APCL

Applied Physics & Chemistry Laboratory

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

June 11, 2004

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

Dear Tony,

This package contains samples in our Service ID 04-3040 and your project : 4-12812 JPL GW Mon 2Q04.
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 Laboratories

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

APCL Analytical Report

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

Service ID #: 801-043040
Collected by: JJ/TM
Collected on: 05/24/04

Received: 05/24/04
Extracted: N/A
Tested: 05/24-06/02/04
Reported: 06/04/04

Sample Description: Water from MW-10.
Project Description: 4-12812 JPL GW Mon 2Q04

Analysis of Water Samples

Component Analyzed	Method	Unit	PQL	Analysis Result MW-10 04-03040-1
BICARBONATE	SM2320B	mg/L	2	235
CARBONATE	SM2320B	mg-$CaCO_3$/L	2	<2
PH	9040B	pH unit	0.01	6.81
SOLIDS, TOTAL DISSOLVED (TDS)	160.1	mg/L	10	812
CHROMIUM (VI)	7196	mg/L	0.01	<0.01
Dilution Factor				1
PERCHLORATE	314.0	µg/L	4	13.5
Dilution Factor				25
CHLORIDE CL^-	300.0	mg/L	0.2	104
NITRATE AS N	300.0	mg/L	0.04	14.4
SULFATE SO_4^{--}	300.0	mg/L	0.5	149
Dilution Factor				1
CHROMIUM	200.8	µg/L	0.1	21.3
LEAD	200.8	µg/L	0.12	<0.12
Dilution Factor				1
ARSENIC	200.9	µg/L	5	<5
Dilution Factor				1
CALCIUM	200.7	µg/L	200	129,000
IRON	200.7	µg/L	50	153
MAGNESIUM	200.7	µg/L	100	42,700
POTASSIUM	200.7	µg/L	400	3,380
SODIUM	200.7	µg/L	2000	30,100

Component Analyzed	Method	Unit	PQL	Analysis Result MW-10 04-03040-1	TB-15-5/24/04 04-03040-2
VOLATILE ORGANIC COMPOUNDS					
Dilution Factor				1	1
BENZENE	524.2	µg/L	0.5	<0.5	<0.5
BROMOBENZENE	524.2	µg/L	0.5	<0.5	<0.5
BROMOCHLOROMETHANE	524.2	µg/L	0.5	<0.5	<0.5
BROMODICHLOROMETHANE	524.2	µg/L	0.5	<0.5	<0.5
BROMOFORM	524.2	µg/L	0.5	<0.5	<0.5
BROMOMETHANE	524.2	µg/L	0.5	<0.5	<0.5
N-BUTYLBENZENE	524.2	µg/L	0.5	<0.5	<0.5
SEC-BUTYLBENZENE	524.2	µg/L	0.5	<0.5	<0.5
TERT-BUTYLBENZENE	524.2	µg/L	0.5	<0.5	<0.5
2-BUTANONE	524.2	µg/L	10	<10	<10
CARBON TETRACHLORIDE	524.2	µg/L	0.5	<0.5	<0.5
CHLOROBENZENE	524.2	µg/L	0.5	<0.5	<0.5
CHLORODIBROMOMETHANE	524.2	µg/L	0.5	<0.5	<0.5
CHLOROETHANE	524.2	µg/L	0.5	<0.5	<0.5
CHLOROFORM	524.2	µg/L	0.5	1.3	<0.5

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result MW-10 04-03040-1	TB-15-5/24/04 04-03040-2
CHLOROMETHANE	524.2	µg/L	0.5	<0.5	<0.5
2-CHLOROTOLUENE	524.2	µg/L	0.5	<0.5	<0.5
4-CHLOROTOLUENE	524.2	µg/L	0.5	<0.5	<0.5
1,2-DIBROMO-3-CHLOROPROPANE	524.2	µg/L	0.5	<0.5	<0.5
1,2-DIBROMOETHANE (EDB)	524.2	µg/L	0.5	<0.5	<0.5
DIBROMOMETHANE	524.2	µg/L	0.5	<0.5	<0.5
1,2-DICHLOROBENZENE	524.2	µg/L	0.5	<0.5	<0.5
1,3-DICHLOROBENZENE	524.2	µg/L	0.5	<0.5	<0.5
1,4-DICHLOROBENZENE	524.2	µg/L	0.5	<0.5	<0.5
DICHLORODIFLUOROMETHANE	524.2	µg/L	0.5	<0.5	<0.5
1,1-DICHLOROETHANE	524.2	µg/L	0.5	1.1	<0.5
1,2-DICHLOROETHANE	524.2	µg/L	0.5	<0.5	<0.5
1,1-DICHLOROETHENE	524.2	µg/L	0.5	<0.5	<0.5
CIS-1,2-DICHLOROETHENE	524.2	µg/L	0.5	<0.5	<0.5
TRANS-1,2-DICHLOROETHENE	524.2	µg/L	0.5	<0.5	<0.5
1,2-DICHLOROPROPANE	524.2	µg/L	0.5	<0.5	<0.5
1,3-DICHLOROPROPANE	524.2	µg/L	0.5	<0.5	<0.5
2,2-DICHLOROPROPANE	524.2	µg/L	0.5	<0.5	<0.5
1,1-DICHLOROPROPENE	524.2	µg/L	0.5	<0.5	<0.5
CIS-1,3-DICHLOROPROPENE	524.2	µg/L	0.5	<0.5	<0.5
TRANS-1,3-DICHLOROPROPENE	524.2	µg/L	0.5	<0.5	<0.5
ETHYLBENZENE	524.2	µg/L	0.5	<0.5	<0.5
HEXACHLOROBUTADIENE	524.2	µg/L	0.5	<0.5	<0.5
ISOPROPYLBENZENE (CUMENE)	524.2	µg/L	0.5	<0.5	<0.5
P-ISOPROPYLTOLUENE	524.2	µg/L	0.5	<0.5	<0.5
METHYLENE CHLORIDE	524.2	µg/L	0.5	<0.5	<0.5
METHYL-T-BUTYL ETHER (MTBE)	524.2	µg/L	1	<1	<1
4-METHYL-2-PENTANONE (MIBK)	524.2	µg/L	10	<10	<10
NAPHTHALENE	524.2	µg/L	0.5	<0.5	<0.5
N-PROPYLBENZENE	524.2	µg/L	0.5	<0.5	<0.5
STYRENE	524.2	µg/L	0.5	<0.5	<0.5
1,1,1,2-TETRACHLOROETHANE	524.2	µg/L	0.5	<0.5	<0.5
1,1,2,2-TETRACHLOROETHANE	524.2	µg/L	0.5	<0.5	<0.5
TETRACHLOROETHENE	524.2	µg/L	0.5	2.0	<0.5
TOLUENE	524.2	µg/L	0.5	<0.5	<0.5
1,2,3-TRICHLOROBENZENE	524.2	µg/L	0.5	<0.5	<0.5
1,2,4-TRICHLOROBENZENE	524.2	µg/L	0.5	<0.5	<0.5
1,1,1-TRICHLOROETHANE	524.2	µg/L	0.5	<0.5	<0.5
1,1,2-TRICHLOROETHANE	524.2	µg/L	0.5	<0.5	<0.5
TRICHLOROETHENE	524.2	µg/L	0.5	13.4	<0.5
TRICHLOROFLUOROMETHANE	524.2	µg/L	0.5	<0.5	<0.5
1,2,3-TRICHLOROPROPANE	524.2	µg/L	0.5	<0.5	<0.5

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Component Analyzed	Method	Unit	PQL	Analysis Result MW-10 04-03040-1	TB-15-5/24/04 04-03040-2
112TRICHLORO-122TRIFLUOROETHANE	524.2	μg/L	0.5	<0.5	<0.5
1,2,4-TRIMETHYLBENZENE	524.2	μg/L	0.5	<0.5	<0.5
1,3,5-TRIMETHYLBENZENE	524.2	μg/L	0.5	<0.5	<0.5
VINYL CHLORIDE	524.2	μg/L	0.5	<0.5	<0.5
O-XYLENE	524.2	μg/L	0.5	<0.5	<0.5
M/P-XYLENE	524.2	μg/L	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 Laboratories

Applied P & CH Laboratories
13760 Magnolia Ave., Chino CA 91710
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Case Narrative

Project: JPL GW Mon 2Q04/MW-10/4-12812

For GEOFON, Inc.

APCL Service No: 04-3040

1. Sample Identification

The sample identifications are listed in the following table:

GEOFON, Inc. Sample ID	APCL Sample ID
MW-10	04-03040-1
TB-15-5/24/04	04-03040-2

2. Analytical Methodology

Samples are analyzed by EPA methods

524.2 (Volatile Organic Compounds),
7196A (Chromium (VI)),
314.0 (Perchlorate, low level),
300.0 (Anions, by IC),
SM2320B (Carbonate),
9040B (pH),
160.1 (Solids, Total Dissolved (TDS)),
200.7 (Metals, by ICP),
200.9 (Arsenic, As, by GFAA),
200.8 (Chromium, Lead, by ICPMS),

3. Holding Time

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

4. Preservation

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

5. Tele-log

None

6. Anomaly

(1) 200.8:

Chromium in the amounts ranging from 0.130 ug/L through 0.194 ug/L was detected in the CCBs associated with the samples. The values were higher than 0.1 ug/L reporting limit. Chromium was not detected in the associated Method Blank. Chromium was detected in the field sample in the amount significantly exceeding the reporting limit.

"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 Laboratories

GEOFON INCORPORATED

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

CHAIN-OF-CUSTODY RECORD

LABORATORY COPY

~~MW-99~~ 5.24.04 Shallow Wells 0108

GEOFON's LAB COORDINATOR: Scott Burmer ~~Brad Shaque~~ 5.7.04	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: SPL-GW Mon-2004	PROJECT LOCATION: MW-10	PROJECT NUMBER: 2812 ~~04-4428-10~~	LABORATORY PHONE: 909 590 1828	LABORATORY FAX: 909 590 1498	RECIPIENT NAME: Tony Ford
PROJECT CONTACT: S.J.D. Jones ~~Scott Burmer~~ 5.7.04	PROJECT PHONE NUMBER: 714 920 8729 ~~909 396 7662~~ 5.7.04	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			

Item	Sample Identifier	Matrix	Date	Time	Preserved	# of Cont.	QC Level	T.A.T	Analyses: 524.2 (VOCs)	314.0 (ClO4)	200.8 (Cr)	7196A (Cr(VI))	pH, TDS, NO3, Cl	200.7 (Na, K, Mg, Fe, Cu)	200.8 (Pb)	300.0 (NO3, SO4, Cl)	Comments
1	MW-10	W	5/24/04	0948	HCl HNO3 NONE	5	III	Normal	X	X	X	X	X	X	X		3040
2	TB-15-5/24/04			—	HCl	2			X								
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

S. D. Jones
5.24.04

SAMPLES COLLECTED BY: JJ + TM

COOLER TEMPERATURE UPON RECEIPT

SAMPLE'S CONDITION UPON RECEIPT

RELINQUISHED BY	COURIER AND AIR BILL NUMBER / RECEIVED BY	DATE	TIME
S.D. Jones	[illegible]	5/24/04	1050
Adam Cruz	[illegible]	5/24/04	11:50

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

Applied P & CH Laboratories
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Sample Receiving Checklist

APCL ServiceID: 3040 **Client Name/Project:** GeoTon

1. Sample Arrival

Date/Time Received 5/24/04 1150 Date/Time Opened 5/24/04 1150 By (name): Jason N

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

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 3.0

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

Cooler Custody Seal? ☐ Absent ☐ Intact ☐ Tampered?

