General Engineering Laboratories, Inc.
2040 Savage Road
Charleston SC 29407

Chain of Custody/Analysis Request

COC/Lab Request #: 2013-265

Page 1 of 1

Client Contact:

Lab Agreement # : 126310011
Project Number :
Analysis Turnaround Time:
24 Hour - ☐ Other - ☐
7 Day - ☐
14 Day - ☐
21 Day - ☐
28 Day - ☒

Site Name: Los Alamos National Laboratory

Rad Screening Info: Yes, Below Background

Field Sample ID	Sample Date	Sample Time	Sample Matrix	WSP-8260B-VOA	WSP-8270C-SVOA	WSP-GENINORG	WSP-GrossA/B	WSP-LL-H-3	WSP-Met+B+SN+SR+U	WSP-NH3+NO3/NO2+PO4	WSP-RAD	WSP-TKN+TOC
CAMO-13-24279	Nov 1 2012	11:34	W	2	3		1				1	1
CAMO-13-24283	Nov 1 2012	11:34	W			1			1	1		
CAMO-13-24274	Nov 1 2012	11:34	W	2								

Special Instructions:

Relinquished by: Sherri Sherwood	S. Sherwood	Date/Time: 11/2/12 3pm	Received by:
Relinquished by:		Date/Time:	Received by:
Relinquished by:		Date/Time:	Received by:

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4031 **EVENT NAME:** Mortandad/Sandia (MDA C and GS Monitoring) Q1 Watershed Sampling_MORTANDAD

SAMPLE ID: CAMO-13-24279 **WORK ORDER:** NA

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		ow 11/01/12 11/01/12 2012	FIELD MATRIX: WG		OK
TIME COLLECTED (HH:MM):		1134	MEDIA: UA		OK
PRS ID:		OK	SAMPLE TECH CODE: UA		GSI
LOCATION ID: R-60			FIELD PREP: UF		OK
LOCATION TYPE: MON			FIELD QC TYPE: REG		
PORT: SINGLE COMPLETION			SAMPLE USAGE: INV		

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
NA	WSP-8260B-VOA	40 ML SEPTUM AMBER GLASS	2	HCL	Y	NA
	WSP-8270C-SVOA	1 LITER AMBER GLASS	3	ICE		
	WSP-GrossA/B	1 LITER POLY	1	NONE		
	WSP-LL-H-3	1 LITER POLY	1	NONE		
	WSP-RAD	1 GAL POLY	1	HNO3		
	WSP-TKN+TOC	500 ML AMBER GLASS	1	H2SO4		

SAMPLE COMMENTS: Samples taken within 50 feet of a running diesel generator

LOCATION COMMENTS: None

FIELD PARAMETERS:

Dissolved Oxygen 5.85 mg/L Oxidation-Reduction Potential 132.2 MV pH 8.30 SU

Specific Conductance 1116 uS/cm Temperature 23.72 deg C Turbidity 1.49 NTU

COLLECTED BY (PRINT) D Fellenz

RELINQUISHED BY (Printed Name) D Woody (Signature) David Woody	**Date/Time** 11/01/12 1230	**RECEIVED BY** (Printed Name) (Signature)	**Date/Time** 11/01/12 1230
RELINQUISHED BY (Printed Name) (Signature)	**Date/Time**	**RECEIVED BY** (Printed Name) (Signature)	**Date/Time**

Report Date 10/24/2012

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4031 **EVENT NAME:** Mortandad/Sandia (MDA C and GS Monitoring) Q1 Watershed Sampling_MORTANDAD

SAMPLE ID: CAMO-13-24283 **WORK ORDER:** NA

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		11/01/2012	FIELD MATRIX:	WG	OV
TIME COLLECTED (HH:MM):		1134	MEDIA:	UA	OV
PRS ID:		OV	SAMPLE TECH CODE:	UA	GSP
LOCATION ID:	R-60		FIELD PREP:	F	OV
LOCATION TYPE:	MON		FIELD QC TYPE:	REG	
PORT:	SINGLE COMPLETION		SAMPLE USAGE:	INV	

