APCL

Applied Physics & Chemistry Laboratory

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

May 29, 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 03-2933 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 #: 801-032933
Collected by: Leo Williamson
Collected on: 04/28/03

Received: 04/28/03
Extracted: 05/01/03
Tested: 04/28-05/02/03
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-6-4/28/03 03-02933-1	MW-17-1 03-02933-2	MW-17-2 03-02933-3
BICARBONATE	SM2320B	mg/L	2	<2	176	164
CARBONATE	SM2320B	mg-$CaCO_3$/L	2	<2	<2	<2
PH	9040B	pH unit	0.01	6.54	7.44	7.97
SOLIDS, TOTAL DISSOLVED (TDS)	160.1	mg/L	10	<10	253	250
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	<4	4.1
Dilution Factor				1.25	2	2
CHLORIDE CL^-	300.0	mg/L	0.2	0.20J	13.3	19.6
NITRATE AS N	300.0	mg/L	0.04	0.071	1.3	2.0
SULFATE SO_4^{--}	300.0	mg/L	0.5	<0.63	36.5	34.7
Dilution Factor				1	1	1
ARSENIC	200.9	μg/L	5	<5	<5	<5
CALCIUM	200.7	μg/L	200	<200	50,700	41,900
IRON	200.7	μg/L	50	<50	69.6	311
MAGNESIUM	200.7	μg/L	100	<100	16,100	18,100
POTASSIUM	200.7	μg/L	400	<400	2,400	2,480
SODIUM	200.7	μg/L	2000	<2000	16,100	15,900
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

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Component Analyzed	Method	Unit	PQL	Analysis Result EB-6-4/28/03 03-02933-1	MW-17-1 03-02933-2	MW-17-2 03-02933-3
4-CHLOROTOLUENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DIBROMO-3-CHLOROPROPANE	524.2	µg/L	1.1 [a]	<1.1	<1.1	<1.1
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	1.8 [a]	<1.8	<1.8	<1.8
METHYL-T-BUTYL ETHER (MTBE)	524.2	µg/L	1	<1	<1	<1
4-METHYL-2-PENTANONE (MIBK)	524.2	µg/L	10	<10	5J	5J
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	<0.5	<0.5
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	<0.5	0.9
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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Component Analyzed	Method	Unit	PQL	Analysis Result MW-17-3 03-02933-4	MW-17-4 03-02933-5	MW-17-5 03-02933-6	TB-6-4/28/03 03-02933-7
BICARBONATE	SM2320B	mg/L	2	167	137	156	-
CARBONATE	SM2320B	mg-$CaCO_3$/L	2	<2	<2	<2	-
PH	9040B	pH unit	0.01	8.08	8.01	8.17	-
SOLIDS, TOTAL DISSOLVED (TDS)	160.1	mg/L	10	247	198	219	-
CHROMIUM (VI)	7196	mg/L	0.01	<0.01	<0.01	<0.01	-
Dilution Factor				2	1	1	1
PERCHLORATE	314.0	µg/L	4	126	6.5	3.6J	-
Dilution Factor				2	2	2	1
CHLORIDE CL^-	300.0	mg/L	0.2	12.5	11.4	11.2	-
NITRATE AS N	300.0	mg/L	0.04	1.5	0.70	0.64	-
SULFATE SO_4^{--}	300.0	mg/L	0.5	31.7	25.5	18.8	-
Dilution Factor				1	1	1	1
ARSENIC	200.9	µg/L	5	<5	2.2J	3.2J	-
CALCIUM	200.7	µg/L	200	37,600	21,900	25,100	-
IRON	200.7	µg/L	50	822	639	1,280	-
MAGNESIUM	200.7	µg/L	100	16,600	11,300	7,240	-
POTASSIUM	200.7	µg/L	400	2,060	1,960	2,080	-
SODIUM	200.7	µg/L	2000	20,400	31,400	39,500	-
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	6.4	<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	1.7	1	0.6	<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	1.1 [a]	<1.1	<1.1	<1.1	<1.1
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
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

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Component Analyzed	Method	Unit	PQL	Analysis Result MW-17-3 03-02933-4	MW-17-4 03-02933-5	MW-17-5 03-02933-6	TB-6-4/28/03 03-02933-7
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	1.8 [a]	<1.8	<1.8	<1.8	<1.8
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	4J	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	0.4J	<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	1.9	6.2	3.1	<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

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result MW-17-4 03-02933-5
Dilution Factor				1
1,4-DIOXANE	8270-SIM	μg/L	1	<1

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

[a] MDL reported.

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: 03-2933

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Case Narrative

Project: JPL/04-4428.10

For GEOFON, Inc.

APCL Service No: 03-2933

1. Sample Identification

The sample identifications are listed in the following table:

GEOFON, Inc. Sample ID	APCL Sample ID
MW-17-5	03-02933-6
MW-17-4	03-02933-5
MW-17-3	03-02933-4
MW-17-2	03-02933-3
MW-17-1	03-02933-2
TB-6-4/28/03	03-02933-7
EB-6-4/28/03	03-02933-1

2. Analytical Methodology

Samples are analyzed by EPA methods

524.2 (Volatile Organic Compounds),
7196A (Chromium (VI)),
314.0 (Perchlorate, low level),
300.0 (Anions by IC),
SM2320B (Carbonate),
SM2320B (Bicarbonate),
9040B (pH),
160.1 (Solids, Total Dissolved (TDS));
200.7 (Metals by ICP),
200.9 (Arsenic, As, by GFAA),
8270C-SIM (1,4-Dioxane),

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

(1) EPA 524.2:

Surrogate BFB recovery in the sample MW-17-1 was 134%, higher than 70-129% control limits. No target analytes above reporting limits were detected in this sample.

"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

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CHAIN-OF-CUSTODY RECORD

LABORATORY COPY

MW-17 0023

GEOFON's LAB COORDINATOR: Brad Shojaee	LAB COORDINATOR'S PHONE: (909) 396-7662	LAB COORDINATOR'S FAX: (909) 396-1455	LABORATORY SERVICE ID: —	LABORATORY CONTACT: Kenny Chan	MAIL REPORT (COMPANY NAME): GEOFON, INC.
PROJECT NAME: GW MON-2Q03	PROJECT LOCATION: MW-17 (Harriet & Casitas)	PROJECT NUMBER: 04-4428.10	LABORATORY PHONE: (909) 590-1828	LABORATORY FAX: (909) 590-1498	RECIPIENT NAME: Leo W. Williamson
PROJECT CONTACT: Leo W. Williamson	PROJECT PHONE NUMBER: (714) 920-8729	PROJECT FAX: (909) 396-1455	LABORATORY ADDRESS: 13760 Magnolia Ave		ADDRESS: 22632 Golden Springs Dr. #270
PROJECT ADDRESS: 4800 Oak Grove Dr.	CITY, STATE AND ZIPCODE: Pasadena, CA.	CLIENT: US NAVY, SWDIV	CITY, STATE AND ZIPCODE: Chino, CA. 91710		CITY, STATE AND ZIPCODE: Diamond Bar, CA. 91765
PROJECT MANAGER: Asrar Faheem	PROJECT MANAGER'S PHONE: (909) 396-7662	PROJECT MANAGER'S FAX: (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)	SIM 2320B (Carb. / Bicarb.)	300.0 (Cl / SO4 / NO3)	314.0 (Perchlorate)	160.1 (TDS) / 9040B (pH)	200.8 (Cr+Pb)	Comments
1	MW-17-5	H_2O	4/28/03	800	HCl NONE HNO_3	3+1+ 1+1	III	NORMAL	X	X	X	X	X	X	X	X	MINERALS: Na/K/Ca/As/Mg/Fe
2	MW-17-4	↓	↓	950	↓	↓	↓	↓	X	X	X	X	X	X	X	X	
3	MW-17-3	↓	↓	1035	↓	↓	↓	↓	X	X	X	X	X	X	X	X	
4	MW-17-2	↓	↓	1150	↓	↓	↓	↓	X	X	X	X	X	X	X	X	MS/MSD
5	MW-17-1	↓	↓	1230	↓	↓	↓	↓	X	X	X	X	X	X	X	X	
6																	
7	TB-6-4/28/03	H_2O	—	—	HCl	2	III	NORMAL	X								2933
8	EB-6-4/28/03	↓	4/28/03	1050	HCl NONE HNO_3	3+1+ 1+1	↓	↓	X	X	X	X	X	X	X	X	
9																	2933
10																	

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]	4/28/03	1400
[illegible]	[illegible]	4/28/03	1510

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

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-17 0024

GEOFON 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-17 (Harriet & Casitas)	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
4900 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.	Analyses: 8270 SIM (1,4-Dioxane)	Analyses: 1625M (NDMA)							Comments
1	MW-17-4	H_2O	4/28/03	950	NONE	2L + 2L	III	NORMAL	X	X							
2																	
3																	
4																	
5																	
6																	2933
7																	
8																	
9																	2993
10																	

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	[signature]	4/28/03	1400
[signature]	[signature]	4/28/03	1510

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

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

Sample Receiving Checklist

APCL ServiceID: 2933 **Client Name/Project:** Geofon

1. **Sample Arrival**
   Date/Time Received 4/28/03 Date/Time Opened 4/28/03 1510 By (name): Kenny Chan
   Custody Transfer: ☐ Client ☐ Golden State ☐ UPS ☐ US Mail ☐ FedEx ☑ APCL Empl Adam Wood

2. **Chain-of-Custody (CoC)**
   ☑ With Samples? ☐ Faxed? ☐ Client has Copy? ☐ Signed, dated? By:
   ☑ Project ID? ☑ Analyses Clear? ☐ Hold Samples? #on Hold ____ # Received 8
   ☑ CoC/Docs Zip-Locked under lid? ☐ Compos.#: ☑ #Samples OK?
   ☐ Discrepancies? ☐ Client notified? ☐ Response (attach docs):

3. **Shipping Container/Cooler**
   ☑ Cooler Used? # of 2 Cooled by: ☑ Ice ☐ Blue Ice ☐ Dry Ice ☐ None
   Temp °C 3.8 4.2
   (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: 5 days ☐ 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: 28 Apr 2003 Time: 7:30 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.

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

Sample Login: Check List

03-02933 (0470_ 134) (2202777_ 134)

04/28/03

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:	*04/28/03 1510*
		COC No.	
☐	Shipping Information	Shipping Company	*APCL pick up*
		Packing Information:	*Cooler/Ice Chester*
		Cooler Temperature:	*3.8 4.2 °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-17-5	VOC	03-02933-6-α	W	V	C	40	3	G	042803	N	0	6	☐
	MW-17-5	Metal	03-02933-6-β	W	P	N	500	1	G	042803	N	0	6	☐
	MW-17-5	300	03-02933-6-γ	W	P		1000	1	G	042803	N	0	6	☐
2	MW-17-4	VOC	03-02933-5-α	W	V	C	40	3	G	042803	N	0	6	☐
	MW-17-4	Metal	03-02933-5-β	W	P	N	500	1	G	042803	N	0	6	☐
	MW-17-4	300	03-02933-5-γ	W	P		1000	1	G	042803	N	0	6	☐
	MW-17-4	Dioxane	03-02933-5-δ	W	G		1000	2	G	042803	N	0	6	☐
3	MW-17-3	VOC	03-02933-4-α	W	V	C	40	3	G	042803	N	0	6	☐
	MW-17-3	Metal	03-02933-4-β	W	P	N	500	1	G	042803	N	0	6	☐
	MW-17-3	300	03-02933-4-γ	W	P		1000	1	G	042803	N	0	6	☐
4	MW-17-2	VOC	03-02933-3-α	W	V	C	40	9	G	042803	N	0	6	☐
	MW-17-2	Metal	03-02933-3-β	W	P	N	500	3	G	042803	N	0	6	☐
	MW-17-2	300	03-02933-3-γ	W	P		1000	3	G	042803	N	0	6	☐
5	MW-17-1	VOC	03-02933-2-α	W	V	C	40	3	G	042803	N	0	6	☐
	MW-17-1	Metal	03-02933-2-β	W	P	N	500	1	G	042803	N	0	6	☐
	MW-17-1	300	03-02933-2-γ	W	P		1000	1	G	042803	N	0	6	☐
6	TB-6-4/28/03	VOC	03-02933-7	W	V	C	40	2	G	042803	N	0	6	☐
7	EB-6-4/28/03	VOC	03-02933-1-α	W	V	C	40	3	G	042803	N	0	6	☐
	EB-6-4/28/03	Metal	03-02933-1-β	W	P	N	500	1	G	042803	N	0	6	☐
	EB-6-4/28/03	300	03-02933-1-γ	W	P		1000	1	G	042803	N	0	6	☐

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/SM4500NO3* 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

Level C Data Package Deliverables

Volatile Organics

Applied P & Ch Laboratory

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:	32933	Collected by:	
		Lab Sample ID:	03G2269-MB-01	Received Date:	04/30/2003
Sample ID:	**03G2269-MB-01**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Method Blank	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	524.2	Prep. Date:	04/30/03	Anal. Date:	04/30/03
Batch No:	03G2269	Prep. No:	–	Anal. Time:	21:03
Data File Name:	G2269K02	Sample Amount:	25 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	1.1 [a]	<1.1	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	1.8 [a]	<1.8	U
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	110
2	1,2-DICHLOROETHANE-D4	17060-07-0	70-129	85
3	DIBROMOFLUOROMETHANE	1868-53-7	70-122	91
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	86
2	1,4-DICHLOROBENZENE-D4	3855-82-1	50-200	87
3	FLUOROBENZENE	462-06-6	50-200	96
# of out-of-control				0

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

[a] MDL reported.

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:	04/28/2003
Project ID:	JPL	Service ID:	32933	Collected by:	Leo Williamson
		Lab Sample ID:	03-2933-1	Received Date:	04/28/2003
Sample ID:	**EB-6-4/28/03**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	524.2	Prep. Date:	04/30/03	Anal. Date:	04/30/03
Batch No:	03G2269	Prep. No:	–	Anal. Time:	21:31
Data File Name:	2933-01	Sample Amount:	25 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	1.1 [a]	<1.1	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	1.8 [a]	<1.8	U
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	103
2	1,2-DICHLOROETHANE-D4	17060-07-0	70-129	86
3	DIBROMOFLUOROMETHANE	1868-53-7	70-122	91
4	TOLUENE-D8	2037-26-5	73-129	106
# 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	94
3	FLUOROBENZENE	462-06-6	50-200	101
# of out-of-control				0

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

[a] MDL reported.

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:	04/28/2003
Project ID:	JPL	Service ID:	32933	Collected by:	Leo Williamson
		Lab Sample ID:	03-2933-2	Received Date:	04/28/2003
Sample ID:	**MW-17-1**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	524.2	Prep. Date:	04/30/03	Anal. Date:	04/30/03
Batch No:	03G2269	Prep. No:	–	Anal. Time:	22:00
Data File Name:	2933-02	Sample Amount:	25 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	1.1 [a]	<1.1	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	1.8 [a]	<1.8	U
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	134
2	1,2-DICHLOROETHANE-D4	17060-07-0	70-129	92
3	DIBROMOFLUOROMETHANE	1868-53-7	70-122	97
4	TOLUENE-D8	2037-26-5	73-129	111
# of out-of-control				1

Internal Standard			Control Limit, %	IS Rec.%
1	CHLOROBENZENE-D5	3114-55-4	50-200	81
2	1,4-DICHLOROBENZENE-D4	3855-82-1	50-200	72
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.

[a] MDL reported.

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:	04/28/2003
Project ID:	JPL	Service ID:	32933	Collected by:	Leo Williamson
		Lab Sample ID:	03-2933-3	Received Date:	04/28/2003
Sample ID:	**MW-17-2**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	524.2	Prep. Date:	04/30/03	Anal. Date:	04/30/03
Batch No:	03G2269	Prep. No:	–	Anal. Time:	22:28
Data File Name:	2933-03	Sample Amount:	25 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	1.1 [a]	<1.1	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	1.8 [a]	<1.8	U
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	0.9	
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	87
3	DIBROMOFLUOROMETHANE	1868-53-7	70-122	88
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	98
2	1,4-DICHLOROBENZENE-D4	3855-82-1	50-200	95
3	FLUOROBENZENE	462-06-6	50-200	104
# of out-of-control				0

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

[a] MDL reported.

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:	04/28/2003
Project ID:	JPL	Service ID:	32933	Collected by:	Leo Williamson
		Lab Sample ID:	03-2933-4	Received Date:	04/28/2003
Sample ID:	**MW-17-3**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	524.2	Prep. Date:	04/30/03	Anal. Date:	04/30/03
Batch No:	03G2269	Prep. No:	–	Anal. Time:	22:57
Data File Name:	2933-04	Sample Amount:	25 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	6.4	
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	1.7	
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	1.1 [a]	<1.1	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	1.8 [a]	<1.8	U
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	1.9	
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	87
3	DIBROMOFLUOROMETHANE	1868-53-7	70-122	89
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	98
2	1,4-DICHLOROBENZENE-D4	3855-82-1	50-200	99
3	FLUOROBENZENE	462-06-6	50-200	103
# of out-of-control				0

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

[a] MDL reported.

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:	04/28/2003
Project ID:	JPL	Service ID:	32933	Collected by:	Leo Williamson
		Lab Sample ID:	03-2933-5	Received Date:	04/28/2003
Sample ID:	**MW-17-4**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	524.2	Prep. Date:	04/30/03	Anal. Date:	04/30/03
Batch No:	03G2269	Prep. No:	–	Anal. Time:	23:26
Data File Name:	2933-05	Sample Amount:	25 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	1	
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	1.1 [a]	<1.1	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	1.8 [a]	<1.8	U
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	0.4	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	6.2	
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	108
2	1,2-DICHLOROETHANE-D4	17060-07-0	70-129	89
3	DIBROMOFLUOROMETHANE	1868-53-7	70-122	92
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	102
2	1,4-DICHLOROBENZENE-D4	3855-82-1	50-200	96
3	FLUOROBENZENE	462-06-6	50-200	104
# of out-of-control				0

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

[a] MDL reported.

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:	04/28/2003
Project ID:	JPL	Service ID:	32933	Collected by:	Leo Williamson
		Lab Sample ID:	03-2933-6	Received Date:	04/28/2003
Sample ID:	**MW-17-5**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	524.2	Prep. Date:	04/30/03	Anal. Date:	04/30/03
Batch No:	03G2269	Prep. No:	–	Anal. Time:	23:55
Data File Name:	2933-06	Sample Amount:	25 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	0.6	
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	1.1 [a]	<1.1	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	1.8 [a]	<1.8	U
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	3.1	
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	119
2	1,2-DICHLOROETHANE-D4	17060-07-0	70-129	92
3	DIBROMOFLUOROMETHANE	1868-53-7	70-122	95
4	TOLUENE-D8	2037-26-5	73-129	108
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	CHLOROBENZENE-D5	3114-55-4	50-200	93
2	1,4-DICHLOROBENZENE-D4	3855-82-1	50-200	87
3	FLUOROBENZENE	462-06-6	50-200	101
# of out-of-control				0

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

[a] MDL reported.

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:	04/28/2003
Project ID:	JPL	Service ID:	32933	Collected by:	Leo Williamson
		Lab Sample ID:	03-2933-7	Received Date:	04/28/2003
Sample ID:	**TB-6-4/28/03**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	524.2	Prep. Date:	05/01/03	Anal. Date:	05/01/03
Batch No:	03G2269	Prep. No:	–	Anal. Time:	00:24
Data File Name:	2933-07	Sample Amount:	25 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	1.1 [a]	<1.1	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	1.8 [a]	<1.8	U
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	109
2	1,2-DICHLOROETHANE-D4	17060-07-0	70-129	87
3	DIBROMOFLUOROMETHANE	1868-53-7	70-122	91
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	96
2	1,4-DICHLOROBENZENE-D4	3855-82-1	50-200	92
3	FLUOROBENZENE	462-06-6	50-200	101
# of out-of-control				0

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

[a] MDL reported.

