APPENDIX C

APCL

Applied Physics & Chemistry Laboratory

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

December 10, 2003

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

Dear Brad,

This package contains samples in our Service ID 03-6047 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: Brad Shojaee
22632 Golden Spring Dr Ste 270
Diamond Bar CA 91765
Tel: (909)396-7662 Fax: (909)396-1455

Service ID #: 801-036047
Collected by: JR
Collected on: 11/10/03

Received: 11/10/03
Extracted: N/A
Tested: 11/10-12/03
Reported: 11/20/03

Sample Description: Water from MW-16,7,1.
Project Description: 04-4428.10 JPL

Analysis of Water Samples

Component Analyzed	Method	Unit	PQL	Analysis Result MW-1 03-06047-1	MW-7 03-06047-2	MW-16 03-06047-3	TB-13-11-10-03 03-06047-4
CHROMIUM (VI)	7196	mg/L	0.01	<0.01	<0.01	<0.01	-
Dilution Factor				1	50	25	1
PERCHLORATE	314.0	µg/L	4	<4	2,400	1,360	-
VOLATILE ORGANIC COMPOUNDS							
Dilution Factor				1	1	1	1
BENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
BROMOBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
BROMOCHLOROMETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
BROMODICHLOROMETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
BROMOFORM	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
BROMOMETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
N-BUTYLBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
SEC-BUTYLBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
TERT-BUTYLBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
2-BUTANONE	524.2	µg/L	10	<10	<10	<10	<10
CARBON TETRACHLORIDE	524.2	µg/L	0.5	<0.5	42.0	3.1	<0.5
CHLOROBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
CHLORODIBROMOMETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
CHLOROETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
CHLOROFORM	524.2	µg/L	0.5	<0.5	9.9	4.6	<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	0.5	<0.5	<0.5	<0.5	<0.5
1,2-DIBROMOETHANE (EDB)	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
DIBROMOMETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,2-DICHLOROBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,3-DICHLOROBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,4-DICHLOROBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
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	3.2	<0.5	<0.5

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result MW-1 03-06047-1	MW-7 03-06047-2	MW-16 03-06047-3	TB-13-11-10-03 03-06047-4
CIS-1,2-DICHLOROETHENE	524.2	μg/L	0.5	<0.5	<0.5	<0.5	<0.5
TRANS-1,2-DICHLOROETHENE	524.2	μg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,2-DICHLOROPROPANE	524.2	μg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,3-DICHLOROPROPANE	524.2	μg/L	0.5	<0.5	<0.5	<0.5	<0.5
2,2-DICHLOROPROPANE	524.2	μg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,1-DICHLOROPROPENE	524.2	μg/L	0.5	<0.5	<0.5	<0.5	<0.5
CIS-1,3-DICHLOROPROPENE	524.2	μg/L	0.5	<0.5	<0.5	<0.5	<0.5
TRANS-1,3-DICHLOROPROPENE	524.2	μg/L	0.5	<0.5	<0.5	<0.5	<0.5
ETHYLBENZENE	524.2	μg/L	0.5	<0.5	<0.5	<0.5	<0.5
HEXACHLOROBUTADIENE	524.2	μg/L	0.5	<0.5	<0.5	<0.5	<0.5
ISOPROPYLBENZENE (CUMENE)	524.2	μg/L	0.5	<0.5	<0.5	<0.5	<0.5
P-ISOPROPYLTOLUENE	524.2	μg/L	0.5	<0.5	<0.5	<0.5	<0.5
METHYLENE CHLORIDE	524.2	μg/L	0.5	<0.5	<0.5	<0.5	0.6
METHYL-T-BUTYL ETHER (MTBE)	524.2	μg/L	1	<1	<1	<1	<1
4-METHYL-2-PENTANONE (MIBK)	524.2	μg/L	10	<10	<10	<10	<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	7.2	<0.5	<0.5
TOLUENE	524.2	μg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,2,3-TRICHLOROBENZENE	524.2	μg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,2,4-TRICHLOROBENZENE	524.2	μg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-TRICHLOROETHANE	524.2	μg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-TRICHLOROETHANE	524.2	μg/L	0.5	<0.5	<0.5	<0.5	<0.5
TRICHLOROETHENE	524.2	μg/L	0.5	<0.5	5.0	1.9	<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	2.4	<0.5	<0.5
1,2,4-TRIMETHYLBENZENE	524.2	μg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,3,5-TRIMETHYLBENZENE	524.2	μg/L	0.5	<0.5	<0.5	<0.5	<0.5
VINYL CHLORIDE	524.2	μg/L	0.5	<0.5	<0.5	<0.5	<0.5
O-XYLENE	524.2	μg/L	0.5	<0.5	<0.5	<0.5	<0.5
M/P-XYLENE	524.2	μg/L	0.5	<0.5	<0.5	<0.5	<0.5

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

Respectfully submitted,

Dominic Lau
Laboratory Director
Applied P & Ch Laboratory

Level C Data Package Deliverables

General Information

Project: 04-4428.10 JPL

APCL Service ID: 03-6047

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

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Case Narrative

Project: JPL/MW-16,7,1./04-4428.10

For GEOFON, Inc.

APCL Service No: 03-6047

1. Sample Identification

The sample identifications are listed in the following table:

GEOFON, Inc. Sample ID	APCL Sample ID
MW-16	03-06047-3
MW-7	03-06047-2
MW-1	03-06047-1
TB-13-11-10-03	03-06047-4

2. Analytical Methodology

Samples are analyzed by EPA methods

524.2 (Volatile Organic Compounds),
7196 (Chromium (VI)),
314.0 (Perchlorate, low level),

3. Holding Time

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

4. Preservation

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

5. Tele-log

None

6. Anomaly

None

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

Respectfully submitted,

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

0074

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

GEOFON'S LAB COORDINATOR: Brad Shojaie	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
PROJECT NAME: JPL GW Mon. 4-003	PROJECT LOCATION: MW-16, 7 + 1	PROJECT NUMBER: 04-4428.10	LABORATORY PHONE: 909 590 1828	LABORATORY FAX: 909 590 1498	RECIPIENT NAME: Tony Ford
PROJECT CONTACT: Scott Bulmer	PROJECT PHONE NUMBER: 909 396 7662 ~~04-4428.10~~ 11.10.03	PROJECT FAX: 909 396 1455	LABORATORY ADDRESS: 13760 Magnolia Ave.		ADDRESS: 22632 Golden Springs Dr. Ste 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: Tony Ford	PROJECT MANAGER'S PHONE: 909 396 7662	PROJECT MANAGER'S FAX: 909 396 1455			

6047

Item	Sample Identifier	Matrix	Date	Time	Preserved	# of Cont	QC Level	T.A.T	Analyses: 524.2 (VOC)	314.0 (clo4)	200.8 (Cr)	7196A (Hex Cr)					Comments
1	MW-16	W	11/10/03	0804	HCl HNO3 None	5	III	Normal	X	X	X	X					
2	MW-7	↓	↓	0940	↓	↓	↓	↓	X	X	X	X					
3	MW-1	↓	↓	1100	↓	↓	↓	↓	X	X	X	X					
4	TB-13-11-10-03	↓	↓	—	HCl	3	↓	↓	X								
5																	
6																	
7																	
8								11.10.03									
9																	
10																	

SAMPLES COLLECTED BY: JA

COURIER AND AIR BILL NUMBER:

COOLER TEMPERATURE UPON RECEIPT:

RELINQUISHED BY	RECEIVED BY	DATE	TIME	SAMPLE'S CONDITION UPON RECEIPT
[signature]	[signature]	11-10-03	11:35	
[signature]	[signature]	11-10-03	13:00	

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

PROJECT DATA MANAGER'S COPY

0074

GEOFON LAB COORDINATOR: Brad Shaw	LAB COORDINATOR'S PHONE: 909 396 7662	LAB COORDINATOR'S FAX: 909 396 1455	LABORATORY SERVICE ID	LABORATORY CONTACT: Kang Chao	MAIL REPORT (COMPANY NAME): Geofon
PROJECT NAME: 38C Gal Mo 1-03	PROJECT LOCATION: Mo 16 9 + 1	PROJECT NUMBER: 01-4128.10	LABORATORY PHONE: 909 590 1828	LABORATORY FAX: 909 590 1498	RECIPIENT NAME: Tony Fead
PROJECT CONTACT: Scott Barbour	PROJECT PHONE NUMBER: 714 [illegible] ~~01-4128.10~~	PROJECT FAX: 909 396 1455	LABORATORY ADDRESS: 13700 Heacock Ave.		ADDRESS: 22632 Golden Springs Dr. Ste 270
PROJECT ADDRESS: 4300 Del Amo Dr	CITY, STATE AND ZIPCODE: Pasadena, CA	CLIENT: US NAVY SOUTH	CITY, STATE AND ZIPCODE: Chino, CA 91710		CITY, STATE AND ZIPCODE: Diamond Bar, CA 91765
PROJECT MANAGER: Tony Fead	PROJECT MANAGER'S PHONE: 909 396 7662	PROJECT MANAGER'S FAX: 909 396 1455			

6047

Item	Sample Identifier	Matrix	Date	Time	Preserved	# of Cont.	QC Level	T.A.T.	Analyses 8260 (VOC)	8270 (SVOC)	6010 (Metals)	7196A (Cr+6)					Comments
1	Mo-16	W	11/10/03	0807	HCl	5	III	Normal	X	X	X	X					
2	Mo-9	↓	↓	0940	↓	↓	↓	↓	X	X	X	X					
3	Mo-1	↓	↓	1100	↓	↓	↓	↓	X	X	X	X					
4	TB-13-11-03	↓	↓	—	HCl	3	↓	↓	X								
5						11.13.03											
6																	
7																	
8																	
9								11.10.03									
10																	

SAMPLES COLLECTED BY: JT

COURIER AND AIR BILL NUMBER

COOLER TEMPERATURE UPON RECEIPT

RELINQUISHED BY	RECEIVED BY	DATE	TIME	SAMPLE'S CONDITION UPON RECEIPT
[signature]	[signature]	11-10-03	11:55	

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: 6047 **Client Name/Project:** Geofon

1. Sample Arrival

Date/Time Received 11/10/03 1300 Date/Time Opened 11/10/03 1300 By (name): Jason

Custody Transfer: ☐ Client ☐ Golden State ☐ UPS ☐ US Mail ☐ FedEx ☒ APCL Empl: SB

2. Chain-of-Custody (CoC)

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

3. Shipping Container/Cooler

☒ Cooler Used? # of 1 Cooled by: ☒ Ice ☐ Blue Ice ☐ Dry Ice ☐ None
Temp °C 3-7
(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: 5day ☐ 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: ____ Printed: 10 Nov 2003 7:18 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
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Tel: (909) 590-1828 Fax: (909) 590-1498

Sample Login: Check List

03-06047 (0470_ 190) (2202777_ 190)

11/10/03

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?	*Jason N.*
		Receiving Date/Time:	*11/10/03 1300*
		COC No.	*0074*
☐	Shipping Information	Shipping Company	*APCL pick up*
		Packing Information:	*Cooler/Ice Chester*
		Cooler Temperature:	*3.1 °C*
☐	Container Information	Container Provider:	*Client*
☐	Sampling Information	Sampling Person:	*JR*
		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-16	VOC	03-06047-3-α	W	V	C	40	3	G	111003	N	0	6	☐
	MW-16	CrVI	03-06047-3-β	W	P		500	1	G	111003	N	0	6	☐
2	MW-7	VOC	03-06047-2-α	W	V	C	40	3	G	111003	N	0	6	☐
	MW-7	CrVI	03-06047-2-β	W	P		500	1	G	111003	N	0	6	☐
3	MW-1	VOC	03-06047-1-α	W	V	C	40	3	G	111003	N	0	6	☐
	MW-1	CrVI	03-06047-1-β	W	P		500	1	G	111003	N	0	6	☐
4	TB-13-11-10-03	VOC	03-06047-4	W	V	C	40	3	G	111003	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/SM4500NO3C* Nitrate (NO_3^-) as N by IC
- ☐ *SM2320B* Carbonate
- ☐ *SM2320B* Bicarbonate
- ☐ *9040B/150.1* pH
- ☐ *160.1* Solids, Total Dissolved (TDS)
- ☐ *200.7/6010B* Sodium, Na, by ICP
- ☐ *200.7/6010B* Calcium, Ca, by ICP
- ☐ *200.7/6010B* Potassium, K, by ICP
- ☐ *200.7/6010B* Magnesium, Mg, by ICP
- ☐ *200.7/6010B* Iron, Fe, by ICP
- ☐ *206.2/7060A* Arsenic, As, by GFAA
- ☐ *8270-SIM* 1,4-Dioxane

Seq. #	Client"s Sample ID (as given on COC)	Sample Sub-ID	APCL Sample ID	Matrix	524.2	CHROMIUM	PERCH	CL	SO4	NO3	CARBON	BICARB	
1	MW-16	VOC	03-06047-3-α	W	X								☐
	MW-16	CrVI	03-06047-3-β	W		X	X						☐
2	MW-7	VOC	03-06047-2-α	W	X								☐
	MW-7	CrVI	03-06047-2-β	W		X	X						☐
3	MW-1	VOC	03-06047-1-α	W	X								☐

Level C Data Package Deliverables

Volatile Organics

Applied P & Ch Laboratory

2005

Applied P & Ch Laboratory

Organic Analysis Results for Method 524.2

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Collection Date:	11/12/2003
Project ID:	JPL	Service ID:	36047	Collected by:	
		Lab Sample ID:	03G4771-MB-01	Received Date:	11/12/2003
Sample ID:	**03G4771-MB-01**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Method Blank	Prep. Method:	5030	Instrument ID:	GC/MS: A
Anal. Method:	524.2	Prep. Date:	11/12/03	Anal. Date:	11/12/03
Batch No:	03G4771	Prep. No:	–	Anal. Time:	01:17
Data File Name:	G4771K01	Sample Amount:	25.0 mL	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N) N	

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

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	P-ISOPROPYLTOLUENE	99-87-6	µg/L	0.5	<0.5	U
41	METHYLENE CHLORIDE	75-09-2	µg/L	0.5	0.4	J
42	METHYL-T-BUTYL ETHER (MTBE)	1634-04-4	µg/L	1	<1	U
43	4-METHYL-2-PENTANONE (MIBK)	108-10-1	µg/L	10	<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	108
2	1,2-DICHLOROETHANE-D4	17060-07-0	70-129	115
3	DIBROMOFLUOROMETHANE	1868-53-7	70-122	112
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	104
2	1,4-DICHLOROBENZENE-D4	3855-82-1	50-200	102
3	FLUOROBENZENE	462-06-6	50-200	100
# of out-of-control				0

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

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

Applied P & Ch Laboratory

Organic Analysis Results for Method 524.2

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Collection Date:	11/10/2003
Project ID:	JPL	Service ID:	36047	Collected by:	JR
		Lab Sample ID:	03-6047-1	Received Date:	11/10/2003
Sample ID:	**MW-1**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: A
Anal. Method:	524.2	Prep. Date:	11/12/03	Anal. Date:	11/12/03
Batch No:	03G4771	Prep. No:	–	Anal. Time:	06:36
Data File Name:	6047-01	Sample Amount:	25.0 mL	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N) N	

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

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	P-ISOPROPYLTOLUENE	99-87-6	µg/L	0.5	<0.5	U
41	METHYLENE CHLORIDE	75-09-2	µg/L	0.5	<0.5	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	114
3	DIBROMOFLUOROMETHANE	1868-53-7	70-122	113
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	100
2	1,4-DICHLOROBENZENE-D4	3855-82-1	50-200	99
3	FLUOROBENZENE	462-06-6	50-200	97
# of out-of-control				0

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

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

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Organic Analysis Results for Method 524.2

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Collection Date:	11/10/2003
Project ID:	JPL	Service ID:	36047	Collected by:	JR
		Lab Sample ID:	03-6047-2	Received Date:	11/10/2003
Sample ID:	**MW-7**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: A
Anal. Method:	524.2	Prep. Date:	11/12/03	Anal. Date:	11/12/03
Batch No:	03G4771	Prep. No:	–	Anal. Time:	07:02
Data File Name:	6047-02	Sample Amount:	25.0 mL	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	BENZENE	71-43-2	μg/L	0.5	<0.5	U
2	BROMOBENZENE	108-86-1	μg/L	0.5	<0.5	U
3	BROMOCHLOROMETHANE	74-97-5	μg/L	0.5	<0.5	U
4	BROMODICHLOROMETHANE	75-27-4	μg/L	0.5	<0.5	U
5	BROMOFORM	75-25-2	μg/L	0.5	<0.5	U
6	BROMOMETHANE	74-83-9	μg/L	0.5	<0.5	U
7	N-BUTYLBENZENE	104-51-8	μg/L	0.5	<0.5	U
8	SEC-BUTYLBENZENE	135-98-8	μg/L	0.5	<0.5	U
9	TERT-BUTYLBENZENE	98-06-6	μg/L	0.5	<0.5	U
10	2-BUTANONE	78-93-3	μg/L	10	<10	U
11	CARBON TETRACHLORIDE	56-23-5	μg/L	0.5	42.0	
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	9.9	
16	CHLOROMETHANE	74-87-3	μg/L	0.5	<0.5	U
17	2-CHLOROTOLUENE	95-49-8	μg/L	0.5	<0.5	U
18	4-CHLOROTOLUENE	106-43-4	μg/L	0.5	<0.5	U
19	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	μg/L	0.5	<0.5	U
20	1,2-DIBROMOETHANE (EDB)	106-93-4	μg/L	0.5	<0.5	U
21	DIBROMOMETHANE	74-95-3	μg/L	0.5	<0.5	U
22	1,2-DICHLOROBENZENE	95-50-1	μg/L	0.5	<0.5	U
23	1,3-DICHLOROBENZENE	541-73-1	μg/L	0.5	<0.5	U
24	1,4-DICHLOROBENZENE	106-46-7	μg/L	0.5	<0.5	U
25	DICHLORODIFLUOROMETHANE	75-71-8	μg/L	0.5	<0.5	U
26	1,1-DICHLOROETHANE	75-34-3	μg/L	0.5	<0.5	U
27	1,2-DICHLOROETHANE	107-06-2	μg/L	0.5	<0.5	U
28	1,1-DICHLOROETHENE	75-35-4	μg/L	0.5	3.2	
29	CIS-1,2-DICHLOROETHENE	156-59-2	μg/L	0.5	<0.5	U
30	TRANS-1,2-DICHLOROETHENE	156-60-5	μg/L	0.5	<0.5	U
31	1,2-DICHLOROPROPANE	78-87-5	μg/L	0.5	<0.5	U
32	1,3-DICHLOROPROPANE	142-28-9	μg/L	0.5	<0.5	U
33	2,2-DICHLOROPROPANE	594-20-7	μg/L	0.5	<0.5	U
34	1,1-DICHLOROPROPENE	563-58-6	μg/L	0.5	<0.5	U
35	CIS-1,3-DICHLOROPROPENE	10061-01-5	μg/L	0.5	<0.5	U
36	TRANS-1,3-DICHLOROPROPENE	10061-02-6	μg/L	0.5	<0.5	U
37	ETHYLBENZENE	100-41-4	μg/L	0.5	<0.5	U
38	HEXACHLOROBUTADIENE	87-68-3	μg/L	0.5	<0.5	U
39	ISOPROPYLBENZENE (CUMENE)	98-82-8	μg/L	0.5	<0.5	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	P-ISOPROPYLTOLUENE	99-87-6	µg/L	0.5	<0.5	U
41	METHYLENE CHLORIDE	75-09-2	µg/L	0.5	<0.5	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	7.2	
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	5.0	
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	2.4	
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	107
2	1,2-DICHLOROETHANE-D4	17060-07-0	70-129	115
3	DIBROMOFLUOROMETHANE	1868-53-7	70-122	114
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	103
2	1,4-DICHLOROBENZENE-D4	3855-82-1	50-200	101
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.

