
Sample 3	3		/X_0 =	95.0/ =	0.002	mg/L	0.002 ppm	
Sample 4	4		/X_0 =	95.0/ =	0.001	mg/L	0.001 ppm	
Sample 5	5		/X_0 =	95.0/ =	0.002	mg/L	0.002 ppm	
Sample 6	6		/X_0 =	95.0/ =	0.004	mg/L	0.005 ppm	
Sample 7	-		/X_0 =	95.0/ =		mg/L	ppm	
Sample 8			/X_0 =	95.0/ =		mg/L	ppm	
Sample 9			/X_0 =	95.0/ =		mg/L	ppm	
Sample 10			/X_0 =	95.0/ =		mg/L	ppm	
Blank	Lot:		/X_0 =	95.0/ =		mg/L	ppm	
LCS2	Bl. Lot: T1115		/X_0 = 1	95.0/ =	0.210	mg/L	0.251 ppm	
Sample 11			/X_0 =	95.0/ =		mg/L	ppm	
Sample 12			/X_0 =	95.0/ =		mg/L	ppm	
Sample 13			/X_0 =	95.0/ =		mg/L	ppm	
Sample 14			/X_0 =	95.0/ =		mg/L	ppm	
Sample 15			/X_0 =	95.0/ =		mg/L	ppm	
Sample 16			/X_0 =	95.0/ =		mg/L	ppm	
Sample 17			/X_0 =	95.0/ =		mg/L	ppm	
Sample 18			/X_0 =	95.0/ =		mg/L	ppm	
Sample 19			/X_0 =	95.0/ =		mg/L	ppm	
Sample 20			/X_0 =	95.0/ =		mg/L	ppm	
MTX Dup.	closing 0.25mg/L		/X_0 =	95.0/ =	0.204	mg/L	0.244 ppm	

Type	STD Lot #	$C_{STD}(\mu g/mL) \times V_{STD}(mL)/X(g \text{ or } mL) = T$	Spike Rec.	Ctl Limit (W/S)
MS	W-7076	× / =0.25 ppm	%	80-120 %/80-120 %
MSD	W-	× / = ppm	%	.. ..
LCS	W-7191	× / = ppm	%	80-120 %/80-120 %
LCSD	W-	× / = ppm	%	.. ..

PQL/MDL (in ppm)	
PQL(w)	0.01
PQL(s)	0.05
MDL(w)	0.005
MDL(s)	0.025

APCL form 5-155 May 08, 1996. Ver. 3.1 No pencil. Use blue pen for record. Use red pen for correction.
File:[CUST.DOC.WET]CR6.TEX Root-file: CR6_ROOT.TEX 1-Page-File: CR61.TEX
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Applied P & Ch Laboratory
0 Magnolia Ave. Chino CA 91710
(909) 590-1828 Fax: (909) 590-1498

Conductance (120.1) Worksheet

Test Date: 5/9/03 Analyst: WW

Batch # for reference Matrix: W

Cell Constant ↓ Calibration STD: 0.0100M KCl µS/cm SOP: G-45

#	Sample ID	Treatment V/X=f0	Dilution Vf/Vi=f1	Temperature T, °C	$C_{25}=C_T f_1/[1-0.0191(25-T)]$ C_T, µmhos/cm	C_{25}, µmhos/cm	ρ=1/C25 MΩ cm	Note & Anomaly
Cal.	Lot #:	-	-	25°C				C25=1,413±20
MB		/ =	/ =					for CW
1	3152-1	/ =	/ =			189		
2	-2	/ =	/ =			~~172~~ 180 5/9/03		
3	-3	/ =	/ =			174		
4	-4	/ =	/ =			105 ~~107~~ ~~84.70~~ WW 5/9/03		
5	-5	/ =	/ =			123		
6	-6	/ =	/ =		12.2	~~364~~ WW 5/9/03		
7	3082-1	/ =	/ =			370		
8	-2	/ =	/ =			498		
9	-3	/ =	/ =			338		
10	-4	/ =	/ =			333		
11	-5	/ =	/ =			149		
12	-6	/ =	/ =			29 323		
13	3130-1	/ =	/ =			167		
14	-2	/ =	/ =			749		
15	-3	/ =	/ =			555		
16	-4	/ =	/ =			590		
17	-5	/ =	/ =			349		
18	-6	/ =	/ =			364		
19		/ =	/ =					
20		/ =	/ =					
Dup.		/ =	/ =					

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Solid Analysis (160.1, 160.2, 160.3) Worksheet

Batch #03W2800 Matrix W Method: 160.1 Balance No. _____ Date: 1/9/03 Analyst: DL

EPA 160.1 TDS – Total Dissolved (filterable) Solids — Dry for 1hr. or more at 180 °C

EPA 160.2 TSS – Total Suspended (nonfilterable) Soilds — Dry for 1hr. or more at 103-105 °C

EPA 160.3 TS – Total Solids — Dry for 1hr. or more at 103-105 °C

Other method (specify):

Result= $10^6 \times \Delta W \times f_1 / V$ **SOP: G-81**

#	Analysis Type	Sample ID (STD Lot #)	Treatment Ratio $V_f/X=f_1$	Volume V, mL	W_1 g	W_2 1st, g	W_2 2nd, g	$\Delta W = W_2 - W_1$, g	Results (ppm)	Note
1	Blank	T1116	1 =	100	103.1172	103.1174	103.1175	0.0003	3	GL
2	LCS	T1116	1 =	100	112.2993	112.3385	112.3383	0.0390	390	K
3	Sample-1	3090-1	1 =	100	115.9188	115.9476	115.9478	0.0290	290	Y9
4	MS on S-1	3130-2	1 =	100	103.3079	103.4105	103.4107	0.1028	1028	L
5	MSD on S-1	-2	1 =	100	113.8619	113.9633	113.9631	0.1012	1012	6
6	Sample-2	3090-2	1 =	100	114.1383	114.1677	114.1679	0.0296	296	G3
7	Sample-3	-3	1 =	100	113.0683	113.1017	113.1019	0.0336	336	PR
8	Sample-4	-4	1 =	100	103.9457	103.9948	103.9949	0.0492	492	14
9	Sample-5	~~3090-1~~	1 =							
10	Sample-6	3130-1	1 =	100	113.9026	113.9028	113.9030	0.0004	4	P
11	Sample-7	-2	1 =	100	113.2716	113.2364	113.2362	0.0646	646	25
12	Sample-8	-3	1 =	100	114.3837	114.4127	114.4124	0.0287	287	A
13	Sample-9	-4	1 =	100	115.8624	115.8910	115.8911	0.0287	287	30
14	Sample-10	-5	1 =	100	106.3256	106.3469	106.3469	0.0213	213	8
15	LCSD	T1116	1 =	100	115.3109	115.3493	115.3495	0.0386	386	38
16	Sample-11	3130-6	1 =	100	113.8234	113.8440	113.8442	0.0208	208	33
17	Sample-12	3086-1	1 =	100	104.3418	104.4446	104.4446	0.1028	1028	3
18	Sample-13		1 =							
19	Sample-14		1 =							
20	Sample-15		1 =							
21	Sample-16		1 =							
22	Sample-17		1 =							
23	Sample-18		1 =							
24	Sample-19		1 =							
25	Sample-20		1 =							
26	Mtx Dup.		1 =							

Type	STD Lot #	$C_{STD}(\mu g/mL) \times V_{STD}(mL)/X(g \text{ or } mL) = T$	Spike Rec.	Ctl Limit (W/S)
MS	W- 7618	× 1 = 400 ppm	%	85-115 %/80-120 %
MSD	W- ↓	× 1 = ↓ ppm	%	.. ..
LCS	W- 7619	× 1 = ppm	%	90-110 %/85-115 %
LCSD	W- ↓	× 1 = ↓ ppm	%	.. ..

PQL/MDL (in ppm)	
PQL(w)	10
PQL(s)	50
MDL(w)	4
MDL(s)	20

APCL form 5-127, March 7, 1995. Ver. 3.0 No pencil. Use blue pen for record. Use red pen for correction.

FILE: [CUST.DOC.WET]TDS .TEX ROOT-FILE: TDS_ROOT.TEX CONTROL-FILE: TDS.000 1-Page file: TDS1.TEX

Control limits are subjected to change. The updated values are given in the latest version of APCL Technical Handbook Vol. 2

ne	Sample	Sample Type	Level	Method	Data File	Volume	Dilution
	##03w2866kw ipc 25ppb w7759	Sample		e314-011.met	c:\data\03w2866k\w2866k ipc 25ppb	1	1
	ccv 50ppb w7827e	Sample		e314-011.met	c:\data\03w2866k\w2866k q01	1	1
	ccb	Sample		e314-011.met	c:\data\03w2866k\w2866k ccb01	1	1
	lcs 25ppb w7827d	Sample		e314-011.met	c:\data\03w2866k\w2866k l01	1	1
	LCS 18PPB W7685D	Sample		e314-011.met	c:\data\03w2866k\w2866k j01	1	1
	ICCS 4ppb w7827b	Sample		e314-011.met	c:\data\03w2866k\w2866k iccs 4ppb	1	1
	mb	Sample		e314-011.met	c:\data\03w2866k\w2866k k01	1	1
	3177-01 F=1	Sample		e314-011.met	c:\data\03w2866k\3177-01	1	1
	3178-01 f=1	Sample		e314-011.met	c:\data\03w2866k\3178-01	1	1
	3130-01 F=1	Sample		e314-011.met	c:\data\03w2866k\3130-01	1	1
	3130-02 F=1	Sample		e314-011.met	c:\data\03w2866k\3130-02	1	1
	3130-03 f=1	Sample		e314-011.met	c:\data\03w2866k\3130-03	1	1
	ccv 50ppb w7827e	Sample		e314-011.met	c:\data\03w2866k\w2866k q02	1	1
	ccb	Sample		e314-011.met	c:\data\03w2866k\w2866k k02	1	1
	3130-04 f=1	Sample		e314-011.met	c:\data\03w2866k\3130-04	1	1
	3130-05 F=1	Sample		e314-011.met	c:\data\03w2866k\3130-05	1	1
	3130-06 F=1	Sample		e314-011.met	c:\data\03w2866k\3130-06	1	1
	3130-02 MS 50PPB F=1	Sample		e314-011.met	c:\data\03w2866k\w2866k m01	1	1
	3130-02 MSD 50PPB F=1	Sample		e314-011.met	c:\data\03w2866k\w2866k n01	1	1
	3205-01 F=1	Sample		e314-011.met	c:\data\03w2866k\3205-01	1	1
	3205-02 F=1	Sample		e314-011.met	c:\data\03w2866k\3205-02	1	1
	3205-03 F=1	Sample		e314-011.met	c:\data\03w2866k\3205-03	1	1
	3205-04 F=1	Sample		e314-011.met	c:\data\03w2866k\3205-04	1	1
	ccv 50ppb w7827e	Sample		e314-011.met	c:\data\03w2866k\w2866k q03	1	1
	CCB	Sample		e314-011.met	c:\data\03w2866k\w2866k k03	1	1
	3205-05 F=1	Sample		e314-011.met	c:\data\03w2866k\3205-05	1	1
	3205-06 F=1	Sample		e314-011.met	c:\data\03w2866k\3205-06	1	1
	3205-07 F=1	Sample		e314-011.met	c:\data\03w2866k\3205-07	1	1
	3178-01 f=1	Sample		e314-011.met	c:\data\03w2866k\3178-01	1	1
	CCV 50PPB W7827E	Sample		e314-011.met	c:\data\03w2866k\w2866k q04	1	1
		Sample		aastopcl.met		1	1

Analyst [illegible]
Date 5/14/03
Instrument IC-K

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Line	Sample	Sample Type	Level	Method	Data File	Volume	Dilution
1	Cal blank	Sample		e314-011.met	c:\data\e314-011\mb_001.dxd	1	1
2	cal standard 2ppb W7827a	Sample		e314-011.met	c:\data\e314-011\std-2pb_002.dxd	1	1
3	cal standard 4ppb W7827b	Sample		e314-011.met	c:\data\e314-011\std-4pb_003.dxd	1	1
4	cal standard 10ppb W7827c	Sample		e314-011.met	c:\data\e314-011\std-10pb_004.dxd	1	1
5	cal standard 25ppb W7827d	Sample		e314-011.met	c:\data\e314-011\std-25pb_005.dxd	1	1
6	cal standard 50ppb W7827e	Sample		e314-011.met	c:\data\e314-011\std-50pb_006.dxd	1	1
7	cal standard 75ppb W7827f	Sample		e314-011.met	c:\data\e314-011\std-75pb_007.dxd	1	1
8	cal standard 100ppb W7827g	Sample		e314-011.met	c:\data\e314-011\std-100pb_008.dxd	1	1
9	ICV 50 ppb w7828a	Sample		e314-011.met	c:\data\e314-011\icv-50pb_009.dxd	1	1
0	icb	Sample		e314-011.met	c:\data\e314-011\icb_010.dxd	1	1
1	anion 100pm each ,25pb CLO4	Sample		e314-011.met	c:\data\e314-011\mct-100_011.dxd	1	1
2	anion 200pm each ,25pb CLO4	Sample		e314-011.met	c:\data\e314-011\mct-200_012.dxd	1	1
3	anion 300pm each ,25pb CLO4	Sample		e314-011.met	c:\data\e314-011\mct-300_013.dxd	1	1
4	anion 400pm each ,25pb CLO4	Sample		e314-011.met	c:\data\e314-011\mct-400_014.dxd	1	1
5	anion 500pm each ,25pb CLO4	Sample		e314-011.met	c:\data\e314-011\mct-500_015.dxd	1	1
6	anion 600pm each ,25pb CLO4	Sample		e314-011.met	c:\data\e314-011\mct-600_016.dxd	1	1
7	anion 800pm each ,25pb CLO4	Sample		e314-011.met	c:\data\e314-011\mct-800_017.dxd	1	1
8	anion 1000pm each ,25pb CLO4	Sample		e314-011.met	c:\data\e314-011\mct-1000_018.dxd	1	1
9	anion 400pm each 2pb	Sample		e314-011.met	c:\data\e314-011\ipc-2pb_019.dxd	1	1
0	anion 400pm each 4pb	Sample		e314-011.met	c:\data\e314-011\ipc-4pb_020.dxd	1	1
1	anion 400pm each 25pb	Sample		e314-011.met	c:\data\e314-011\ipc-25pb_021.dxd	1	1
2	ICV 50 ppb	Sample		e314-011.met	c:\data\e314-011\ccv-50pb	1	1
3	MDL 4pb	Sample		e314-011.met	c:\data\e314-011\mdl-02_023.dxd	1	1
4	MDL 4pb	Sample		e314-011.met	c:\data\e314-011\mdl-03_024.dxd	1	1
5	MDL 4pb	Sample		e314-011.met	c:\data\e314-011\mdl-04	1	1
6	MDL 4pb	Sample		e314-011.met	c:\data\e314-011\mdl-05	1	1
7	MDL 4pb	Sample		e314-011.met	c:\data\e314-011\mdl-06	1	1
8	MDL 4pb	Sample		e314-011.met	c:\data\e314-011\mdl-07	1	1
9	MDL 4pb	Sample		e314-011.met	c:\data\e314-011\mdl-08	1	1
0	IDP and IDA 25pb	Sample		e314-011.met	c:\data\e314-011\idap-25pb	1	1
1	IDP and IDA 25pb	Sample		e314-011.met	c:\data\e314-011\idap-25pb	1	1
2	IDP and IDA 25pb	Sample		e314-011.met	c:\data\e314-011\idap-25pb	1	1
3	IDP and IDA 25pb	Sample		e314-011.met	c:\data\e314-011\idap-25pb	1	1
4	IDP and IDA 25pb	Sample		e314-011.met	c:\data\e314-011\idap-25pb	1	1
5	IDP and IDA 25pb	Sample		e314-011.met	c:\data\e314-011\idap-25pb	1	1
6	IDP and IDA 25pb	Sample		e314-011.met	c:\data\e314-011\idap-25pb	1	1
7	MCT anion 800pm each, 25pbCLO4	Sample		e314-011.met	c:\data\e314-011\ipc-25pb	1	1
8	MCT anion 800pm each, 25pbCLO4	Sample		e314-011.met	c:\data\e314-011\ipc-25pb	1	1
9	MCT anion 800pm each, 4pbCLO4	Sample		e314-011.met	c:\data\e314-011\ipc-4pb	1	1
0	MCT anion 800pm each, 4pbCLO4	Sample		e314-011.met	c:\data\e314-011\ipc-4pb	1	1
1	MDL 20pb soil	Sample		e314-011.met	c:\data\e314-011\mdl-s01	1	5
2	MDL 20pb soil	Sample		e314-011.met	c:\data\e314-011\mdl-s02	1	5
3	MDL 20pb soil	Sample		e314-011.met	c:\data\e314-011\mdl-s03	1	5
4	MDL 20pb soil	Sample		e314-011.met	c:\data\e314-011\mdl-s04	1	5
5	MDL 20pb soil	Sample		e314-011.met	c:\data\e314-011\mdl-s05	1	5
6	MDL 20pb soil	Sample		e314-011.met	c:\data\e314-011\mdl-s06	1	5
7	MDL 20pb soil	Sample		e314-011.met	c:\data\e314-011\mdl-s07	1	5
8	standard 25ppb W7827d	Sample		e314-011.met	c:\data\e314-011\std-25pb	1	1
9	anion 100pm each,4pb CLO4	Sample		e314-011.met	c:\data\e314-011\am-100-4pb	1	1
0	anion 200pm each ,4pb CLO4	Sample		e314-011.met	c:\data\e314-011\am-200-4pb	1	1
	anion 300pm each ,4pb CLO4	Sample		e314-011.met	c:\data\e314-011\am-300-4pb	1	1
2	anion 100pm each,2pb CLO4	Sample		e314-011.met	c:\data\e314-011\am-100-2pb	1	1
3	anion 200pm each,2pb CLO4	Sample		e314-011.met	c:\data\e314-011\am-200-2pb	1	1
4	anion 300pm each,2pb CLO4	Sample		e314-011.met	c:\data\e314-011\am-300-2pb	1	1
5	1982-01 B S.C 4450us/cm	Sample		e314-011.met	c:\data\e314-011\1982-01	1	1
6	1982-01 B S.C 4450us/cm	Sample		e314-011.met	c:\data\e314-011\1982-01	1	2
	1982-02 f=10	Sample		e314-011.met	c:\data\e314-011\1982-02_057.dxd	1	10
		Sample		aastopcl.met		1	1

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DIONEX SCHEDULE - C:\DX\SCHEDULE\E300-063.SCH

Inj#	Sample Name	Method	Data File	Vol.	Dil.	Int.Std.
1	autocal1r	..\E300-063	..\W7767Q01.D01	1	1	1
2	autocal2r	..\E300-063	..\W7767Q01.D02	1	1	1
3	autocal3r	..\E300-063	..\W7767Q01.D03	1	1	1
4	autocal4r	..\E300-063	..\W7767Q01.D04	1	1	1
5	autocal5r	..\E300-063	..\W7767Q01.D05	1	1	1
6	autocal6r	..\E300-063	..\W7767Q01.D06	1	1	1
7	icv-w7768-100X	..\E300-063	..\W7768Q01.D07	1	1	1
8	icb	..\E300-063	..\W7767Q01.D08	1	1	1

Comment:

Analyst DN

Date 3/21/03

Instrument J

DIONEX SCHEDULE - C:\DX\SCHEDULE\03W2777.SCH

Inj#	Sample Name	Method	Data File	Vol.	Dil.	Int.Std.
1	##03W2777, W CCVW77	..\E300-063	..\W2777Q01.D01	1	1	1
2	MB RW1410	..\E300-063	..\W2777K01.D02	1	1	1
3	LCS W7768-100X	..\E300-063	..\W2777L01.D03	1	1	1
4	LCSD W7768-100X	..\E300-063	..\W2777J01.D04	1	1	1
5	3102-1 F=2.5	..\E300-063	..\3102-101.D05	1	2.5	1
6	3102-3 F=4	..\E300-063	..\3102-301.D06	1	4	1
7	3102-4 F=2.5	..\E300-063	..\3102-401.D07	1	2.5	1
8	3102-5 F=2.5	..\E300-063	..\3102-501.D08	1	2.5	1
9	3102-6 F=2.5	..\E300-063	..\3102-601.D09	1	2.5	1
10	3102-7 F=2.5	..\E300-063	..\3102-701.D10	1	2.5	1
11	3102-2 F=1.25	..\E300-063	..\3102-201.D11	1	1.25	1
12	CCV2W7767-100X	..\E300-063	..\W2777Q01.D12	1	1	1
13	MB RW1410	..\E300-063	..\W2777K11.D13	1	1	1
14	$3130-2 MS F=25	..\E300-063	..\W2777M01.D14	1	25	1
15	$3130-2 MSD F=25	..\E300-063	..\W2777N01.D15	1	25	1
16	3130-2 F=12.5	..\E300-063	..\3130-201.D16	1	12.5	1
17	3130-3 F=5	..\E300-063	..\3130-301.D17	1	5	1
18	3130-4 F=5	..\E300-063	..\3130-401.D18	1	5	1
19	3130-5 F=2	..\E300-063	..\3130-501.D19	1	2	1
20	3130-6 F=2	..\E300-063	..\3130-601.D20	1	2	1
21	3130-1 F=1.25	..\E300-063	..\3130-101.D21	1	1.25	1
22	CCV3W7767-100X	..\E300-063	..\W2777Q01.D22	1	1	1
23		..\STOP.MET		1	1	1

Comment:
LCS/LCSD LOT # W7768
MS/MSD LOT # W7767
ELUENT LOT # W7868
ANALYTICAL METHOD 9056/E300 MATRIX W

Analyst TN
Date 1/8/03
Instrument J

APCL

Applied Physics & Chemistry Laboratory

13760 Magnolia Ave. Chino CA 91710
Tel. (909) 590-1828 Fax (909) 590-1498

June 6, 2003

GEOFON, Inc.
Attention: Leo Williamson
22632 Golden Spring Dr Ste 270
Diamond Bar CA 91765

Dear Leo Williamson,

This package contains samples in our Service ID 03-2987 and your project : 04-4428.10 JPL. Enclosed please find:

(1) Original analytical report.
(2) Original Chain of Custody.
(3) One diskette containing EDD deliverable.
(4) One original Level C Data Package Deliverable.