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-2C

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:	032933
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03G2269		

#	Client Sample No	Lab Sample ID	S1 % #	S2 % #	S3 % #	S4 % #	TOT OUT
1	03G2269-LCS-01	03G2269-LCS-01	102	87	96	101	0
2	MW-17-2MS	03-2933-3MS	103	84	96	105	0
3	MW-17-2MSD	03-2933-3MSD	103	84	98	104	0
4	03G2269-MB-01	03G2269-MB-01	110	85	91	103	0
5	EB-6-4/28/03	03-2933-1	103	86	91	106	0
6	MW-17-1	03-2933-2	134 *	92	97	111	1
7	MW-17-2	03-2933-3	101	87	88	101	0
8	MW-17-3	03-2933-4	102	87	89	102	0
9	MW-17-4	03-2933-5	108	89	92	105	0
10	MW-17-5	03-2933-6	119	92	95	108	0
11	TB-6-4/28/03	03-2933-7	109	87	91	104	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:	32933
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03G2269		
LCS Filename:	G2269L01	Date Analyzed:	043003	Time Analyzed:	18:09
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	20.1	101	65-120
CHLOROBENZENE	μg/L	20	0	22.3	112	65-134
1,1-DICHLOROETHENE	μg/L	20	0	18.7	94	65-127
TOLUENE	μg/L	20	0	19.7	99	65-134
TRICHLOROETHENE	μg/L	20	0	19.8	99	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:	32933
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03G2269		
MS Filename:	G2269M01	Date Analyzed:	043003	Time Analyzed:	18:38
MSD Filename:	G2269N01	Date Analyzed:	043003	Time Analyzed:	19:08
MS Sample No:	**MW-17-2**	Sample Lab ID:	03-2933-3		

Spiked Components	Unit	Spike Added	Concentration Unspiked	Concentration MS	MS Rec% #	QC Limit, % REC
BENZENE	μg/L	20	0	20.6	103	65-121
CHLOROBENZENE	μg/L	20	0	22.7	114	65-134
1,1-DICHLOROETHENE	μg/L	20	0	20.0	100	65-127
TOLUENE	μg/L	20	0	20.2	101	65-134
TRICHLOROETHENE	μg/L	20	0.9	20.5	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	20.6	103	0	28	65-121
CHLOROBENZENE	μg/L	20	22.4	112	2	35	65-134
1,1-DICHLOROETHENE	μg/L	20	19.4	97	3	31	65-127
TOLUENE	μg/L	20	20.0	100	1	35	65-134
TRICHLOROETHENE	μg/L	20	20.9	100	2	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:	32933
Project ID:	JPL	Project No:	04-4428.10	Analysis Date:	04/30/03
		Sample Matrix:	Water	Analysis Time:	21:03
Sample ID:	**03G2269-MB-01**	Batch No:	03G2269	Instrument ID:	GC/MS: G
Lab Sample ID:	03G2269-MB-01	Data File Name:	G2269K02	GC Column:	DB-VEX
		Heated Purge: (Y/N)	N	Column ID:	0.45 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	03G2269-LCS-01	03G2269-LCS-01	Lab Control Spike	G2269L01	04/30/03	18:09
2	MW-17-2MS	03-2933-3MS	Matrix Spike	G2269M01	04/30/03	18:38
3	MW-17-2MSD	03-2933-3MSD	Matrix Spike Duplicate	G2269N01	04/30/03	19:08
4	EB-6-4/28/03	03-2933-1	Field Sample	2933-01	04/30/03	21:31
5	MW-17-1	03-2933-2	Field Sample	2933-02	04/30/03	22:00
6	MW-17-2	03-2933-3	Field Sample	2933-03	04/30/03	22:28
7	MW-17-3	03-2933-4	Field Sample	2933-04	04/30/03	22:57
8	MW-17-4	03-2933-5	Field Sample	2933-05	04/30/03	23:26
9	MW-17-5	03-2933-6	Field Sample	2933-06	04/30/03	23:55
10	TB-6-4/28/03	03-2933-7	Field Sample	2933-07	05/01/03	00:24
11						
12						
13						
14						
15						
16						
17						
18						
19						
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21						
22						
23						
24						
25						

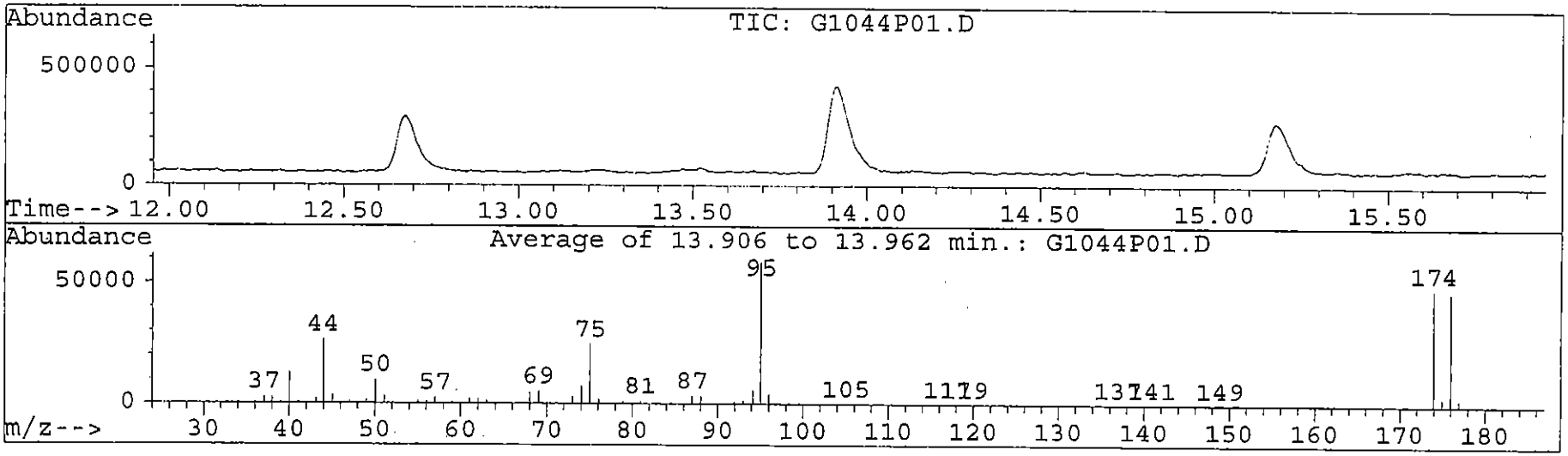
BFB

4726

Data File : C:\HPCHEM\1\DATA\03G1044\G1044P01.D
Acq On : 10 Jan 03 1:51 pm
Sample : ##03g1044, w
Misc :

Vial: 16
Operator: Eddie
Inst : GCMS-G
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\E524G003.M
Title : **Applied P &Ch Lab** EPA 524.2



Peak Apex is scan: 1479

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	16.9	9968	PASS
75	95	30	60	41.9	24658	PASS
95	95	100	100	100.0	58860	PASS
96	95	5	9	7.2	4263	PASS
173	174	0	2	0.0	0	PASS
174	95	50	100	82.4	48487	PASS
175	174	5	9	7.2	3468	PASS
176	174	95	101	96.8	46953	PASS
177	176	5	9	6.3	2949	PASS

G1044[illegible]1.D E524G003.M Mon Jan 13 09:24:09 [illegible]3

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

Lab Name : APPLIED P & CH LAB Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 03-2933

Lab File ID: G1044 P01 BFB Injection Date: 01/10/2003

Instrument ID: GCMS-G BFB Injection Time: 1351

GC Column: VOCOL ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	%RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	16.9
75	30.0 - 60.0% of mass 95	41.9
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.2
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	82.4
175	5.0 - 9.0% of mass 174	5.9 (7.2)1
176	95.0 - 101.0% of mass 174	79.8 (96.8)1
177	5.0 - 9.0% of mass 176	5.0 (6.3)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	003-A0003	003-A0003.D	01/10/03	1427
02	VSTD002	003-002	003-0002.D	01/10/03	1526
03	VSTD010	003-0010	003-0010.D	01/10/03	1555
04	VSTD020	003-0020	003-0020.D	01/10/03	1624
05	VSTD040	003-0040	003-0040.D	01/10/03	1654
06	VSTD080	003-0080	003-0080.D	01/10/03	1723
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
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20					
21					
22					

INITIAL CALIBRATION SUMMARY

Method File E524G003
Last Calibration Update Mon Jan 13 09:57:17 2003

Level 1 File Name	3-0003.D	**Level 1 ID**	0.3
Level 2 File Name	3-002.D	**Level 2 ID**	2
Level 3 File Name	3-010.D	**Level 3 ID**	10
Level 4 File Name	3-020.D	**Level 4 ID**	20
Level 5 File Name	3-040.D	**Level 5 ID**	40
Level 6 File Name	3-080.D	**Level 6 ID**	80
Level 7 File Name	3-020.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 I1 1	765834	768596	755237	739905	721219	703721	-1	------	------	------	------
3 di-Cl-di-F-methane 85 87	9202	44272	235359	427426	820884	1551879	-1	0.0191	0.2750	0.0000	0.9996
4 Chloromethane 50 52	4751	30836	163038	374044	803175	1514667	-1	0.0000	0.2433	0.0000	0.1388
9 F114 85 135	8035	46094	252154	462947	909235	1714061	-1	0.0000	0.3193	0.0000	0.0593
5 vinyl chloride 62 64	4990	35625	183259	344227	682967	1258237	-1	0.0000	0.2307	0.0000	0.0396
6 bromomethane 94 96	5861	43488	181174	281305	570773	1116110	-1	0.0126	0.1961	0.0000	0.9990
7 Chloroethane 64 66	3629	27223	133510	250119	505034	952606	-1	0.0000	0.1709	0.0000	0.0425
8 tri-Cl-F-methane 101 103	7295	56379	326202	612174	1192828	2238212	-1	0.0000	0.3902	0.0000	0.1070
111 isopropyl alcohol x10	1236	8181	34708	55395	131600	244204	-1	0.0000	0.0045	0.0000	0.1257
100 ethyl ether x5	20361	108089	509174	980952	1975186	3742221	-1	0.0000	0.1425	0.0000	0.1211
102 Acrolein x10	3234	15074	75489	215710	340415	601157	-1	0.0000	0.0114	0.0000	0.1719
119 methyl acetate	4062	15788	82815	187169	-1	696519	-1	-0.0033	0.1242	0.0000	0.9997
104 Carbon disulfide	21121	133095	626926	1173322	2357195	4372134	-1	0.0000	0.8336	0.0000	0.0625
103 Acrylonitrilex10	4569	37044	178667	348877	701313	1341637	-1	0.0000	0.0239	0.0000	0.0128
95 Acetone x10	989	41993	128289	268909	465240	912905	-1	0.0227	0.0159	0.0000	0.9991
108 F-113	5327	41068	259145	480691	925581	1749444	-1	0.0000	0.2998	0.0000	0.1395
13 11-dichloroethene 61 96	8641	61263	309126	575822	1147783	2146767	-1	0.0000	0.3920	0.0000	0.0313
101 Acetonnitrilex10	2063	1527	53569	97490	189257	353648	-1	0.0013	0.0063	0.0000	0.9985
109 Iodomethane	3901	55824	290992	473953	954242	1666625	-1	0.0467	0.2964	0.0000	0.9961
113 Tert butyl alcohol x10	2556	18436	60720	133851	240444	485913	-1	0.0016	0.0086	0.0000	0.9991
18 methylene chloride 49 84	28023	111315	375753	602942	1052979	-1	-1	0.0818	0.3520	0.0000	0.9932

112 Allyl chloride	11807	73643	318868	616004	1168854	2056270	-1	0.0000	0.4336	0.0000	0.1239
200 Nitro methane x10	10089	68361	334791	633827	1264975	2385881	-1	0.0000	0.0436	0.0000	0.0192
10 t-Bu-Me-ether 73 57	19344	73627	300489	618307	1211982	2415631	-1	-0.0086	0.4281	0.0000	0.9997
19 t-12-di-Cl-ethene 96 61	7446	45222	225516	438020	867973	1629626	-1	0.0000	0.3005	0.0000	0.0405
98 Vinyl acetate x5	35861	233914	1080092	1161950	4543111	6984572	-1	0.0000	0.2704	0.0000	0.2248
21 11-dichloroethane 63 83	11490	83925	403704	780313	1539657	2853804	-1	0.0000	0.5248	0.0000	0.0336
91 2-butanone MEKx10	23960	146366	680153	1296553	2708302	5159574	-1	0.0000	0.0938	0.0000	0.0620
115 Di isoprop ether	2475	206054	993426	1953682	3898884	7414434	-1	0.0032	1.3231	0.0000	0.9998
22 c-12-di-Cl-ethene 96 61	6875	46067	219592	430734	857123	1613152	-1	0.0000	0.2941	0.0000	0.0183
23 22-Dichloropropane 77 97	13155	71811	330092	619878	1207116	2269373	-1	0.0000	0.4529	0.0000	0.1383
24 Br-Cl-methane 128 130	956	15248	78733	153832	312235	593248	-1	-0.0008	0.1060	0.0000	0.9998
25 chloroform 83 85	14881	81604	372529	722194	1453363	2739754	-1	0.0000	0.5251	0.0000	0.1186
201 Ethyl acetate x2	-1	44403	206670	296783	873148	1526995	-1	0.0000	0.1337	0.0000	0.1475
116 ETBE	20917	124488	594002	1154600	2264664	4329036	-1	0.0000	0.8068	0.0000	0.0650
117 Iso-butyl alcohol X10	5582	44403	221032	297076	880890	1546333	-1	0.0000	0.0268	0.0000	0.1460
26 tetrahydrofuranx5	1945	8407	36840	75144	146600	287877	-1	0.0000	0.0102	0.0000	0.0418
27 Di-Br-F-Methane (S1) 111 1	13867	59189	265788	517816	1038870	1963588	-1	0.0096	0.3493	0.0000	0.9997
34 111-tri-Cl-ethane 97 99	12459	65859	315664	604949	1193974	2324189	-1	0.0000	0.4374	0.0000	0.1185
30 12-dichloroethane 64 62	549	31555	154021	298086	600265	1155412	-1	-0.0025	0.2060	0.0000	0.9999
35 11-Di-Cl-propene 75 110	9488	58117	286388	549558	1091787	2099663	-1	0.0000	0.3822	0.0000	0.0404
29 1,2-di-Cl-ethane-d4 [Surr] 10	-1	26643	124715	242470	475685	894560	-1	0.0000	0.1652	0.0000	0.0314
36 benzene 78 52	19613	138554	661631	1277049	2547937	4710056	-1	0.0000	0.8690	0.0000	0.0263
37 CCl4 117 119	7832	47773	267339	493900	981263	1852391	-1	0.0000	0.3348	0.0000	0.0432
97 thiophene	10129	70133	323713	623624	1239916	2337761	-1	0.0000	0.4320	0.0000	0.0339
118 TAME	4367	97622	406861	792558	1521011	3045504	-1	0.0000	0.5555	0.0000	0.0806
39 12-di-Cl-propane 63 76	5869	38931	190695	376101	741594	1426638	-1	0.0000	0.2543	0.0000	0.0066
40 trichloroethene 130 132	5805	41064	207771	403682	804090	1515012	-1	0.0000	0.2693	0.0000	0.0339
96 Me-methacrylate	1472	19691	65318	123371	250724	519513	-1	-0.0068	0.0920	0.0000	0.9983
42 Br-di-Cl-methane 83 85	10138	55994	256691	484084	955698	1823535	-1	0.0000	0.3546	0.0000	0.1265
41 dibromomethane 174 172	2292	17911	96884	194764	383350	714384	-1	0.0000	0.1227	0.0000	0.1029

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
45 c-13-di-Cl-propene 75 110	7832	48533	229072	445153	890451	1727952	-1	------	------	------	------
55 toluene-d8(S2) 100 99	-1	78299	377922	725871	1455135	2774904	-1	0.0000	0.4995	0.0000	0.0157
92 2-ClEt-Vi-ether10	10352	80060	410701	820365	1655105	3234891	-1	0.0000	0.0536	0.0000	0.0868
56 toluene 91 92	21278	126101	601438	1149709	2291459	4425814	-1	0.0000	0.8167	0.0000	0.0680

107 Et methacrylate	-1	35707	132945	165590	512644	828103	-1	0.0000	0.1690	0.0000	0.2625
93 2-Hexanone x5	10744	47646	218029	368204	831419	1601350	-1	0.0000	0.0568	0.0000	0.0778
48 112-tri-Cl-Et 97 83	5203	21908	90597	172036	347876	664699	-1	0.0031	0.1179	0.0000	0.9998
58 1,2-di-br-ethane 107 109	1144	19207	94012	191133	371448	723238	-1	-0.0016	0.1288	0.0000	1.0000
51 di-Br-Cl-methane 129 127	2693	27173	125300	243477	489254	967601	-1	0.0000	0.1610	0.0000	0.1359
46 t-13-di-cl-propene 75 110	4584	30276	155530	301394	594704	1109294	-1	0.0000	0.2015	0.0000	0.0211
105 1-Chlorohexane	12961	43864	205359	374248	719249	1336615	-1	0.0247	0.2364	0.0000	0.9994
47 Cl-benzene-d5, I2	226795	229493	225971	224981	233528	241678	-1	0.0000	1.0000	0.0000	0.0000
54 MIBK	1407	13676	74160	143757	303184	587112	-1	0.0184	0.3053	0.0000	0.9988
49 1,3-di-cl-propane 76 78	4247	30516	157929	310529	604220	1155285	-1	0.0000	0.6537	0.0000	0.0595
59 tetra-Cl-ethene 166 168	5221	40927	216892	417298	825820	1643233	-1	0.0000	0.8800	0.0000	0.0760

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
60 chlorobenzene 112 77	9971	71440	352480	668143	1330525	2470738	-1	0.0000	------	------	------
61 1112-tetra-Cl-Et 131 133	3219	28400	138607	283855	562377	1108773	-1	0.0000	0.5853	0.0000	0.0996
64 ethylbenzene 91 106	21430	140640	637777	1239073	2446417	4804958	-1	0.0000	2.8157	0.0000	0.0906
65 m/p-Xylenes x2	31419	213036	1000145	1911139	3754507	7222435	-1	0.0000	2.1406	0.0000	0.0830
99 1-4-di-Cl-butane	5503	32572	146606	276558	532573	1001628	-1	0.0000	0.6450	0.0000	0.1606
52 bromoform 173 175	806	13982	71698	143599	281887	544898	-1	0.0303	0.2823	0.0000	0.9980
66 styrene 104 78	10850	75317	352645	677932	1346269	2563056	-1	0.0000	1.5116	0.0000	0.0758
67 o-xylene 91 106	16715	110603	485194	915641	1764503	3287299	-1	0.0000	2.1063	0.0000	0.1398
68 1122-Tetra-Cl-Et 83 85	2658	21540	91096	173152	326262	625224	-1	0.0000	0.3868	0.0000	0.1294
110 t-1,4-dichloro-2-butene	1095	7032	17679	27009	54200	103110	-1	0.0235	0.0507	0.0000	0.9991
106 Cl-benzyl	6053	24517	121704	238713	457227	866531	-1	0.0784	0.4469	0.0000	0.9969
62 1,4-DCB-d4 150 152 I3	197143	197148	188831	184633	176207	164785	-1	0.0000	1.0000	0.0000	0.0000
69 123-tri-Cl-Pr 110 97	253	4401	21971	45443	89331	172722	-1	0.0000	0.1218	0.0000	0.0642
70 4-Br-1-F-Bz (S3) 174 95	-1	36886	165570	327081	627145	1159540	-1	0.0000	0.8935	0.0000	0.0269
71 isopropylbenzene 105 120	16442	135584	641793	1217921	2372165	4528346	-1	0.0000	3.2861	0.0000	0.0771
72 bromobenzene 156 158	3119	27613	143515	285095	554412	1030644	-1	0.0000	0.7214	0.0000	0.1387
73 n-propylbenzene 120 78	4297	36443	173970	335858	643879	1212584	-1	0.0000	0.8858	0.0000	0.0883
74 2-Cl-Tl 126 128	3821	23738	106793	201349	427470	745993	-1	0.0000	0.5885	0.0000	0.0623
75 4-Cl-Tl 126 128	4042	32882	163598	289530	594245	1075809	-1	0.0000	0.8045	0.0000	0.0813
76 135-tri-Me-Bz 105 120	14680	107323	509842	969387	1885346	3580223	-1	0.0000	2.6533	0.0000	0.0343
79 tert-butylbenzene 119 91	13115	113211	533176	1020985	1994231	3739615	-1	0.0000	2.7239	0.0000	0.0919
78 124-tri-Me-Bz 105 120	11184	96787	424953	847796	1639260	3054447	-1	0.0000	2.2558	0.0000	0.0848
80 13-di-Cl-Bz 146 148	5522	45648	238597	400250	844281	1658291	-1	0.0000	1.1491	0.0000	0.1087

82	14-di-Cl-Bz 146 148	9029	69544	305231	644124	1193857	2207723	-1	0.0000	1.6699	0.0000	0.0524
81	sec-butylbenzene 105 134	19695	163551	797663	1465228	2859247	5499576	-1	0.0000	3.9831	0.0000	0.0835
77	4-iso-Pr-toluene 119 134	14306	119820	572630	1085210	2064029	3804782	-1	0.0000	2.8739	0.0000	0.0804
84	12-di-Cl-benzene 146 148	5444	45355	219614	410082	812246	1524040	-1	0.0000	1.1088	0.0000	0.0849
85	n-butylbenzene 91 134	17944	117913	579573	1096665	2099124	3991637	-1	0.0000	3.0116	0.0000	0.0128
86	12-diBr-3-Cl-Pra 157 155	-1	2498	14611	31395	62914	120318	-1	0.0000	0.0813	0.0000	0.1395
87	124-tri-Cl-Bz 180 182	3158	29532	158333	322231	604462	1187497	-1	-0.0539	0.9002	0.0000	0.9995
88	naphthalene 128 129	4753	21798	116373	245906	459400	922945	-1	0.0000	0.6651	0.0000	0.1268
90	123-tri-Cl-Bz 180 182	2940	22060	121207	239739	448256	845940	-1	0.0000	0.6042	0.0000	0.1029
89	hx-Cl-butadiene 225 260	2553	24644	130257	244690	466707	859594	-1	0.0135	0.6525	0.0000	0.9999

Response Factor Report GCMS-G

Method : C:\HPCHEM\1\METHODS\E524G003.M
Title : **Applied P &Ch Lab** EPA 524.2
Last Update : Mon Jan 13 09:57:17 2003
Response via : Initial Calibration

Calibration Files
0.3 =3-0003.D 2 =3-002.D 10 =3-010.D
20 =3-020.D 40 =3-040.D 80 =3-080.D

		Compound	0.3	2	10	20	40	80	Avg	%RSD	r2
1)	I	1 Fluorobenzene I1	ISTD								
2)		3 di-Cl-di-F-metha	0.401	0.288	0.312	0.289	0.285	0.276	0.308	15.17	1.000
3)	P	4 Chloromethane		0.201	0.216	0.253	0.278	0.269	0.243	13.88	
4)		9 F114 85 135	0.350	0.300	0.334	0.313	0.315	0.304	0.319	5.93	
5)	C	5 vinyl chloride	0.217	0.232	0.243	0.233	0.237	0.223	0.231	3.96	
6)		6 bromomethane	0.255	0.283	0.240	0.190	0.198	0.198	0.227	16.60	0.999
7)		7 Chloroethane	0.158	0.177	0.177	0.169	0.175	0.169	0.171	4.25	
8)		8 tri-Cl-F-methane	0.318	0.367	0.432	0.414	0.413	0.398	0.390	10.70	
9)		111 isopropyl alcoh		0.005	0.005	0.004	0.005	0.004	0.005#	12.57	
10)		100 ethyl ether x5	0.177	0.141	0.135	0.133	0.137	0.133	0.143	12.11	
11)		102 Acrolein x10		0.010	0.010	0.015	0.012	0.011	0.011#	17.19	
12)		119 methyl acetate	0.177	0.103	0.110	0.126		0.124	0.128	22.73	1.000
13)		104 Carbon disulfid	0.919	0.866	0.830	0.793	0.817	0.777	0.834	6.25	
14)		103 Acrylonitrilex1		0.024	0.024	0.024	0.024	0.024	0.024#	1.28	
15)		95 Acetone x10		0.027	0.017	0.018	0.016	0.016	0.019#	25.00	0.999
16)		108 F-113	0.232	0.267	0.343	0.325	0.321	0.311	0.300	13.95	
17)	M,C	13 11-dichloroethen	0.376	0.399	0.409	0.389	0.398	0.381	0.392	3.13	
18)		101 Acetonnitrilex1	0.009	0.001	0.007	0.007	0.007	0.006	0.006#	44.01	0.998
19)		109 Iodomethane	0.170	0.363	0.385	0.320	0.331	0.296	0.311	24.45	0.996
20)		113 Tert butyl alco		0.012	0.008	0.009	0.008	0.009	0.009#	17.38	0.999
21)		18 methylene chlori	1.220	0.724	0.498	0.407	0.365		0.643	54.62	0.993
22)		112 Allyl chloride	0.514	0.479	0.422	0.416	0.405	0.365	0.434	12.39	
23)		200 Nitro methane x	0.044	0.044	0.044	0.043	0.044	0.042	0.044#	1.92	
24)		10 t-Bu-Me-ether	0.842	0.479	0.398	0.418	0.420	0.429	0.498	34.33	1.000
25)		19 t-12-di-Cl-ethen	0.324	0.294	0.299	0.296	0.301	0.289	0.301	4.05	
26)		98 Vinyl acetate x5	0.312	0.304	0.286	0.157	0.315	0.248	0.270	22.48	
27)	P	21 11-dichloroethan	0.500	0.546	0.535	0.527	0.534	0.507	0.525	3.36	
28)		91 2-butanone MEKx1	0.104	0.095	0.090	0.088	0.094	0.092	0.094	6.20	