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:	11/10/2003
Project ID:	JPL	Service ID:	36047	Collected by:	JR
		Lab Sample ID:	03-6047-3	Received Date:	11/10/2003
Sample ID:	**MW-16**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: A
Anal. Method:	524.2	Prep. Date:	11/12/03	Anal. Date:	11/12/03
Batch No:	03G4771	Prep. No:	–	Anal. Time:	07:28
Data File Name:	6047-03	Sample Amount:	25.0 mL	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	BENZENE	71-43-2	µg/L	0.5	<0.5	U
2	BROMOBENZENE	108-86-1	µg/L	0.5	<0.5	U
3	BROMOCHLOROMETHANE	74-97-5	µg/L	0.5	<0.5	U
4	BROMODICHLOROMETHANE	75-27-4	µg/L	0.5	<0.5	U
5	BROMOFORM	75-25-2	µg/L	0.5	<0.5	U
6	BROMOMETHANE	74-83-9	µg/L	0.5	<0.5	U
7	N-BUTYLBENZENE	104-51-8	µg/L	0.5	<0.5	U
8	SEC-BUTYLBENZENE	135-98-8	µg/L	0.5	<0.5	U
9	TERT-BUTYLBENZENE	98-06-6	µg/L	0.5	<0.5	U
10	2-BUTANONE	78-93-3	µg/L	10	<10	U
11	CARBON TETRACHLORIDE	56-23-5	µg/L	0.5	3.1	
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	4.6	
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	0.5	<0.5	U
20	1,2-DIBROMOETHANE (EDB)	106-93-4	µg/L	0.5	<0.5	U
21	DIBROMOMETHANE	74-95-3	µg/L	0.5	<0.5	U
22	1,2-DICHLOROBENZENE	95-50-1	µg/L	0.5	<0.5	U
23	1,3-DICHLOROBENZENE	541-73-1	µg/L	0.5	<0.5	U
24	1,4-DICHLOROBENZENE	106-46-7	µg/L	0.5	<0.5	U
25	DICHLORODIFLUOROMETHANE	75-71-8	µg/L	0.5	<0.5	U
26	1,1-DICHLOROETHANE	75-34-3	µg/L	0.5	<0.5	U
27	1,2-DICHLOROETHANE	107-06-2	µg/L	0.5	<0.5	U
28	1,1-DICHLOROETHENE	75-35-4	µg/L	0.5	<0.5	U
29	CIS-1,2-DICHLOROETHENE	156-59-2	µg/L	0.5	<0.5	U
30	TRANS-1,2-DICHLOROETHENE	156-60-5	µg/L	0.5	<0.5	U
31	1,2-DICHLOROPROPANE	78-87-5	µg/L	0.5	<0.5	U
32	1,3-DICHLOROPROPANE	142-28-9	µg/L	0.5	<0.5	U
33	2,2-DICHLOROPROPANE	594-20-7	µg/L	0.5	<0.5	U
34	1,1-DICHLOROPROPENE	563-58-6	µg/L	0.5	<0.5	U
35	CIS-1,3-DICHLOROPROPENE	10061-01-5	µg/L	0.5	<0.5	U
36	TRANS-1,3-DICHLOROPROPENE	10061-02-6	µg/L	0.5	<0.5	U
37	ETHYLBENZENE	100-41-4	µg/L	0.5	<0.5	U
38	HEXACHLOROBUTADIENE	87-68-3	µg/L	0.5	<0.5	U
39	ISOPROPYLBENZENE (CUMENE)	98-82-8	µg/L	0.5	<0.5	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	P-ISOPROPYLTOLUENE	99-87-6	µg/L	0.5	<0.5	U
41	METHYLENE CHLORIDE	75-09-2	µg/L	0.5	<0.5	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	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	110
2	1,2-DICHLOROETHANE-D4	17060-07-0	70-129	115
3	DIBROMOFLUOROMETHANE	1868-53-7	70-122	114
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	101
2	1,4-DICHLOROBENZENE-D4	3855-82-1	50-200	98
3	FLUOROBENZENE	462-06-6	50-200	97
# of out-of-control				0

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

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

Applied P & Ch Laboratory

Organic Analysis Results for Method 524.2

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Collection Date:	11/10/2003
Project ID:	JPL	Service ID:	36047	Collected by:	JR
		Lab Sample ID:	03-6047-4	Received Date:	11/10/2003
Sample ID:	**TB-13-11-10-03**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: A
Anal. Method:	524.2	Prep. Date:	11/12/03	Anal. Date:	11/12/03
Batch No:	03G4771	Prep. No:	–	Anal. Time:	01:49
Data File Name:	6047-04	Sample Amount:	25.0 mL	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

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

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	P-ISOPROPYLTOLUENE	99-87-6	μg/L	0.5	<0.5	U
41	METHYLENE CHLORIDE	75-09-2	μg/L	0.5	0.6	
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	107
2	1,2-DICHLOROETHANE-D4	17060-07-0	70-129	115
3	DIBROMOFLUOROMETHANE	1868-53-7	70-122	112
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	107
2	1,4-DICHLOROBENZENE-D4	3855-82-1	50-200	108
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.

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

FORM-2A

Applied P & Ch Laboratory

Surrogate Recovery Summary for Method 524.2

Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		SDG Number:	036047
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03G4771		

#	Client Sample No	Lab Sample ID	S1 % #	S2 % #	S3 % #	S4 % #	TOT OUT
1	03G4771-LCS-01	03G4771-LCS-01	95	99	96	93	0
2	MW-13MS	03-6034-3MS	93	96	93	91	0
3	MW-13MSD	03-6034-3MSD	98	101	100	94	0
4	03G4771-MB-01	03G4771-MB-01	108	115	112	104	0
5	TB-13-11-10-03	03-6047-4	107	115	112	102	0
6	MW-1	03-6047-1	109	114	113	105	0
7	MW-7	03-6047-2	107	115	114	101	0
8	MW-16	03-6047-3	110	115	114	104	0
9							
10							
11							
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:	36047
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03G4771		
LCS Filename:	G4771L01	Date Analyzed:	111103	Time Analyzed:	20:46
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	17.0	85	65-120
CHLOROBENZENE	μg/L	20	0	18.5	93	65-134
1,1-DICHLOROETHENE	μg/L	20	0	20.4	102	65-127
TOLUENE	μg/L	20	0	17.2	86	65-134
TRICHLOROETHENE	μg/L	20	0	18.5	93	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:	36047
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03G4771		
MS Filename:	G4771M02	Date Analyzed:	111103	Time Analyzed:	22:29
MSD Filename:	G4771N02	Date Analyzed:	111103	Time Analyzed:	22:55
MS Sample No:	**MW-13**	Sample Lab ID:	03-6034-3		

Spiked Components	Unit	Spike Added	Concentration Unspiked	Concentration MS	MS Rec% #	QC Limit, % REC
BENZENE	μg/L	20	0	17.0	85	65-121
CHLOROBENZENE	μg/L	20	0	18.2	91	65-134
1,1-DICHLOROETHENE	μg/L	20	0	20.5	103	65-127
TOLUENE	μg/L	20	0	16.9	85	65-134
TRICHLOROETHENE	μg/L	20	8.97	27.1	91	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	17.8	89	5	28	65-121
CHLOROBENZENE	μg/L	20	18.7	94	3	35	65-134
1,1-DICHLOROETHENE	μg/L	20	20.9	105	2	31	65-127
TOLUENE	μg/L	20	17.6	88	3	35	65-134
TRICHLOROETHENE	μg/L	20	28.0	95	4	30	65-125
# of Out-of-control				0	0		

Column to be used to flag recovery and RPD values:

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

Comments: _____

FORM-4A

Applied P & Ch Laboratory

Method Blank Summary for Method 524.2

Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		Service ID:	36047
Project ID:	JPL	Project No:	04-4428.10	Analysis Date:	11/12/03
		Sample Matrix:	Water	Analysis Time:	01:17
Sample ID:	**03G4771-MB-01**	Batch No:	03G4771	Instrument ID:	GC/MS: A
Lab Sample ID:	03G4771-MB-01	Data File Name:	G4771K01	GC Column:	HP-VOC
		Heated Purge: (Y/N)	N	Column ID:	0.20 mm

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

#	Client Sample No	Lab Sample ID	Sample Type	Data Filename	Analysis Date	Analysis Time
1	03G4771-LCS-01	03G4771-LCS-01	Lab Control Spike	G4771L01	11/11/03	20:46
2	MW-13MS	03-6034-3MS	Matrix Spike	G4771M02	11/11/03	22:29
3	MW-13MSD	03-6034-3MSD	Matrix Spike Duplicate	G4771N02	11/11/03	22:55
4	TB-13-11-10-03	03-6047-4	Field Sample	6047-04	11/12/03	01:49
5	MW-1	03-6047-1	Field Sample	6047-01	11/12/03	06:36
6	MW-7	03-6047-2	Field Sample	6047-02	11/12/03	07:02
7	MW-16	03-6047-3	Field Sample	6047-03	11/12/03	07:28
8						
9						
10						
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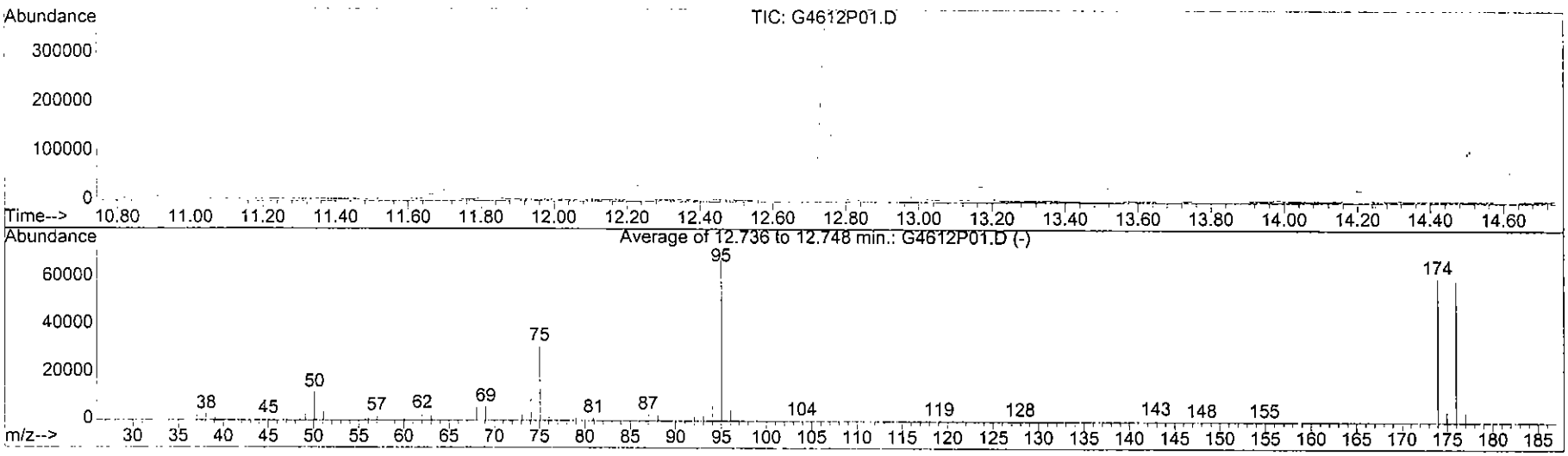
2020

Data File : C:\MSDCHEM\1\DATA\03G4612\G4612P01.D Vial: 1
Acq On : 21 Oct 2003 9:14 am Operator: zou
Sample : ##03g4565,w 50ng Inst : GCMS-A
Misc : Multiplr: 1.00
MS Integration Params: Lscint.p
Method : C:\MSDCHEM\1\METHODS\E524A003.M (RTE Integrator)
Title : **Applied P &Ch Lab** EPA 524.2



Spectrum Information: Average of 12.736 to 12.748 min.

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	17.0	11745	PASS
75	95	30	60	45.0	31162	PASS
95	95	100	100	100.0	69181	PASS
96	95	5	9	6.6	4558	PASS
173	174	0.00	2	0.5	275	PASS
174	95	50	100	87.4	60456	PASS
175	174	5	9	7.7	4634	PASS
176	174	95	101	98.1	59312	PASS
177	176	5	9	7.0	4135	PASS

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

Lab Name : APPLIED P & CH LAB Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 036047

Lab File ID: G4612 P01 BFB Injection Date: 10/21/2003

Instrument ID: GCMS-A BFB Injection Time: 0914

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

m/e	ION ABUNDANCE CRITERIA	%RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	17.0
75	30.0 - 60.0% of mass 95	45.0
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.6
173	Less than 2.0% of mass 174	0.4 (0.5)1
174	50.0 - 100.0% of mass 95	87.4
175	5.0 - 9.0% of mass 174	6.7 (7.7)1
176	95.0 - 101.0% of mass 174	85.7 (98.1)1
177	5.0 - 9.0% of mass 176	6.0 (7.0)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	3-A0003	3-A0003.D	10/21/2003	1005
02	VSTD002	3-0002	3-0002.D	10/21/2003	1031
03	VSTD010	3-0010	3-0010.D	10/21/2003	1056
04	VSTD020	3-0020	3-0020.D	10/21/2003	1122
05	VSTD040	3-0040	3-0040.D	10/21/2003	1147
06	VSTD060	3-0060	3-0060.D	10/21/2003	1214
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2022

INITIAL CALIBRATION SUMMARY

Method File	e524a003		
Last Calibration Update	Mon Oct 27 13:56:31 2003		
Level 1 File Name	3-A0003.D	Level 1 ID	.3
Level 2 File Name	3-002.D	Level 2 ID	2
Level 3 File Name	3-0010.D	Level 3 ID	10
Level 4 File Name	3-0020.D	Level 4 ID	20
Level 5 File Name	3-0040.D	Level 5 ID	40
Level 6 File Name	3-0060.D	Level 6 ID	60
Level 7 File Name	3-0020.D	Level 7 ID	cc