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
NA	WSP-GENINORG	1 LITER POLY	1	ICE	Y	NA
	WSP-Met+B+SN+SR+U	1 LITER POLY	1	HNO3		
	WSP-NH3+NO3/NO2+PO4	500 ML AMBER GLASS	1	H2SO4		

SAMPLE COMMENTS:

LOCATION COMMENTS:

See CAMO-13-24279

FIELD PARAMETERS:

Dissolved Oxygen _____ mg/L Oxidation-Reduction Potential _____ MV pH _____ SU

Specific Conductance _____ uS/cm Temperature _____ deg C Turbidity _____ NTU

COLLECTED BY (PRINT) D Fellenz

RELINQUISHED BY (Printed Name) D Woody/Woody (Signature)	**Date/Time** 11/01/12 1230	**RECEIVED BY** (Printed Name) (Signature)	**Date/Time** 11/01/12 1230
RELINQUISHED BY (Printed Name) (Signature)	**Date/Time**	**RECEIVED BY** (Printed Name) (Signature)	**Date/Time**

Report Date 10/24/2012

Data Validation Report for:

Chain Of Custody No. 2013-265

Data Validation Report

Chain Of Custody No. 2013-265

1. Distribution Of Samples In EDD.

SDG	Analytical Method	Regular Samples	Field Duplicates	Trip Blanks	Field Blanks	Equipment Blanks
314528	EPA:120.1	1				
314528	EPA:150.1	1				
314528	EPA:160.1	1				
314528	EPA:245.2	1				
314528	EPA:300.0	1				
314528	EPA:310.1	1				
314528	EPA:350.1	1				
314528	EPA:351.2	1				
314528	EPA:353.2	1				
314528	EPA:365.4	1				
314528	EPA:900	1				
314528	EPA:901.1	1				
314528	EPA:905.0	1				
314528	HASL-300:AM-241	1				
314528	HASL-300:ISOPU	1				
314528	HASL-300:ISOU	1				
314528	SM:A2340B	1				
314528	SW-846:6010B	1				
314528	SW-846:6020	1				
314528	SW-846:8260B	1		1		
314528	SW-846:8270C	1				
314528	SW-846:9060	1				

SDG	Analytical Method	Analysis Lot ID	Prep Lot ID	Regular Samples	Field Duplicates	Trip Blanks	Field Blanks	Equipment Blanks	Method Blanks	Matrix Spikes	Matrix Spike Dups
314528	EPA:120.1	1265081	1265081	1							
314528	EPA:150.1	1260327	1260327	1							
314528	EPA:160.1	1260149	1260149	1					1		
314528	EPA:245.2	1264600	1264596	1					1	2	
314528	EPA:300.0	1259659	1259659	1					1		
314528	EPA:310.1	1262945	1262945	1					1	1	
314528	EPA:350.1	1260275	1260272	1					1	2	2
314528	EPA:351.2	1260284	1260283	1					1	1	1
314528	EPA:353.2	1260242	1260242	1					1		
314528	EPA:365.4	1260281	1260280	1					1	1	1
314528	EPA:900	1260898	1260898	1					1	1	1
314528	EPA:901.1	1260199	1260199	1					1		
314528	EPA:905.0	1260884	1260884	1					1	1	
314528	HASL-300:AM-241	1259852	1259852	1					1		
314528	HASL-300:ISOPU	1259851	1259851	1					1		
314528	HASL-300:ISOU	1259850	1259850	1					1		
314528	SM:A2340B	1266665	1266665	1							
314528	SW-846:6010B	1260610	1260609	1					1	1	
314528	SW-846:6020	1260607	1260605	1					1	1	
314528	SW-846:8260B	1262779	1262779	1		1			2		
314528	SW-846:8270C	1261145	1261144	1					1	1	1
314528	SW-846:9060	1260735	1260735	1					1		