4. Sample Preservation

☐ **pH <2** ☐ pH >12

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

5. Holding-time Requirements

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

6. Sample Container Condition

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

7. Turn Around Time

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

8. Sample Matrix

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

9. Pre-Login Check List Completed & OK?

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

Received/Checked by: _____ Printed: 24 May 2004 7:26 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.

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Sample Login: Check List

04-03040 (0470_ 241) (2202777_ 241)

05/24/04

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 GW Mon 2Q04*
		Project #:	*4-12812*
☐	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 Nario*
		Receiving Date/Time:	*05/24/04 1150*
		COC No.	*0108*
☐	Shipping Information	Shipping Company	*APCL pick up*
		Packing Information:	*Cooler/Ice Chester*
		Cooler Temperature:	*3.0 °C*
☐	Container Information	Container Provider:	*Client*
☐	Sampling Information	Sampling Person:	*JJ/TM*
		Sampling Company:	*Client*
☐	Turn-Around-Time Option:		*Normal*
☐	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-10	VOC	04-03040-1-α	W	V	C	40	3	G	052404	N	0	9	☐
	MW-10	WET	04-03040-1-β	W	P		1000	1	G	052404	N	0	9	☐
	MW-10	MET	04-03040-1-γ	W	P	N	500	1	G	052404	N	0	9	☐
2	TB-15-5/24/04	VOC	04-03040-2	W	V	C	40	2	G	052404	N	0	9	☐

Part 3: Analysis Information

Test Items:

- ☐ *524.2* Volatile Organic Compounds
- ☐ *7196A* Chromium (VI)
- ☐ *314.0/300.0* Perchlorate, low level
- ☐ *300.0* Chloride Cl^- by IC
- ☐ *300.0* Sulfate (SO_4^{--}), by IC
- ☐ *300.0/SM4500NO3* Nitrate (NO_3^-) as N by IC
- ☐ *SM2320B* Carbonate
- ☐ *SM2320B* Bicarbonate
- ☐ *9040B/150.1* pH
- ☐ *160.1* Solids, Total Dissolved (TDS)
- ☐ *200.7/6010B* Sodium, Na, by ICP
- ☐ *200.7/6010B* Calcium, Ca, by ICP
- ☐ *200.7/6010B* Potassium, K, by ICP
- ☐ *200.7/6010B* Magnesium, Mg, by ICP
- ☐ *200.7/6010B* Iron, Fe, by ICP
- ☐ *206.2/7060A* Arsenic, As, by GFAA
- ☐ *8270-SIM* 1,4-Dioxane
- ☐ *200.8* Target Analyte by ICPMS

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-10	VOC	04-03040-1-α	W	X								☐
	MW-10	WET	04-03040-1-β	W		X	X	X	X	X	X	X	☐
	MW-10	MET	04-03040-1-γ	W									☐
2	TB-15-5/24/04	VOC	04-03040-2	W	X								☐

Seq. #	Client"s Sample ID (as given on COC)	Sample Sub-ID	APCL Sample ID	Matrix	PH	TDS	NA	CA	K	MG	FE	AS

APCL

Applied Physics & Chemistry Laboratory

13760 Magnolia Ave. Chino CA 91710
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June 14, 2004

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

Dear Tony,

This package contains samples in our Service ID 04-3051 and your project : 04-4428.10 JPL GW Mon 1Q04.
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 Laboratories

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APCL Analytical Report

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

Service ID #: 801-043051
Collected by: JR/MM
Collected on: 05/25/04

Received: 05/25/04
Extracted: 05/27/04
Tested: 05/25-06/02/04
Reported: 06/03/04

Sample Description: Water from MW-13.
Project Description: 04-4428.10 JPL GW Mon 1Q04

Analysis of Water Samples

Component Analyzed	Method	Unit	PQL	Analysis Result MW-13 04-03051-1
BICARBONATE	SM2320B	mg/L	2	149
CARBONATE	SM2320B	mg-$CaCO_3$/L	2	<2
PH	9040B	pH unit	0.01	7.01
SOLIDS, TOTAL DISSOLVED (TDS)	160.1	mg/L	10	423
CHROMIUM (VI)	7196	mg/L	0.01	0.024
Dilution Factor				4
PERCHLORATE	314.0	μg/L	4	205
Dilution Factor				10
CHLORIDE CL^-	300.0	mg/L	0.2	56.5
NITRATE AS N	300.0	mg/L	0.04	7.1
SULFATE SO_4^{--}	300.0	mg/L	0.5	67.7
Dilution Factor				1
CHROMIUM	200.8	μg/L	0.1	31.5
LEAD	200.8	μg/L	0.12	<0.12
Dilution Factor				1
ARSENIC	200.9	μg/L	5	<5
Dilution Factor				1
CALCIUM	200.7	μg/L	200	61,300
IRON	200.7	μg/L	50	<50
MAGNESIUM	200.7	μg/L	100	20,900
POTASSIUM	200.7	μg/L	400	2,430
SODIUM	200.7	μg/L	2000	25,400
Dilution Factor				1
1,4-DIOXANE	8270-SIM	μg/L	1	5.3

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result MW-13 04-03051-1	TB-16-5/25/04 04-03051-2
VOLATILE ORGANIC COMPOUNDS					
Dilution Factor				1	1
BENZENE	524.2	µg/L	0.5	<0.5	<0.5
BROMOBENZENE	524.2	µg/L	0.5	<0.5	<0.5
BROMOCHLOROMETHANE	524.2	µg/L	0.5	<0.5	<0.5
BROMODICHLOROMETHANE	524.2	µg/L	0.5	<0.5	<0.5
BROMOFORM	524.2	µg/L	0.5	<0.5	<0.5
BROMOMETHANE	524.2	µg/L	0.5	<0.5	<0.5
N-BUTYLBENZENE	524.2	µg/L	0.5	<0.5	<0.5
SEC-BUTYLBENZENE	524.2	µg/L	0.5	<0.5	<0.5
TERT-BUTYLBENZENE	524.2	µg/L	0.5	<0.5	<0.5
2-BUTANONE	524.2	µg/L	10	<10	<10
CARBON TETRACHLORIDE	524.2	µg/L	0.5	1.4	<0.5
CHLOROBENZENE	524.2	µg/L	0.5	<0.5	<0.5
CHLORODIBROMOMETHANE	524.2	µg/L	0.5	<0.5	<0.5
CHLOROETHANE	524.2	µg/L	0.5	<0.5	<0.5
CHLOROFORM	524.2	µg/L	0.5	1.7	<0.5
CHLOROMETHANE	524.2	µg/L	0.5	<0.5	<0.5
2-CHLOROTOLUENE	524.2	µg/L	0.5	<0.5	<0.5
4-CHLOROTOLUENE	524.2	µg/L	0.5	<0.5	<0.5
1,2-DIBROMO-3-CHLOROPROPANE	524.2	µg/L	0.5	<0.5	<0.5
1,2-DIBROMOETHANE (EDB)	524.2	µg/L	0.5	<0.5	<0.5
DIBROMOMETHANE	524.2	µg/L	0.5	<0.5	<0.5
1,2-DICHLOROBENZENE	524.2	µg/L	0.5	<0.5	<0.5
1,3-DICHLOROBENZENE	524.2	µg/L	0.5	<0.5	<0.5
1,4-DICHLOROBENZENE	524.2	µg/L	0.5	<0.5	<0.5
DICHLORODIFLUOROMETHANE	524.2	µg/L	0.5	<0.5	<0.5
1,1-DICHLOROETHANE	524.2	µg/L	0.5	0.6	<0.5
1,2-DICHLOROETHANE	524.2	µg/L	0.5	<0.5	<0.5
1,1-DICHLOROETHENE	524.2	µg/L	0.5	<0.5	<0.5
CIS-1,2-DICHLOROETHENE	524.2	µg/L	0.5	<0.5	<0.5
TRANS-1,2-DICHLOROETHENE	524.2	µg/L	0.5	<0.5	<0.5
1,2-DICHLOROPROPANE	524.2	µg/L	0.5	<0.5	<0.5
1,3-DICHLOROPROPANE	524.2	µg/L	0.5	<0.5	<0.5
2,2-DICHLOROPROPANE	524.2	µg/L	0.5	<0.5	<0.5
1,1-DICHLOROPROPENE	524.2	µg/L	0.5	<0.5	<0.5
CIS-1,3-DICHLOROPROPENE	524.2	µg/L	0.5	<0.5	<0.5
TRANS-1,3-DICHLOROPROPENE	524.2	µg/L	0.5	<0.5	<0.5
ETHYLBENZENE	524.2	µg/L	0.5	<0.5	<0.5
HEXACHLOROBUTADIENE	524.2	µg/L	0.5	<0.5	<0.5
ISOPROPYLBENZENE (CUMENE)	524.2	µg/L	0.5	<0.5	<0.5