(#) = Out of Range

Response Factor Report GCMS-G

Method : C:\HPCHEM\1\METHODS\E524G003.M
Title : **Applied P &Ch Lab** EPA 524.2
Last Update : Mon Jan 13 09:57:17 2003
Response via : Initial Calibration

Calibration Files
0.3 =3-0003.D 2 =3-002.D 10 =3-010.D
20 =3-020.D 40 =3-040.D 80 =3-080.D

		Compound	0.3	2	10	20	40	80	Avg	%RSD	r^2
29)		115 Di isoprop ethe	0.108	1.340	1.315	1.320	1.351	1.317	1.125	44.32	1.000
30)		22 c-12-di-Cl-ethen	0.299	0.300	0.291	0.291	0.297	0.287	0.294	1.83	
31)		23 22-Dichloropropa	0.573	0.467	0.437	0.419	0.418	0.403	0.453	13.83	
32)		24 Br-Cl-methane	0.042	0.099	0.104	0.104	0.108	0.105	0.094	27.43	1.000
33)	C	25 chloroform	0.648	0.531	0.493	0.488	0.504	0.487	0.525	11.86	
34)		201 Ethyl acetate x		0.144	0.137	0.100	0.151	0.136	0.134	14.75	
35)		116 ETBE	0.910	0.810	0.787	0.780	0.785	0.769	0.807	6.50	
36)		117 Iso-butyl alcoh	0.024	0.029	0.029	0.020	0.031	0.027	0.027#	14.60	
37)		26 tetrahydrofuranx		0.011	0.010	0.010	0.010	0.010	0.010#	4.18	
38)	S	27 Di-Br-F-Methane	0.604	0.385	0.352	0.350	0.360	0.349	0.400	25.18	1.000
39)		34 111-tri-Cl-ethan	0.542	0.428	0.418	0.409	0.414	0.413	0.437	11.85	
40)		30 12-dichloroethan	0.024	0.205	0.204	0.201	0.208	0.205	0.175	42.30	1.000
41)		35 11-Di-Cl-propene	0.413	0.378	0.379	0.371	0.378	0.373	0.382	4.04	
42)	S	29 1,2-di-Cl-ethane		0.173	0.165	0.164	0.165	0.159	0.165	3.14	
43)	M	36 benzene	0.854	0.901	0.876	0.863	0.883	0.837	0.869	2.63	
44)		37 CCl4	0.341	0.311	0.354	0.334	0.340	0.329	0.335	4.32	
45)		97 thiophene	0.441	0.456	0.429	0.421	0.430	0.415	0.432	3.39	
46)		118 TAME		0.635	0.539	0.536	0.527	0.541	0.556	8.06	
47)	C	39 12-di-Cl-propane	0.255	0.253	0.252	0.254	0.257	0.253	0.254	0.66	
48)	M	40 trichloroethene	0.253	0.267	0.275	0.273	0.279	0.269	0.269	3.39	
49)		96 Me-methacrylate		0.128	0.086	0.083	0.087	0.092	0.095	19.43	0.99 P
50)		42 Br-di-Cl-methane	0.441	0.364	0.340	0.327	0.331	0.324	0.355	12.65	
51)		41 dibromomethane	0.100	0.117	0.128	0.132	0.133	0.127	0.123	10.29	
52)		45 c-13-di-Cl-prope	0.341	0.316	0.303	0.301	0.309	0.307	0.313	4.71	
53)	S	55 toluene-d8(S2)		0.509	0.500	0.491	0.504	0.493	0.500	1.57	
54)		92 2-ClEt-Vi-ether1	0.045	0.052	0.054	0.055	0.057	0.057	0.054	8.68	
55)	M C	56 toluene	0.926	0.820	0.796	0.777	0.794	0.786	0.817	6.80	
56)		107 Et methacrylate		0.232	0.176	0.112	0.178	0.147	0.169	26.25	
57)		93 2-Hexanone x5		0.062	0.058	0.050	0.058	0.057	0.057	7.78	

(#) = Out of Range

Response Factor Report GCMS-G

Method : C:\HPCHEM\1\METHODS\E524G003.M
Title : **Applied P &Ch Lab** EPA 524.2
Last Update : Mon Jan 13 09:57:17 2003
Response via : Initial Calibration

Calibration Files
0.3 =3-0003.D 2 =3-002.D 10 =3-010.D
20 =3-020.D 40 =3-040.D 80 =3-080.D

			Compound	0.3	2	10	20	40	80	Avg	%RSD	
58)		48	112-tri-Cl-Et	0.226	0.143	0.120	0.116	0.121	0.118	0.141	30.67	1.000
59)		58	1,2-di-br-ethane	0.050	0.125	0.124	0.129	0.129	0.128	0.114	27.70	1.000
60)		51	di-Br-Cl-methane	0.117	0.177	0.166	0.165	0.170	0.172	0.161	13.59	
61)		46	t-13-di-cl-prope	0.200	0.197	0.206	0.204	0.206	0.197	0.202	2.11	
62)		105	1-Chlorohexane	0.564	0.285	0.272	0.253	0.249	0.237	0.310	40.49	0.999
63)	I	47	Cl-benzene-d5, I2	----------ISTD----------								
64)		54	MIBK	0.207	0.298	0.328	0.319	0.325	0.304	0.297	15.38	0.999
65)		49	1,3-di-cl-propan	0.624	0.665	0.699	0.690	0.647	0.598	0.654	5.95	
66)		59	tetra-Cl-ethene	0.767	0.892	0.960	0.927	0.884	0.850	0.880	7.60	
67)	M P	60	chlorobenzene	1.465	1.556	1.560	1.485	1.424	1.278	1.461	7.13	
68)		61	1112-tetra-Cl-Et	0.473	0.619	0.613	0.631	0.602	0.573	0.585	9.96	
69)	C	64	ethylbenzene	3.150	3.064	2.822	2.754	2.619	2.485	2.816	9.06	
70)		65	m/p-Xylenes x2	2.309	2.321	2.213	2.124	2.010	1.868	2.141	8.30	
71)		99	1-4-di-Cl-butane	0.809	0.710	0.649	0.615	0.570	0.518	0.645	16.06	
72)	P	52	bromoform	0.118	0.305	0.317	0.319	0.302	0.282	0.274	28.23	0.998
73)		66	styrene	1.595	1.641	1.561	1.507	1.441	1.326	1.512	7.58	
74)		67	o-xylene	2.457	2.410	2.147	2.035	1.889	1.700	2.106	13.98	
75)	P	68	1122-Tetra-Cl-Et	0.391	0.469	0.403	0.385	0.349	0.323	0.387	12.94	
76)		110	t-1,4-dichloro-		0.153	0.078	0.060	0.058	0.053	0.081	51.75	0.999
77)		106	Cl-benzyl	0.890	0.534	0.539	0.531	0.489	0.448	0.572	27.91	0.996
78)	I	62	1,4-DCB-d4 150 152	----------ISTD----------								
79)		69	123-tri-Cl-Pr		0.112	0.116	0.123	0.127	0.131	0.122	6.42	
80)	S	70	4-Br-1-F-Bz (S3)		0.935	0.877	0.886	0.890	0.880	0.893	2.69	
81)		71	isopropylbenzene	2.780	3.439	3.399	3.298	3.366	3.435	3.286	7.71	
82)		72	bromobenzene	0.527	0.700	0.760	0.772	0.787	0.782	0.721	13.87	
83)		73	n-propylbenzene	0.727	0.924	0.921	0.910	0.914	0.920	0.886	8.83	
84)		74	2-Cl-Tl 126	0.646	0.602	0.566	0.545	0.606	0.566	0.589	6.23	

(#) = Out of Range

Response Factor Report GCMS-G

Method : C:\HPCHEM\1\METHODS\E524G003.M
Title : **Applied P &Ch Lab** EPA 524.2
Last Update : Mon Jan 13 09:57:17 2003
Response via : Initial Calibration

Calibration Files
0.3 =3-0003.D 2 =3-002.D 10 =3-010.D
20 =3-020.D 40 =3-040.D 80 =3-080.D

	Compound		0.3	2	10	20	40	80	Avg	%RSD	
85)	75 4-Cl-Tl	126	0.683	0.834	0.866	0.784	0.843	0.816	0.804	8.13	
86)	76 135-tri-Me-Bz		2.482	2.722	2.700	2.625	2.675	2.716	2.653	3.43	
87)	79 tert-butylbenzen		2.218	2.871	2.824	2.765	2.829	2.837	2.724	9.19	
88)	78 124-tri-Me-Bz		1.891	2.455	2.250	2.296	2.326	2.317	2.256	8.48	
89)	80 13-di-Cl-Bz	146	0.934	1.158	1.264	1.084	1.198	1.258	1.149	10.87	
90)	82 14-di-Cl-Bz	146	1.527	1.764	1.616	1.744	1.694	1.675	1.670	5.24	
91)	81 sec-butylbenzene		3.330	4.148	4.224	3.968	4.057	4.172	3.983	8.35	
92)	77 4-iso-Pr-toluene		2.419	3.039	3.032	2.939	2.928	2.886	2.874	8.04	
93)	84 12-di-Cl-benzene		0.920	1.150	1.163	1.111	1.152	1.156	1.109	8.49	
94)	85 n-butylbenzene		3.034	2.990	3.069	2.970	2.978	3.028	3.012	1.28	
95)	86 12-diBr-3-Cl-Pra			0.063	0.077	0.085	0.089	0.091	0.081	13.95	
96)	87 124-tri-Cl-Bz		0.534	0.749	0.838	0.873	0.858	0.901	0.792	17.24	0.999
97)	88 naphthalene		0.804	0.553	0.616	0.666	0.652	0.700	0.665	12.68	
98)	90 123-tri-Cl-Bz		0.497	0.559	0.642	0.649	0.636	0.642	0.604	10.29	
99)	89 hx-Cl-butadiene		0.432	0.625	0.690	0.663	0.662	0.652	0.621	15.29	1.000

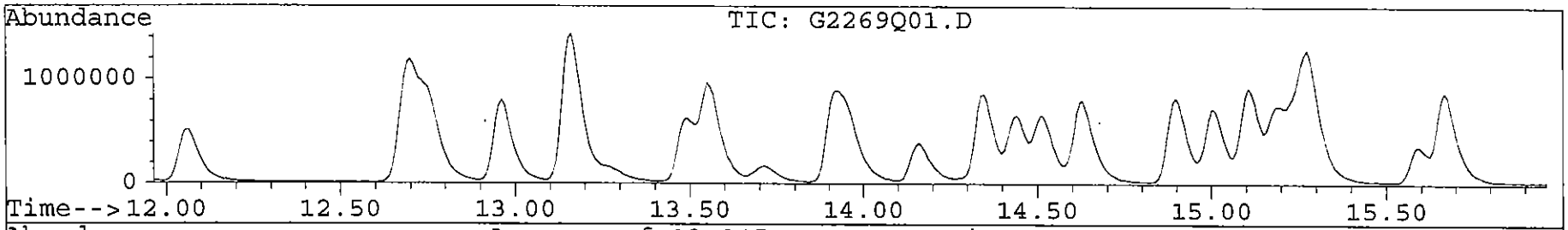
(#) = Out of Range

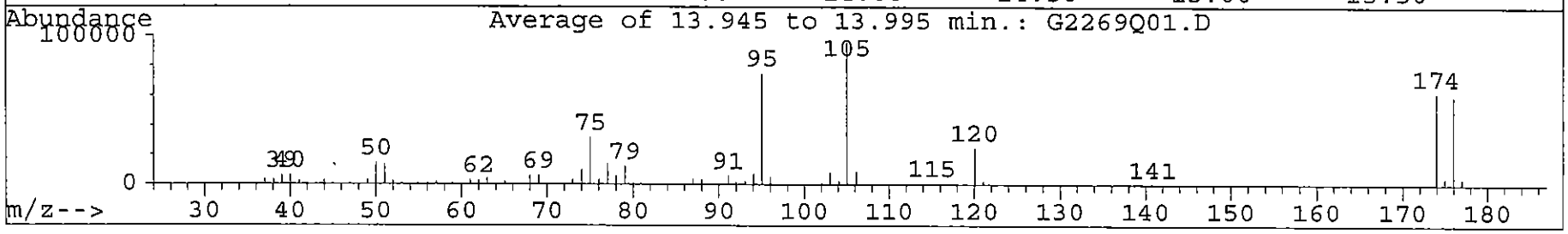
BFB

Data File : C:\HPCHEM\1\DATA\03G2269\G2269Q01.D
Acq On : 30 Apr 03 5:40 pm
Sample : f=1
Misc :

Vial: 17
Operator: Eddie
Inst : GCMS-G
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\E524G003.M
Title : **Applied P &Ch Lab** EPA 524.2





Peak Apex is scan: 1443

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.6	14722	PASS
75	95	30	60	42.3	31794	PASS
95	95	100	100	100.0	75222	PASS
96	95	5	9	6.7	5047	PASS
173	174	0	2	0.0	0	PASS
174	95	50	100	82.8	62279	PASS
175	174	5	9	7.5	4689	PASS
176	174	95	101	96.3	60000	PASS
177	176	5	9	6.8	4089	PASS

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:	032933
Project ID:	JPL	BFB Inj. Date:	04/30/03	Batch No:	03G2269
		BFB Inj. Time:	17:40	Sequence No:	03G2269
Project No:	04-4428.10	Instrument ID:	G	GC Column:	DB-VEX
Data File Name:	G2269Q01	Heated Purge: (Y/N)	N	Column ID:	0.45 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	03G2269-CCV-01	03G2269-CCV-01	G2269Q01	04/30/03	17:40
2	03G2269-LCS-01	03G2269-LCS-01	G2269L01	04/30/03	18:09
3	MW-17-2MS	03-2933-3MS	G2269M01	04/30/03	18:38
4	MW-17-2MSD	03-2933-3MSD	G2269N01	04/30/03	19:08
5	03G2269-MB-01	03G2269-MB-01	G2269K02	04/30/03	21:03
6	EB-6-4/28/03	03-2933-1	2933-01	04/30/03	21:31
7	MW-17-1	03-2933-2	2933-02	04/30/03	22:00
8	MW-17-2	03-2933-3	2933-03	04/30/03	22:28
9	MW-17-3	03-2933-4	2933-04	04/30/03	22:57
10	MW-17-4	03-2933-5	2933-05	04/30/03	23:26
11	MW-17-5	03-2933-6	2933-06	04/30/03	23:55
12	TB-6-4/28/03	03-2933-7	2933-07	05/01/03	00:24
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Continuing Calibration Concentration Summary

Data File G2269Q01.D
Method File E524G003

Compound Name	Amount	Actual	Units	%Dev	Target Response
1 Fluorobenzene I1 1	10	10.00	ppb	0.00	761786
3 di-Cl-di-F-methane 85 87	20	17.84	ppb	10.82	388177
4 Chloromethane 50 52	20	16.98	ppb	15.10	314773
9 F114 85 135	20	20.61	ppb	3.04	501305
5 vinyl chloride 62 64	20	18.16	ppb	9.19	319243
6 bromomethane 94 96	20	19.26	ppb	3.68	297323
7 Chloroethane 64 66	20	19.38	ppb	3.10	252239
8 tri-Cl-F-methane 101 103	20	21.14	ppb	5.68	628206
111 isopropyl alcohol x10	200	175.40	ppb	12.30	60291
100 ethyl ether x5	100	80.76	ppb	19.24	876837
102 Acrolein x10	200	203.31	ppb	1.65	176116
119 methyl acetate	20	17.07	ppb	14.66	158971
104 Carbon disulfide	20	15.62	ppb	21.90	992000
103 Acrylonitrilex10	200	171.37	ppb	14.32	311929
95 Acetone x10	200	202.99	ppb	1.50	263169
108 F-113	20	23.08	ppb	15.41	527111
13 11-dichloroethene 61 96	20	19.38	ppb	3.09	578845
101 Acetonnitrilex10	200	6.47	ppb	96.76	4137
109 Iodomethane	20	22.19	ppb	10.97	536775
113 Tert butyl alcohol x10	200	178.57	ppb	10.72	117653
18 methylene chloride 49 84	20	19.35	ppb	3.27	581064
112 Allyl chloride	20	18.78	ppb	6.08	620506
200 Nitro methane x10	200	183.54	ppb	8.23	610000
10 t-Bu-Me-ether 73 57	20	18.30	ppb	8.48	590288
19 t-12-di-Cl-ethene 96 61	20	18.25	ppb	8.77	417743
98 Vinyl acetate x5	100	88.47	ppb	11.53	1822747
21 11-dichloroethane 63 83	20	20.70	ppb	3.52	827680
91 2-butanone MEKx10	200	171.45	ppb	14.27	1224926
115 Di isoprop ether	20	18.06	ppb	9.69	1822892
22 c-12-di-Cl-ethene 96 61	20	18.83	ppb	5.84	421869
23 22-Dichloropropane 77 97	20	20.04	ppb	0.18	691258
24 Br-Cl-methane 128 130	20	17.36	ppb	13.21	139523
25 chloroform 83 85	20	18.34	ppb	8.31	733492
201 Ethyl acetate x2	40	35.50	ppb	11.25	361550
116 ETBE	20	17.11	ppb	14.44	1051771
117 Iso-butyl alcohol X10	200	180.84	ppb	9.58	368565
26 tetrahydrofuranx5	100	87.15	ppb	12.85	68033
27 Di-Br-F-Methane (S1) 111 1	20	19.21	ppb	3.93	518608
34 111-tri-Cl-ethane 97 99	20	19.53	ppb	2.37	650600
30 12-dichloroethane 64 62	20	17.61	ppb	11.94	274524
35 11-Di-Cl-propene 75 110	20	20.17	ppb	0.86	587246
29 1,2-di-Cl-ethane-d4 [Surr] 10	20	17.06	ppb	14.70	214731
36 benzene 78 52	20	20.17	ppb	0.84	1335059
37 CCl4 117 119	20	21.31	ppb	6.56	543484

97 thiophene	20	18.57	ppb	7.16	611092
118 TAME	20	16.95	ppb	15.27	717138
39 12-di-Cl-propane 63 76	20	19.01	ppb	4.96	368246
40 trichloroethene 130 132	20	20.14	ppb	0.71	413159
96 Me-methacrylate	20	17.96	ppb	10.20	120737
42 Br-di-Cl-methane 83 85	20	17.33	ppb	13.37	468055
41 dibromomethane 174 172	20	19.01	ppb	4.94	177648
45 c-13-di-Cl-propene 75 110	20	18.54	ppb	7.29	441720
55 toluene-d8(S2) 100 99	20	20.20	ppb	1.02	768828
92 2-ClEt-Vi-ether10	200	71.42	ppb	64.29	291782

Compound Name	Amount	Actual	Units	%Dev	Target Response
56 toluene 91 92	20	19.73	ppb	1.33	1227802
107 Et methacrylate	20	18.60	ppb	6.98	239507
93 2-Hexanone x5	100	92.03	ppb	7.97	398233
48 112-tri-Cl-Et 97 83	20	17.24	ppb	13.79	157257
58 1,2-di-br-ethane 107 109	20	17.46	ppb	12.68	170146
51 di-Br-Cl-methane 129 127	20	18.25	ppb	8.73	223865
46 t-13-di-cl-propene 75 110	20	18.55	ppb	7.26	284786
105 1-Chlorohexane	20	22.36	ppb	11.78	421400
47 Cl-benzene-d5, I2	10	10.00	ppb	0.00	223184
54 MIBK	20	19.12	ppb	4.40	134404
49 1,3-di-cl-propane 76 78	20	19.48	ppb	2.59	284260
59 tetra-Cl-ethene 166 168	20	22.42	ppb	12.08	440272
60 chlorobenzene 112 77	20	21.94	ppb	9.70	715660
61 1112-tetra-Cl-Et 131 133	20	21.46	ppb	7.31	280352
64 ethylbenzene 91 106	20	21.99	ppb	9.95	1381912

Compound Name	Amount	Actual	Units	%Dev	Target Response
65 m/p-Xylenes x2	40	43.49	ppb	8.73	2077922
99 1-4-di-Cl-butane	20	17.83	ppb	10.83	256743
52 bromoform 173 175	20	19.63	ppb	1.86	130445
66 styrene 104 78	20	21.34	ppb	6.71	720039
67 o-xylene 91 106	20	21.58	ppb	7.88	1014307
68 1122-Tetra-Cl-Et 83 85	20	18.82	ppb	5.91	162432
110 t-1,4-dichloro-2-butene	20	22.58	ppb	12.90	30780
106 Cl-benzyl	20	23.54	ppb	17.69	252253
62 1,4-DCB-d4 150 152 I3	10	10.00	ppb	0.00	187712
69 123-tri-Cl-Pr 110 97	20	17.87	ppb	10.65	40845
70 4-Br-1-F-Bz (S3) 174 95	20	20.61	ppb	3.07	345743
71 isopropylbenzene 105 120	20	23.48	ppb	17.38	1448076
72 bromobenzene 156 158	20	20.51	ppb	2.54	277685
73 n-propylbenzene 120 78	20	23.42	ppb	17.12	389498
74 2-Cl-Tl 126 128	20	20.60	ppb	2.98	227537
75 4-Cl-Tl 126 128	20	19.21	ppb	3.96	290072
76 135-tri-Me-Bz 105 120	20	22.32	ppb	11.60	1111705
79 tert-butylbenzene 119 91	20	22.68	ppb	13.42	1159830
78 124-tri-Me-Bz 105 120	20	22.15	ppb	10.73	937730
80 13-di-Cl-Bz 146 148	20	19.21	ppb	3.97	414282
82 14-di-Cl-Bz 146 148	20	20.72	ppb	3.61	649550
81 sec-butylbenzene 105 134	20	22.32	ppb	11.61	1669005