2. Distribution Of Analytes In EDD.

Analytical Method	Method Category	Field Sample ID	Lab Sample ID	Sample Purpose	Target Analytes	Surrogates	Spikes	TICS
EPA:120.1	GENERAL CHEMISTRY	CAMO-13-24255	1202784135	DUP	1	0	0	0
EPA:120.1	GENERAL CHEMISTRY	CAMO-13-24258	1202784136	DUP	1	0	0	0
EPA:120.1	GENERAL CHEMISTRY	CAMO-13-24283	314528002	REG	1	0	0	0
EPA:120.1	GENERAL CHEMISTRY	LCS	1202784137	LCS	0	0	1	0
EPA:150.1	GENERAL CHEMISTRY	CAMO-13-24258	1202772818	DUP	1	0	0	0
EPA:150.1	GENERAL CHEMISTRY	CAMO-13-24283	314528002	REG	1	0	0	0
EPA:150.1	GENERAL CHEMISTRY	LCS	1202772819	LCS	0	0	1	0
EPA:160.1	GENERAL CHEMISTRY	CAMO-13-24260	1202772397	DUP	1	0	0	0
EPA:160.1	GENERAL CHEMISTRY	CAMO-13-24283	314528002	REG	1	0	0	0
EPA:160.1	GENERAL CHEMISTRY	CASA-13-24223	1202772398	DUP	1	0	0	0
EPA:160.1	GENERAL CHEMISTRY	LCS	1202772399	LCS	0	0	1	0
EPA:160.1	GENERAL CHEMISTRY	MB	1202772396	MB	1	0	0	0
EPA:245.2	INORGANIC	CAMO-13-24255	1202783063	DUP	1	0	0	0
EPA:245.2	INORGANIC	CAMO-13-24255	1202783067	MS	0	0	1	0
EPA:245.2	INORGANIC	CAMO-13-24258	1202783064	DUP	1	0	0	0
EPA:245.2	INORGANIC	CAMO-13-24258	1202783068	MS	0	0	1	0
EPA:245.2	INORGANIC	CAMO-13-24283	314528002	REG	1	0	0	0
EPA:245.2	INORGANIC	LCS	1202783069	LCS	0	0	1	0
EPA:245.2	INORGANIC	MB	1202783062	MB	1	0	0	0
EPA:300.0	GENERAL CHEMISTRY	CAMO-13-24255	1202771232	DUP	4	0	0	0
EPA:300.0	GENERAL CHEMISTRY	CAMO-13-24283	314528002	REG	4	0	0	0
EPA:300.0	GENERAL CHEMISTRY	LCS	1202771234	LCS	0	0	4	0
EPA:300.0	GENERAL CHEMISTRY	MB	1202771231	MB	4	0	0	0
EPA:310.1	GENERAL CHEMISTRY	CAMO-13-24256	1202779306	DUP	2	0	0	0
EPA:310.1	GENERAL CHEMISTRY	CAMO-13-24256	1202779307	MS	0	0	1	0
EPA:310.1	GENERAL CHEMISTRY	CAMO-13-24283	314528002	REG	2	0	0	0