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

APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result MW-13 04-03051-1	TB-16-5/25/04 04-03051-2
P-ISOPROPYLTOLUENE	524.2	μg/L	0.5	<0.5	<0.5
METHYLENE CHLORIDE	524.2	μg/L	0.5	<0.5	<0.5
METHYL-T-BUTYL ETHER (MTBE)	524.2	μg/L	1	<1	<1
4-METHYL-2-PENTANONE (MIBK)	524.2	μg/L	10	<10	<10
NAPHTHALENE	524.2	μg/L	0.5	<0.5	<0.5
N-PROPYLBENZENE	524.2	μg/L	0.5	<0.5	<0.5
STYRENE	524.2	μg/L	0.5	<0.5	<0.5
1,1,1,2-TETRACHLOROETHANE	524.2	μg/L	0.5	<0.5	<0.5
1,1,2,2-TETRACHLOROETHANE	524.2	μg/L	0.5	<0.5	<0.5
TETRACHLOROETHENE	524.2	μg/L	0.5	1.2	<0.5
TOLUENE	524.2	μg/L	0.5	<0.5	<0.5
1,2,3-TRICHLOROBENZENE	524.2	μg/L	0.5	<0.5	<0.5
1,2,4-TRICHLOROBENZENE	524.2	μg/L	0.5	<0.5	<0.5
1,1,1-TRICHLOROETHANE	524.2	μg/L	0.5	<0.5	<0.5
1,1,2-TRICHLOROETHANE	524.2	μg/L	0.5	<0.5	<0.5
TRICHLOROETHENE	524.2	μg/L	0.5	7.4	<0.5
TRICHLOROFLUOROMETHANE	524.2	μg/L	0.5	<0.5	<0.5
1,2,3-TRICHLOROPROPANE	524.2	μg/L	0.5	<0.5	<0.5
112TRICHLORO-122TRIFLUOROETHANE	524.2	μg/L	0.5	<0.5	<0.5
1,2,4-TRIMETHYLBENZENE	524.2	μg/L	0.5	<0.5	<0.5
1,3,5-TRIMETHYLBENZENE	524.2	μg/L	0.5	<0.5	<0.5
VINYL CHLORIDE	524.2	μg/L	0.5	<0.5	<0.5
O-XYLENE	524.2	μg/L	0.5	<0.5	<0.5
M/P-XYLENE	524.2	μg/L	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 Laboratories

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

Case Narrative

Project: JPL GW Mon 1Q04/MW-13./04-4428.10

For GEOFON, Inc.

APCL Service No: 04-3051

1. Sample Identification

The sample identifications are listed in the following table:

GEOFON, Inc. Sample ID	APCL Sample ID
MW-13	04-03051-1
TB-16-5/25/04	04-03051-2

2. Analytical Methodology

Samples are analyzed by EPA methods

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

3. Holding Time

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

4. Preservation

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

5. Tele-log

None

6. Anomaly

(1) 200.8:

Chromium in the amounts ranging from 0.130 ug/L through 0.194 ug/L was detected in the CCBs associated with the samples. The values were higher than 0.1 ug/L reporting limit. Chromium was not detected in the associated Method Blank. Chromium was detected in the field sample in the amount significantly exceeding the reporting limit.

"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 Laboratories

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

CHAIN-OF-CUSTODY RECORD

Shallow Wells

LABORATORY COPY

009

GEOFON's LAB COORDINATOR: Scott Brunner ~~Brad Shapiro~~	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-1Q04	PROJECT LOCATION: MW-5, 6, 7, 13	PROJECT NUMBER: 04-4428.10	LABORATORY PHONE: 909 590 1828	LABORATORY FAX: 909 590 1498	RECIPIENT NAME: Tony Ford
PROJECT CONTACT: S.D. Brunner ~~Scott Brunner~~	PROJECT PHONE NUMBER: 714 920 8729 ~~909 396 7662~~	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			

3051

Item	Sample Identifier	Matrix	Date	Time	Preserved	# of Cont	QC Level	T.A.T	524.2 (VOCs)	314.0 (C/104)	200.8 (C)	7196A (C) (VI)	NDMA	pH, TDS, HCO3, CO3	200.7 (Na, K, Ca, Mg, Fe, Mn) 200.8 (Pb)	1,4-Dioxane	Comments
1	MW-13	W	5/25/04	0851	HCl HNO3 None	9	III	Normal	X	X	X	X	X	X	X	X	
2	~~MW-5~~					~~12~~			X	X	X	X		X	X		MS/MSD cancel entry
3																	no entry
4																	no entry
5	TB-16-5 125/04			—	HCl	2			X								
6	~~Dupe-2004~~				HCl HNO3 None	6	IV		X	X	X	X	X	X	X		cancel entry
7	~~Dupe-2004~~					16	IV		X	X	X	X	X	X	X	X	cancel entry
8																	
9																	
10																	

SAMPLES COLLECTED BY: JR + HM

COURIER AND AIR BILL NUMBER:

COOLER TEMPERATURE UPON RECEIPT

RELINQUISHED BY	RECEIVED BY	DATE	TIME
G. DeFoe	G. Rubbatt	5-25-04	9:45
G. Rubbatt	[illegible]	5-25-04	10:45

SAMPLE'S CONDITION UPON RECEIPT

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

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

Sample Receiving Checklist

APCL ServiceID: 3051 **Client Name/Project:** Geotn JPL

1. Sample Arrival

Date/Time Received 5/25/04 1045 Date/Time Opened 5/25/04 1045 By (name): Kenny Chan

Custody Transfer: ☐ Client ☐ Golden State ☐ UPS ☐ US Mail ☐ FedEx ☑ APCL Empl: Scott B.

2. Chain-of-Custody (CoC)

☑ With Samples? ☐ Faxed? ☑ Client has Copy? ☐ Signed, dated? By: _____
☑ Project ID? ☑ Analyses Clear? ☐ Hold Samples? #on Hold _____ # Received 2
☐ 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 3.8

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

Cooler Custody Seal? ☐ Absent ☐ Intact ☐ Tampered?

4. Sample Preservation

☐ **pH <2** ☐ pH >12

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

5. Holding-time Requirements

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

6. Sample Container Condition

☑ Intact? ☐ Broken? ☐ Documented? Number: _____

Type: ☑ plastic ☑ glass ☐ Tube: brass/SS ☐ Tedlar Bag
☑ Quantity OK? ☐ Leaking? ☐ Anomaly?
☑ Caps tight? ☐ Air Bubbles? ☐ Anomaly?

Labels: ☑ Unique ID? ☑ Date/Time ☐ Preserved?

7. Turn Around Time

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

8. Sample Matrix

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

9. Pre-Login Check List Completed & OK?

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

Received/Checked by: Kenny Chan Printed: 25 May 2004 7:21 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 Laboratories
13760 Magnolia Ave., Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Sample Login: Check List

04-03051 (0470_ 242) (2202777_ 242)

05/25/04

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 GW Mon 1Q04*
			Shallow Wells
		Project #:	*04-4428.10*
☐	Billing Information	P.O. #:	
		Bill Address:	*22632 Golden Spring Dr Ste 270 ,Diamond Bar ,CA 91765*
		Lab Project ID:	
		Client Database #:	*3*
☐	Receiving Information	Who Received Sample?	*Kenny Chan*
		Receiving Date/Time:	*05/25/04 1045*
		COC No.	*0109*
☐	Shipping Information	Shipping Company	*APCL pick up*
		Packing Information:	*Cooler/Ice Chester*
		Cooler Temperature:	*3.8 °C*
☐	Container Information	Container Provider:	*Client*
☐	Sampling Information	Sampling Person:	*JR/MM*
		Sampling Company:	*Client*
☐	Turn-Around-Time Option:		*Normal*
☐	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-13	VOC	04-03051-1-α	W	V	C	40	3	G	052504	N	0	9	☐
	MW-13	DIOX	04-03051-1-β	W	G		1000	2	G	052504	N	0	9	☐
	MW-13	WET	04-03051-1-γ	W	P		1000	1	G	052504	N	0	9	☐
	MW-13	MET	04-03051-1-δ	W	P	N	500	1	G	052504	N	0	9	☐
2	TB-16-5/25/04	VOC	04-03051-2	W	V	C	40	2	G	052504	N	0	9	☐

Part 3: Analysis Information

Test Items:

- ☐ *524.2* Volatile Organic Compounds
- ☐ *7196A* Chromium (VI)
- ☐ *314.0/300.0* Perchlorate, low level
- ☐ *300.0* Chloride Cl^- by IC
- ☐ *300.0* Sulfate (SO_4^{--}), by IC
- ☐ *300.0/SM4500NO3* Nitrate (NO_3^-) as N by IC
- ☐ *SM2320B* Carbonate
- ☐ *SM2320B* Bicarbonate
- ☐ *9040B/150.1* pH
- ☐ *160.1* Solids, Total Dissolved (TDS)
- ☐ *200.7/6010B* Sodium, Na, by ICP
- ☐ *200.7/6010B* Calcium, Ca, by ICP
- ☐ *200.7/6010B* Potassium, K, by ICP
- ☐ *200.7/6010B* Magnesium, Mg, by ICP
- ☐ *200.7/6010B* Iron, Fe, by ICP
- ☐ *206.2/7060A* Arsenic, As, by GFAA
- ☐ *8270-SIM* 1,4-Dioxane
- ☐ *200.8* Target Analyte by ICPMS

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-13	VOC	04-03051-1-α	W	X								☐
	MW-13	DIOX	04-03051-1-β	W									☐
	MW-13	WET	04-03051-1-γ	W		X	X	X	X	X	X	X	☐
	MW-13	MET	04-03051-1-δ	W									☐
2	TB-16-5/25/04	VOC	04-03051-2	W	X								☐

APCL

Applied Physics & Chemistry Laboratory

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

June 14, 2004

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

Dear Tony,

This package contains samples in our Service ID 04-3080 and your project : 04-4428.10 JPL GW Mon 2Q04.
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 Laboratories

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

APCL Analytical Report

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

Service ID #: 801-043080
Collected by: MM/JJ
Collected on: 05/26/04

Received: 05/26/04
Extracted: N/A
Tested: 05/26-06/08/04
Reported: 06/09/04

Sample Description: Water
Project Description: 04-4428.10 JPL GW Mon 2Q04

Analysis of Water Samples

Component Analyzed	Method	Unit	PQL	Analysis Result DUPE-7-2Q04 04-03080-1	MW-7 04-03080-2	MW-8 04-03080-3	TB-17-5/26/04 04-03080-4
BICARBONATE	SM2320B	mg/L	2	190	185	161	-
CARBONATE	SM2320B	mg-$CaCO_3$/L	2	<2	<2	<2	-
PH	9040	pH unit	0.01	7.78	7.86	7.22	-
SOLIDS, TOTAL DISSOLVED (TDS)	160.1	mg/L	10	333	348	282	-
CHROMIUM (VI)	7196	mg/L	0.01	<0.01	<0.01	<0.01	-
Dilution Factor				100	100	1	1
PERCHLORATE	314.0	µg/L	4	4,430	4,680	<4	-
Dilution Factor				5	5	2.5	1
CHLORIDE CL^-	300.0	mg/L	0.2	35.4	37.3	14.2	-
NITRATE AS N	300.0	mg/L	0.04	5.8	6.0	1.3	-
SULFATE SO_4^{--}	300.0	mg/L	0.5	41.8	42.9	40.0	-
Dilution Factor				1	1	1	1
CHROMIUM	200.8	µg/L	0.1	11.7	11.2	6.0	-
LEAD	200.8	µg/L	0.12	0.51	0.46	0.024J	-
Dilution Factor				1	1	1	1
ARSENIC	200.9	µg/L	5	<5	<5	<5	-
Dilution Factor				1	1	1	1
CALCIUM	200.7	µg/L	200	59,400	62,600	46,200	-
IRON	200.7	µg/L	50	1,690	1,470	40.5J	-
MAGNESIUM	200.7	µg/L	100	20,200	21,200	15,600	-
POTASSIUM	200.7	µg/L	400	2,670	2,820	2,240	-
SODIUM	200.7	µg/L	2000	21,800	22,900	16,100	-
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	0.4J	0.4J	<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	71.1 [a]	72.0 [a]	<0.5	<0.5
CHLOROBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
CHLORODIBROMOMETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
CHLOROETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
CHLOROFORM	524.2	µg/L	0.5	16.3	15.9	<0.5	<0.5
CHLOROMETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
2-CHLOROTOLUENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
4-CHLOROTOLUENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,2-DIBROMO-3-CHLOROPROPANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5