If anything is missing or you have any questions, please feel free to contact me.

Respectfully submitted,

Regina Kirakozova
Associate QA/QC Director
Applied P & Ch Laboratory

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Submitted to:
GEOFON, Inc.
Attention: Leo Williamson
22632 Golden Spring Dr Ste 270
Diamond Bar CA 91765
Tel: (909)396-7662 Fax: (909)396-1455

Service ID #: 801-032987
Collected by: Leo Williamson
Collected on: 04/30/03

Received: 04/30/03
Extracted: N/A
Tested: 04/30-05/13/03
Reported: 05/15/03

Sample Description: Water
Project Description: 04-4428.10 JPL

Analysis of Water Samples

Component Analyzed	Method	Unit	PQL	Analysis Result EB-8-4/30/03 03-02987-1	MW-23-1 03-02987-2	MW-23-2 03-02987-3
BICARBONATE	SM2320B	mg/L	2	<2	243	215
CARBONATE	SM2320B	mg-$CaCO_3$/L	2	<2	<2	<2
PH	9040B	pH unit	0.01	6.48	7.00	7.70
SOLIDS, TOTAL DISSOLVED (TDS)	160.1	mg/L	10	6.0J	765	606
CHROMIUM (VI)	7196	mg/L	0.01	<0.01	<0.01	<0.01
Dilution Factor				1	1	1
PERCHLORATE	314.0	µg/L	4	<4	2.9J	3.8J
Dilution Factor				1.25	20	10
CHLORIDE CL^-	300.0	mg/L	0.2	0.20J	118	96.5
NITRATE AS N	300.0	mg/L	0.04	0.067	13.8	12.5
SULFATE SO_4^{--}	300.0	mg/L	0.5	<0.63	183	124
Dilution Factor				1	1	1
ARSENIC	200.9	µg/L	5	<5	<5	<5
CALCIUM	200.7	µg/L	200	<200	147,000	106,000
IRON	200.7	µg/L	50	23.3J	447	49.2J
MAGNESIUM	200.7	µg/L	100	39.0J	50,300	39,900
POTASSIUM	200.7	µg/L	400	146J	3,030	2,950
SODIUM	200.7	µg/L	2000	<2000	35,900	36,700
VOLATILE ORGANIC COMPOUNDS						
Dilution Factor				1	1	1
BENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
BROMOBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
BROMOCHLOROMETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
BROMODICHLOROMETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
BROMOFORM	524.2	µg/L	0.5	<0.5	<0.5	<0.5
BROMOMETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
N-BUTYLBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
SEC-BUTYLBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
TERT-BUTYLBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
2-BUTANONE	524.2	µg/L	10	<10	<10	<10
CARBON TETRACHLORIDE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
CHLOROBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
CHLORODIBROMOMETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
CHLOROETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
CHLOROFORM	524.2	µg/L	0.5	<0.5	0.5	0.5
CHLOROMETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
2-CHLOROTOLUENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result EB-8-4/30/03 03-02987-1	MW-23-1 03-02987-2	MW-23-2 03-02987-3
4-CHLOROTOLUENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DIBROMO-3-CHLOROPROPANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DIBROMOETHANE (EDB)	524.2	µg/L	0.5	<0.5	<0.5	<0.5
DIBROMOMETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DICHLOROBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,3-DICHLOROBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,4-DICHLOROBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
DICHLORODIFLUOROMETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,1-DICHLOROETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DICHLOROETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,1-DICHLOROETHENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
CIS-1,2-DICHLOROETHENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
TRANS-1,2-DICHLOROETHENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DICHLOROPROPANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,3-DICHLOROPROPANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
2,2-DICHLOROPROPANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,1-DICHLOROPROPENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
CIS-1,3-DICHLOROPROPENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
TRANS-1,3-DICHLOROPROPENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
ETHYLBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
HEXACHLOROBUTADIENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
ISOPROPYLBENZENE (CUMENE)	524.2	µg/L	0.5	<0.5	<0.5	<0.5
P-ISOPROPYLTOLUENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
METHYLENE CHLORIDE	524.2	µg/L	0.5	0.5J	0.5J	0.4J
METHYL-T-BUTYL ETHER (MTBE)	524.2	µg/L	1	<1	<1	<1
4-METHYL-2-PENTANONE (MIBK)	524.2	µg/L	10	4J	4J	3J
NAPHTHALENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
N-PROPYLBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
STYRENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,1,1,2-TETRACHLOROETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,1,2,2-TETRACHLOROETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
TETRACHLOROETHENE	524.2	µg/L	0.5	<0.5	0.8	0.4J
TOLUENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,2,3-TRICHLOROBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,2,4-TRICHLOROBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,1,1-TRICHLOROETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,1,2-TRICHLOROETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
TRICHLOROETHENE	524.2	µg/L	0.5	<0.5	1	0.6
TRICHLOROFLUOROMETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,2,3-TRICHLOROPROPANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
112TRICHLORO-122TRIFLUOROETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,2,4-TRIMETHYLBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,3,5-TRIMETHYLBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
VINYL CHLORIDE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
O-XYLENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
M/P-XYLENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result MW-23-3 03-02987-4	MW-23-4 03-02987-5	MW-23-5 03-02987-6	TB-8-4/30/03 03-02987-7
BICARBONATE	SM2320B	mg/L	2	146	125	95.8	-
CARBONATE	SM2320B	mg-$CaCO_3$/L	2	<2	5.2	92.0	-
PH	9040B	pH unit	0.01	7.88	8.28	9.55	-
SOLIDS, TOTAL DISSOLVED (TDS)	160.1	mg/L	10	284	220	263	-
CHROMIUM (VI)	7196	mg/L	0.01	<0.01	<0.01	<0.01	-
Dilution Factor				1	1	1	1
PERCHLORATE	314.0	µg/L	4	<4	<4	<4	-
Dilution Factor				4	2	2.5	1
CHLORIDE CL^-	300.0	mg/L	0.2	20.0	17.7	14.5	-
NITRATE N-NO_3^- AS N	300.0	mg/L	0.04	7.2	6.5	0.14	-
SULFATE SO_4^{--}	300.0	mg/L	0.5	14.4	8.5	2.2	-
Dilution Factor				1	1	1	1
ARSENIC	200.9	µg/L	5	<5	<5	3.2J	-
CALCIUM	200.7	µg/L	200	40,700	27,400	5,270	-
IRON	200.7	µg/L	50	677	59.3	189	-
MAGNESIUM	200.7	µg/L	100	13,800	12,500	450	-
POTASSIUM	200.7	µg/L	400	1,760	1,990	2,530	-
SODIUM	200.7	µg/L	2000	27,000	30,500	97,700	-
VOLATILE ORGANIC COMPOUNDS							
Dilution Factor				1	1	1	1
BENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
BROMOBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
BROMOCHLOROMETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
BROMODICHLOROMETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
BROMOFORM	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
BROMOMETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
N-BUTYLBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
SEC-BUTYLBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
TERT-BUTYLBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
2-BUTANONE	524.2	µg/L	10	<10	<10	<10	<10
CARBON TETRACHLORIDE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
CHLOROBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
CHLORODIBROMOMETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
CHLOROETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
CHLOROFORM	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
CHLOROMETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
2-CHLOROTOLUENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
4-CHLOROTOLUENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,2-DIBROMO-3-CHLOROPROPANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,2-DIBROMOETHANE (EDB)	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
DIBROMOMETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,2-DICHLOROBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,3-DICHLOROBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,4-DICHLOROBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result MW-23-3 03-02987-4	MW-23-4 03-02987-5	MW-23-5 03-02987-6	TB-8-4/30/03 03-02987-7
DICHLORODIFLUOROMETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,1-DICHLOROETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,2-DICHLOROETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,1-DICHLOROETHENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
CIS-1,2-DICHLOROETHENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
TRANS-1,2-DICHLOROETHENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,2-DICHLOROPROPANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,3-DICHLOROPROPANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
2,2-DICHLOROPROPANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,1-DICHLOROPROPENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
CIS-1,3-DICHLOROPROPENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
TRANS-1,3-DICHLOROPROPENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
ETHYLBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
HEXACHLOROBUTADIENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
ISOPROPYLBENZENE (CUMENE)	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
P-ISOPROPYLTOLUENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
METHYLENE CHLORIDE	524.2	µg/L	0.5	0.5J	0.5J	0.6	0.7
METHYL-T-BUTYL ETHER (MTBE)	524.2	µg/L	1	<1	<1	<1	<1
4-METHYL-2-PENTANONE (MIBK)	524.2	µg/L	10	3J	5J	3J	<10
NAPHTHALENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
N-PROPYLBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
STYRENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,1,1,2-TETRACHLOROETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,1,2,2-TETRACHLOROETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
TETRACHLOROETHENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
TOLUENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,2,3-TRICHLOROBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,2,4-TRICHLOROBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-TRICHLOROETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-TRICHLOROETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
TRICHLOROETHENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
TRICHLOROFLUOROMETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,2,3-TRICHLOROPROPANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
112TRICHLORO-122TRIFLUOROETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,2,4-TRIMETHYLBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,3,5-TRIMETHYLBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
VINYL CHLORIDE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
O-XYLENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
M/P-XYLENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit
N.D.: Not Detected or less than the practical quantitation limit. "-": Analysis is not required.
J: Reported between PQL and MDL.
Listed Dilution Factors (DF) are relative to the method default DF. All unlisted DFs are 1.0

Respectfully submitted,

Dominic Lau
Laboratory Director
Applied P & Ch Laboratory

Level C Data Package Deliverables

General Information

Project: 04-4428.10 JPL

APCL Service ID: 03-2987

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino, CA 91710
Telephone (909)590-1828
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Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Case Narrative

Project: JPL/04-4428.10

For GEOFON, Inc.

APCL Service No: 03-2987

1. Sample Identification

The sample identifications are listed in the following table:

GEOFON, Inc. Sample ID	APCL Sample ID
MW-23-5	03-02987-6
MW-23-4	03-02987-5
MW-23-3	03-02987-4
MW-23-2	03-02987-3
MW-23-1	03-02987-2
TB-8-4/30/03	03-02987-7
EB-8-4/30/03	03-02987-1

2. Analytical Methodology

Samples are analyzed by EPA methods

524.2 (Volatile Organic Compounds),
7196 (Chromium (VI)),
314.0 (Perchlorate, low level),
300.0 (Anions, by IC),
SM2320B (Bicarbonate,Carbonate),
9040B (pH),
160.1 (Solids, Total Dissolved (TDS)),
200.7/200.9 (Metals),

3. Holding Time

All samples were extracted, digested and analyzed within the holding times defined by the appropriate EPA methods of the analyses.

4. Preservation

All samples were preserved and stored according to the appropriate EPA methods.

5. Tele-log

None

6. Anomaly

None

"I certify that these data are technically accurate, complete, and in compliance with the terms and conditions of the contract, for other than the conditions detailed above. Release of the data contained in the hardcopy data package and its electronic data deliverable submitted on diskette had been authorized by the Laboratory Manager or her/his designee, as verified by the following signature."

Respectfully submitted,

Regina Kirakozova
Associate QA/QC Director
Applied P & Ch Laboratory

GEOFON INCORPORATED

22632 GOLDEN SPRINGS DR., SUITE 270
DIAMOND BAR, CA 91765 • (909) 396-7662 • FAX (909) 396-1455

CHAIN-OF-CUSTODY RECORD

LABORATORY COPY

MW-23 0027

GEOFON's LAB COORDINATOR	LAB COORDINATOR'S PHONE	LAB COORDINATOR'S FAX	LABORATORY SERVICE ID	LABORATORY CONTACT	MAIL REPORT (COMPANY NAME)
Brad Shojaee	(909) 396-7662	(909) 396-1455	—	Kenny Chan	GEOFON, INC

PROJECT NAME	PROJECT LOCATION	PROJECT NUMBER	LABORATORY PHONE	LABORATORY FAX	RECIPIENT NAME
JPL GW MON-2903	MW-23 (N. of Bl 233)	04-4428.10	(909) 590-1828	(909) 590-1498	Leo W. Williamson

PROJECT CONTACT	PROJECT PHONE NUMBER	PROJECT FAX	LABORATORY ADDRESS	ADDRESS
Leo W. Williamson	(714) 920-8729	(909) 396-1455	13760 Magnolia Ave	22632 Golden Springs Dr. #270

PROJECT ADDRESS	CITY, STATE AND ZIPCODE	CLIENT	CITY, STATE AND ZIPCODE	CITY, STATE AND ZIPCODE
4800 Oak Grove Dr.	Pasadena, CA	US NAVY, SWDIV	Chino, CA 91710	Diamond Bar, CA 91765

PROJECT MANAGER	PROJECT MANAGER'S PHONE	PROJECT MANAGER'S FAX
Asrar Faheem	(909) 396-7662	(909) 396-1455

Item	Sample Identifier	Matrix	Date	Time	Preserved	# of Cont.	QC Level	T.A.T.	524.2 (VOCs)	200.7 & 200.9 (Minerals)	7196 (Hex. Chrome)	SM 2320B (Carb./Bicarb.)	300.0 [Cl/SO4/NO3]	314.0 (Perchlorate)	160.1 (TDS) + 9040B (pH)	200.9 (Cd+Pb)	Comments
1	MW-23-5	H_2O	4/30/03	820	HCl NONE HNO3	3+1 1+1	III	NORMAL	X	X	X	X	X	X	X	X	MINERALS: Na/K/Ca/As/Mg/Fe MS/MSD
2	MW-23-4	↓	↓	900	↓	↓	↓	↓	X	X	X	X	X	X	X	X	
3	MW-23-3	↓	↓	940	↓	↓	↓	↓	X	X	X	X	X	X	X	X	
4	MW-23-2	↓	↓	1025	↓	↓	↓	↓	X	X	X	X	X	X	X	X	
5	MW-23-1	↓	↓	1100	↓	↓	↓	↓	X	X	X	X	X	X	X	X	
6																	
7	TB-8-4/30/03	H_2O	4/30/03	—	HCl	2	III	NORMAL	X								
8	EB-8-4/30/03	↓	↓	835	HCl NONE HNO3	3+1 1+1	↓	↓	X	X	X	X	X	X	X	X	
9																	
10																	

2987

SAMPLES COLLECTED BY: Leo W. Williamson

COURIER AND AIR BILL NUMBER:

COOLER TEMPERATURE UPON RECEIPT

SAMPLE'S CONDITION UPON RECEIPT

RELINQUISHED BY	RECEIVED BY	DATE	TIME
Leo W. Williamson	[illegible]	4/30/03	1135
[illegible]	[illegible]	4/30/03	1220

Distribution: White - Laboratory (To be returned with Analytical Report); Goldenrod - Project File; Yellow - Project Data Manager

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Sample Receiving Checklist

APCL ServiceID: 2987 **Client Name/Project:** Geotn JPL

1. Sample Arrival

Date/Time Received 4/30/03 1220 Date/Time Opened 4/30/03 1220 By (name): Kenny Chan

Custody Transfer: ☐ Client ☐ Golden State ☐ UPS ☐ US Mail ☐ FedEx ☑ APCL Empl: Adam Abed

2. Chain-of-Custody (CoC)

☑ With Samples? ☐ Faxed? ☐ Client has Copy? ☐ Signed, dated? By:
☑ Project ID? ☑ Analyses Clear? ☐ Hold Samples? #on Hold # Received 7
☑ CoC/Docs Zip-Locked under lid? ☐ Compos.#: ☑ #Samples OK?
☐ Discrepancies? ☐ Client notified? ☐ Response (attach docs):

3. Shipping Container/Cooler

☑ Cooler Used? # of 1 Cooled by: ☑ Ice ☐ Blue Ice ☐ Dry Ice ☐ None

Temp °C 4.5

(Cooler temperature measured from temp blank if present, otherwise measured from the cooler).

Cooler Custody Seal? ☐ Absent ☑ Intact ☐ Tampered?

4. Sample Preservation

☐ **pH <2** ☐ pH >12

If Not, pH = Preserved by: ☐ Client ☐ APCL ☐ Third Party

5. Holding-time Requirements

☐ pH 24hr ☐ BACT 6/24hr ☑ Cr^{VI} 24hr ☑ NO_3^- 48hr ☐ BOD 48hr
☐ Cl_2 ASAP ☐ Turbidity 48hr ☐ DO ASAP ☐ Fe(II) ASAP
☐ HT Expired? ☐ Client notified?

6. Sample Container Condition

☑ Intact? ☐ Broken? ☐ Documented? Number:
Type: ☑ plastic ☑ glass ☐ Tube: brass/SS ☐ Tedlar Bag
☑ Quantity OK? ☐ Leaking? ☐ Anomaly?
☑ Caps tight? ☐ Air Bubbles? ☐ Anomaly?
Labels: ☑ Unique ID? ☑ Date/Time ☐ Preserved?

7. Turn Around Time

☐ RUSH TAT: ☑ Std (7-10 days) ☐ Not Marked

8. Sample Matrix

☐ Drinking H_2O ☑ Other Liq ☐ Soil ☐ Wipe ☐ Polymer ☐ Air ☐ Other:
☐ Ground H_2O ☐ Sludge ☐ Filter ☐ Oil/Petro ☐ Paint ☐ W. Water ☐ Extract ☐ Unknown

9. Pre-Login Check List Completed & OK?

☑ ALL OK? (if not, attach docs) ☐ Client Contact? (Name:)Date/Time:

Received/Checked by: [signature] Date: 30 Apr 2003 Time: 7:42 a.m.

*HT: Samples must be analyzed for results to reflect total concentrations. Results generated outside required of holding times are considered minimal values and may be used to define waste as hazardous but not as non-hazardous.

DocumentFile: [neal.texfiles]smprcl.tex.

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Sample Login: Check List

03-02987 (0470_ 138) (2202777_ 138)

04/30/03

Part 1: General Information

☐	Company Information	Name:	*GEOFON, Inc.*
		Address:	*22632 Golden Spring Dr Ste 270 ,Diamond Bar ,CA 91765*
☐	Project Information	Project Description:	*JPL*
		Project #:	*04-4428.10*
☐	Billing Information	P.O. #:	
		Bill Address:	*22632 Golden Spring Dr Ste 270 ,Diamond Bar ,CA 91765*
		Lab Project ID:	
		Client Database #:	*3*
☐	Receiving Information	Who Received Sample?	*Kenny Chan*
		Receiving Date/Time:	*04/30/03 1220*
		COC No.	
☐	Shipping Information	Shipping Company	*APCL pick up*
		Packing Information:	*Cooler/Ice Chester*
		Cooler Temperature:	*4.5 °C*
☐	Container Information	Container Provider:	*Client*
☐	Sampling Information	Sampling Person:	
		Sampling Company:	*Client*
☐	Turn-Around-Time Option:		*Rush 5 working day(s)*
☐	QC Option:		*NEESA C*
☐	Disposal Option:		*Not specify*

Part 2: Sample Information

Seq. #	Sample ID (on COC)	Sample Sub-ID	APCL Sample ID	Matrix	Cont-tainer	Preser-vative	Vol, ml Am. g	# of Replica	Condition G, L, B	Collected mmddyy	Hold ?	Composite Group	TAT Days	
1	MW-23-5	VOC	03-02987-6-α	W	V	C	40	6	G	043003	N	0	7	☐
	MW-23-5	Metal	03-02987-6-β	W	P	N	500	2	G	043003	N	0	7	☐
	MW-23-5	300	03-02987-6-γ	W	P		1000	2	G	043003	N	0	7	☐
2	MW-23-4	VOC	03-02987-5-α	W	V	C	40	3	G	043003	N	0	7	☐
	MW-23-4	Metal	03-02987-5-β	W	P	N	500	1	G	043003	N	0	7	☐
	MW-23-4	300	03-02987-5-γ	W	P		1000	1	G	043003	N	0	7	☐
3	MW-23-3	VOC	03-02987-4-α	W	V	C	40	3	G	043003	N	0	7	☐
	MW-23-3	Metal	03-02987-4-β	W	P	N	500	1	G	043003	N	0	7	☐
	MW-23-3	300	03-02987-4-γ	W	P		1000	1	G	043003	N	0	7	☐
4	MW-23-2	VOC	03-02987-3-α	W	V	C	40	3	G	043003	N	0	7	☐
	MW-23-2	Metal	03-02987-3-β	W	P	N	500	1	G	043003	N	0	7	☐
	MW-23-2	300	03-02987-3-γ	W	P		1000	1	G	043003	N	0	7	☐
5	MW-23-1	VOC	03-02987-2-α	W	V	C	40	3	G	043003	N	0	7	☐
	MW-23-1	Metal	03-02987-2-β	W	P	N	500	1	G	043003	N	0	7	☐
	MW-23-1	300	03-02987-2-γ	W	P		1000	1	G	043003	N	0	7	☐
6	TB-8-4/30/03	VOC	03-02987-7	W	V	C	40	2	G	043003	N	0	7	☐
7	EB-8-4/30/03	VOC	03-02987-1-α	W	V	C	40	3	G	043003	N	0	7	☐
	EB-8-4/30/03	Metal	03-02987-1-β	W	P	N	500	1	G	043003	N	0	7	☐
	EB-8-4/30/03	300	03-02987-1-γ	W	P		1000	1	G	043003	N	0	7	☐