Compound Name	Level 1 Response	Level 2 Response	Level 3 Response	Level 4 Response	Level 5 Response	Level 6 Response	Level 7 Response	Coeff X^0	Coeff X^1 / ave RF	Coeff X^2	R^2 / RSD
1 Fluorobenzene	920067	916201	919392	955116	907151	1006211	-1	------	------	------	------
3 di-Cl-di-F-methane	6437	39097	199979	303885	731076	1099511	-1	0.0000	0.2011	0.0000	0.1330
4 Chloromethane	6136	37417	181676	348991	739859	1132557	-1	0.0000	0.1997	0.0000	0.0704
2 F114	1527	19306	101058	155932	367886	551592	-1	0.0028	0.0932	0.0000	0.9919
5 vinyl chloride	4876	33446	161213	285451	640709	982033	-1	0.0000	0.1705	0.0000	0.0717
6 bromomethane	2539	18408	87613	168214	383891	601141	-1	0.0000	0.0969	0.0000	0.0659
7 chloroethane	2197	17752	90280	159905	376464	536590	-1	0.0000	0.0918	0.0000	0.1013
8 tri-Cl-F-methane	8394	56082	277768	461283	1030751	1532166	-1	0.0000	0.2819	0.0000	0.0992
91 Acetonitrile X10	10689	82041	382813	794170	1713507	2428244	-1	0.0000	0.0431	0.0000	0.0662
9 acrolein X10	5645	40130	201945	381523	807796	1232252	-1	0.0000	0.0212	0.0000	0.0467
11 acetone X10	-1	64324	288996	538495	1267205	1816586	-1	0.0000	0.0319	0.0000	0.0947
12 ethyl ether X5	13693	93915	436367	874255	1704647	2654028	-1	0.0000	0.0950	0.0000	0.0552
13 11-dichloroethene	6637	46215	229524	410040	877445	1367991	-1	0.0000	0.2376	0.0000	0.0605
14 Iodomethane	3461	29384	183879	356970	751141	1123042	-1	0.0038	0.1913	0.0000	0.9951
15 F-113	4492	28088	146108	224035	516639	784890	-1	0.0000	0.1441	0.0000	0.1231
16 acrylonitrile X10	10574	78358	419836	794346	1709905	2532493	-1	0.0000	0.0429	0.0000	0.0731
17 carbon disulfide	13839	85463	420250	772812	1671671	2561651	-1	0.0000	0.4524	0.0000	0.0750
94 Isopropyl Alcoholx10	331	1284	1238	28714	240070	128634	-1	0.0000	0.0020	0.0000	1.1427
18 methylene chloride	10278	48191	203033	407143	804880	1192483	-1	0.0203	0.2012	0.0000	0.9947
19 t-12-di-Cl-ethene	6615	45733	217854	407874	774111	1126298	-1	0.0000	0.2233	0.0000	0.1039
20 t-Bu-Me-ether	9529	70095	362056	751228	1592599	2437498	-1	0.0000	0.3929	0.0000	0.0773
95 Tert butyl alcoholx10	1332	4624	88338	76985	452680	251872	-1	0.0000	0.0066	0.0000	0.6496

2023

94 allyl chloride	10689	82041	426268	794170	1724483	2428244	-1	0.0000	0.4409	0.0000	0.0706
21 11-dichloroethane	10035	71189	342138	689918	1398310	2101878	-1	0.0000	0.3698	0.0000	0.0415
97 propionitrile	103	3119	18745	29270	62391	109975	-1	0.0000	0.0176	0.0000	0.1055
22 c-12-di-Cl-ethene	6459	46844	225560	436935	845644	1210430	-1	0.0000	0.2329	0.0000	0.0801
23 22-Dichloropropane	5693	38859	218612	456844	979998	1513030	-1	0.0000	0.2360	0.0000	0.1011
24 Br-Cl-methane	3294	23046	109590	215148	438926	655419	-1	0.0000	0.1177	0.0000	0.0523
25 chloroform	13164	80631	375460	741683	1492648	2229387	-1	0.0000	0.4157	0.0000	0.0920
26 tetrahydrofuranX5	4044	28808	169729	317711	726346	1114014	-1	0.0000	0.0346	0.0000	0.1155
98 Diisopropyl ether	16931	136442	688556	1387177	2723439	4088155	-1	0.0000	0.7101	0.0000	0.0772
27 Di-Br-F-Me (surr)	6137	45047	218874	439096	880145	1314263	-1	0.0000	0.2348	0.0000	0.0481
99 ETBE	9591	74005	411030	879689	1934215	2984281	-1	0.0000	0.4477	0.0000	0.1468
29 1,2-Di-Cl-Et-d4 (S1)	5167	39287	192209	385356	801084	1206050	-1	0.0000	0.2091	0.0000	0.0418
30 12-dichloroethane	2318	14864	77221	146461	303955	463659	-1	0.0000	0.0811	0.0000	0.0434
32 vinyl acetate X5	36279	291623	1683396	3463521	7301957	11062661	-1	0.0000	0.3465	0.0000	0.1412
92 Nitro Methane(x10)	1574	10571	358371	95786	134103	298076	-1	0.0000	0.0117	0.0000	1.3083
33 2-butanoneMEK X10	14739	98541	459782	956754	2014463	3034414	-1	0.0000	0.0522	0.0000	0.0453
93 Ethyl Acetate x2	6463	37342	237607	465630	1199719	1687653	-1	0.0000	0.1292	0.0000	0.1682
34 111-trichloroethane	9393	63933	333945	629233	1352461	2070811	-1	0.0000	0.3496	0.0000	0.0454
35 11-Di-Cl-propene	6749	49362	260487	484228	1020849	1516179	-1	0.0000	0.2639	0.0000	0.0625
36 benzene	23536	167998	811668	1581767	3067808	4519766	-1	0.0000	0.8457	0.0000	0.0673
37 CCl4	9052	59763	312695	555550	1228562	1842053	-1	0.0000	0.3215	0.0000	0.0608

Compound Name	Level 1 Response	Level 2 Response	Level 3 Response	Level 4 Response	Level 5 Response	Level 6 Response	Level 7 Response	Coeff X^0	Coeff X^1 / ave RF	Coeff X^2	R^2 / RSD
100 Isobutyl alcoholx10	2932	21047	112031	247109	552842	880424	-1	------	------	------	------
38 thiophene	10222	83170	428533	868274	1718044	2554816	-1	0.0000	0.4403	0.0000	0.0870
39 12-di-Cl-propane	4815	37555	178169	370946	752605	1124998	-1	0.0000	0.1935	0.0000	0.0628
40 trichloroethene	7696	50098	255616	501517	1020048	1520360	-1	0.0000	0.2710	0.0000	0.0423
41 dibromomethane	3770	26033	124373	247759	508912	747601	-1	0.0000	0.1346	0.0000	0.0506
101 TAME	7879	59032	335735	716981	1622049	2525816	-1	-0.0345	0.4304	0.0000	0.9963
42 Br-di-Cl-methane	9392	56733	274489	546104	1129675	1703118	-1	0.0000	0.3046	0.0000	0.0694
43 Me-methacrylate	1457	14747	87065	188318	435160	662734	-1	-0.0095	0.1138	0.0000	0.9946
44 2-ClEt-Vi-ether10	4887	45249	275793	591932	1294105	1950851	-1	-0.0367	0.0357	0.0000	0.9955
45 c-13-di-Cl-propene	6769	54923	293425	608486	1252896	1891415	-1	0.0000	0.3069	0.0000	0.1096
46 t-1,3-dichloropropene	5153	40425	231011	505285	1067475	1638452	-1	-0.0097	0.2792	0.0000	0.9968
47 Chlorobezene-d5	745928	732691	724575	731811	659336	705610	-1	0.0000	1.0000	0.0000	0.0000

2024

48 112-tri-Cl-Et	4896	31570	158039	308164	644393	936372	-1	0.0000	0.2214	0.0000	0.0533
49 13-di-Cl-propane	7569	48826	251096	479955	958048	1392110	-1	0.0000	0.3397	0.0000	0.0396
50 Et methacrylate	2785	29334	189197	404574	897662	1374874	-1	-0.0430	0.3345	0.0000	0.9960

Compound Name	Level 1 Response	Level 2 Response	Level 3 Response	Level 4 Response	Level 5 Response	Level 6 Response	Level 7 Response	Coeff X^0	Coeff X^1 / ave RF	Coeff X^2	R^2 / RSD
51 di-Br-Cl-methane	7359	44728	219307	430191	895491	1332246	-1	0.0000	0.3141	0.0000	0.0548
52 bromoform	4029	26611	127022	257402	537161	813031	-1	0.0000	0.1848	0.0000	0.0599
53 1,4-dichlorobutane-2	7248	52525	270048	530472	1118631	1708578	-1	0.0000	0.3742	0.0000	0.0947
54 MIBK	2727	20267	114402	244409	567049	883730	-1	-0.0334	0.2144	0.0000	0.9947
55 toluene-d8	22176	162055	811859	1597728	3175057	4699033	-1	0.0000	1.1038	0.0000	0.0617
56 toluene	32453	204349	957684	1867212	3679239	5453434	-1	0.0000	1.3542	0.0000	0.0513
57 2-hexanone X5	8296	70148	400071	806303	1789801	2714840	-1	-0.0660	0.1318	0.0000	0.9958
58 12-dibromoethane	4393	32436	159989	322735	683020	1029927	-1	0.0000	0.2269	0.0000	0.0954
59 tetra-Cl-ethene	8603	59173	281865	498130	1001817	1436032	-1	0.0000	0.3728	0.0000	0.0719
60 chlorobenzene	21200	144953	676974	1307160	2492370	3536493	-1	0.0000	0.9241	0.0000	0.0576
61 1112-tetra-Cl-Et	7365	51367	249086	487380	969491	1437439	-1	0.0000	0.3439	0.0000	0.0403
62 1,4-Dichlorobenzene-d4	436784	441685	431820	433290	398842	428493	-1	0.0000	1.0000	0.0000	0.0000
63 1-chlorohexane	3125	20185	105292	181129	379300	546400	-1	0.0000	0.2284	0.0000	0.0636
64 Et-Bz	31613	225200	1128701	2162672	4307205	6378701	-1	0.0000	2.5420	0.0000	0.0404
65 m/p-Xylenes X2	51588	364290	1753788	3322945	6407191	9314343	-1	0.0000	1.9663	0.0000	0.0463
66 styrene	19899	158986	755749	1448349	2712603	3842415	-1	0.0000	1.6558	0.0000	0.0748
67 o-xylene	25030	181225	888564	1715323	3289680	4761198	-1	0.0000	1.9855	0.0000	0.0445
68 1122-Tetra-Cl-Et	4786	35408	176142	333638	679431	1005365	-1	0.0000	0.3960	0.0000	0.0524
69 123-tri-Cl-Pr	1463	11857	58506	111098	231129	345542	-1	0.0000	0.1315	0.0000	0.0844
70 4-Br-1-F-Bz (S3)	9236	60769	292727	571173	1114624	1638683	-1	0.0000	0.6776	0.0000	0.0376
71 isopropylbenzene	31809	228075	1204677	2257352	4576796	6821750	-1	0.0000	2.6544	0.0000	0.0592
72 bromobenzene	8279	62596	299551	577972	1123002	1610222	-1	0.0000	0.6719	0.0000	0.0539
92 t-1,4-dichloro-2-butene	370	3850	26890	58909	138278	214154	-1	-0.0139	0.0860	0.0000	0.9950
73 n-propylbenzene	9091	70513	355352	656540	1290074	1877926	-1	0.0000	0.7686	0.0000	0.0653
74 2-Cl-Toluene	7570	61543	297725	558317	1084812	1601091	-1	0.0000	0.6518	0.0000	0.0707
75 4-Cl-Toluene	9182	64367	296683	566381	1062470	1497703	-1	0.0000	0.6698	0.0000	0.0750
76 135-tri-Me-Benzene	28727	213694	1063069	2008540	3906361	5670674	-1	0.0000	2.3409	0.0000	0.0517
77 4-iso-Pr-toluene	31720	226621	1149787	2111126	4215398	6174914	-1	0.0000	2.5215	0.0000	0.0463
78 124-tri-Me-Benzene	29971	222021	1078747	2103275	4147713	6124395	-1	0.0000	2.4513	0.0000	0.0448
79 tert-butylbenzene	24279	177466	929162	1736357	3598467	5289165	-1	0.0000	2.0550	0.0000	0.0671

2025

80 13-DCB	19447	131664	611576	1176380	2227519	3166301	-1	0.0000	1.3960	0.0000	0.0684
81 sec-butylbenzene	38627	268975	1387531	2530666	5231475	7732088	-1	0.0000	3.0688	0.0000	0.0475
82 14-DCB	21754	133604	619366	1184125	2334471	3417867	-1	0.0000	1.4610	0.0000	0.0806
83 Cl-benzyl	871	5857	44122	106539	268318	431461	-1	-0.0412	0.1731	0.0000	0.9920
84 12-DCB	17721	121367	559240	1055514	2046326	2953834	-1	0.0000	1.2785	0.0000	0.0657
85 n-butylbenzene	8164	59910	307483	567085	1127859	1596385	-1	0.0000	0.6659	0.0000	0.0599
86 12-diBr-2-Cl-Pra	1032	7477	40003	83208	177685	276212	-1	0.0000	0.0951	0.0000	0.1330
87 124-tri-Cl-Bz	9169	66792	354819	702123	1402301	2085639	-1	0.0000	0.7963	0.0000	0.0771
88 naphthalene	11079	87277	545491	1159824	2506296	3927146	-1	-0.1762	1.5623	0.0000	0.9976
89 hx-Cl-butadiene	6445	40287	205532	360400	746186	1096494	-1	0.0000	0.4557	0.0000	0.0644
90 123-Tri-Cl-Bz	7754	57941	307963	600915	1229181	1798500	-1	0.0000	0.6874	0.0000	0.0870

Response F or Report GCMS-A

2026

Method : C:\MSDCHEM\1\METHODS\E524A003.M (RTE Integrator)
Title : **Applied P &Ch Lab** EPA 524.2
Last Update : Mon Oct 27 13:56:31 2003
Response via : Initial Calibration

Calibration Files
.3 =3-A0003.D 2 =3-002.D 10 =3-0010.D
20 =3-0020.D 40 =3-0040.D 60 =3-0060.D

			Compound	.3	2	10	20	40	60	Avg	%RSD	r2
1)	I	1	Fluorobenzene	---ISTD---								
2)		3	di-Cl-di-F-m	0.233	0.213	0.218	0.159	0.201	0.182	0.201	13.30	
3)	p	4	Chloromethan	0.222	0.204	0.198	0.183	0.204	0.188	0.200	7.04	
4)		2	F114	0.055	0.105	0.110	0.082	0.101	0.091	0.091	22.20	0.990
5)	C	5	vinyl chlori	0.177	0.183	0.175	0.149	0.177	0.163	0.171	7.17	
6)		6	bromomethane	0.092	0.100	0.095	0.088	0.106	0.100	0.097	6.59	
7)		7	chloroethane	0.080	0.097	0.098	0.084	0.104	0.089	0.092	10.13	
8)		8	tri-Cl-F-met	0.304	0.306	0.302	0.241	0.284	0.254	0.282	9.92	
9)		91	Acetonitrile		0.045	0.042	0.042	0.047	0.040	0.043	6.62	
10)		9	acrolein	0.020	0.022	0.022	0.020	0.022	0.020	0.021	4.67	
11)		11	acetone X		0.035	0.031	0.028	0.035	0.030	0.032	9.47	
12)		12	ethyl ether	0.099	0.103	0.095	0.092	0.094	0.088	0.095	5.52	
13)	M,	C13	11-dichloroe	0.240	0.252	0.250	0.215	0.242	0.227	0.238	6.05#	
14)		14	Iodomethane	0.125	0.160	0.200	0.187	0.207	0.186	0.178	16.98	0.995
15)		15	F-113	0.163	0.153	0.159	0.117	0.142	0.130	0.144	12.31	
16)		16	acrylonitril	0.038	0.043	0.046	0.042	0.047	0.042	0.043	7.31	
17)		17	carbon disul	0.501	0.466	0.457	0.405	0.461	0.424	0.452	7.50	
18)		94	Isopropyl Al	0.001	0.001	0.000	0.002	0.007	0.002	0.002	114.27	
19)		18	methylene ch	0.372	0.263	0.221	0.213	0.222	0.198	0.248	26.04	0.995
20)		19	t-12-di-Cl-e	0.240	0.250	0.237	0.214	0.213	0.187	0.223	10.39	
21)		20	t-Bu-Me-ethe	0.345	0.383	0.394	0.393	0.439	0.404	0.393	7.73	
22)		95	Tert butyl a		0.003	0.010	0.004	0.012	0.004	0.007	64.96	
23)		94	allyl chlori		0.448	0.464	0.416	0.475	0.402	0.441	7.06	
24)	p	21	11-dichloroe	0.364	0.389	0.372	0.361	0.385	0.348	0.370	4.15	
25)		97	propionitril		0.017	0.020	0.015	0.017	0.018	0.018	10.55	
26)		22	c-12-di-Cl-e	0.234	0.256	0.245	0.229	0.233	0.200	0.233	8.01	
27)		23	22-Dichlorop	0.206	0.212	0.238	0.239	0.270	0.251	0.236	10.11	
28)		24	Br-Cl-methan	0.119	0.126	0.119	0.113	0.121	0.109	0.118	5.23	

(#) = Out of Range

Response F or Report GCMS-A

Method : C:\MSDCHEM\1\METHODS\E524A003.M (RTE Integrator)
Title : **Applied P &Ch Lab** EPA 524.2
Last Update : Mon Oct 27 13:56:31 2003
Response via : Initial Calibration

Calibration Files
.3 =3-A0003.D 2 =3-002.D 10 =3-0010.D
20 =3-0020.D 40 =3-0040.D 60 =3-0060.D