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

APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result DUPE-7-2Q04 04-03080-1	MW-7 04-03080-2	MW-8 04-03080-3	TB-17-5/26/04 04-03080-4
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	7.9	7.6	<0.5	<0.5
CIS-1,2-DICHLOROETHENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
TRANS-1,2-DICHLOROETHENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,2-DICHLOROPROPANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,3-DICHLOROPROPANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
2,2-DICHLOROPROPANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,1-DICHLOROPROPENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
CIS-1,3-DICHLOROPROPENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
TRANS-1,3-DICHLOROPROPENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
ETHYLBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
HEXACHLOROBUTADIENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
ISOPROPYLBENZENE (CUMENE)	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
P-ISOPROPYLTOLUENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
METHYLENE CHLORIDE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
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	16.3	15.6	<0.5	<0.5
TOLUENE	524.2	µg/L	0.5	0.8	0.8	<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	7.1	6.8	<0.5	<0.5
TRICHLOROFLUOROMETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,2,3-TRICHLOROPROPANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5

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

APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result DUPE-7-2Q04 04-03080-1	MW-7 04-03080-2	MW-8 04-03080-3	TB-17-5/26/04 04-03080-4
112TRICHLORO-122TRIFLUOROETHANE	524.2	μg/L	0.5	6.0	5.8	<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

[a] Analyzed with a dilution factor of 2.

Respectfully submitted,

Dominic Lau
Laboratory Director
Applied P & CH Laboratories

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

Case Narrative

Project: JPL GW Mon 2Q04/04-4428.10

For GEOFON, Inc.

APCL Service No: 04-3080

1. Sample Identification

The sample identifications are listed in the following table:

GEOFON, Inc. Sample ID	APCL Sample ID
MW-8	04-03080-3
MW-7	04-03080-2
DUPE-7-2Q04	04-03080-1
TB-17-5/26/04	04-03080-4

2. Analytical Methodology

Samples are analyzed by EPA methods

524.2 (Volatile Organic Compounds),
7196A (Chromium (VI)),
314.0 (Perchlorate, low level),
300.0 (Anions, by IC),
SM2320B (Carbonate),
9040B (pH),
160.1 (Solids, Total Dissolved (TDS)),
200.7 (Metals, by ICP),
200.9 (Arsenic, As, by GFAA),
200.8 (Chromium, Lead, by ICPMS),

3. Holding Time

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

4. Preservation

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

5. Tele-log

None

6. Anomaly

(1) 200.8:

Chromium in the amounts ranging from 0.130 ug/L through 0.194 ug/L was detected in the CCBs associated with the samples. The values were higher than 0.1 ug/L reporting limit. Chromium was not detected in the associated Method Blank. Chromium was detected in the field samples in the amounts significantly exceeding the reporting limit.

"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 Laboratories

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

Shallow Wells

0110

GEOFON's LAB COORDINATOR: Scott Brunner. ~~Brad Shaper~~	LAB COORDINATOR'S PHONE: 909 396 7662	LAB COORDINATOR'S FAX: 909 396 1455	LABORATORY SERVICE ID:	LABORATORY CONTACT: Henry Chan	MAIL REPORT (COMPANY NAME): GEOFON
PROJECT NAME: JPL - Cold Mon - 2Q04	PROJECT LOCATION: MW - 8 + 7	PROJECT NUMBER: 04-4428.10	LABORATORY PHONE: 909 590 1828	LABORATORY FAX: 909 590 1498	RECIPIENT NAME: Tony Ford
PROJECT CONTACT: ~~Scott Brunner~~	PROJECT PHONE NUMBER: 714 920 8729 ~~909 396 7662~~	PROJECT FAX: 909 396 1455	LABORATORY ADDRESS: 18760 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			

Item	Sample Identifier	Matrix	Date	Time	Preserved	# of Cont.	QC Level	T.A.T.	524.2 (VOCs)	314.0 (ClO4)	200.8 (W)	7196A (Cr(VI))	pH, TDS, 310.1	200.7 (Ca, Mg), 200.8 (Mn, Fe, Cu)	200.9 (As)	300.0 (NO3, SO4, Cl)	Comments
1	MW - 8	W	5/26/04	1432	HCl HNO3 NONE	6	III	Normal	X	X	X	X	X	X	X	X	MS/MSD
2	MW-7	↓	↓	1236	↓	↓	↓	↓	X	X	X	X	X	X	X	X	
3	Dupe-7-2Q04	↓	↓	—	↓	↓	IV	↓	X	X	X	X	X	X	X	X	
4	TB-17-5/26/04	↓	↓	—	HCl	2	III	↓	X								
5																	
6																	
7																	
8																	
9																	
10																	

G. D. Ford
5.26.04

3080

SAMPLES COLLECTED BY: MM + JJ

COURIER AND AIR BILL NUMBER:

COOLER TEMPERATURE UPON RECEIPT

SAMPLE'S CONDITION UPON RECEIPT

RELINQUISHED BY	RECEIVED BY	DATE	TIME
G. D. Ford	Richard Stewart	5-26-04	1604
Richard Stewart	[illegible]	5-26-04	1630

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

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

Sample Receiving Checklist

APCL ServiceID: 3080 **Client Name/Project:** Geofon/JPL

1. Sample Arrival

Date/Time Received 5/26/04 1630 Date/Time Opened 5/26/04 1630 By (name): Kenny Chan

Custody Transfer: ☐ Client ☐ Golden State ☐ UPS ☐ US Mail ☐ FedEx ☑ APCL Empl: Richard Stinson

2. Chain-of-Custody (CoC)

☑ With Samples? ☐ Faxed? ☑ Client has Copy? ☐ Signed, dated? By: _____
☑ Project ID? ☑ Analyses Clear? ☐ Hold Samples? #on Hold _____ # Received 3
☐ CoC/Docs Zip-Locked under lid? ☐ Compos.#: _ ☑ #Samples OK? _____
☐ Discrepancies? ☐ Client notified? ☐ Response (attach docs): _____

3. Shipping Container/Cooler

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

Temp °C 4.4 _____ _____ _____ _____ _____

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

Cooler Custody Seal? ☐ Absent ☐ Intact ☐ Tampered?

4. Sample Preservation

☐ **pH <2** ☐ pH >12

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

5. Holding-time Requirements

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

6. Sample Container Condition

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

7. Turn Around Time

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

8. Sample Matrix

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

9. Pre-Login Check List Completed & OK?

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

Received/Checked by: [signature] Printed: 26 May 2004 7:21 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 Laboratories
13760 Magnolia Ave., Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Sample Login: Check List

04-03080 (0470_ 244) (2202777_ 244)

05/26/04

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 GW Mon 2Q04*
		Project #:	*04-4428.10*
☐	Billing Information	P.O. #:	
		Bill Address:	*22632 Golden Spring Dr Ste 270 ,Diamond Bar ,CA 91765*
		Lab Project ID:	
		Client Database #:	*3*
☐	Receiving Information	Who Received Sample?	*Kenny Chan*
		Receiving Date/Time:	*05/26/04 1630*
		COC No.	*0110*
☐	Shipping Information	Shipping Company	*APCL pick up*
		Packing Information:	*Cooler/Ice Chester*
		Cooler Temperature:	*4.4 °C*
☐	Container Information	Container Provider:	*Client*
☐	Sampling Information	Sampling Person:	*MM/JJ*
		Sampling Company:	*Client*
☐	Turn-Around-Time Option:		*Normal*
☐	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-8	VOC	04-03080-3-α	W	V	C	40	6	G	052604	N	0	9	☐
	MW-8	PH/TDS	04-03080-3-β	W	P		500	2	G	052604	N	0	9	☐
	MW-8	300	04-03080-3-γ	W	P		500	2	G	052604	N	0	9	☐
	MW-8	Metal	04-03080-3-δ	W	P	N	500	2	G	052604	N	0	9	☐
2	MW-7	VOC	04-03080-2-α	W	V	C	40	3	G	052604	N	0	9	☐
	MW-7	PH/TDS	04-03080-2-β	W	P		500	1	G	052604	N	0	9	☐
	MW-7	300	04-03080-2-γ	W	P		500	1	G	052604	N	0	9	☐
	MW-7	Metal	04-03080-2-δ	W	P	N	500	1	G	052604	N	0	9	☐
3	DUPE-7-2Q04	VOC	04-03080-1-α	W	V	C	40	3	G	052604	N	0	9	☐
	DUPE-7-2Q04	PH/TDS	04-03080-1-β	W	P		500	1	G	052604	N	0	9	☐
	DUPE-7-2Q04	300	04-03080-1-γ	W	P		500	1	G	052604	N	0	9	☐
	DUPE-7-2Q04	Metal	04-03080-1-δ	W	P	N	500	1	G	052604	N	0	9	☐
4	TB-17-5/26/04	VOC	04-03080-4	W	V	C	40	2	G	052604	N	0	9	☐

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
- ☐ *200.8* Target Analyte by ICPMS

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

APCL Analytical Report

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

Service ID #: 801-042901
Collected by: JJ/MM
Collected on: 05/11/04

Received: 05/11/04
Extracted: N/A
Tested: N/A
Reported: 06/17/04

Sample Description: Water from MW-4 MW-17
Project Description: 4-12812 JPL-GW Mon 2Q04