Part 3: Analysis Information

Test Items:

- ☐ *524.2* Volatile Organic Compounds
- ☐ *7196A* Chromium (VI)
- ☐ *314.0/300.0* Perchlorate, low level
- ☐ *300.0* Chloride Cl^- by IC
- ☐ *300.0* Sulfate (SO_4^{--}), by IC
- ☐ *300.0/SM4500NO3C* Nitrate (NO_3^-) as N by IC
- ☐ *SM2320B* Carbonate
- ☐ *SM2320B* Bicarbonate
- ☐ *9040B/150.1* pH
- ☐ *160.1* Solids, Total Dissolved (TDS)
- ☐ *200.7/6010B* Sodium, Na, by ICP
- ☐ *200.7/6010B* Calcium, Ca, by ICP
- ☐ *200.7/6010B* Potassium, K, by ICP
- ☐ *200.7/6010B* Magnesium, Mg, by ICP
- ☐ *200.7/6010B* Iron, Fe, by ICP

☐ *206.2/7060A* Arsenic, As, by GFAA

☐ *8270-SIM* 1,4-Dioxane

Seq. #	Client"s Sample ID (as given on COC)	Sample Sub-ID	APCL Sample ID	Matrix	524.2	CHROMIUM	PERCH	CL	SO4	NO3	CARBON	BICARB	
1	MW-23-5	VOC	03-02987-6-α	W	X								☐
	MW-23-5	Metal	03-02987-6-β	W									☐
	MW-23-5	300	03-02987-6-γ	W		X	X	X	X	X	X	X	☐
2	MW-23-4	VOC	03-02987-5-α	W	X								☐
	MW-23-4	Metal	03-02987-5-β	W									☐
	MW-23-4	300	03-02987-5-γ	W		X	X	X	X	X	X	X	☐
3	MW-23-3	VOC	03-02987-4-α	W	X								☐
	MW-23-3	Metal	03-02987-4-β	W									☐
	MW-23-3	300	03-02987-4-γ	W		X	X	X	X	X	X	X	☐
4	MW-23-2	VOC	03-02987-3-α	W	X								☐
	MW-23-2	Metal	03-02987-3-β	W									☐
	MW-23-2	300	03-02987-3-γ	W		X	X	X	X	X	X	X	☐
5	MW-23-1	VOC	03-02987-2-α	W	X								☐
	MW-23-1	Metal	03-02987-2-β	W									☐
	MW-23-1	300	03-02987-2-γ	W		X	X	X	X	X	X	X	☐
6	TB-8-4/30/03	VOC	03-02987-7	W	X								☐
7	EB-8-4/30/03	VOC	03-02987-1-α	W	X								☐
	EB-8-4/30/03	Metal	03-02987-1-β	W									☐
	EB-8-4/30/03	300	03-02987-1-γ	W		X	X	X	X	X	X	X	☐

Seq. #	Client"s Sample ID (as given on COC)	Sample Sub-ID	APCL Sample ID	Matrix	PH	TDS	NA	CA	K	MG	FE	AS	
1	MW-23-5	VOC	03-02987-6-α	W									☐
	MW-23-5	Metal	03-02987-6-β	W			X	X	X	X	X	X	☐
	MW-23-5	300	03-02987-6-γ	W	X	X							☐
2	MW-23-4	VOC	03-02987-5-α	W									☐
	MW-23-4	Metal	03-02987-5-β	W			X	X	X	X	X	X	☐
	MW-23-4	300	03-02987-5-γ	W	X	X							☐
3	MW-23-3	VOC	03-02987-4-α	W									☐
	MW-23-3	Metal	03-02987-4-β	W			X	X	X	X	X	X	☐
	MW-23-3	300	03-02987-4-γ	W	X	X							☐
4	MW-23-2	VOC	03-02987-3-α	W									☐
	MW-23-2	Metal	03-02987-3-β	W			X	X	X	X	X	X	☐
	MW-23-2	300	03-02987-3-γ	W	X	X							☐
5	MW-23-1	VOC	03-02987-2-α	W									☐
	MW-23-1	Metal	03-02987-2-β	W			X	X	X	X	X	X	☐
	MW-23-1	300	03-02987-2-γ	W	X	X							☐
6	TB-8-4/30/03	VOC	03-02987-7	W									☐
7	EB-8-4/30/03	VOC	03-02987-1-α	W									☐
	EB-8-4/30/03	Metal	03-02987-1-β	W			X	X	X	X	X	X	☐

EB-8-4/30/03	300	03-02987-1-γ.	W	X	X	☐

Seq. #	Client"s Sample ID (as given on COC)	Sample Sub-ID	APCL Sample ID	Matrix	DIOXANE	
1	MW-23-5	VOC	03-02987-6-α	W		☐
	MW-23-5	Metal	03-02987-6-β	W		☐
	MW-23-5	300	03-02987-6-γ	W		☐
2	MW-23-4	VOC	03-02987-5-α	W		☐
	MW-23-4	Metal	03-02987-5-β	W		☐
	MW-23-4	300	03-02987-5-γ	W		☐
3	MW-23-3	VOC	03-02987-4-α	W		☐
	MW-23-3	Metal	03-02987-4-β	W		☐
	MW-23-3	300	03-02987-4-γ	W		☐
4	MW-23-2	VOC	03-02987-3-α	W		☐
	MW-23-2	Metal	03-02987-3-β	W		☐
	MW-23-2	300	03-02987-3-γ	W		☐
5	MW-23-1	VOC	03-02987-2-α	W		☐
	MW-23-1	Metal	03-02987-2-β	W		☐
	MW-23-1	300	03-02987-2-γ	W		☐
6	TB-8-4/30/03	VOC	03-02987-7	W		☐
7	EB-8-4/30/03	VOC	03-02987-1-α	W		☐
	EB-8-4/30/03	Metal	03-02987-1-β	W		☐
	EB-8-4/30/03	300	03-02987-1-γ	W		☐

☐ Client"s Requirement: **RUN MS/MSD ON SAMPLE** #6

Login By En-Yu Paul Kou

Check By PX

Level C Data Package Deliverables

Volatile Organics

Applied P & Ch Laboratory

6107

Applied P & Ch Laboratory

Organic Analysis Results for Method 524.2

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Collection Date:	05/13/2003
Project ID:	JPL	Service ID:	32987	Collected by:	
		Lab Sample ID:	03G2456-MB-01	Received Date:	05/13/2003
Sample ID:	**03G2456-MB-01**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Method Blank	Prep. Method:	5030	Instrument ID:	GC/MS: A
Anal. Method:	524.2	Prep. Date:	05/13/03	Anal. Date:	05/13/03
Batch No:	03G2456	Prep. No:	–	Anal. Time:	15:55
Data File Name:	G2456K01	Sample Amount:	25.0 mL	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	BENZENE	71-43-2	µg/L	0.5	<0.5	U
2	BROMOBENZENE	108-86-1	µg/L	0.5	<0.5	U
3	BROMOCHLOROMETHANE	74-97-5	µg/L	0.5	<0.5	U
4	BROMODICHLOROMETHANE	75-27-4	µg/L	0.5	<0.5	U
5	BROMOFORM	75-25-2	µg/L	0.5	<0.5	U
6	BROMOMETHANE	74-83-9	µg/L	0.5	<0.5	U
7	N-BUTYLBENZENE	104-51-8	µg/L	0.5	<0.5	U
8	SEC-BUTYLBENZENE	135-98-8	µg/L	0.5	<0.5	U
9	TERT-BUTYLBENZENE	98-06-6	µg/L	0.5	<0.5	U
10	2-BUTANONE	78-93-3	µg/L	10	3	J
11	CARBON TETRACHLORIDE	56-23-5	µg/L	0.5	<0.5	U
12	CHLOROBENZENE	108-90-7	µg/L	0.5	<0.5	U
13	CHLORODIBROMOMETHANE	124-48-1	µg/L	0.5	<0.5	U
14	CHLOROETHANE	75-00-3	µg/L	0.5	<0.5	U
15	CHLOROFORM	67-66-3	µg/L	0.5	<0.5	U
16	CHLOROMETHANE	74-87-3	µg/L	0.5	<0.5	U
17	2-CHLOROTOLUENE	95-49-8	µg/L	0.5	<0.5	U
18	4-CHLOROTOLUENE	106-43-4	µg/L	0.5	<0.5	U
19	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	µg/L	0.5	<0.5	U
20	1,2-DIBROMOETHANE (EDB)	106-93-4	µg/L	0.5	<0.5	U
21	DIBROMOMETHANE	74-95-3	µg/L	0.5	<0.5	U
22	1,2-DICHLOROBENZENE	95-50-1	µg/L	0.5	<0.5	U
23	1,3-DICHLOROBENZENE	541-73-1	µg/L	0.5	<0.5	U
24	1,4-DICHLOROBENZENE	106-46-7	µg/L	0.5	<0.5	U
25	DICHLORODIFLUOROMETHANE	75-71-8	µg/L	0.5	<0.5	U
26	1,1-DICHLOROETHANE	75-34-3	µg/L	0.5	<0.5	U
27	1,2-DICHLOROETHANE	107-06-2	µg/L	0.5	<0.5	U
28	1,1-DICHLOROETHENE	75-35-4	µg/L	0.5	<0.5	U
29	CIS-1,2-DICHLOROETHENE	156-59-2	µg/L	0.5	<0.5	U
30	TRANS-1,2-DICHLOROETHENE	156-60-5	µg/L	0.5	<0.5	U
31	1,2-DICHLOROPROPANE	78-87-5	µg/L	0.5	<0.5	U
32	1,3-DICHLOROPROPANE	142-28-9	µg/L	0.5	<0.5	U
33	2,2-DICHLOROPROPANE	594-20-7	µg/L	0.5	<0.5	U
34	1,1-DICHLOROPROPENE	563-58-6	µg/L	0.5	<0.5	U
35	CIS-1,3-DICHLOROPROPENE	10061-01-5	µg/L	0.5	<0.5	U
36	TRANS-1,3-DICHLOROPROPENE	10061-02-6	µg/L	0.5	<0.5	U
37	ETHYLBENZENE	100-41-4	µg/L	0.5	<0.5	U
38	HEXACHLOROBUTADIENE	87-68-3	µg/L	0.5	<0.5	U
39	ISOPROPYLBENZENE (CUMENE)	98-82-8	µg/L	0.5	<0.5	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	P-ISOPROPYLTOLUENE	99-87-6	µg/L	0.5	<0.5	U
41	METHYLENE CHLORIDE	75-09-2	µg/L	0.5	4.5	
42	METHYL-T-BUTYL ETHER (MTBE)	1634-04-4	µg/L	1	<1	U
43	4-METHYL-2-PENTANONE (MIBK)	108-10-1	µg/L	10	<10	U
44	NAPHTHALENE	91-20-3	µg/L	0.5	<0.5	U
45	N-PROPYLBENZENE	103-65-1	µg/L	0.5	<0.5	U
46	STYRENE	100-42-5	µg/L	0.5	<0.5	U
47	1,1,1,2-TETRACHLOROETHANE	630-20-6	µg/L	0.5	<0.5	U
48	1,1,2,2-TETRACHLOROETHANE	79-34-5	µg/L	0.5	<0.5	U
49	TETRACHLOROETHENE	127-18-4	µg/L	0.5	<0.5	U
50	TOLUENE	108-88-3	µg/L	0.5	<0.5	U
51	1,2,3-TRICHLOROBENZENE	87-61-6	µg/L	0.5	<0.5	U
52	1,2,4-TRICHLOROBENZENE	120-82-1	µg/L	0.5	<0.5	U
53	1,1,1-TRICHLOROETHANE	71-55-6	µg/L	0.5	<0.5	U
54	1,1,2-TRICHLOROETHANE	79-00-5	µg/L	0.5	<0.5	U
55	TRICHLOROETHENE	79-01-6	µg/L	0.5	<0.5	U
56	TRICHLOROFLUOROMETHANE	75-69-4	µg/L	0.5	<0.5	U
57	1,2,3-TRICHLOROPROPANE	96-18-4	µg/L	0.5	<0.5	U
58	112TRICHLORO-122TRIFLUOROETHANE	76-13-1	µg/L	0.5	<0.5	U
59	1,2,4-TRIMETHYLBENZENE	95-63-6	µg/L	0.5	<0.5	U
60	1,3,5-TRIMETHYLBENZENE	108-67-8	µg/L	0.5	<0.5	U
61	VINYL CHLORIDE	75-01-4	µg/L	0.5	<0.5	U
62	O-XYLENE	95-47-6	µg/L	0.5	<0.5	U
63	M/P-XYLENE	108-38-3	µg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-BROMO-FLUOROBENZENE (BFB)	460-00-4	70-129	102
2	1,2-DICHLOROETHANE-D4	17060-07-0	70-129	97
3	DIBROMOFLUOROMETHANE	1868-53-7	70-122	101
4	TOLUENE-D8	2037-26-5	73-129	103
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	CHLOROBENZENE-D5	3114-55-4	50-200	94
2	1,4-DICHLOROBENZENE-D4	3855-82-1	50-200	88
3	FLUOROBENZENE	462-06-6	50-200	90
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

Applied P & Ch Laboratory

Organic Analysis Results for Method 524.2

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Collection Date:	04/30/2003
Project ID:	JPL	Service ID:	32987	Collected by:	
		Lab Sample ID:	03-2987-1	Received Date:	04/30/2003
Sample ID:	**EB-8-4/30/03**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: A
Anal. Method:	524.2	Prep. Date:	05/13/03	Anal. Date:	05/13/03
Batch No:	03G2456	Prep. No:	–	Anal. Time:	16:49
Data File Name:	2987-01	Sample Amount:	25.0 mL	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N) N	

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	BENZENE	71-43-2	µg/L	0.5	<0.5	U
2	BROMOBENZENE	108-86-1	µg/L	0.5	<0.5	U
3	BROMOCHLOROMETHANE	74-97-5	µg/L	0.5	<0.5	U
4	BROMODICHLOROMETHANE	75-27-4	µg/L	0.5	<0.5	U
5	BROMOFORM	75-25-2	µg/L	0.5	<0.5	U
6	BROMOMETHANE	74-83-9	µg/L	0.5	<0.5	U
7	N-BUTYLBENZENE	104-51-8	µg/L	0.5	<0.5	U
8	SEC-BUTYLBENZENE	135-98-8	µg/L	0.5	<0.5	U
9	TERT-BUTYLBENZENE	98-06-6	µg/L	0.5	<0.5	U
10	2-BUTANONE	78-93-3	µg/L	10	<10	U
11	CARBON TETRACHLORIDE	56-23-5	µg/L	0.5	<0.5	U
12	CHLOROBENZENE	108-90-7	µg/L	0.5	<0.5	U
13	CHLORODIBROMOMETHANE	124-48-1	µg/L	0.5	<0.5	U
14	CHLOROETHANE	75-00-3	µg/L	0.5	<0.5	U
15	CHLOROFORM	67-66-3	µg/L	0.5	<0.5	U
16	CHLOROMETHANE	74-87-3	µg/L	0.5	<0.5	U
17	2-CHLOROTOLUENE	95-49-8	µg/L	0.5	<0.5	U
18	4-CHLOROTOLUENE	106-43-4	µg/L	0.5	<0.5	U
19	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	µg/L	0.5	<0.5	U
20	1,2-DIBROMOETHANE (EDB)	106-93-4	µg/L	0.5	<0.5	U
21	DIBROMOMETHANE	74-95-3	µg/L	0.5	<0.5	U
22	1,2-DICHLOROBENZENE	95-50-1	µg/L	0.5	<0.5	U
23	1,3-DICHLOROBENZENE	541-73-1	µg/L	0.5	<0.5	U
24	1,4-DICHLOROBENZENE	106-46-7	µg/L	0.5	<0.5	U
25	DICHLORODIFLUOROMETHANE	75-71-8	µg/L	0.5	<0.5	U
26	1,1-DICHLOROETHANE	75-34-3	µg/L	0.5	<0.5	U
27	1,2-DICHLOROETHANE	107-06-2	µg/L	0.5	<0.5	U
28	1,1-DICHLOROETHENE	75-35-4	µg/L	0.5	<0.5	U
29	CIS-1,2-DICHLOROETHENE	156-59-2	µg/L	0.5	<0.5	U
30	TRANS-1,2-DICHLOROETHENE	156-60-5	µg/L	0.5	<0.5	U
31	1,2-DICHLOROPROPANE	78-87-5	µg/L	0.5	<0.5	U
32	1,3-DICHLOROPROPANE	142-28-9	µg/L	0.5	<0.5	U
33	2,2-DICHLOROPROPANE	594-20-7	µg/L	0.5	<0.5	U
34	1,1-DICHLOROPROPENE	563-58-6	µg/L	0.5	<0.5	U
35	CIS-1,3-DICHLOROPROPENE	10061-01-5	µg/L	0.5	<0.5	U
36	TRANS-1,3-DICHLOROPROPENE	10061-02-6	µg/L	0.5	<0.5	U
37	ETHYLBENZENE	100-41-4	µg/L	0.5	<0.5	U
38	HEXACHLOROBUTADIENE	87-68-3	µg/L	0.5	<0.5	U
39	ISOPROPYLBENZENE (CUMENE)	98-82-8	µg/L	0.5	<0.5	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	P-ISOPROPYLTOLUENE	99-87-6	µg/L	0.5	<0.5	U
41	METHYLENE CHLORIDE	75-09-2	µg/L	0.5	0.5	J
42	METHYL-T-BUTYL ETHER (MTBE)	1634-04-4	µg/L	1	<1	U
43	4-METHYL-2-PENTANONE (MIBK)	108-10-1	µg/L	10	4	J
44	NAPHTHALENE	91-20-3	µg/L	0.5	<0.5	U
45	N-PROPYLBENZENE	103-65-1	µg/L	0.5	<0.5	U
46	STYRENE	100-42-5	µg/L	0.5	<0.5	U
47	1,1,1,2-TETRACHLOROETHANE	630-20-6	µg/L	0.5	<0.5	U
48	1,1,2,2-TETRACHLOROETHANE	79-34-5	µg/L	0.5	<0.5	U
49	TETRACHLOROETHENE	127-18-4	µg/L	0.5	<0.5	U
50	TOLUENE	108-88-3	µg/L	0.5	<0.5	U
51	1,2,3-TRICHLOROBENZENE	87-61-6	µg/L	0.5	<0.5	U
52	1,2,4-TRICHLOROBENZENE	120-82-1	µg/L	0.5	<0.5	U
53	1,1,1-TRICHLOROETHANE	71-55-6	µg/L	0.5	<0.5	U
54	1,1,2-TRICHLOROETHANE	79-00-5	µg/L	0.5	<0.5	U
55	TRICHLOROETHENE	79-01-6	µg/L	0.5	<0.5	U
56	TRICHLOROFLUOROMETHANE	75-69-4	µg/L	0.5	<0.5	U
57	1,2,3-TRICHLOROPROPANE	96-18-4	µg/L	0.5	<0.5	U
58	112TRICHLORO-122TRIFLUOROETHANE	76-13-1	µg/L	0.5	<0.5	U
59	1,2,4-TRIMETHYLBENZENE	95-63-6	µg/L	0.5	<0.5	U
60	1,3,5-TRIMETHYLBENZENE	108-67-8	µg/L	0.5	<0.5	U
61	VINYL CHLORIDE	75-01-4	µg/L	0.5	<0.5	U
62	O-XYLENE	95-47-6	µg/L	0.5	<0.5	U
63	M/P-XYLENE	108-38-3	µg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	1-BROMO-4-FLUOROBENZENE (4-BROMOFL	460-00-4	70-129	101
2	1,2-DICHLOROETHANE-D4	17060-07-0	70-129	103
3	DIBROMOFLUOROMETHANE	1868-53-7	70-122	105
4	TOLUENE-D8	2037-26-5	73-129	101
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	CHLOROBENZENE-D5	3114-55-4	50-200	96
2	1,4-DICHLOROBENZENE-D4	3855-82-1	50-200	92
3	FLUOROBENZENE	462-06-6	50-200	90
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

Applied P & Ch Laboratory

Organic Analysis Results for Method 524.2

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Collection Date:	04/30/2003
Project ID:	JPL	Service ID:	32987	Collected by:	
		Lab Sample ID:	03-2987-2	Received Date:	04/30/2003
Sample ID:	**MW-23-1**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: A
Anal. Method:	524.2	Prep. Date:	05/13/03	Anal. Date:	05/13/03
Batch No:	03G2456	Prep. No:	–	Anal. Time:	17:43
Data File Name:	2987-02	Sample Amount:	25.0 mL	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N) N	