		Compound	.3	2	10	20	40	60	Avg	%RSD	
29)	C	25 chloroform	0.477	0.440	0.408	0.388	0.411	0.369	0.416	9.20	
30)		26 tetrahydrofu	0.029	0.031	0.037	0.033	0.040	0.037	0.035	11.55	
31)		98 Diisopropyl	0.613	0.745	0.749	0.726	0.751	0.677	0.710	7.72	
32)	S	27 Di-Br-F-Me (		0.246	0.238	0.230	0.243	0.218	0.235	4.81	
33)		99 ETBE	0.347	0.404	0.447	0.461	0.533	0.494	0.448	14.68	
34)	S	29 1,2-Di-Cl-Et		0.214	0.209	0.202	0.221	0.200	0.209	4.18	
35)		30 12-dichloroe	0.084	0.081	0.084	0.077	0.084	0.077	0.081	4.34	
36)		32 vinyl acetat	0.263	0.318	0.366	0.363	0.402	0.366	0.346	14.12	
37)		92 Nitro Methan		0.006	0.039	0.005	0.004	0.005	0.012	130.83	
38)		33 2-butanoneME	0.053	0.054	0.050	0.050	0.056	0.050	0.052	4.53	
39)		93 Ethyl Acetat	0.117	0.102	0.129	0.122	0.165	0.140	0.129	16.82	
40)		34 111-trichlor	0.340	0.349	0.363	0.329	0.373	0.343	0.350	4.54	
41)		35 11-Di-Cl-pro	0.245	0.269	0.283	0.253	0.281	0.251	0.264	6.25	
42)	M	36 benzene	0.853	0.917	0.883	0.828	0.845	0.749	0.846	6.73	
43)		37 CCl4	0.328	0.326	0.340	0.291	0.339	0.305	0.321	6.08	
44)		100 Isobutyl al	0.011	0.011	0.012	0.013	0.015	0.015	0.013	13.92	
45)		38 thiophene	0.370	0.454	0.466	0.455	0.473	0.423	0.440	8.70	
46)	C	39 12-di-Cl-pro	0.174	0.205	0.194	0.194	0.207	0.186	0.194	6.28#	
47)	M	40 trichloroeth	0.279	0.273	0.278	0.263	0.281	0.252	0.271	4.23	
48)		41 dibromometha	0.137	0.142	0.135	0.130	0.140	0.124	0.135	5.06	
49)		101 TAME	0.285	0.322	0.365	0.375	0.447	0.418	0.369	16.15	0.995
50)		42 Br-di-Cl-met	0.340	0.310	0.299	0.286	0.311	0.282	0.305	6.94	
51)		43 Me-methacryl	0.053	0.080	0.095	0.099	0.120	0.110	0.093	25.59	0.994
52)		44 2-ClEt-Vi-et	0.018	0.025	0.030	0.031	0.036		0.028	24.68	0.993
53)		45 c-13-di-Cl-p	0.245	0.300	0.319	0.319	0.345	0.313	0.307	10.96	
54)		46 t-1,3-dichlo	0.187	0.221	0.251	0.265	0.294	0.271	0.248	15.58	0.997
55)	I	47 Chlorobezene-d5	----------ISTD----------								
56)		48 112-tri-Cl-E	0.219	0.215	0.218	0.211	0.244	0.221	0.221	5.33	

(#) = Out of Range

Response F :or Report GCMS-A

2028

Method : C:\MSDCHEM\1\METHODS\E524A003.M (RTE Integrator)
Title : **Applied P &Ch Lab** EPA 524.2
Last Update : Mon Oct 27 13:56:31 2003
Response via : Initial Calibration

Calibration Files
.3 =3-A0003.D 2 =3-002.D 10 =3-0010.D
20 =3-0020.D 40 =3-0040.D 60 =3-0060.D

			Compound	.3	2	10	20	40	60	Avg	%RSD	
57)		49	13-di-Cl-pro	0.338	0.333	0.347	0.328	0.363	0.329	0.340	3.96	
58)		50	Et methacryl	0.124	0.200	0.261	0.276	0.340	0.325	0.255	31.77	0.995
59)		51	di-Br-Cl-met	0.329	0.305	0.303	0.294	0.340	0.315	0.314	5.48	
60)	P	52	bromoform	0.180	0.182	0.175	0.176	0.204	0.192	0.185	5.99	
61)		53	1,4-dichloro	0.324	0.358	0.373	0.362	0.424	0.404	0.374	9.47	
62)		54	MIBK	0.122	0.138	0.158	0.167	0.215	0.209	0.168	22.23	0.992
63)	s	55	toluene-d8	0.991	1.106	1.120	1.092	1.204	1.110	1.104	6.17	
64)	M,C	56	toluene	1.450	1.395	1.322	1.276	1.395	1.288	1.354	5.13	
65)		57	2-hexanone X	0.074	0.096	0.110	0.110	0.136	0.128	0.109	20.41	0.994
66)		58	12-dibromoet	0.196	0.221	0.221	0.221	0.259	0.243	0.227	9.54	
67)		59	tetra-Cl-eth	0.384	0.404	0.389	0.340	0.380	0.339	0.373	7.19	
68)	M,P	60	chlorobenzen	0.947	0.989	0.934	0.893	0.945	0.835	0.924	5.76	
69)		61	1112-tetra-C	0.329	0.351	0.344	0.333	0.368	0.340	0.344	4.03	
70)	I	62	1,4-Dichlorobenzen	----------ISTD----------								
71)		63	1-chlorohexa	0.238	0.228	0.244	0.209	0.238	0.213	0.228	6.36	
72)	C	64	Et-Bz	2.413	2.549	2.614	2.496	2.700	2.481	2.542	4.04#	
73)		65	m/p-Xylenes	1.968	2.062	2.031	1.917	2.008	1.811	1.966	4.63	
74)		66	styrene	1.519	1.800	1.750	1.671	1.700	1.495	1.656	7.48	
75)		67	o-xylene	1.910	2.052	2.058	1.979	2.062	1.852	1.985	4.45	
76)	p	68	1122-Tetra-C	0.365	0.401	0.408	0.385	0.426	0.391	0.396	5.24	
77)		69	123-tri-Cl-P	0.112	0.134	0.135	0.128	0.145	0.134	0.131	8.44	
78)	S	70	4-Br-1-F-Bz	0.705	0.688	0.678	0.659	0.699	0.637	0.678	3.76	
79)		71	isopropylben	2.428	2.582	2.790	2.605	2.869	2.653	2.654	5.92	
80)		72	bromobenzene	0.632	0.709	0.694	0.667	0.704	0.626	0.672	5.39	
81)		92	t-1,4-dichlo	0.028	0.044	0.062	0.068	0.087	0.083	0.062	36.62	0.993
82)		73	n-propylbenz	0.694	0.798	0.823	0.758	0.809	0.730	0.769	6.53	
83)		74	2-Cl-Toluene	0.578	0.697	0.689	0.644	0.680	0.623	0.652	7.07	
84)		75	4-Cl-Toluene	0.701	0.729	0.687	0.654	0.666	0.583	0.670	7.50	

(#) = Out of Range

Response F or Report GCMS-A

Method : C:\MSDCHEM\1\METHODS\E524A003.M (RTE Integrator)
Title : **Applied P &Ch Lab** EPA 524.2
Last Update : Mon Oct 27 13:56:31 2003
Response via : Initial Calibration

Calibration Files
.3 =3-A0003.D 2 =3-002.D 10 =3-0010.D
20 =3-0020.D 40 =3-0040.D 60 =3-0060.D

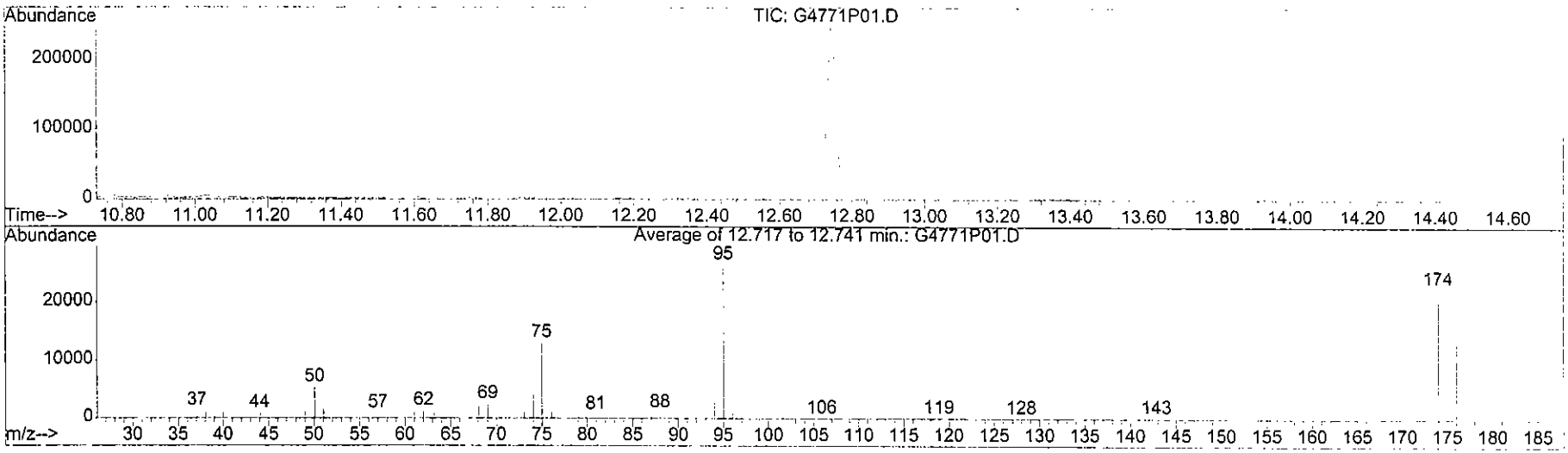
		Compound	.3	2	10	20	40	60	Avg	%RSD	
85)	76	135-tri-Me-B	2.192	2.419	2.462	2.318	2.449	2.206	2.341	5.17	
86)	77	4-iso-Pr-tol	2.421	2.565	2.663	2.436	2.642	2.402	2.522	4.63	
87)	78	124-tri-Me-B	2.287	2.513	2.498	2.427	2.600	2.382	2.451	4.48	
88)	79	tert-butylbe	1.853	2.009	2.152	2.004	2.256	2.057	2.055	6.71	
89)	80	13-DCB	1.484	1.490	1.416	1.357	1.396	1.232	1.396	6.84	
90)	81	sec-butylben	2.948	3.045	3.213	2.920	3.279	3.007	3.069	4.75	
91)	82	14-DCB	1.660	1.512	1.434	1.366	1.463	1.329	1.461	8.06	
92)	83	Cl-benzyl	0.066	0.066	0.102	0.123	0.168	0.168	0.116	39.76	0.989
93)	84	12-DCB	1.352	1.374	1.295	1.218	1.283	1.149	1.278	6.57	
94)	85	n-butylbenze	0.623	0.678	0.712	0.654	0.707	0.621	0.666	5.99	
95)	86	12-diBr-2-Cl	0.079	0.085	0.093	0.096	0.111	0.107	0.095	13.30	
96)	87	124-tri-Cl-B	0.700	0.756	0.822	0.810	0.879	0.811	0.796	7.71	
97)	88	naphthalene	0.845	0.988	1.263	1.338	1.571	1.528	1.256	23.09	0.997
98)	89	hx-Cl-butadi	0.492	0.456	0.476	0.416	0.468	0.426	0.456	6.44	
99)	90	123-Tri-Cl-B	0.592	0.656	0.713	0.693	0.770	0.700	0.687	8.70	

(#) = Out of Range

BFB

2030

Data File : C:\MSDCHEM\1\DATA\03G4771\G4771P01.D Vial: 1
Acq On : 11 Nov 2003 7:55 pm Operator: zou
Sample : ##03g4771, w 50 ng Inst : GCMS-A
Misc : Multiplr: 1.00
MS Integration Params: Lscint.p
Method : C:\MSDCHEM\1\METHODS\E524A003.M (RTE Integrator)
Title : **Applied P &Ch Lab** EPA 524.2



Spectrum Information: Average of 12.717 to 12.741 min.

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.9	5344	PASS
75	95	30	60	46.0	13021	PASS
95	95	100	100	100.0	28294	PASS
96	95	5	9	6.3	1780	PASS
173	174	0.00	2	0.4	86	PASS
174	95	50	100	79.6	22535	PASS
175	174	5	9	9.0	2018	PASS
176	174	95	101	96.5	21748	PASS
177	176	5	9	6.5	1404	PASS

G4771P01.D E524A003.M Wed Nov 12 09:36:20 2003

FORM-5A

Applied P & Ch Laboratory

Volatile Organic Instrument Performance Check for Method 524.2

Bromofluorobenzene (BFB), Part II

Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		Service ID:	036047
Project ID:	JPL	BFB Inj. Date:	11/11/03	Batch No:	03G4771
		BFB Inj. Time:	19:55	Sequence No:	03G4771
Project No:	04-4428.10	Instrument ID:	A	GC Column:	HP-VOC
Data File Name:	G4771P01	Heated Purge: (Y/N)	N	Column ID:	0.20 mm

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

#	Client Sample No	Lab Sample ID	Data File Name	Date Analyzed	Time Analyzed
1	03G4771-CCV-01	03G4771-CCV-01	G4771Q01	11/11/03	20:21
2	03G4771-LCS-01	03G4771-LCS-01	G4771L01	11/11/03	20:46
3	MW-13MS	03-6034-3MS	G4771M02	11/11/03	22:29
4	MW-13MSD	03-6034-3MSD	G4771N02	11/11/03	22:55
5	03G4771-MB-01	03G4771-MB-01	G4771K01	11/12/03	01:17
6	TB-13-11-10-03	03-6047-4	6047-04	11/12/03	01:49
7	MW-1	03-6047-1	6047-01	11/12/03	06:36
8	MW-7	03-6047-2	6047-02	11/12/03	07:02
9	MW-16	03-6047-3	6047-03	11/12/03	07:28
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Continuing Calibration Concentration Summary

Data File G4771Q01
Method File E524A003

Compound Name	Amount	Actual	Units	%Dev	Target Response
1 Fluorobenzene	10	10.00	ppb	0.00	648705
3 di-Cl-di-F-methane	20	18.09	ppb	9.55	236014
4 Chloromethane	20	12.06	ppb	39.69	156277
2 F114	20	19.43	ppb	2.86	119259
5 vinyl chloride	20	16.30	ppb	18.51	180287
6 bromomethane	20	12.56	ppb	37.19	78937
7 chloroethane	20	17.87	ppb	10.66	106450
8 tri-Cl-F-methane	20	22.87	ppb	14.34	418258
91 Acetonitrile X10	200	171.16	ppb	14.42	478387
9 acrolein X10	200	182.44	ppb	8.78	250437
11 acetone X10	200	175.87	ppb	12.06	364495
12 ethyl ether X5	100	92.37	ppb	7.63	569304
13 11-dichloroethene	20	20.68	ppb	3.40	318706
14 Iodomethane	20	7.98	ppb	60.10	101487
15 F-113	20	23.06	ppb	15.28	215535
16 acrylonitrile X10	200	172.76	ppb	13.62	480760
17 carbon disulfide	20	15.85	ppb	20.77	465029
94 Isopropyl Alcoholx10	200	523.05	ppb	161.52	69469
18 methylene chloride	20	17.58	ppb	12.09	242614
19 t-12-di-Cl-ethene	20	17.76	ppb	11.19	257248
20 t-Bu-Me-ether	20	20.53	ppb	2.63	523188
95 Tert butyl alcoholx10	200	329.22	ppb	64.61	140138
94 allyl chloride	20	16.73	ppb	16.37	478387
21 11-dichloroethane	20	18.46	ppb	7.69	442921
97 propionitrile	20	17.58	ppb	12.08	20109
22 c-12-di-Cl-ethene	20	18.48	ppb	7.60	279184
23 22-Dichloropropane	20	24.66	ppb	23.28	377449
24 Br-Cl-methane	20	18.45	ppb	7.76	140909
25 chloroform	20	19.56	ppb	2.19	527523
26 tetrahydrofuranX5	100	83.11	ppb	16.89	186784
98 Diisopropyl ether	20	18.23	ppb	8.87	839624
27 Di-Br-F-Me (surr)	20	20.13	ppb	0.63	306557
99 ETBE	20	21.57	ppb	7.87	626611
29 1,2-Di-Cl-Et-d4 (S1)	20	20.91	ppb	4.57	283742
30 12-dichloroethane	20	21.32	ppb	6.59	112093
32 vinyl acetate X5	100	98.35	ppb	1.65	2210560
92 Nitro Methane(x10)	200	82.27	ppb	58.87	62329
33 2-butanoneMEK X10	200	175.13	ppb	12.43	592745
93 Ethyl Acetate x2	40	35.79	ppb	10.51	299980
34 111-trichloroethane	20	23.08	ppb	15.42	523515
35 11-Di-Cl-propene	20	20.45	ppb	2.26	350064
36 benzene	20	17.72	ppb	11.40	972148
37 CCl4	20	24.90	ppb	24.52	519310

Compound Name	Amount	Actual	Units	%Dev	Target Response
100 Isobutyl alcoholx10	200	212.46	ppb	6.23	176984
38 thiophene	20	18.91	ppb	5.45	540056
39 12-di-Cl-propane	20	17.67	ppb	11.66	221801
40 trichloroethene	20	19.51	ppb	2.45	342927
41 dibromomethane	20	19.52	ppb	2.41	170442
101 TAME	20	19.08	ppb	4.59	510416
42 Br-di-Cl-methane	20	20.01	ppb	0.05	395417
43 Me-methacrylate	20	16.67	ppb	16.63	116871
44 2-ClEt-Vi-ether10	200	134.62	ppb	32.69	288370
45 c-13-di-Cl-propene	20	19.84	ppb	0.82	394857
46 t-1,3-dichloropropene	20	19.64	ppb	1.82	349316
47 Chlorobezene-d5	10	10.00	ppb	0.00	495670
48 112-tri-Cl-Et	20	18.53	ppb	7.33	203392
49 13-di-Cl-propane	20	19.07	ppb	4.64	321083
50 Et methacrylate	20	16.71	ppb	16.43	255825

Compound Name	Amount	Actual	Units	%Dev	Target Response
51 di-Br-Cl-methane	20	20.18	ppb	0.90	314220
52 bromoform	20	20.71	ppb	3.56	189669
53 1,4-dichlorobutane-2	20	18.67	ppb	6.63	346373
54 MIBK	20	15.55	ppb	22.23	148712
55 toluene-d8	20	19.10	ppb	4.52	1044814
56 toluene	20	17.85	ppb	10.74	1198320
57 2-hexanone X5	100	82.13	ppb	17.87	503832
58 12-dibromoethane	20	18.70	ppb	6.48	210321
59 tetra-Cl-ethene	20	21.31	ppb	6.55	393755
60 chlorobenzene	20	19.29	ppb	3.57	883342
61 1112-tetra-Cl-Et	20	21.35	ppb	6.77	364035
62 1,4-Dichlorobenzene-d4	10	10.00	ppb	0.00	306638
63 1-chlorohexane	20	20.18	ppb	0.88	141280
64 Et-Bz	20	19.32	ppb	3.40	1505927
65 m/p-Xylenes X2	40	39.08	ppb	2.30	2356272
66 styrene	20	19.51	PPB	2.47	990373
67 o-xylene	20	19.76	ppb	1.18	1203304
68 1122-Tetra-Cl-Et	20	17.90	ppb	10.48	217397
69 123-tri-Cl-Pr	20	20.01	ppb	0.04	80664
70 4-Br-1-F-Bz (S3)	20	20.08	ppb	0.42	417338
71 isopropylbenzene	20	20.75	ppb	3.75	1688975
72 bromobenzene	20	20.16	ppb	0.79	415302
92 t-1,4-dichloro-2-butene	20	18.21	ppb	8.93	43762
73 n-propylbenzene	20	21.17	ppb	5.83	498861
74 2-Cl-Toluene	20	20.38	ppb	1.91	407381
75 4-Cl-Toluene	20	19.97	ppb	0.15	410131
76 135-tri-Me-Benzene	20	20.98	ppb	4.91	1506141
77 4-iso-Pr-toluene	20	21.59	ppb	7.96	1669502
78 124-tri-Me-Benzene	20	20.69	ppb	3.47	1555566
79 tert-butylbenzene	20	21.68	ppb	8.38	1365888
80 13-DCB	20	20.03	ppb	0.13	857264
81 sec-butylbenzene	20	21.36	ppb	6.80	2010030

82 14-DCB	20	19.10	ppb	4.52	855464
83 Cl-benzyl	20	18.26	ppb	8.69	84303
84 12-DCB	20	19.73	ppb	1.35	773523
85 n-butylbenzene	20	21.96	ppb	9.80	448411
86 12-diBr-2-Cl-Pra	20	19.32	ppb	3.39	56374
87 124-tri-Cl-Bz	20	21.50	ppb	7.48	524901
88 naphthalene	20	19.34	ppb	3.29	872593
89 hx-Cl-butadiene	20	23.94	ppb	19.71	334524
90 123-Tri-Cl-Bz	20	21.70	ppb	8.49	457343

Average D % 11.558642

Evaluate Continuing Calibration Report

2035

Data File : C:\MSDCHEM\1\DATA\03G4771\G4771Q01.D Vial: 2
Acq On : 11 Nov 2003 8:21 pm Operator: zou
Sample : f=1 Inst : GCMS-A
Misc : Multiplr: 1.00
MS Integration Params: Lscint.p

Method : C:\MSDCHEM\1\METHODS\E524A003.M (RTE Integrator)
Title : **Applied P &Ch Lab** EPA 524.2
Last Update : Mon Oct 27 14:05:06 2003
Response via : Multiple Level Calibration

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

			Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1	Fluorobenzene	1.000	1.000	0.0	68	0.00
2		3	di-Cl-di-F-methane	0.201	0.182	9.5	78	0.00
3	p	4	Chloromethane	0.200	0.120	40.0#	45#	0.00
4		2	F114	0.091	0.092	-1.1	76	0.00
5	C	5	vinyl chloride	0.171	0.139	18.7	63	0.00
6		6	bromomethane	0.097	0.061	37.1#	47#	0.00
7		7	chloroethane	0.092	0.082	10.9	67	0.00
8		8	tri-Cl-F-methane	0.282	0.322	-14.2	91	0.00
9		91	Acetonitrile X10	0.043	0.037	14.0	60	0.00
10		9	acrolein X10	0.021	0.019	9.5	66	0.00
11		11	acetone X10	0.032	0.028	12.5	68	0.00
12		12	ethyl ether X5	0.095	0.088	7.4	65	0.00
13	M, C	13	11-dichloroethene	0.238	0.246	-3.4	78	0.00
14		14	Iodomethane	0.178	0.078	56.2#	28#	0.00
15		15	F-113	0.144	0.166	-15.3	96	0.00
16		16	acrylonitrile X10	0.043	0.037	14.0	61	0.00
17		17	carbon disulfide	0.452	0.358	20.8#	60	0.00
18		94	Isopropyl Alcoholx10	0.002	0.005	-150.0#	242#	0.00
19		18	methylene chloride	0.248	0.187	24.6#	60	0.00
20		19	t-12-di-Cl-ethene	0.223	0.198	11.2	63	0.00
21		20	t-Bu-Me-ether	0.393	0.403	-2.5	70	0.00
22		95	Tert butyl alcoholx10	0.007	0.011	-57.1#	182	-0.01
23		94	allyl chloride	0.441	0.369	16.3	60	0.00
24	p	21	11-dichloroethane	0.370	0.341	7.8	64	0.00
25		97	propionitrile	0.018	0.015	16.7	69	0.00
26		22	c-12-di-Cl-ethene	0.233	0.215	7.7	64	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

2036

Data File : C:\MSDCHEM\1\DATA\03G4771\G4771Q01.D Vial: 2
Acq On : 11 Nov 2003 8:21 pm Operator: zou
Sample : f=1 Inst : GCMS-A
Misc : Multiplr: 1.00
MS Integration Params: Lscint.p

Method : C:\MSDCHEM\1\METHODS\E524A003.M (RTE Integrator)
Title : **Applied P &Ch Lab** EPA 524.2
Last Update : Mon Oct 27 14:05:06 2003
Response via : Multiple Level Calibration

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

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
27		23 22-Dichloropropane	0.236	0.291	-23.3#	83	0.00
28		24 Br-Cl-methane	0.118	0.109	7.6	65	0.00
29	C	25 chloroform	0.416	0.407	2.2	71	0.00
30		26 tetrahydrofuranX5	0.035	0.029	17.1	59	0.00
31		98 Diisopropyl ether	0.710	0.647	8.9	61	0.00
32	S	27 Di-Br-F-Me (surr)	0.235	0.236	-0.4	70	0.00
33		99 ETBE	0.448	0.483	-7.8	71	0.00
34	S	29 1,2-Di-Cl-Et-d4 (S1)	0.209	0.219	-4.8	74	0.00
35		30 12-dichloroethane	0.081	0.086	-6.2	77	0.00
36		32 vinyl acetate X5	0.346	0.341	1.4	64	0.00
37		92 Nitro Methane(x10)	0.012	0.005	58.3#	65	-0.02
38		33 2-butanoneMEK X10	0.052	0.046	11.5	62	0.00
39		93 Ethyl Acetate x2	0.129	0.116	10.1	64	0.00
40		34 111-trichloroethane	0.350	0.404	-15.4	83	0.00
41		35 11-Di-Cl-propene	0.264	0.270	-2.3	72	0.00
42	M	36 benzene	0.846	0.749	11.5	61	0.00
43		37 CCl4	0.321	0.400	-24.6#	93	0.00
44		100 Isobutyl alcoholx10	0.013	0.014	-7.7	72	0.00
45		38 thiophene	0.440	0.416	5.5	62	0.00
46	C	39 12-di-Cl-propane	0.194	0.171	11.9	60	0.00
47	M	40 trichloroethene	0.271	0.264	2.6	68	0.00
48		41 dibromomethane	0.135	0.131	3.0	69	0.00
49		101 TAME	0.369	0.393	-6.5	71	0.00
50		42 Br-di-Cl-methane	0.305	0.305	0.0	72	0.00
51		43 Me-methacrylate	0.093	0.090	3.2	62	0.00
52		44 2-ClEt-Vi-ether10	0.028	0.022	21.4#	49#	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\03G4771\G4771Q01.D Vial: 2
Acq On : 11 Nov 2003 8:21 pm Operator: zou
Sample : f=1 Inst : GCMS-A
Misc : Multiplr: 1.00
MS Integration Params: Lscint.p

Method : C:\MSDCHEM\1\METHODS\E524A003.M (RTE Integrator)
Title : **Applied P &Ch Lab** EPA 524.2
Last Update : Mon Oct 27 14:05:06 2003
Response via : Multiple Level Calibration

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

			Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
53		45	c-13-di-Cl-propene	0.307	0.304	1.0	65	0.00
54		46	t-1,3-dichloropropene	0.248	0.269	-8.5	69	0.00
55	I	47	Chlorobezene-d5	1.000	1.000	0.0	68	0.00
56		48	112-tri-Cl-Et	0.221	0.205	7.2	66	0.00
57		49	13-di-Cl-propane	0.340	0.324	4.7	67	0.00
58		50	Et methacrylate	0.255	0.258	-1.2	63	0.00
59		51	di-Br-Cl-methane	0.314	0.317	-1.0	73	0.00
60	P	52	bromoform	0.185	0.191	-3.2	74	0.00
61		53	1,4-dichlorobutane-2	0.374	0.349	6.7	65	0.00
62		54	MIBK	0.168	0.150	10.7	61	0.00
63	s	55	toluene-d8	1.104	1.054	4.5	65	0.00
64	M,C	56	toluene	1.354	1.209	10.7	64	0.00
65		57	2-hexanone X5	0.109	0.102	6.4	62	0.00
66		58	12-dibromoethane	0.227	0.212	6.6	65	0.00
67		59	tetra-Cl-ethene	0.373	0.397	-6.4	79	0.00
68	M,P	60	chlorobenzene	0.924	0.891	3.6	68	0.00
69		61	1112-tetra-Cl-Et	0.344	0.367	-6.7	75	0.00
70	I	62	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	71	0.00
71		63	1-chlorohexane	0.228	0.230	-0.9	78	0.00
72	C	64	Et-Bz	2.542	2.456	3.4	70	0.00
73		65	m/p-Xylenes X2	1.966	1.921	2.3	71	0.00
74		66	styrene	1.656	1.615	2.5	68	0.00
75		67	o-xylene	1.985	1.962	1.2	70	0.00
76	p	68	1122-Tetra-Cl-Et	0.396	0.354	10.6	65	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

2038

Data File : C:\MSDCHEM\1\DATA\03G4771\G4771Q01.D Vial: 2
Acq On : 11 Nov 2003 8:21 pm Operator: zou
Sample : f=1 Inst : GCMS-A
Misc : Multiplr: 1.00
MS Integration Params: Lscint.p

Method : C:\MSDCHEM\1\METHODS\E524A003.M (RTE Integrator)
Title : **Applied P &Ch Lab** EPA 524.2
Last Update : Mon Oct 27 14:05:06 2003
Response via : Multiple Level Calibration

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

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
77		69 123-tri-Cl-Pr	0.131	0.132	-0.8	73	0.00
78	S	70 4-Br-1-F-Bz (S3)	0.678	0.681	-0.4	73	0.00
79		71 isopropylbenzene	2.654	2.754	-3.8	75	0.00
80		72 bromobenzene	0.672	0.677	-0.7	72	0.00
81		92 t-1,4-dichloro-2-butene	0.062	0.071	-14.5	74	0.00
82		73 n-propylbenzene	0.769	0.813	-5.7	76	0.00
83		74 2-Cl-Toluene	0.652	0.664	-1.8	73	0.00
84		75 4-Cl-Toluene	0.670	0.669	0.1	72	0.00
85		76 135-tri-Me-Benzene	2.341	2.456	-4.9	75	0.00
86		77 4-iso-Pr-toluene	2.522	2.722	-7.9	79	0.00
87		78 124-tri-Me-Benzene	2.451	2.536	-3.5	74	0.00
88		79 tert-butylbenzene	2.055	2.227	-8.4	79	0.00
89		80 13-DCB	1.396	1.398	-0.1	73	0.00
90		81 sec-butylbenzene	3.069	3.278	-6.8	79	0.00
91		82 14-DCB	1.461	1.395	4.5	72	0.00
92		83 Cl-benzyl	0.116	0.137	-18.1	79	0.00
93		84 12-DCB	1.278	1.261	1.3	73	0.00
94		85 n-butylbenzene	0.666	0.731	-9.8	79	0.00
95		86 12-diBr-2-Cl-Pra	0.095	0.092	3.2	68	0.00
96		87 124-tri-Cl-Bz	0.796	0.856	-7.5	75	0.00
97		88 naphthalene	1.256	1.423	-13.3	75	0.00
98		89 hx-Cl-butadiene	0.456	0.545	-19.5	93	0.00
99		90 123-Tri-Cl-Bz	0.687	0.746	-8.6	76	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:	036047
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		CCV Data File:	G4771Q01	Instrument ID:	A

Batch No: 03G4771

#	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			11/11/03 20:21	648705	7.64	495670	11.54	306638	13.84
CCV Upper Limit				1297410	8.14	991340	12.04	613276	14.34
CCV Lower Limit				324352	7.14	247835	11.04	153319	13.34
1	03G4771-LCS-01	03G4771-LCS-01	11/11/03 20:46	677978	7.64	508521	11.54	312840	13.84
2	MW-13MS	03-6034-3MS	11/11/03 22:29	710443	7.65	537799	11.54	330228	13.84
3	MW-13MSD	03-6034-3MSD	11/11/03 22:55	702138	7.64	536504	11.54	324603	13.84
4	03G4771-MB-01	03G4771-MB-01	11/12/03 01:17	650041	7.64	514703	11.54	313855	13.84
5	TB-13-11-10-03	03-6047-4	11/12/03 01:49	656021	7.64	532560	11.54	330116	13.84
6	MW-1	03-6047-1	11/12/03 06:36	628447	7.64	493763	11.55	302566	13.84
7	MW-7	03-6047-2	11/12/03 07:02	624358	7.65	508987	11.54	311164	13.85
8	MW-16	03-6047-3	11/12/03 07:28	629016	7.64	501449	11.55	301472	13.85
9									
10									
11									
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

A

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

VOC Analysis General Logbook

Sequence # 03J4771 Batch # 03J4771 Matrix: W Date: 11/11/03 Analyst: Zou

Lot #: IS/Surrogate: GC-15761/15762 Methanol(mark-*M*): _____ PEG (mark-*PEG*): _____ Defoaming(mark-*DF*): _____

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

Op. #	Type	Sample ID	Method	$V/X=f_1$	$V_f/V_i=f_2$	$V_{spg}/V_{inj}=f_3$	F	A-#	Datafile	Note	pH
4905	SP	G4771P01	E524A 003	25/25 = 1	/ =	/ =	1		G4771P01	11/11/03	19:55
4906	CCV	Q01		/ =	/ =	/ =			Q01	gc15811	
4907	LCS	L01		/ =	/ =	/ =			L01		
4908	MS	M01		/ =	/ =	/ =			M01	$6002-02	<2
4909	MSD	N01		/ =	/ =	/ =			N01	↓	
4910	MS	M02		/ =	/ =	/ =			M02	$6034-03	
4911	MSD	N02		/ =	/ =	/ =			N02	↓	↓
4912	MB	K01		/ =	/ =	/ =			K01		
4913	Sample	6047-04		/ =	/ =	/ =			6047-04	tb	<2
4914		6002-05		/ =	/ =	/ =			6002-05	tb	
4915		6034-05		/ =	/ =	/ =			6034-05	tb	
4916		03		/ =	/ =	/ =			03	ms	
4917		6002-02		/ =	/ =	/ =			6002-02	ms	
4918		01		/ =	/ =	/ =			01		
4919		03		/ =	/ =	/ =			03		
4920		04		/ =	/ =	/ =			04		
4921		6034-01		/ =	/ =	/ =			6034-01		
4922		02		/ =	/ =	/ =			02		
4923		04		/ =	/ =	/ =			04		
4924		6047-01		/ =	/ =	/ =			6047-01		
4925		02		/ =	/ =	/ =			02		
4926		03		/ =	/ =	/ =			03		
4927				/ =	/ =	/ =					
4928				/ =	/ =	/ =					
4929				/ =	/ =	/ =					
4930				/ =	/ =	/ =					
4931				/ =	/ =	/ =					
4932				/ =	/ =	/ =					
4933				/ =	/ =	/ =					
4934				/ =	/ =	/ =					
4935				/ =	/ =	/ =					
4936				/ =	/ =	/ =					

11/12/03

Type	Op #	STD Lot #	$C_{std}(ng/\mu L)\times V_{std}(\mu L)/X(g \text{ or } mL)=T$	Op #	STD Lot #	$C_{std}(ng/\mu L)\times V_{std}(\mu L)/X(g \text{ or } mL)=T$
LCS/LCSD	4907	GC-	× /X= ppb		GC-	× /X= ppb
MS/MSD	4908/4909	GC-15812	200 × 2.5 /X= 20 ppb	4910/4911	GC-15812	200 × 2.5 /X= 20 ppb

Footnote/Anomaly:

2040

A

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

VOC Analysis General Logbook

Sequence # 0364612 Batch # 0364612 Matrix: W Date: 10/21/03 Analyst: Eddie

Lot #: IS/Surrogate: GC15114/15115 Methanol(mark-*M*): _____ PEG (mark-*PEG*): _____ Defoaming(mark-*DF*): _____

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

Op. #	Type	Sample ID	Method	$V/X=f_1$	$V_f/V_i=f_2$	$V_{spg}/V_{inj}=f_3$	F	A-#	Datafile	Note	pH
4201	SP	G4612P01	E524A	25/25 = 1	/ =	/ =	1		G4612P01	10/21/03 9:14am	
4202	Calib	3-A0003	003	/ =	/ =	/ =			3-A0003	gc15731	
4203		3-002		/ =	/ =	/ =			3-002		
4204		3-0010		/ =	/ =	/ =			3-0010		
4205		3-0020		/ =	/ =	/ =			3-0020		
4206		3-0040		/ =	/ =	/ =			3-0040		
4207		3-0060		/ =	/ =	/ =			3-0060		
4208	ICV	ICV		/ =	/ =	/ =			ICV	gc15732	
4209				/ =	/ =	/ =					
4210				/ =	/ =	/ =					
4211				/ =	/ =	/ =					
4212				/ =	/ =	/ =					
4213				/ =	/ =	/ =					
4214				/ =	/ =	/ =					
4215				/ =	/ =	/ =					
4216				/ =	/ =	/ =					
4217				/ =	/ =	/ =					
4218				/ =	/ =	/ =					
4219				/ =	/ =	/ =					
4220				/ =	/ =	/ =					
4221				/ =	/ =	/ =					
4222				/ =	/ =	/ =					
4223				/ =	/ =	/ =					
4224				/ =	10/21/03	/ =					
4225				/ =	/ =	/ =					
4226				/ =	/ =	/ =					
4227				/ =	/ =	/ =					
4228				/ =	/ =	/ =					
4229				/ =	/ =	/ =					
4230				/ =	/ =	/ =					
4231				/ =	/ =	/ =					
4232				/ =	/ =	/ =					

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		GC-	× /X= ppb		GC-	× /X= ppb
MS/MSD		GC-	× /X= ppb		GC-	× /X= ppb

Footnote/Anomaly:

Level C Data Package Deliverables

Wet Chemistry

Applied P & Ch Laboratory

Applied P & Ch Laboratory

Wet Analysis Results for Method 7196

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Anal. Method	7196
Project ID:	JPL	Service ID:	36047	Collected by:	JR

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

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
03-6047-1	MW-1	Water	11/10/03	11/10/03	11/10/03	03W5105	mg/L	0.01	<0.01	U
03-6047-2	MW-7	Water	11/10/03	11/10/03	11/10/03	03W5105	mg/L	0.01	<0.01	U
03-6047-3	MW-16	Water	11/10/03	11/10/03	11/10/03	03W5105	mg/L	0.01	<0.01	U
03W5105-MB-01	03W5105-MB-01	Water	11/10/03	11/10/03	11/10/03	03W5105	mg/L	0.01	<0.01	U

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

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

Applied P & Ch Laboratory

Wet Analysis Results for Method 314.0

Client Name:	GEOFON, Inc.	Project No:	04-4428.10	Anal. Method	314.0
Project ID:	JPL	Service ID:	36047	Collected by:	JR

Component Name: Perchlorate
CAS No:

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
03-6047-1	MW-1	Water	11/10/03	11/10/03	11/11/03	03W5120	μg/L	4	<4	U
03-6047-2	MW-7	Water	11/10/03	11/10/03	11/11/03	03W5120	μg/L	200	2400	
03-6047-3	MW-16	Water	11/10/03	11/10/03	11/11/03	03W5120	μg/L	100	1360	
03W5120-MB-01	03W5120-MB-01	Water	11/11/03	11/11/03	11/11/03	03W5120	μg/L	4	<4	U

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

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

FORM-3

Applied P & Ch Laboratory

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

Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		Service ID:	36047
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03W5120		
LCS Filename:	-	Date Analyzed:	111103	Time Analyzed:	
LCSD Filename:	-	Date Analyzed:	111103	Time Analyzed:	

Spiked Components	Unit	Spike Added	Concentration Unspiked	Concentration LCS	LCS Rec% #	QC Limit, % REC
PERCHLORATE	μg/L	25	0	28.8	115	80-120
# of Out-of-control					0	

Spiked Components	Unit	Spike Added	LCSD Concentration	LCSD Rec% #	RPD% #	QC Limit, % RPD	QC Limit, % REC
PERCHLORATE	μg/L	25	28.7	115	0	20	80-120
# of Out-of-control				0	0		

Column to be used to flag recovery and RPD values:

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

Comments: _____

FORM-3

Applied P & Ch Laboratory

Matrix Spike/Matrix Spike Duplicate Recovery for Method 314.0

Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		Service ID:	36047
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03W5120		
MS Filename:	-	Date Analyzed:	111103	Time Analyzed:	
MSD Filename:	-	Date Analyzed:	111103	Time Analyzed:	
MS Sample No:	**MW-5**	Sample Lab ID:	03-6002-2		

Spiked Components	Unit	Spike Added	Concentration Unspiked	Concentration MS	MS Rec% #	QC Limit, % REC
PERCHLORATE	μg/L	25	0	30.0	120	75-125
# of Out-of-control					0	

Spiked Components	Unit	Spike Added	MSD Concentration	MSD Rec% #	RPD% #	QC Limit, % RPD	QC Limit, % REC
PERCHLORATE	μg/L	25	30.1	120	0	20	75-125
# of Out-of-control				0	0		

Column to be used to flag recovery and RPD values:

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

Comments: _____

FORM-3

Applied P & Ch Laboratory

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

Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		Service ID:	36047
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03W5105		
LCS Filename:	-	Date Analyzed:	111003	Time Analyzed:	13:17
LCSD Filename:	-	Date Analyzed:	111003	Time Analyzed:	13:17

Spiked Components	Unit	Spike Added	Concentration Unspiked	Concentration LCS	LCS Rec% #	QC Limit, % REC
CHROMIUM (VI)	mg/L	0.25	0	0.229	92	80-115
# of Out-of-control					0	

Spiked Components	Unit	Spike Added	LCSD Concentration	LCSD Rec% #	RPD% #	QC Limit, % RPD	QC Limit, % REC
CHROMIUM (VI)	mg/L	0.25	0.235	94	2	19	80-115
# of Out-of-control				0	0		

Column to be used to flag recovery and RPD values:

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

Comments: _____

FORM-3

Applied P & Ch Laboratory

Matrix Spike/Matrix Spike Duplicate Recovery for Method 7196

Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		Service ID:	36047
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03W5105		
MS Filename:	-	Date Analyzed:	111003	Time Analyzed:	13:17
MSD Filename:	-	Date Analyzed:	111003	Time Analyzed:	13:17
MS Sample No:	MW-1	Sample Lab ID:	03-6047-1		

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

Spiked Components	Unit	Spike Added	MSD Concentration	MSD Rec% #	RPD% #	QC Limit, % RPD	QC Limit, % REC
CHROMIUM (VI)	mg/L	0.25	0.223	89	1	19	78-115
# of Out-of-control				0	0		

Column to be used to flag recovery and RPD values:

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

Comments: _____

6A

INITIAL CALIBRATION DATA

Lab Name: Applied P & Ch Lab Contract: 36047

Analysis: Chromium (VI) Calibration Date: 07/28/2003

Concentration (mg/L)	0.000	0.0125	0.025	0.125	0.250	0.50
Absorbance	0.000	0.007	0.017	0.107	0.212	0.420

A=-0.001+ 0.846C

A=Absorbance

C=Concentration (mg/L)

r= 0.9999

FORM-7

Applied P & Ch Laboratory

CCV Recovery for Wet Analysis

Client Name: GEOFON, Inc. Contract No.: Lab Code: APCL
Case No: SAS No.: Service ID: 36047
Project ID: JPL Project No.: 04-4428.10

#	Component Name	Method	Batch No.	Unit	Expe-cted	Test Result	Rec. %	Dev. %	Flag	Control Limit, %	Test Date
1	Perchlorate	314.0	03W5120	μg/L	50	57.0	114	14	√	85-115	11/11/2003
	Perchlorate	314.0	03W5120	μg/L	50	57.3	115	15	√	85-115	11/11/2003
	Perchlorate	314.0	03W5120	μg/L	50	57.1	114	14	√	85-115	11/11/2003
	Perchlorate	314.0	03W5120	μg/L	50	57.1	114	14	√	85-115	11/11/2003
2	Chromium (VI)	7196	03W5105	mg/L	0.25	0.246	98	-2	√	90-110	11/10/2003
	Chromium (VI)	7196	03W5105	mg/L	0.25	0.251	100	0	√	90-110	11/10/2003

Line	Sample	Sample Type	Level	Method	Data File	Volume	Dilution	Weight
1	##03w5120k ipc 25ppb w8032	Sample		e314-011.met	c:\data\03w5120k\w5120k ipc25ppb	1	1	1
2	ccv 50ppb w8082	Sample		e314-011.met	c:\data\03w5120k\w5120k q01	1	1	1
3	lcs 25ppb w8087	Sample		e314-011.met	c:\data\03w5120k\w5120k l01	1	1	1
4	Lcsd 25PPB W8257	Sample		e314-011.met	c:\data\03w5120k\w5120k j01	1	1	1
5	ICCS 4ppb w8088	Sample		e314-011.met	c:\data\03w5120k\w5120k iccs 4ppb	1	1	1
6	mb	Sample		e314-011.met	c:\data\03w5120k\w5120k k01	1	1	1
7	5975-01 f=1	Sample		e314-011.met	c:\data\03w5120k\5975-01	1	1	1
8	5975-02 f=1	Sample		e314-011.met	c:\data\03w5120k\5975-02	1	1	1
9	5975-03 f=1	Sample		e314-011.met	c:\data\03w5120k\5975-03	1	1	1
10	6002-02 f=1	Sample		e314-011.met	c:\data\03w5120k\6002-02	1	1	1
11	6002-04 f=1	Sample		e314-011.met	c:\data\03w5120k\6002-04	1	1	1
12	6034-03 f=1	Sample		e314-011.met	c:\data\03w5120k\6034-03	1	1	1
13	ccv 50ppb w8082	Sample		e314-011.met	c:\data\03w5120k\w5120k q02	1	1	1
14	ccb	Sample		e314-011.met	c:\data\03w5120k\w5120k ccb	1	1	1
15	6002-02 ms 25ppb f=1	Sample		e314-011.met	c:\data\03w5120k\w5120k m01	1	1	1
16	6002-02 msd 25ppb f=1	Sample		e314-011.met	c:\data\03w5120k\w5120k n01	1	1	1
17	6034-03 MS 25PPB F=5	Sample		e314-011.met	c:\data\03w5120k\w5120k m02	1	5	1
18	6034-03 MSD 25PPB F=5	Sample		e314-011.met	c:\data\03w5120k\w5120k n02	1	5	1
19	6034-01 F=1	Sample		e314-011.met	c:\data\03w5120k\6034-01	1	1	1
20	6034-02 F=1	Sample		e314-011.met	c:\data\03w5120k\6034-02	1	1	1
21	6034-04 f=1	Sample		e314-011.met	c:\data\03w5120k\6034-04	1	1	1
22	6047-01 F=1	Sample		e314-011.met	c:\data\03w5120k\6047-01	1	1	1
23	6047-02 F=1	Sample		e314-011.met	c:\data\03w5120k\6047-02	1	1	1
24	CCV 50PPB W8082	Sample		e314-011.met	c:\data\03w5120k\w5120k q03	1	1	1
25	6047-03 F=1	Sample		e314-011.met	c:\data\03w5120k\6047-03	1	1	1
26	6034-03 F=5	Sample		e314-011.met	c:\data\03w5120k\6034-03a	1	5	1
27	6047-02 F=50	Sample		e314-011.met	c:\data\03w5120k\6047-02a	1	50	1
28	6047-03 F=25	Sample		e314-011.met	c:\data\03w5120k\6047-03a	1	25	1
29	CCV 50PPB W8082	Sample		e314-011.met	c:\data\03w5120k\w5120k q04	1	1	1
30		Sample		aastopcl.met		1	1	1
31	MDL 4PPB WATER	Sample		e314-011.met	c:\data\03w5120k\w5120k mdl-w01	1	1	1
32	MDL 4PPB WATER	Sample		e314-011.met	c:\data\03w5120k\w5120k mdl-w02	1	1	1
33	MDL 4PPB WATER	Sample		e314-011.met	c:\data\03w5120k\w5120k mdl-w03	1	1	1
34	MDL 4PPB WATER	Sample		e314-011.met	c:\data\03w5120k\w5120k mdl-w04	1	1	1
35	MDL 4PPB WATER	Sample		e314-011.met	c:\data\03w5120k\w5120k mdl-w05	1	1	1
36	MDL 4PPB WATER	Sample		e314-011.met	c:\data\03w5120k\w5120k mdl-w06	1	1	1
37	MDL 4PPB WATER	Sample		e314-011.met	c:\data\03w5120k\w5120k mdl-w07	1	1	1
38	MDL 20PPB SOIL	Sample		e314-011.met	c:\data\03w5120k\w5120k mdl-s01	1	5	1
39	MDL 20PPB SOIL	Sample		e314-011.met	c:\data\03w5120k\w5120k mdl-s02	1	5	1
40	MDL 20PPB SOIL	Sample		e314-011.met	c:\data\03w5120k\w5120k mdl-s03	1	5	1
41	MDL 20PPB SOIL	Sample		e314-011.met	c:\data\03w5120k\w5120k mdl-s04	1	5	1
42	MDL 20PPB SOIL	Sample		e314-011.met	c:\data\03w5120k\w5120k mdl-s05	1	5	1
43	MDL 20PPB SOIL	Sample		e314-011.met	c:\data\03w5120k\w5120k mdl-s06	1	5	1
44	MDL 20PPB SOIL	Sample		e314-011.met	c:\data\03w5120k\w5120k mdl-s07	1	5	1
45		Sample		aastopcl.met		1	1	1

Analyst W. W

Date 11/11/03

Instrument IC-1C

2051

Line	Int. Std.	Comment
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2	1	
3	1	
4	1	
5	1	
6	1	
7	1	
8	1	
9	1	
10	1	
11	1	
12	1	
13	1	
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15	1	
16	1	
17	1	
18	1	
9	1	
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4	1	
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6	1	
7	1	
8	1	
9	1	
0	1	
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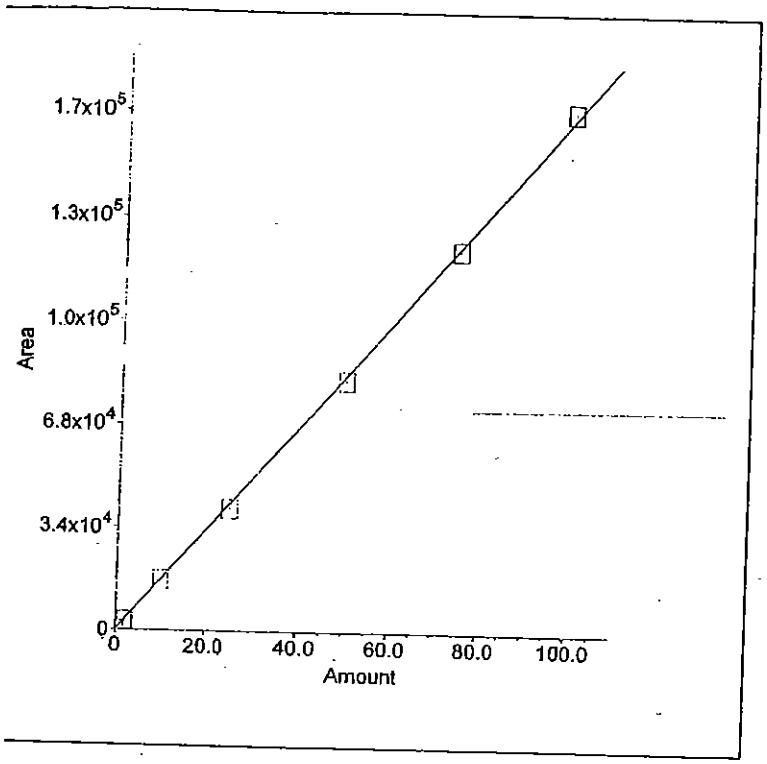
2	1	
3	1	
1	1	
5	1	
6	1	
	1	
	1	
	1	
	1	
	1	
	1	
	1	
	1	
	1	

fault Method Path: C:\PEAKNET\METHOD
fault Data Path: C:\DATA\03W5052K
mment:

Method:C:\PEAKNET\METHOD\E314-011.MET Updated:03/13/2003 10:39:48 AM Total:1

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



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

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

2053

kNet 5.2

APCL Perchlorate Analysis Report

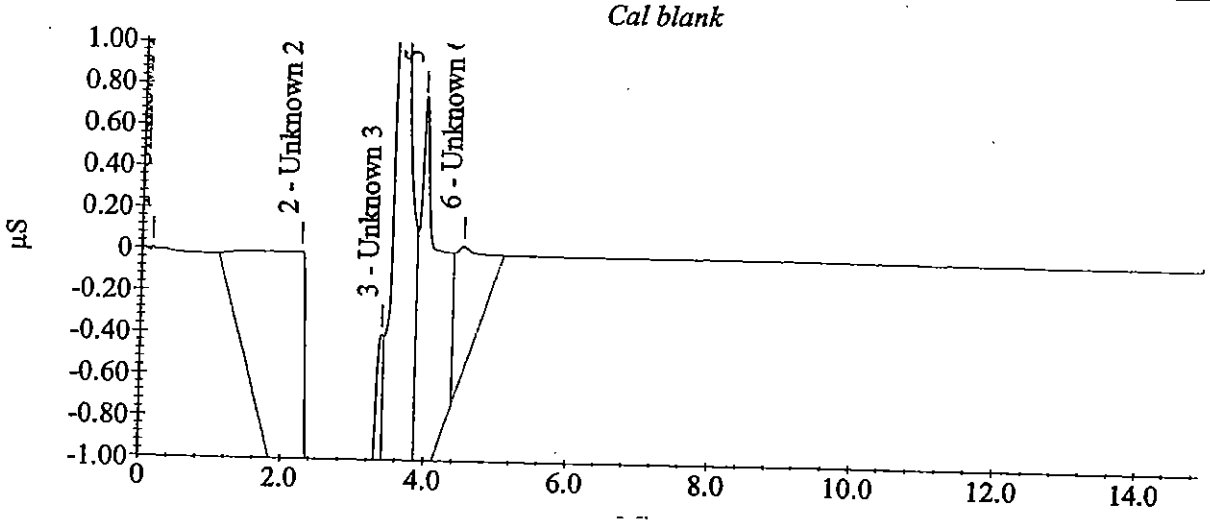
Sample Name : Cal blank
Data File Name : C:\data\E314-011\Mb_001.DXD

Method File Name : c:\peaknet\method\e314-011.met
Date Time Collected : 03/12/2003 5:55:39 PM
System Operator : wei wang
Dilution Factor : 1.00

Peak Information : All Components

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

Cal blank



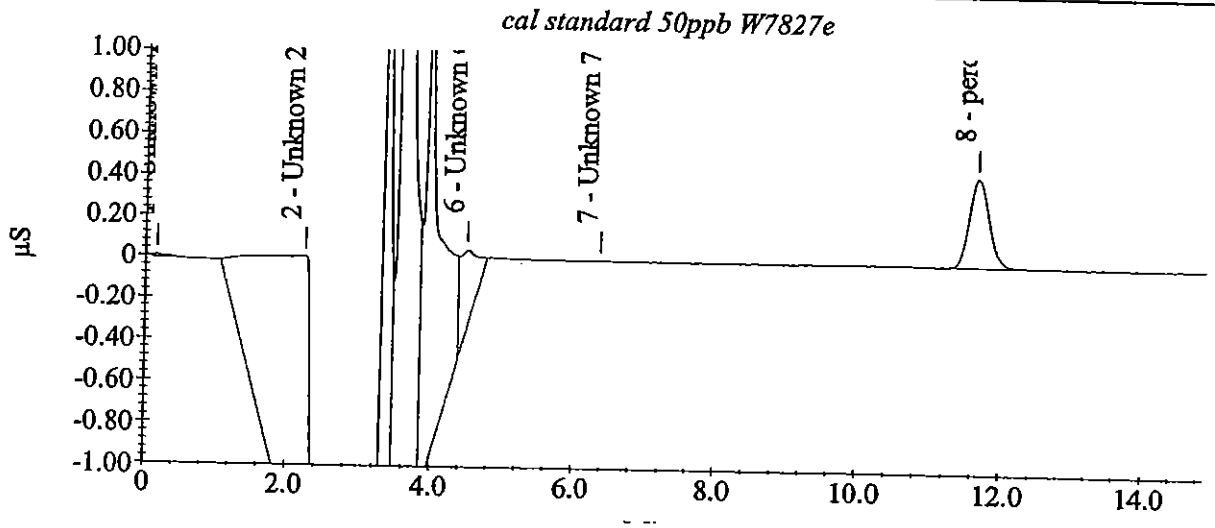
APCL Perchlorate Analysis Report

Sample Name : cal standard 50ppb W7827e
Data File Name : C:\DATA\E314-011\std-50pb_006.DXD

Method File Name : C:\PEAKNET\METHOD\e314-011.met
Date Time Collected : 03/12/2003 7:23:30 PM
System Operator : wei wang
Dilution Factor : 1.00

Peak Information : All Components

Peak #	Component Name	Retention Time	Amount (ppb)	Peak Area	Peak Height
8	perchlorate	11.67	54.89	83240	4320



2055

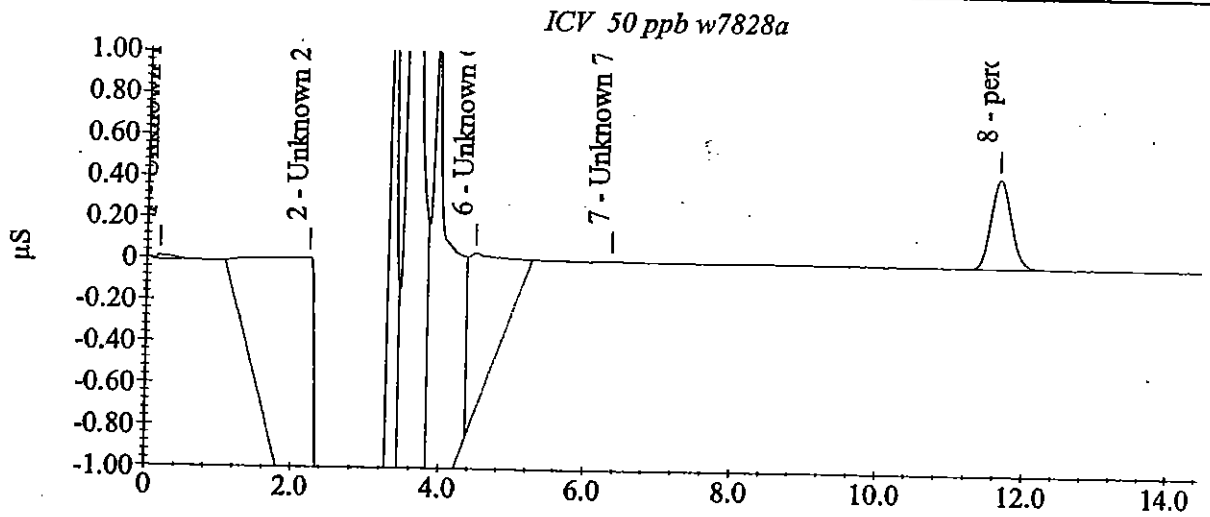
APCL Perchlorate Analysis Report

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

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

Peak Information : All Components

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



APCL Perchlorate Analysis Report

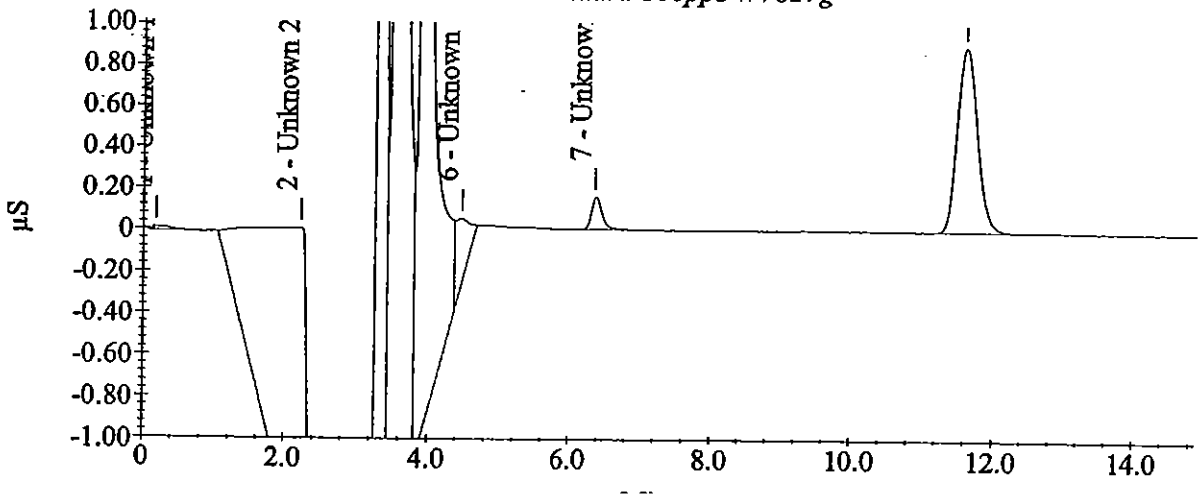
Sample Name : cal standard 100ppb W7827g
Data File Name : C:\DATA\E314-011\std-100pb_008.DXD

Method File Name : C:\PEAKNET\METHOD\e314-011.met
Date Time Collected : 03/12/2003 7:58:39 PM
System Operator : wei wang
Dilution Factor : 1.00

Peak Information : All Components

Peak #	Component Name	Retention Time	Amount (ppb)	Peak Area	Peak Height
8	perchlorate	11.62	113.21	171686	89271

cal standard 100ppb W7827g



2057

APCL Perchlorate Analysis Report

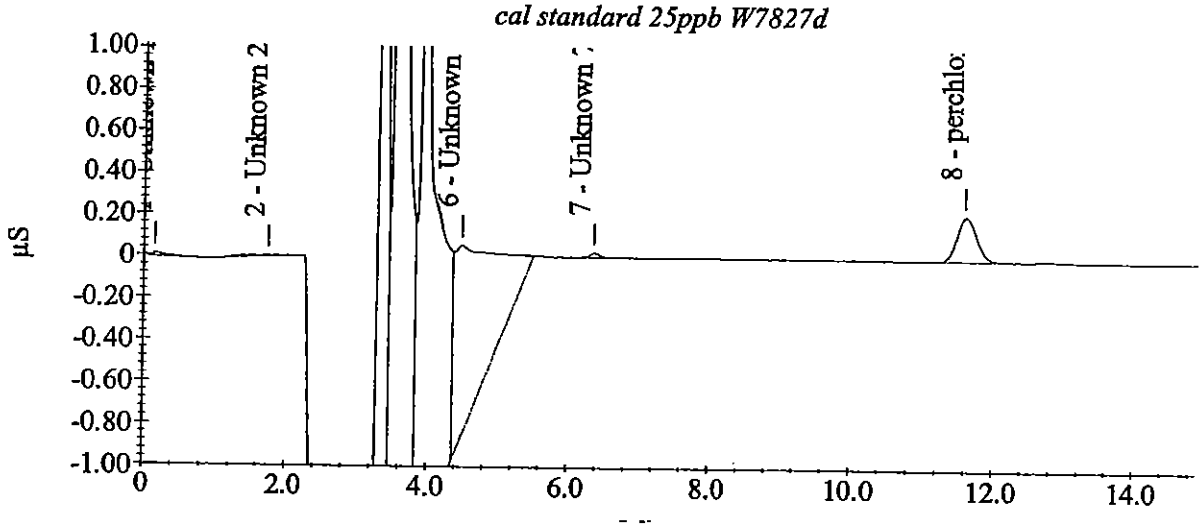
Sample Name : cal standard 25ppb W7827d
Data File Name : C:\DATA\E314-011\std-25pb_005.DXD

Method File Name : C:\PEAKNET\METHOD\e314-011.met
Date Time Collected : 03/12/2003 7:05:54 PM
System Operator : wei wang
Dilution Factor : 1.00

Peak Information : All Components

Peak #	Component Name	Retention Time	Amount (ppb)	Peak Area	Peak Height
8	perchlorate	11.60	26.84	40702	2125

cal standard 25ppb W7827d



ine	Sample	Sample Type	Level	Method	Data File	Volume	Dilution
	Cal blank	Sample		e314-011.met	c:\data\e314-011\mb_001.dxd	1	1
2	cal standard 2ppb W7827a	Sample		e314-011.met	c:\data\e314-011\std-2pb_002.dxd	1	1
3	cal standard 4ppb W7827b	Sample		e314-011.met	c:\data\e314-011\std-4pb_003.dxd	1	1
4	cal standard 10ppb W7827c	Sample		e314-011.met	c:\data\e314-011\std-10pb_004.dxd	1	1
5	cal standard 25ppb W7827d	Sample		e314-011.met	c:\data\e314-011\std-25pb_005.dxd	1	1
6	cal standard 50ppb W7827e	Sample		e314-011.met	c:\data\e314-011\std-50pb_006.dxd	1	1
7	cal standard 75ppb W7827f	Sample		e314-011.met	c:\data\e314-011\std-75pb_007.dxd	1	1
8	cal standard 100ppb W7827g	Sample		e314-011.met	c:\data\e314-011\std-100pb_008.dxd	1	1
9	ICV 50 ppb w7828a	Sample		e314-011.met	c:\data\e314-011\icv-50pb_009.dxd	1	1
10	icb	Sample		e314-011.met	c:\data\e314-011\icb_010.dxd	1	1
11	anion 100pm each ,25pb CLO4	Sample		e314-011.met	c:\data\e314-011\mct-100_011.dxd	1	1
12	anion 200pm each ,25pb CLO4	Sample		e314-011.met	c:\data\e314-011\mct-200_012.dxd	1	1
13	anion 300pm each ,25pb CLO4	Sample		e314-011.met	c:\data\e314-011\mct-300_013.dxd	1	1
14	anion 400pm each ,25pb CLO4	Sample		e314-011.met	c:\data\e314-011\mct-400_014.dxd	1	1
15	anion 500pm each ,25pb CLO4	Sample		e314-011.met	c:\data\e314-011\mct-500_015.dxd	1	1
16	anion 600pm each ,25pb CLO4	Sample		e314-011.met	c:\data\e314-011\mct-600_016.dxd	1	1
17	anion 800pm each ,25pb CLO4	Sample		e314-011.met	c:\data\e314-011\mct-800_017.dxd	1	1
18	anion 1000pm each ,25pb CLO4	Sample		e314-011.met	c:\data\e314-011\mct-1000_018.dxd	1	1
19	anion 400pm each 2pb	Sample		e314-011.met	c:\data\e314-011\ipc-2pb_019.dxd	1	1
20	anion 400pm each 4pb	Sample		e314-011.met	c:\data\e314-011\ipc-4pb_020.dxd	1	1
21	anion 400pm each 25pb	Sample		e314-011.met	c:\data\e314-011\ipc-25pb_021.dxd	1	1
22	ICV 50 ppb	Sample		e314-011.met	c:\data\e314-011\ccv-50pb	1	1
23	MDL 4pb	Sample		e314-011.met	c:\data\e314-011\mdl-02_023.dxd	1	1
24	MDL 4pb	Sample		e314-011.met	c:\data\e314-011\mdl-03_024.dxd	1	1
25	MDL 4pb	Sample		e314-011.met	c:\data\e314-011\mdl-04	1	1
26	MDL 4pb	Sample		e314-011.met	c:\data\e314-011\mdl-05	1	1
27	MDL 4pb	Sample		e314-011.met	c:\data\e314-011\mdl-06	1	1
28	MDL 4pb	Sample		e314-011.met	c:\data\e314-011\mdl-07	1	1
29	MDL 4pb	Sample		e314-011.met	c:\data\e314-011\mdl-08	1	1
30	IDP and IDA 25pb	Sample		e314-011.met	c:\data\e314-011\idap-25pb	1	1
31	IDP and IDA 25pb	Sample		e314-011.met	c:\data\e314-011\idap-25pb	1	1
32	IDP and IDA 25pb	Sample		e314-011.met	c:\data\e314-011\idap-25pb	1	1
33	IDP and IDA 25pb	Sample		e314-011.met	c:\data\e314-011\idap-25pb	1	1
34	IDP and IDA 25pb	Sample		e314-011.met	c:\data\e314-011\idap-25pb	1	1
35	IDP and IDA 25pb	Sample		e314-011.met	c:\data\e314-011\idap-25pb	1	1
36	IDP and IDA 25pb	Sample		e314-011.met	c:\data\e314-011\idap-25pb	1	1
37	MCT anion 800pm each, 25pbCLO4	Sample		e314-011.met	c:\data\e314-011\ipc-25pb	1	1
38	MCT anion 800pm each, 25pbCLO4	Sample		e314-011.met	c:\data\e314-011\ipc-25pb	1	1
39	MCT anion 800pm each, 4pbCLO4	Sample		e314-011.met	c:\data\e314-011\ipc-4pb	1	1
40	MCT anion 800pm each, 4pbCLO4	Sample		e314-011.met	c:\data\e314-011\ipc-4pb	1	1
41	MDL 20pb soil	Sample		e314-011.met	c:\data\e314-011\mdl-s01	1	5
42	MDL 20pb soil	Sample		e314-011.met	c:\data\e314-011\mdl-s02	1	5
43	MDL 20pb soil	Sample		e314-011.met	c:\data\e314-011\mdl-s03	1	5
44	MDL 20pb soil	Sample		e314-011.met	c:\data\e314-011\mdl-s04	1	5
45	MDL 20pb soil	Sample		e314-011.met	c:\data\e314-011\mdl-s05	1	5
46	MDL 20pb soil	Sample		e314-011.met	c:\data\e314-011\mdl-s06	1	5
47	MDL 20pb soil	Sample		e314-011.met	c:\data\e314-011\mdl-s07	1	5
48	standard 25ppb W7827d	Sample		e314-011.met	c:\data\e314-011\std-25pb	1	1
49	anion 100pm each,4pb CLO4	Sample		e314-011.met	c:\data\e314-011\am-100-4pb	1	1
50	anion 200pm each ,4pb CLO4	Sample		e314-011.met	c:\data\e314-011\am-200-4pb	1	1
51	anion 300pm each ,4pb CLO4	Sample		e314-011.met	c:\data\e314-011\am-300-4pb	1	1
52	anion 100pm each,2pb CLO4	Sample		e314-011.met	c:\data\e314-011\am-100-2pb	1	1
53	anion 200pm each,2pb CLO4	Sample		e314-011.met	c:\data\e314-011\am-200-2pb	1	1
54	anion 300pm each,2pb CLO4	Sample		e314-011.met	c:\data\e314-011\am-300-2pb	1	1
55	1982-01 B S.C 4450us/cm	Sample		e314-011.met	c:\data\e314-011\1982-01	1	1
56	1982-01 B S.C 4450us/cm	Sample		e314-011.met	c:\data\e314-011\1982-01	1	2
57	1982-02 f=10	Sample		e314-011.met	c:\data\e314-011\1982-02_057.dxd	1	10
		Sample		aastopcl.met		1	1

2059

Line	Weight	Int. Std.	Comment
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52	1	1	
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54	1	1	
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57	1	1	
58	1	1	

Default Method Path: C:\PEAKNET\METHOD
Default Data Path: C:\DATA\03W1286K
Comment:
Remark:

Condition information:

1. Column

Separator column: AS16 4mm

Guard column: AS16 4mm

2. Eluent : NaOH 38mM

3. Flow rate: 1.2mL/min

4. Suppressor: ASRS-ULTRA 4mm

5.Detector: CD20

6.Analyst: Charles Wu and Wei Wang

7.Date: 03 / 12 / 2003

8.Instrument: IC-K DX-500 Dionex

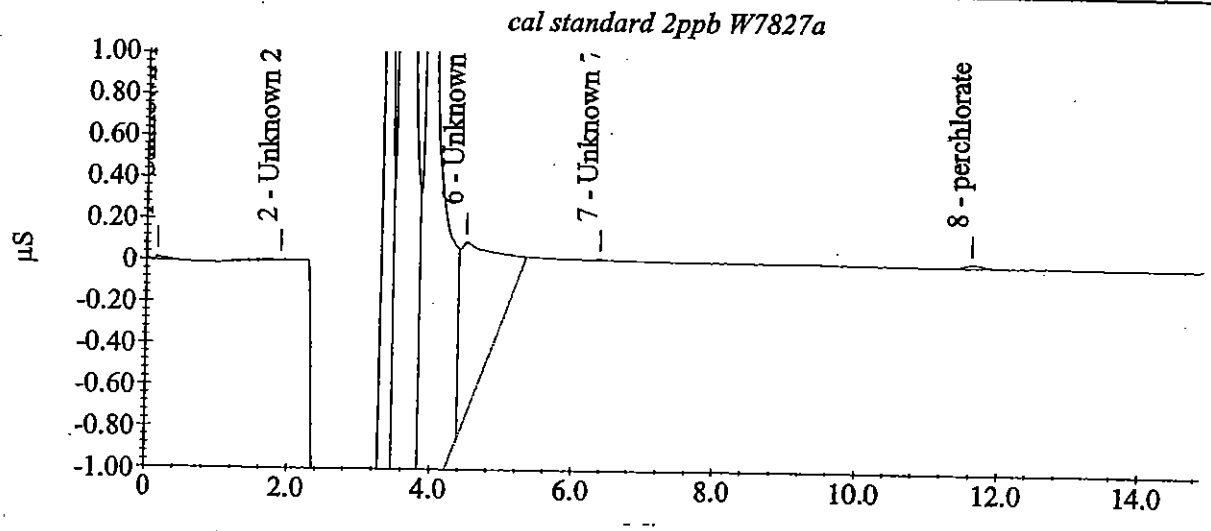
APCL Perchlorate Analysis Report

Sample Name : cal standard 2ppb W7827a
Data File Name : C:\DATA\E314-011\std-2pb_002.DXD

Method File Name : C:\PEAKNET\METHOD\e314-011.met
Date Time Collected : 03/12/2003 6:13:12 PM
System Operator : wei wang
Dilution Factor : 1.00

Peak Information : All Components

Peak #	Component Name	Retention Time	Amount (ppb)	Peak Area	Peak Height
8	perchlorate	11.62	1.92	2910	164



APCL Perchlorate Analysis Report

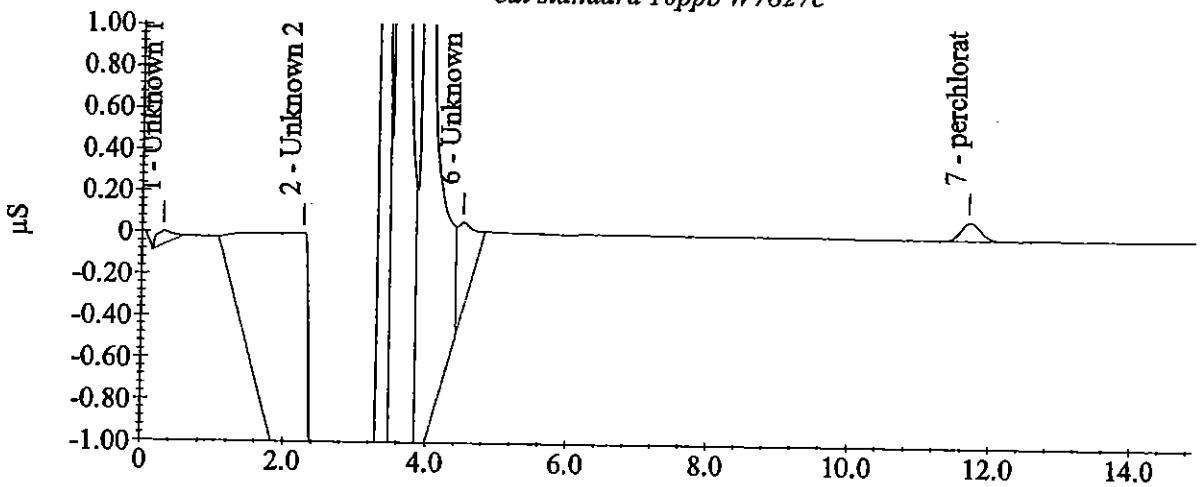
Sample Name : cal standard 10ppb W7827c
Data File Name : C:\DATA\E314-011\std-10pb_004.DXD

Method File Name : C:\PEAKNET\METHOD\e314-011.met
Date Time Collected : 03/12/2003 6:48:21 PM
System Operator : wei wang
Dilution Factor : 1.00

Peak Information : All Components

Peak #	Component Name	Retention Time	Amount (ppb)	Peak Area	Peak Height
7	perchlorate	11.70	11.16	16917	879

cal standard 10ppb W7827c



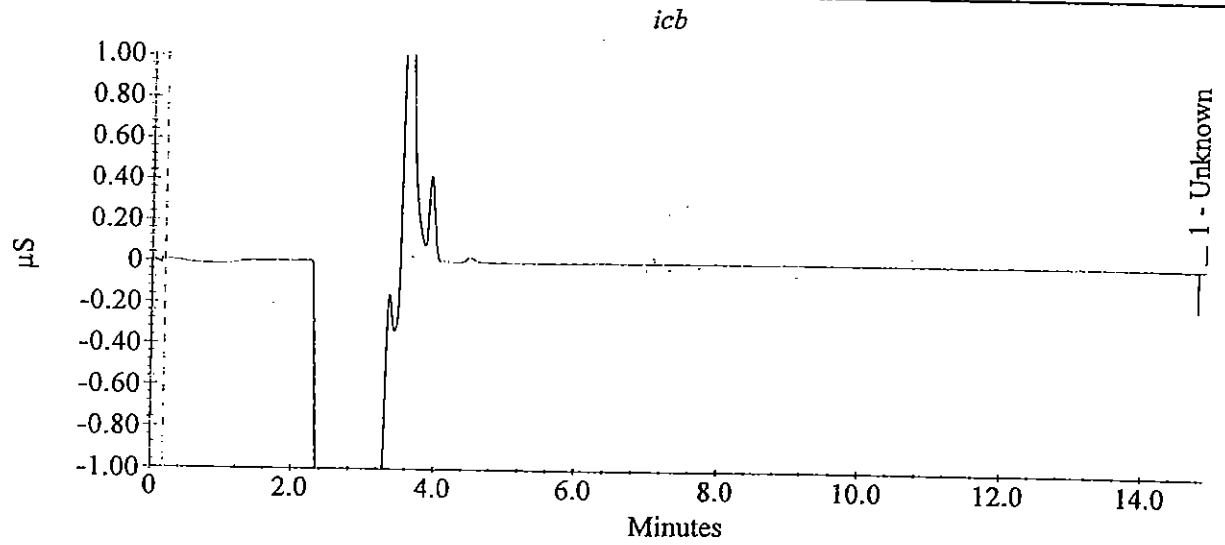
APCL Perchlorate Analysis Report

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

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

Peak Information : All Components

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



APCL Perchlorate Analysis Report

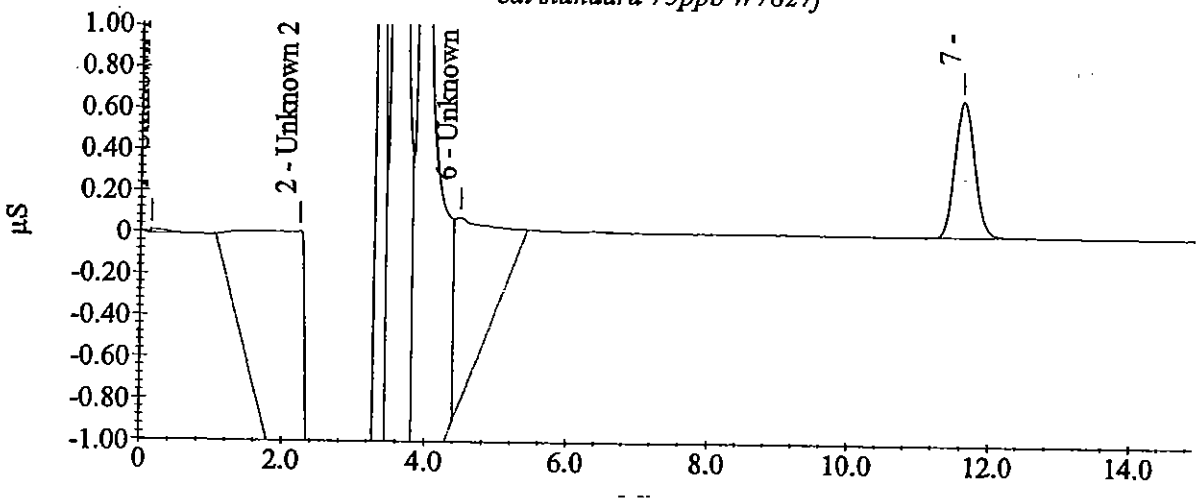
Sample Name : cal standard 75ppb W7827f
Data File Name : C:\DATA\E314-011\std-75pb_007.DXD

Method File Name : C:\PEAKNET\METHOD\e314-011.met
Date Time Collected : 03/12/2003 7:41:05 PM
System Operator : wei wang
Dilution Factor : 1.00

Peak Information : All Components

Peak #	Component Name	Retention Time	Amount (ppb)	Peak Area	Peak Height
7	perchlorate	11.62	83.23	126224	6553

cal standard 75ppb W7827f



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

Chromium (VI) (7196) Workshee

Batch # 03W5105 Matrix: W

[Holding Time: 24 hours!!]

Test Date: 11/10/03 Analyst: [illegible]

Lot #: Reagent Water _____ Diphenylcazide solution _____

Test Time: 13:17 SOP:

Calibration	STD Lot #	$C_{std} \times V_{std}/V_f = C_i$	A_i	$RF_i = A_i/C_i$	Calibration results	Note
STD-1	W-	× / = mg/L			Least Square [RF]=	Cal. Code:
STD-2	W-	× / = mg/L			Average $\bar{RF}$=	
STD-3	W-	× / = mg/L			C.C.=0.9999 (≥ 0.995)	
STD-4	W-	× / = mg/L			RSD= % (≤ 15%)	
STD-5	W-	× / = mg/L			Ref. page	
STD-6	W-	× / = mg/L			A=-0.001+0.846C	

Analysis Type	Sample ID or Lot #	Samp. Amnt X_0 (g or mL)	Dilu./Ext $X/X_0=f_1$	Treat. Ratio $V/X=f_2$	540 nm A	Concentration $C'=A/\bar{RF}$	C (Sample) $C=f_1 f_2 C'$	Anor No
CCV	Lot: W- 7757	Expected Conc.:	×	/ =0.25 mg/L	0.207	0.246 mg/L	REC. %	90-11
Method Blank	Bl. Lot: T1118		$/X_0$ = 1	95.0/ =	0.000	mg/L	0.001 ppm	
LCS1	Bl. Lot:		$/X_0$ =	95.0/ =	0.193	mg/L	0.229 ppm	
Sample-1	6047-1		$/X_0$ =	95.0/ =	0.000	mg/L	0.001 ppm	
MS on S-1	1		$/X_0$ =	95.0/ =	0.184	mg/L	0.219 ppm	
MSD on S-1	1		$/X_0$ =	95.0/ =	0.188	mg/L	0.223 ppm	
Sample 2	2		$/X_0$ =	95.0/ =	0.000	mg/L	0.001 ppm	
Sample 3	3		$/X_0$ =	95.0/ =	0.001	mg/L	0.002 ppm	
Sample 4			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 5			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 6			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 7			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 8			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 9			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 10			$/X_0$ =	95.0/ =		mg/L	ppm	
Blank	Lot:		$/X_0$ =	95.0/ =		mg/L	ppm	
LCS2	Bl. Lot: T1118		$/X_0$ = 1	95.0/ =	0.198	mg/L	0.235 ppm	
Sample 11			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 12			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 13			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 14			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 15			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 16			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 17			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 18			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 19			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 20			$/X_0$ =	95.0/ =		mg/L	ppm	
MTX Dup.	Losing 0.25 mg/L		$/X_0$ =	95.0/ =	0.211	0.251 mg/L	ppm	

11/10/03

11/10/03

Type	STD Lot #	$C_{STD}(\mu g/mL) \times V_{STD}(mL)/X(g \text{ or } mL) = T$	Spike Rec.	Ctl Limit (W/S)
MS	W- 7757	× / = 0.25 ppm	%	80-120 %/80-120 %
MSD	W-	× / = ppm	%	.. ..
LCS	W- 7853	× / = ppm	%	80-120 %/80-120 %
LCSD	W-	× / = ppm	%	.. ..

PQL/MDL (in ppm)	
PQL(w)	0.01
PQL(s)	0.05
MDL(w)	0.003
MDL(s)	0.025

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File:[CUST.DOC.WET]CR6.TEX Root-file: CR6_ROOT.TEX 1-Page-File: CR61.TEX
Control limits are subjected to change. The updated values are given in the ...

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Chromium (VI) (7196) Worksheet

Batch # PZ Matrix: W & DGS [Holding Time: 24 hours!!] Test Date: 7/28/03 Analyst: [illegible]

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

Calibration	STD Lot #	$C_{std} \times V_{std}/V_f = C_i$	A_i	$RF_i = A_i/C_i$	Calibration results	Note
STD-1	W-7757	× / = 0.00 mg/L	0.000		Least Square [RF]=	Cal. Code:
STD-2	W-	× / = 0.025 mg/L	0.007		Average $\bar{RF}$=	
STD-3	W-	× / 0.075 = 0.10 mg/L	0.017		C.C.= 0.999 (≥ 0.995)	
STD-4	W-	× / = 0.25 mg/L	0.107		RSD= % (≤ 15%)	
STD-5	W-	× / = 0.50 mg/L	0.212		Ref. page	
STD-6	W-	× / = 0.50 mg/L	0.420		A = -0.001 + 0.846C	

Analysis Type	Sample ID or Lot #	Samp. Amnt X_0 (g or mL)	Dilu./Ext $X/X_0 = f_1$	Treat. Ratio $V/X = f_2$	540 nm A	Concentration $C' = A/\bar{RF}$	C (Sample) $C = f_1 f_2 C'$	Anom: Note
CCV	Lot: W-7853	Expected Conc.:	×	/ = 0.25 mg/L	0.218	0.259 mg/L	REC. %	90-110
Method Blank	Bl. Lot:		$/X_0$ =	95.0/ =	0.000	0.000 mg/L	ppm	
LCS1	Bl. Lot:		$/X_0$ =	95.0/ =	0.210	0.250 mg/L	ppm	
Sample-1	4177-37	1ml → 100ml	$/X_0$ = 1	95.0/ = 2	0.290	0.687 mg/L	ppm	
MS on S-1	37	0.5ml → 100ml	$/X_0$ =	95.0/ = 2	0.287	0.682 mg/L	ppm	report
MSD on S-1	4175-15	10.0g	50.0mL $/X_0$ = 5	95.0/ = 10	0.050	3.04 mg/L	ppm	
Sample 2	15	Y	$/X_0$ =	95.0/ = 2	0.247	2.94 mg/L	ppm	report
Sample 3			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 4			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 5			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 6			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 7			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 8			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 9			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 10			$/X_0$ =	95.0/ =		mg/L	ppm	
Blank	Lot:		$/X_0$ =	95.0/ =		mg/L	ppm	
LCS2	Bl. Lot:		$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 11			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 12			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 13			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 14			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 15			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 16			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 17			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 18			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 19			$/X_0$ =	95.0/ =		mg/L	ppm	
Sample 20			$/X_0$ =	95.0/ =		mg/L	ppm	
MTX Dup.	[illegible]		$/X_0$ =	95.0/ =	0.218	0.259 mg/L	ppm	

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

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

2066

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