Analysis of Water Samples

Component Analyzed	Method	Unit	PQL	Analysis Result MW-4-1 04-02901-1	MW-17-4 04-02901-2
NDMA [a]					

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

Respectfully submitted,

Dominic Lau
Laboratory Director
Applied P & CH Laboratories

GEOFON INCORPORATED

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

CHAIN-OF-CUSTODY RECORD

LABORATORY COPY

MW-4 + MW-17-4

001

GEOFON's LAB COORDINATOR	LAB COORDINATOR'S PHONE	LAB COORDINATOR'S FAX	LABORATORY SERVICE ID	LABORATORY CONTACT	MAIL REPORT (COMPANY NAME)
Scott Buhmer	909 396 7662	909 396 1455		Kenny Chan	GEOFON
PROJECT NAME: SPL-GW Mon 2004	PROJECT LOCATION: MW-4	PROJECT NUMBER: 4-12812	LABORATORY PHONE: 909 590 1828	LABORATORY FAX: 909 590 1498	RECIPIENT NAME: Tony Ford
PROJECT CONTACT: J. D. Jones	PROJECT PHONE NUMBER: 714 920 8729	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: NAVY - SW DIV	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			

Item	Sample Identifier	Matrix	Date	Time	Preserved	# of Cont.	QC Level	T.A.T.	524.2 (VOCs)	314.0 (ClO4)	200.8 (Cu)	7196 (Cr (VI))	1600 (200.8) As	200.9 (Pb)	NDMA + 1,4-Dioxane	pH, TDS, HCO3, CO3	200.7 (Na, K, Ca, Mg, Fe)	300.0 (Na, SO4, Cl)	Comments
1	MW-4-5	W	5/11/04	0717	HCl None HNO3	5	III	Normal	X	X	X	X	X		X	X	X	X	
2	MW-4-4			0806					X	X	X	X	X			X	X	X	
3	MW-4-3			0838					X	X	X	X	X			X	X	X	
4	MW-4-2			0906					X	X	X	X	X			X	X	X	
5	MW-4-1			0953		8			X	X	X	X	X		X	X	X	X	
6	EB-8-5/11/04			0942		5			X	X	X	X	X			X	X	X	
7	TB-8-5/11/04			—	HCl	2			X										
8	Dupe-3-2004			—	HCl HNO3 None	5	VI		X	X	X	X	X			X	X	X	
9	MW-17-4			1210	None	2	III								X				Only NDMA
10																			

2001

SAMPLES COLLECTED BY: JJ + MM	COURIER AND AIR BILL NUMBER:	COOLER TEMPERATURE UPON RECEIPT

RELINQUISHED BY	RECEIVED BY	DATE	TIME	SAMPLE'S CONDITION UPON RECEIPT
J. D. Jones	Buhmer	5-11-04	13:18	
Buhmer	[illegible]	5-11-04	14:45	

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

Maxxam Analytics Inc

SUBMISSION CASE NARRATIVE
NDMA

MAXXAM L.I.M.S. No. A421782

PROJECT: Applied P&CH Laboratory NDMA Analysis

I. Receipt

Samples were received at Maxxam on May 13, 2004.
Samples were received in good condition.

II. Holding Times

A. Sample preparation: To ensure holding times were met, samples were fortified and solvent was added directly to the bottles on May 14, 2004.
B. Sample analysis: all holding times were met.

III. Method

The method followed was Maxxam's in-house method for NDMA analysis, Entitled "EXTRACTION & ANALYSIS OF NITROSAMINES AND NDMA BY HRMS" –Ont. SOP-0121.

IV. Preparation

Sample preparation proceeded normally. Samples and associated QC samples were extracted on May 19, 2004.

V. Analysis

Analysis proceeded normally. The instrumentation run sequence for this analytical batch was initiated and completed on May 26, 2004.

A. Calibration: All criteria were met.

B. Mass Resolution: All criteria met.

000001

50 Bathurst Drive, Unit 12, Waterloo, Ontario, Canada N2V 2C5 Tel: (519) 747-2575 Toll free (866) 747-8749 Fax: (519) 747-3806 Website: www.maxxam.ca

B. Mass Resolution: All criteria met.

C. Method Blank: All acceptance criteria were met for the method blank and no detects have been observed above the MDL.

D. Laboratory Control Spike: A LCS and LCSDUP were analyzed with all acceptance criteria met and they had a RPD of 6%.

E. Matrix spike/Matrix spike duplicate: MS and MSD were analyzed not analyzed with these samples.

F. Surrogate Standards: All samples and QC samples met surrogate Standard criteria

G. Samples: Sample analysis proceeded normally.

H. Glass blank: All acceptance criteria for the glass blank were met.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Maxxam Analytics Inc., both technically and for completeness, except for any conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the HRMS Strategic Business Unit Operational Manager, as verified by the following signature.

AnMarie Wright

AnnMarie Wright, B.Sc.
Laboratory Operations Manager

This report contains _____ pages.

50 Bathurst Drive, Unit 12, Waterloo, Ontario, Canada N2V 2C5 Tel: (519) 747-2575 Toll free (866) 747-8749 Fax: (519) 747-3806 Website: www.maxxam.ca

SUMMARY OF SAMPLES SUBMITTED-NDMA						
(YYYY/MM/DD)						
FIELD SAMPLE ID NO.	*MAXXAM*	*DATE*	*DATE*	*DATE*	*DATE*	*ASSOCIATED*
	L.I.M.S. ID	*SAMPLED*	*RECEIVED*	*EXTRACTED*	*ANALYZED*	*QC LABEL*
MW-4-1	A421782-C71629	2004/05/11	2004/05/13	2004/05/19	2004/05/26	595208
MW-17-4	A421782-C71630	2004/05/11	2004/05/13	2004/05/19	2004/05/26	595208

Glossary of Definitions

NDMA	N-Nitrosodimethylamine
OPR	Ongoing Performance & Recovery Standard (Matrix spike)
PAR	Performance & Recovery Standard (Spiking Mixture)
IPR	Initial Performance & Recovery Standard (Matrix spike)
K-D	Kuderna-Danish concentrator: a device used to concentrate the analytes in a solvent
LIMS	Laboratory Information Management System
MISA	Municipal Industrial Strategy for Abatement
EPA	see USEPA
USEPA	United States Environmental Protection Agency
CEPA	Canadian Environmental Protection Agency
amp	ampere
cm	centimetre
g	gram
h	hour
ID	internal diameter
OD	outside diameter
In.	inch
L	litre
M	Molecular ion
min	minute
mL	mililitre
mm	millimetre
m/z	mass-to-charge ratio
N	Normal; gram molecular weight of solute divided by hydrogen equivalent of solute, per litre of solution
mg	milligram 10^{-3}g
µg	microgram 10^{-6}g
ng	nanogram 10^{-9}g
pg	picogram 10^{-12}g
fg	femtogram 10^{-15}g
ppm	parts per million (mg/L, mg/kg)
ppb	parts per billion (µg/L, µg/kg)
ppt	parts per trillion (ng/L, ng/kg)
ppq	parts per quadrillion (pg/L, pg/kg)
v/v	volume per unit volume
w/v	weight per unit volume
DCM	Dichloromethane (Methylene Chloride)
PFK	Perfluorokerosene
HIRES	High Resolution
GC	Gas Chromatography

MS	Mass Spectrometry
HRMS	High Resolution Mass Spectrometry

Acceptance Criteria

Values used by the laboratory in order to determine that a process is in control.

Accuracy — It is the degree of agreement of a measured value with the true or expected value of the quantity of concern.

Analyte — A Nitrosodimethylamine and/or 1,4-Dioxane parameter tested by a method.

Blind Sample — It is a sample submitted for analysis whose composition is known to the submitter but unknown to the analyst. A blind sample is used to test the proficiency of a measurement process.

Calibration Standard (CAL)

Consist of a set of solutions containing known amounts of native & carbon-13-labelled NDMA and/or 1,4-Dioxane. These solutions are used to establish the relationship between the parameter's concentration & MS detector response over the expected range of sample concentration.

Calibration Verification Material

Consists of a calibration standard solution of intermediate level concentration (e.g. CS3), used to assess whether the initial calibration is still valid.

Certified Reference Material

It is a stable, homogenous, and well characterized reference material, one or more of whose property values are certified by repetitive analysis by several operators & different methodologies in one or more qualified laboratories of known precision & accuracy. This material is used to assess the accuracy of a measurement process.

CAS# — Chemical Abstracts Compound Registry Number.

Control Sample

It is a reference material of known composition that is analyzed concurrently with test samples to evaluate the accuracy and/or precision of a measurement process.

EDL — Estimated detection limit or detection limit.

Glassware Proof Rinse

It is the composite final solvent rinse of each piece of glassware intended for use in processing a batch of samples. Proof rinse samples are analyzed before sample processing begins.

Instrument Detection Limit

It is the smallest concentration/amount of analyte, in a solution containing only the analyte(s) of interest, which produces an instrumental response that satisfies all analyte detection & identification criteria.

IS — Internal Standard, a deuterated or ^{13}C-labelled analyte that is added to a sample extract prior to instrument analysis.

Isomer — A member of a group of compounds that differ from each other only in terms of locations of a specified number of common substituent atoms, or groups of atoms, on the parent compound.

Method Blank — Laboratory control sample using reagents, purified water, soil or relevant matrix known to be free of contaminants.

Method Detection Limit (MDL)

It is the smallest test sample concentration/amount of analyte that produces an instrumental response that satisfies all analyte detection & identification criteria when the sample is processed & analyzed according to the requirements of a specific test method. Reported MDL values reflect the composite effect of sample-related variables as well as method-related variables.

MSDS — Material Safety Data Sheet

NIOSH — National Institute of Occupational Safety & Health

Precision — It is the degree of agreement between the data generated from repetitive measurements under specified conditions. It is generally reported as the standard deviation (SD) or relative standard deviation (RSD).

%D — Percent Difference.

Quality Assurance (QA)

It is a system of activities whose purpose is to provide the producer or user of a product with the assurance that the product meets a defined standard of quality. The system consists of two separate but related activities, quality control & quality assessment.

Quality Control (QC)

It is the overall system of activities whose purpose is to control the quality of a product so that it meets the needs of users.

Recovery Standards

They are selected compounds that are added to sample extracts immediately before instrumental analysis so that surrogate (internal standard) recoveries can be calculated.

RPD (%) Relative Percent Difference.

Relative Retention Factor (RRF)

It is the quotient of a target analyte response factor (instrument response per unit weight) divided by the response factor (RF) for its corresponding labelled surrogate. An RRF value remains constant over the range of concentration for which instrument response is linear.