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	BENZENE	71-43-2	µg/L	0.5	<0.5	U
2	BROMOBENZENE	108-86-1	µg/L	0.5	<0.5	U
3	BROMOCHLOROMETHANE	74-97-5	µg/L	0.5	<0.5	U
4	BROMODICHLOROMETHANE	75-27-4	µg/L	0.5	<0.5	U
5	BROMOFORM	75-25-2	µg/L	0.5	<0.5	U
6	BROMOMETHANE	74-83-9	µg/L	0.5	<0.5	U
7	N-BUTYLBENZENE	104-51-8	µg/L	0.5	<0.5	U
8	SEC-BUTYLBENZENE	135-98-8	µg/L	0.5	<0.5	U
9	TERT-BUTYLBENZENE	98-06-6	µg/L	0.5	<0.5	U
10	2-BUTANONE	78-93-3	µg/L	10	<10	U
11	CARBON TETRACHLORIDE	56-23-5	µg/L	0.5	<0.5	U
12	CHLOROBENZENE	108-90-7	µg/L	0.5	<0.5	U
13	CHLORODIBROMOMETHANE	124-48-1	µg/L	0.5	<0.5	U
14	CHLOROETHANE	75-00-3	µg/L	0.5	<0.5	U
15	CHLOROFORM	67-66-3	µg/L	0.5	0.5	
16	CHLOROMETHANE	74-87-3	µg/L	0.5	<0.5	U
17	2-CHLOROTOLUENE	95-49-8	µg/L	0.5	<0.5	U
18	4-CHLOROTOLUENE	106-43-4	µg/L	0.5	<0.5	U
19	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	µg/L	0.5	<0.5	U
20	1,2-DIBROMOETHANE (EDB)	106-93-4	µg/L	0.5	<0.5	U
21	DIBROMOMETHANE	74-95-3	µg/L	0.5	<0.5	U
22	1,2-DICHLOROBENZENE	95-50-1	µg/L	0.5	<0.5	U
23	1,3-DICHLOROBENZENE	541-73-1	µg/L	0.5	<0.5	U
24	1,4-DICHLOROBENZENE	106-46-7	µg/L	0.5	<0.5	U
25	DICHLORODIFLUOROMETHANE	75-71-8	µg/L	0.5	<0.5	U
26	1,1-DICHLOROETHANE	75-34-3	µg/L	0.5	<0.5	U
27	1,2-DICHLOROETHANE	107-06-2	µg/L	0.5	<0.5	U
28	1,1-DICHLOROETHENE	75-35-4	µg/L	0.5	<0.5	U
29	CIS-1,2-DICHLOROETHENE	156-59-2	µg/L	0.5	<0.5	U
30	TRANS-1,2-DICHLOROETHENE	156-60-5	µg/L	0.5	<0.5	U
31	1,2-DICHLOROPROPANE	78-87-5	µg/L	0.5	<0.5	U
32	1,3-DICHLOROPROPANE	142-28-9	µg/L	0.5	<0.5	U
33	2,2-DICHLOROPROPANE	594-20-7	µg/L	0.5	<0.5	U
34	1,1-DICHLOROPROPENE	563-58-6	µg/L	0.5	<0.5	U
35	CIS-1,3-DICHLOROPROPENE	10061-01-5	µg/L	0.5	<0.5	U
36	TRANS-1,3-DICHLOROPROPENE	10061-02-6	µg/L	0.5	<0.5	U
37	ETHYLBENZENE	100-41-4	µg/L	0.5	<0.5	U
38	HEXACHLOROBUTADIENE	87-68-3	µg/L	0.5	<0.5	U
39	ISOPROPYLBENZENE (CUMENE)	98-82-8	µg/L	0.5	<0.5	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	P-ISOPROPYLTOLUENE	99-87-6	µg/L	0.5	<0.5	U
41	METHYLENE CHLORIDE	75-09-2	µg/L	0.5	0.5	J
42	METHYL-T-BUTYL ETHER (MTBE)	1634-04-4	µg/L	1	<1	U
43	4-METHYL-2-PENTANONE (MIBK)	108-10-1	µg/L	10	4	J
44	NAPHTHALENE	91-20-3	µg/L	0.5	<0.5	U
45	N-PROPYLBENZENE	103-65-1	µg/L	0.5	<0.5	U
46	STYRENE	100-42-5	µg/L	0.5	<0.5	U
47	1,1,1,2-TETRACHLOROETHANE	630-20-6	µg/L	0.5	<0.5	U
48	1,1,2,2-TETRACHLOROETHANE	79-34-5	µg/L	0.5	<0.5	U
49	TETRACHLOROETHENE	127-18-4	µg/L	0.5	0.8	
50	TOLUENE	108-88-3	µg/L	0.5	<0.5	U
51	1,2,3-TRICHLOROBENZENE	87-61-6	µg/L	0.5	<0.5	U
52	1,2,4-TRICHLOROBENZENE	120-82-1	µg/L	0.5	<0.5	U
53	1,1,1-TRICHLOROETHANE	71-55-6	µg/L	0.5	<0.5	U
54	1,1,2-TRICHLOROETHANE	79-00-5	µg/L	0.5	<0.5	U
55	TRICHLOROETHENE	79-01-6	µg/L	0.5	1	
56	TRICHLOROFLUOROMETHANE	75-69-4	µg/L	0.5	<0.5	U
57	1,2,3-TRICHLOROPROPANE	96-18-4	µg/L	0.5	<0.5	U
58	112TRICHLORO-122TRIFLUOROETHANE	76-13-1	µg/L	0.5	<0.5	U
59	1,2,4-TRIMETHYLBENZENE	95-63-6	µg/L	0.5	<0.5	U
60	1,3,5-TRIMETHYLBENZENE	108-67-8	µg/L	0.5	<0.5	U
61	VINYL CHLORIDE	75-01-4	µg/L	0.5	<0.5	U
62	O-XYLENE	95-47-6	µg/L	0.5	<0.5	U
63	M/P-XYLENE	108-38-3	µg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	1-BROMO-4-FLUOROBENZENE (4-BROMOFL	460-00-4	70-129	102
2	1,2-DICHLOROETHANE-D4	17060-07-0	70-129	102
3	DIBROMOFLUOROMETHANE	1868-53-7	70-122	104
4	TOLUENE-D8	2037-26-5	73-129	103
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	CHLOROBENZENE-D5	3114-55-4	50-200	94
2	1,4-DICHLOROBENZENE-D4	3855-82-1	50-200	89
3	FLUOROBENZENE	462-06-6	50-200	88
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

Applied P & Ch Laboratory

Organic Analysis Results for Method 524.2

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Collection Date:	04/30/2003
Project ID:	JPL	Service ID:	32987	Collected by:	
		Lab Sample ID:	03-2987-3	Received Date:	04/30/2003
Sample ID:	**MW-23-2**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: A
Anal. Method:	524.2	Prep. Date:	05/13/03	Anal. Date:	05/13/03
Batch No:	03G2456	Prep. No:	–	Anal. Time:	18:10
Data File Name:	2987-03	Sample Amount:	25.0 mL	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N) N	

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	BENZENE	71-43-2	µg/L	0.5	<0.5	U
2	BROMOBENZENE	108-86-1	µg/L	0.5	<0.5	U
3	BROMOCHLOROMETHANE	74-97-5	µg/L	0.5	<0.5	U
4	BROMODICHLOROMETHANE	75-27-4	µg/L	0.5	<0.5	U
5	BROMOFORM	75-25-2	µg/L	0.5	<0.5	U
6	BROMOMETHANE	74-83-9	µg/L	0.5	<0.5	U
7	N-BUTYLBENZENE	104-51-8	µg/L	0.5	<0.5	U
8	SEC-BUTYLBENZENE	135-98-8	µg/L	0.5	<0.5	U
9	TERT-BUTYLBENZENE	98-06-6	µg/L	0.5	<0.5	U
10	2-BUTANONE	78-93-3	µg/L	10	<10	U
11	CARBON TETRACHLORIDE	56-23-5	µg/L	0.5	<0.5	U
12	CHLOROBENZENE	108-90-7	µg/L	0.5	<0.5	U
13	CHLORODIBROMOMETHANE	124-48-1	µg/L	0.5	<0.5	U
14	CHLOROETHANE	75-00-3	µg/L	0.5	<0.5	U
15	CHLOROFORM	67-66-3	µg/L	0.5	0.5	
16	CHLOROMETHANE	74-87-3	µg/L	0.5	<0.5	U
17	2-CHLOROTOLUENE	95-49-8	µg/L	0.5	<0.5	U
18	4-CHLOROTOLUENE	106-43-4	µg/L	0.5	<0.5	U
19	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	µg/L	0.5	<0.5	U
20	1,2-DIBROMOETHANE (EDB)	106-93-4	µg/L	0.5	<0.5	U
21	DIBROMOMETHANE	74-95-3	µg/L	0.5	<0.5	U
22	1,2-DICHLOROBENZENE	95-50-1	µg/L	0.5	<0.5	U
23	1,3-DICHLOROBENZENE	541-73-1	µg/L	0.5	<0.5	U
24	1,4-DICHLOROBENZENE	106-46-7	µg/L	0.5	<0.5	U
25	DICHLORODIFLUOROMETHANE	75-71-8	µg/L	0.5	<0.5	U
26	1,1-DICHLOROETHANE	75-34-3	µg/L	0.5	<0.5	U
27	1,2-DICHLOROETHANE	107-06-2	µg/L	0.5	<0.5	U
28	1,1-DICHLOROETHENE	75-35-4	µg/L	0.5	<0.5	U
29	CIS-1,2-DICHLOROETHENE	156-59-2	µg/L	0.5	<0.5	U
30	TRANS-1,2-DICHLOROETHENE	156-60-5	µg/L	0.5	<0.5	U
31	1,2-DICHLOROPROPANE	78-87-5	µg/L	0.5	<0.5	U
32	1,3-DICHLOROPROPANE	142-28-9	µg/L	0.5	<0.5	U
33	2,2-DICHLOROPROPANE	594-20-7	µg/L	0.5	<0.5	U
34	1,1-DICHLOROPROPENE	563-58-6	µg/L	0.5	<0.5	U
35	CIS-1,3-DICHLOROPROPENE	10061-01-5	µg/L	0.5	<0.5	U
36	TRANS-1,3-DICHLOROPROPENE	10061-02-6	µg/L	0.5	<0.5	U
37	ETHYLBENZENE	100-41-4	µg/L	0.5	<0.5	U
38	HEXACHLOROBUTADIENE	87-68-3	µg/L	0.5	<0.5	U
39	ISOPROPYLBENZENE (CUMENE)	98-82-8	µg/L	0.5	<0.5	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	P-ISOPROPYLTOLUENE	99-87-6	µg/L	0.5	<0.5	U
41	METHYLENE CHLORIDE	75-09-2	µg/L	0.5	0.4	J
42	METHYL-T-BUTYL ETHER (MTBE)	1634-04-4	µg/L	1	<1	U
43	4-METHYL-2-PENTANONE (MIBK)	108-10-1	µg/L	10	3	J
44	NAPHTHALENE	91-20-3	µg/L	0.5	<0.5	U
45	N-PROPYLBENZENE	103-65-1	µg/L	0.5	<0.5	U
46	STYRENE	100-42-5	µg/L	0.5	<0.5	U
47	1,1,1,2-TETRACHLOROETHANE	630-20-6	µg/L	0.5	<0.5	U
48	1,1,2,2-TETRACHLOROETHANE	79-34-5	µg/L	0.5	<0.5	U
49	TETRACHLOROETHENE	127-18-4	µg/L	0.5	0.4	J
50	TOLUENE	108-88-3	µg/L	0.5	<0.5	U
51	1,2,3-TRICHLOROBENZENE	87-61-6	µg/L	0.5	<0.5	U
52	1,2,4-TRICHLOROBENZENE	120-82-1	µg/L	0.5	<0.5	U
53	1,1,1-TRICHLOROETHANE	71-55-6	µg/L	0.5	<0.5	U
54	1,1,2-TRICHLOROETHANE	79-00-5	µg/L	0.5	<0.5	U
55	TRICHLOROETHENE	79-01-6	µg/L	0.5	0.6	
56	TRICHLOROFLUOROMETHANE	75-69-4	µg/L	0.5	<0.5	U
57	1,2,3-TRICHLOROPROPANE	96-18-4	µg/L	0.5	<0.5	U
58	112TRICHLORO-122TRIFLUOROETHANE	76-13-1	µg/L	0.5	<0.5	U
59	1,2,4-TRIMETHYLBENZENE	95-63-6	µg/L	0.5	<0.5	U
60	1,3,5-TRIMETHYLBENZENE	108-67-8	µg/L	0.5	<0.5	U
61	VINYL CHLORIDE	75-01-4	µg/L	0.5	<0.5	U
62	O-XYLENE	95-47-6	µg/L	0.5	<0.5	U
63	M/P-XYLENE	108-38-3	µg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	1-BROMO-4-FLUOROBENZENE (4-BROMOFL	460-00-4	70-129	101
2	1,2-DICHLOROETHANE-D4	17060-07-0	70-129	101
3	DIBROMOFLUOROMETHANE	1868-53-7	70-122	104
4	TOLUENE-D8	2037-26-5	73-129	103
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	CHLOROBENZENE-D5	3114-55-4	50-200	92
2	1,4-DICHLOROBENZENE-D4	3855-82-1	50-200	87
3	FLUOROBENZENE	462-06-6	50-200	87
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Organic Analysis Results for Method 524.2

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Collection Date:	04/30/2003
Project ID:	JPL	Service ID:	32987	Collected by:	
		Lab Sample ID:	03-2987-4	Received Date:	04/30/2003
Sample ID:	**MW-23-3**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: A
Anal. Method:	524.2	Prep. Date:	05/13/03	Anal. Date:	05/13/03
Batch No:	03G2456	Prep. No:	–	Anal. Time:	18:37
Data File Name:	2987-04	Sample Amount:	25.0 mL	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N) N	

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	BENZENE	71-43-2	µg/L	0.5	<0.5	U
2	BROMOBENZENE	108-86-1	µg/L	0.5	<0.5	U
3	BROMOCHLOROMETHANE	74-97-5	µg/L	0.5	<0.5	U
4	BROMODICHLOROMETHANE	75-27-4	µg/L	0.5	<0.5	U
5	BROMOFORM	75-25-2	µg/L	0.5	<0.5	U
6	BROMOMETHANE	74-83-9	µg/L	0.5	<0.5	U
7	N-BUTYLBENZENE	104-51-8	µg/L	0.5	<0.5	U
8	SEC-BUTYLBENZENE	135-98-8	µg/L	0.5	<0.5	U
9	TERT-BUTYLBENZENE	98-06-6	µg/L	0.5	<0.5	U
10	2-BUTANONE	78-93-3	µg/L	10	<10	U
11	CARBON TETRACHLORIDE	56-23-5	µg/L	0.5	<0.5	U
12	CHLOROBENZENE	108-90-7	µg/L	0.5	<0.5	U
13	CHLORODIBROMOMETHANE	124-48-1	µg/L	0.5	<0.5	U
14	CHLOROETHANE	75-00-3	µg/L	0.5	<0.5	U
15	CHLOROFORM	67-66-3	µg/L	0.5	<0.5	U
16	CHLOROMETHANE	74-87-3	µg/L	0.5	<0.5	U
17	2-CHLOROTOLUENE	95-49-8	µg/L	0.5	<0.5	U
18	4-CHLOROTOLUENE	106-43-4	µg/L	0.5	<0.5	U
19	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	µg/L	0.5	<0.5	U
20	1,2-DIBROMOETHANE (EDB)	106-93-4	µg/L	0.5	<0.5	U
21	DIBROMOMETHANE	74-95-3	µg/L	0.5	<0.5	U
22	1,2-DICHLOROBENZENE	95-50-1	µg/L	0.5	<0.5	U
23	1,3-DICHLOROBENZENE	541-73-1	µg/L	0.5	<0.5	U
24	1,4-DICHLOROBENZENE	106-46-7	µg/L	0.5	<0.5	U
25	DICHLORODIFLUOROMETHANE	75-71-8	µg/L	0.5	<0.5	U
26	1,1-DICHLOROETHANE	75-34-3	µg/L	0.5	<0.5	U
27	1,2-DICHLOROETHANE	107-06-2	µg/L	0.5	<0.5	U
28	1,1-DICHLOROETHENE	75-35-4	µg/L	0.5	<0.5	U
29	CIS-1,2-DICHLOROETHENE	156-59-2	µg/L	0.5	<0.5	U
30	TRANS-1,2-DICHLOROETHENE	156-60-5	µg/L	0.5	<0.5	U
31	1,2-DICHLOROPROPANE	78-87-5	µg/L	0.5	<0.5	U
32	1,3-DICHLOROPROPANE	142-28-9	µg/L	0.5	<0.5	U
33	2,2-DICHLOROPROPANE	594-20-7	µg/L	0.5	<0.5	U
34	1,1-DICHLOROPROPENE	563-58-6	µg/L	0.5	<0.5	U
35	CIS-1,3-DICHLOROPROPENE	10061-01-5	µg/L	0.5	<0.5	U
36	TRANS-1,3-DICHLOROPROPENE	10061-02-6	µg/L	0.5	<0.5	U
37	ETHYLBENZENE	100-41-4	µg/L	0.5	<0.5	U
38	HEXACHLOROBUTADIENE	87-68-3	µg/L	0.5	<0.5	U
39	ISOPROPYLBENZENE (CUMENE)	98-82-8	µg/L	0.5	<0.5	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	P-ISOPROPYLTOLUENE	99-87-6	µg/L	0.5	<0.5	U
41	METHYLENE CHLORIDE	75-09-2	µg/L	0.5	0.5	J
42	METHYL-T-BUTYL ETHER (MTBE)	1634-04-4	µg/L	1	<1	U
43	4-METHYL-2-PENTANONE (MIBK)	108-10-1	µg/L	10	3	J
44	NAPHTHALENE	91-20-3	µg/L	0.5	<0.5	U
45	N-PROPYLBENZENE	103-65-1	µg/L	0.5	<0.5	U
46	STYRENE	100-42-5	µg/L	0.5	<0.5	U
47	1,1,1,2-TETRACHLOROETHANE	630-20-6	µg/L	0.5	<0.5	U
48	1,1,2,2-TETRACHLOROETHANE	79-34-5	µg/L	0.5	<0.5	U
49	TETRACHLOROETHENE	127-18-4	µg/L	0.5	<0.5	U
50	TOLUENE	108-88-3	µg/L	0.5	<0.5	U
51	1,2,3-TRICHLOROBENZENE	87-61-6	µg/L	0.5	<0.5	U
52	1,2,4-TRICHLOROBENZENE	120-82-1	µg/L	0.5	<0.5	U
53	1,1,1-TRICHLOROETHANE	71-55-6	µg/L	0.5	<0.5	U
54	1,1,2-TRICHLOROETHANE	79-00-5	µg/L	0.5	<0.5	U
55	TRICHLOROETHENE	79-01-6	µg/L	0.5	<0.5	U
56	TRICHLOROFLUOROMETHANE	75-69-4	µg/L	0.5	<0.5	U
57	1,2,3-TRICHLOROPROPANE	96-18-4	µg/L	0.5	<0.5	U
58	112TRICHLORO-122TRIFLUOROETHANE	76-13-1	µg/L	0.5	<0.5	U
59	1,2,4-TRIMETHYLBENZENE	95-63-6	µg/L	0.5	<0.5	U
60	1,3,5-TRIMETHYLBENZENE	108-67-8	µg/L	0.5	<0.5	U
61	VINYL CHLORIDE	75-01-4	µg/L	0.5	<0.5	U
62	O-XYLENE	95-47-6	µg/L	0.5	<0.5	U
63	M/P-XYLENE	108-38-3	µg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	1-BROMO-4-FLUOROBENZENE (4-BROMOFL	460-00-4	70-129	101
2	1,2-DICHLOROETHANE-D4	17060-07-0	70-129	100
3	DIBROMOFLUOROMETHANE	1868-53-7	70-122	103
4	TOLUENE-D8	2037-26-5	73-129	104
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	CHLOROBENZENE-D5	3114-55-4	50-200	91
2	1,4-DICHLOROBENZENE-D4	3855-82-1	50-200	86
3	FLUOROBENZENE	462-06-6	50-200	86
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