77	4-iso-Pr-toluene	119 134	20	23.09	ppb	15.46	1245699
84	12-di-Cl-benzene	146 148	20	18.81	ppb	5.95	391500
85	n-butylbenzene	91 134	20	21.83	ppb	9.14	1233921
86	12-diBr-3-Cl-Pra	157 155	20	17.99	ppb	10.06	27436
87	124-tri-Cl-Bz	180 182	20	18.69	ppb	6.53	305769
88	naphthalene	128 129	20	17.18	ppb	14.09	214523
90	123-tri-Cl-Bz	180 182	20	19.61	ppb	1.96	222391
					Ave.% Dev	10.12	

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\03G2269\G2269Q01.D Vial: 17
Acq On : 30 Apr 03 5:40 pm Operator: Eddie
Sample : f=1 Inst : GCMS-G
Misc : Multiplr: 1.00

4741

Method : C:\HPCHEM\1\METHODS\E524G003.M
Title : **Applied P &Ch Lab** EPA 524.2
Last Update : Mon Jan 13 10:38:23 2003
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 35% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1 Fluorobenzene I1 1	1.000	1.000	0.0	103	0.00
2		3 di-Cl-di-F-methane 85 8	0.308	0.255	17.3	91	0.00
3	P	4 Chloromethane 50 5	0.243	0.207	15.1	84	0.00
4		9 F114 85 135	0.319	0.329	-3.0	108	0.00
5	C	5 vinyl chloride 62 6	0.231	0.210	9.2	93	0.00
6		6 bromomethane 94 9	0.227	0.195	14.2	106	0.00
7		7 Chloroethane 64 66	0.171	0.166	3.1	101	0.00
8		8 tri-Cl-F-methane 101 10	0.390	0.412	-5.7	103	0.00
9		111 isopropyl alcohol x10	0.005	0.004#	12.3	109	0.00
10		100 ethyl ether x5	0.143	0.115	19.2	89	0.00
11		102 Acrolein x10	0.011	0.012#	-1.7	82	0.00
12		119 methyl acetate	0.128	0.104	18.4	85	0.00
13		104 Carbon disulfide	0.834	0.651	21.9#	85	0.00
14		103 Acrylonitrilex10	0.024	0.020#	14.3	89	0.00
15		95 Acetone x10	0.019	0.017#	8.9	98	0.00
16		108 F-113	0.300	0.346	-15.4	110	0.00
17	M,C	13 11-dichloroethene 61 9	0.392	0.380	3.1	101	0.00
18		101 Acetonnitrilex10	0.006	0.000#	95.5#	4#	0.00
19		109 Iodomethane	0.311	0.352	-13.3	113	0.00
20		113 Tert butyl alcohol x10	0.009	0.008#	16.1	88	0.00
21		18 methylene chloride 49 8	0.643	0.381	40.7#	96	0.00
22		112 Allyl chloride	0.434	0.407	6.1	101	0.00
23		200 Nitro methane x10	0.044	0.040#	8.2	96	0.00
24		10 t-Bu-Me-ether 73 57	0.498	0.387	22.1#	95	0.00
25		19 t-12-di-Cl-ethene 96 6	0.301	0.274	8.8	95	0.00
26		98 Vinyl acetate x5	0.270	0.239	11.5	157#	0.00
27	P	21 11-dichloroethane 63 8	0.525	0.543	-3.5	106	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\03G2269\G2269Q01.D
Acq On : 30 Apr 03 5:40 pm
Sample : f=1
Misc :

Vial: 17
Operator: Eddie
Inst : GCMS-G
Multiplr: 1.00

4742

Method : C:\HPCHEM\1\METHODS\E524G003.M
Title : **Applied P &Ch Lab** EPA 524.2
Last Update : Mon Jan 13 10:38:23 2003
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 35% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
28		91 2-butanone MEKx10	0.094	0.080	14.3	94	0.00
29		115 Di isoprop ether	1.125	1.196	-6.3	93	0.00
30		22 c-12-di-Cl-ethene 96 6	0.294	0.277	5.8	98	0.00
31		23 22-Dichloropropane 77 9	0.453	0.454	-0.2	112	0.00
32		24 Br-Cl-methane 128 13	0.094	0.092	2.3	91	0.00
33	C	25 chloroform 83 8	0.525	0.481	8.3	102	0.00
34		201 Ethyl acetate x2	0.134	0.119	11.3	122	0.00
35		116 ETBE	0.807	0.690	14.4	91	0.00
36		117 Iso-butyl alcohol X10	0.027	0.024#	9.6	124	0.00
37		26 tetrahydrofuranx5	0.010	0.009#	12.9	91	0.00
38	S	27 Di-Br-F-Methane (S1) 11	0.400	0.340	14.9	100	0.00
39		34 111-tri-Cl-ethane 97 9	0.437	0.427	2.4	108	0.00
40		30 12-dichloroethane 64 6	0.175	0.180	-3.2	92	0.00
41		35 11-Di-Cl-propene 75 11	0.382	0.385	-0.9	107	0.00
42	S	29 1,2-di-Cl-ethane-d4 [Sur	0.165	0.141	14.7	89	0.00
43	M	36 benzene 78 5	0.869	0.876	-0.8	105	0.00
44		37 CCl4 117 11	0.335	0.357	-6.6	110	0.00
45		97 thiophene	0.432	0.401	7.2	98	0.00
46		118 TAME	0.556	0.471	15.3	90	0.00
47	C	39 12-di-Cl-propane 63 7	0.254	0.242	5.0	98	0.00
48	M	40 trichloroethene 130 13	0.269	0.271	-0.7	102	0.00
49		96 Me-methacrylate	0.095	0.079	17.0	98	0.00
50		42 Br-di-Cl-methane 83 8	0.355	0.307	13.4	97	0.00
51		41 dibromomethane 174 17	0.123	0.117	4.9	91	0.00
52		45 c-13-di-Cl-propene 75 11	0.313	0.290	7.3	99	0.00
53	S	55 toluene-d8(S2) 100	0.500	0.505	-1.0	106	0.00
54		92 2-ClEt-Vi-ether10	0.054	0.019#	64.3#	36	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\03G2269\G2269Q01.D Vial: 17
Acq On : 30 Apr 03 5:40 pm Operator: Eddie
Sample : f=1 Inst : GCMS-G
Misc : Multiplr: 1.00

4743

Method : C:\HPCHEM\1\METHODS\E524G003.M
Title : **Applied P &Ch Lab** EPA 524.2
Last Update : Mon Jan 13 10:38:23 2003
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 35% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound		AvgRF	CCRF	%Dev	Area%	Dev(min)
55	M C	56 toluene	91 9	0.817	0.806	1.3	107	0.00
56		107 Et methacrylate		0.169	0.157	7.0	145	0.00
57		93 2-Hexanone x5		0.057	0.052	8.0	108	0.00
58		48 112-tri-Cl-Et	97 8	0.141	0.103	26.6#	91	0.00
59		58 1,2-di-br-ethane	107 109	0.114	0.112	2.3	89	0.00
60		51 di-Br-Cl-methane	129 12	0.161	0.147	8.7	92	0.00
61		46 t-13-di-cl-propene	75 11	0.202	0.187	7.3	94	0.00
62		105 1-Chlorohexane		0.310	0.277	10.8	113	0.00
63	I	47 Cl-benzene-d5, I2		1.000	1.000	0.0	99	0.00
64		54 MIBK		0.297	0.301	-1.5	93	0.00
65		49 1,3-di-cl-propane	76 78	0.654	0.637	2.6	92	0.00
66		59 tetra-Cl-ethene	166 16	0.880	0.986	-12.1	106	0.00
67	M P	60 chlorobenzene	112 7	1.461	1.603	-9.7	107	0.00
68		61 1112-tetra-Cl-Et	131 13	0.585	0.628	-7.3	99	0.00
69	C	64 ethylbenzene	91 10	2.816	3.096	-10.0	112	0.00
70		65 m/p-Xylenes x2		2.141	2.328	-8.7	109	0.00
71		99 1-4-di-Cl-butane		0.645	0.575	10.8	93	0.00
72	P	52 bromoform	173 17	0.274	0.292	-6.7	91	0.00
73		66 styrene	104 7	1.512	1.613	-6.7	106	0.00
74		67 o-xylene	91 10	2.106	2.272	-7.9	111	0.00
75	P	68 1122-Tetra-Cl-Et	83 8	0.387	0.364	5.9	94	0.00
76		110 t-1,4-dichloro-2-butene		0.081	0.069	14.4	114	0.00
77		106 Cl-benzyl		0.572	0.565	1.2	106	0.00
78	I	62 1,4-DCB-d4 150 152 I3		1.000	1.000	0.0	102	0.00
79		69 123-tri-Cl-Pr	110 9	0.122	0.109	10.6	90	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

4744

Data File : C:\HPCHEM\1\DATA\03G2269\G2269Q01.D Vial: 17
Acq On : 30 Apr 03 5:40 pm Operator: Eddie
Sample : f=1 Inst : GCMS-G
Misc : Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\E524G003.M
Title : **Applied P &Ch Lab** EPA 524.2
Last Update : Mon Jan 13 10:38:23 2003
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 35% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound			AvgRF	CCRF	%Dev	Area%	Dev(min)
80	S	70 4-Br-1-F-Bz (S3)	174	9	0.893	0.921	-3.1	106	0.00
81		71 isopropylbenzene	105	12	3.286	3.857	-17.4	119	0.00
82		72 bromobenzene	156	15	0.721	0.740	-2.5	97	0.00
83		73 n-propylbenzene	120	7	0.886	1.037	-17.1	116	0.00
84		74 2-Cl-Tl 126 128			0.589	0.606	-3.0	113	0.00
85		75 4-Cl-Tl 126 128			0.804	0.773	4.0	100	0.00
86		76 135-tri-Me-Bz	105	12	2.653	2.961	-11.6	115	0.00
87		79 tert-butylbenzene	119	9	2.724	3.089	-13.4	114	0.00
88		78 124-tri-Me-Bz	105	12	2.256	2.498	-10.7	111	0.00
89		80 13-di-Cl-Bz 146 148			1.149	1.104	4.0	104	0.00
90		82 14-di-Cl-Bz 146 148			1.670	1.730	-3.6	101	0.00
91		81 sec-butylbenzene	105	13	3.983	4.446	-11.6	114	0.00
92		77 4-iso-Pr-toluene	119	13	2.874	3.318	-15.5	115	0.00
93		84 12-di-Cl-benzene	146	14	1.109	1.043	6.0	95	0.00
94		85 n-butylbenzene	91	13	3.012	3.287	-9.1	113	0.00
95		86 12-diBr-3-Cl-Pra	157	15	0.081	0.073	10.1	87	0.00
96		87 124-tri-Cl-Bz	180	18	0.792	0.814	-2.8	95	0.00
97		88 naphthalene	128	12	0.665	0.571	14.1	87	0.00
98		90 123-tri-Cl-Bz	180	18	0.604	0.592	2.0	93	0.00
99		89 hx-Cl-butadiene	225	26	0.621	0.797	-28.4#	122	0.00

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

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:	032933
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		CCV Data File:	G2269Q01	Instrument ID:	G

Batch No: 03G2269

#	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			04/30/03 17:40	761786	9.07	223184	12.71	187712	15.23
CCV Upper Limit				1523572	9.57	446368	13.21	375424	15.73
CCV Lower Limit				380893	8.57	111592	12.21	93856	14.73
1	03G2269-LCS-01	03G2269-LCS-01	04/30/03 18:09	760366	9.08	211140	12.72	183003	15.23
2	MW-17-2MS	03-2933-3MS	04/30/03 18:38	774675	9.07	217575	12.72	187626	15.24
3	MW-17-2MSD	03-2933-3MSD	04/30/03 19:08	799033	9.08	232426	12.73	196889	15.24
4	03G2269-MB-01	03G2269-MB-01	04/30/03 21:03	730711	9.12	192175	12.76	163983	15.28
5	EB-6-4/28/03	03-2933-1	04/30/03 21:31	770361	9.12	214419	12.76	176217	15.27
6	MW-17-1	03-2933-2	04/30/03 22:00	688451	9.12	179771	12.77	134442	15.28
7	MW-17-2	03-2933-3	04/30/03 22:28	791241	9.12	218903	12.77	178189	15.26
8	MW-17-3	03-2933-4	04/30/03 22:57	786332	9.12	218300	12.77	185783	15.26
9	MW-17-4	03-2933-5	04/30/03 23:26	789634	9.11	227662	12.74	180619	15.25
10	MW-17-5	03-2933-6	04/30/03 23:55	769649	9.11	207109	12.74	163071	15.25
11	TB-6-4/28/03	03-2933-7	05/01/03 00:24	767987	9.11	214366	12.74	172467	15.25
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

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

VOC-044

VOC Analysis General Logbook

Office # 03G1044 Batch # 03G1044 Matrix: W Date: 1/10/03 Analyst: [illegible]

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

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

#	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
2378	SP	G1044P01	E524G-003	25T 25=1	1 =	1 =	1		G1044P01	1/10/03 1:51pm	
2379	Calib	3-0003		1 =	1 =	1 =			3-0003	GC 14720	
2380		3-002		1 =	1 =	1 =			3-002		
2381		3-010		1 =	1 =	1 =			3-010		
2382		3-020		1 =	1 =	1 =			3-020		
2383		3-040		1 =	1 =	1 =			3-040		
2384		3-080		1 =	1 =	1 =			3-080		
2385	CCV	G1044Q01		1 =	1 =	1 =			G1044Q01	CCV/ICV/DFB GC14721	
2386	MS	M01		1 =	1 =	1 =			M01	S1011-03	C2
2387	LCS	L01		1 =	1 =	1 =			L01		
2388	MSD	N01		1 =	1 =	1 =			N01	S1011-03	C2
2389	MB	K01		1 =	1 =	1 =			K01		
2390	Sample	1084-03		1 =	1 =	1 =			1084-03		C2
2391		6844-02A		1 =	1 =	1 =			6844-02A		
2392		6844-01A		1 =	1 =	1 =			-01A		
2393		1017-1		1 =	1 =	1 =			1017-1		
2394		1011-02		1 =	1 =	1 =			1011-02		
2395		3		1 =	1 =	1 =			3		
2396		4		1 =	1 =	1 =			4		
2397		5		1 =	1 =	1 =			5		
2398		1047-01		1 =	1 =	1 =			1047-01		
2399		-02		1 =	1 =	1 =			-02		
2400		1051-2		1 =	1 =	1 =			1051-2		
2401		3		1 =	1 =	1 =			3		
2402		1084-1		1 =	1 =	1 =			1084-01		
2403		2		1 =	1 =	1 =			2		
		4		1 =	1 =	1 =			4		
2404				1 =	1 =	1 =					
2405				1 =	1 =	1 =					
2406				1 =	1/10/03	1 =					
2407				1 =	1 =	1 =					
2408				1 =	1 =	1 =					

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	2386	GC-	200 × 2.5 /X= 10 ppb		GC-	× /X= ppb
MS/MSD	2385/2387	GC- 14721	× /X= ppb		GC-	× /X= ppb

Footnote/Anomaly:

4746

GT
Applied P & Ch Laboratory
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VOC-087

VOC Analysis General Logbook

Project # 0367 2269 Batch # 0367 2269 Matrix: W Date: 4-30-03 Analyst: Eddie

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

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

#	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
753	SP	G2269P01	E5246	25/25 = 1	/ =	/ =	1		G2269P01		
754	W	Q01	003	/ =	/ =	/ =			Q01	4-30-03 5:40pm	GC1516
755	LM	L01		/ =	/ =	/ =			L01		
756	MS	M01		/ =	/ =	/ =			M01	4293303	L2
757	MSD	N01		/ =	/ =	/ =			N01	4293303	L2
758	MB	K01		/ =	/ =	/ =			K01		
759	MB	K02		/ =	/ =	/ =			K02		
760	Sample	2933-01		/ =	/ =	/ =			2933-01	eb	L2
761		02		/ =	/ =	/ =			02		
762		03		/ =	/ =	/ =			03		
763		04		/ =	/ =	/ =			04		
764		05		/ =	/ =	/ =			05		
765		06		/ =	/ =	/ =			06		
766		07		/ =	/ =	/ =			07		
767		2968-01		/ =	/ =	/ =			2968-01		
768		02		/ =	/ =	/ =			02		
769		03		/ =	/ =	/ =			03		
770		04		/ =	/ =	/ =			04		
771		05		/ =	/ =	/ =			05		
772		06		/ =	/ =	/ =			06		
773		07		/ =	/ =	/ =			07		
774		08		/ =	/ =	/ =			08		
775				/ =	/ =	/ =					
776				/ =	/ =	/ =					
777				/ =	/ =	/ =					
778				/ =	/ =	/ =					
779				/ =	/ =	/ =					
780				/ =	/ =	/ =					
781				/ =	/ =	/ =					
782				/ =	/ =	/ =					
783				/ =	/ =	/ =					
784				/ =	/ =	/ =					

Type	Op #	STD Lot #	$C_{std}(ng/\mu L) \times V_{std}(\mu L)/X(g \text{ or } mL) = T$	Op #	STD Lot #	$C_{std}(ng/\mu L) \times V_{std}(\mu L)/X(g \text{ or } mL) = T$
S/LCSD	37755	GC-	× /X= ppb		GC-	× /X= ppb
S/MSD	37756/37757	GC- 15117	200 × 25 /X= 20 ppb		GC-	× /X= ppb

Footnote/Anomaly:

4747

pH for field water sample only.
Supervisor Initial _____

Level C Data Package Deliverables

8270-SIM

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

Applied P & Ch Laboratory

Organic Analysis Results for Method 8270-SIM

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Collection Date:	05/01/2003
Project ID:	JPL	Service ID:	32933	Collected by:	
		Lab Sample ID:	03G2304-MB-01	Received Date:	05/01/2003
Sample ID:	**03G2304-MB-01**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Method Blank	Prep. Method:	Method	Instrument ID:	GC/MS: M
Anal. Method:	8270-SIM	Prep. Date:	05/01/03	Anal. Date:	05/02/03
Batch No:	03G2304	Prep. No:	1 of 1	Anal. Time:	11:34
Data File Name:	G2304K01	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	1,4-DIOXANE	123-91-1	μg/L	1	<1	U

Internal Standard			Control Limit, %	IS Rec.%
1	1,4-DIOXANE-D8	17647-74-4	50-200	75
# 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 8270-SIM

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Collection Date:	04/28/2003
Project ID:	JPL	Service ID:	32933	Collected by:	Leo Williamson
		Lab Sample ID:	03-2933-5	Received Date:	04/28/2003
Sample ID:	**MW-17-4**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	Method	Instrument ID:	GC/MS: M
Anal. Method:	8270-SIM	Prep. Date:	05/01/03	Anal. Date:	05/02/03
Batch No:	03G2304	Prep. No:	1 of 1	Anal. Time:	12:32
Data File Name:	2933-05	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	1,4-DIOXANE	123-91-1	μg/L	1	<1	U

Internal Standard			Control Limit, %	IS Rec.%
1	1,4-DIOXANE-D8	17647-74-4	50-200	67
# 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-3C

Applied P & Ch Laboratory

Lab Control Spike/Lab Control Spike Duplicate Recovery for Method 8270-SIM

Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		Service ID:	32933
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03G2304		
LCS Filename:	G2304L01	Date Analyzed:	050203	Time Analyzed:	11:53
LCSD Filename:	G2304J01	Date Analyzed:	050203	Time Analyzed:	12:12

Spiked Components	Unit	Spike Added	Concentration Unspiked	Concentration LCS	LCS Rec% #	QC Limit, % REC
1,4-DIOXANE	µg/L	20	0	19.5	98	40-140
# of Out-of-control					0	

Spiked Components	Unit	Spike Added	LCSD Concentration	LCSD Rec% #	RPD% #	QC Limit, % RPD	QC Limit, % REC
1,4-DIOXANE	µg/L	20	19.7	99	1	30	40-140
# 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-4B

Applied P & Ch Laboratory

Method Blank Summary for Method 8270-SIM

Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		Service ID:	32933
Project ID:	JPL	Project No:	04-4428.10	Analysis Date:	05/02/03
		Sample Matrix:	Water	Analysis Time:	11:34
Sample ID:	**03G2304-MB-01**	Batch No:	03G2304	Instrument ID:	GC/MS: M
Lab Sample ID:	03G2304-MB-01	Data File Name:	G2304K01	GC Column:	DB-5.625
				Column ID:	0.25 mm

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

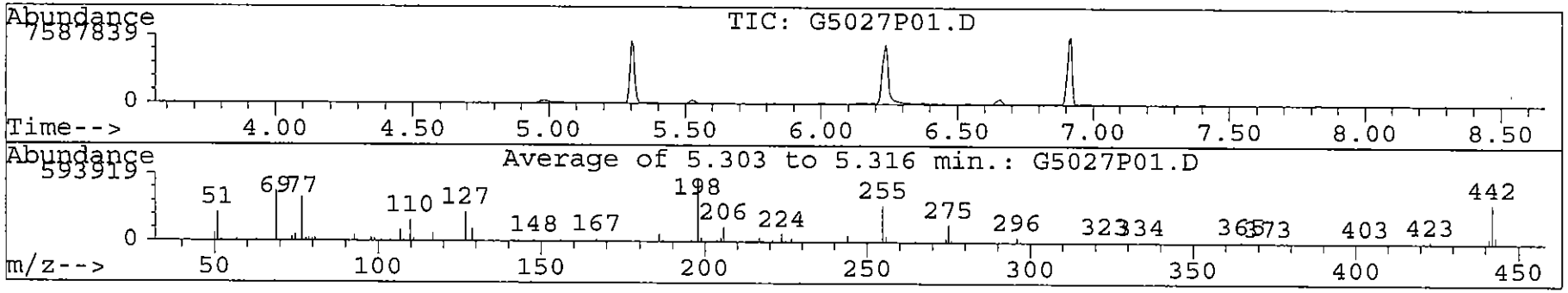
#	Client Sample No	Lab Sample ID	Sample Type	Data Filename	Analysis Date	Analysis Time
1	03G2304-LCS-01	03G2304-LCS-01	Lab Control Spike	G2304L01	05/02/03	11:53
2	03G2304-LSD-01	03G2304-LSD-01	Lab Control Spike Duplicate	G2304J01	05/02/03	12:12
3	MW-17-4	03-2933-5	Field Sample	2933-05	05/02/03	12:32
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						

DFTPP

Data File : C:\HPCHEM\1\DATA\02G5027\G5027P01.D
Acq On : 17 Dec 02 2:19 pm
Sample : ##02g5027,w dftpp gc14349
Misc :