RSD Relative Standard Deviation.

SDS Soxhlet/Dean-Stark extractor, an extraction device applied to the extraction of solid & semi-solid materials.

Spiked blank Laboratory control sample that has been fortified with native analytes of interest.

Stock Solution A solution containing an analyte that is prepared using a reference material traceable to EPA, the National Institute of Science & Technology (NIST), or a source that will attest to the purity & authenticity of the reference material.

Surrogate A compound whose composition and chemical properties are nearly identical to those of target analytes, but which is distinguishable from target analytes by some means of detection (i.e. MS). These include deuterated or ^{13}C-labelled analogues of the target analytes, which are added to the sample prior to extraction or clean-up steps.

Window Defining Mixture

It is a solution containing the earliest & latest eluting congeners within each homologous group of target analytes on a specified GC column.

MW-4-1

Lab Name	Maxxam Analytics Inc.				
Method	EPA 607 / 1625 mod			Lab Sample ID:	A421782-C71629
Matrix:	liquid			Project Number:	04-2901
Sample wt/vol:	900	(g/mL)	mL	Project Name:	JPL
Level (low/med):	low			Lab File ID:	KR24950012
% Moisture:	Not applicable	Decanted (Y/N):	N	Date Received:	May 13, 2004
Concentrated Extract Volume:	1000	(uL)		Date Extracted:	May 19, 2004
Injection Volume:	2	(uL)		Lab Batch:	595208
Acid Wash Cleanup (Y/N):	N	pH	Not analyzed	Date Analyzed:	May 26, 2004
				Calib. Ref.:	20040525
				Time Analyzed:	11:40:26
				Dilution Factor:	1

CAS Number	Compound	Concentration (ug/L)	Qualifier	EDL (ug/L)	REPORTING LIMIT (ug/L)
62-75-9	N-Nitrosodimethylamine	0.00200	U	0.000370	0.00200

CAS Number	Surrogate	Recovery (%)	Acceptance Criteria (%)
000	D6-N-Nitrosodimethylamine	14	10 - 81

MW-17-4

Lab Name	Maxxam Analytics Inc.				
Method	EPA 607 / 1625 mod			Lab Sample ID:	A421782-C71630
Matrix:	liquid			Project Number:	04-2901
Sample wt/vol:	900	(g/mL)	mL	Project Name:	JPL
Level (low/med):	low			Lab File ID:	KR24950013
% Moisture:	Not applicable	Decanted (Y/N):	N	Date Received:	May 13, 2004
Concentrated Extract Volume:	1000	(uL)		Date Extracted:	May 19, 2004
Injection Volume:	2	(uL)		Lab Batch:	595208
Acid Wash Cleanup (Y/N):	N	pH	Not analyzed	Date Analyzed:	May 26, 2004
				Calib. Ref.:	20040525
				Time Analyzed:	11:57:53
				Dilution Factor:	1

CAS Number	Compound	Concentration (ug/L)	Qualifier	EDL (ug/L)	REPORTING LIMIT (ug/L)
62-75-9	N-Nitrosodimethylamine	0.00200	U	0.000370	0.00200

CAS Number	Surrogate	Recovery (%)	Acceptance Criteria (%)
000	D6-N-Nitrosodimethylamine	15	10 - 81

Applied P & Ch Laboratory

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

Subcontract Chain of Custody

Please Print in pen Page _____ of _____

Subcontract Lab: Maxxam Analytical Labs Contact: Nellie Gudzak Tel #: (519) 747 2575 Fax #:
Address: 50 Bathurst Dr. #12 City: Waterloo State: ONT Zip code: N2V2C5
APCL Client: 04-2901 APCL Contact:
Project Name/Code JPL Job #
BILL TO APCL Sub Quotation #
Due Date: ☒ regular ☐ rush: ___ days ___ hours Sampled by: JJ/MM

Analysis Items: 1625m NDMA

Field Sample ID No.	Sample Description	Date Collected	Time	Sample Matrix	Preservation	# of Containers	1625m NDMA	Remarks
MW-4-1		4/5/11/04	0953	W	–	2	X	Level 5+ EDD
MW-17-4		5/11/04	1210	W	–	2	X	

White – With report
Yellow – Lab copy
Pink – Originator

QC Requirement: ☐ Regular; ☐ QA/QC Report; ☐ WIP; ☐ Raw Data; ☐ Extended Raw Data ☐ CLP; ☐ ACE ☐ AFCEE ☐ NEESA ___ (E, C or D); ☐ Other _____ (Please specify)
Sample Disposal: ☐ Return ☐ Disposal by APCL ☐ Hold for _____ days after receiving date. **If not specified, samples will be discarded 45 days after samples are received.**
Sample Conditions: ☐ Intact; ☐ Broken. Cooler Seal: ☐ Intact; ☐ Broken; ☐ None. Tag # _____ Temperature: ☐ Room ☐ Cold (____ °C).

Relinquished by [signature] Date/Time 5/11/04 / 1600 Received by [signature] Maxxam Date/Time 2004-05-13 @ 11:35 / 2.3°C
Relinquished by Date/Time / Received by Date/Time /

APCL USE ONLY Service # Note:

Clients understand that all terms described in the proposals, quotations for this project, and/or the general terms provided in the current APCL price schedules will be followed. APCL reserves the right to terminate its service or withhold delivery of any reports, if in APCL's sole discretion the terms of the project have been broken.

Maxxam Analytics Inc

SAMPLE RECEIPT RECORD

Received 2004-05-13 11:55AM Courier FEDEX
WAYBILL #838068291116
PROJECT # JPL
Assigned Job # A421782
Client: applied P & CH
Contact Kenny Chan

Observation	Yes	NO
Was the Chain of custody inside the cooler?	✓	
Was the Chain of Custody properly filled out?	✓	
Were ice or ice packs used to keep samples cool?	✓	
Temperature of the cooler .	2.3°c.	
Was the temperature acceptance limit of <8 c met?	✓	
Were the sample containers in good condition?	✓	

If the answer to any of the questions above is NO, a sample exceptions report must be completed.

Date Logged in 2004-05-13

Sample Entry
Tracy Strelau

Maxxam Analytics Inc

50 Bathurst Dr, Unit #12
Waterloo, ON
N2V 2C5
(519) 747 2575 ext.21

Comments:

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

CHAIN-OF-CUSTODY RECORD

MW-24

LABORATORY COPY

005

GEOFON's LAB COORDINATOR: Scott Buhmer	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: SPL Cold Mon. 2004	PROJECT LOCATION: MW-24	PROJECT NUMBER: 4-12812	LABORATORY PHONE: 909 590 1828	LABORATORY FAX: 909 590 1498	RECIPIENT NAME: Tony Ford
PROJECT CONTACT: J. D. Jones	PROJECT PHONE NUMBER: 714 920 8729	PROJECT FAX: 909 396 1455	LABORATORY ADDRESS: 137760 Magnolia Ave.		ADDRESS: 22632 Golden Springs Dr., Ste 270
PROJECT ADDRESS: 4800 Oak Grove Dr.	CITY, STATE AND ZIPCODE: Pasadena, CA	CLIENT: 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			

Item	Sample Identifier	Matrix	Date	Time	Preserved	# of Cont	QC Level	T.A.T.	Analyses: 542.2 (VOCs)	7196B (Cr6+)	314.0 (ClO4-)	200.8 (Cr)	NDMA	pH, TDS, HCO3, CO3	1,4-Dioxane	200.7 (Na, Ca, Fe, Mg, K) 200.9 (Ba)	Comments
1	MW-24-5	W	5/18/04	0710	HCl HNO3 NaOH	2	III	Normal	X	X	X		X		X		
2	MW-24-4			0745					X	X	X		X		X		
3	MW-24-3			0821					X	X	X		X		X		
4	MW-24-2			0904					X	X	X		X		X		
5	MW-24-1			0947		88			X	X	X	X	X	X	X		2957
6	EB-12-5/18/04			0843		2			X	X	X		X		X		
7	TB-12-5/18/04			—	HH	2			X								
8																	
9																	
10																	

J. D. Jones 5-18-04

SAMPLES COLLECTED BY: MM + JJ

COURIER AND AIR BILL NUMBER:

COOLER TEMPERATURE UPON RECEIPT

RELINQUISHED BY	RECEIVED BY	DATE	TIME	SAMPLE'S CONDITION UPON RECEIPT
J. D. Jones	[signature]	5-18-04	1157	
[signature]	[signature]	5-18-04	12:05	

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

SUBMISSION CASE NARRATIVE
NDMA

MAXXAM L.I.M.S. No. A423068

PROJECT: Applied P&CH Laboratory NDMA Analysis

I. Receipt

Sample was received at Maxxam on May 20, 2004.
Sample was received in good condition.

II. Holding Times

A. Sample preparation: To ensure the holding time was met, the sample was fortified and solvent was added directly to the bottle on May 25, 2004.
B. Sample analysis: all holding times were met.

III. Method

The method followed was Maxxam's in-house method for NDMA analysis, Entitled "EXTRACTION & ANALYSIS OF NITROSAMINES AND NDMA BY HRMS-Ont. SOP-0121.

IV. Preparation

Sample preparation proceeded normally. Sample was extracted on May 26, 2004.

V. Analysis

Analysis proceeded normally. Sample was analyzed on June 2, 2004.

A. Calibration: All criteria were met.

B. Mass Resolution: All criteria met.

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C. Method Blank: All acceptance criteria were met for the method blank and no detects have been observed above the MDL.

D. Laboratory Control Spike: A LCS and LCSDUP were analyzed with all acceptance criteria met and they had a RPD of 7%.

E. Matrix spike/Matrix spike duplicate: MS and MSD were analyzed not analyzed with these samples.

F. Surrogate Standards: All samples and QC samples met surrogate Standard criteria

G. Samples: Sample analysis proceeded normally.

H. Glass blank: All acceptance criteria for the glass blank were met.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Maxxam Analytics Inc., both technically and for completeness, except for any conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the HRMS Strategic Business Unit Operational Manager, as verified by the following signature.

AnnMarie Wright

AnnMarie Wright, B.Sc.
Laboratory Operations Manager

This report contains 73 pages.