Applied P & Ch Laboratory

Organic Analysis Results for Method 524.2

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Collection Date:	04/30/2003
Project ID:	JPL	Service ID:	32987	Collected by:	
		Lab Sample ID:	03-2987-5	Received Date:	04/30/2003
Sample ID:	**MW-23-4**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: A
Anal. Method:	524.2	Prep. Date:	05/13/03	Anal. Date:	05/13/03
Batch No:	03G2456	Prep. No:	–	Anal. Time:	19:04
Data File Name:	2987-05	Sample Amount:	25.0 mL	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	BENZENE	71-43-2	μg/L	0.5	<0.5	U
2	BROMOBENZENE	108-86-1	μg/L	0.5	<0.5	U
3	BROMOCHLOROMETHANE	74-97-5	μg/L	0.5	<0.5	U
4	BROMODICHLOROMETHANE	75-27-4	μg/L	0.5	<0.5	U
5	BROMOFORM	75-25-2	μg/L	0.5	<0.5	U
6	BROMOMETHANE	74-83-9	μg/L	0.5	<0.5	U
7	N-BUTYLBENZENE	104-51-8	μg/L	0.5	<0.5	U
8	SEC-BUTYLBENZENE	135-98-8	μg/L	0.5	<0.5	U
9	TERT-BUTYLBENZENE	98-06-6	μg/L	0.5	<0.5	U
10	2-BUTANONE	78-93-3	μg/L	10	<10	U
11	CARBON TETRACHLORIDE	56-23-5	μg/L	0.5	<0.5	U
12	CHLOROBENZENE	108-90-7	μg/L	0.5	<0.5	U
13	CHLORODIBROMOMETHANE	124-48-1	μg/L	0.5	<0.5	U
14	CHLOROETHANE	75-00-3	μg/L	0.5	<0.5	U
15	CHLOROFORM	67-66-3	μg/L	0.5	<0.5	U
16	CHLOROMETHANE	74-87-3	μg/L	0.5	<0.5	U
17	2-CHLOROTOLUENE	95-49-8	μg/L	0.5	<0.5	U
18	4-CHLOROTOLUENE	106-43-4	μg/L	0.5	<0.5	U
19	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	μg/L	0.5	<0.5	U
20	1,2-DIBROMOETHANE (EDB)	106-93-4	μg/L	0.5	<0.5	U
21	DIBROMOMETHANE	74-95-3	μg/L	0.5	<0.5	U
22	1,2-DICHLOROBENZENE	95-50-1	μg/L	0.5	<0.5	U
23	1,3-DICHLOROBENZENE	541-73-1	μg/L	0.5	<0.5	U
24	1,4-DICHLOROBENZENE	106-46-7	μg/L	0.5	<0.5	U
25	DICHLORODIFLUOROMETHANE	75-71-8	μg/L	0.5	<0.5	U
26	1,1-DICHLOROETHANE	75-34-3	μg/L	0.5	<0.5	U
27	1,2-DICHLOROETHANE	107-06-2	μg/L	0.5	<0.5	U
28	1,1-DICHLOROETHENE	75-35-4	μg/L	0.5	<0.5	U
29	CIS-1,2-DICHLOROETHENE	156-59-2	μg/L	0.5	<0.5	U
30	TRANS-1,2-DICHLOROETHENE	156-60-5	μg/L	0.5	<0.5	U
31	1,2-DICHLOROPROPANE	78-87-5	μg/L	0.5	<0.5	U
32	1,3-DICHLOROPROPANE	142-28-9	μg/L	0.5	<0.5	U
33	2,2-DICHLOROPROPANE	594-20-7	μg/L	0.5	<0.5	U
34	1,1-DICHLOROPROPENE	563-58-6	μg/L	0.5	<0.5	U
35	CIS-1,3-DICHLOROPROPENE	10061-01-5	μg/L	0.5	<0.5	U
36	TRANS-1,3-DICHLOROPROPENE	10061-02-6	μg/L	0.5	<0.5	U
37	ETHYLBENZENE	100-41-4	μg/L	0.5	<0.5	U
38	HEXACHLOROBUTADIENE	87-68-3	μg/L	0.5	<0.5	U
39	ISOPROPYLBENZENE (CUMENE)	98-82-8	μg/L	0.5	<0.5	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	P-ISOPROPYLTOLUENE	99-87-6	µg/L	0.5	<0.5	U
41	METHYLENE CHLORIDE	75-09-2	µg/L	0.5	0.5	J
42	METHYL-T-BUTYL ETHER (MTBE)	1634-04-4	µg/L	1	<1	U
43	4-METHYL-2-PENTANONE (MIBK)	108-10-1	µg/L	10	5	J
44	NAPHTHALENE	91-20-3	µg/L	0.5	<0.5	U
45	N-PROPYLBENZENE	103-65-1	µg/L	0.5	<0.5	U
46	STYRENE	100-42-5	µg/L	0.5	<0.5	U
47	1,1,1,2-TETRACHLOROETHANE	630-20-6	µg/L	0.5	<0.5	U
48	1,1,2,2-TETRACHLOROETHANE	79-34-5	µg/L	0.5	<0.5	U
49	TETRACHLOROETHENE	127-18-4	µg/L	0.5	<0.5	U
50	TOLUENE	108-88-3	µg/L	0.5	<0.5	U
51	1,2,3-TRICHLOROBENZENE	87-61-6	µg/L	0.5	<0.5	U
52	1,2,4-TRICHLOROBENZENE	120-82-1	µg/L	0.5	<0.5	U
53	1,1,1-TRICHLOROETHANE	71-55-6	µg/L	0.5	<0.5	U
54	1,1,2-TRICHLOROETHANE	79-00-5	µg/L	0.5	<0.5	U
55	TRICHLOROETHENE	79-01-6	µg/L	0.5	<0.5	U
56	TRICHLOROFLUOROMETHANE	75-69-4	µg/L	0.5	<0.5	U
57	1,2,3-TRICHLOROPROPANE	96-18-4	µg/L	0.5	<0.5	U
58	112TRICHLORO-122TRIFLUOROETHANE	76-13-1	µg/L	0.5	<0.5	U
59	1,2,4-TRIMETHYLBENZENE	95-63-6	µg/L	0.5	<0.5	U
60	1,3,5-TRIMETHYLBENZENE	108-67-8	µg/L	0.5	<0.5	U
61	VINYL CHLORIDE	75-01-4	µg/L	0.5	<0.5	U
62	O-XYLENE	95-47-6	µg/L	0.5	<0.5	U
63	M/P-XYLENE	108-38-3	µg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	1-BROMO-4-FLUOROBENZENE (4-BROMOFL	460-00-4	70-129	102
2	1,2-DICHLOROETHANE-D4	17060-07-0	70-129	102
3	DIBROMOFLUOROMETHANE	1868-53-7	70-122	104
4	TOLUENE-D8	2037-26-5	73-129	105
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	CHLOROBENZENE-D5	3114-55-4	50-200	88
2	1,4-DICHLOROBENZENE-D4	3855-82-1	50-200	83
3	FLUOROBENZENE	462-06-6	50-200	84
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Organic Analysis Results for Method 524.2

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Collection Date:	04/30/2003
Project ID:	JPL	Service ID:	32987	Collected by:	
		Lab Sample ID:	03-2987-6	Received Date:	04/30/2003
Sample ID:	**MW-23-5**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: A
Anal. Method:	524.2	Prep. Date:	05/13/03	Anal. Date:	05/13/03
Batch No:	03G2456	Prep. No:	–	Anal. Time:	17:16
Data File Name:	2987-06	Sample Amount:	25.0 mL	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N) N	

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	BENZENE	71-43-2	μg/L	0.5	<0.5	U
2	BROMOBENZENE	108-86-1	μg/L	0.5	<0.5	U
3	BROMOCHLOROMETHANE	74-97-5	μg/L	0.5	<0.5	U
4	BROMODICHLOROMETHANE	75-27-4	μg/L	0.5	<0.5	U
5	BROMOFORM	75-25-2	μg/L	0.5	<0.5	U
6	BROMOMETHANE	74-83-9	μg/L	0.5	<0.5	U
7	N-BUTYLBENZENE	104-51-8	μg/L	0.5	<0.5	U
8	SEC-BUTYLBENZENE	135-98-8	μg/L	0.5	<0.5	U
9	TERT-BUTYLBENZENE	98-06-6	μg/L	0.5	<0.5	U
10	2-BUTANONE	78-93-3	μg/L	10	<10	U
11	CARBON TETRACHLORIDE	56-23-5	μg/L	0.5	<0.5	U
12	CHLOROBENZENE	108-90-7	μg/L	0.5	<0.5	U
13	CHLORODIBROMOMETHANE	124-48-1	μg/L	0.5	<0.5	U
14	CHLOROETHANE	75-00-3	μg/L	0.5	<0.5	U
15	CHLOROFORM	67-66-3	μg/L	0.5	<0.5	U
16	CHLOROMETHANE	74-87-3	μg/L	0.5	<0.5	U
17	2-CHLOROTOLUENE	95-49-8	μg/L	0.5	<0.5	U
18	4-CHLOROTOLUENE	106-43-4	μg/L	0.5	<0.5	U
19	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	μg/L	0.5	<0.5	U
20	1,2-DIBROMOETHANE (EDB)	106-93-4	μg/L	0.5	<0.5	U
21	DIBROMOMETHANE	74-95-3	μg/L	0.5	<0.5	U
22	1,2-DICHLOROBENZENE	95-50-1	μg/L	0.5	<0.5	U
23	1,3-DICHLOROBENZENE	541-73-1	μg/L	0.5	<0.5	U
24	1,4-DICHLOROBENZENE	106-46-7	μg/L	0.5	<0.5	U
25	DICHLORODIFLUOROMETHANE	75-71-8	μg/L	0.5	<0.5	U
26	1,1-DICHLOROETHANE	75-34-3	μg/L	0.5	<0.5	U
27	1,2-DICHLOROETHANE	107-06-2	μg/L	0.5	<0.5	U
28	1,1-DICHLOROETHENE	75-35-4	μg/L	0.5	<0.5	U
29	CIS-1,2-DICHLOROETHENE	156-59-2	μg/L	0.5	<0.5	U
30	TRANS-1,2-DICHLOROETHENE	156-60-5	μg/L	0.5	<0.5	U
31	1,2-DICHLOROPROPANE	78-87-5	μg/L	0.5	<0.5	U
32	1,3-DICHLOROPROPANE	142-28-9	μg/L	0.5	<0.5	U
33	2,2-DICHLOROPROPANE	594-20-7	μg/L	0.5	<0.5	U
34	1,1-DICHLOROPROPENE	563-58-6	μg/L	0.5	<0.5	U
35	CIS-1,3-DICHLOROPROPENE	10061-01-5	μg/L	0.5	<0.5	U
36	TRANS-1,3-DICHLOROPROPENE	10061-02-6	μg/L	0.5	<0.5	U
37	ETHYLBENZENE	100-41-4	μg/L	0.5	<0.5	U
38	HEXACHLOROBUTADIENE	87-68-3	μg/L	0.5	<0.5	U
39	ISOPROPYLBENZENE (CUMENE)	98-82-8	μg/L	0.5	<0.5	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	P-ISOPROPYLTOLUENE	99-87-6	µg/L	0.5	<0.5	U
41	METHYLENE CHLORIDE	75-09-2	µg/L	0.5	0.6	B
42	METHYL-T-BUTYL ETHER (MTBE)	1634-04-4	µg/L	1	<1	U
43	4-METHYL-2-PENTANONE (MIBK)	108-10-1	µg/L	10	3	J
44	NAPHTHALENE	91-20-3	µg/L	0.5	<0.5	U
45	N-PROPYLBENZENE	103-65-1	µg/L	0.5	<0.5	U
46	STYRENE	100-42-5	µg/L	0.5	<0.5	U
47	1,1,1,2-TETRACHLOROETHANE	630-20-6	µg/L	0.5	<0.5	U
48	1,1,2,2-TETRACHLOROETHANE	79-34-5	µg/L	0.5	<0.5	U
49	TETRACHLOROETHENE	127-18-4	µg/L	0.5	<0.5	U
50	TOLUENE	108-88-3	µg/L	0.5	<0.5	U
51	1,2,3-TRICHLOROBENZENE	87-61-6	µg/L	0.5	<0.5	U
52	1,2,4-TRICHLOROBENZENE	120-82-1	µg/L	0.5	<0.5	U
53	1,1,1-TRICHLOROETHANE	71-55-6	µg/L	0.5	<0.5	U
54	1,1,2-TRICHLOROETHANE	79-00-5	µg/L	0.5	<0.5	U
55	TRICHLOROETHENE	79-01-6	µg/L	0.5	<0.5	U
56	TRICHLOROFLUOROMETHANE	75-69-4	µg/L	0.5	<0.5	U
57	1,2,3-TRICHLOROPROPANE	96-18-4	µg/L	0.5	<0.5	U
58	112TRICHLORO-122TRIFLUOROETHANE	76-13-1	µg/L	0.5	<0.5	U
59	1,2,4-TRIMETHYLBENZENE	95-63-6	µg/L	0.5	<0.5	U
60	1,3,5-TRIMETHYLBENZENE	108-67-8	µg/L	0.5	<0.5	U
61	VINYL CHLORIDE	75-01-4	µg/L	0.5	<0.5	U
62	O-XYLENE	95-47-6	µg/L	0.5	<0.5	U
63	M/P-XYLENE	108-38-3	µg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	1-BROMO-4-FLUOROBENZENE (4-BROMOFL	460-00-4	70-129	101
2	1,2-DICHLOROETHANE-D4	17060-07-0	70-129	99
3	DIBROMOFLUOROMETHANE	1868-53-7	70-122	104
4	TOLUENE-D8	2037-26-5	73-129	104
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	CHLOROBENZENE-D5	3114-55-4	50-200	91
2	1,4-DICHLOROBENZENE-D4	3855-82-1	50-200	86
3	FLUOROBENZENE	462-06-6	50-200	87
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

Applied P & Ch Laboratory

Organic Analysis Results for Method 524.2

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Collection Date:	04/30/2003
Project ID:	JPL	Service ID:	32987	Collected by:	
		Lab Sample ID:	03-2987-7	Received Date:	04/30/2003
Sample ID:	**TB-8-4/30/03**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: A
Anal. Method:	524.2	Prep. Date:	05/13/03	Anal. Date:	05/13/03
Batch No:	03G2456	Prep. No:	–	Anal. Time:	19:31
Data File Name:	2987-07	Sample Amount:	25.0 mL	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	BENZENE	71-43-2	μg/L	0.5	<0.5	U
2	BROMOBENZENE	108-86-1	μg/L	0.5	<0.5	U
3	BROMOCHLOROMETHANE	74-97-5	μg/L	0.5	<0.5	U
4	BROMODICHLOROMETHANE	75-27-4	μg/L	0.5	<0.5	U
5	BROMOFORM	75-25-2	μg/L	0.5	<0.5	U
6	BROMOMETHANE	74-83-9	μg/L	0.5	<0.5	U
7	N-BUTYLBENZENE	104-51-8	μg/L	0.5	<0.5	U
8	SEC-BUTYLBENZENE	135-98-8	μg/L	0.5	<0.5	U
9	TERT-BUTYLBENZENE	98-06-6	μg/L	0.5	<0.5	U
10	2-BUTANONE	78-93-3	μg/L	10	<10	U
11	CARBON TETRACHLORIDE	56-23-5	μg/L	0.5	<0.5	U
12	CHLOROBENZENE	108-90-7	μg/L	0.5	<0.5	U
13	CHLORODIBROMOMETHANE	124-48-1	μg/L	0.5	<0.5	U
14	CHLOROETHANE	75-00-3	μg/L	0.5	<0.5	U
15	CHLOROFORM	67-66-3	μg/L	0.5	<0.5	U
16	CHLOROMETHANE	74-87-3	μg/L	0.5	<0.5	U
17	2-CHLOROTOLUENE	95-49-8	μg/L	0.5	<0.5	U
18	4-CHLOROTOLUENE	106-43-4	μg/L	0.5	<0.5	U
19	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	μg/L	0.5	<0.5	U
20	1,2-DIBROMOETHANE (EDB)	106-93-4	μg/L	0.5	<0.5	U
21	DIBROMOMETHANE	74-95-3	μg/L	0.5	<0.5	U
22	1,2-DICHLOROBENZENE	95-50-1	μg/L	0.5	<0.5	U
23	1,3-DICHLOROBENZENE	541-73-1	μg/L	0.5	<0.5	U
24	1,4-DICHLOROBENZENE	106-46-7	μg/L	0.5	<0.5	U
25	DICHLORODIFLUOROMETHANE	75-71-8	μg/L	0.5	<0.5	U
26	1,1-DICHLOROETHANE	75-34-3	μg/L	0.5	<0.5	U
27	1,2-DICHLOROETHANE	107-06-2	μg/L	0.5	<0.5	U
28	1,1-DICHLOROETHENE	75-35-4	μg/L	0.5	<0.5	U
29	CIS-1,2-DICHLOROETHENE	156-59-2	μg/L	0.5	<0.5	U
30	TRANS-1,2-DICHLOROETHENE	156-60-5	μg/L	0.5	<0.5	U
31	1,2-DICHLOROPROPANE	78-87-5	μg/L	0.5	<0.5	U
32	1,3-DICHLOROPROPANE	142-28-9	μg/L	0.5	<0.5	U
33	2,2-DICHLOROPROPANE	594-20-7	μg/L	0.5	<0.5	U
34	1,1-DICHLOROPROPENE	563-58-6	μg/L	0.5	<0.5	U
35	CIS-1,3-DICHLOROPROPENE	10061-01-5	μg/L	0.5	<0.5	U
36	TRANS-1,3-DICHLOROPROPENE	10061-02-6	μg/L	0.5	<0.5	U
37	ETHYLBENZENE	100-41-4	μg/L	0.5	<0.5	U
38	HEXACHLOROBUTADIENE	87-68-3	μg/L	0.5	<0.5	U
39	ISOPROPYLBENZENE (CUMENE)	98-82-8	μg/L	0.5	<0.5	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	P-ISOPROPYLTOLUENE	99-87-6	µg/L	0.5	<0.5	U
41	METHYLENE CHLORIDE	75-09-2	µg/L	0.5	0.7	B
42	METHYL-T-BUTYL ETHER (MTBE)	1634-04-4	µg/L	1	<1	U
43	4-METHYL-2-PENTANONE (MIBK)	108-10-1	µg/L	10	<10	U
44	NAPHTHALENE	91-20-3	µg/L	0.5	<0.5	U
45	N-PROPYLBENZENE	103-65-1	µg/L	0.5	<0.5	U
46	STYRENE	100-42-5	µg/L	0.5	<0.5	U
47	1,1,1,2-TETRACHLOROETHANE	630-20-6	µg/L	0.5	<0.5	U
48	1,1,2,2-TETRACHLOROETHANE	79-34-5	µg/L	0.5	<0.5	U
49	TETRACHLOROETHENE	127-18-4	µg/L	0.5	<0.5	U
50	TOLUENE	108-88-3	µg/L	0.5	<0.5	U
51	1,2,3-TRICHLOROBENZENE	87-61-6	µg/L	0.5	<0.5	U
52	1,2,4-TRICHLOROBENZENE	120-82-1	µg/L	0.5	<0.5	U
53	1,1,1-TRICHLOROETHANE	71-55-6	µg/L	0.5	<0.5	U
54	1,1,2-TRICHLOROETHANE	79-00-5	µg/L	0.5	<0.5	U
55	TRICHLOROETHENE	79-01-6	µg/L	0.5	<0.5	U
56	TRICHLOROFLUOROMETHANE	75-69-4	µg/L	0.5	<0.5	U
57	1,2,3-TRICHLOROPROPANE	96-18-4	µg/L	0.5	<0.5	U
58	112TRICHLORO-122TRIFLUOROETHANE	76-13-1	µg/L	0.5	<0.5	U
59	1,2,4-TRIMETHYLBENZENE	95-63-6	µg/L	0.5	<0.5	U
60	1,3,5-TRIMETHYLBENZENE	108-67-8	µg/L	0.5	<0.5	U
61	VINYL CHLORIDE	75-01-4	µg/L	0.5	<0.5	U
62	O-XYLENE	95-47-6	µg/L	0.5	<0.5	U
63	M/P-XYLENE	108-38-3	µg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	1-BROMO-4-FLUOROBENZENE (4-BROMOFL	460-00-4	70-129	101
2	1,2-DICHLOROETHANE-D4	17060-07-0	70-129	103
3	DIBROMOFLUOROMETHANE	1868-53-7	70-122	105
4	TOLUENE-D8	2037-26-5	73-129	102
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	CHLOROBENZENE-D5	3114-55-4	50-200	90
2	1,4-DICHLOROBENZENE-D4	3855-82-1	50-200	85
3	FLUOROBENZENE	462-06-6	50-200	84
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

FORM-2A

Applied P & Ch Laboratory

Surrogate Recovery Summary for Method 524.2

Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		SDG Number:	032987
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03G2456		

#	Client Sample No	Lab Sample ID	S1 % #	S2 % #	S3 % #	S4 % #	TOT OUT
1	03G2456-LCS-01	03G2456-LCS-01	95	89	97	100	0
2	MW-23-5MS	03-2987-6MS	92	84	91	96	0
3	MW-23-5MSD	03-2987-6MSD	95	92	98	99	0
4	03G2456-MB-01	03G2456-MB-01	102	97	101	103	0
5	EB-8-4/30/03	03-2987-1	101	103	105	101	0
6	MW-23-5	03-2987-6	101	99	104	104	0
7	MW-23-1	03-2987-2	102	102	104	103	0
8	MW-23-2	03-2987-3	101	101	104	103	0
9	MW-23-3	03-2987-4	101	100	103	104	0
10	MW-23-4	03-2987-5	102	102	104	105	0
11	TB-8-4/30/03	03-2987-7	101	103	105	102	0
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							

	QC Control Limit
S1 = 1-BROMO-4-FLUOROBENZENE (4-BROMOFL	70-129
S2 = 1,2-DICHLOROETHANE-D4	70-129
S3 = DIBROMOFLUOROMETHANE	70-122
S4 = TOLUENE-D8	73-129

Column to be used to flag recovery values:

* – Values outside of contract required QC Limits D – Surrogate diluted out I – Matrix Interference

FORM-3A

Applied P & Ch Laboratory

Lab Control Spike/Lab Control Spike Duplicate Recovery for Method 524.2

Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		Service ID:	32987
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03G2456		
LCS Filename:	G2456L01	Date Analyzed:	051303	Time Analyzed:	13:41
LCSD Filename:	–	Date Analyzed:	–	Time Analyzed:	–

Spiked Components	Unit	Spike Added	Concentration Unspiked	Concentration LCS	LCS Rec% #	QC Limit, % REC
BENZENE	μg/L	20	0	19.9	100	65-120
CHLOROBENZENE	μg/L	20	0	19.9	100	65-134
1,1-DICHLOROETHENE	μg/L	20	0	17.9	90	65-127
TOLUENE	μg/L	20	0	20.1	101	65-134
TRICHLOROETHENE	μg/L	20	0	20.4	102	67-122
# of Out-of-control					0	

Column to be used to flag recovery and RPD values:

* – Values outside of contract required QC Limits D – Spiked components diluted out

Comments: _____

FORM-3A

Applied P & Ch Laboratory

Matrix Spike/Matrix Spike Duplicate Recovery for Method 524.2

Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		Service ID:	32987
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03G2456		
MS Filename:	G2456M01	Date Analyzed:	051303	Time Analyzed:	14:08
MSD Filename:	G2456N01	Date Analyzed:	051303	Time Analyzed:	14:35
MS Sample No:	**MW-23-5**	Sample Lab ID:	03-2987-6		

Spiked Components	Unit	Spike Added	Concentration Unspiked	Concentration MS	MS Rec% #	QC Limit, % REC
BENZENE	μg/L	20	0	18.8	94	65-121
CHLOROBENZENE	μg/L	20	0	19.0	95	65-134
1,1-DICHLOROETHENE	μg/L	20	0	17.3	87	65-127
TOLUENE	μg/L	20	0	19.3	97	65-134
TRICHLOROETHENE	μg/L	20	0	19.5	98	65-125
# of Out-of-control					0	

Spiked Components	Unit	Spike Added	MSD Concentration	MSD Rec% #	RPD% #	QC Limit, % RPD	QC Limit, % REC
BENZENE	μg/L	20	19.6	98	4	28	65-121
CHLOROBENZENE	μg/L	20	19.8	99	4	35	65-134
1,1-DICHLOROETHENE	μg/L	20	17.9	90	3	31	65-127
TOLUENE	μg/L	20	19.8	99	2	35	65-134
TRICHLOROETHENE	μg/L	20	20.4	102	4	30	65-125
# of Out-of-control				0	0		

Column to be used to flag recovery and RPD values:

* – Values outside of contract required QC Limits D – Spiked components diluted out

Comments: _____

FORM-4A

Applied P & Ch Laboratory

Method Blank Summary for Method 524.2

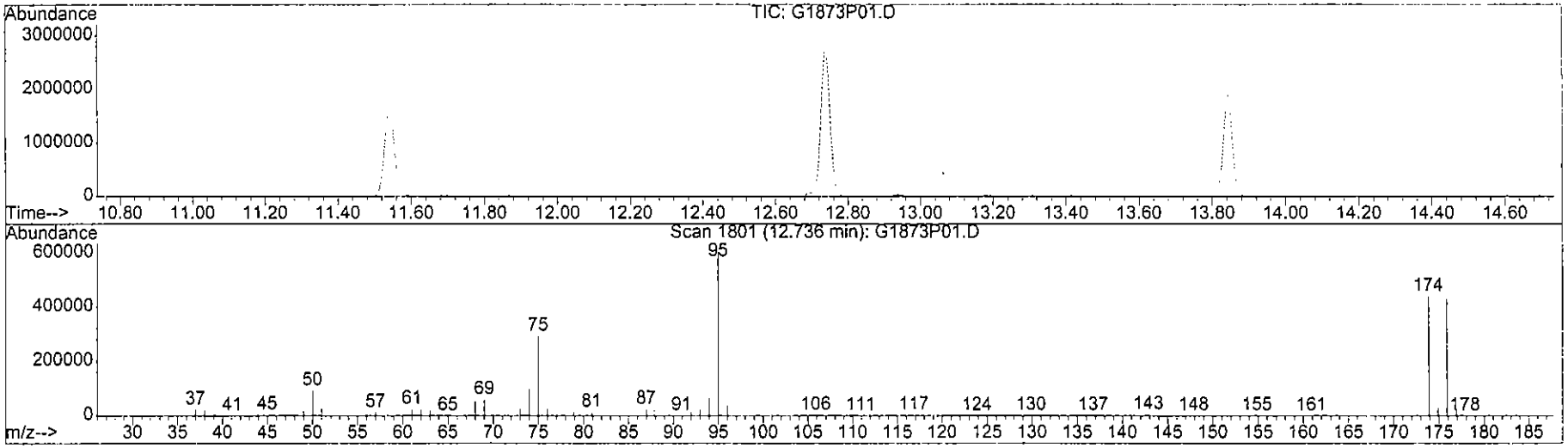
Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		Service ID:	32987
Project ID:	JPL	Project No:	04-4428.10	Analysis Date:	05/13/03
		Sample Matrix:	Water	Analysis Time:	15:55
Sample ID:	**03G2456-MB-01**	Batch No:	03G2456	Instrument ID:	GC/MS: A
Lab Sample ID:	03G2456-MB-01	Data File Name:	G2456K01	GC Column:	HP-VOC
		Heated Purge: (Y/N)	N	Column ID:	0.20 mm

This Method Blank applies to the following samples and QC samples:

#	Client Sample No	Lab Sample ID	Sample Type	Data Filename	Analysis Date	Analysis Time
1	03G2456-LCS-01	03G2456-LCS-01	Lab Control Spike	G2456L01	05/13/03	13:41
2	MW-23-5MS	03-2987-6MS	Matrix Spike	G2456M01	05/13/03	14:08
3	MW-23-5MSD	03-2987-6MSD	Matrix Spike Duplicate	G2456N01	05/13/03	14:35
4	EB-8-4/30/03	03-2987-1	Field Sample	2987-01	05/13/03	16:49
5	MW-23-5	03-2987-6	Field Sample	2987-06	05/13/03	17:16
6	MW-23-1	03-2987-2	Field Sample	2987-02	05/13/03	17:43
7	MW-23-2	03-2987-3	Field Sample	2987-03	05/13/03	18:10
8	MW-23-3	03-2987-4	Field Sample	2987-04	05/13/03	18:37
9	MW-23-4	03-2987-5	Field Sample	2987-05	05/13/03	19:04
10	TB-8-4/30/03	03-2987-7	Field Sample	2987-07	05/13/03	19:31
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						

BFB

Data File : C:\MSDCHEM\1\DATA\03G1873\G1873P01.D Vial: 1
Acq On : 30 Mar 2003 2:29 pm Operator: zou
Sample : ##03g1873,w Inst : GCMS-A
Misc : Multiplr: 1.00
MS Integration Params: Lscint.p
Method : C:\MSDCHEM\1\METHODS\826WA010.M (RTE Integrator)
Title : **Applied P &Ch Lab** EPA 8260



Spectrum Information: Scan 1801

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	15.2	92424	PASS
75	95	30	60	48.4	293504	PASS
95	95	100	100	100.0	606592	PASS
96	95	5	9	6.6	39960	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	72.6	440576	PASS
175	174	5	9	7.4	32632	PASS
176	174	95	101	98.1	432384	PASS
177	176	5	9	6.7	29056	PASS

G187[illegible]01.D 826WA010.M Mon Mar 31 17:15:05 [illegible]03

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

Lab Name : APPLIED P & CH LAB Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 03-2987

Lab File ID: G1873P01 BFB Injection Date: 3/30/03

Instrument ID: GCMS-A BFB Injection Time: 1429

GC Column: HP-VOC ID: 0.20 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	%RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	15.2
75	30.0 - 60.0% of mass 95	48.4
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.6
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	72.6
175	5.0 - 9.0% of mass 174	5.4 (7.4)1
176	95.0 - 101.0% of mass 174	71.3 (98.1)1
177	5.0 - 9.0% of mass 176	4.8 (6.7)2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following SAMPLES, MS, MSD, BLANKS and STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0003	10-0003	10-00003.D	3/30/03	1550
02	VSTD002	10-0002	10-0002.D	3/30/03	1643
03	VSTD010	10-0010	10-0010.D	3/30/03	1737
04	VSTD020	10-0020	10-0020.D	3/30/03	1830
05	VSTD040	10-0040	10-0040.D	3/30/03	1924
06	VSTD060	10-0060	10-0060.D	3/30/03	2017
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20					
21					
22					

6130

Response Factor Report GCMS-A

Method : C:\MSDCHEM\1\METHODS\826WA010.M (RTE Integrator)
Title : **Applied P &Ch Lab** EPA 8260
Last Update : Mon Mar 31 10:25:55 2003
Response via : Initial Calibration

Calibration Files
.3 =10-0003A.D 2 =10-0002.D 10 =10-0010.D
20 =10-0020.D 40 =10-0040.D 60 =10-0060.D

			Compound	.3	2	10	20	40	60	Avg	%RSD	
1)	I	1	Fluorobenzene	----------ISTD----------								
2)		3	di-Cl-di-F-m	0.258	0.233	0.242	0.252	0.272	0.235	0.249	6.08	
3)	p	4	Chloromethan	0.339	0.254	0.236	0.247	0.236	0.224	0.256	16.32	0.997
4)		2	F114	0.122	0.119	0.120	0.134	0.130	0.116	0.124	5.77	
5)	C	5	vinyl chlori	0.249	0.237	0.241	0.256	0.266	0.244	0.249	4.29	
6)		6	bromomethane	0.185	0.163	0.141	0.134	0.139	0.137	0.150	13.41	
7)		7	chloroethane	0.238	0.150	0.151	0.162	0.163	0.154	0.170	20.13	0.998
8)		8	tri-Cl-F-met	0.387	0.355	0.362	0.395	0.397	0.347	0.374	5.80	
9)		91	Acetonitrile		0.030	0.029	0.035	0.035	0.030	0.032	9.40	
10)		9	acrolein		0.025	0.023	0.024	0.024	0.023	0.024	3.26	
11)		11	acetone X		0.037	0.023	0.023	0.021	0.021	0.025	27.74	0.999
12)		12	ethyl ether	0.130	0.126	0.124	0.133	0.128	0.123	0.127	3.13	
13)	M, C13	11	-dichloroe	0.318	0.295	0.295	0.321	0.317	0.288	0.306	4.78#	
14)		14	Iodomethane	0.079	0.078	0.124	0.222	0.252	0.244	0.166	49.28	0.994
15)		15	F-113	0.230	0.214	0.214	0.239	0.238	0.204	0.223	6.41	
16)		16	acrylonitril	0.034	0.033	0.033	0.030	0.034	0.033	0.033	4.16	
17)		17	carbon disul	1.009	0.823	0.821	0.906	0.913	0.826	0.883	8.47	
18)		94	Isopropyl Al	0.009	0.003	0.001	0.001	0.001		0.003	113.71	0.995
19)		18	methylene ch	0.432	0.236	0.219	0.225	0.229	0.223	0.260	32.37	0.999
20)		19	t-12-di-Cl-e	0.264	0.237	0.244	0.255	0.272	0.257	0.255	4.99	
21)		20	t-Bu-Me-ethe	0.448	0.431	0.450	0.472	0.497	0.487	0.464	5.52	
22)		95	Tert butyl a		0.005	0.002	0.004	0.005	0.003	0.004	33.63	
23)		94	allyl chlori		0.299	0.287	0.348	0.351	0.303	0.317	9.40	
24)	p	21	11-dichloroe	0.443	0.403	0.408	0.418	0.443	0.427	0.424	4.06	
25)		97	propionitril		0.012	0.012	0.010	0.013	0.012	0.012	10.29	
26)		22	c-12-di-Cl-e	0.260	0.233	0.243	0.255	0.269	0.263	0.254	5.32	
27)		23	22-Dichlorop	0.312	0.265	0.290	0.322	0.339	0.320	0.308	8.54	
28)		24	Br-Cl-methan	0.096	0.098	0.098	0.101	0.105	0.103	0.100	3.22	

(#) = Out of Range

Response Factor Report GCMS-A

Method : C:\MSDCHEM\1\METHODS\826WA010.M (RTE Integrator)
Title : **Applied P &Ch Lab** EPA 8260
Last Update : Mon Mar 31 10:25:55 2003
Response via : Initial Calibration

Calibration Files
.3 =10-0003A.D 2 =10-0002.D 10 =10-0010.D
20 =10-0020.D 40 =10-0040.D 60 =10-0060.D

		Compound	.3	2	10	20	40	60	Avg	%RSD	
29)	C	25 chloroform		0.417	0.419	0.428	0.442	0.429	0.427	2.30	
30)		26 tetrahydrofu	0.030	0.027	0.028	0.024	0.028	0.028	0.027	7.27	
31)		98 Diisopropyl	0.675	0.662	0.692	0.667	0.728	0.707	0.688	3.70	
32)	S	27 Di-Br-F-Me (	0.263	0.216	0.216	0.227	0.232	0.226	0.230	7.61	
33)		99 ETBE	0.484	0.471	0.516	0.535	0.583	0.584	0.529	9.11	
34)	S	29 1,2-Di-Cl-Et	0.258	0.203	0.200	0.209	0.208	0.203	0.214	10.24	
35)		30 12-dichloroe	0.084	0.078	0.076	0.080	0.078	0.075	0.079	4.09	
36)		32 vinyl acetat	0.304	0.296	0.313	0.295	0.332	0.315	0.309	4.47	
37)		92 Nitro Methan		0.035	0.035	0.036	0.039	0.038	0.037	4.34	
38)		33 2-butanoneME		0.039	0.027	0.028	0.032	0.031	0.032	14.75	
39)		93 Ethyl Acetat		0.123	0.141	0.105	0.150	0.133	0.130	13.15	
40)		34 111-trichlor	0.392	0.351	0.363	0.384	0.413	0.389	0.382	5.76	
41)		35 11-Di-Cl-pro	0.330	0.289	0.312	0.337	0.365	0.336	0.328	7.84	
42)	M	36 benzene	1.005	0.924	0.978	1.055	1.057	1.017	1.006	5.00	
43)		37 CCl4	0.324	0.282	0.308	0.324	0.363	0.335	0.323	8.40	
44)		100 Isobutyl al		0.002	0.001	0.002	0.002	0.002	0.002	30.05	
45)		38 thiophene	0.482	0.458	0.496	0.537	0.546	0.535	0.509	7.01	
46)	C	39 12-di-Cl-pro	0.215	0.196	0.209	0.227	0.226	0.221	0.216	5.42#	
47)	M	40 trichloroeth	0.281	0.249	0.258	0.285	0.295	0.280	0.275	6.33	
48)		41 dibromometha	0.102	0.102	0.102	0.107	0.108	0.105	0.104	2.67	
49)		101 TAME	0.410	0.403	0.454	0.511	0.530	0.533	0.474	12.47	
50)		42 Br-di-Cl-met		0.278	0.288	0.308	0.309	0.304	0.297	4.56	
51)		43 Me-methacryl	0.085	0.087	0.099	0.107	0.116	0.113	0.101	12.85	
52)		44 2-ClEt-Vi-et		0.015	0.019	0.024	0.027	0.027	0.023	24.02	0.998
53)		45 c-13-di-Cl-p	0.286	0.278	0.309	0.342	0.351	0.346	0.319	10.09	
54)		46 t-1,3-dichlo	0.200	0.205	0.239	0.267	0.287	0.280	0.246	15.20	0.999
55)	I	47 Chlorobezene-d5	----------ISTD----------								
56)		48 112-tri-Cl-E	0.222	0.199	0.200	0.208	0.214	0.206	0.208	4.27	

(#) = Out of Range

6132

Response Factor Report GCMS-A

Method : C:\MSDCHEM\1\METHODS\826WA010.M (RTE Integrator)
Title : **Applied P &Ch Lab** EPA 8260
Last Update : Mon Mar 31 10:25:55 2003
Response via : Initial Calibration

Calibration Files
.3 =10-0003A.D 2 =10-0002.D 10 =10-0010.D
20 =10-0020.D 40 =10-0040.D 60 =10-0060.D

			Compound	.3	2	10	20	40	60	Avg	%RSD	
57)		49	13-di-Cl-pro	0.374	0.361	0.358	0.372	0.382	0.362	0.368	2.58	
58)		50	Et methacryl	0.226	0.251	0.288	0.304	0.346	0.334	0.291	16.07	0.998
59)		51	di-Br-Cl-met		0.234	0.247	0.256	0.276	0.267	0.256	6.45	
60)	P	52	bromoform	0.146	0.119	0.128	0.134	0.148	0.143	0.136	8.58	
61)		53	1,4-dichloro		0.320	0.326	0.335	0.351	0.331	0.333	3.55	
62)		54	MIBK		0.132	0.133	0.132	0.158	0.151	0.141	8.61	
63)	s	55	toluene-d8		1.172	1.220	1.322	1.363	1.290	1.273	6.06	
64)	M,C	56	toluene	1.483	1.381	1.458	1.571	1.597	1.490	1.497	5.23	
65)		57	2-hexanone X		0.089	0.091	0.094	0.101	0.095	0.094	4.99	
66)		58	12-dibromoet	0.185	0.188	0.190	0.198	0.209	0.201	0.195	4.69	
67)		59	tetra-Cl-eth	0.404	0.360	0.360	0.395	0.415	0.376	0.385	6.08	
68)	M,P	60	chlorobenzen	1.025	0.902	0.921	0.980	0.998	0.958	0.964	4.84	
69)		61	1112-tetra-C	0.282	0.281	0.298	0.322	0.337	0.329	0.308	7.99	
70)	I	62	1,4-Dichlorobenzen ----------ISTD----------									
71)		63	1-chlorohexa	0.403	0.341	0.366	0.424	0.462	0.419	0.402	10.81	
72)	C	64	Et-Bz	3.443	3.192	3.357	3.680	3.841	3.609	3.520	6.68#	
73)		65	m/p-Xylenes	2.731	2.487	2.612	2.843	2.884	2.654	2.702	5.50	
74)		66	styrene	1.866	1.872	2.002	2.189	2.278	2.176	2.064	8.50	
75)		67	o-xylene	2.643	2.489	2.693	2.927	3.014	2.852	2.770	7.08	
76)	p	68	1122-Tetra-C	0.507	0.479	0.460	0.478	0.510	0.482	0.486	3.89	
77)		69	123-tri-Cl-P	0.160	0.134	0.134	0.137	0.145	0.138	0.141	7.08	
78)	S	70	4-Br-1-F-Bz		0.718	0.718	0.774	0.810	0.785	0.761	5.45	
79)		71	isopropylben	3.250	2.950	3.272	3.652	3.847	3.577	3.425	9.53	
80)		72	bromobenzene	0.751	0.698	0.726	0.785	0.825	0.793	0.763	6.13	
81)		92	t-1,4-dichlo	0.050	0.053	0.065	0.075	0.092	0.092	0.071	25.62	0.994
82)		73	n-propylbenz	0.993	0.867	0.933	1.055	1.134	1.069	1.009	9.66	
83)		74	2-Cl-Toluene	0.851	0.749	0.802	0.880	0.934	0.897	0.852	7.89	
84)		75	4-Cl-Toluene	0.910	0.783	0.817	0.890	0.944	0.899	0.874	6.98	

(#) = Out of Range

Response Factor Report GCMS-A

Method : C:\MSDCHEM\1\METHODS\826WA010.M (RTE Integrator)
Title : **Applied P &Ch Lab** EPA 8260
Last Update : Mon Mar 31 10:25:55 2003
Response via : Initial Calibration

Calibration Files
.3 =10-0003A.D 2 =10-0002.D 10 =10-0010.D
20 =10-0020.D 40 =10-0040.D 60 =10-0060.D

	Compound	.3	2	10	20	40	60	Avg	%RSD	
85)	76 135-tri-Me-B	2.886	2.570	2.825	3.101	3.252	3.022	2.943	8.09	
86)	77 4-iso-Pr-tol	3.039	2.843	3.056	3.311	3.633	3.321	3.201	8.70	
87)	78 124-tri-Me-B	3.100	2.689	2.842	3.139	3.264	3.085	3.020	7.03	
88)	79 tert-butylbe	2.468	2.285	2.505	2.811	2.989	2.782	2.640	9.95	
89)	80 13-DCB	1.801	1.498	1.518	1.628	1.720	1.640	1.634	7.10	
90)	81 sec-butylben	3.686	3.443	3.710	4.114	4.369	3.965	3.881	8.61	
91)	82 14-DCB	1.902	1.503	1.501	1.597	1.707	1.630	1.640	9.17	
92)	83 Cl-benzyl	0.068	0.087	0.115	0.123	0.165	0.162	0.120	32.61	0.990
93)	84 12-DCB	1.551	1.321	1.324	1.365	1.479	1.417	1.409	6.51	
94)	85 n-butylbenze	0.751	0.714	0.798	0.847	0.984	0.919	0.835	12.24	
95)	86 12-diBr-2-Cl	0.058	0.072	0.079	0.078	0.098	0.095	0.080	18.35	0.994
96)	87 124-tri-Cl-B		0.887	0.929	1.087	1.119	1.063	1.017	10.07	
97)	88 naphthalene		1.196	1.313	1.647	1.687	1.607	1.490	14.80	
98)	89 hx-Cl-butadi	0.613	0.570	0.556	0.614	0.669	0.618	0.607	6.59	
99)	90 123-Tri-Cl-B		0.743	0.767	0.924	0.919	0.874	0.845	10.10	

(#) = Out of Range

INITIAL CALIBRATION SUMMARY

Method File	826WA010		
Last Calibration Update	Mon Mar 31 10:32:37 2003		
Level 1 File Name	10-0003A.D	Level 1 ID	.3
Level 2 File Name	10-0002.D	Level 2 ID	2
Level 3 File Name	10-0010.D	Level 3 ID	10
Level 4 File Name	10-0020.D	Level 4 ID	20
Level 5 File Name	10-0040.D	Level 5 ID	40
Level 6 File Name	10-0060.D	Level 6 ID	60
Level 7 File Name	10-0020.D	Level 7 ID	cc

Compound Name	Level 1 Response	Level 2 Response	Level 3 Response	Level 4 Response	Level 5 Response	Level 6 Response	Level 7 Response	Coeff X^0	Coeff X^1 / ave RF	Coeff X^2	R^2 / RSD
1 Fluorobenzene	1402185	1401700	1425417	1419632	1412433	1400715	-1	------	------	------	------
3 di-Cl-di-F-methane	10847	65256	344729	715366	1537518	1972057	-1	0.0120	0.2437	0.0000	0.9908
4 Chloromethane	14243	71226	336320	702444	1333124	1882279	-1	0.0000	0.2560	0.0000	0.1632
2 F114	5136	33302	171012	381760	733605	974692	-1	0.0000	0.1235	0.0000	0.0577
5 vinyl chloride	10455	66474	343348	725558	1503869	2051199	-1	0.0000	0.2487	0.0000	0.0429
6 bromomethane	7777	45613	200938	379493	785517	1151335	-1	0.0000	0.1497	0.0000	0.1341
7 chloroethane	10022	41956	214551	459359	920537	1294623	-1	0.0034	0.1562	0.0000	0.9986
8 tri-Cl-F-methane	16293	99495	515840	1121757	2241613	2920268	-1	0.0000	0.3739	0.0000	0.0580
91 Acetonitrile X10	20424	83795	408495	988740	1981444	2545093	-1	0.0000	0.0317	0.0000	0.0940
9 acrolein X10	11130	69228	329654	676073	1354015	1908483	-1	0.0000	0.0237	0.0000	0.0326
11 acetone X10	28459	104684	332887	639556	1203415	1741743	-1	0.0375	0.0202	0.0000	0.9998
12 ethyl ether X5	27298	176671	881117	1890393	3629304	5150102	-1	0.0000	0.1273	0.0000	0.0313
13 11-dichloroethene	13394	82732	420004	911032	1792018	2421004	-1	0.0000	0.3057	0.0000	0.0478
14 Iodomethane	3342	21843	176232	629497	1424862	2050698	-1	-0.0514	0.2544	0.0000	0.9940
15 F-113	9667	60030	305521	677448	1343471	1714509	-1	0.0000	0.2231	0.0000	0.0641
16 acrylonitrile X10	14334	91693	475343	863383	1929340	2786466	-1	0.0000	0.0330	0.0000	0.0416
17 carbon disulfide	42449	230738	1170329	2572254	5155522	6945088	-1	0.0000	0.8830	0.0000	0.0847
94 Isopropyl Alcoholx10	3968	8959	17262	31346	53652	-1	-1	0.0037	0.0009	0.0000	0.9956
18 methylene chloride	18179	66074	311459	637490	1291619	1876442	-1	0.0027	0.2242	0.0000	0.9997
19 t-12-di-Cl-ethene	11094	66357	348511	724140	1535637	2159090	-1	0.0000	0.2548	0.0000	0.0499
20 t-Bu-Me-ether	18835	120775	641266	1340185	2809850	4095292	-1	0.0000	0.4642	0.0000	0.0552
95 Tert butyl alcoholx10	-1	14346	35248	105910	309880	244429	-1	0.0000	0.0039	0.0000	0.3363

94 allyl chloride	-1	83795	408495	988740	1981444	2545093	-1	0.0000	0.3175	0.0000	0.0940
21 11-dichloroethane	18621	112842	581855	1186542	2504419	3588511	-1	0.0000	0.4236	0.0000	0.0406
97 propionitrile	136	3425	17147	28049	74203	104848	-1	0.0000	0.0119	0.0000	0.1029
22 c-12-di-Cl-ethene	10945	65228	346763	722727	1519062	2211008	-1	0.0000	0.2538	0.0000	0.0532
23 22-Dichloropropane	13116	74347	413858	914214	1915303	2688487	-1	0.0000	0.3080	0.0000	0.0854
24 Br-Cl-methane	4057	27612	140152	286516	593528	865536	-1	0.0000	0.1004	0.0000	0.0322
25 chloroform	22993	116777	597861	1214377	2494537	3609401	-1	0.0000	0.4269	0.0000	0.0230
26 tetrahydrofuranX5	6239	38117	198933	336272	790362	1173186	-1	0.0000	0.0274	0.0000	0.0727
98 Diisopropyl ether	28399	185552	986248	1893560	4112776	5938451	-1	0.0000	0.6884	0.0000	0.0370
27 Di-Br-F-Me (surr)	11084	60638	307963	643560	1311195	1902499	-1	0.0000	0.2302	0.0000	0.0761
99 ETBE	20365	132029	735024	1518648	3294293	4912092	-1	0.0000	0.5289	0.0000	0.0911
29 1,2-Di-Cl-Et-d4 (S1)	10836	56975	284710	593863	1176956	1708276	-1	0.0000	0.2136	0.0000	0.1024
30 12-dichloroethane	3534	21980	108018	227029	439257	631642	-1	0.0000	0.0785	0.0000	0.0409
32 vinyl acetate X5	63860	414860	2230480	4194574	9370203	13254307	-1	0.0000	0.3092	0.0000	0.0447
92 Nitro Methane(x10)	16099	98654	503941	1026662	2197883	3164808	-1	0.0000	0.0367	0.0000	0.0434
33 2-butanoneMEK X10	23496	109206	386182	800835	1835004	2621391	-1	0.0000	0.0316	0.0000	0.1475
93 Ethyl Acetate x2	10913	69080	401801	597072	1689794	2243912	-1	0.0000	0.1305	0.0000	0.1315
34 111-trichloroethane	16490	98389	517930	1091679	2332259	3272931	-1	0.0000	0.3822	0.0000	0.0576
35 11-Di-Cl-propene	13873	81037	444769	957310	2063877	2822864	-1	0.0000	0.3282	0.0000	0.0784
36 benzene	42274	259026	1393453	2994641	5972223	8547309	-1	0.0000	1.0059	0.0000	0.0500
37 CCl4	13612	78957	439090	920143	2050691	2812796	-1	0.0000	0.3225	0.0000	0.0840

Compound Name	Level 1 Response	Level 2 Response	Level 3 Response	Level 4 Response	Level 5 Response	Level 6 Response	Level 7 Response	Coeff X^0	Coeff X^1 / ave RF	Coeff X^2	R^2 / RSD
100 Isobutyl alcoholx10	-1	4726	14196	70592	117355	167235	-1	------	------	------	------
38 thiophene	20269	128315	706455	1525558	3083581	4494310	-1	0.0000	0.5088	0.0000	0.0701
39 12-di-Cl-propane	9049	55011	298031	645043	1275427	1856699	-1	0.0000	0.2157	0.0000	0.0542
40 trichloroethene	11826	69743	368318	809129	1664792	2353937	-1	0.0000	0.2747	0.0000	0.0633
41 dibromomethane	4302	28599	144754	304462	609801	879445	-1	0.0000	0.1043	0.0000	0.0267
101 TAME	17251	113069	647400	1450103	2994595	4479028	-1	0.0000	0.4736	0.0000	0.1247
42 Br-di-Cl-methane	15590	77950	410468	873215	1744848	2551794	-1	0.0000	0.2972	0.0000	0.0456
43 Me-methacrylate	3581	24393	141762	302947	655401	947564	-1	0.0000	0.1012	0.0000	0.1285
44 2-ClEt-Vi-ether10	4864	41895	276079	689334	1551121	2307334	-1	-0.0618	0.0285	0.0000	0.9983
45 c-13-di-Cl-propene	12016	78024	440533	972065	1981413	2911762	-1	0.0000	0.3188	0.0000	0.1009
46 t-1,3-dichloropropene	8432	57535	340215	757085	1619889	2349418	-1	-0.0204	0.2846	0.0000	0.9990
47 Chlorobezene-d5	988828	990172	1024243	1043945	1007385	1007143	-1	0.0000	1.0000	0.0000	0.0000

48 112-tri-Cl-Et	6594	39408	204447	433455	862039	1245491	-1	0.0000	0.2081	0.0000	0.0427
49 13-di-Cl-propane	11088	71526	366282	776054	1541261	2185204	-1	0.0000	0.3681	0.0000	0.0258
50 Et methacrylate	6698	49628	294482	634508	1395321	2018328	-1	-0.0285	0.3411	0.0000	0.9981

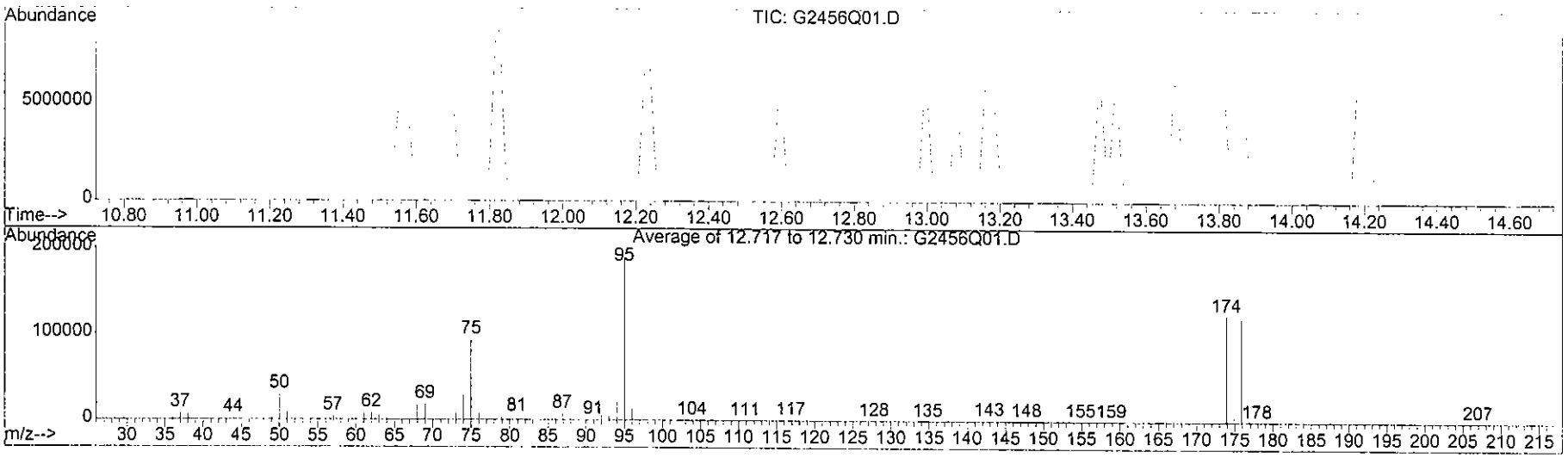
Compound Name	Level 1 Response	Level 2 Response	Level 3 Response	Level 4 Response	Level 5 Response	Level 6 Response	Level 7 Response	Coeff X^0	Coeff X^1 / ave RF	Coeff X^2	R^2 / RSD
51 di-Br-Cl-methane	9920	46263	252673	533500	1110440	1612394	-1	0.0000	0.2556	0.0000	0.0645
52 bromoform	4340	23486	130929	280129	598350	865181	-1	0.0000	0.1364	0.0000	0.0858
53 1,4-dichlorobutane-2	11561	63322	334210	699010	1415056	1998159	-1	0.0000	0.3325	0.0000	0.0355
54 MIBK	4102	26191	136436	276346	635297	913350	-1	0.0000	0.1413	0.0000	0.0861
55 toluene-d8	40331	232082	1249806	2759643	5492872	7796171	-1	0.0000	1.2734	0.0000	0.0606
56 toluene	44000	273555	1493556	3279721	6436941	9003846	-1	0.0000	1.4968	0.0000	0.0523
57 2-hexanone X5	18952	87657	465288	979048	2031915	2868357	-1	0.0000	0.0938	0.0000	0.0499
58 12-dibromoethane	5481	37268	194331	412749	842422	1213791	-1	0.0000	0.1950	0.0000	0.0469
59 tetra-Cl-ethene	11997	71322	368264	825724	1672283	2271115	-1	0.0000	0.3851	0.0000	0.0608
60 chlorobenzene	30395	178605	943078	2046929	4023278	5789041	-1	0.0000	0.9640	0.0000	0.0484
61 1112-tetra-Cl-Et	8360	55612	304924	672900	1358601	1988434	-1	0.0000	0.3081	0.0000	0.0799
62 1,4-Dichlorobenzene-d4	475933	477645	496828	495828	473305	466660	-1	0.0000	1.0000	0.0000	0.0000
63 1-chlorohexane	5749	32590	181618	420352	875550	1173405	-1	0.0000	0.4025	0.0000	0.1081
64 Et-Bz	49158	304901	1668070	3648966	7272072	10104426	-1	0.0000	3.5203	0.0000	0.0668
65 m/p-Xylenes X2	77987	475103	2595435	5637783	10918251	14861766	-1	0.0000	2.7016	0.0000	0.0550
66 styrene	26636	178864	994724	2170590	4313332	6092272	-1	0.0000	2.0638	0.0000	0.0850
67 o-xylene	37736	237765	1338059	2902842	5706977	7984326	-1	0.0000	2.7697	0.0000	0.0708
68 1122-Tetra-Cl-Et	7232	45751	228508	474459	964820	1348818	-1	0.0000	0.4859	0.0000	0.0389
69 123-tri-Cl-Pr	2281	12812	66381	135429	274408	386049	-1	0.0000	0.1411	0.0000	0.0708
70 4-Br-1-F-Bz (S3)	14323	68592	356594	767770	1533349	2198848	-1	0.0000	0.7610	0.0000	0.0545
71 isopropylbenzene	46404	281854	1625443	3621879	7283454	10015298	-1	0.0000	3.4248	0.0000	0.0953
72 bromobenzene	10720	66727	360820	778815	1562791	2219172	-1	0.0000	0.7632	0.0000	0.0613
92 t-1,4-dichloro-2-butene	721	5096	32426	74114	174039	258524	-1	-0.0165	0.0943	0.0000	0.9958
73 n-propylbenzene	14176	82858	463721	1046004	2147440	2993047	-1	0.0000	1.0086	0.0000	0.0966
74 2-Cl-Toluene	12148	71589	398415	872352	1768651	2511389	-1	0.0000	0.8522	0.0000	0.0789
75 4-Cl-Toluene	12996	74825	405718	882193	1787025	2516053	-1	0.0000	0.8737	0.0000	0.0698
76 135-tri-Me-Benzene	41200	245516	1403326	3075105	6157544	8461302	-1	0.0000	2.9426	0.0000	0.0809
77 4-iso-Pr-toluene	43393	271628	1518534	3283328	6877345	9299329	-1	0.0000	3.2006	0.0000	0.0870
78 124-tri-Me-Benzene	44257	256888	1411774	3112878	6178974	8636660	-1	0.0000	3.0196	0.0000	0.0703
79 tert-butylbenzene	35232	218303	1244711	2787927	5658720	7790717	-1	0.0000	2.6401	0.0000	0.0995

80 13-DCB	25714	143111	754344	1614275	3257265	4592008	-1	0.0000	1.6343	0.0000	0.0710
81 sec-butylbenzene	52624	328900	1843396	4079544	8272245	11100655	-1	0.0000	3.8811	0.0000	0.0861
82 14-DCB	27152	143617	745545	1584107	3232580	4565239	-1	0.0000	1.6402	0.0000	0.0917
83 Cl-benzyl	971	8277	57140	121481	312170	454087	-1	-0.0325	0.1668	0.0000	0.9932
84 12-DCB	22144	126151	657679	1353599	2799301	3968647	-1	0.0000	1.4094	0.0000	0.0651
85 n-butylbenzene	10725	68240	396229	839651	1862723	2572119	-1	0.0000	0.8354	0.0000	0.1224
86 12-diBr-2-Cl-Pra	829	6904	39462	77382	184762	265893	-1	-0.0119	0.0970	0.0000	0.9959
87 124-tri-Cl-Bz	17557	84776	461305	1077695	2118549	2975216	-1	0.0000	1.0169	0.0000	0.1007
88 naphthalene	25997	114299	652424	1633734	3193154	4499282	-1	0.0000	1.4901	0.0000	0.1480
89 hx-Cl-butadiene	8755	54493	276180	608951	1266400	1730110	-1	0.0000	0.6067	0.0000	0.0659
90 123-Tri-Cl-Bz	14845	70983	380915	916514	1740600	2447267	-1	0.0000	0.8455	0.0000	0.1010

BFB

Data File : C:\MSDCHEM\1\DATA\03G2456\G2456Q01.D
Acq On : 13 May 2003 1:15 pm
Sample : f=1
Misc :
MS Integration Params: Lscint.p
Method : C:\MSDCHEM\1\METHODS\826WA010.M (RTE Integrator)
Title : **Applied P &Ch Lab** EPA 8260

Vial: 3
Operator: zou
Inst : GCMS-A
Multiplr: 1.00



Spectrum Information: Average of 12.717 to 12.730 min.

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	15.6	29790	PASS
75	95	30	60	48.9	93562	PASS
95	95	100	100	100.0	191189	PASS
96	95	5	9	7.3	13954	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	64.8	123936	PASS
175	174	5	9	7.8	9688	PASS
176	174	95	101	97.7	121088	PASS
177	176	5	9	7.3	8887	PASS

G2456Q01.D 826WA010.M Wed May 14 11:20:49 2003

FORM-5A

Applied P & Ch Laboratory

Volatile Organic Instrument Performance Check for Method 524.2

Bromofluorobenzene (BFB), Part II

Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		Service ID:	032987
Project ID:	JPL	BFB Inj. Date:	05/13/03	Batch No:	03G2456
		BFB Inj. Time:	13:15	Sequence No:	03G2456
Project No:	04-4428.10	Instrument ID:	A	GC Column:	HP-VOC
Data File Name:	G2456Q01	Heated Purge: (Y/N)	N	Column ID:	0.20 mm

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

#	Client Sample No	Lab Sample ID	Data File Name	Date Analyzed	Time Analyzed
1	03G2456-CCV-01	03G2456-CCV-01	G2456Q01	05/13/03	13:15
2	03G2456-LCS-01	03G2456-LCS-01	G2456L01	05/13/03	13:41
3	MW-23-5MS	03-2987-6MS	G2456M01	05/13/03	14:08
4	MW-23-5MSD	03-2987-6MSD	G2456N01	05/13/03	14:35
5	03G2456-MB-01	03G2456-MB-01	G2456K01	05/13/03	15:55
6	EB-8-4/30/03	03-2987-1	2987-01	05/13/03	16:49
7	MW-23-5	03-2987-6	2987-06	05/13/03	17:16
8	MW-23-1	03-2987-2	2987-02	05/13/03	17:43
9	MW-23-2	03-2987-3	2987-03	05/13/03	18:10
10	MW-23-3	03-2987-4	2987-04	05/13/03	18:37
11	MW-23-4	03-2987-5	2987-05	05/13/03	19:04
12	TB-8-4/30/03	03-2987-7	2987-07	05/13/03	19:31
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Evaluate Continuing Calibration Report

6140

Data File : C:\MSDCHEM\1\DATA\03G2456\G2456Q01.D Vial: 3
Acq On : 13 May 2003 1:15 pm Operator: zou
Sample : f=1 Inst : GCMS-A
Misc : Multiplr: 1.00
MS Integration Params: Lscint.p

Method : C:\MSDCHEM\1\METHODS\826WA010.M (RTE Integrator)
Title : **Applied P &Ch Lab** EPA 8260
Last Update : Thu Apr 10 14:53:47 2003
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

			Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1	Fluorobenzene	1.000	1.000	0.0	116	0.01
2		3	di-Cl-di-F-methane	0.249	0.221	11.2	102	0.02
3	p	4	Chloromethane	0.256	0.195	23.8#	92	0.02
4		2	F114	0.124	0.110	11.3	95	0.03
5	C	5	vinyl chloride	0.249	0.224	10.0	102	0.02
6		6	bromomethane	0.150	0.118	21.3#	102	0.02
7		7	chloroethane	0.170	0.139	18.2	99	0.02
8		8	tri-Cl-F-methane	0.374	0.346	7.5	101	0.02
9		91	Acetonitrile X10	0.032	0.039	-21.9#	131	0.06
10		9	acrolein X10	0.024	0.020	16.7	95	0.02
11		11	acetone X10	0.025	0.031	-24.0#	160	0.03
12		12	ethyl ether X5	0.127	0.115	9.4	100	0.02
13	M, C	13	11-dichloroethene	0.306	0.272	11.1	98	0.02
14		14	Iodomethane	0.166	0.241	-45.2#	126	0.01
15		15	F-113	0.223	0.217	2.7	105	0.02
16		16	acrylonitrile X10	0.033	0.034	-3.0	131	0.02
17		17	carbon disulfide	0.883	0.703	20.4#	90	0.02
18		94	Isopropyl Alcoholx10	0.003	0.001	66.7#	95	0.02
19		18	methylene chloride	0.260	0.229	11.9	118	0.02
20		19	t-12-di-Cl-ethene	0.255	0.242	5.1	110	0.01
21		20	t-Bu-Me-ether	0.464	0.463	0.2	114	0.02
22		95	Tert butyl alcoholx10	0.004	0.008	-100.0#	242#	0.06
23		94	allyl chloride	0.317	0.393	-24.0#	131	0.02
24	p	21	11-dichloroethane	0.424	0.392	7.5	109	0.01
25		97	propionitrile	0.012	0.013	-8.3	150	0.03
26		22	c-12-di-Cl-ethene	0.254	0.249	2.0	113	0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

6141

Data File : C:\MSDCHEM\1\DATA\03G2456\G2456Q01.D Vial: 3
Acq On : 13 May 2003 1:15 pm Operator: zou
Sample : f=1 Inst : GCMS-A
Misc : Multiplr: 1.00
MS Integration Params: Lscint.p

Method : C:\MSDCHEM\1\METHODS\826WA010.M (RTE Integrator)
Title : **Applied P &Ch Lab** EPA 8260
Last Update : Thu Apr 10 14:53:47 2003
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
27		23 22-Dichloropropane	0.308	0.339	-10.1	122	0.02
28		24 Br-Cl-methane	0.100	0.099	1.0	114	0.01
29	C	25 chloroform	0.427	0.402	5.9	109	0.02
30		26 tetrahydrofuranX5	0.027	0.027	0.0	133	0.02
31		98 Diisopropyl ether	0.688	0.652	5.2	113	0.02
32	S	27 Di-Br-F-Me (surr)	0.230	0.216	6.1	111	0.02
33		99 ETBE	0.529	0.529	0.0	115	0.01
34	S	29 1,2-Di-Cl-Et-d4 (S1)	0.214	0.187	12.6	104	0.01
35		30 12-dichloroethane	0.079	0.068	13.9	99	0.01
36		32 vinyl acetate X5	0.309	0.297	3.9	116	0.02
37		92 Nitro Methane(x10)	0.037	0.032	13.5	102	0.13
38		33 2-butanoneMEK X10	0.032	0.044	-37.5#	180	0.02
39		93 Ethyl Acetate x2	0.130	0.098	24.6#	108	0.02
40		34 111-trichloroethane	0.382	0.382	0.0	115	0.02
41		35 11-Di-Cl-propene	0.328	0.322	1.8	111	0.01
42	M	36 benzene	1.006	0.969	3.7	107	0.01
43		37 CCl4	0.323	0.344	-6.5	123	0.01
44		100 Isobutyl alcoholx10	0.002	0.003	-50.0#	162	0.04
45		38 thiophene	0.509	0.497	2.4	107	0.01
46	C	39 12-di-Cl-propane	0.216	0.204	5.6	104	0.00
47	M	40 trichloroethene	0.275	0.272	1.1	111	0.01
48		41 dibromomethane	0.104	0.105	-1.0	113	0.00
49		101 TAME	0.474	0.478	-0.8	109	0.01
50		42 Br-di-Cl-methane	0.297	0.289	2.7	109	0.00
51		43 Me-methacrylate	0.101	0.108	-6.9	117	0.01
52		44 2-ClEt-Vi-ether10	0.023	0.004	82.6#	17#	0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

6142

Data File : C:\MSDCHEM\1\DATA\03G2456\G2456Q01.D Vial: 3
Acq On : 13 May 2003 1:15 pm Operator: zou
Sample : f=1 Inst : GCMS-A
Misc : Multiplr: 1.00
MS Integration Params: Lscint.p

Method : C:\MSDCHEM\1\METHODS\826WA010.M (RTE Integrator)
Title : **Applied P &Ch Lab** EPA 8260
Last Update : Thu Apr 10 14:53:47 2003
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

			Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
53		45	c-13-di-Cl-propene	0.319	0.328	-2.8	111	0.00
54		46	t-1,3-dichloropropene	0.246	0.265	-7.7	115	0.00
55	I	47	Chlorobezene-d5	1.000	1.000	0.0	115	0.00
56		48	112-tri-Cl-Et	0.208	0.206	1.0	114	0.00
57		49	13-di-Cl-propane	0.368	0.357	3.0	110	0.00
58		50	Et methacrylate	0.291	0.314	-7.9	118	0.00
59		51	di-Br-Cl-methane	0.256	0.266	-3.9	119	0.00
60	P	52	bromoform	0.136	0.145	-6.6	124	0.00
61		53	1,4-dichlorobutane-2	0.333	0.311	6.6	107	0.00
62		54	MIBK	0.141	0.142	-0.7	123	0.00
63	s	55	toluene-d8	1.273	1.239	2.7	108	0.00
64	M,C	56	toluene	1.497	1.463	2.3	107	0.00
65		57	2-hexanone X5	0.094	0.104	-10.6	127	0.00
66		58	12-dibromoethane	0.195	0.197	-1.0	114	0.00
67		59	tetra-Cl-ethene	0.385	0.387	-0.5	112	0.00
68	M,P	60	chlorobenzene	0.964	0.936	2.9	110	0.00
69		61	1112-tetra-Cl-Et	0.308	0.320	-3.9	114	0.00
70	I	62	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	127	0.00
71		63	1-chlorohexane	0.402	0.377	6.2	113	0.00
72	C	64	Et-Bz	3.520	3.188	9.4	110	0.00
73		65	m/p-Xylenes X2	2.702	2.428	10.1	108	0.00
74		66	styrene	2.064	1.933	6.3	112	0.00
75		67	o-xylene	2.770	2.531	8.6	110	0.00
76	p	68	1122-Tetra-Cl-Et	0.486	0.431	11.3	114	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

6143

Data File : C:\MSDCHEM\1\DATA\03G2456\G2456Q01.D Vial: 3
Acq On : 13 May 2003 1:15 pm Operator: zou
Sample : f=1 Inst : GCMS-A
Misc : Multiplr: 1.00
MS Integration Params: Lscint.p

Method : C:\MSDCHEM\1\METHODS\826WA010.M (RTE Integrator)
Title : **Applied P &Ch Lab** EPA 8260
Last Update : Thu Apr 10 14:53:47 2003
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
77		69 123-tri-Cl-Pr	0.141	0.127	9.9	118	0.00
78	S	70 4-Br-1-F-Bz (S3)	0.761	0.702	7.8	115	0.00
79		71 isopropylbenzene	3.425	3.246	5.2	113	0.00
80		72 bromobenzene	0.763	0.706	7.5	114	0.00
81		92 t-1,4-dichloro-2-butene	0.071	0.070	1.4	119	0.00
82		73 n-propylbenzene	1.009	0.950	5.8	114	0.00
83		74 2-Cl-Toluene	0.852	0.790	7.3	114	0.00
84		75 4-Cl-Toluene	0.874	0.793	9.3	113	0.00
85		76 135-tri-Me-Benzene	2.943	2.738	7.0	112	0.00
86		77 4-iso-Pr-toluene	3.201	3.026	5.5	116	0.00
87		78 124-tri-Me-Benzene	3.020	2.766	8.4	112	0.00
88		79 tert-butylbenzene	2.640	2.508	5.0	113	0.00
89		80 13-DCB	1.634	1.498	8.3	117	0.00
90		81 sec-butylbenzene	3.881	3.718	4.2	115	0.00
91		82 14-DCB	1.640	1.462	10.9	116	0.00
92		83 Cl-benzyl	0.120	0.165	-37.5#	170	0.00
93		84 12-DCB	1.409	1.282	9.0	119	0.00
94		85 n-butylbenzene	0.835	0.834	0.1	125	0.00
95		86 12-diBr-2-Cl-Pra	0.080	0.084	-5.0	136	0.00
96		87 124-tri-Cl-Bz	1.017	0.993	2.4	116	0.00
97		88 naphthalene	1.490	1.602	-7.5	123	0.00
98		89 hx-Cl-butadiene	0.607	0.562	7.4	116	0.00
99		90 123-Tri-Cl-Bz	0.845	0.816	3.4	112	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Continuing Calibration Concentration Summary

Data File G2456Q01
Method File 826WA010

Compound Name	Amount	Actual	Units	%Dev	Target Response
1 Fluorobenzene	10	10.00	ppb	0.00	1646457
3 di-Cl-di-F-methane	20	17.75	ppb	11.27	726202
4 Chloromethane	20	16.62	ppb	16.90	643403
2 F114	20	17.85	ppb	10.76	362968
5 vinyl chloride	20	18.00	ppb	10.01	737069
6 bromomethane	20	15.73	ppb	21.33	387834
7 chloroethane	20	17.52	ppb	12.39	456239
8 tri-Cl-F-methane	20	18.48	ppb	7.59	1137788
91 Acetonitrile X10	200	247.62	ppb	23.81	1294272
9 acrolein X10	200	165.26	ppb	17.37	643826
11 acetone X10	200	288.92	ppb	44.46	1022772
12 ethyl ether X5	100	90.56	ppb	9.44	1897786
13 11-dichloroethene	20	17.82	ppb	10.91	896873
14 Iodomethane	20	20.94	ppb	4.68	792462
15 F-113	20	19.44	ppb	2.78	714265
16 acrylonitrile X10	200	208.87	ppb	4.43	1133945
17 carbon disulfide	20	15.92	ppb	20.39	2314877
94 Isopropyl Alcoholx10	200	165.06	ppb	17.47	29727
18 methylene chloride	20	20.30	ppb	1.50	753632
19 t-12-di-Cl-ethene	20	18.97	ppb	5.15	795724
20 t-Bu-Me-ether	20	19.93	ppb	0.35	1523160
95 Tert butyl alcoholx10	200	394.66	ppb	97.33	256192
94 allyl chloride	20	24.76	ppb	23.81	1294272
21 11-dichloroethane	20	18.52	ppb	7.41	1291524
97 propionitrile	20	21.32	ppb	6.62	41944
22 c-12-di-Cl-ethene	20	19.61	ppb	1.96	819293
23 22-Dichloropropane	20	22.03	ppb	10.17	1117461
24 Br-Cl-methane	20	19.70	ppb	1.50	325556
25 chloroform	20	18.85	ppb	5.75	1325038
26 tetrahydrofuranX5	100	98.97	ppb	1.03	446372
98 Diisopropyl ether	20	18.95	ppb	5.24	2148005
27 Di-Br-F-Me (surr)	20	18.78	ppb	6.09	711767
99 ETBE	20	20.01	ppb	0.05	1742296
29 1,2-Di-Cl-Et-d4 (S1)	20	17.53	ppb	12.35	616351
30 12-dichloroethane	20	17.32	ppb	13.40	223895
32 vinyl acetate X5	100	95.92	ppb	4.08	4882913
92 Nitro Methane(x10)	200	172.91	ppb	13.54	1043467
33 2-butanoneMEK X10	200	277.96	ppb	38.98	1445478
93 Ethyl Acetate x2	40	29.94	ppb	25.14	643184
34 111-trichloroethane	20	19.99	ppb	0.04	1257987
35 11-Di-Cl-propene	20	19.64	ppb	1.81	1061234
36 benzene	20	19.26	ppb	3.69	3190045
37 CCl4	20	21.30	ppb	6.52	1131176

Compound Name	Amount	Actual	Units	%Dev	Target Response
100 Isobutyl alcoholx10	200	375.57	ppb	87.79	114213
38 thiophene	20	19.55	ppb	2.27	1637488
39 12-di-Cl-propane	20	18.94	ppb	5.28	672824
40 trichloroethene	20	19.84	ppb	0.82	897033
41 dibromomethane	20	20.07	ppb	0.34	344537
101 TAME	20	20.19	ppb	0.94	1574036
42 Br-di-Cl-methane	20	19.44	ppb	2.78	951451
43 Me-methacrylate	20	21.29	ppb	6.46	354683
44 2-ClEt-Vi-ether10	200	46.95	ppb	76.52	118721
45 c-13-di-Cl-propene	20	20.56	ppb	2.82	1079280
46 t-1,3-dichloropropene	20	19.32	ppb	3.39	871943
47 Chlorobezene-d5	10	10.00	ppb	0.00	1198131
48 112-tri-Cl-Et	20	19.81	ppb	0.93	493987
49 13-di-Cl-propane	20	19.42	ppb	2.89	856503
50 Et methacrylate	20	19.23	ppb	3.83	751839

Compound Name	Amount	Actual	Units	%Dev	Target Response
51 di-Br-Cl-methane	20	20.78	ppb	3.89	636409
52 bromoform	20	21.29	ppb	6.43	347919
53 1,4-dichlorobutane-2	20	18.70	ppb	6.48	745202
54 MIBK	20	20.12	ppb	0.60	340676
55 toluene-d8	20	19.47	ppb	2.67	2970011
56 toluene	20	19.55	ppb	2.24	3506528
57 2-hexanone X5	100	110.66	ppb	10.66	1243497
58 12-dibromoethane	20	20.21	ppb	1.03	472189
59 tetra-Cl-ethene	20	20.08	ppb	0.39	926294
60 chlorobenzene	20	19.42	ppb	2.90	2243020
61 1112-tetra-Cl-Et	20	20.74	ppb	3.71	765753
62 1,4-Dichlorobenzene-d4	10	10.00	ppb	0.00	628384
63 1-chlorohexane	20	18.74	ppb	6.30	473929
64 Et-Bz	20	18.11	ppb	9.43	4006756
65 m/p-Xylenes X2	40	35.95	ppb	10.14	6102368
66 styrene	20	18.73	PPB	6.36	2428805
67 o-xylene	20	18.28	ppb	8.62	3180795
68 1122-Tetra-Cl-Et	20	17.76	ppb	11.20	542201
69 123-tri-Cl-Pr	20	17.99	ppb	10.04	159579
70 4-Br-1-F-Bz (S3)	20	18.45	ppb	7.73	882502
71 isopropylbenzene	20	18.96	ppb	5.22	4079382
72 bromobenzene	20	18.50	ppb	7.49	887249
92 t-1,4-dichloro-2-butene	20	16.60	ppb	17.00	87993
73 n-propylbenzene	20	18.83	ppb	5.86	1193315
74 2-Cl-Toluene	20	18.53	ppb	7.33	992418
75 4-Cl-Toluene	20	18.15	ppb	9.26	996343
76 135-tri-Me-Benzene	20	18.61	ppb	6.97	3440427
77 4-iso-Pr-toluene	20	18.91	ppb	5.46	3802809
78 124-tri-Me-Benzene	20	18.32	ppb	8.39	3476640
79 tert-butylbenzene	20	19.00	ppb	5.01	3151803
80 13-DCB	20	18.33	ppb	8.36	1882277
81 sec-butylbenzene	20	19.16	ppb	4.20	4672968

82 14-DCB	20	17.83	ppb	10.87	1837296
83 Cl-benzyl	20	21.70	ppb	8.52	207100
84 12-DCB	20	18.20	ppb	9.02	1611555
85 n-butylbenzene	20	19.96	ppb	0.18	1048008
86 12-diBr-2-Cl-Pra	20	18.56	ppb	7.22	105620
87 124-tri-Cl-Bz	20	19.54	ppb	2.30	1248512
88 naphthalene	20	21.50	ppb	7.48	2012873
89 hx-Cl-butadiene	20	18.54	ppb	7.29	706919
90 123-Tri-Cl-Bz	20	19.31	ppb	3.44	1026015

Average D % 9.3240463

FORM-8A

Applied P & Ch Laboratory

Internal Standard Area and RT Summary for Method 524.2

Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		Service ID:	032987
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		CCV Data File:	G2456Q01	Instrument ID:	A

Batch No: 03G2456

#	Client Sample No	Lab Sample ID	Analysis Date & Time	IS-1 Area #	IS-1 RT #	IS-2 Area #	IS-2 RT #	IS-3 Area #	IS-3 RT #
12 Hour CCV STD			05/13/03 13:15	1646457	7.64	1198131	11.54	628384	13.84
CCV Upper Limit				3292914	8.14	2396262	12.04	1256768	14.34
CCV Lower Limit				823228	7.14	599065	11.04	314192	13.34
1	03G2456-LCS-01	03G2456-LCS-01	05/13/03 13:41	1536499	7.64	1124739	11.54	592039	13.85
2	MW-23-5MS	03-2987-6MS	05/13/03 14:08	1674220	7.64	1209063	11.54	627928	13.84
3	MW-23-5MSD	03-2987-6MSD	05/13/03 14:35	1632156	7.64	1205698	11.54	637369	13.84
4	03G2456-MB-01	03G2456-MB-01	05/13/03 15:55	1477639	7.64	1123135	11.54	551400	13.85
5	EB-8-4/30/03	03-2987-1	05/13/03 16:49	1477542	7.64	1152738	11.55	576265	13.85
6	MW-23-5	03-2987-6	05/13/03 17:16	1430404	7.64	1094707	11.55	539535	13.85
7	MW-23-1	03-2987-2	05/13/03 17:43	1451912	7.64	1121747	11.54	561231	13.85
8	MW-23-2	03-2987-3	05/13/03 18:10	1428231	7.64	1098884	11.55	547562	13.85
9	MW-23-3	03-2987-4	05/13/03 18:37	1410443	7.64	1088510	11.55	538612	13.85
10	MW-23-4	03-2987-5	05/13/03 19:04	1376588	7.64	1051051	11.55	521934	13.85
11	TB-8-4/30/03	03-2987-7	05/13/03 19:31	1385341	7.64	1075974	11.55	534359	13.85
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									

IS-1 = FLUOROBENZENE
IS-2 = CHLOROBENZENE-D5
IS-3 = 1,4-DICHLOROBENZENE-D4

Area Upper Limit = +100% of CCV internal standard area
Area Lower Limit = - 50% of CCV internal standard area
RT Upper Limit = +0.50 minutes of CCV internal standard RT
RT Lower Limit = - 0.50 minutes of CCV internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits

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VOC Analysis General Logbook

Sequence # 03671873 Batch # 03671873 Matrix: W Date: 3-30-03 Analyst: Zou

#: IS/Surrogate: GC-14507/14508 Methanol(mark-M): PEG (mark-PEG): Defoaming(mark-DF):

☐ Calib. + Ini. Batch ☑ Initial Batch; ☐ Middle Batch; ☐ Final Batch. ☐ Internal Study Datafile Path:

Op. #	Type	Sample ID	Method	$V/X=f_1$	$V_f/V_i=f_2$	$V_{spg}/V_{inj}=f_3$	F	A-#	Datafile	Note	pH
4969	SP	671873P01	8260A	25/25 = 1	/ =	/ =	1		671873P01	3-30-03 2:29pm	
4970	Calib	10-0003A	010	/ =	/ =	/ =			10-0003A	6TC14501	
4971		10-0002		/ =	/ =	/ =			10-0002		
4972		10-0010		/ =	/ =	/ =			10-0010		
4973		10-0020		/ =	/ =	/ =			10-0020		
4974		10-0040		/ =	/ =	/ =			10-0040		
4975		10-0060		/ =	/ =	/ =			10-0060		
4976	CW	671873R01		/ =	/ =	/ =			671873R01	CW/ICW 6TC14502	3-30-03 11:29AM
4977	MS	L01		/ =	/ =	/ =			L01		
4978	MS	M01		/ =	/ =	/ =			M01	5230L-04	<2
4979	MSD	N01		/ =	/ =	/ =			N01	5230L-04	
4980	MS	M02		/ =	/ =	/ =			M02	5230-03	
4981	MSD	N02		/ =	/ =	/ =			N02	5230-03	
4982	MB	K01		/ =	/ =	/ =			K01		
4983	Sample	2469-01		/ =	/ =	/ =			2469-01	tb	<2
4984		2301-05		/ =	/ =	/ =			2301-05	tb	
4985		2303-04		/ =	/ =	/ =			2303-04	tb	
4986		2303-03		/ =	/ =	/ =			2303-03	ms	
4987		2301-04		/ =	/ =	/ =			2301-04	ms	
4988		01		/ =	/ =	/ =			01		
4989		02		/ =	/ =	/ =			02		
4990		03		/ =	/ =	/ =			03		
4991		2303-01		/ =	/ =	/ =			2303-01		
4992		02		/ =	/ =	/ =			02		
4993		2351-01		/ =	/ =	/ =			2351-01		
4994		2469-02		/ =	/ =	/ =			2469-02		
4995		03		/ =	/ =	/ =			03		
4996		04		/ =	/ =	/ =			04		
4997		2449-01		/ =	/ =	/ =			2449-01		
4998		02		/ =	/ =	/ =			02		
4999		2353-01A		/ =	/ =	/ =			2353-01A	23:15	
5000				/ =	/ =	AL 4-2-03					

Type	Op #	STD Lot #	$C_{std}(ng/\mu L)\times V_{std}(\mu L)/X(g \text{ or } mL)=T$	Op #	STD Lot #	$C_{std}(ng/\mu L)\times V_{std}(\mu L)/X(g \text{ or } mL)=T$
LCS/LCSD	4977	GC-	× /X= ppb		GC-	× /X= ppb
MS/MSD	4978/4979	GC-14502	20 × 1/X= 20 ppb 2.5 20		GC-	× /X= ppb

Footnote/Anomaly:

AL 4-2-03

FILE: [CUST.DOC.GC]VOC_LOG .TEX Root-File: VOC_LOG_ROOT.TEX 1-Page-File:[CUST.DOC.GC]VOC_LOG1.TEX; pH for field water sample only

APCL form 7-201, April 03, 1996; Ver 4.1 No pencil. Use blue pen for record. Use red pen for correction. Supervisor Initial

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VOC-150

VOC Analysis General Logbook

Sequence # 03G2456 Batch # 03G2456 Matrix: W Date: 05/13/03 Analyst: Zou

Lot #: IS/Surrogate: GC-15114/15115 Methanol(mark-*M*): _____ PEG (mark-*PEG*): _____ Defoaming(mark-*DF*): _____

☐ Calib. + Ini. Batch ☒ Initial Batch; ☐ Middle Batch; ☐ Final Batch. ☐ Internal Study Datafile Path: _____

Op. #	Type	Sample ID	Method	$V/X=f_1$	$V_f/V_i=f_2$	$V_{epg}/V_{inj}=f_3$	F	A-#	Datafile	Note	pH
5769	SP	G2456P01	826WA 010	25/25 = 1	/ =	/ =	1		G2456P01	05/13/03	
5770	CCV	Q01		/ =	/ =	/ =			Q01	gc15128	1:15 pm
5771	LCS	L01		/ =	/ =	/ =			L01		
5772	MS	M01		/ =	/ =	/ =			M01	$2987-06	<2
5773	MSD	N01		/ =	/ =	/ =			N01	↓	↓
5774	MB	K01		/ =	/ =	/ =			K01		
5775	sample	2987-01		/ =	/ =	/ =			2987-01	524.2	<2
5776		06		/ =	/ =	/ =			06		
5777		02		/ =	/ =	/ =			02		
5778		03		/ =	/ =	/ =			03		
5779		04		/ =	/ =	/ =			04		
5780		05		/ =	/ =	/ =			05		
5781		07		/ =	/ =	/ =			07		
5782		3015-01		/ =	/ =	/ =			3015-01		
5783		02		/ =	/ =	/ =			02		
5784		03		/ =	/ =	/ =			03		
5785		04		/ =	/ =	/ =			04		
5786		05		/ =	/ =	/ =			05		
5787		06		/ =	/ =	/ =			06		
5788		07		/ =	/ =	/ =			07		
5789		08		/ =	/ =	/ =			08		
5790		3171-03		/ =	/ =	/ =			3171-03		
5791		04		/ =	/ =	/ =			04		
5792		09		/ =	/ =	/ =			09		
5793		12		/ =	/ =	/ =			12		
5794				/ =	/ =	/ =					
5795				/ =	/ =	/ =					
5796				/ =	/ =	/ =					
5797				/ =	/ =	/ =					
5798				/ =	/ =	/ =					
5799				/ =	/ =	/ =					
5800				/ =	/ =	/ =					

05/15/03

Type	Op #	STD Lot #	$C_{std}(ng/\mu L)\times V_{std}(\mu L)/X(g \text{ or } mL)=T$	Op #	STD Lot #	$C_{std}(ng/\mu L)\times V_{std}(\mu L)/X(g \text{ or } mL)=T$
LCS/LCSD	5771	GC-15129	200 × 2.5 /X= 20 ppb		GC-	× /X= ppb
MS/MSD	5772/5773	GC-	× /X= ppb		GC-	× /X= ppb

Footnote/Anomaly:

6149