Vial: 99
Operator: Andy Huang
Inst : GC/MS - M
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\DIOSIM06.M
Title : * Applied P & Ch Lab * GC/MS 8270



Peak Apex is scan: AVERAGE

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	80	44.9	254307	PASS
68	69	0	2	0.0	0	PASS
69	198	1	100	78.3	443243	PASS
70	69	0	2	0.3	1277	PASS
127	198	25	75	46.2	261139	PASS
197	198	0	1	0.0	0	PASS
198	198	100	100	100.0	565803	PASS
199	198	5	9	6.7	37981	PASS
275	198	10	30	27.4	155040	PASS
365	198	1	100	3.7	20870	PASS
441	443	1	99	78.6	52501	PASS
442	198	40	110	61.8	349717	PASS
443	442	15	24	19.1	66784	PASS

5B
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name : APPLIED P & CH LAB Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 03-2933

Lab File ID: G5027P01 DFTPP Injection Date: 12/17/02

Instrument ID: GCMS-M DFTPP Injection Time: 1419

m/e	ION ABUNDANCE CRITERIA	%RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	44.9
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	78.3
70	Less than 2.0% of mass 69	0.2 (0.3)1
127	40.0 - 60.0% of mass 198	46.2
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100 % relative abundance	100.0
199	5.0 - 9.0% of mass 198	6.7
275	10.0 - 30.0% of mass 198	27.4
365	Greater than 0.75% of mass 198	3.7
441	Present, but less than mass 443	9.3 (78.6)3
442	40.0 - 100.0% of mass 198	61.8
443	17.0 - 23.0% of mass 442	11.8 (19.1)2

1-Value is % mass 69 2-Value is % mass 442 3-Value is % mass 443

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	SSTD040	DS006-40	DS006-040.D	12/17/2002	1438
02	SSTD030	DS006-30	DS006-030.D	12/17/2002	1457
03	SSTD020	DS006-20	DS006-020.D	12/17/2002	1516
04	SSTD010	DS006-10	DS006-10.D	12/17/2002	1536
05	SSTD001	DS006-01	DS006-01.D	12/17/2002	1555
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					

Response Factor Report GC/MS - M

Method : C:\HPCHEM\1\METHODS\DIOSIM06.M
Title : * Applied P & Ch Lab * GC/MS 8270
Last Update : Tue Dec 17 16:08:23 2002
Response via : Initial Calibration

Calibration Files
30 =M06-030.D 20 =M06-020.D 10 =M06-010.D
1 =M06-001.D 40 =M06-040.D

		Compound	30	20	10	1	40	Avg	%RSD
1) I	1	1.4-Dioxane-d8	----------ISTD----------						
2)	2	1,4-Dioxane	1.151	1.165	1.216	1.379	1.165	1.215	7.81

(#) = Out of Range

Evaluate Continuing Calibration Report

4756

Data File : C:\HPCHEM\1\DATA\02G5027\G5027Q01.D
Acq On : 17 Dec 02 4:14 pm
Sample : gc14554
Misc :

Vial: 100
Operator: Andy Huang
Inst : GC/MS - M
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\DIOSIM06.M
Title : * Applied P & Ch Lab * GC/MS 8270
Last Update : Tue Dec 17 16:08:23 2002
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1 1,4-Dioxane-d8	1.000	1.000	0.0	86	0.00
2		2 1,4-Dioxane	1.215	1.370	-12.7	102	0.00

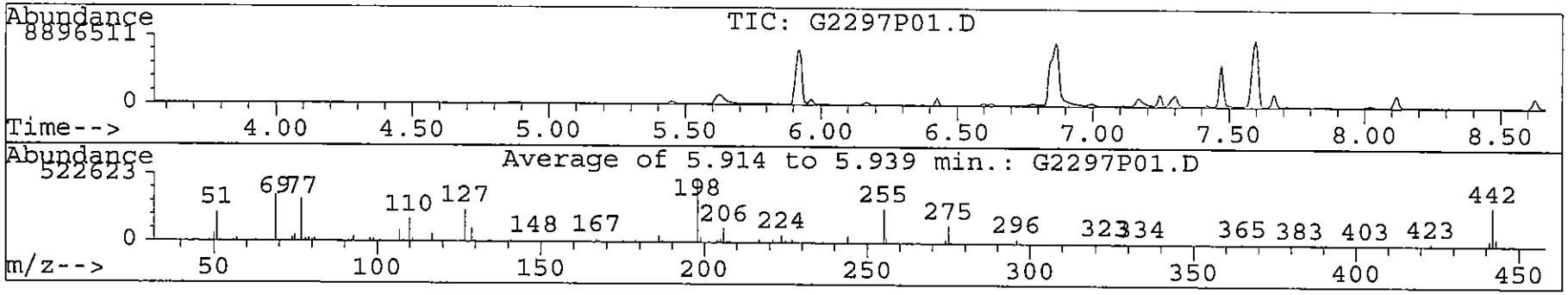
(#) = Out of Range SPCC's out = 0 CCC's out = 0

DFTPP

Data File : C:\HPCHEM\1\DATA\03G2297\G2297P01.D
Acq On : 2 May 03 9:57 am
Sample : ##03g2297,s dftpp gc14349
Misc :

Vial: 99
Operator: Andy Huang
Inst : GC/MS - M
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\DIOSIM06.M
Title : * Applied P & Ch Lab * GC/MS 8270



Peak Apex is scan: AVERAGE

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	80	45.2	224750	PASS
68	69	0	2	0.0	0	PASS
69	198	1	100	72.5	360752	PASS
70	69	0	2	0.9	3341	PASS
127	198	25	75	49.4	245959	PASS
197	198	0	1	0.0	0	PASS
198	198	100	100	100.0	497757	PASS
199	198	5	9	7.0	34603	PASS
275	198	10	30	27.4	136388	PASS
365	198	1	100	3.4	16958	PASS
441	443	1	99	79.6	45081	PASS
442	198	40	110	60.1	298989	PASS
443	442	15	24	18.9	56603	PASS

G2297P01.D DIOSIM06.M Fri May 02 11:33:55 2003 5972

FORM-5B

Applied P & Ch Laboratory

Semivolatile Organic Instrument Performance Check for Method 8270-SIM

Decafluorotriphenylphosphine (DFTPP), Part II

Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		Service ID:	032933
Project ID:	JPL	DFTPP Inj. Date:	05/02/03	Batch No:	03G2304
		DFTPP Inj. Time:	09:57	Sequence No:	03G2297
Project No:	04-4428.10	Instrument ID:	M	GC Column:	DB-5.625
Data File Name:	G2297P01			Column ID:	0.25 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	03G2304-CCV-01	03G2304-CCV-01	G2297Q01	05/02/03	10:16
2	03G2304-MB-01	03G2304-MB-01	G2304K01	05/02/03	11:34
3	03G2304-LCS-01	03G2304-LCS-01	G2304L01	05/02/03	11:53
4	03G2304-LSD-01	03G2304-LSD-01	G2304J01	05/02/03	12:12
5	MW-17-4	03-2933-5	2933-05	05/02/03	12:32
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Evaluate Continuing Calibration Report

4759

Data File : C:\HPCHEM\1\DATA\03G2297\G2297Q01.D Vial: 100
Acq On : 2 May 03 10:16 am Operator: Andy Huang
Sample : gc14554 Inst : GC/MS - M
Misc : Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\DIOSIM06.M
Title : * Applied P & Ch Lab * GC/MS 8270
Last Update : Fri May 02 10:23:53 2003
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1 1.4-Dioxane-d8	1.000	1.000	0.0	101	0.00
2		2 1,4-Dioxane	1.215	1.171	3.6	102	0.00

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

FORM-8B

Applied P & Ch Laboratory

Internal Standard Area and RT Summary for Method 8270-SIM

Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		Service ID:	032933
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		CCV Data File:	G2297Q01	Instrument ID:	M

Batch No: 03G2304

#	Client Sample No	Lab Sample ID	Analysis Date & Time	IS-1 Area #	IS-1 RT #
12 Hour CCV STD			05/02/03 10:16	471664	5.34
CCV Upper Limit				943328	5.84
CCV Lower Limit				235832	4.84
1	03G2304-MB-01	03G2304-MB-01	05/02/03 11:34	354962	5.35
2	03G2304-LCS-01	03G2304-LCS-01	05/02/03 11:53	320271	5.40
3	03G2304-LSD-01	03G2304-LSD-01	05/02/03 12:12	283812	5.39
4	MW-17-4	03-2933-5	05/02/03 12:32	315423	5.46
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

IS-1 = 1,4-DIOXANE-D8

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

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

Analysis Anomaly Record

Batch #: 0392304 Method: 1-4 Dioxane Matrix: W Date: 5-1-03

Samples Involved: 2933, 2940, 2964

- **Anomaly for MS/MSD/MD**
  - ☐ 1. MS/MSD out of control limit, sample matrix interference suspected
  - ☐ 2. MS or MSD out of control limit, but $\overline{MS}$ is O.K.
  - ☐ 3. One of MS/MSD, and $\overline{MS}$ out of control limit, but not enough sample for re-analysis
  - ☒ 4. Not enough sample for MS/MSD, LCS/LCSD may be used
  - ☐ 5. Spiked samples contain high concentration of analytes (>4 × spiked concentration)
  - ☐ 6. MS/MSD out of control limit, but post spike is O.K.
  - ☐ 7. MS/MSD out of control limit, due to the heterogenous matrix
  - ☐ 8. MS/MSD out of control limit, due to the very special matrix
  - ☐ 9. Not enough sample for matrix duplicate (MD)
- **Anomaly for Holding time (HT)**
  - ☐ 10. HT has been exceeded when received, authorized by the Client to carry on with the analyses
  - ☐ 11. Extraction HT was passed, authorized by the Client to carry on with the analyses
  - ☐ 12. Analysis HT was passed, authorized by the Client to carry on with the analyses
- **Surrogates Anomaly**
  - ☐ 13. Surrogate recovery out of control limit (see Level-1 Part III), sample matrix interference suspected
  - ☐ 14. Surrogate recovery out of control limit (see Level-1 Part III), but not enough sample for re-analysis
  - ☐ 15. Surrogate recovery out of control limit, due to very special matrix
  - ☐ 16. Surrogate diluted out (for highly contaminated samples)
  - ☐ 17. Lower surrogate recovery due to cleanup process
- **Chromatogram Pattern Anomaly**
  - ☐ 18. Not a typical gasoline chromatogram pattern
  - ☐ 19. Not a typical diesel chromatogram pattern
  - ☐ 20. Not a typical diesel chromatogram pattern, but similar to heavy-oil or motor oil
  - ☐ 21. Not a typical kerosene chromatogram pattern
  - ☐ 22. Not a typical jet fuel chromatogram pattern
  - ☐ 23. Not a complete PCB chromatogram pattern, interference/degration suspected
- **Other anomaly**

Problem Description: _____

Reason: _____

Analyst: HL Date: 5-1-03

Note: _____

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

Organic Sample Preparation Logbook

Batch # 0342304 Matrix: W Target method: 1,4-Dioxane EXT Method: 3520C Date: 5-1-2

Solvent: CH2Cl2 Lot # 057471 ; Exchange Solvent: NA Lot # NA ; Analyst: VK

Lot #: Surr.: GC- NA Conc.: NA ppm Na_2SO_4: RC00078

Op. #	Sample Type	Sample ID #	Smpl Amnt (mL or g)	Surr. Vol mL	Extract sub-ID	Final Vol. mL	Dilution F=V/X	Note & Anomaly
3131	MB	0342304-MB	1000.0	NA	1,4Dioxane	1.00	0.001	
3132	LCS	-201	1000.0					
3133	LCSD	-201	1000.0					
3134	Sample-1	03-2933-5	1000.0					
3135	MS			5-1-2	VK			
3136	MSD							
3137	Sample-2	03-2940-2	1000.0	NA	1,4-Dioxane	1.00	0.001	
3138	Sample-3	03-2964-3	1000.0					
3139	Sample-4							
3140	Sample-5							
3141	Sample-6							
3142	Sample-7							
3143	Sample-8							
3144	Sample-9							
3145	Sample-10							
3146	Sample-11							
3147	Sample-12							
3148	Sample-13							
3149	Sample-14							
3150	Sample-15							
3151	Sample-16							
3152	Sample-17							
3153	Sample-18							
3154	Sample-19							
3155	Sample-20							
3156	MTX Dup.							
3157	LCS′							
3158	LCSD′							
3159	MS′							
3160	MSD′							

Type	Op #	STD Lot #	$C_{std}(ppm) \times V_{std}(mL)/X(g \text{ or } mL) = T$	Op #	STD Lot #	$C_{std}(ppm) \times V_{std}(mL)/X(g \text{ or } mL) = T$
LCS/LCSD	3132	GC-14768	1000 × 20.0 × 1.00 /X= ppb	3133	GC-14768	1000 × 20.0 × 1.00 /X= ppb
MS/MSD		GC-	1000 × × /X= ppb		GC-	1000 × × /X= ppb
LCS′/LCSD′		GC-	1000 × × /X= ppb		GC-	1000 × × /X= ppb
MS′/MSD′		GC-	1000 × × /X= ppb		GC-	1000 × × /X= ppb

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Organic Sample Preparation

Extraction method: **1** 3510–separate funnel; **2** 3520–L-L continue extraction; **3** 3550–Ultrasonic; **4** LUFT–Shaker; **5** 3540–Soxhlet; **6** Solid phase Extraction; **7** Microextraction; **8** SFE; **9** Dilution; **10** Concentration; **11** Other, specify.

Service ID: 2933 Batch # 0362304 Matrix W GC, GC/MS Method 1,4-Dioxane Ext Method 3520C

Sample Extraction

OP. by	HL		Date	5/1/03	Surro Lot	GC- NA	Conc.	NA pp
LCS Lot	GC- 14768		Conc.	20.0 pp	MS Lot	GC- 14768	Conc.	20.0 pp
Ext. solv.	CHCl3		Lot #	027471	Exchage solv.	NA	Lot #	NA
Sample ID	-K01	-L01	-J01	-5				
Sample Matrix	W							
Sample Amount, X (g/mL)	1000.0	1000.0	1000.0	1000.0				
Any TCLP, EP, WET, SPLP ?								
Surr. STD used, mL	NA							
Spike STD used, mL								
[Extracted at pH]	/	/	/	/	/	/	/	/
Solvent amount, mL	200.0	X	X	X	X	X	X	X
Final volume, V, mL	1.000							
Extraction DF $f_e = V/X$	0.001							
Sub-ID of extracts	1,4-Dioxane							
Anomaly Footnote† :								

Sample Cleanup

Op. by			Date	/ /	(For details, see Cleanup worksheet)			
Cleanup method:								
Cleanup DF, f_c								
Preparation DF, $f_1 = f_e\ f_c$								

Pre-injection*:

Op. by			Date	/ /	IS Lot :	GC-	Conc.	pp
2nd dilution, f_2	(1)							
V_t, μL	(40)							

Single Extract GC, GC/MS Analysis:

$V_2 = V_t/f_2$, μL	$(40/f_2)$							
$V_{solvent} = V_t - V_2$, μL								

Double Extract GC, GC/MS Analysis:

$V_> = \frac{1}{2}V_t/f_2$, μL	$(20/f_2)$							
$V_< = \frac{1}{2}\frac{V_t}{f_2}\frac{f_<}{f_>}$, μL	$(\frac{20}{f_2}\frac{f_<}{f_>})$							
$V_{solvent} = V_t - V_> - V_<$								
IS volume, μL	(10)							
Final Conc. of IS	(40 ppm)							
Total $F = 2\ f_1\ f_>$ or $f_1\ f_2$								

† Extraction Anomaly Footnote:

1. Difficult to concentrate to 1.0 mL.
2. Extract is dark color
3. Extract is sticky
4. Heterogenous matrix.
5. Too much precipitate during extraction.
6. There is an oil layer above the sample.
7. Mixture of soil & water.
8. BN-extract is interfered, A-extract only.
9. Sample has strong stink
10. Some solvent suspected
11. special color, specify

* For double extract analysis (ABN), $f_> = \max[f_A, f_B]$ and $f_< = \min[f_A, f_B]$, where f_A, f_B are f_1 for A and BN extracts, respectively. The values in () is the typical case for 625/8270 ABN analysis.

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M LOG-063

Semi-VOC Analysis Logbook

ence # 02G502)

Starting Date: 12-17-02 Time 2:19 pm Analyst: JVB

type: ☐ Cal. ☒ Ini. Batch ☐ Middle ☐ Final ☐ Continue ☐ Study Datafile Path: _____

ne Maintenance: ☐ Replace Septum ☒ Replace Liner ☐ Replace Seal ☐ Cut Guid Column ☐ Cut Column ☐ Others _____

	Batch-No	MTX	S Type*	Sample ID	Method**	f_2	F	A-#	Datafile	OK ?†	Note††
			SP	G502)P01	DFTPP625			99	G502)P01	✓	12-17-02 2:19pm
			Cali-	M06-040	D105IM06			1	M06-040	✓	40ppm G4U4554
				-030				2	-030	✓	30
				-020				3	-020	✓	20
				-010				4	-010	✓	10
				-001				5	-001	✓	1
			CCV	G502)Q01				100	G502)Q01	✓	G4U4554
2992	02G502)	W	MB	K01			0.001	6	K01	✓	
2993			LCS	L01				7	L01	✓	
2994			LCSD	J01				8	J01	✓	
2995			MS	M01				9	M01	✓	$6556-03
2996			MSD	N01				10	N01	✓	1
2997			MS'	M02			0.000962	11	M02	✓	$6587-01
2998			MSD'	N02				12	N02	✓	1
2999				6587-01				13	6587-01	✓	
3000				-02				14	-02	✓	
3001				-03				15	-03	✓	
3002				6556-01			0.002	16	6556-01	✓	
3003				-02			0.001	17	-02	✓	
3004				-03				18	-03	✓	
3005				6588-01			0.000962	19	6588-01	✓	
3006				6603-01				20	6603-01	✓	
3007				-02				21	-02	✓	
3008				6558-01				22	6558-01	✓	
3009				-03			0.001	23	-03	✓	
3010				6586-02				24	6586-02	✓	
3011				-04				25	-04	✓	
3012				-05				26	-05	✓	
3013				-06				27	-06	2.0 overscale	
3014				-08				28	-08	↓	↓

Footnote/Anomaly:

* Sample type such as, SP(BFB, or DFTPP), CCV, CVA, CVB, LCS, LCSD, MS, MSD, MD, CLS etc. For field samples leave as blank.

** Method name: [MMMM][S][nnn]. [MMMM] – method code, per SOP C-88. Special codes: DSL2: Diesel #2; FP30: Fuel Finger Print (C8-C30); FP40: Fuel Finger Print (C8-C40); EGLY: Ethylene Glycol; FORM: Formaldehyde; MEOH: Methyl Alcohol. [S] – APCL system code; [nnn] – initial calibration number.

† Specify the result of the injection is accepted (√), or denied (X), or need Re-run (R) or use as a reference data (ref).

†† Lot # for CCV/Closing, Time for SP (e.g. DFTPP) must be recorded.

Supervisor Initial

4764

M LOG-136

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

Semi-VOC Analysis Logbook

Sequence # 03G2297 Starting Date: 5-2-03 Time 9:57 am Analyst: JWR

Seq. type: ☐ Cal. ☒ Ini. Batch ☐ Middle ☐ Final ☐ Continue ☐ Study Datafile Path: C:\HPCHEM\1\DATA\03G2297

Routine Maintenance: ☐ Replace Septum ☒ Replace Liner ☐ Replace Seal ☐ Cut Guid Column ☒ Cut Column ☐ Others

Op. #	Batch-No	MTX	S Type*	Sample ID	Method**	f_2	F	A-#	Datafile	OK ?†	Note††
5321			SP	G2297P01	DFTPP625			99	G2297P01	✓	5-2-03 9:57am
5322			CCV	Q01	D105IM06			100	Q01	✓	GC145554
5323	03G2297	S	MB	K01			0.0333	1	K01	✓	
5324			LCS	L01				2	L01	✓	
5325			LCSD	J01	JWR 5/2/03			3	J01	✓	
5326	03G2304	W	MB	~~2933~~G2304K01			0.001	4	G2304K01	✓	
5327			LCS	G2304L01				5	L01	✓	
5328			LCSD	J01				6	J01	✓	
5329				2933-05				7	2933-05	✓	
5330				2940-02				8	2940-02	✓	
5331				2964-03				9	2964-03	✓	
5332	03G2297	S		2997-02			0.0333	10	2997-02	✓	
5333				-04				11	-04	✓	
5334				2929-11				12	2929-11	✓	
5335				2920-03				13	2920-03	✓	
5336				-10				14	-10	✓	
5337				-12				15	-12	✓	
5338				-23				16	-23	✓	
5339			MS	G2297M01				17	G2297M01	✓	$2920-03
5340			MSD	N01				18	N01	✓	1
5341											
5342											
5343											
5344											
5345											
5346											
5347											
5348											
5349											
5350											

JWR 5-2-03

Footnote/Anomaly:

* Sample type such as, SP(BFB, or DFTPP), CCV, CVA, CVB, LCS, LCSD, MS, MSD, MD, CLS etc. For field samples leave as blank.

** Method name: [MMMM][S][nnn]. [MMMM] – method code, per SOP C-88. Special codes: DSL2: Diesel #2; FP30: Fuel Finger Print (C8-C30); FP40: Fuel Finger Print (C8-C40); EGLY: Ethylene Glycol; FORM: Formaldehyde; MEOH: Methyl Alcohol. [S] – APCL system code; [nnn] – initial calibration number.

† Specify the result of the injection is accepted (√), or denied (X), or need Re-run (R) or use as a reference data (ref).

†† Lot # for CCV/Closing, Time for SP (e.g. DFTPP) must be recorded.

FILE: [CUST.DOC.GC]GC_LOG .TEX Root-File: GC_LOG_ROOT.TEX 1-Page-File:[CUST.DOC.GC]GC_LOG1.TEX
APCL form 7-101, Nov 22, 2000; Ver 5.0 No pencil. Use blue pen for record. Use red pen for correction.

