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:	31402	Collected by:	

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

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
03-1402-1	DUPE-1-1Q03	Water	01/30/03	01/30/03	01/30/03	03W1308	mg/L	0.01	<0.01	U
03-1402-2	EB-2-1/30/03	Water	01/30/03	01/30/03	01/30/03	03W1308	mg/L	0.01	<0.01	U
03-1402-3	MW-20-1	Water	01/30/03	01/30/03	01/30/03	03W1308	mg/L	0.01	<0.01	U
03-1402-4	MW-20-2	Water	01/30/03	01/30/03	01/30/03	03W1308	mg/L	0.01	<0.01	U
03-1402-5	MW-20-3	Water	01/30/03	01/30/03	01/30/03	03W1308	mg/L	0.01	<0.01	U
03-1402-6	MW-20-4	Water	01/30/03	01/30/03	01/30/03	03W1308	mg/L	0.01	<0.01	U
03-1402-7	MW-20-5	Water	01/30/03	01/30/03	01/30/03	03W1308	mg/L	0.01	<0.01	U
03W1308-MB-01	03W1308-MB-01	Water	01/30/03	01/30/03	01/30/03	03W1308	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:	31402	Collected by:	

Component Name: Perchlorate
CAS No:

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
03-1402-1	DUPE-1-1Q03	Water	01/30/03	01/30/03	02/03/03	03W1345	μg/L	4	<4	U
03-1402-2	EB-2-1/30/03	Water	01/30/03	01/30/03	02/10/03	03W1424	μg/L	4	<4	U
03-1402-3	MW-20-1	Water	01/30/03	01/30/03	02/03/03	03W1345	μg/L	4	<4	U
03-1402-4	MW-20-2	Water	01/30/03	01/30/03	02/03/03	03W1345	μg/L	4	<4	U
03-1402-5	MW-20-3	Water	01/30/03	01/30/03	02/03/03	03W1345	μg/L	4	<4	U
03-1402-6	MW-20-4	Water	01/30/03	01/30/03	02/10/03	03W1424	μg/L	4	<4	U
03-1402-7	MW-20-5	Water	01/30/03	01/30/03	02/03/03	03W1345	μg/L	4	<4	U
03W1345-MB-01	03W1345-MB-01	Water	02/03/03	02/03/03	02/03/03	03W1345	μg/L	4	<4	U
03W1424-MB-01	03W1424-MB-01	Water	02/10/03	02/10/03	02/10/03	03W1424	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.

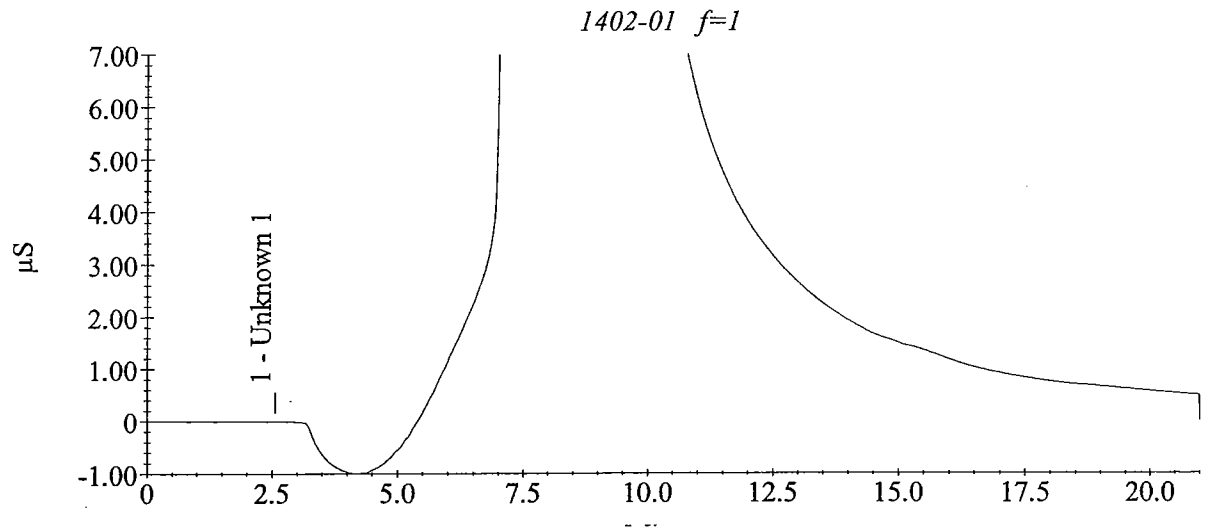
APCL Perchlorate Analysis Report

Sample Name : 1402-01 f=1
Data File Name : C:\DATA\03W1345K\1402-01_007.DXD

Method File Name : c:\peaknet\method\e314.0-9.met
Date Time Collected : 02/03/2003 1:40:49 PM
System Operator : wei wang
Dilution Factor : 1.00

Peak Information : All Components

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



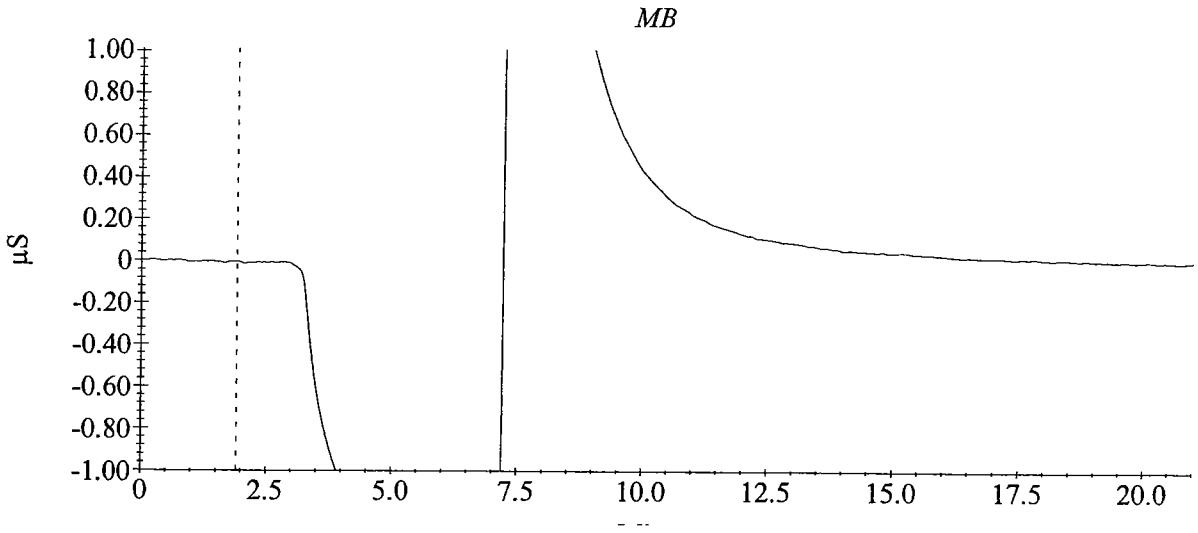
APCL Perchlorate Analysis Report

Sample Name : MB
Data File Name : C:\DATA\03W1345K\W1345K K01_002.DXD

Method File Name : c:\peaknet\method\e314.0-9.met
Date Time Collected : 02/03/2003 11:42:33 AM
System Operator : wei wang
Dilution Factor : 1.00

Peak Information : All Components

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



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:	31402
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03W1345		
LCS Filename:	-	Date Analyzed:	020303	Time Analyzed:	12:30
LCSD Filename:	-	Date Analyzed:	–	Time Analyzed:	–

Spiked Components	Unit	Spike Added	Concentration Unspiked	Concentration LCS	LCS Rec% #	QC Limit, % REC
PERCHLORATE	μg/L	25	0	24.6	98	80-120
# of Out-of-control					0	

Column to be used to flag recovery and RPD values:

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

Comments: _____

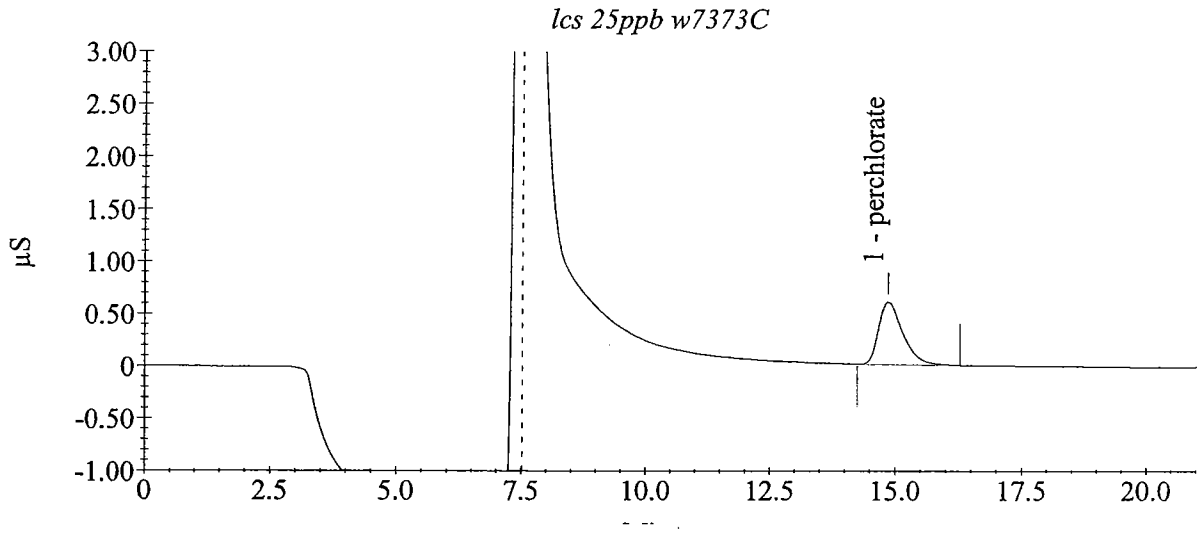
APCL Perchlorate Analysis Report

Sample Name : lcs 25ppb w7373C
Data File Name : C:\DATA\03W1345K\W1345K L01_004.DXD

Method File Name : c:\peaknet\method\e314.0-9.met
Date Time Collected : 02/03/2003 12:30:02 PM
System Operator : wei wang
Dilution Factor : 1.00

Peak Information : All Components

Peak #	Component Name	Retention Time	Amount (ppb)	Peak Area	Peak Height
1	perchlorate	14.85	24.58	199096	6008



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:	31402
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03W1345		
MS Filename:	-	Date Analyzed:	020303	Time Analyzed:	17:12
MSD Filename:	-	Date Analyzed:	020303	Time Analyzed:	17:36
MS Sample No:	**MW-20-3**	Sample Lab ID:	03-1402-5		

Spiked Components	Unit	Spike Added	Concentration Unspiked	Concentration MS	MS Rec% #	QC Limit, % REC
PERCHLORATE	μg/L	50.0	0	44.0	88	75-125
# of Out-of-control					0	

Spiked Components	Unit	Spike Added	MSD Concentration	MSD Rec% #	RPD% #	QC Limit, % RPD	QC Limit, % REC
PERCHLORATE	μg/L	50.0	43.0	86	2	20	75-125
# of Out-of-control				0	0		

Column to be used to flag recovery and RPD values:

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

Comments: _____

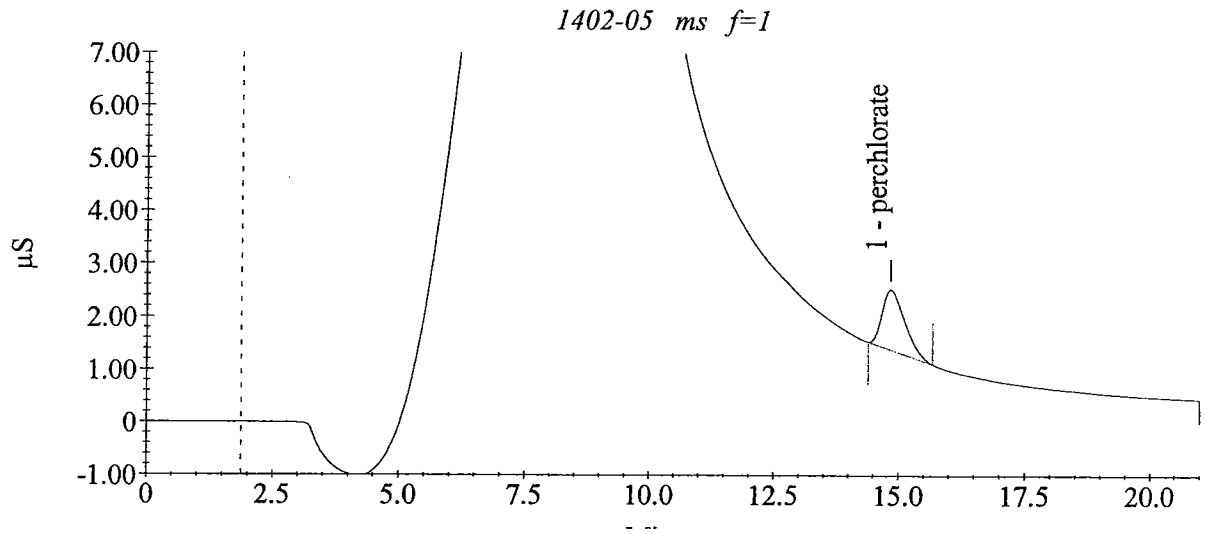
APCL Perchlorate Analysis Report

Sample Name : 1402-05 ms f=1
Data File Name : C:\DATA\03W1345K\W1345K M01_016.DXD

Method File Name : c:\peaknet\method\e314.0-9.met
Date Time Collected : 02/03/2003 5:12:45 PM
System Operator : wei wang
Dilution Factor : 1.00

Peak Information : All Components

Peak #	Component Name	Retention Time	Amount (ppb)	Peak Area	Peak Height
1	perchlorate	14.83	44.01	356439	11310



Rec 88.02%

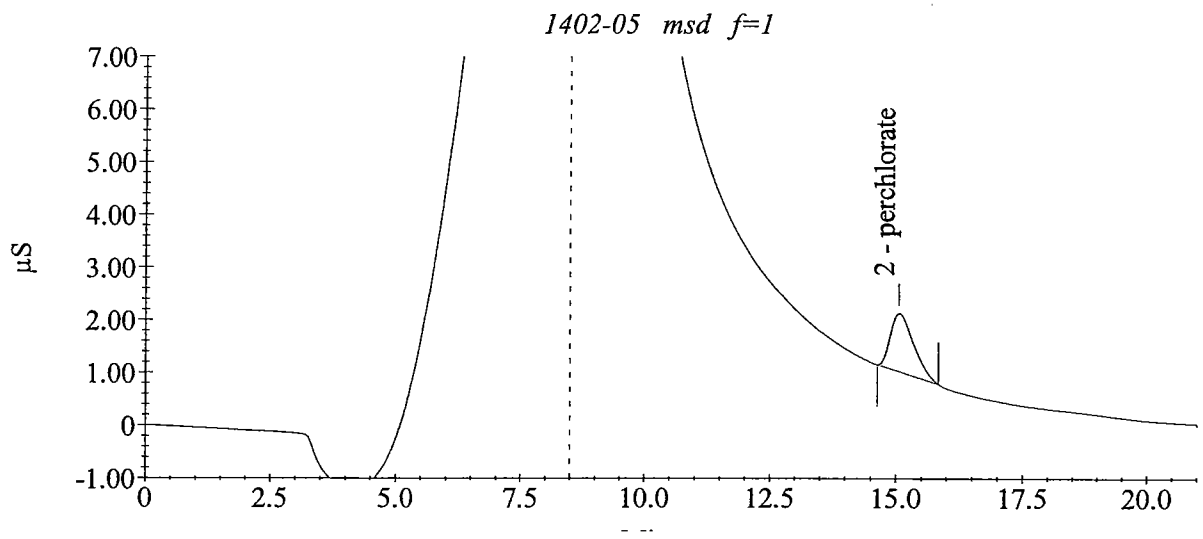
APCL Perchlorate Analysis Report

Sample Name : 1402-05 msd f=1
Data File Name : C:\DATA\03W1345K\W1345K N01_017.DXD

Method File Name : c:\peaknet\method\e314.0-9.met
Date Time Collected : 02/03/2003 5:36:20 PM
System Operator : wei wang
Dilution Factor : 1.00

Peak Information : All Components

Peak #	Component Name	Retention Time	Amount (ppb)	Peak Area	Peak Height
2	perchlorate	15.05	43.01	348354	11001



Rec 86.02%

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:	31402
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03W1308		
LCS Filename:	-	Date Analyzed:	013003	Time Analyzed:	17:39
LCSD Filename:	-	Date Analyzed:	013003	Time Analyzed:	17:39

Spiked Components	Unit	Spike Added	Concentration Unspiked	Concentration LCS	LCS Rec% #	QC Limit, % REC
CHROMIUM (VI)	mg/L	0.25	0	0.243	97	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	0.248	99	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:	31402
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03W1308		
MS Filename:	-	Date Analyzed:	013003	Time Analyzed:	17:39
MSD Filename:	-	Date Analyzed:	013003	Time Analyzed:	17:39
MS Sample No:	**MW-20-3**	Sample Lab ID:	03-1402-5		

Spiked Components	Unit	Spike Added	Concentration Unspiked	Concentration MS	MS Rec% #	QC Limit, % REC
CHROMIUM (VI)	mg/L	0.25	0	0.238	95	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	0.243	97	2	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: _____

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:	31402
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03W1424		
LCS Filename:	-	Date Analyzed:	021003	Time Analyzed:	13:39
LCSD Filename:	-	Date Analyzed:	–	Time Analyzed:	–

Spiked Components	Unit	Spike Added	Concentration Unspiked	Concentration LCS	LCS Rec% #	QC Limit, % REC
PERCHLORATE	μg/L	25	0	24.0	96	80-120
# of Out-of-control					0	

Column to be used to flag recovery and RPD values:

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

Comments: _____

FORM-3

Applied P & Ch Laboratory

Matrix Spike/Matrix Spike Duplicate Recovery for Method 314.0

Client Name:	GEOFON, Inc.	Contract No:		Lab Code:	APCL
Case No:		SAS No:		Service ID:	31402
Project ID:	JPL	Project No:	04-4428.10	Sample Matrix:	Water
		Batch No:	03W1424		
MS Filename:	-	Date Analyzed:	021103	Time Analyzed:	00:52
MSD Filename:	-	Date Analyzed:	021103	Time Analyzed:	01:16
MS Sample No:	**MW-4-1**	Sample Lab ID:	03-1501-2		

Spiked Components	Unit	Spike Added	Concentration Unspiked	Concentration MS	MS Rec% #	QC Limit, % REC
PERCHLORATE	μg/L	50.0	2.9	46.1	86	75-125
# of Out-of-control					0	

Spiked Components	Unit	Spike Added	MSD Concentration	MSD Rec% #	RPD% #	QC Limit, % RPD	QC Limit, % REC
PERCHLORATE	μg/L	50.0	47.1	88	2	20	75-125
# of Out-of-control				0	0		

Column to be used to flag recovery and RPD values:

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

Comments: _____

6A

INITIAL CALIBRATION DATA

Lab Name: Applied P & Ch Lab Contract: 03-1402

Analysis: Chromium (VI) Calibration Date: 01/29/2003

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

A= 0.000 + 0.836C

A=Absorbance

C=Concentration (mg/L)

r= 0.9997

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: 31402
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	03W1345	ug/L	50	50.2	100	0	√	90-110	02/03/2003
	Perchlorate	314.0	03W1345	ug/L	50	49.4	99	-1	√	90-110	02/03/2003
2	Chromium (VI)	7196	03W1308	mg/L	0.25	0.256	102	2	√	90-110	01/30/2003
	Chromium (VI)	7196	03W1308	mg/L	0.25	0.245	98	-2	√	90-110	01/30/2003
3	Perchlorate	314.0	03W1424	ug/L	50	49.5	99	-1	√	90-110	02/10/2003
	Perchlorate	314.0	03W1424	ug/L	50	47.8	96	-4	√	90-110	02/10/2003
	Perchlorate	314.0	03W1424	ug/L	50	48.1	96	-4	√	90-110	02/10/2003

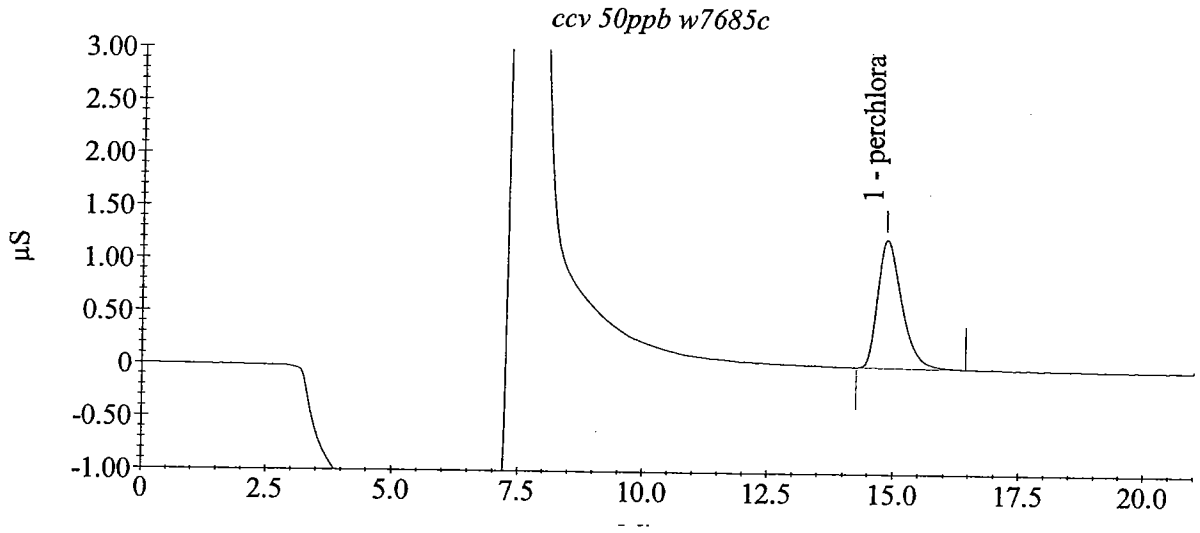
APCL Perchlorate Analysis Report

Sample Name : ccv 50ppb w7685c
Data File Name : C:\DATA\03W1345K\W1345K Q01_003.DXD

Method File Name : c:\peaknet\method\e314.0-9.met
Date Time Collected : 02/03/2003 12:06:17 PM
System Operator : wei wang
Dilution Factor : 1.00

Peak Information : All Components

Peak #	Component Name	Retention Time	Amount (ppb)	Peak Area	Peak Height
1	perchlorate	14.83	50.16	406234	12172



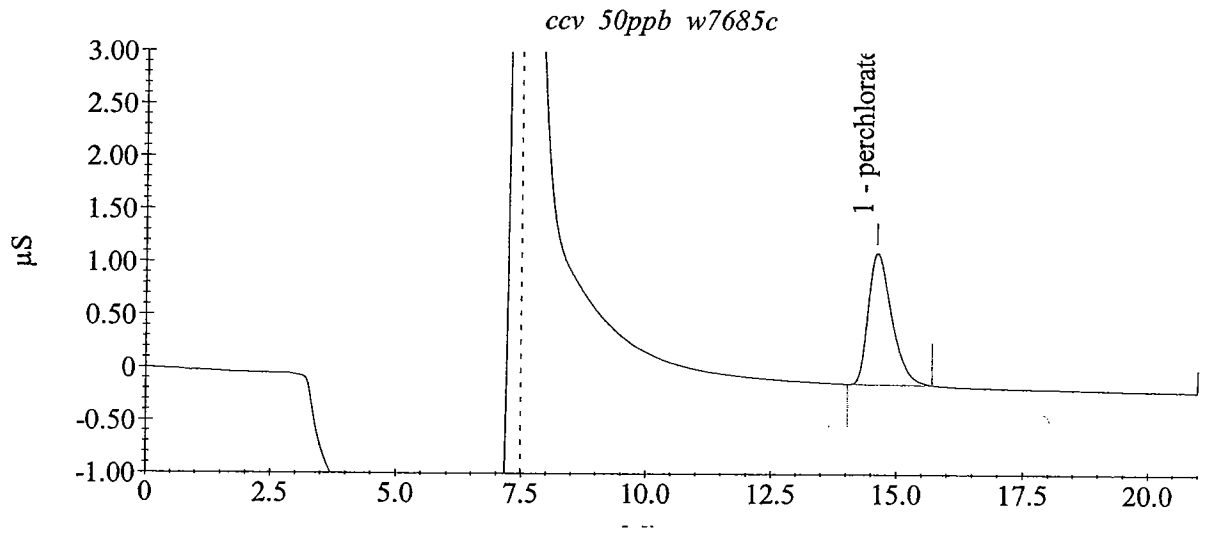
APCL Perchlorate Analysis Report

Sample Name : ccv 50ppb w7685c
Data File Name : C:\DATA\03W1345K\W1345K Q02_014.DXD

Method File Name : c:\peaknet\method\e314.0-9.met
Date Time Collected : 02/03/2003 4:25:41 PM
System Operator : wei wang
Dilution Factor : 1.00

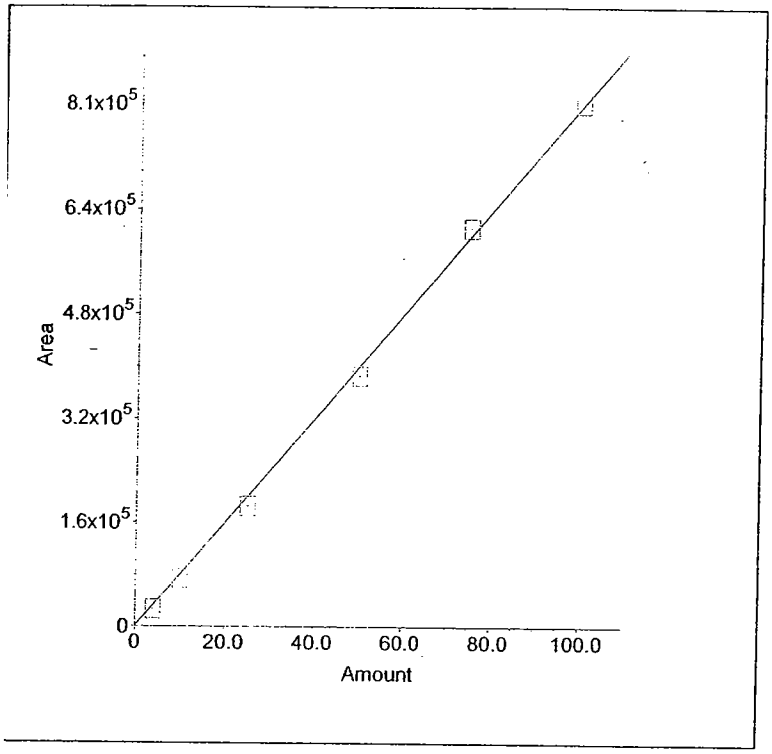
Peak Information : All Components

Peak #	Component Name	Retention Time	Amount (ppb)	Peak Area	Peak Height
1	perchlorate	14.60	49.42	400301	12440



Method:C:\PEAKNET\METHOD\E314.0-9.MET Updated:07/31/2002 2:41:38 PM Total:1

1. Component:perchlorate
Standard:External Fit Type:Linear
Origin:Force Calibration:Area
r^2=0.998635
Amt=0.0001235*Resp+0



Analyst Wei Way
Date 07/31/02
Instrument Ic-1c

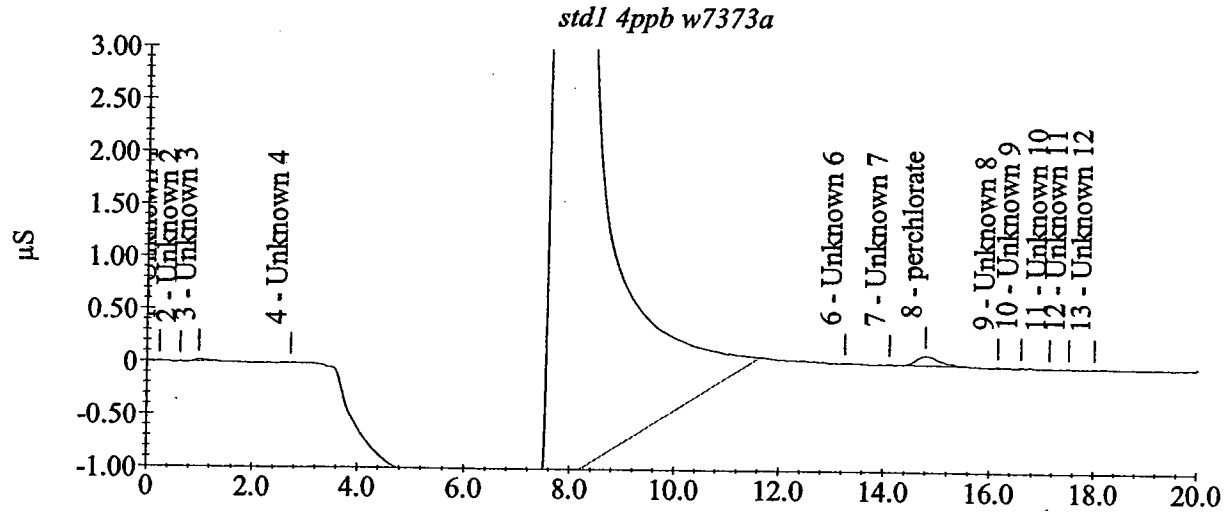
Calibration Update Report

Sample Name : std1 4ppb w7373a
Data File Name : C:\DATA\E314.0-9\STD1_002.DXD

Method File Name : C:\PeakNet\method\E314.0-9.met
Schedule File Name : c:\peaknet\schedule\schedule.sch
Date Time Collected : 07/31/2002 10:28:49 AM
Calibration Date : 07/31/2002 2:38:26 PM
System Operator : wei wang

Peak Information : All Components

Peak #	Component Name	Retention Time	Cal Response (Previous)	Cal Response (Measured)	Cal Response (New)
8	perchlorate	14.78	3926	26934	26934



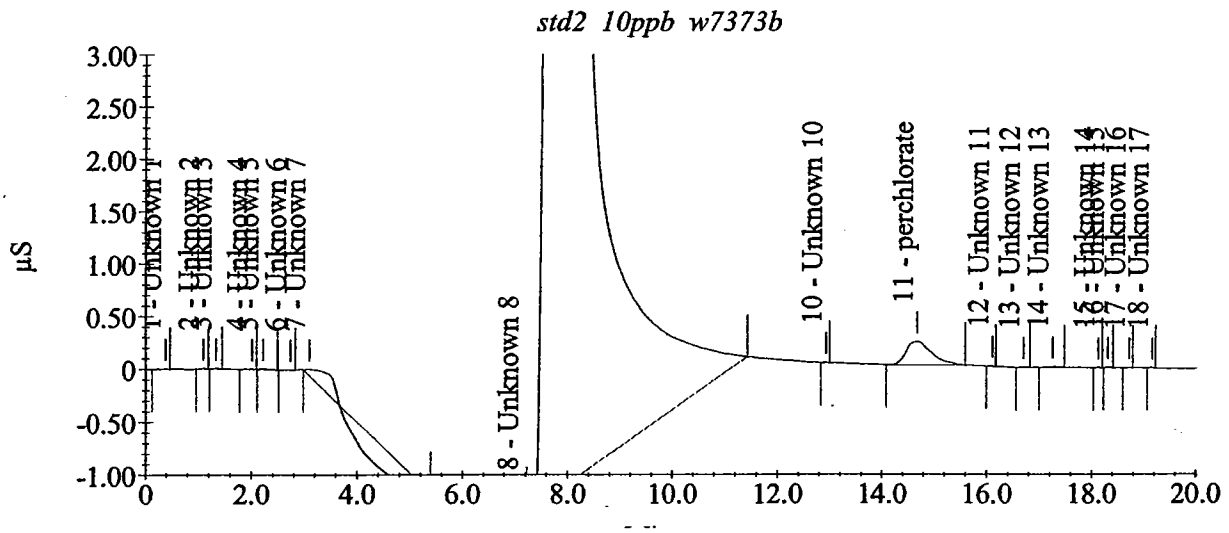
Calibration Update Report

Sample Name : std2 10ppb w7373b
Data File Name : C:\DATA\E314.0-9\STD2_003.DXD

Method File Name : C:\PeakNet\method\E314.0-9.met
Schedule File Name : c:\peaknet\schedule\schedule.sch
Date Time Collected : 07/31/2002 10:51:14 AM
Calibration Date : 07/31/2002 2:36:36 PM
System Operator : wei wang

Peak Information : All Components

Peak #	Component Name	Retention Time	Cal Response (Previous)	Cal Response (Measured)	Cal Response (New)
11	perchlorate	14.68	21766	75031	75031



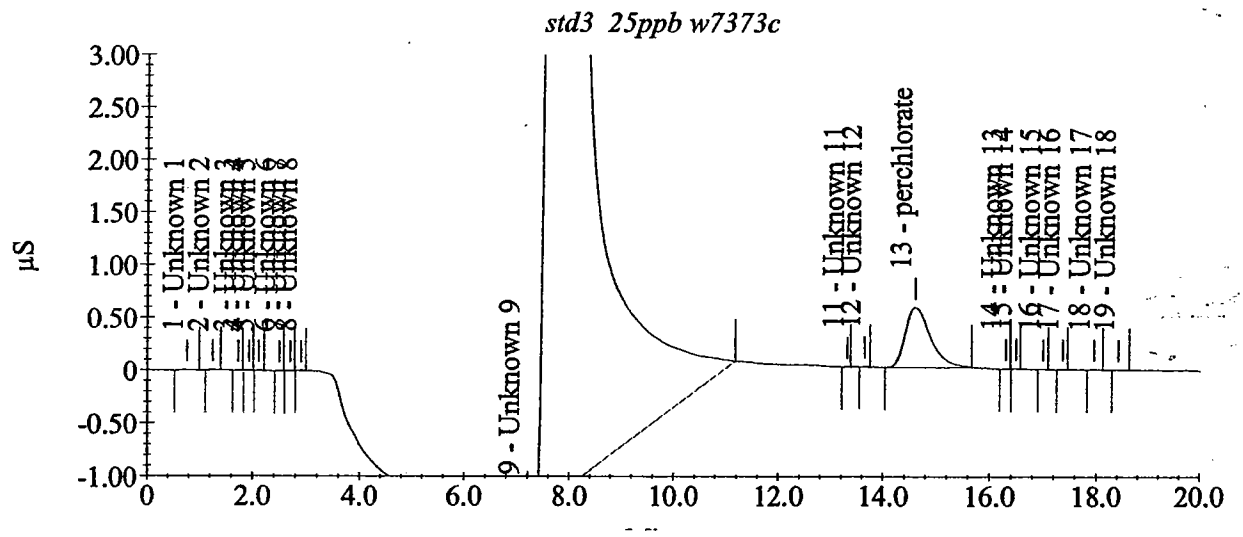
Calibration Update Report

Sample Name : std3 25ppb w7373c
Data File Name : C:\DATA\E314.0-9\STD3_004.DXD

Method File Name : C:\PeakNet\method\E314.0-9.met
Schedule File Name : c:\peaknet\schedule\schedule.sch
Date Time Collected : 07/31/2002 11:13:39 AM
Calibration Date : 07/31/2002 2:35:54 PM
System Operator : wei wang

Peak Information : All Components

Peak #	Component Name	Retention Time	Cal Response (Previous)	Cal Response (Measured)	Cal Response (New)
13	perchlorate	14.60	42545	187759	187759



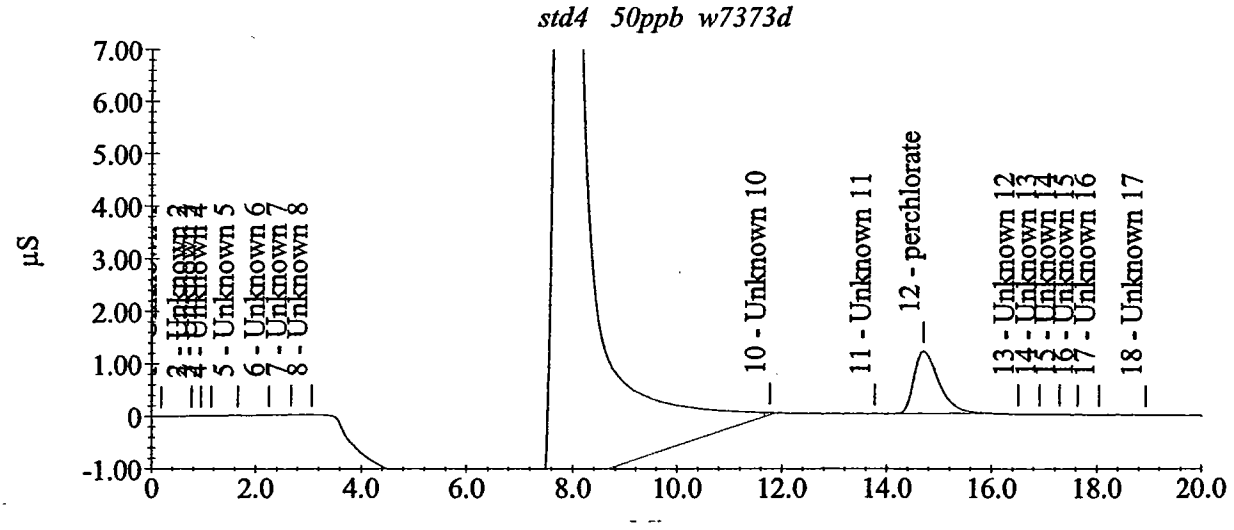
Calibration Update Report

Sample Name : std4 50ppb w7373d
Data File Name : C:\DATA\E314.0-9\STD4_005.DXD

Method File Name : C:\PeakNet\method\E314.0-9.met
Schedule File Name : c:\peaknet\schedule\schedule.sch
Date Time Collected : 07/31/2002 11:36:05 AM
Calibration Date : 07/31/2002 2:35:10 PM
System Operator : wei wang

Peak Information : All Components

Peak #	Component Name	Retention Time	Cal Response (Previous)	Cal Response (Measured)	Cal Response (New)
12	perchlorate	14.70	111034	390100	390100



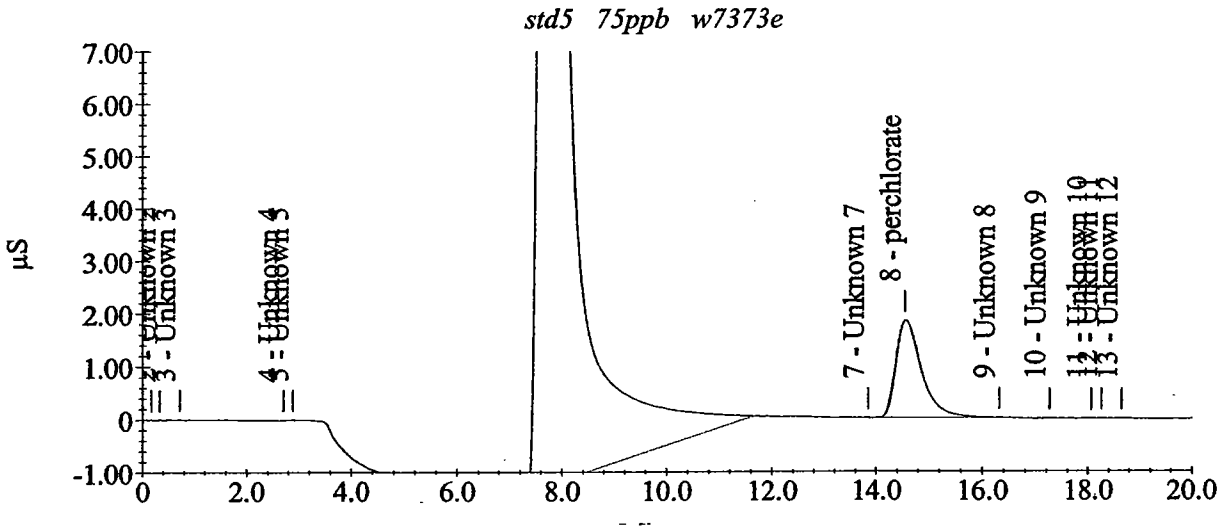
Calibration Update Report

Sample Name : std5 75ppb w7373e
Data File Name : C:\DATA\E314.0-9\STD5_006.DXD

Method File Name : C:\PeakNet\method\E314.0-9.met
Schedule File Name : c:\peaknet\schedule\schedule.sch
Date Time Collected : 07/31/2002 11:58:30 AM
Calibration Date : 07/31/2002 2:34:04 PM
System Operator : wei wang

Peak Information : All Components

Peak #	Component Name	Retention Time	Cal Response (Previous)	Cal Response (Measured)	Cal Response (New)
8	perchlorate	14.55	130423	619321	619321



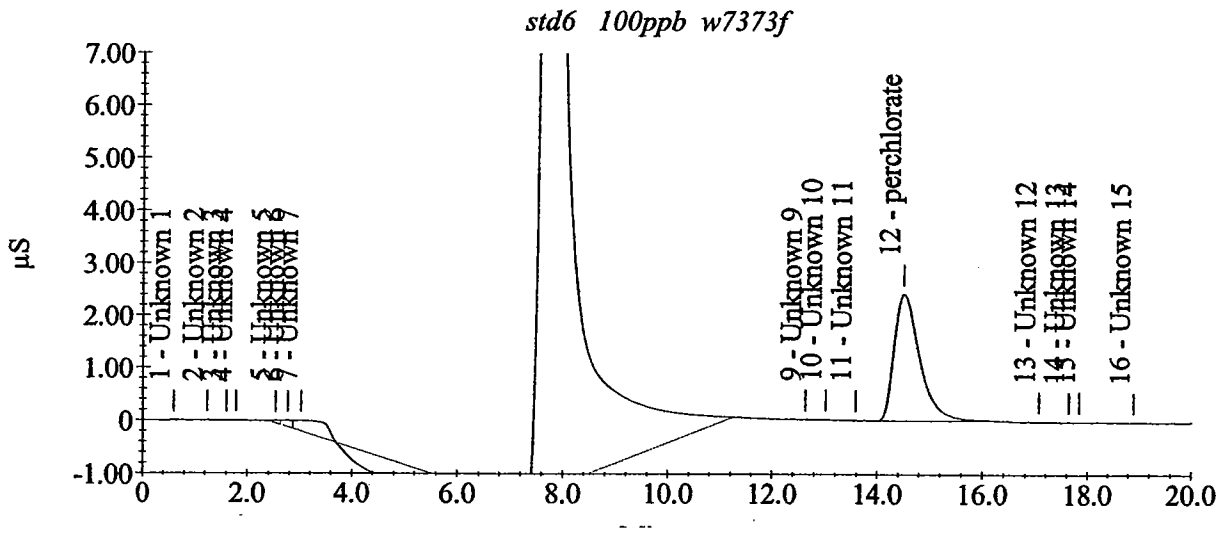
Calibration Update Report

Sample Name : std6 100ppb w7373f
Data File Name : C:\DATA\E314.0-9\STD6_007.DXD

Method File Name : C:\PeakNet\method\E314.0-9.met
Schedule File Name : c:\peaknet\schedule\schedule.sch
Date Time Collected : 07/31/2002 12:20:54 PM
Calibration Date : 07/31/2002 2:32:39 PM
System Operator : wei wang

Peak Information : All Components

Peak #	Component Name	Retention Time	Cal Response (Previous)	Cal Response (Measured)	Cal Response (New)
12	perchlorate	14.50	0	812152	812152



ne	Sample	Sample Type	Level	Method	Data File	Volume	Dilution
	##03w1345kw ipc 25ppb w7685b	Sample		e314.0-9.met	c:\data\03w1345k\w1345k ipc 25ppb	1	1
	MB	Sample		e314.0-9.met	c:\data\03w1345k\w1345k k01	1	1
	ccv 50ppb w7685c	Sample		e314.0-9.met	c:\data\03w1345k\w1345k q01	1	1
	lcs 25ppb w7373C	Sample		e314.0-9.met	c:\data\03w1345k\w1345k l01	1	1
	lcs 18ppb w7685D	Sample		e314.0-9.met	c:\data\03w1345k\w1345k j01	1	1
	ICCS 4ppb w7685a	Sample		e314.0-9.met	c:\data\03w1345k\w1345k iccs 4ppb	1	1
	1402-01 f=1	Sample		e314.0-9.met	c:\data\03w1345k\1402-01	1	1
	1402-02 f=1 - see reference	Sample		e314.0-9.met	c:\data\03w1345k\1402-02	1	1
	1402-03 f=1	Sample		e314.0-9.met	c:\data\03w1345k\1402-03	1	1
	1402-04 f=1	Sample		e314.0-9.met	c:\data\03w1345k\1402-04	1	1
	1402-05 f=1	Sample		e314.0-9.met	c:\data\03w1345k\1402-05_011.dxd	1	1
	1402-06 f=1 - see reference	Sample		e314.0-9.met	c:\data\03w1345k\1402-06_012.dxd	1	1
	1402-07 f=1	Sample		e314.0-9.met	c:\data\03w1345k\1402-07_013.dxd	1	1
	ccv 50ppb w7685c	Sample		e314.0-9.met	c:\data\03w1345k\w1345k q02_014.dxd	1	1
	ccb	Sample		e314.0-9.met	c:\data\03w1345k\w1345k k02_015.dxd	1	1
	1402-05 ms f=1	Sample		e314.0-9.met	c:\data\03w1345k\w1345k m01_016.dxd	1	1
	1402-05 msd f=1	Sample		e314.0-9.met	c:\data\03w1345k\w1345k n01_017.dxd	1	1
	1424-01 f=1	Sample		e314.0-9.met	c:\data\02w3475k\1424-01_018.dxd	1	1
	1424-02 f=1	Sample		e314.0-9.met	c:\data\03w1345k\1424-02_019.dxd	1	1
	1424-03 f=1	Sample		e314.0-9.met	c:\data\03w1345k\1424-03_020.dxd	1	1
	1424-04 f=1	Sample		e314.0-9.met	c:\data\03w1345k\1424-04_021.dxd	1	1
	1424-05 f=1	Sample		e314.0-9.met	c:\data\03w1345k\1424-05_022.dxd	1	1
	1424-06 f=1	Sample		e314.0-9.met	c:\data\03w1345k\1424-06_023.dxd	1	1
	1424-07 f=1	Sample		e314.0-9.met	c:\data\03w1345k\1424-07_024.dxd	1	1
	ccv 50ppb w7685c	Sample		e314.0-9.met	c:\data\03w1345k\w1345k q03_025.dxd	1	1
		Sample		aastopcl.met		1	1

Analyst Wei Way

Date 2/3/03

Instrument IC-K

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Line	Sample	Sample Type	Level	Method	Data File	Volume	Dilution
1	##03w1424kw ipc 25ppb w7685b	Sample		e314.0-9.met	c:\data\03w1424k\w1424k ipc 25ppb	1	1
2	MB	Sample		e314.0-9.met	c:\data\03w1424k\w1424k k01	1	1
3	ccv 50ppb w7685c	Sample		e314.0-9.met	c:\data\03w1424k\w1424k q01	1	1
4	lcs 25ppb w7373C	Sample		e314.0-9.met	c:\data\03w1424k\w1424k l01	1	1
5	lcs 18ppb w7685D	Sample		e314.0-9.met	c:\data\03w1424k\w1424k j01	1	1
6	ICCS 4ppb w7685a	Sample		e314.0-9.met	c:\data\03w1424k\w1424k iccs 4ppb	1	1
7	1444-02 f=1	Sample		e314.0-9.met	c:\data\03w1424k\1444-02	1	1
8	1444-02 ms f=1	Sample		e314.0-9.met	c:\data\03w1424k\w1424k m01	1	1
9	1444-02 msd f=1	Sample		e314.0-9.met	c:\data\03w1424k\w1424k n01	1	1
10	1402-02 f=1	Sample		e314.0-9.met	c:\data\03w1424k\1402-02	1	1
11	1402-06 f=1	Sample		e314.0-9.met	c:\data\03w1424k\1402-06	1	1
12	ccv 50ppb w7685c	Sample		e314.0-9.met	c:\data\03w1424k\w1424k q02	1	1
13	ccb	Sample		e314.0-9.met	c:\data\03w1424k\w1424k k02	1	1
14	1444-04 f=1	Sample		e314.0-9.met	c:\data\03w1424k\1444-04	1	1
15	1497-03 f=1	Sample		e314.0-9.met	c:\data\03w1424k\1497-03	1	1
16	1457-01 f=1	Sample		e314.0-9.met	c:\data\03w1424k\1457-01	1	1
17	1457-02 f=1	Sample		e314.0-9.met	c:\data\03w1424k\1457-02	1	1
18	1457-03 f=1	Sample		e314.0-9.met	c:\data\03w1424k\1457-03	1	1
19	1457-04 f=1	Sample		e314.0-9.met	c:\data\03w1424k\1457-04	1	1
20	1457-05 f=1	Sample		e314.0-9.met	c:\data\03w1424k\1457-05	1	1
21	1501-01 f=1	Sample		e314.0-9.met	c:\data\03w1424k\1501-01	1	1
22	1501-02 f=1	Sample		e314.0-9.met	c:\data\03w1424k\1501-02	1	1
23	ccv 50ppb w7685c	Sample		e314.0-9.met	c:\data\03w1424k\w1424k q03	1	1
24	ccb	Sample		e314.0-9.met	c:\data\03w1424k\w1424k k03	1	1
25	1501-03 f=1	Sample		e314.0-9.met	c:\data\03w1424k\1501-03	1	1
26	1501-04 f=1	Sample		e314.0-9.met	c:\data\03w1424k\1501-04	1	1
27	1501-06 f=1	Sample		e314.0-9.met	c:\data\03w1424k\1501-06	1	1
28	1501-07 f=1	Sample		e314.0-9.met	c:\data\03w1424k\1501-07	1	1
29	1501-08 f=1	Sample		e314.0-9.met	c:\data\03w1424k\1501-08	1	1
30	1501-02 ms f=1	Sample		e314.0-9.met	c:\data\03w1424k\w1424k m02	1	1
31	1501-02 msd f=1	Sample		e314.0-9.met	c:\data\03w1424k\w1424k n02	1	1
32	1444-01 f=1	Sample		e314.0-9.met	c:\data\03w1424k\1444-01	1	1
33	1444-03 f=1	Sample		e314.0-9.met	c:\data\03w1424k\1444-03	1	1
34	ccv 50ppb w7685c	Sample		e314.0-9.met	c:\data\03w1424k\w1424k q03	1	1
35	ccv 50ppb w7685c	Sample		e314.0-9.met	c:\data\02w3475k\w1424k q04_a035.dxd	1	1
36	1444-03 f=2	Sample		e314.0-9.met	c:\data\02w3475k\1444-03_036.dxd	1	2
37	ccv 50ppb w7685c	Sample		e314.0-9.met	c:\data\03w1424k\w1424k q05_037.dxd	1	1
38		Sample		aastopcl.met		1	1

Analyst Wei Wang

Date 2/10-11/03

Instrument IC-K

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ıe	Sample	Sample Type	Level	Method	Data File	Volume	Dilution	Weight	Int. Std.
	mb	Sample		e314.0-9.met	mb_001.dxd	1	1	1	1
	std1 4ppb w7373a	Calibration	1	e314.0-9.met	std1_002.dxd	1	1	1	1
	std2 10ppb w7373b	Calibration	2	e314.0-9.met	std2_003.dxd	1	1	1	1
	std3 25ppb w7373c	Calibration	3	e314.0-9.met	std3_004.dxd	1	1	1	1
	std4 50ppb w7373d	Calibration	4	e314.0-9.met	std4_005.dxd	1	1	1	1
	std5 75ppb w7373e	Calibration	5	e314.0-9.met	std5_006.dxd	1	1	1	1
	std6 100ppb w7373f	Calibration	6	e314.0-9.met	std6_007.dxd	1	1	1	1
	icv 50ppb w7319c	Sample		e314.0-9.met	icv_a008.dxd	1	1	1	1
	icb	Sample		e314.0-9.met	icb	1	1	1	1
	3984-15 f=1	Sample		e314.0-9.met	3984-15	1	1	1	1
	3843-33 f=1	Sample		e314.0-9.met	3843-33	1	1	1	1
	3984-15 f=1	Sample		e314.0-9.met	3984-15a	1	1	1	1
	3843-33 f=1	Sample		e314.0-9.met	3843-33a	1	1	1	1
	3984-15 f=1	Sample		e314.0-9.met	3984-15b	1	1	1	1
	3843-33 f=1	Sample		e314.0-9.met	3843-33b	1	1	1	1

Analyst Wei Wang

Date 7/31/02

Instrument IC-K

Applied P & Ch Laboratory

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

Chromium (VI) (7196) Worksheet

Batch # 03W1308 Matrix: W [Holding Time: 24 hours!!] Test Date: 01/30/03 Analyst: ww

Lot #: Reagent Water _____ Diphenylcazide solution _____ Test Time: 17:39 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 RF=	
STD-3	W-	× / = mg/L			C.C.= 0.9997 (≥ 0.995)	A=0.000+0.8
STD-4	W-	× / = mg/L			RSD= % (≤ 15%)	
STD-5	W-	× / = mg/L			Ref. page 148	
STD-6	W-	× / = mg/L				

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 $C' = A/RF$	C (Sample) $C = f_1 f_2 C'$	Anc N
CCV	Lot: W- 7076	Expected Conc.:	×	/ = 0.25 mg/L	0.214	0.2560 mg/L	REC. %	90-1
Method Blank	Bl. Lot: 7111		$/X_0$ = 1	95.0/ =	0.000	mg/L	0.00 ppm	
LCS1	Bl. Lot:		$/X_0$ =	95.0/ =	0.203	mg/L	0.2428 ppm	--
Sample-1	1391-1	1402-1	$/X_0$ =	95.0/	0.015 -0.009=0.006	0.007 mg/L	0.236 ppm	Jo1
MS on S-1	(MS) ww 1/30/03 -2	-2	$/X_0$ =	95.0/ 0.011	0.008 0.0024 0.199 ww	0.016 mg/L	0.2380 ppm	
MSD on S-1	(MSD) -2	-3	$/X_0$ =	95.0/	0.003 0.195 1/30/03	0.004 mg/L	0.2333 ppm	
Sample 2	1391-2	-4	$/X_0$ =	95.0/	0.003 0.004	0.004 mg/L	0.005 ppm	
Sample 3		-5	$/X_0$ =	95.0/ =	0.008-0.003=0.005	mg/L	0.006 ppm	
Sample 4	(MS)	-5	$/X_0$ =	95.0/ =	0.199	mg/L	0.2380 ppm	
Sample 5	(MSD)	-5	$/X_0$ =	95.0/ =	0.203	mg/L	0.2428 ppm	
Sample 6		-6	$/X_0$ =	95.0/ =	0.017-0.012=0.005	mg/L	0.006 ppm ww 1/30/03	
Sample 7		-7	$/X_0$ =	95.0/ =	0.006	mg/L	0.007 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: 7111		$/X_0$ = 1	95.0/ =	0.207	mg/L	0.2476 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	0.25 mg/L		$/X_0$ =	95.0/ =	0.205	mg/L	0.245 ppm	

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

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

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

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

Chromium (VI) (7196) Worksheet

Batch # 03W1295 Matrix: W [Holding Time: 24 hours!!] Test Date: 1/29/03 Analyst: BN

Lot #: Reagent Water _____ Diphenylcazide solution _____ Test Time: _____ SOP: G-22

Calibration	STD Lot #	$C_{std} \times V_{std}/V_f = C_i$	A_i	$RF_i = A_i/C_i$	Calibration results	Note
STD-1	W-7191	× / =0.000mg/L	0.000		Least Square [RF]=	Cal. Code:
STD-2	W-	× / =0.025mg/L	0.006		Average $\bar{RF}$=	A=0.000+0.836C
STD-3	W-	× / =0.050mg/L	0.041		C.C.=0.9977 (≥ 0.995)	
STD-4	W-	× / =0.125mg/L	0.109		RSD= % (≤ 15%)	
STD-5	W-	× / =0.250mg/L	0.214		Ref. page	
STD-6	W-	× / =0.500mg/L	0.415		A=0.003+Bn 1/29/03	