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SUMMARY OF SAMPLES SUBMITTED-NDMA						
(YYYY/MM/DD)						
FIELD SAMPLE ID NO.	*MAXXAM*	*DATE*	*DATE*	*DATE*	*DATE*	*ASSOCIATED*
	L.I.M.S. ID	*SAMPLED*	*RECEIVED*	*EXTRACTED*	*ANALYZED*	*QC LABEL*
MW-24-1	A423068-C76695	2004/05/18	2004/05/20	2004/05/26	2004/06/02	597510

MW-24-1

Lab Name	Maxxam Analytics Inc.				
Method	EPA 607 / 1625 mod			Lab Sample ID:	A423068-C76695
Matrix:	liquid			Project Number:	04-2957
Sample wt/vol:	810	(g/mL)	mL	Project Name:	JPL
Level (low/med):	low			Lab File ID:	KR24980020
% Moisture:	Not applicable	Decanted (Y/N):	N	Date Received:	May 20, 2004
Concentrated Extract Volume:	1000	(uL)		Date Extracted:	May 26, 2004
Injection Volume:	2	(uL)		Lab Batch:	597510
Acid Wash Cleanup (Y/N):	N	pH	Not analyzed	Date Analyzed:	June 2, 2004
				Calib. Ref.:	20040602
				Time Analyzed:	19:09:15
				Dilution Factor:	1

CAS Number	Compound	Concentration (ug/L)	Qualifier	EDL (ug/L)	REPORTING LIMIT (ug/L)
62-75-9	N-Nitrosodimethylamine	0.000511	J	0.000370	0.00200

CAS Number	Surrogate	Recovery (%)	Acceptance Criteria (%)
000	D6-N-Nitrosodimethylamine	16	10 - 81

Applied P & Ch Laboratory

Subcontract Chain of Custody

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

AW230698

Please Print in pen Page ____ of ____

Subcontract Lab: Maxxam Analytical Labs. Contact: Nellie Gudzak Tel #: (519) 747 2575 Fax #:

Address: 50 Bathurst Dr. #12 City: Waterloo State: ONT Zip code: N2V-2C5

APCL Client: 04-2957 APCL Contact: Kenny Chan

Project Name/Code JPL Job #

BILL TO APCL Sub Quotation #

Due Date: ☒ regular ☐ rush: ___ days ___ hours Sampled by: JJ/MM

Analysis Items: 1625m NDMA

White – With report
Yellow – Lab copy
Pink – Originator

Field Sample ID No.	Sample Description	Date Collected	Time Collected	Sample Matrix	Preservation	# of Containers	1625m NDMA	Remarks
MW-24-1		5/18/04	0947	W	—	2	X	Level 5 + EDD

QC Requirement: ☐ Regular; ☐ QA/QC Report; ☐ WIP; ☐ Raw Data; ☐ Extended Raw Data ☐ CLP; ☐ ACE ☐ AFCEE ☐ NEESA ___ (E, C or D); ☒ Other _____ (Please specify)

Sample Disposal: ☐ Return ☐ Disposal by APCL ☐ Hold for _____ days after receiving date. **If not specified, samples will be discarded 45 days after samples are received.**

Sample Conditions: ☐ Intact; ☐ Broken. Cooler Seal: ☐ Intact; ☐ Broken; ☐ None. Tag # _____ Temperature: ☐ Room ☐ Cold (____ °C).

Relinquished by [signature] Date/Time 5/19/04 / 1600 Received by [signature] Date/Time 2004/05/20

Relinquished by Fedex Date/Time / Received by [signature] Date/Time 04.05.21 / 11:30 AM

APCL USE ONLY Service # Note:

Clients understand that all terms described in the proposals, quotations for this project, and/or the general terms provided in the current APCL price schedules will be followed. APCL reserves the right to terminate its service or withhold delivery of any reports, if in APCL's sole discretion the terms of the project have been broken.

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CHAIN-OF-CUSTODY RECORD

Shallow Wells

LABORATORY COPY

0106

GEOFON's LAB COORDINATOR: Scott Burmer	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 2004	PROJECT LOCATION: MW-2+9, 16+6	PROJECT NUMBER: 4-12812	LABORATORY PHONE: 909 590 1828	LABORATORY FAX: 909 590 1498	RECIPIENT NAME: Tony Ford
PROJECT CONTACT: J.D. Jones	PROJECT PHONE NUMBER: 714 920 8729	PROJECT FAX: 909 396 1455	LABORATORY ADDRESS: 13160 Magnolia Ave.		ADDRESS: 22632 Golden Springs Dr., Ste 270
PROJECT ADDRESS: 4800 Oak Grove Dr.	CITY, STATE AND ZIPCODE: Pasadena, CA	CLIENT: 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			

Item	Sample Identifier	Matrix	Date	Time	Preserved	# of Cont	QC Level	T.A.T	Analyses: 5422.2 (VOCs)	7196 (Cr(VI))	314.0 (Clo4)	300.0 200.8 (Cu)	(NO3, SO4)	PH, TDS, HCO3, CO3	200.7 (Ca, Mg, Na, K) 200.8 (Fe)	200.9 (As)	N/A	1,4-Dioxane	Comments
1	MW-2	W	5/19/04	1217	5	HCl HNO3 None	III	Normal	X	X	X	X	X						
2	MW-9	↓	↓	1327	↓	↓	↓	↓	X	X	X	X	X						
3	TB-13-5/19/04	↓	↓	—	2	HCl	↓	↓	X										2973
4	MW-6	↓	↓	0851	5	HCl HNO3 None	↓	↓	X	X	X	X	X						
5	MW-16	↓	↓	1031	8	↓	III	↓	X	X	X	X	X	X	X				
6	~~Dupe-6-2004~~			—			~~IV~~		X	X	X	X	X						cancel entry J.D. Jones 5.19.04
7																			
8							J. D. Jones												
9							5.19.04												
10																			

SAMPLES COLLECTED BY: TM + JJ + MM

COURIER AND AIR BILL NUMBER:

COOLER TEMPERATURE UPON RECEIPT

SAMPLE'S CONDITION UPON RECEIPT

RELINQUISHED BY	RECEIVED BY	DATE	TIME
J. D. Jones	[illegible]	5/19/04	2:05 pm
[illegible]	[illegible]	5/19/04	3:00 pm

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

SUBMISSION CASE NARRATIVE
NDMA

MAXXAM L.I.M.S. No. A423062

PROJECT: Applied P&CH Laboratory NDMA Analysis

I. Receipt

Sample was received at Maxxam on May 20, 2004.
Sample was received in good condition.

II. Holding Times

A. Sample preparation: all holding times were met.
B. Sample analysis: all holding times were met.

III. Method

The method followed was Maxxam's in-house method for NDMA analysis, Entitled "EXTRACTION & ANALYSIS OF NITROSAMINES AND NDMA BY HRMS-Ont. SOP-0121.

IV. Preparation

Sample preparation proceeded normally. Sample was extracted on May 26, 2004.

V. Analysis

Analysis proceeded normally. Sample was analyzed on June 2, 2004.

A. Calibration: All criteria were met.

B. Mass Resolution: All criteria met.

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C. Method Blank: All acceptance criteria were met for the method blank and no detects have been observed above the MDL.

D. Laboratory Control Spike: A LCS and LCSDUP were analyzed with all acceptance criteria met and they had a RPD of 7%.

E. Matrix spike/Matrix spike duplicate: MS and MSD were analyzed not analyzed with these samples.

F. Surrogate Standards: All samples and QC samples met surrogate Standard criteria

G. Samples: Sample analysis proceeded normally.

H. Glass blank: All acceptance criteria for the glass blank were met.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Maxxam Analytics Inc., both technically and for completeness, except for any conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the HRMS Strategic Business Unit Operational Manager, as verified by the following signature.

AnnMarie Wright

AnnMarie Wright, B.Sc.
Laboratory Operations Manager

This report contains 73 pages.

50 Bathurst Drive, Unit 12, Waterloo, Ontario, Canada N2V 2C5 Tel: (519) 747-2575 Toll free (866) 747-8749 Fax: (519) 747-3806 Website: www.maxxam.ca

SUMMARY OF SAMPLES SUBMITTED-NDMA						
(YYYY/MM/DD)						
FIELD SAMPLE ID NO.	*MAXXAM*	*DATE*	*DATE*	*DATE*	*DATE*	*ASSOCIATED*
	L.I.M.S. ID	*SAMPLED*	*RECEIVED*	*EXTRACTED*	*ANALYZED*	*QC LABEL*
MW-16	A423062-C76675	2004/05/19	2004/05/20	2004/05/26	2004/06/02	597510

MW-16

Lab Name	Maxxam Analytics Inc.				
Method	EPA 607 / 1625 mod			Lab Sample ID:	A423062-C76675
Matrix:	liquid			Project Number:	04-2973
Sample wt/vol:	1000	(g/mL)	mL	Project Name:	JPL
Level (low/med):	low			Lab File ID:	KR24980019
% Moisture:	Not applicable	Decanted (Y/N):	N	Date Received:	May 20, 2004
Concentrated Extract Volume:	1000	(uL)		Date Extracted:	May 26, 2004
Injection Volume:	2	(uL)		Lab Batch:	597510
Acid Wash Cleanup (Y/N):	N	pH	Not analyzed	Date Analyzed:	June 2, 2004
				Calib. Ref.:	20040602
				Time Analyzed:	18:51:45
				Dilution Factor:	1

CAS Number	Compound	Concentration (ug/L)	Qualifier	EDL (ug/L)	REPORTING LIMIT (ug/L)
62-75-9	N-Nitrosodimethylamine	0.00200	U	0.000370	0.00200

CAS Number	Surrogate	Recovery (%)	Acceptance Criteria (%)
000	D6-N-Nitrosodimethylamine	13	10 - 81

Applied P & Ch Laboratory

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

Subcontract Chain of Custody

A423062

Please Print in pen Page ____ of ____

Subcontract Lab: Maxxam Analytical Contact: Nellie Gudzak Tel #: (519) 7472575 Fax #:
Address: 50 Bathurst Dr. #12 City: Waterloo State: ONT Zip code: N2V2C5
APCL Client: 04-2973 APCL Contact: Kenny Chan
Project Name/Code JPL Job #
BILL TO APCL Sub Quotation #
Due Date: ☒ regular ☐ rush: ___ days ___ hours Sampled by: JJ/MM/TM

White – With report
Yellow – Lab copy
Pink – Originator

Field Sample ID No.	Sample Description	Date Collected	Time Collected	Sample Matrix	Preservation	# of Containers	1625m NDMA											Remarks
MW-16		5/19/04	1031	W	–	2	X											
																		LCIC/S+EDD

QC Requirement: ☐ Regular; ☐ QA/QC Report; ☐ WIP; ☐ Raw Data; ☐ Extended Raw Data ☐ CLP; ☐ ACE ☐ AFCEE ☐ NEESA ___ (E, C or D); ☒ Other _____ (Please specify)
Sample Disposal: ☐ Return ☐ Disposal by APCL ☐ Hold for _____ days after receiving date. If not specified, samples will be discarded 45 days after samples are received.
Sample Conditions: ☐ Intact; ☐ Broken. Cooler Seal: ☐ Intact; ☐ Broken; ☐ None. Tag # _____ Temperature: ☐ Room ☐ Cold (____ °C).