Supervisor Initial

Level C Data Package Deliverables

Metals

Applied P & Ch Laboratory

Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Collection Date:	04/29/2003
Project ID:	JPL	Service ID:	32933	Collected by:	
		Lab Sample ID:	03M1402-MB-01	Received Date:	04/29/2003
Sample ID:	**03M1402-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		03M1402E	04/29/03	04/29/03	1	200.9
CALCIUM	7440-70-2	μg/L	200	< 200	U	P		03M1409L	04/30/03	04/30/03	1	200.7
IRON	7439-89-6	μg/L	50	< 50	U	P		03M1409L	04/30/03	04/30/03	1	200.7
MAGNESIUM	7439-95-4	μg/L	100	< 100	U	P		03M1409L	04/30/03	04/30/03	1	200.7
POTASSIUM	7440-09-7	μg/L	400	< 400	U	P		03M1409L	04/30/03	04/30/03	1	200.7
SODIUM	7440-23-5	μg/L	2000	< 2000	U	P		03M1409L	04/30/03	04/30/03	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:	04/28/2003
Project ID:	JPL	Service ID:	32933	Collected by:	Leo Williamson
		Lab Sample ID:	03-2933-1	Received Date:	04/28/2003
Sample ID:	**EB-6-4/28/03**	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		03M1402E	04/29/03	04/29/03	1	200.9
CALCIUM	7440-70-2	μg/L	200	< 200	U	P		03M1409L	04/30/03	04/30/03	1	200.7
IRON	7439-89-6	μg/L	50	< 50	U	P		03M1409L	04/30/03	04/30/03	1	200.7
MAGNESIUM	7439-95-4	μg/L	100	< 100	U	P		03M1409L	04/30/03	04/30/03	1	200.7
POTASSIUM	7440-09-7	μg/L	400	< 400	U	P		03M1409L	04/30/03	04/30/03	1	200.7
SODIUM	7440-23-5	μg/L	2000	< 2000	U	P		03M1409L	04/30/03	04/30/03	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:	04/28/2003
Project ID:	JPL	Service ID:	32933	Collected by:	Leo Williamson
		Lab Sample ID:	03-2933-2	Received Date:	04/28/2003
Sample ID:	**MW-17-1**	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		03M1402E	04/29/03	04/29/03	1	200.9
CALCIUM	7440-70-2	μg/L	200	50700		P		03M1409L	04/30/03	04/30/03	1	200.7
IRON	7439-89-6	μg/L	50	69.6		P		03M1409L	04/30/03	04/30/03	1	200.7
MAGNESIUM	7439-95-4	μg/L	100	16100		P		03M1409L	04/30/03	04/30/03	1	200.7
POTASSIUM	7440-09-7	μg/L	400	2400		P		03M1409L	04/30/03	04/30/03	1	200.7
SODIUM	7440-23-5	μg/L	2000	16100		P		03M1409L	04/30/03	04/30/03	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:	04/28/2003
Project ID:	JPL	Service ID:	32933	Collected by:	Leo Williamson
		Lab Sample ID:	03-2933-3	Received Date:	04/28/2003
Sample ID:	**MW-17-2**	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		03M1402E	04/29/03	04/29/03	1	200.9
CALCIUM	7440-70-2	μg/L	200	41900		P		03M1409L	04/30/03	04/30/03	1	200.7
IRON	7439-89-6	μg/L	50	311		P		03M1409L	04/30/03	04/30/03	1	200.7
MAGNESIUM	7439-95-4	μg/L	100	18100		P		03M1409L	04/30/03	04/30/03	1	200.7
POTASSIUM	7440-09-7	μg/L	400	2480		P		03M1409L	04/30/03	04/30/03	1	200.7
SODIUM	7440-23-5	μg/L	2000	15900		P		03M1409L	04/30/03	04/30/03	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:	04/28/2003
Project ID:	JPL	Service ID:	32933	Collected by:	Leo Williamson
		Lab Sample ID:	03-2933-4	Received Date:	04/28/2003
Sample ID:	**MW-17-3**	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		03M1402E	04/29/03	04/29/03	1	200.9
CALCIUM	7440-70-2	μg/L	200	37600		P		03M1409L	04/30/03	04/30/03	1	200.7
IRON	7439-89-6	μg/L	50	822		P		03M1409L	04/30/03	04/30/03	1	200.7
MAGNESIUM	7439-95-4	μg/L	100	16600		P		03M1409L	04/30/03	04/30/03	1	200.7
POTASSIUM	7440-09-7	μg/L	400	2060		P		03M1409L	04/30/03	04/30/03	1	200.7
SODIUM	7440-23-5	μg/L	2000	20400		P		03M1409L	04/30/03	04/30/03	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:	04/28/2003
Project ID:	JPL	Service ID:	32933	Collected by:	Leo Williamson
		Lab Sample ID:	03-2933-5	Received Date:	04/28/2003
Sample ID:	**MW-17-4**	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	2.2	B	F		03M1402E	04/29/03	04/29/03	1	200.9
CALCIUM	7440-70-2	μg/L	200	21900		P		03M1409L	04/30/03	04/30/03	1	200.7
IRON	7439-89-6	μg/L	50	639		P		03M1409L	04/30/03	04/30/03	1	200.7
MAGNESIUM	7439-95-4	μg/L	100	11300		P		03M1409L	04/30/03	04/30/03	1	200.7
POTASSIUM	7440-09-7	μg/L	400	1960		P		03M1409L	04/30/03	04/30/03	1	200.7
SODIUM	7440-23-5	μg/L	2000	31400		P		03M1409L	04/30/03	04/30/03	1	200.7

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:	04/28/2003
Project ID:	JPL	Service ID:	32933	Collected by:	Leo Williamson
		Lab Sample ID:	03-2933-6	Received Date:	04/28/2003
Sample ID:	**MW-17-5**	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	3.2	B	F		03M1402E	04/29/03	04/29/03	1	200.9
CALCIUM	7440-70-2	μg/L	200	25100		P		03M1409L	04/30/03	04/30/03	1	200.7
IRON	7439-89-6	μg/L	50	1280		P		03M1409L	04/30/03	04/30/03	1	200.7
MAGNESIUM	7439-95-4	μg/L	100	7240		P		03M1409L	04/30/03	04/30/03	1	200.7
POTASSIUM	7440-09-7	μg/L	400	2080		P		03M1409L	04/30/03	04/30/03	1	200.7
SODIUM	7440-23-5	μg/L	2000	39500		P		03M1409L	04/30/03	04/30/03	1	200.7

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	Service ID:	032933	Sequence No.:	03M1402E
		Instrument:	GFAA-E	Method:	200.9
Batch No.(s):	03M1402				

Analysis Date: **04/29/03** Concentration Units: **UG/L**

		ICV	11:52		CCV	13:10		CCV	14:25		CCV	15:30	
#	Analyte	True	Result	%R	True	Result	%R	True	Result	%R	True	Result	%R
1	Arsenic	50.0	49.60	99.2	50.0	52.30	104.6	50.0	50.20	100.4	50.0	53.80	107.6

(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	Service ID:	032933	Sequence No.:	03M1409L
		Instrument:	ICP -L	Method:	200.9
Batch No.(s):	03M1409				

Analysis Date: **04/30/03** Concentration Units: **UG/L**

#	Analyte	ICV True	12:11 Result	%R	CCV True	12:33 Result	%R	CCV True	13:07 Result	%R	CCV True	13:32 Result	%R
1	Aluminum	10000.0	9812.40	98.1	5000.0	5120.35	102.4	5000.0	5028.26	100.6	5000.0	5034.53	100.7
2	Antimony	4000.0	3985.69	99.6	2000.0	2006.03	100.3	2000.0	1972.79	98.6	2000.0	1978.66	98.9
3	Arsenic	1000.0	988.30	98.8	500.0	500.54	100.1	500.0	499.44	99.9	500.0	498.09	99.6
4	Barium	10000.0	9948.75	99.5	5000.0	5167.83	103.4	5000.0	4990.24	99.8	5000.0	4982.71	99.7
5	Beryllium	1000.0	998.08	99.8	500.0	509.70	101.9	500.0	490.32	98.1	500.0	488.56	97.7
6	Cadmium	2000.0	1970.39	98.5	1000.0	994.28	99.4	1000.0	999.05	99.9	1000.0	988.25	98.8
7	Calcium	100000.0	98213.02	98.2	50000.0	50447.02	100.9	50000.0	49603.09	99.2	50000.0	49294.44	98.6
8	Chromium	1000.0	991.00	99.1	500.0	508.25	101.6	500.0	495.00	99.0	500.0	495.43	99.1
9	Cobalt	4000.0	3950.73	98.8	2000.0	2014.28	100.7	2000.0	2003.62	100.2	2000.0	1993.09	99.7
10	Copper	4000.0	3968.36	99.2	2000.0	1987.33	99.4	2000.0	1967.30	98.4	2000.0	1948.96	97.4
11	Iron	10000.0	9863.90	98.6	5000.0	5061.73	101.2	5000.0	4977.17	99.5	5000.0	4955.97	99.1
12	Lead	1000.0	981.82	98.2	500.0	493.98	98.8	500.0	498.19	99.6	500.0	493.66	98.7
13	Magnesium	50000.0	49104.83	98.2	25000.0	24977.02	99.9	25000.0	24832.03	99.3	25000.0	24617.46	98.5
14	Manganese	4000.0	3977.56	99.4	2000.0	2065.61	103.3	2000.0	2001.21	100.1	2000.0	1992.59	99.6
15	Nickel	4000.0	3938.44	98.5	2000.0	2018.46	100.9	2000.0	2003.34	100.2	2000.0	1984.37	99.2
16	Potassium	30000.0	29616.55	98.7	15000.0	15225.80	101.5	15000.0	15096.64	100.6	15000.0	15124.74	100.8
17	Selenium	1000.0	972.18	97.2	500.0	501.53	100.3	500.0	507.69	101.5	500.0	501.82	100.4
18	Silver	2000.0	1993.67	99.7	1000.0	994.91	99.5	1000.0	974.86	97.5	1000.0	971.66	97.2
19	Sodium	200000.0	193980.50	97.0	100000.0	99870.41	99.9	100000.0	100977.02	101.0	100000.0	100606.16	100.6
20	Thallium	1000.0	991.08	99.1	500.0	505.93	101.2	500.0	489.52	97.9	500.0	500.10	100.0
21	Vanadium	4000.0	3975.15	99.4	2000.0	2020.90	101.0	2000.0	1999.54	100.0	2000.0	1966.88	98.3
22	Zinc	4000.0	3917.54	97.9	2000.0	1996.33	99.8	2000.0	2001.86	100.1	2000.0	1983.67	99.2
23	Molybdenum	4000.0	3952.88	98.8	2000.0	2016.77	100.8	2000.0	1993.51	99.7	2000.0	1977.98	98.9

(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	Service ID:	032933	Sequence No.:	03M1409L
		Instrument:	ICP -L	Method:	200.9
Batch No.(s):	03M1409				

Analysis Date: **04/30/03** Concentration Units: **UG/L**

#	Analyte	CCV True	13:59 Result	%R	CCV True	14:34 Result	%R	CCV True	15:00 Result	%R	CCV True	15:45 Result	%R
1	Aluminum	5000.0	5098.40	102.0	5000.0	4998.04	100.0	5000.0	5005.26	100.1	5000.0	5249.19	105.0
2	Antimony	2000.0	1973.92	98.7	2000.0	1888.52	94.4	2000.0	1959.85	98.0	2000.0	1963.88	98.2
3	Arsenic	500.0	496.50	99.3	500.0	483.23	96.6	500.0	491.72	98.3	500.0	496.70	99.3
4	Barium	5000.0	5036.49	100.7	5000.0	4918.78	98.4	5000.0	4949.94	99.0	5000.0	5182.43	103.6
5	Beryllium	500.0	495.22	99.0	500.0	479.47	95.9	500.0	478.73	95.7	500.0	499.21	99.8
6	Cadmium	1000.0	995.89	99.6	1000.0	962.30	96.2	1000.0	985.08	98.5	1000.0	992.35	99.2
7	Calcium	50000.0	49937.88	99.9	50000.0	47656.80	95.3	50000.0	49080.17	98.2	50000.0	50642.05	101.3
8	Chromium	500.0	496.56	99.3	500.0	478.60	95.7	500.0	489.80	98.0	500.0	502.68	100.5
9	Cobalt	2000.0	2012.77	100.6	2000.0	1954.42	97.7	2000.0	1958.52	97.9	2000.0	2022.20	101.1
10	Copper	2000.0	1984.82	99.2	2000.0	1924.25	96.2	2000.0	1920.97	96.0	2000.0	1992.38	99.6
11	Iron	5000.0	5023.21	100.5	5000.0	4904.63	98.1	5000.0	4921.85	98.4	5000.0	5141.05	102.8
12	Lead	500.0	495.60	99.1	500.0	482.06	96.4	500.0	495.00	99.0	500.0	504.41	100.9
13	Magnesium	25000.0	25089.04	100.4	25000.0	24747.17	99.0	25000.0	24952.28	99.8	25000.0	25961.18	103.8
14	Manganese	2000.0	2013.30	100.7	2000.0	1951.32	97.6	2000.0	1952.29	97.6	2000.0	2025.86	101.3
15	Nickel	2000.0	2018.16	100.9	2000.0	1966.77	98.3	2000.0	1970.74	98.5	2000.0	2037.04	101.9
16	Potassium	15000.0	15337.02	102.2	15000.0	15069.94	100.5	15000.0	15282.35	101.9	15000.0	15611.80	104.1
17	Selenium	500.0	504.25	100.8	500.0	485.31	97.1	500.0	494.22	98.8	500.0	503.38	100.7
18	Silver	1000.0	990.37	99.0	1000.0	967.97	96.8	1000.0	970.94	97.1	1000.0	1018.13	101.8
19	Sodium	100000.0	102169.09	102.2	100000.0	100462.87	100.5	100000.0	101741.04	101.7	100000.0	103986.67	104.0
20	Thallium	500.0	494.48	98.9	500.0	477.16	95.4	500.0	496.46	99.3	500.0	506.84	101.4
21	Vanadium	2000.0	2024.56	101.2	2000.0	1964.33	98.2	2000.0	1961.32	98.1	2000.0	2055.47	102.8
22	Zinc	2000.0	2016.55	100.8	2000.0	1963.87	98.2	2000.0	1958.99	97.9	2000.0	2001.11	100.1
23	Molybdenum	2000.0	1987.65	99.4	2000.0	1930.12	96.5	2000.0	1999.15	100.0	2000.0	2030.87	101.5

(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	Service ID:	032933	Sequence No.:	03M1409L
		Instrument:	ICP -L	Method:	200.9
Batch No.(s):	03M1409				

Analysis Date: **04/30/03** Concentration Units: **UG/L**

#	Analyte	CCV True	16:19 Result	%R	CCV True	16:43 Result	%R	CCV True	17:07 Result	%R	CCV True	17:33 Result	%R
1	Aluminum	5000.0	5198.99	104.0	5000.0	5247.46	104.9						
2	Antimony	2000.0	1942.97	97.1	2000.0	1939.56	97.0						
3	Arsenic	500.0	488.25	97.6	500.0	484.94	97.0						
4	Barium	5000.0	5161.53	103.2	5000.0	5094.61	101.9						
5	Beryllium	500.0	496.69	99.3	500.0	494.51	98.9						
6	Cadmium	1000.0	992.58	99.3	1000.0	980.45	98.0						
7	Calcium	50000.0	49073.98	98.1	50000.0	49566.64	99.1						
8	Chromium	500.0	506.98	101.4	500.0	508.90	101.8						
9	Cobalt	2000.0	2002.58	100.1	2000.0	1987.83	99.4						
10	Copper	2000.0	1964.72	98.2	2000.0	1959.26	98.0						
11	Iron	5000.0	5099.97	102.0	5000.0	5086.39	101.7	5000.0	5043.77	100.9	5000.0	4650.54	93.0
12	Lead	500.0	490.62	98.1	500.0	488.22	97.6						
13	Magnesium	25000.0	25707.86	102.8	25000.0	25465.34	101.9						
14	Manganese	2000.0	2015.72	100.8	2000.0	1997.56	99.9						
15	Nickel	2000.0	2016.07	100.8	2000.0	2003.23	100.2						
16	Potassium	15000.0	15401.81	102.7	15000.0	15504.93	103.4						
17	Selenium	500.0	501.55	100.3	500.0	498.42	99.7						
18	Silver	1000.0	1011.21	101.1	1000.0	1007.20	100.7						
19	Sodium	100000.0	102760.90	102.8	100000.0	100957.62	101.0						
20	Thallium	500.0	507.16	101.4	500.0	497.49	99.5						
21	Vanadium	2000.0	2015.24	100.8	2000.0	2025.13	101.3						
22	Zinc	2000.0	1981.01	99.1	2000.0	1960.19	98.0						
23	Molybdenum	2000.0	2058.40	102.9	2000.0	2051.31	102.6						

(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	Service ID:	032933	Sequence No.:	03M1409L
		Instrument:	ICP -L	Method:	200.9
Batch No.(s):	03M1409				

Analysis Date: **04/30/03**

Concentration Units: **UG/L**

#	Analyte	CCV True	18:01 Result	%R	CCV True	18:30 Result	%R	True	Result	%R	True	Result	%R
1	Iron	5000.0	4641.53	92.8	5000.0	4833.93	96.7						

(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	Service ID:	032933	Sequence No.:	03M1409L
		Instrument:	ICP -L	Method:	200.9
Batch No.(s):	03M1409				

Analysis Date: **04/30/03**

Concentration Units: **UG/L**

#	Analyte	True	12:24 Found	R%	Time Found	R%
1	Aluminum	200.0	211.79	105.9		
2	Antimony	20.0	22.57	112.9		
3	Arsenic	20.0	18.55	92.7		
4	Barium	10.0	10.57	105.7		
5	Beryllium	4.0	4.12	103.0		
6	Cadmium	5.0	5.17	103.4		
7	Calcium	1000.0	1079.58	108.0		
8	Chromium	10.0	9.99	99.9		
9	Cobalt	20.0	20.13	100.7		
10	Copper	10.0	9.28	92.8		
11	Iron	50.0	50.60	101.2		
12	Lead	10.0	9.64	96.4		
13	Magnesium		27.13			
14	Manganese	10.0	9.76	97.6		
15	Nickel	20.0	19.60	98.0		
16	Potassium		8.06			
17	Selenium	10.0	10.83	108.3		
18	Silver	10.0	9.23	92.3		
19	Sodium		-124.94			
20	Thallium	10.0	10.36	103.6		
21	Vanadium	10.0	8.99	89.9		
22	Zinc	20.0	21.56	107.8		
23	Molybdenum	15.0	13.70	91.3		

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	Service ID:	032933	Sequence No.:	03M1402E
		Instrument:	GFAA-E	Method:	200.9
Batch No.(s):	03M1402				

Analysis Date: **04/29/03**

Concentration Units: **UG/L**

#	Analyte	ICB Result	11:59 C	CCB Result	13:16 C	CCB Result	14:32 C	CCB Result	15:36 C	CCB Result	Time C
1	Arsenic	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	Service ID:	032933	Sequence No.:	03M1409L
		Instrument:	ICP -L	Method:	200.9
Batch No.(s):	03M1409				

Analysis Date: **04/30/03** Concentration Units: **UG/L**

#	Analyte	ICB Result	12:20 C	CCB Result	12:36 C	CCB Result	13:10 C	CCB Result	13:35 C	CCB Result	14:02 C
1	Aluminum	5.60	U	5.60	U	5.60	U	5.60	U	5.60	U
2	Antimony	2.73	B	2.70	U	2.97	B	2.70	U	2.70	U
3	Arsenic	-1.95	B	-4.29	B	-3.64	B	-2.51	B	1.90	U
4	Barium	1.20	U	1.20	U	1.20	U	1.20	U	1.20	U
5	Beryllium	0.06	U	0.06	U	0.06	U	0.12	B	0.06	B
6	Cadmium	0.21	B	0.23	B	0.20	B	0.22	B	0.13	U
7	Calcium	-71.59	B	59.00	U	-112.40	B	-96.36	B	-102.59	B
8	Chromium	0.14	U	0.14	U	0.14	U	0.14	U	0.16	B
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	3.03	B	1.70	B	1.50	U	1.50	U
12	Lead	1.30	U	-1.43	B	-1.31	B	-1.75	B	1.30	U
13	Magnesium	9.70	U	14.06	B	10.21	B	9.95	B	9.70	U
14	Manganese	0.16	U	0.61	B	0.60	B	0.67	B	0.57	B
15	Nickel	0.52	B	0.48	B	0.46	U	0.46	U	0.46	U
16	Potassium	17.46	B	8.10	U	8.10	U	8.10	U	8.10	U
17	Selenium	-2.50	B	2.30	U	2.30	U	2.30	U	2.30	U
18	Silver	-0.67	B	0.61	U	0.61	U	0.61	U	0.61	U
19	Sodium	144.00	U	-263.44	B	-234.08	B	-374.73	B	-278.23	B
20	Thallium	1.60	U	1.60	U	1.60	U	1.60	U	1.60	U
21	Vanadium	0.13	U	0.40	B	0.39	B	0.39	B	1.28	B
22	Zinc	2.20	U	2.20	U	2.20	U	2.20	U	2.20	U
23	Molybdenum	0.34	B	1.38	B	0.37	B	0.35	B	0.70	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	Service ID:	032933	Sequence No.:	03M1409L
		Instrument:	ICP -L	Method:	200.9
Batch No.(s):	03M1409				

Analysis Date: **04/30/03** Concentration Units: **UG/L**

#	Analyte	CCB Result	14:38 C	CCB Result	15:05 C	CCB Result	15:49 C	CCB Result	16:23 C	CCB Result	16:47 C
1	Aluminum	5.60	U	8.73	B	5.60	U	5.60	U	5.60	U
2	Antimony	2.70	U	2.70	U	2.70	U	2.70	U	2.70	U
3	Arsenic	1.90	U	-4.67	B	-2.61	B	-4.36	B	1.90	U
4	Barium	1.20	U	1.20	U	1.20	U	1.20	U	1.20	U
5	Beryllium	0.06	U	0.06	U	0.06	U	0.07	B	0.06	U
6	Cadmium	0.28	B	0.22	B	0.13	U	0.26	B	0.13	U
7	Calcium	-161.54	B	59.00	U	-203.31		-71.28	B	-81.80	B
8	Chromium	0.14	U	0.14	U	0.19	B	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	2.12	B	1.50	U	3.60	B
12	Lead	1.30	U	1.30	U	1.30	U	1.30	U	1.30	U
13	Magnesium	9.70	U	9.70	U	14.43	B	9.70	U	11.55	B
14	Manganese	0.44	B	0.24	B	0.75	B	0.73	B	0.73	B
15	Nickel	0.46	U	0.58	B	0.46	U	0.46	U	0.46	U
16	Potassium	15.47	B	18.00	B	8.10	U	8.10	U	8.10	U
17	Selenium	-4.04	B	2.30	U	-2.32	B	2.30	U	2.30	U
18	Silver	0.61	U	0.61	U	0.61	U	-0.64	B	0.61	U
19	Sodium	144.00	U	-199.59	B	-261.77	B	144.00	U	-154.36	B
20	Thallium	1.60	U	1.60	U	1.60	U	1.60	U	1.60	U
21	Vanadium	-0.37	B	0.13	U	0.13	U	0.25	B	0.90	B
22	Zinc	2.20	U	2.20	U	2.20	U	2.20	U	2.20	U
23	Molybdenum	0.32	U	0.88	B	0.74	B	0.68	B	0.79	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	Service ID:	032933	Sequence No.:	03M1409L
		Instrument:	ICP -L	Method:	200.9
Batch No.(s):	03M1409				

Analysis Date: **04/30/03**

Concentration Units: **UG/L**

#	Analyte	CCB Result	17:09 C	CCB Result	17:35 C	CCB Result	18:03 C	CCB Result	18:32 C	CCB Result	Time C
1	Iron	1.50	U	-2.26	B	1.50	U	1.73	B		

FORM-4 Metal

Applied P & Ch Laboratory

ICP Interference Check Sample

Client Name: GEOFON, Inc.
Project Name: JPL
Batch No.(s): 03M1409

Project No: 04-4428.10
Service ID: 032933
ICP ID Number: ICP -L

Lab Code: APCL
Sequence No.: 03M1409L

Analysis Date: **04/30/03**

Concentration Units: **UG/L**

#	Analyte	Expected Sol. A	Expected Sol. AB	Initial 12:26 Sol. A	Found 12:29 Sol. AB	%R	Final 16:37 Sol. A	Found 16:39 Sol. AB	%R
1	Aluminum	500000	500000	463258	480526.3	96.1	462937	471174.6	94.2
2	Antimony	0	1000	-4	979.3	97.9	6	963.5	96.4
3	Arsenic	0	1000	11	974.9	97.5	-11	945.8	94.6
4	Barium	0	500	-2	0.0	0.0	-1	501.8	100.4
5	Beryllium	0	500	0	494.5	98.9	0	474.6	94.9
6	Cadmium	0	1000	-1	994.9	99.5	1	976.9	97.7
7	Calcium	500000	500000	462669	487888.8	97.6	450417	480858.8	96.2
8	Chromium	0	500	6	517.9	103.6	7	517.8	103.6
9	Cobalt	0	500	2	484.0	96.8	3	478.3	95.7
10	Copper	0	500	6	523.8	104.8	6	500.7	100.1
11	Iron	200000	200000	181171	183015.3	91.5	179807	180006.4	90.0
12	Lead	0	1000	-6	924.1	92.4	-1	932.7	93.3
13	Magnesium	500000	500000	470843	472759.6	94.6	476195	473515.2	94.7
14	Manganese	0	500	-1	500.5	100.1	-2	482.0	96.4
15	Nickel	0	1000	0	939.4	93.9	2	937.1	93.7
16	Potassium	0	0	13	14.4		24	36.6	
17	Selenium	0	1000	25	964.0	96.4	-3	945.9	94.6
18	Silver	0	1000	6	1043.3	104.3	5	1021.1	102.1
19	Sodium	0	0	-265	-213.8		-316	216.8	
20	Thallium	0	1000	0	920.7	92.1	-12	929.4	92.9
21	Vanadium	0	500	-3	505.5	101.1	-2	489.3	97.9
22	Zinc	0	1000	8	990.3	99.0	7	972.4	97.2
23	Molybdenum	0	1000	4	977.4	97.7	2	990.1	99.0

FORM-4 Metal

Applied P & Ch Laboratory

ICP Interference Check Sample

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Lab Code:	APCL
Project Name:	JPL	Service ID:	032933	Sequence No.:	03M1409L
		ICP ID Number:	ICP -L		
Batch No.(s):	03M1409				

Analysis Date: **04/30/03**

Concentration Units: **UG/L**

		Expected		Initial 18:25	Found 18:28		Final	Found	
#	Analyte	Sol. A	Sol. AB	Sol. A	Sol. AB	%R	Sol. A	Sol. AB	%R
1	Iron	200000	200000	192718	198394.0	99.2			

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:	32933
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03M1402E		
MS Filename:	-	Date Analyzed:	042903	Time Analyzed:	12:44
MSD Filename:	-	Date Analyzed:	042903	Time Analyzed:	12:50
MS Sample No:	**MW-17-2**	Sample Lab ID:	03-2933-3		

Spiked Components	Unit	Spike Added	Concentration Unspiked	Concentration MS	MS Rec% #	QC Limit, % REC
ARSENIC	μg/L	50	0	45.6	91	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	46.3	93	2	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:	32933
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03M1409L		
MS Filename:	-	Date Analyzed:	043003	Time Analyzed:	12:59
MSD Filename:	-	Date Analyzed:	043003	Time Analyzed:	13:02
MS Sample No:	**MW-17-2**	Sample Lab ID:	03-2933-3		

Spiked Components	Unit	Spike Added	Concentration Unspiked	Concentration MS	MS Rec% #	QC Limit, % REC
CALCIUM	μg/L	20000	41900	61200	97	75-125
MAGNESIUM	μg/L	10000	18100	28500	104	75-125
POTASSIUM	μg/L	5000	2480	8110	113	75-125
SODIUM	μg/L	40000	15900	57300	104	75-125
# of Out-of-control					0	

Spiked Components	Unit	Spike Added	MSD Concentration	MSD Rec% #	RPD% #	QC Limit, % RPD	QC Limit, % REC
CALCIUM	μg/L	20000	61500	98	1	20	75-125
MAGNESIUM	μg/L	10000	27900	98	6	20	75-125
POTASSIUM	μg/L	5000	7990	110	3	20	75-125
SODIUM	μg/L	40000	56900	103	1	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:	32933
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03M1409L		
MS Filename:	-	Date Analyzed:	043003	Time Analyzed:	17:26
MSD Filename:	-	Date Analyzed:	043003	Time Analyzed:	17:28
MS Sample No:	**MW-17-2**	Sample Lab ID:	03-2933-3		

Spiked Components	Unit	Spike Added	Concentration Unspiked	Concentration MS	MS Rec% #	QC Limit, % REC
IRON	μg/L	1000	311	1250	94	75-125
# of Out-of-control					0	

Spiked Components	Unit	Spike Added	MSD Concentration	MSD Rec% #	RPD% #	QC Limit, % RPD	QC Limit, % REC
IRON	μg/L	1000	1230	92	2	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	Service ID:	032933	Sequence No.:	03M1402E
		Batch No.:	03M1402	Method:	200.9
Spike Sample No. :	03-2933-03	Matrix:	WATER	Instrument:	GFAA-E
Client Sample No.:	MW-17-2	Analysis Date:	04/29/03		

Concentration Units: **UG/L**

#	Analyte	Spiked Sample Result(SSR)	12:57 C	Sample Result(SR)	12:24 C	Spike Added(SA)	% Rec.	Control Limit	Q
1	Arsenic	48.6000		-0.5000	U	50.00	97.2	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	Service ID:	032933	Sequence No.:	03M1409L
		Batch No.:	03M1409	Method:	200.9
Spike Sample No. :	03-2933-03	Matrix:	WATER	Instrument:	ICP -L
Client Sample No.:	MW-17-2	Analysis Date:	04/30/03		

Concentration Units: UG/L

#	Analyte	Spiked Sample Result(SSR)	13:04 C	Sample Result(SR)	12:48 C	Spike Added(SA)	% Rec.	Control Limit	Q
1	Aluminum	2126.3169		23.8939	B	2000.00	105.1	75-125	
2	Antimony	495.4527		2.2341	U	500.00	99.1	75-125	
3	Arsenic	491.7809		-1.2742	U	500.00	98.4	75-125	
4	Barium	4138.8643		51.1674		4000.00	102.2	75-125	
5	Beryllium	188.0006		0.0578	B	200.00	94.0	75-125	
6	Cadmium	249.9257		0.1993	B	250.00	99.9	75-125	
7	Calcium	59707.0469		41893.0234		20000.00	89.1	75-125	
8	Chromium	996.5853		1.7584	B	1000.00	99.5	75-125	
9	Cobalt	980.4302		-0.4258	U	1000.00	98.0	75-125	
10	Copper	959.8073		0.7453	U	1000.00	96.0	75-125	
11	Iron	1290.5531		314.0540		1000.00	97.6	75-125	
12	Lead	2980.6189		-0.8298	U	3000.00	99.4	75-125	
13	Magnesium	27767.9668		18126.0156		10000.00	96.4	75-125	
14	Manganese	920.6787		3.0841	B	1000.00	91.8	75-125	
15	Nickel	966.6140		0.5367	B	1000.00	96.6	75-125	
16	Potassium	7889.1875		2480.8416		5000.00	108.2	75-125	
17	Selenium	513.3387		-0.0345	U	500.00	102.7	75-125	
18	Silver	948.4855		1.0105	B	1000.00	94.7	75-125	
19	Sodium	56371.6172		15899.6572		40000.00	101.2	75-125	
20	Thallium	514.4723		-1.2012	U	500.00	102.9	75-125	
21	Vanadium	1939.8680		1.5136	B	2000.00	96.9	75-125	
22	Zinc	496.5833		3.3512	B	500.00	98.6	75-125	
23	Molybdenum	2077.6257		2.9359	B	2000.00	103.7	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	Service ID:	032933	Sequence No.:	03M1409L
		Batch No.:	03M1409	Method:	200.9
Spike Sample No. :	03-2933-03	Matrix:	WATER	Instrument:	ICP -L
Client Sample No.:	MW-17-2	Analysis Date:	04/30/03		

Concentration Units: UG/L

#	Analyte	Spiked Sample Result(SSR)	17:30 C	Sample Result(SR)	17:18 C	Spike Added(SA)	% Rec.	Control Limit	Q
1	Iron	1207.9413		311.1490		1000.00	89.7	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	Service ID:	032933	Sequence No.:	03M1402E
		Batch No.:	03M1402	Method:	200.9
Spike Sample No.	03-2933-03	Matrix:	WATER	Instrument:	GFAA-E
Client Sample No.	MW-17-2	% Solid:	0.00	Analysis Date:	04/29/03

Concentration Unit: **UG/L**

#	Analyte	12:24 Sample(s)	C	12:30 Duplicate	C	RPD(%)	Q
1	Arsenic	-0.5000	U	0.7000	U		

FORM-6 Metal

Applied P & Ch Laboratory

Duplicates Verification

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Lab Code:	APCL
Project Name:	JPL	Service ID:	032933	Sequence No.:	03M1409L
		Batch No.:	03M1409	Method:	200.9
Spike Sample No.	03-2933-03	Matrix:	WATER	Instrument:	ICP -L
Client Sample No.	MW-17-2	% Solid:	0.00	Analysis Date:	04/30/03

Concentration Unit: **UG/L**

#	Analyte	17:18 Sample(s)	C	12:52 Duplicate	C	RPD(%)	Q
1	Iron	311.1490		319.9178		2.8	

FORM-6 Metal

Applied P & Ch Laboratory

Duplicates Verification

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Lab Code:	APCL
Project Name:	JPL	Service ID:	032933	Sequence No.:	03M1409L
		Batch No.:	03M1409	Method:	200.9
Spike Sample No.	03-2933-03	Matrix:	WATER	Instrument:	ICP -L
Client Sample No.	**MW-17-2**	% Solid:	0.00	Analysis Date:	04/30/03

Concentration Unit: **UG/L**

#	Analyte	17:18 Sample(s)	C	17:21 Duplicate	C	RPD(%)	Q
1	Iron	311.1490		320.4336		2.9	

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:	32933
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03M1402E		
LCS Filename:	-	Date Analyzed:	042903	Time Analyzed:	12:11
LCSD Filename:	-	Date Analyzed:	042903	Time Analyzed:	12:18

Spiked Components	Unit	Spike Added	Concentration Unspiked	Concentration LCS	LCS Rec% #	QC Limit, % REC
ARSENIC	μg/L	50	0	53.1	106	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	49.8	100	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-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:	32933
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03M1409L		
LCS Filename:	-	Date Analyzed:	043003	Time Analyzed:	12:41
LCSD Filename:	-	Date Analyzed:	043003	Time Analyzed:	12:45

Spiked Components	Unit	Spike Added	Concentration Unspiked	Concentration LCS	LCS Rec% #	QC Limit, % REC
CALCIUM	μg/L	20000	0	20600	103	80-120
MAGNESIUM	μg/L	10000	0	9430	94	80-120
POTASSIUM	μg/L	5000	0	5170	103	80-120
SODIUM	μg/L	40000	0	40400	101	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	20200	101	2	20	80-120
MAGNESIUM	μg/L	10000	9900	99	5	20	80-120
POTASSIUM	μg/L	5000	5370	107	4	20	80-120
SODIUM	μg/L	40000	40600	102	1	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:	32933
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03M1409L		
LCS Filename:	-	Date Analyzed:	043003	Time Analyzed:	17:14
LCSD Filename:	-	Date Analyzed:	043003	Time Analyzed:	17:16

Spiked Components	Unit	Spike Added	Concentration Unspiked	Concentration LCS	LCS Rec% #	QC Limit, % REC
IRON	μg/L	1000	0	951	95	80-120
# of Out-of-control					0	

Spiked Components	Unit	Spike Added	LCSD Concentration	LCSD Rec% #	RPD% #	QC Limit, % RPD	QC Limit, % REC
IRON	μg/L	1000	976	98	3	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	Service ID:	032933	Sequence No.:	03M1402E
		Batch No.:	03M1402	Method:	200.9
Dilution Sample No.:	03-2933-03	Matrix:	WATER	Instrument:	GFAA-E
Client Sample No.:	MW-17-2	Analysis Date:	04/29/03		

Concentration Units: **UG/L**

#	Analyte	Initial Sample Results(I)	12:24 C	Serial Dilut Results(S)	12:37 C	% Diff.	Q
1	Arsenic	-0.50	U	-5.00	U		

FORM-9 Metal

Applied P & Ch Laboratory

Serial Dilution

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Lab Code:	APCL
Project Name:	JPL	Service ID:	032933	Sequence No.:	03M1409L
		Batch No.:	03M1409	Method:	200.9
Dilution Sample No.:	03-2933-03	Matrix:	WATER	Instrument:	ICP -L
Client Sample No.:	MW-17-2	Analysis Date:	04/30/03		

Concentration Units: **UG/L**

#	Analyte	Initial Sample Results(I)	12:48 C	Serial Dilut Results(S)	12:55 C	% Diff.	Q
1	Aluminum	23.89	B	49.39	B	106.7	
2	Antimony	2.23	U	13.84	B		
3	Arsenic	-1.27	U	-17.64	U		
4	Barium	51.17		53.01		3.6	
5	Beryllium	0.06	B	0.00	U	100.0	
6	Cadmium	0.20	B	-0.67	U	100.0	
7	Calcium	41893.02		43186.43		3.1	
8	Chromium	1.76	B	2.39	B	36.2	
9	Cobalt	-0.43	U	-1.45	U		
10	Copper	0.75	U	0.03	U		
11	Iron	314.05		330.37		5.2	
12	Lead	-0.83	U	-4.24	U		
13	Magnesium	18126.02		18058.32		0.4	
14	Manganese	3.08	B	6.05	B	96.1	
15	Nickel	0.54	B	21.58	B	3920.5	
16	Potassium	2480.84		2132.38		14.0	E
17	Selenium	-0.03	U	0.41	U		
18	Silver	1.01	B	6.41	B	533.9	
19	Sodium	15899.66		14979.79		5.8	
20	Thallium	-1.20	U	2.85	U		
21	Vanadium	1.51	B	3.83	B	153.0	
22	Zinc	3.35	B	15.33	B	357.4	
23	Molybdenum	2.94	B	4.71	B	60.4	

FORM-9 Metal

Applied P & Ch Laboratory

Serial Dilution

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Lab Code:	APCL
Project Name:	JPL	Service ID:	032933	Sequence No.:	03M1409L
		Batch No.:	03M1409	Method:	200.9
Dilution Sample No.:	03-2933-03	Matrix:	WATER	Instrument:	ICP -L
Client Sample No.:	**MW-17-2**	Analysis Date:	04/30/03		

Concentration Units: **UG/L**

#	Analyte	Initial Sample Results(I)	17:18 C	Serial Dilut Results(S)	17:23 C	% Diff.	Q
1	Iron	311.15		330.30		6.2	

FORM-13 Metal

Applied P & Ch Laboratory

Preparation Log

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Lab Code:	APCL
Project Name:	JPL	Service ID:	032933	Sequence No.:	03M1402E
		Batch No.:	03M1402	Method:	200.9
Preparation Matrix:	WATER	Instrument:	GFAA-E		

#	Client Sample No.	APCL Sample No.	Preparation Date	Weight (gram)	Volume (ml)
1	DUPE-2-2Q03	03-2843-01	04/29/03		50.0
2	EB-4-4/23/03	03-2843-02	04/29/03		50.0
3	MW-14-1	03-2843-03	04/29/03		50.0
4	MW-14-2	03-2843-04	04/29/03		50.0
5	MW-14-3	03-2843-05	04/29/03		50.0
6	MW-14-4	03-2843-06	04/29/03		50.0
7	MW-14-5	03-2843-07	04/29/03		50.0
8	DUPE-3-2Q03	03-2866-01	04/29/03		50.0
9	EB-5-4/24/03	03-2866-02	04/29/03		50.0
10	MW-20-1	03-2866-03	04/29/03		50.0
11	MW-20-2	03-2866-04	04/29/03		50.0
12	MW-20-3	03-2866-05	04/29/03		50.0
13	MW-20-4	03-2866-06	04/29/03		50.0
14	MW-20-5	03-2866-07	04/29/03		50.0
15	MW-17-2	03-2933-03DM	04/29/03		50.0
16	EB-6-4/28/03	03-2933-01	04/29/03		50.0
17	MW-17-1	03-2933-02	04/29/03		50.0
18	MW-17-3	03-2933-04	04/29/03		50.0
19	MW-17-4	03-2933-05	04/29/03		50.0
20	MW-17-5	03-2933-06	04/29/03		50.0
21		03M1402MB	04/29/03		50.0
22		03M1402LCS	04/29/03		50.0
23		03M1402LCSD	04/29/03		50.0
24	MW-17-2 Dup.	03M1402MD	04/29/03		50.0
25	MW-17-2 MS	03M1402MS	04/29/03		50.0
26	MW-17-2 MSD	03M1402MSD	04/29/03		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	Service ID:	032933	Sequence No.:	03M1409L
		Batch No.:	03M1409	Method:	200.9
Preparation Matrix:	WATER	Instrument:	ICP -L		

#	Client Sample No.	APCL Sample No.	Preparation Date	Weight (gram)	Volume (ml)
1	4	03-2881-01	04/30/03		50.0
2	5	03-2881-02	04/30/03		50.0
3	6	03-2881-03	04/30/03		50.0
4	7	03-2881-04	04/30/03		50.0
5	8	03-2881-05	04/30/03		50.0
6	11	03-2881-06	04/30/03		50.0
7	MW-17-2	03-2933-03DM	04/30/03		50.0
8	EB-6-4/28/03	03-2933-01	04/30/03		50.0
9	MW-17-1	03-2933-02	04/30/03		50.0
10	MW-17-3	03-2933-04	04/30/03		50.0
11	MW-17-4	03-2933-05	04/30/03		50.0
12	MW-17-5	03-2933-06	04/30/03		50.0
13	01GP-02-5-GW	03-2942-03	04/30/03		50.0
14	09GP-14-1-GW	03-2942-07	04/30/03		50.0
15	09GP-11-1-GW	03-2970-02	04/30/03		50.0
16	09GP-13-1-GW	03-2970-03	04/30/03		50.0
17	09V18GP-09-1-GW	03-2970-04	04/30/03		50.0
18	09V20GP-10-1-GW	03-2970-05	04/30/03		50.0
19		03M1409MB	04/30/03		50.0
20		03M1409LCS	04/30/03		50.0
21		03M1409LCSD	04/30/03		50.0
22	MW-17-2 Dup.	03M1409MD	04/30/03		50.0
23	MW-17-2 MS	03M1409MS	04/30/03		50.0
24	MW-17-2 MSD	03M1409MSD	04/30/03		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	Service ID:	032933	Sequence No.:	03M1402E
		Instrument:	GFAA-E	Method:	200.9
Batch No.(s):	03M1402	Start Date:	04/29/03	End Date:	04/29/03

#	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	11:12	√																													
2	AS Position 001	1.00	11:15	√																													
3	Calib. Blank	1.00	11:18	√																													
4	1/2 STD1 1472A	1.00	11:24	√																													
5	STD1 1472A	1.00	11:31	√																													
6	STD2 1472B	1.00	11:37	√																													
7	STD3 1472C	1.00	11:44	√																													
8	ICV A1474	1.00	11:52	√																													
9	ICB	1.00	11:59	√																													
10	M-BL 03M1402	1.00	12:05	√																													
11	LCS-03M1402	1.00	12:11	√																													
12	LCSD-03M1402	1.00	12:18	√																													
13	2933-3 S F=1	1.00	12:24	√																													
14	2933-3 D F=1	1.00	12:30	√																													
15	2933-3 1/5 F=5	5.00	12:37	√																													
16	2933-3 MS F=1	1.00	12:44	√																													
17	2933-3 MSD F=1	1.00	12:50	√																													
18	2933-3 PS F=1	1.00	12:57	√																													
19	2933-1 F=1	1.00	13:03	√																													
20	CCV A1474	1.00	13:10	√																													
21	CCB	1.00	13:16	√																													
22	2933-2 F=1	1.00	13:22	√																													
23	2933-4 F=1	1.00	13:29	√																													
24	2933-5 F=1	1.00	13:35	√																													
25	2933-6 F=1	1.00	13:41	√																													
26	2866-1 F=1	1.00	13:47	√																													
27	2866-2 F=1	1.00	13:54	√																													
28	2866-3 F=1	1.00	14:00	√																													
29	2866-4 F=1	1.00	14:06	√																													
30	2866-5 F=1	1.00	14:12	√																													
31	2866-6 F=1	1.00	14:19	√																													
32	CCV A1474	1.00	14:25	√																													
33	CCB	1.00	14:32	√																													
34	2866-7 F=1	1.00	14:38	√																													
35	2843-1 F=1	1.00	14:44	√																													
36	2843-2 F=1	1.00	14:51	√																													
37	2843-3 F=1	1.00	14:58	√																													
38	2843-4 F=1	1.00	15:04	√																													
39	2843-5 F=1	1.00	15:11	√																													
40	2843-6 F=1	1.00	15:17	√																													

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	Service ID:	032933	Sequence No.:	03M1402E
		Instrument:	GFAA-E	Method:	200.9
Batch No.(s):	03M1402	Start Date:	04/29/03	End Date:	04/29/03

#	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	2843-7 F=1	1.00	15:23	√																													
42	CCV A1474	1.00	15:30	√																													
43	CCB	1.00	15:36	√																													

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	Service ID:	032933	Sequence No.:	03M1409L
		Instrument:	ICP -L	Method:	200.9
Batch No.(s):	03M1409	Start Date:	04/30/03	End Date:	04/30/03

#	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	12:00	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
2	STD1 1423A	1.00	12:03	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
3	STD2 1423B	1.00	12:05	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
4	STD3 1423C	1.00	12:09	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
5	ICV 1447A	1.00	12:11	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
6	ICB	1.00	12:20	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
7	CRI A1432	1.00	12:24	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
8	ICSA 1441	1.00	12:26	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
9	ICSAB 1443	1.00	12:29	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
10	CCV 1447B	1.00	12:33	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
11	CCB	1.00	12:36	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
12	M-BL 03M1409 W	1.00	12:40	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
13	LCS-03M1409	1.00	12:41	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
14	LCSD-03M1409	1.00	12:45	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
15	2933-3 S F=1	1.00	12:48	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
16	2933-3 D F=1	1.00	12:52	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
17	2933-3 1/5 F=5	5.00	12:55	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
18	2933-3 MS F=1	1.00	12:59	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
19	2933-3 MSD F=1	1.00	13:02	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
20	2933-3 PS F=1	1.00	13:04	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
21	CCV 1447B	1.00	13:07	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
22	CCB	1.00	13:10	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
23	2933-1 F=1	1.00	13:14	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
24	2933-2 F=1	1.00	13:17	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
25	2933-4 F=1	1.00	13:21	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
26	2933-5 F=1	1.00	13:24	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
27	2933-6 F=1	1.00	13:28	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
28	CCV 1447B	1.00	13:32	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
29	CCB	1.00	13:35	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
30	2881-1 F=1	1.00	13:39	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
31	2881-2 F=1	1.00	13:42	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
32	2881-3 F=1	1.00	13:46	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
33	2881-4 F=1	1.00	13:49	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
34	2881-5 F=1	1.00	13:53	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
35	2881-6 F=1	1.00	13:56	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
36	CCV 1447B	1.00	13:59	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
37	CCB	1.00	14:02	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
38	2942-3 F=1	1.00	14:06	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
39	2942-7 F=1	1.00	14:10	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
40	2942-7 F=20	20.00	14:13	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						

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	Service ID:	032933	Sequence No.:	03M1409L
		Instrument:	ICP -L	Method:	200.9
Batch No.(s):	03M1409	Start Date:	04/30/03	End Date:	04/30/03

#	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	2970-2 F=1	1.00	14:17	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
42	2970-3 F=1	1.00	14:21	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
43	2970-2 F=20	20.00	14:23	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
44	2970-3 F=20	20.00	14:30	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
45	CCV 1447B	1.00	14:34	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
46	CCB	1.00	14:38	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
47	2970-4 F=1	1.00	14:42	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
48	2970-4 F=40	40.00	14:50	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
49	2970-5 F=1	1.00	14:54	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
50	2970-5 F=40	40.00	14:58	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
51	CCV 1447B	1.00	15:00	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
52	CCB	1.00	15:05	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
53	M-BL 03M1410S	1.00	15:08	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
54	LCS-03M1410	1.00	15:11	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
55	LCSD-03M1410	1.00	15:21	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
56	2930-12 S F=200	4.00	15:25	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
57	2930-12 D F=200	4.00	15:28	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
58	2930-12 1/5 F=1	20.00	15:32	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
59	2930-12 MS F=20	4.00	15:35	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
60	2930-12 MSD F=2	4.00	15:39	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
61	2930-12 PS F=20	4.00	15:43	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
62	CCV 1447B	1.00	15:45	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
63	CCB	1.00	15:49	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
64	2930-1 F=200	4.00	15:52	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
65	2930-2 F=200	4.00	15:56	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
66	2930-3 F=200	4.00	15:58	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
67	2930-4 F=200	4.00	16:01	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
68	2930-5 F=200	4.00	16:04	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
69	2930-6 F=200	4.00	16:06	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
70	2930-7 F=200	4.00	16:09	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
71	2930-8 F=200	4.00	16:12	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
72	2930-9 F=200	4.00	16:16	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
73	CCV 1447B	1.00	16:19	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
74	CCB	1.00	16:23	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
75	2930-10 F=200	4.00	16:25	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
76	2930-11 F=200	4.00	16:28	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
77	2930-13 F=200	4.00	16:31	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
78	2930-14 F=200	4.00	16:34	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
79	ICSA 1441	1.00	16:37	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
80	ICSAB 1443	1.00	16:39	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						

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	Service ID:	032933	Sequence No.:	03M1409L
		Instrument:	ICP -L	Method:	200.9
Batch No.(s):	03M1409	Start Date:	04/30/03	End Date:	04/30/03

#	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
81	CCV 1447B	1.00	16:43	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
82	CCB	1.00	16:47	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
83	DLC A1427	1.00	16:50	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
84	Calib Blank	1.00	16:57											√																			
85	STD1 1423A	1.00	17:00											√																			
86	STD2 1423B	1.00	17:02											√																			
87	STD3 1423C	1.00	17:04											√																			
88	CCV 1447B	1.00	17:07											√																			
89	CCB	1.00	17:09											√																			
90	M-BL 03M1409 W	1.00	17:11											√																			
91	LCS-03M1409	1.00	17:14											√																			
92	LCSD-03M1409	1.00	17:16											√																			
93	2933-3 S F=1	1.00	17:18											√																			
94	2933-3 D F=1	1.00	17:21											√																			
95	2933-3 1/5 F=5	5.00	17:23											√																			
96	2933-3 MS F=1	1.00	17:26											√																			
97	2933-3 MSD F=1	1.00	17:28											√																			
98	2933-3 PS F=1	1.00	17:30											√																			
99	CCV 1447B	1.00	17:33											√																			
100	CCB	1.00	17:35											√																			
101	2933-1 F=1	1.00	17:37											√																			
102	2933-2 F=1	1.00	17:39											√																			
103	2933-4 F=1	1.00	17:42											√																			
104	2933-5 F=1	1.00	17:44											√																			
105	2933-6 F=1	1.00	17:46											√																			
106	2881-1 F=1	1.00	17:49											√																			
107	2881-2 F=1	1.00	17:51											√																			
108	2881-3 F=1	1.00	17:54											√																			
109	2881-4 F=1	1.00	17:56											√																			
110	2881-5 F=1	1.00	17:58											√																			
111	CCV 1447B	1.00	18:01											√																			
112	CCB	1.00	18:03											√																			
113	2881-6 F=1	1.00	18:05											√																			
114	2942-3 F=1	1.00	18:08											√																			
115	2942-7 F=1	1.00	18:10											√																			
116	2970-2 F=1	1.00	18:12											√																			
117	2970-3 F=1	1.00	18:15											√																			
118	2970-4 F=1	1.00	18:17											√																			
119	2970-5 F=1	1.00	18:19											√																			
120	ICSA 1441	1.00	18:25											√																			

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	Service ID:	032933	Sequence No.:	03M1409L
		Instrument:	ICP -L	Method:	200.9
Batch No.(s):	03M1409	Start Date:	04/30/03	End Date:	04/30/03

#	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
121	ICSAB 1443	1.00	18:28	√																													
122	CCV 1447B	1.00	18:30	√																													
123	CCB	1.00	18:32	√																													

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

Metal Digestion (3010/3050) Worksheet

Batch # 03M1409 Matrix: W Method used: 3010A Date: 4/30/03 Digested by: Xi Diluted by: N.F

Lot #: ASTM Type I water RW1409 HNO_3 110 x 120 H_2SO_4 _____ HCl 110 x 080 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
4745	Method Blank	Bl. Lot RW1409	50	50 /X= 1	/ =	/ =		23ml
4746	LCS1	Bl. Lot: 4		/X=	/ =	/ =		T=95°C
4747	Sample-1	2933-3		/X=	/ =	/ =		
4748	MS1 on S-1	-3		/X=	/ =	/ =		
4749	MS2 on S-1	-3		/X=	/ =	/ =		
4750	Sample 2	-1		/X=	/ =	/ =		
4751	Sample 3	-2		/X=	/ =	/ =		
4752	Sample 4	-4		/X=	/ =	/ =		
4753	Sample 5	-5		/X=	/ =	/ =		
4754	Sample 6	-6		/X=	/ =	/ =		
4755	Sample 7	2970-2		/X=	10/0.5=20	/ =		F=20 for K. Na
4756	Sample 8	-3		/X=	" / " = "	/ =		" "
4757	Sample 9	-4		/X=	10/0.25=40	/ =		F=40 "
4758	Sample 10	-5		/X=	" / " = "	/ =		" "
4759	LCS2	Bl. Lot RW1409		/X=	/ =	/ =		
4760	Sample 11	2881-1		/X=	/ =	/ =		
4761	Sample 12	-2		/X=	/ =	/ =		
4762	Sample 13	-3		/X=	/ =	/ =		
4763	Sample 14	-4		/X=	/ =	/ =		
4764	Sample 15	-5		/X=	/ =	/ =		
4765	Sample 16	-6		/X=	/ =	/ =		
4766	Sample 17	2942-3		/X=	/ =	/ =		
4767	Sample 18	-7	↓	↓ /X= ↓	10/0.5=20	/ =		F=20 for K.
4768	Sample 19			/X=	/ =	/ =		
4769	Sample 20		Xi 4/30/03	/X=	/ =	/ =		
4770	Duplicate	2933-3	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-1033	/ / /20	/ / /2	/ / /	
MS2	/AsSe/Sb/M_{20}	AA- /AA- /AA- /AA- "	/ / /	/ / /	/ / /	
LCS1	/AsSe/Sb/M_{20}	AA- /AA- /AA- /AA-1032	/ / /	/ / /	/ / /	
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 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 1809

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

Metal Digestion (3010/3050) Worksheet

Batch # 03M1402 Matrix: W Method used: 3020A Date: 09/09/03 Digested by: XL Diluted by: _____

Lot #: ASTM Type I water RW1409 HNO_3 1102420 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
4719	Method Blank	Bl. Lot RW1409	50	50 /X= 1	/ =	/ =		GFAA/As
4720	LCS1	Bl. Lot: "		/X=	/ =	/ =		T=95°C
4721	Sample-1	2933 -3		/X=	/ =	/ =		
4722	MS1 on S-1	-3		/X=	/ =	/ =		
4723	MS2 on S-1	-3		/X=	/ =	/ =		
4724	Sample 2	-1		/X=	/ =	/ =		
4725	Sample 3	-2		/X=	/ =	/ =		
4726	Sample 4	-4		/X=	/ =	/ =		
4727	Sample 5	-5		/X=	/ =	/ =		
4728	Sample 6	-6		/X=	/ =	/ =		
4729	Sample 7	2866-1		/X=	/ =	/ =		
4730	Sample 8	-2		/X=	/ =	/ =		
4731	Sample 9	-3		/X=	/ =	/ =		
4732	Sample 10	-4		/X=	/ =	/ =		
4733	LCS2	Bl. Lot RW1409		/X=	/ =	/ =		
4734	Sample 11	-5		/X=	/ =	/ =		
4735	Sample 12	-6		/X=	/ =	/ =		
4736	Sample 13	-7		/X=	/ =	/ =		
4737	Sample 14	2863-1		/X=	/ =	/ =		
4738	Sample 15	-2		/X=	/ =	/ =		
4739	Sample 16	-3		/X=	/ =	/ =		
4740	Sample 17	-4		/X=	/ =	/ =		
4741	Sample 18	-5		/X=	/ =	/ =		
4742	Sample 19	-6		/X=	/ =	/ =		
4743	Sample 20	-7		/X=	/ =	/ =		
4744	Duplicate	2933-3	✓	✓ /X= ✓	/ =	/ =		

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	/As/Se/Sb/M_{20}	AA- /AA-1 /AA- /AA-	/ 5 / /	10.0 /	10.0 /	
MS2	/As/Se/Sb/M_{20}	AA- /AA-4 /AA- /AA-	/ / /	/ / /	/ / /	
LCS1	/As/Se/Sb/M_{20}	AA- /AA-1 /AA- /AA-	/ / /	/ / /	/ / /	
LCS2	/As/Se/Sb/M_{20}	AA- /AA-1 /AA- /AA-	✓ / /	✓ / /	✓ / /	

* Notation: T – rep. sample spike level. T' – digest solution spike level. $T=f\ T'=C_sV_s/X$. M_{20} (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 48/10

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	Service ID:	032933	Sequence No.:	03M1409L
		Instrument:	ICP -L	Method:	200.9
Batch No.(s):	03M1409	Start Date:	04/30/03	End Date:	04/30/03

#	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	12:00	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
2	STD1 1423A	1.00	12:03	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
3	STD2 1423B	1.00	12:05	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
4	STD3 1423C	1.00	12:09	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
5	ICV 1447A	1.00	12:11	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
6	ICB	1.00	12:20	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
7	CRI A1432	1.00	12:24	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
8	ICSA 1441	1.00	12:26	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
9	ICSAB 1443	1.00	12:29	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
10	CCV 1447B	1.00	12:33	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
11	CCB	1.00	12:36	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
12	M-BL 03M1409 W	1.00	12:40	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
13	LCS-03M1409	1.00	12:41	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
14	LCSD-03M1409	1.00	12:45	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
15	2933-3 S F=1	1.00	12:48	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
16	2933-3 D F=1	1.00	12:52	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
17	2933-3 1/5 F=5	5.00	12:55	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
18	2933-3 MS F=1	1.00	12:59	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
19	2933-3 MSD F=1	1.00	13:02	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
20	2933-3 PS F=1	1.00	13:04	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
21	CCV 1447B	1.00	13:07	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
22	CCB	1.00	13:10	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
23	2933-1 F=1	1.00	13:14	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
24	2933-2 F=1	1.00	13:17	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
25	2933-4 F=1	1.00	13:21	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
26	2933-5 F=1	1.00	13:24	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
27	2933-6 F=1	1.00	13:28	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
28	CCV 1447B	1.00	13:32	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
29	CCB	1.00	13:35	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
30	2881-1 F=1	1.00	13:39	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
31	2881-2 F=1	1.00	13:42	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
32	2881-3 F=1	1.00	13:46	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
33	2881-4 F=1	1.00	13:49	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
34	2881-5 F=1	1.00	13:53	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
35	2881-6 F=1	1.00	13:56	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
36	CCV 1447B	1.00	13:59	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
37	CCB	1.00	14:02	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
38	2942-3 F=1	1.00	14:06	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
39	2942-7 F=1	1.00	14:10	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
40	2942-7 F=20	20.00	14:13	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						

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	Service ID:	032933	Sequence No.:	03M1409L
		Instrument:	ICP -L	Method:	200.9
Batch No.(s):	03M1409	Start Date:	04/30/03	End Date:	04/30/03

#	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	2970-2 F=1	1.00	14:17	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
42	2970-3 F=1	1.00	14:21	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
43	2970-2 F=20	20.00	14:23	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
44	2970-3 F=20	20.00	14:30	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
45	CCV 1447B	1.00	14:34	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
46	CCB	1.00	14:38	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
47	2970-4 F=1	1.00	14:42	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
48	2970-4 F=40	40.00	14:50	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
49	2970-5 F=1	1.00	14:54	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
50	2970-5 F=40	40.00	14:58	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
51	CCV 1447B	1.00	15:00	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
52	CCB	1.00	15:05	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
53	M-BL 03M1410S	1.00	15:08	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
54	LCS-03M1410	1.00	15:11	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
55	LCSD-03M1410	1.00	15:21	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
56	2930-12 S F=200	4.00	15:25	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
57	2930-12 D F=200	4.00	15:28	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
58	2930-12 1/5 F=1	20.00	15:32	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
59	2930-12 MS F=20	4.00	15:35	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
60	2930-12 MSD F=2	4.00	15:39	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
61	2930-12 PS F=20	4.00	15:43	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
62	CCV 1447B	1.00	15:45	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
63	CCB	1.00	15:49	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
64	2930-1 F=200	4.00	15:52	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
65	2930-2 F=200	4.00	15:56	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
66	2930-3 F=200	4.00	15:58	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
67	2930-4 F=200	4.00	16:01	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
68	2930-5 F=200	4.00	16:04	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
69	2930-6 F=200	4.00	16:06	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
70	2930-7 F=200	4.00	16:09	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
71	2930-8 F=200	4.00	16:12	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
72	2930-9 F=200	4.00	16:16	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
73	CCV 1447B	1.00	16:19	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
74	CCB	1.00	16:23	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
75	2930-10 F=200	4.00	16:25	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
76	2930-11 F=200	4.00	16:28	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
77	2930-13 F=200	4.00	16:31	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
78	2930-14 F=200	4.00	16:34	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
79	ICSA 1441	1.00	16:37	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
80	ICSAB 1443	1.00	16:39	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						

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	Service ID:	032933	Sequence No.:	03M1409L
		Instrument:	ICP -L	Method:	200.9
Batch No.(s):	03M1409	Start Date:	04/30/03	End Date:	04/30/03

#	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
81	CCV 1447B	1.00	16:43	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
82	CCB	1.00	16:47	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
83	DLC A1427	1.00	16:50	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√						
84	Calib Blank	1.00	16:57	√																													
85	STD1 1423A	1.00	17:00	√																													
86	STD2 1423B	1.00	17:02	√																													
87	STD3 1423C	1.00	17:04	√																													
88	CCV 1447B	1.00	17:07	√																													
89	CCB	1.00	17:09	√																													
90	M-BL 03M1409 W	1.00	17:11	√																													
91	LCS-03M1409	1.00	17:14	√																													
92	LCSD-03M1409	1.00	17:16	√																													
93	2933-3 S F=1	1.00	17:18	√																													
94	2933-3 D F=1	1.00	17:21	√																													
95	2933-3 1/5 F=5	5.00	17:23	√																													
96	2933-3 MS F=1	1.00	17:26	√																													
97	2933-3 MSD F=1	1.00	17:28	√																													
98	2933-3 PS F=1	1.00	17:30	√																													
99	CCV 1447B	1.00	17:33	√																													
100	CCB	1.00	17:35	√																													
101	2933-1 F=1	1.00	17:37	√																													
102	2933-2 F=1	1.00	17:39	√																													
103	2933-4 F=1	1.00	17:42	√																													
104	2933-5 F=1	1.00	17:44	√																													
105	2933-6 F=1	1.00	17:46	√																													
106	2881-1 F=1	1.00	17:49	√																													
107	2881-2 F=1	1.00	17:51	√																													
108	2881-3 F=1	1.00	17:54	√																													
109	2881-4 F=1	1.00	17:56	√																													
110	2881-5 F=1	1.00	17:58	√																													
111	CCV 1447B	1.00	18:01	√																													
112	CCB	1.00	18:03	√																													
113	2881-6 F=1	1.00	18:05	√																													
114	2942-3 F=1	1.00	18:08	√																													
115	2942-7 F=1	1.00	18:10	√																													
116	2970-2 F=1	1.00	18:12	√																													
117	2970-3 F=1	1.00	18:15	√																													
118	2970-4 F=1	1.00	18:17	√																													
119	2970-5 F=1	1.00	18:19	√																													
120	ICSA 1441	1.00	18:25	√																													

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	Service ID:	032933	Sequence No.:	03M1409L
		Instrument:	ICP -L	Method:	200.9
Batch No.(s):	03M1409	Start Date:	04/30/03	End Date:	04/30/03

#	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
121	ICSAB 1443	1.00	18:28	√																													
122	CCV 1447B	1.00	18:30	√																													
123	CCB	1.00	18:32	√																													

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	Service ID:	032933	Sequence No.:	03M1402E
		Instrument:	GFAA-E	Method:	200.9
Batch No.(s):	03M1402	Start Date:	04/29/03	End Date:	04/29/03

#	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	11:12			√																											
2	AS Position 001	1.00	11:15			√																											
3	Calib. Blank	1.00	11:18			√																											
4	1/2 STD1 1472A	1.00	11:24			√																											
5	STD1 1472A	1.00	11:31			√																											
6	STD2 1472B	1.00	11:37			√																											
7	STD3 1472C	1.00	11:44			√																											
8	ICV A1474	1.00	11:52			√																											
9	ICB	1.00	11:59			√																											
10	M-BL 03M1402	1.00	12:05			√																											
11	LCS-03M1402	1.00	12:11			√																											
12	LCSD-03M1402	1.00	12:18			√																											
13	2933-3 S F=1	1.00	12:24			√																											
14	2933-3 D F=1	1.00	12:30			√																											
15	2933-3 1/5 F=5	5.00	12:37			√																											
16	2933-3 MS F=1	1.00	12:44			√																											
17	2933-3 MSD F=1	1.00	12:50			√																											
18	2933-3 PS F=1	1.00	12:57			√																											
19	2933-1 F=1	1.00	13:03			√																											
20	CCV A1474	1.00	13:10			√																											
21	CCB	1.00	13:16			√																											
22	2933-2 F=1	1.00	13:22			√																											
23	2933-4 F=1	1.00	13:29			√																											
24	2933-5 F=1	1.00	13:35			√																											
25	2933-6 F=1	1.00	13:41			√																											
26	2866-1 F=1	1.00	13:47			√																											
27	2866-2 F=1	1.00	13:54			√																											
28	2866-3 F=1	1.00	14:00			√																											
29	2866-4 F=1	1.00	14:06			√																											
30	2866-5 F=1	1.00	14:12			√																											
31	2866-6 F=1	1.00	14:19			√																											
32	CCV A1474	1.00	14:25			√																											
33	CCB	1.00	14:32			√																											
34	2866-7 F=1	1.00	14:38			√																											
35	2843-1 F=1	1.00	14:44			√																											
36	2843-2 F=1	1.00	14:51			√																											
37	2843-3 F=1	1.00	14:58			√																											
38	2843-4 F=1	1.00	15:04			√																											
39	2843-5 F=1	1.00	15:11			√																											
40	2843-6 F=1	1.00	15:17			√																											

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	Service ID:	032933	Sequence No.:	03M1402E
		Instrument:	GFAA-E	Method:	200.9
Batch No.(s):	03M1402	Start Date:	04/29/03	End Date:	04/29/03

#	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	2843-7 F=1	1.00	15:23	√																													
42	CCV A1474	1.00	15:30	√																													
43	CCB	1.00	15:36	√																													