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

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

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

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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 latest version of APCL Technical Handbook Vol. 2

APCL

Applied Physics & Chemistry Laboratory

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

March 6, 2003

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

Dear Leo Williamson,

This package contains samples in our Service ID 03-1369 and your project : 04-442810 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

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-21 0001

GEOFON's LAB COORDINATOR: Brad Shojaee	LAB COORDINATOR'S PHONE: (909) 396-7662	LAB COORDINATOR'S FAX: (909) 396-1455	LABORATORY SERVICE ID:	LABORATORY CONTACT: Kenny Chan	MAIL REPORT (COMPANY NAME): GEOFON, INC.
PROJECT NAME: JPL GW Monitoring	PROJECT LOCATION: MW-21 - Hahamongna Park	PROJECT NUMBER: 04-442810	LABORATORY PHONE: (909) 590-1828	LABORATORY FAX: (909) 590-1498	RECIPIENT NAME: Leo W. Williamson
PROJECT CONTACT: Leo W. Williamson	PROJECT PHONE NUMBER: (714) 920-8729	PROJECT FAX: (909) 396-1455	LABORATORY ADDRESS: 13760 Magnolia Ave		ADDRESS: 22632 Golden Springs Dr, #270
PROJECT ADDRESS: 4800 Oak Grove Dr.	CITY, STATE AND ZIPCODE: Pasadena, CA.	CLIENT: US NAVY SWDIV	CITY, STATE AND ZIPCODE: Chino, CA. 91710		CITY, STATE AND ZIPCODE: Diamond Bar, CA 91765
PROJECT MANAGER: Asrar Faheem	PROJECT MANAGER'S PHONE: (909) 396-7662	PROJECT MANAGER'S FAX: (909) 396-7662			

Item	Sample Identifier	Matrix	Date	Time	Preserved	# of Cont.	QC Level	T.A.T	Analyses: 524.2 (VOCs)	314.0 (Perchlorate)	200.8 (Total Chromium)	7196 (Hex Chrome)					Comments
1	MW-21-5	H_2O	1/29/03	840	HCl / HNO_3 / NONE	3+1+1	III	NORMAL	X	X	X	X					NOTE: 314.0 & 7196 Samples are in the same 500ml poly.
2	MW-21-4			915					X	X	X	X					
3	MW-21-3			1245					X	X	X	X					
4	MW-21-2			1320					X	X	X	X					
5	MW-21-1			1400					X	X	X	X					
6																	
7	TB-1-1/29/03	H_2O	N/A	N/A	HCl	2	III	NORMAL	X								
8	SOURCE BLANK-1		1/29/03	1100	HCl	3			X								
9	EB-1-1/29/03			1410	HCl / HNO_3 / NONE	3+1+1			X	X	X	X					
10																	

1369

SAMPLES COLLECTED BY: Leo W. Williamson

COURIER AND AIR BILL NUMBER:

COOLER TEMPERATURE UPON RECEIPT

RELINQUISHED BY	RECEIVED BY	DATE	TIME	SAMPLE'S CONDITION UPON RECEIPT
Leo W. Williamson	Richard Atmar	1-29-03	1500	
Richard Atmar	[illegible]	1-29-03	1600	

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

APCL Analytical Report

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

Service ID #: 801-031369
Collected by: Leo Williamson
Collected on: 01/29/03

Received: 01/29/03
Extracted: N/A
Tested: 01/29-02/03/03
Reported: 02/05/03

Sample Description: Water from MW-21-Hahamonga.
Project Description: 04-442810 JPL

Analysis of Water Samples

Component Analyzed	Method	Unit	PQL	Analysis Result EB-1-1/29/03 03-01369-1	MW-21-1 03-01369-2	MW-21-2 03-01369-3	MW-21-3 03-01369-4
CHROMIUM (VI)	7196	mg/L	0.01	<0.01	<0.01	<0.01	<0.01
Dilution Factor				1	1	1	1
PERCHLORATE	314.0	μg/L	4	<4	3.1J	<4	1.9J
VOLATILE ORGANICS							
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	0.73 [a]	<0.73	<0.73	<0.73	<0.73
2-BUTANONE	524.2	μg/L	10	<10	<10	<10	<10
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
CARBON TETRACHLORIDE	524.2	μg/L	0.5	<0.5	<0.5	<0.5	<0.5
CHLOROBENZENE	524.2	μg/L	0.5	<0.5	<0.5	<0.5	<0.5
CHLORODIBROMOMETHANE	524.2	μg/L	0.5	<0.5	<0.5	<0.5	<0.5
CHLOROETHANE	524.2	μg/L	0.5	<0.5	<0.5	<0.5	<0.5
CHLOROFORM	524.2	μg/L	0.5	<0.5	1.0	<0.5	0.9
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	0.54 [a]	<0.54	<0.54	<0.54	<0.54
1,2-DIBROMOETHANE (EDB)	524.2	μg/L	0.5	<0.5	<0.5	<0.5	<0.5
DIBROMOMETHANE	524.2	μg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,2-DICHLOROBENZENE	524.2	μg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,3-DICHLOROBENZENE	524.2	μg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,4-DICHLOROBENZENE	524.2	μg/L	0.5	<0.5	<0.5	<0.5	<0.5
DICHLORODIFLUOROMETHANE	524.2	μg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,1-DICHLOROETHANE	524.2	μg/L	0.5	<0.5	0.5	<0.5	<0.5
1,2-DICHLOROETHANE	524.2	μg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,1-DICHLOROETHENE	524.2	μg/L	0.5	<0.5	<0.5	<0.5	<0.5
CIS-1,2-DICHLOROETHENE	524.2	μg/L	0.5	<0.5	<0.5	<0.5	0.3J

Applied P & Ch Laboratory
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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result EB-1-1/29/03 03-01369-1	MW-21-1 03-01369-2	MW-21-2 03-01369-3	MW-21-3 03-01369-4
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	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
4-METHYL-2-PENTANONE (MIBK)	524.2	μg/L	10	<10	<10	<10	<10
METHYL-T-BUTYL ETHER (MTBE)	524.2	μg/L	1	<1	<1	<1	<1
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 (PCE)	524.2	μg/L	0.5	<0.5	0.7	1.1	1.9
TOLUENE	524.2	μg/L	0.5	0.3J	<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 (TCE)	524.2	μg/L	0.5	<0.5	3.6	0.5	1.1
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
TRICHLOROTRIFLUOROETHANE	524.2	μg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,2,4-TRIMETHYLBENZENE	524.2	μg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,3,5-TRIMETHYLBENZENE	524.2	μg/L	0.5	<0.5	<0.5	<0.5	<0.5
VINYL CHLORIDE	524.2	μg/L	0.5	<0.5	<0.5	<0.5	<0.5
O-XYLENE	524.2	μg/L	0.5	<0.5	<0.5	<0.5	<0.5
M/P-XYLENE	524.2	μg/L	0.5	<0.5	<0.5	<0.5	<0.5

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result MW-21-4 03-01369-5	MW-21-5 03-01369-6	Source Blank-1 03-01369-7	TB-1-1/29/03 03-01369-8
CHROMIUM (VI)	7196	mg/L	0.01	<0.01	<0.01	-	-
Dilution Factor				1	1	1	1
PERCHLORATE	314.0	µg/L	4	1.8J	<4	-	-
VOLATILE ORGANICS							
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	0.73 [a]	<0.73	<0.73	<0.73	<0.73
2-BUTANONE	524.2	µg/L	10	<10	<10	<10	<10
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
CARBON TETRACHLORIDE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
CHLOROBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
CHLORODIBROMOMETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
CHLOROETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
CHLOROFORM	524.2	µg/L	0.5	1.7	2.5	<0.5	<0.5
CHLOROMETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
2-CHLOROTOLUENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
4-CHLOROTOLUENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,2-DIBROMO-3-CHLOROPROPANE	524.2	µg/L	0.54 [a]	<0.54	<0.54	<0.54	<0.54
1,2-DIBROMOETHANE (EDB)	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
DIBROMOMETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,2-DICHLOROBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,3-DICHLOROBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,4-DICHLOROBENZENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
DICHLORODIFLUOROMETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,1-DICHLOROETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,2-DICHLOROETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,1-DICHLOROETHENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
CIS-1,2-DICHLOROETHENE	524.2	µg/L	0.5	0.7	2.0	<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

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result MW-21-4 03-01369-5	MW-21-5 03-01369-6	Source Blank-1 03-01369-7	TB-1-1/29/03 03-01369-8
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	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
4-METHYL-2-PENTANONE (MIBK)	524.2	μg/L	10	<10	<10	<10	<10
METHYL-T-BUTYL ETHER (MTBE)	524.2	μg/L	1	<1	<1	<1	<1
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 (PCE)	524.2	μg/L	0.5	5.2	9.6	<0.5	<0.5
TOLUENE	524.2	μg/L	0.5	<0.5	<0.5	0.5J	<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 (TCE)	524.2	μg/L	0.5	0.3J	0.7	<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
TRICHLOROTRIFLUOROETHANE	524.2	μg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,2,4-TRIMETHYLBENZENE	524.2	μg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,3,5-TRIMETHYLBENZENE	524.2	μg/L	0.5	<0.5	<0.5	<0.5	<0.5
VINYL CHLORIDE	524.2	μg/L	0.5	<0.5	<0.5	<0.5	<0.5
O-XYLENE	524.2	μg/L	0.5	<0.5	<0.5	<0.5	<0.5
M/P-XYLENE	524.2	μg/L	0.5	<0.5	<0.5	<0.5	<0.5

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

Respectfully submitted,

Dominic Lau
Laboratory Director
Applied P & Ch Laboratory

Level C Data Package Deliverables

General Information

Project: 04-4428.10 JPL

APCL Service ID: 03-1369

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Case Narrative

Project: JPL/MW-21-Hahamonga./04-442810

For GEOFON, Inc.

APCL Service No: 03-1369

1. Sample Identification

The sample identifications are listed in the following table:

GEOFON, Inc. Sample ID	APCL Sample ID
MW-21-5	03-01369-6
MW-21-4	03-01369-5
MW-21-3	03-01369-4
MW-21-2	03-01369-3
MW-21-1	03-01369-2
TB-1-1/29/03	03-01369-8
Source Blank-1	03-01369-7
EB-1-1/29/03	03-01369-1

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

Applied P & Ch Laboratory
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Sample Receiving Checklist

APCL ServiceID: 1369 **Client Name/Project:** Geotron / JPL

1. Sample Arrival

Date/Time Received 1/29/03 1600 Date/Time Opened 1/29/03 1600 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 8
☑ CoC/Docs Zip-Locked under lid? ☐ Compos.#: ___ ☑ #Samples OK? ____
☐ Discrepancies? ☐ Client notified? ☐ Response (attach docs): ____

3. Shipping Container/Cooler

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

Temp °C 4.5 ____ ____ ____ ____ ____

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

Cooler Custody Seal? ☐ Absent ☐ Intact ☐ Tampered?

4. Sample Preservation

☐ **pH <2** ☐ pH >12

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

5. Holding-time Requirements

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

6. Sample Container Condition

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

7. Turn Around Time

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

8. Sample Matrix

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

9. Pre-Login Check List Completed & OK?

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

Received/Checked by: Kenny Chan Date: 29 Jan 2003 Time: 7:35 a.m.

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

DocumentFile: [neal.texfiles]smprcl.tex.

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Sample Login: Check List

03-01369 (0470_ 103) (2202777_ 103)

01/29/03

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 #:	*04-442810*
☐	Billing Information	P.O. #:	
		Bill Address:	*22632 Golden Spring Dr Ste 270 ,Diamond Bar ,CA 91765*
		Lab Project ID:	
		Client Database #:	203 (LP2/5/03)
☐	Receiving Information	Who Received Sample?	*Kenny Chan*
		Receiving Date/Time:	*01/29/03 1600*
		COC No.	
☐	Shipping Information	Shipping Company	*APCL pick up*
		Packing Information:	*Cooler/Ice Chester*
		Cooler Temperature:	*4.5 °C*
☐	Container Information	Container Provider:	*Client*
☐	Sampling Information	Sampling Person:	
		Sampling Company:	*Client*
☐	Turn-Around-Time Option:		*Rush 5 working day(s)*
☐	QC Option:		*NEESA D*
☐	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-21-5	VOC	03-01369-6-α	W	V	C	40	3	G	012903	N	0	7	☐
	MW-21-5	CRVI/Perch	03-01369-6-β	W	P		500	1	G	012903	N	0	7	☐
2	MW-21-4	VOC	03-01369-5-α	W	V	C	40	3	G	012903	N	0	7	☐
	MW-21-4	CRVI/Perch	03-01369-5-β	W	P		500	1	G	012903	N	0	7	☐
3	MW-21-3	VOC	03-01369-4-α	W	V	C	40	3	G	012903	N	0	7	☐
	MW-21-3	CRVI/Perch	03-01369-4-β	W	P		500	1	G	012903	N	0	7	☐
4	MW-21-2	VOC	03-01369-3-α	W	V	C	40	3	G	012903	N	0	7	☐
	MW-21-2	CRVI/Perch	03-01369-3-β	W	P		500	1	G	012903	N	0	7	☐
5	MW-21-1	VOC	03-01369-2-α	W	V	C	40	3	G	012903	N	0	7	☐
	MW-21-1	CRVI/Perch	03-01369-2-β	W	P		500	1	G	012903	N	0	7	☐
6	TB-1-1/29/03	VOC	03-01369-8	W	V	C	40	2	G	012903	N	0	7	☐
7	Source Blank-1	VOC	03-01369-7	W	V	C	40	3	G	012903	N	0	7	☐
8	EB-1-1/29/03	VOC	03-01369-1-α	W	V	C	40	3	G	012903	N	0	7	☐
	EB-1-1/29/03	CRVI/Perch	03-01369-1-β	W	P		500	1	G	012903	N	0	7	☐

Part 3: Analysis Information

Test Items:

☐	*524.2*	Volatile Organic Compounds
☐	*7196*	Chromium (VI)
☐	*300.0*	Perchlorate, low level
☐	*200.7/6010*	Sodium, Na, by ICP
☐	*200.7/6010*	Potassium, K, by ICP
☐	*200.7/6010*	Calcium, Ca, by ICP
☐	*200.7/6010*	Magnesium, Mg, by ICP
☐	*200.7/6010*	Iron, Fe, by ICP
☐	*300.0*	Sulfate (SO_4^{--}), by IC
☐	*300.0/SM4500NO3C*	Nitrate (NO_3^-) as N by IC
☐	*300.0*	Chloride Cl^- by IC
☐	*SM2320B*	Carbonate
☐	*SM2320B*	Bicarbonate
☐	*9040/150.1*	pH
☐	*160.1*	Solids, Total Dissolved (TDS)
☐	*206.2/7060*	Arsenic, As, by GFAA
☐	*310.1*	Alkalinity
☐	*PAH-SIM*	PAH (NOAA)

Seq. #	Client"s Sample ID (as given on COC)	Sample Sub-ID	APCL Sample ID	Matrix	524.2	CHROMIUM	PERCHL	NA	K	CA	MG	FE	
1	MW-21-5	VOC	03-01369-6-α	W	X								☐
	MW-21-5	CRVI/Perch	03-01369-6-β	W		X	X						☐
2	MW-21-4	VOC	03-01369-5-α	W	X								☐
	MW-21-4	CRVI/Perch	03-01369-5-β	W		X	X						☐
3	MW-21-3	VOC	03-01369-4-α	W	X								☐
	MW-21-3	CRVI/Perch	03-01369-4-β	W		X	X						☐
4	MW-21-2	VOC	03-01369-3-α	W	X								☐
	MW-21-2	CRVI/Perch	03-01369-3-β	W		X	X						☐
5	MW-21-1	VOC	03-01369-2-α	W	X								☐
	MW-21-1	CRVI/Perch	03-01369-2-β	W		X	X						☐
6	TB-1-1/29/03	VOC	03-01369-8	W	X								☐
7	Source Blank-1	VOC	03-01369-7	W	X								☐
8	EB-1-1/29/03	VOC	03-01369-1-α	W	X								☐
	EB-1-1/29/03	CRVI/Perch	03-01369-1-β	W		X	X						☐

Seq. #	Client"s Sample ID (as given on COC)	Sample Sub-ID	APCL Sample ID	Matrix	SO4	NO3	CL	CARBONATE	BICARBON	PH	TDS	AS	
1	MW-21-5	VOC	03-01369-6-α	W									☐
	MW-21-5	CRVI/Perch	03-01369-6-β	W									☐
2	MW-21-4	VOC	03-01369-5-α	W									☐
	MW-21-4	CRVI/Perch	03-01369-5-β	W									☐
3	MW-21-3	VOC	03-01369-4-α	W									☐
	MW-21-3	CRVI/Perch	03-01369-4-β	W									☐
4	MW-21-2	VOC	03-01369-3-α	W									☐
	MW-21-2	CRVI/Perch	03-01369-3-β	W									☐
5	MW-21-1	VOC	03-01369-2-α	W									☐
	MW-21-1	CRVI/Perch	03-01369-2-β	W									☐
6	TB-1-1/29/03	VOC	03-01369-8	W									☐
7	Source Blank-1	VOC	03-01369-7	W									☐
8	EB-1-1/29/03	VOC	03-01369-1-α	W									☐
	EB-1-1/29/03	CRVI/Perch	03-01369-1-β	W									☐

Seq. #	Client"s Sample ID (as given on COC)	Sample Sub-ID	APCL Sample ID	Matrix	ALKALIN	SIM	
1	MW-21-5	VOC	03-01369-6-α	W			☐
	MW-21-5	CRVI/Perch	03-01369-6-β	W			☐
2	MW-21-4	VOC	03-01369-5-α	W			☐
	MW-21-4	CRVI/Perch	03-01369-5-β	W			☐
3	MW-21-3	VOC	03-01369-4-α	W			☐
	MW-21-3	CRVI/Perch	03-01369-4-β	W			☐
4	MW-21-2	VOC	03-01369-3-α	W			☐

	MW-21-2	CRVI/Perch	03-01369-3-β	W	☐
5	MW-21-1	VOC	03-01369-2-α	W	☐
	MW-21-1	CRVI/Perch	03-01369-2-β	W	☐
6	TB-1-1/29/03	VOC	03-01369-8	W	☐
7	Source Blank-1	VOC	03-01369-7	W	☐
8	EB-1-1/29/03	VOC	03-01369-1-α	W	☐
	EB-1-1/29/03	CRVI/Perch	03-01369-1-β	W	☐

☐ Client"s Requirement: **PLEASE ~~RUN MS/MSD ON SAMPLE #~~** EDC 1/29/03

☐ **IF ENOUGH SAMPLE**

☐ **FOR 8270SIM, PLEASE INCLUDE 1,4-DIOXANE**

Login By En-Yu Paul Kou

Check By PDK