Relinquished by [signature] Date/Time 5/19/04 / 1600 Received by [signature] Date/Time /
Relinquished by [signature] Date/Time / Received by [signature] @ Maxxam Date/Time 04-05-21 11:35 AM

APCL USE ONLY Service # Note: 5.4°C

Clients understand that all terms described in the proposals, quotations for this project, and/or the general terms provided in the current APCL price schedules will be followed. APCL reserves the right to terminate its service or withhold delivery of any reports, if in APCL's sole discretion the terms of the project have been broken.

Maxxam Analytics Inc

SAMPLE RECEIPT RECORD

Received 2004-05-20 11:30AM Courier FEDEX
WAYBILL #838068291127
PROJECT ~~#~~ NAME JPL
Assigned Job # ~~A~~A423068/A423062
Client: APPLIED P & CH
Contact Kenny Chan

Observation	Yes	NO
Was the Chain of custody inside the cooler?	✓	
Was the Chain of Custody properly filled out?	✓	
Were ice or ice packs used to keep samples cool?	✓	
Temperature of the cooler .	5.4°c.	
Was the temperature acceptance limit of <8 c met?	✓	
Were the sample containers in good condition?	✓	

If the answer to any of the questions above is NO, a sample exceptions report must be completed.

Date Logged in 2004-05-20

Sample Entry
Tracy Strelau

Maxxam Analytics Inc

50 Bathurst Dr, Unit #12
Waterloo, ON
N2V 2C5
(519) 747 2575 ext.21

Comments:

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

CHAIN-OF-CUSTODY RECORD

Shallow Wells

LABORATORY COPY

009

GEOFON's LAB COORDINATOR: ~~Brad Shepard~~ Scott Bynum	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: SPL-GW Mon-1Q04	PROJECT LOCATION: MW-5, 6, 7, 13	PROJECT NUMBER: 04-4428.10	LABORATORY PHONE: 909 590 1828	LABORATORY FAX: 909 590 1498	RECIPIENT NAME: Tony Ford
PROJECT CONTACT: ~~Scott Bynum~~ Brad Shepard	PROJECT PHONE NUMBER: ~~909 396 7662~~ 714 920 8729	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			

3052

Item	Sample Identifier	Matrix	Date	Time	Preserved	# of Cont	QC Level	T.A.T	Analyses: 524.2 (VOCs)	314.0 (Cl04)	200.8 (Cu)	7196A (Cr(VI))	NDMA	pH, TDS, HCO3, CO3	200.7 Na, K, Ca, Mg, Fe, Cl	200.8 (Pb)	1,4-Dioxane	Comments
1	MW-13	W	5/25/04	0851	HCl HNO3 None	12 ~~8~~ 9	III	Normal	X	X	X	X	X	X	X	X		
2	~~MW-5~~					~~12~~			~~X~~	~~X~~	~~X~~	~~X~~		~~X~~	~~X~~			MS/MSD cancel entry
3																		no entry
4																		no entry
5	TB-16-5 125/04	↓	↓	—	HCl	2	↓	↓	X									
6	~~Dupe-2004~~				HCl HNO3 None	~~6~~	~~IV~~		~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~			cancel entry
7	~~Dupe-2004~~					~~16~~	~~IV~~		~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~		cancel entry
8																		
9																		
10																		

SAMPLES COLLECTED BY: JR + HM

COURIER AND AIR BILL NUMBER:

COOLER TEMPERATURE UPON RECEIPT

RELINQUISHED BY	RECEIVED BY	DATE	TIME	SAMPLE'S CONDITION UPON RECEIPT
[illegible]	[illegible]	5-25-04	9:45	
[illegible]	[illegible]	5-25-04	10:45	

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

SUBMISSION CASE NARRATIVE
NDMA

MAXXAM L.I.M.S. No. A424122

PROJECT: Applied P&CH Laboratory NDMA Analysis

I. Receipt

Sample was received at Maxxam on May 27, 2004.
Sample was received in good condition.

II. Holding Times

A. Sample preparation: all holding times were met.
B. Sample analysis: all holding times were met.

III. Method

The method followed was Maxxam's in-house method for NDMA analysis, Entitled "EXTRACTION & ANALYSIS OF NITROSAMINES AND NDMA BY HRMS-Ont. SOP-0121.

IV. Preparation

Sample preparation proceeded normally. Sample was extracted on May 31, 2004.

V. Analysis

Analysis proceeded normally. Sample was analyzed on June 4, 2004.

A. Calibration: All criteria were met.

B. Mass Resolution: All criteria met.

50 Bathurst Drive, Unit 12, Waterloo, Ontario, Canada N2V 2C5 Tel: (519) 747-2575 Toll free (866) 747-8749 Fax: (519) 747-3806 Website: www.maxxam.ca

Maxxam Analytics Inc

C. Method Blank: The method blank was contaminated to a level of 0.000412 ug/L. Since it is below the reporting limit, this contamination is considered negligible.

D. Laboratory Control Spike: A LCS and LCSDUP were analyzed with all acceptance criteria met and they had a RPD of 9%.

E. Matrix spike/Matrix spike duplicate: MS and MSD were analyzed not analyzed with these samples.

F. Surrogate Standards: All samples and QC samples met surrogate Standard criteria

G. Samples: Sample analysis proceeded normally.

H. Glass blank: All acceptance criteria for the glass blank were met.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Maxxam Analytics Inc., both technically and for completeness, except for any conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the HRMS Strategic Business Unit Operational Manager, as verified by the following signature.

AnnMarie Wright

AnnMarie Wright, B.Sc.
Laboratory Operations Manager

This report contains 71 pages.

SUMMARY OF SAMPLES SUBMITTED-NDMA						
(YYYY/MM/DD)						
FIELD SAMPLE ID NO.	*MAXXAM*	*DATE*	*DATE*	*DATE*	*DATE*	*ASSOCIATED*
	L.I.M.S. ID	*SAMPLED*	*RECEIVED*	*EXTRACTED*	*ANALYZED*	*QC LABEL*
MW-13	A424122-C81184	2004/05/25	2004/05/27	2004/05/31	2004/06/04	598965

MW-13

Lab Name	Maxxam Analytics Inc.			Lab Sample ID:	A424122-C81184
Method	EPA 607 / 1625 mod			Project Number:	04-3052
Matrix:	liquid			Project Name:	JPL
Sample wt/vol:	980	(g/mL)	mL	Lab File ID:	KR25000025
Level (low/med):	low			Date Received:	May 27, 2004
% Moisture:	Not applicable	Decanted (Y/N):	N	Date Extracted:	May 31, 2004
Concentrated Extract Volume:	1000	(uL)		Lab Batch:	598965
Injection Volume:	2	(uL)		Date Analyzed:	June 4, 2004
Acid Wash Cleanup (Y/N):	N	pH	Not analyzed	Calib. Ref.:	20040604
				Time Analyzed:	19:36:17
				Dilution Factor:	1

CAS Number	Compound	Concentration (ug/L)	Qualifier	EDL (ug/L)	REPORTING LIMIT (ug/L)
62-75-9	N-Nitrosodimethylamine	0.00200	U	0.000370	0.00200

CAS Number	Surrogate	Recovery (%)	Acceptance Criteria (%)
000	D6-N-Nitrosodimethylamine	14	10 - 81

H424122

Applied P & Ch Laboratory

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

Subcontract Chain of Custody

Please Print in pen Page ____ of ____

Subcontract Lab: Maxxam Analytical Lab. Contact: Nellie Gudzak Tel #: (519) 747 2575 Fax #:
Address: 50 Bathurst Dr. #12 City: Waterloo State: ONT Zip code: N2V-2C5
APCL Client: 04-3002 APCL Contact: Kenny Chan
Project Name/Code JPL Job #
BILL TO APCL Sub Quotation #
Due Date: ☒ regular ☐ rush: ___ days ___ hours Sampled by: JJ/MM

Analysis Items

Field Sample ID No.	Sample Description	Date Collected	Time Collected	Sample Matrix	Preservation	# of Containers	1605m NDMA											Remarks
MW-13		5/25/04	0851	W	–	2	X											Level 5+EDD

White – With report
Yellow – Lab copy
Pink – Originator

2.7°C

QC Requirement: ☐ Regular; ☐ QA/QC Report; ☐ WIP; ☐ Raw Data; ☐ Extended Raw Data ☐ CLP; ☐ ACE ☐ AFCEE ☐ NEESA ___ (E, C or D); ☐ Other _____ (Please specify)
Sample Disposal: ☐ Return ☐ Disposal by APCL ☐ Hold for _____ days after receiving date. **If not specified, samples will be discarded 45 days after samples are received.**
Sample Conditions: ☐ Intact; ☐ Broken. Cooler Seal: ☐ Intact; ☐ Broken; ☐ None. Tag # _____ Temperature: ☐ Room ☐ Cold (____ °C).

Relinquished by Ken Chan Date/Time 5/26/04 / 1600 Received by C. Vickers Date/Time 2004/05/27 / 12:25pm
Relinquished by Date/Time / Received by Date/Time /

APCL USE ONLY Service # Note:

Clients understand that all terms described in the proposals, quotations for this project, and/or the general terms provided in the current APCL price schedules will be followed. APCL reserves the right to terminate its service or withhold delivery of any reports, if in APCL's sole discretion the terms of the project have been broken.

APCL Form 4-101, Ver. 4.0, Jan. 17, 2003

Maxxam Analytics Inc

SAMPLE RECEIPT RECORD

Date Received 2004-05-27 12:25PM
Waybill #838068291138 Courier Company FEDEX
Assigned Job #A424122
Project #JPL
Client applied P & CH
Client Contact Kenny Chan

Observation	Yes	NO
Were custody Seals on Cooler?	✓	
Was the Chain of custody inside the cooler?	✓	
Was the Chain of Custody properly filled out?	✓	
Was ice or ice packs used to keep samples cool?	✓	
Enter Temperature of the cooler or blank.	2.7c	
Was the temperature acceptance limit of <8 c met?	✓	
Were the sample containers in good condition?	✓	

If the answer to any of the questions above is NO, a sample exceptions report must be completed.

Date Logged in 2004-05-27

Sample Entry CV
Maxxam Analytics Inc

50 Bathurst Dr, Unit #12
Waterloo, ON
N2V 2C5
(519) 747 2575 ext.21

COMMENTS: