

**Level D Data Package Deliverables**

# **General Information**

**Project: 010HW019 JPL**

**APCL Service ID: 02-1355**



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

# Case Narrative

## Project: JPL/00HW019

For SOTA Environmental

APCL Service No: 02-1355

### 1. Sample Identification

The sample identifications are listed in the following table:

SOTA Environmental Sample ID	APCL Sample ID
TB-11	02-01355-7
MW-11-5	02-01355-6
MW-11-4	02-01355-5
MW-11-3	02-01355-4
MW-11-2	02-01355-3
MW-11-1	02-01355-2
ER-11	02-01355-1

### 2. Analytical Methodology

Samples are analyzed by EPA methods

- 524.2 (Volatile Organic Compounds ),
- 7196 (Chromium (VI) ),
- E314 (Perchlorate, low level ),
- 200.7 (Metals by ICP ),
- 300.0 (Nitrate (NO<sub>3</sub><sup>-</sup>) as N by IC ),
- 300.0 (Chloride by IC ),
- 300.0 (Sulfate by IC ),
- SM2320B (Carbonate ),
- SM2320B (Bicarbonate ),
- 150.1 (pH ),
- 160.1 (Solids, Total Dissolved (TDS) ),
- 200.9 (Arsenic, As, by GFAA ),
- 310.1 (Alkalinity ),

### 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,



Kevin Xie, Ph.D.,  
QA/QC Director  
Applied P & Ch Laboratory





# Applied P & Ch Laboratory

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

# Chain of Custody

Please Print in pen Page 2 of 2

Client: SOTA ENVIR. TECH., INC.

Contact: MUEL SAYRE

Tel #: 858-485-8100 Fax #: 858-485-0812

Address: 16835 W. BERNARDO DR. #212

City: SAN DIEGO

State: CA

Zip code: 92127

Bill to: SOTA

Job # 00HWO19 P.O. #

Project Address PASADENA, CALIFORNIA APCI Quotation #

Due Date:  regular  rush: \_\_\_ days \_\_\_ hours Sampled by: MES/JNT

Field Sample ID No.	Sample Description	Date Collected	Sample Matrix	Preservation	# of Containers	Analysis Items		Remarks
						White - With report Yellow - Lab copy Pink - Originator	White - With report Yellow - Lab copy Pink - Originator	
MW-11-1	MW-11-1	1/25/02 12:33	WATER	—	1	<input checked="" type="checkbox"/> VOCs (52+2) <input checked="" type="checkbox"/> Pb (200.9) <input checked="" type="checkbox"/> Cu (71.6) <input checked="" type="checkbox"/> Cd (15.1) <input checked="" type="checkbox"/> Ni (71.6) <input checked="" type="checkbox"/> Zn (200.8) <input checked="" type="checkbox"/> Mn (52.0) <input checked="" type="checkbox"/> Cr (200.9)	<input checked="" type="checkbox"/> Total Cr (400.0) <input checked="" type="checkbox"/> Ni (71.6) <input checked="" type="checkbox"/> Cr (71.6) <input checked="" type="checkbox"/> Pb (200.9) <input checked="" type="checkbox"/> Cd (15.1) <input checked="" type="checkbox"/> Zn (200.8) <input checked="" type="checkbox"/> Mn (52.0) <input checked="" type="checkbox"/> Cr (200.9)	
ER-11	EQUIP. RINSATE	10:33		HCl	3			
				HNO <sub>3</sub>	2			
				—	1			
								1355

QC Requirement:  Regular;  QA/QC Report;  WIP;  Raw Data;  Extended Raw Data  CLP;  ACE  AFCEE  NEBSA \_\_\_ (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 MUEL SAYRE Date/Time 1/25/02 1342 Received by [Signature] Date/Time 1/25/02 1342

Relinquished by \_\_\_ Date/Time \_\_\_ Received by \_\_\_ Date/Time \_\_\_

Applied P & Ch Laboratory

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Sample Receiving Checklist

APCL ServiceID: 1355 Client Name/Project: Sota

1. Sample Arrival

Date/Time Received 1/25/02 1342 Date/Time Opened 1/25/02 1342 By (name): Kenny
Custody Transfer: [X] Client [ ] Golden State [ ] UPS [ ] US Mail [ ] FedEx [ ] APCL Empl:

2. Chain-of-Custody (CoC)

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

3. Shipping Container/Cooler

[X] Cooler Used? # of 1 Cooled by: [X] Ice [ ] Blue Ice [ ] Dry Ice [ ] None
Temp °C 39
(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 [ ] CrVI 24hr [ ] NO3 48hr [ ] BOD 48hr
[ ] Cl2 ASAP [ ] Turbidity 48hr [ ] DO ASAP [ ] Fe(II) ASAP
[ ] HT Expired? [ ] Client notified?

6. Sample Container Condition

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

7. Turn Around Time

[ ] RUSH TAT: [X] Std (7-10 days) [ ] Not Marked

8. Sample Matrix

[ ] Drinking H2O [X] Other Liq [ ] Soil [ ] Wipe [ ] Polymer [ ] Air [ ] Other:
[ ] Ground H2O [ ] Sludge [ ] Filter [ ] Oil/Petro [ ] Paint [ ] W. Water [ ] Extract [ ] Unknown

9. Pre-Login-Check List Completed & OK?

[X] ALL OK? (if not, attach docs) [ ] Client Contact? (Name: ) Date/Time:
Received/Checked by: [Signature] Date: 25 Jan 2002 Time: 9:15 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.

Applied P & Ch Laboratory

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# Sample Login: Check List

02-01355 (1288\_ 309) (4858100\_ 309)

01/25/02

## Part 1: General Information

- 
- |                          |                          |                      |                                                            |
|--------------------------|--------------------------|----------------------|------------------------------------------------------------|
| <input type="checkbox"/> | Company Information      | Name:                | <i>SOTA Environmental</i>                                  |
|                          |                          | Address:             | <i>16835 W. Bernardo Dr, Ste. 212 ,San Diego ,CA 92127</i> |
| <input type="checkbox"/> | Project Information      | Project Description: | <i>JPL</i>                                                 |
|                          |                          | Project #:           | <i>00HW019</i>                                             |
| <input type="checkbox"/> | Billing Information      | P.O. #:              |                                                            |
|                          |                          | Bill Address:        | <i>16835 W. Bernardo Dr, Ste. 212 ,San Diego ,CA 92127</i> |
|                          |                          | Lab Project ID:      | <i>2002_0002</i>                                           |
|                          |                          | Client Database #:   | <i>01</i>                                                  |
| <input type="checkbox"/> | Receiving Information    | Who Received Sample? | <i>Kenny</i>                                               |
|                          |                          | Receiving Date/Time: | <i>01/25/02 1342</i>                                       |
|                          |                          | COC No.              |                                                            |
| <input type="checkbox"/> | Shipping Information     | Shipping Company     | <i>by Client</i>                                           |
|                          |                          | Packing Information: | <i>Cooler/Ice Chester</i>                                  |
|                          |                          | Cooler Temperature:  | <i>3.9 °C</i>                                              |
| <input type="checkbox"/> | Container Information    | Container Provider:  | <i>Client</i>                                              |
| <input type="checkbox"/> | Sampling Information     | Sampling Person:     |                                                            |
|                          |                          | Sampling Company:    | <i>Client</i>                                              |
| <input type="checkbox"/> | Turn-Around-Time Option: |                      | <i>Rush 5 working day(s)</i>                               |
| <input type="checkbox"/> | QC Option:               |                      | <i>NEESA D</i>                                             |
| <input type="checkbox"/> | Disposal Option:         |                      | <i>Not specify</i>                                         |
- 

053503

## 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	TB-11 ✓	524.2	02-01355-7	W	V	C	40	2	G	012502	N	0	7 <input type="checkbox"/>
2	MW-11-5 ✓	524.2	02-01355-6-α	W	V	C	40	3	G	012502	N	0	7 <input type="checkbox"/>
	MW-11-5	Metals	02-01355-6-β	W	P	N	500	1	G	012502	N	0	7 <input type="checkbox"/>
	MW-11-5	300	02-01355-6-γ	W	P		500	1	G	012502	N	0	7 <input type="checkbox"/>
3	MW-11-4 ✓	524.2	02-01355-5-α	W	V	C	40	3	G	012502	N	0	7 <input type="checkbox"/>
	MW-11-4	Metals	02-01355-5-β	W	P	N	500	1	G	012502	N	0	7 <input type="checkbox"/>
	MW-11-4	300	02-01355-5-γ	W	P		500	1	G	012502	N	0	7 <input type="checkbox"/>
4	MW-11-3 ✓	524.2	02-01355-4-α	W	V	C	40	3	G	012502	N	0	7 <input type="checkbox"/>
	MW-11-3	Metals	02-01355-4-β	W	P	N	500	1	G	012502	N	0	7 <input type="checkbox"/>
	MW-11-3	300	02-01355-4-γ	W	P		500	1	G	012502	N	0	7 <input type="checkbox"/>
5	MW-11-2 ✓	524.2	02-01355-3-α	W	V	C	40	3	G	012502	N	0	7 <input type="checkbox"/>
	MW-11-2	Metals	02-01355-3-β	W	P	N	500	1	G	012502	N	0	7 <input type="checkbox"/>
	MW-11-2	300	02-01355-3-γ	W	P		500	1	G	012502	N	0	7 <input type="checkbox"/>
6	MW-11-1 ✓	524.2	02-01355-2-α	W	V	C	40	3	G	012502	N	0	7 <input type="checkbox"/>
	MW-11-1	Metals	02-01355-2-β	W	P	N	500	1	G	012502	N	0	7 <input type="checkbox"/>
	MW-11-1	300	02-01355-2-γ	W	P		500	1	G	012502	N	0	7 <input type="checkbox"/>
7	ER-11 ✓	524.2	02-01355-1-α	W	V	C	40	3	G	012502	N	0	7 <input type="checkbox"/>
	ER-11	Metals	02-01355-1-β	W	P	N	500	1	G	012502	N	0	7 <input type="checkbox"/>
	ER-11	300	02-01355-1-γ	W	P		500	1	G	012502	N	0	7 <input type="checkbox"/>

## 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<sub>4</sub><sup>2-</sup>), by IC
- 300.0/SM4500NOM Nitrate (NO<sub>3</sub><sup>-</sup>) as N by IC
- 300.0 Chloride Cl<sup>-</sup> 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

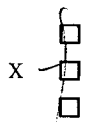
PAH (NOAA)

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	TB-11	524.2	02-01355-7	W	X -							
2	MW-11-5	524.2	02-01355-6-α	W	X -							
	MW-11-5	Metals	02-01355-6-β	W				X -	X -	X -	X -	X -
	MW-11-5	300	02-01355-6-γ	W		X -	X -					
3	MW-11-4	524.2	02-01355-5-α	W	X							
	MW-11-4	Metals	02-01355-5-β	W				X	X	X	X	X
	MW-11-4	300	02-01355-5-γ	W		X	X					
4	MW-11-3	524.2	02-01355-4-α	W	X							
	MW-11-3	Metals	02-01355-4-β	W				X	X	X	X	X
	MW-11-3	300	02-01355-4-γ	W		X	X					
5	MW-11-2	524.2	02-01355-3-α	W	X							
	MW-11-2	Metals	02-01355-3-β	W				X	X	X	X	X
	MW-11-2	300	02-01355-3-γ	W		X	X					
6	MW-11-1	524.2	02-01355-2-α	W	X							
	MW-11-1	Metals	02-01355-2-β	W				X	X	X	X	X
	MW-11-1	300	02-01355-2-γ	W		X	X					
7	ER-11	524.2	02-01355-1-α	W	X -							
	ER-11	Metals	02-01355-1-β	W								
	ER-11	300	02-01355-1-γ	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	TB-11	524.2	02-01355-7	W								
2	MW-11-5	524.2	02-01355-6-α	W								
	MW-11-5	Metals	02-01355-6-β	W								X -
	MW-11-5	300	02-01355-6-γ	W	X -	X -	X -	X -	X -	X -	X -	
3	MW-11-4	524.2	02-01355-5-α	W								
	MW-11-4	Metals	02-01355-5-β	W								X
	MW-11-4	300	02-01355-5-γ	W	X	X	X	X	X	X	X	
4	MW-11-3	524.2	02-01355-4-α	W								
	MW-11-3	Metals	02-01355-4-β	W								X
	MW-11-3	300	02-01355-4-γ	W	X	X	X	X	X	X	X	
5	MW-11-2	524.2	02-01355-3-α	W								
	MW-11-2	Metals	02-01355-3-β	W								X
	MW-11-2	300	02-01355-3-γ	W	X	X	X	X	X	X	X	
6	MW-11-1	524.2	02-01355-2-α	W								
	MW-11-1	Metals	02-01355-2-β	W								X
	MW-11-1	300	02-01355-2-γ	W	X	X	X	X	X	X	X	

53505

7	ER-11	524.2	02-01355-1- $\alpha$	W
	ER-11	Metals	02-01355-1- $\beta$	W
	ER-11	300	02-01355-1- $\gamma$	W

X 

Seq. #	Client's Sample ID (as given on COC)	Sample Sub-ID	APCL Sample ID	Matrix	ALKALIN	SIM
1	TB-11	524.2	02-01355-7	W		
2	MW-11-5	524.2	02-01355-6- $\alpha$	W		
	MW-11-5	Metals	02-01355-6- $\beta$	W		
	MW-11-5	300	02-01355-6- $\gamma$	W	X ✓	
3	MW-11-4	524.2	02-01355-5- $\alpha$	W		
	MW-11-4	Metals	02-01355-5- $\beta$	W		
	MW-11-4	300	02-01355-5- $\gamma$	W	X	
4	MW-11-3	524.2	02-01355-4- $\alpha$	W		
	MW-11-3	Metals	02-01355-4- $\beta$	W		
	MW-11-3	300	02-01355-4- $\gamma$	W	X	
5	MW-11-2	524.2	02-01355-3- $\alpha$	W		
	MW-11-2	Metals	02-01355-3- $\beta$	W		
	MW-11-2	300	02-01355-3- $\gamma$	W	X	
6	MW-11-1	524.2	02-01355-2- $\alpha$	W		
	MW-11-1	Metals	02-01355-2- $\beta$	W		
	MW-11-1	300	02-01355-2- $\gamma$	W	X	
7	ER-11	524.2	02-01355-1- $\alpha$	W		
	ER-11	Metals	02-01355-1- $\beta$	W		
	ER-11	300	02-01355-1- $\gamma$	W		

- Client's Requirement: **PLEASE RUN MS/MSD ON SAMPLE #**
- IF ENOUGH SAMPLE**
- FOR 8270SIM, PLEASE INCLUDE 1,4-DIOXANE**

Login By En-Yu Paul Kou

Check By *dy*

53506



Applied Physics & Chemistry Laboratory

13760 Magnolia Ave. Chino CA 91710

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

February 13, 2002

SOTA Environmental  
Attention: Yu Zeng  
16835 W. Bernardo Dr. Suite 212  
San Diego CA 92127

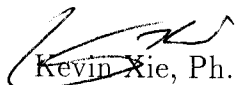
Dear Yu,

This package contains samples in our Service ID 02-1309 and your project is 00HW019 JPL.  
Enclosed please find:

- (1) One original report.
- (2) One original Chain of Custody.
- (3) One diskette containing EDD Deliverable.
- (4) One original of Level D Data Package Deliverable.

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

Respectfully submitted,

  
Kevin Xie, Ph.D.,

QA/QC Director

Applied P & Ch Laboratory

Applied P & Ch Laboratory

13760 Magnolia Ave. Chino CA 91710

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

# APCL Analytical Report

Submitted to:  
SOTA Environmental  
Attention: Yu Zeng  
16835 W. Bernardo Dr, Ste. 212  
San Diego CA 92127  
Tel: (858)485-8100 Fax: (858)485-0812

Service ID #: 801-021309 Received: 01/22/02  
Collected by: MES/JNT Extracted: N/A  
Collected on: 01/22/02 Tested: 01/23-25/02  
Reported: 01/30/02  
Sample Description: Water from Pasadena, CA  
Project Description: 00HW019 JPL

## Analysis of Water Samples

Component Analyzed	Method	Unit	PQL	Analysis Result			
				ER-8 02-01309-1	MW-12-1 02-01309-2	MW-12-2 02-01309-3	MW-12-3 02-01309-4
ALKALINITY	310.1	mg/L	2	-	166	193	198
BICARBONATE <sup>(a)</sup>	SM2320B	mg/L	2	-	166	193	198
CARBONATE <sup>(a)</sup>	SM2320B	mg-CaCO <sub>3</sub> /L	2	-	<2	<2	<2
PH	150.1	pH unit	0.01	-	7.58	7.65	7.67
SOLIDS, TOTAL DISSOLVED (TDS)	160.1	mg/L	10	-	268	314	316
CHROMIUM (VI)	7196	mg/L	0.01	<0.01	<0.01	<0.01	<0.01
Dilution Factor				1	1	1	1
PERCHLORATE	E314	µg/L	4	<4	<4	<4	<4
Dilution Factor				1	2	4	4
CHLORIDE CL <sup>-</sup>	300.0	mg/L	0.2	-	9.8	16.2	18.8
NITRATE AS N	300.0	mg/L	0.04	-	0.60	1.5	1.1
SULFATE SO <sub>4</sub> <sup>--</sup>	300.0	mg/L	0.5	-	38.0	38.6	41.4
Dilution Factor				1	1	1	1
ARSENIC	200.9	µg/L	5	<5	<5	<5	<5
CALCIUM	200.7	µg/L	200	-	42,800	54,900	59,900
IRON	200.7	µg/L	50	-	197	149	178
MAGNESIUM	200.7	µg/L	100	-	17,000	18,700	18,100
POTASSIUM	200.7	µg/L	400	-	3,000	3,240	3,020
SODIUM	200.7	µg/L	2000	-	20,100	24,600	23,300
VOLATILE ORGANIC COMPOUNDS							
Dilution Factor				1	1	1	1
CARBON TETRACHLORIDE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	4.0
CHLOROFORM	524.2	µg/L	0.5	<0.5	<0.5	<0.5	1.3
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
METHYLENE CHLORIDE	524.2	µg/L	1	6.3	0.8J	0.8J	<1
TETRACHLOROETHENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
TRICHLOROETHENE	524.2	µg/L	0.5	<0.5	<0.5	0.4J	0.5
112TRICHLORO-122TRIFLUOROETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5

# APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result			
				MW-12-4 02-01309-5	MW-12-5 02-01309-6	MW-12-2D 02-01309-7	TB-8 02-01309-8
ALKALINITY	310.1	mg/L	2	192	181	196	-
BICARBONATE <sup>(a)</sup>	SM2320B	mg/L	2	192	181	196	-
CARBONATE <sup>(a)</sup>	SM2320B	mg-CaCO <sub>3</sub> /L	2	<2	<2	<2	-
PH	150.1	pH unit	0.01	7.65	7.77	7.64	-
SOLIDS, TOTAL DISSOLVED (TDS)	160.1	mg/L	10	292	280	305	-
CHROMIUM (VI)	7196	mg/L	0.01	<0.01	<0.01	<0.01	-
Dilution Factor				1	1	1	1
PERCHLORATE	E314	µg/L	4	4.0	<4	<4	-
Dilution Factor				4	4	4	1
CHLORIDE CL <sup>-</sup>	300.0	mg/L	0.2	15.6	16.7	16.3	-
NITRATE AS N	300.0	mg/L	0.04	1.5	1.8	1.6	-
SULFATE SO <sub>4</sub> <sup>--</sup>	300.0	mg/L	0.5	33.7	22.9	39.4	-
Dilution Factor				1	1	1	1
ARSENIC	200.9	µg/L	5	<5	1.8J	1.7J	-
CALCIUM	200.7	µg/L	200	57,900	43,900	53,000	-
IRON	200.7	µg/L	50	586	372	120	-
MAGNESIUM	200.7	µg/L	100	15,000	11,800	19,200	-
POTASSIUM	200.7	µg/L	400	2,360	2,220	3,300	-
SODIUM	200.7	µg/L	2000	22,400	34,200	23,900	-
VOLATILE ORGANIC COMPOUNDS							
Dilution Factor				1	1	1	1
CARBON TETRACHLORIDE	524.2	µg/L	0.5	3.2	0.8	<0.5	<0.5
CHLOROFORM	524.2	µg/L	0.5	1	<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
METHYLENE CHLORIDE	524.2	µg/L	1	1	<1	2.6	1
TETRACHLOROETHENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
TRICHLOROETHENE	524.2	µg/L	0.5	0.8	0.6	0.5	<0.5
112TRICHLORO-122TRIFLUOROETHANE	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.

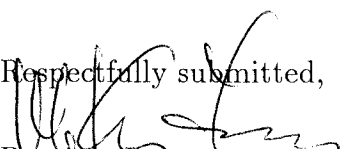
"-": Analysis is not required.

J: Reported between PQL and MDL.

Listed Dilution Factors (DF) are relative to the method default DF. All unlisted DFs are 1.0

<sup>(a)</sup> Calculated from alkalinity result by EPA 310.1

Respectfully submitted,

  
 Dominic Lau  
 Laboratory Director  
 Applied P & Ch Laboratory

**Level D Data Package Deliverables**

# **General Information**

**Project: 010HW019 JPL**

**APCL Service ID: 02-1309**



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

# Case Narrative

## Project: JPL/00HW019

For SOTA Environmental

APCL Service No: 02-1309

### 1. Sample Identification

The sample identifications are listed in the following table:

SOTA Environmental Sample ID	APCL Sample ID
TB-8	02-01309-8
MW-12-5	02-01309-6
MW-12-4	02-01309-5
ER-8	02-01309-1
MW-12-3	02-01309-4
MW-12-2	02-01309-3
MW-12-2D	02-01309-7
MW-12-1	02-01309-2

### 2. Analytical Methodology

Samples are analyzed by EPA methods

- 524.2 (Volatile Organic Compounds ),
- 7196 (Chromium (VI) ),
- E314 (Perchlorate, low level ),
- 200.7 (Metals by ICP ),
- 300.0 (Anions by IC ),
- SM2320B (Carbonate ),
- 150.1 (pH ),
- 160.1 (Solids, Total Dissolved (TDS) ),
- 200.9 (Arsenic, As, by GFAA ),
- 310.1 (Alkalinity ),

### 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) 200.9 - Arsenic:

ICV analyzed on 02/25/02 at 10:56 did not contain standard and was re-analyzed on 02/25/02 at 11:16 with acceptable recovery.

"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,



Kevin Xie, Ph.D.,

QA/QC Director

Applied P & Ch Laboratory







# Sample Receiving Checklist

APCL ServiceID: **1309** Client Name/Project: Sota Environment

### 1. Sample Arrival

Date/Time Received 1/22/02 1753 Date/Time Opened 1/23/02 0900 By (name): Paul

Custody Transfer:  Client  Golden State  UPS  US Mail  FedEx  APCL Empl: Paul

### 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 2.4

(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<sup>VI</sup> 24hr  NO<sub>3</sub> 48hr  BOD 48hr  
 Cl<sub>2</sub> ASAP  Turbidity 48hr  DO ASAP  Fe(II) ASAP  
 HT Expired?  Client notified?

### 6. Sample Container Condition

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

### 7. Turn Around Time

RUSH TAT: 5 day  Std (7-10 days)  Not Marked

### 8. Sample Matrix

Drinking H<sub>2</sub>O  Other Liq  Soil  Wipe  Polymer  Air  Other: \_\_\_\_\_  
 Ground H<sub>2</sub>O  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: Paul Date: 22 Jan 2002 Time: 8:34 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.



## Part 2: Sample Information

Seq. #	Sample ID (on COC)	Sample Sub-ID	APCL Sample ID	Cont- Matrix	Preser- tainer	Vol, ml Am. g	# of Replica	Condition G, L, B	Collected mmddyy	Hold ?	Composite Group	TAT Days
1	TB-8 ✓	524.2	02-01309-8	W	V	C 40	2	G	012202	N	0	7 <input type="checkbox"/>
2	MW-12-5 ✓	524.2	02-01309-6-α	W	V	C 40	3	G	012202	N	0	7 <input type="checkbox"/>
	MW-12-5	Metals	02-01309-6-β	W	P	N 500	1	G	012202	N	0	7 <input type="checkbox"/>
	MW-12-5	300	02-01309-6-γ	W	P	500	1	G	012202	N	0	7 <input type="checkbox"/>
3	MW-12-4 ✓	524.2	02-01309-5-α	W	V	C 40	3	G	012202	N	0	7 <input type="checkbox"/>
	MW-12-4	Metals	02-01309-5-β	W	P	N 500	1	G	012202	N	0	7 <input type="checkbox"/>
	MW-12-4	300	02-01309-5-γ	W	P	500	1	G	012202	N	0	7 <input type="checkbox"/>
4	ER-8 ✓	524.2	02-01309-1-α	W	V	C 40	3	G	012202	N	0	7 <input type="checkbox"/>
	ER-8	Metals	02-01309-1-β	W	P	N 500	1	G	012202	N	0	7 <input type="checkbox"/>
	ER-8	300	02-01309-1-γ	W	P	500	1	G	012202	N	0	7 <input type="checkbox"/>
5	MW-12-3 ✓	524.2	02-01309-4-α	W	V	C 40	3	G	012202	N	0	7 <input type="checkbox"/>
	MW-12-3	Metals	02-01309-4-β	W	P	N 500	1	G	012202	N	0	7 <input type="checkbox"/>
	MW-12-3	300	02-01309-4-γ	W	P	500	1	G	012202	N	0	7 <input type="checkbox"/>
6	MW-12-2 ✓	524.2	02-01309-3-α	W	V	C 40	3	G	012202	N	0	7 <input type="checkbox"/>
	MW-12-2	Metals	02-01309-3-β	W	P	N 500	1	G	012202	N	0	7 <input type="checkbox"/>
	MW-12-2	300	02-01309-3-γ	W	P	500	1	G	012202	N	0	7 <input type="checkbox"/>
7	MW-12-2D ✓	524.2	02-01309-7-α	W	V	C 40	3	G	012202	N	0	7 <input type="checkbox"/>
	MW-12-2D	Metals	02-01309-7-β	W	P	N 500	1	G	012202	N	0	7 <input type="checkbox"/>
	MW-12-2D	300	02-01309-7-γ	W	P	500	1	G	012202	N	0	7 <input type="checkbox"/>
8	MW-12-1 ✓	524.2	02-01309-2-α	W	V	C 40	3	G	012202	N	0	7 <input type="checkbox"/>
	MW-12-1	Metals	02-01309-2-β	W	P	N 500	1	G	012202	N	0	7 <input type="checkbox"/>
	MW-12-1	300	02-01309-2-γ	W	P	500	1	G	012202	N	0	7 <input type="checkbox"/>

## 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<sub>4</sub><sup>-</sup>), by IC
- 300.0/SM4500NON Nitrate (NO<sub>3</sub><sup>-</sup>) as N by IC
- 300.0 Chloride Cl<sup>-</sup> 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	TB-8	524.2	02-01309-8	W	X ✓							<input checked="" type="checkbox"/>
2	MW-12-5	524.2	02-01309-6-α	W	X ✓							<input type="checkbox"/>
	MW-12-5	Metals	02-01309-6-β	W				X ✓	X ✓	X ✓	X ✓	<input type="checkbox"/>
	MW-12-5	300	02-01309-6-γ	W		X ✓	X ✓					<input type="checkbox"/>
3	MW-12-4	524.2	02-01309-5-α	W	X							<input type="checkbox"/>
	MW-12-4	Metals	02-01309-5-β	W				X	X	X	X	<input type="checkbox"/>
	MW-12-4	300	02-01309-5-γ	W		X	X					<input type="checkbox"/>
4	ER-8	524.2	02-01309-1-α	W	X ✓							<input type="checkbox"/>
	ER-8	Metals	02-01309-1-β	W								<input type="checkbox"/>
	ER-8	300	02-01309-1-γ	W		X ✓	X ✓					<input type="checkbox"/>
5	MW-12-3	524.2	02-01309-4-α	W	X							<input type="checkbox"/>
	MW-12-3	Metals	02-01309-4-β	W				X	X	X	X	<input type="checkbox"/>
	MW-12-3	300	02-01309-4-γ	W		X	X					<input type="checkbox"/>
6	MW-12-2	524.2	02-01309-3-α	W	X							<input type="checkbox"/>
	MW-12-2	Metals	02-01309-3-β	W				X	X	X	X	<input type="checkbox"/>
	MW-12-2	300	02-01309-3-γ	W		X	X					<input type="checkbox"/>
7	MW-12-2D	524.2	02-01309-7-α	W	X							<input type="checkbox"/>
	MW-12-2D	Metals	02-01309-7-β	W				X	X	X	X	<input type="checkbox"/>
	MW-12-2D	300	02-01309-7-γ	W		X	X					<input type="checkbox"/>
8	MW-12-1	524.2	02-01309-2-α	W	X							<input type="checkbox"/>
	MW-12-1	Metals	02-01309-2-β	W				X	X	X	X	<input type="checkbox"/>
	MW-12-1	300	02-01309-2-γ	W		X	X					<input type="checkbox"/>

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	TB-8	524.2	02-01309-8	W								<input type="checkbox"/>
2	MW-12-5	524.2	02-01309-6-α	W								<input type="checkbox"/>
	MW-12-5	Metals	02-01309-6-β	W							X ✓	<input type="checkbox"/>
	MW-12-5	300	02-01309-6-γ	W	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	<input type="checkbox"/>
3	MW-12-4	524.2	02-01309-5-α	W								<input type="checkbox"/>
	MW-12-4	Metals	02-01309-5-β	W								<input type="checkbox"/>
	MW-12-4	300	02-01309-5-γ	W	X	X	X	X	X	X		<input type="checkbox"/>
4	ER-8	524.2	02-01309-1-α	W								<input type="checkbox"/>
	ER-8	Metals	02-01309-1-β	W							X ✓	<input type="checkbox"/>

051606



Login By En-Yu Paul Kou

Check By *PK*





A P C L

Applied Physics & Chemistry Laboratory

13760 Magnolia Ave. Chino CA 91710

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

February 19, 2002

SOTA Environmental  
Attention: Yu Zeng  
16835 W. Bernardo Dr. Suite 212  
San Diego CA 92127

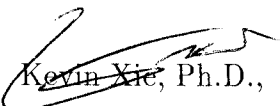
Dear Yu,

This package contains samples in our Service ID 02-1393 and your project is 00HW019 JPL.  
Enclosed please find:

- (1) One original report.
- (2) One original Chain of Custody.
- (3) One diskette containing EDD Deliverable.
- (4) One original of Level D Data Package Deliverable.

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

Respectfully submitted,

  
Kevin Xie, Ph.D.,

QA/QC Director

Applied P & Ch Laboratory

# APCL Analytical Report

Submitted to:  
 SOTA Environmental  
 Attention: Yu Zeng  
 16835 W. Bernardo Dr, Ste. 212  
 San Diego CA 92127  
 Tel: (858)485-8100 Fax: (858)485-0812

Service ID #: 801-021393  
 Collected by: MES/JNT  
 Collected on: 01/29/02  
 Received: 01/29/02  
 Extracted: 01/30/02  
 Tested: 01/30-02/06/02  
 Reported: 02/07/02  
 Sample Description: Water  
 Project Description: 00HW019 JPL

## Analysis of Water Samples

Component Analyzed	Method	Unit	PQL	Analysis Result			
				MW-13 02-01393-1	MW-16 02-01393-2	MW-16D 02-01393-3	TB-13 02-01393-4
ALKALINITY	310.1	mg/L	2	136	145	149	-
BICARBONATE (a)	SM2320B	mg/L	2	136	145	149	-
CARBONATE (a)	SM2320B	mg-CaCO <sub>3</sub> /L	2	<2	<2	<2	-
PH	150.1	pH unit	0.01	7.23	7.32	7.34	-
SOLIDS, TOTAL DISSOLVED (TDS)	160.1	mg/L	10	393	310	311	-
CHROMIUM (VI)	7196	mg/L	0.01	0.034	<0.01	<0.01	-
Dilution Factor				4	50	50	1
PERCHLORATE	E314	µg/L	4	326	2,070	2,070	-
Dilution Factor				8	5	5	1
CHLORIDE CL <sup>-</sup>	300.0	mg/L	0.2	44.7	36.2	34.9	-
NITRATE AS N	300.0	mg/L	0.04	7.7	5.8	5.7	-
SULFATE SO <sub>4</sub> <sup>2-</sup>	300.0	mg/L	0.5	67.3	34.3	32.6	-
Dilution Factor				1	1	1	1
ARSENIC	200.9	µg/L	5	2.7J	2.8J	3.1J	-
Dilution Factor				1	1	1	1
CALCIUM	200.7	µg/L	200	60,800	49,100	48,100	-
IRON	200.7	µg/L	50	690	62.1	57.8	-
MAGNESIUM	200.7	µg/L	100	19,900	17,700	17,200	-
POTASSIUM	200.7	µg/L	400	2,570	2,340	2,270	-
SODIUM	200.7	µg/L	2000	24,800	23,400	23,100	-
VOLATILE ORGANIC COMPOUNDS							
Dilution Factor				1	1	1	1
CARBON TETRACHLORIDE	524.2	µg/L	0.5	11.0	12.3	13.2	<0.5
CHLOROFORM	524.2	µg/L	0.5	4.6	15.9	16.7	<0.5
1,1-DICHLOROETHANE	524.2	µg/L	0.5	0.7	<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	1	1.4	1.3	<0.5
METHYLENE CHLORIDE	524.2	µg/L	1	1	0.9J	-	1
TETRACHLOROETHENE	524.2	µg/L	0.5	1.2	0.5	0.6	<0.5
TRICHLOROETHENE	524.2	µg/L	0.5	12.5	2.5	2.7	<0.5
TRICHLOROFLUOROMETHANE	524.2	µg/L	0.5	0.8	-	-	-
112TRICHLORO-122TRIFLUOROETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5

# APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result			
				MW-13	MW-16	MW-16D	TB-13
				02-01393-1	02-01393-2	02-01393-3	02-01393-4
Dilution Factor				1	1	1	1
1,4-DIOXANE	8270-SIM	µg/L	3	4	9.9	10	-

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit

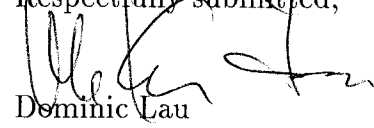
N.D.: Not Detected or less than the practical quantitation limit. ".": Analysis is not required.

J: Reported between PQL and MDL.

Listed Dilution Factors (DF) are relative to the method default DF. All unlisted DFs are 1.0

(a) Calculated from alkalinity result by EPA 310.1

Respectfully submitted,



Dominic Lau  
Laboratory Director  
Applied P & Ch Laboratory