EPA:310.1	GENERAL CHEMISTRY	LCS	1202779299	LCS	0	0	1	0
EPA:310.1	GENERAL CHEMISTRY	MB	1202779298	MB	3	0	0	0
EPA:350.1	GENERAL CHEMISTRY	CAMO-13-24255	1202772677	DUP	1	0	0	0
EPA:350.1	GENERAL CHEMISTRY	CAMO-13-24255	1202772679	MS	0	0	1	0
EPA:350.1	GENERAL CHEMISTRY	CAMO-13-24255	1202772681	MSD	0	0	1	0
EPA:350.1	GENERAL CHEMISTRY	CAMO-13-24257	1202772678	DUP	1	0	0	0
EPA:350.1	GENERAL CHEMISTRY	CAMO-13-24257	1202772680	MS	0	0	1	0
EPA:350.1	GENERAL CHEMISTRY	CAMO-13-24257	1202772682	MSD	0	0	1	0
EPA:350.1	GENERAL CHEMISTRY	CAMO-13-24283	314528002	REG	1	0	0	0
EPA:350.1	GENERAL CHEMISTRY	LCS	1202772683	LCS	0	0	1	0
EPA:350.1	GENERAL CHEMISTRY	MB	1202772676	MB	1	0	0	0
EPA:351.2	GENERAL CHEMISTRY	CAMO-13-24238	1202772708	DUP	1	0	0	0
EPA:351.2	GENERAL CHEMISTRY	CAMO-13-24238	1202772709	MS	0	0	1	0
EPA:351.2	GENERAL CHEMISTRY	CAMO-13-24238	1202772710	MSD	0	0	1	0
EPA:351.2	GENERAL CHEMISTRY	CAMO-13-24279	314528001	REG	1	0	0	0
EPA:351.2	GENERAL CHEMISTRY	LCS	1202772711	LCS	0	0	1	0
EPA:351.2	GENERAL CHEMISTRY	MB	1202772707	MB	1	0	0	0
EPA:353.2	GENERAL CHEMISTRY	CAMO-13-24283	1202772623	DUP	1	0	0	0
EPA:353.2	GENERAL CHEMISTRY	CAMO-13-24283	314528002	REG	1	0	0	0
EPA:353.2	GENERAL CHEMISTRY	LCS	1202772626	LCS	0	0	1	0
EPA:353.2	GENERAL CHEMISTRY	MB	1202772621	MB	1	0	0	0
EPA:365.4	GENERAL CHEMISTRY	CAMO-13-24255	1202772696	DUP	1	0	0	0
EPA:365.4	GENERAL CHEMISTRY	CAMO-13-24255	1202772698	MS	0	0	1	0
EPA:365.4	GENERAL CHEMISTRY	CAMO-13-24255	1202772700	MSD	0	0	1	0
EPA:365.4	GENERAL CHEMISTRY	CAMO-13-24283	314528002	REG	1	0	0	0
EPA:365.4	GENERAL CHEMISTRY	LCS	1202772701	LCS	0	0	1	0
EPA:365.4	GENERAL CHEMISTRY	MB	1202772694	MB	1	0	0	0

EPA:900	RAD	CAMO-13-24279	314528001	REG	2	0	0	0
EPA:900	RAD	CAPA-12-23808	1202774276	DUP	2	0	0	0
EPA:900	RAD	CAPA-12-23808	1202774277	MS	0	0	2	0
EPA:900	RAD	CAPA-12-23808	1202774278	MSD	0	0	2	0
EPA:900	RAD	LCS	1202774279	LCS	0	0	2	0
EPA:900	RAD	MB	1202774275	MB	2	0	0	0
EPA:901.1	RAD	CAMO-13-24279	1202772495	DUP	6	0	0	0
EPA:901.1	RAD	CAMO-13-24279	314528001	REG	5	0	0	0
EPA:901.1	RAD	LCS	1202772496	LCS	0	0	3	0
EPA:901.1	RAD	MB	1202772494	MB	6	0	0	0
EPA:905.0	RAD	CAMO-13-24241	1202774231	DUP	1	0	0	0
EPA:905.0	RAD	CAMO-13-24241	1202774232	MS	0	0	1	0
EPA:905.0	RAD	CAMO-13-24279	314528001	REG	1	0	0	0
EPA:905.0	RAD	LCS	1202774233	LCS	0	0	1	0
EPA:905.0	RAD	MB	1202774230	MB	1	0	0	0
HASL-300:AM-241	RAD	CAMO-13-24225	1202771691	DUP	1	0	0	0
HASL-300:AM-241	RAD	CAMO-13-24279	314528001	REG	1	0	0	0
HASL-300:AM-241	RAD	LCS	1202771693	LCS	0	0	1	0
HASL-300:AM-241	RAD	MB	1202771689	MB	1	0	0	0
HASL-300:ISOPU	RAD	CAMO-13-24225	1202771686	DUP	2	0	0	0
HASL-300:ISOPU	RAD	CAMO-13-24279	314528001	REG	2	0	0	0
HASL-300:ISOPU	RAD	LCS	1202771688	LCS	0	0	1	0
HASL-300:ISOPU	RAD	MB	1202771684	MB	2	0	0	0
HASL-300:ISOU	RAD	CAMO-13-24225	1202771682	DUP	3	0	0	0
HASL-300:ISOU	RAD	CAMO-13-24279	314528001	REG	3	0	0	0
HASL-300:ISOU	RAD	LCS	1202771683	LCS	0	0	1	0
HASL-300:ISOU	RAD	MB	1202771681	MB	3	0	0	0
SM:A2340B	INORGANIC	CAMO-13-24283	314528002	REG	1	0	0	0
SW-846:6010B	INORGANIC	CAMO-13-24283	1202773562	DUP	17	0	0	0
SW-846:6010B	INORGANIC	CAMO-13-24283	1202773563	MS	0	0	17	0
SW-846:6010B	INORGANIC	CAMO-13-24283	314528002	REG	17	0	0	0
SW-846:6010B	INORGANIC	LCS	1202773561	LCS	0	0	17	0
SW-846:6010B	INORGANIC	MB	1202773560	MB	17	0	0	0
SW-846:6020	INORGANIC	CAMO-13-24283	1202773554	DUP	11	0	0	0
SW-846:6020	INORGANIC	CAMO-13-24283	1202773555	MS	0	0	11	0
SW-846:6020	INORGANIC	CAMO-13-24283	314528002	REG	11	0	0	0
SW-846:6020	INORGANIC	LCS	1202773553	LCS	0	0	11	0
SW-846:6020	INORGANIC	MB	1202773552	MB	11	0	0	0
SW-846:8260B	VOC	CAMO-13-24274	314528003	FTB	80	3	0	0
SW-846:8260B	VOC	CAMO-13-24279	314528001	REG	80	3	0	0
SW-846:8260B	VOC	LCS	1202778863	LCS	0	3	70	0
SW-846:8260B	VOC	LCS	1202778864	LCS	0	3	10	0
SW-846:8260B	VOC	LCS	1202780091	LCS	0	3	70	0
SW-846:8260B	VOC	LCS	1202780092	LCS	0	3	10	0
SW-846:8260B	VOC	MB	1202778860	MB	80	3	0	0
SW-846:8260B	VOC	MB	1202780090	MB	80	3	0	0
SW-846:8270C	SVOC	CAMO-13-24279	1202774964	MS	0	6	76	0
SW-846:8270C	SVOC	CAMO-13-24279	1202774965	MSD	0	6	76	0
SW-846:8270C	SVOC	CAMO-13-24279	314528001	REG	80	6	0	0
SW-846:8270C	SVOC	LCS	1202774966	LCS	0	6	76	0
SW-846:8270C	SVOC	MB	1202774963	MB	80	6	0	0
SW-846:9060	GENERAL CHEMISTRY	CAMO-13-24241	1202773872	DUP	1	0	0	0
SW-846:9060	GENERAL CHEMISTRY	CAMO-13-24279	314528001	REG	1	0	0	0
SW-846:9060	GENERAL CHEMISTRY	LCS	1202773876	LCS	0	0	1	0
SW-846:9060	GENERAL CHEMISTRY	MB	1202773871	MB	1	0	0	0

3. Are any analytes missing?

Data Validation Report for;

Chain Of Custody No. 2013-265

No.

4. Were any holding times exceeded?

No.

5. Any contaminants in blanks?

Field Sample ID	Lab Sample ID	Type Of Blank	Analytical Method	Sample Matrix	Parameter Name	Lab Result	Lab Qualifier	Units	Lab Detection Limit
MB	1202772694	METHOD BLANK	EPA:365.4	W	Total Phosphate as Phosphorus	0.0459	J	mg/L	0.05
MB	1202772707	METHOD BLANK	EPA:351.2	W	Total Kjeldahl Nitrogen	0.0602	J	mg/L	0.1
MB	1202773560	METHOD BLANK	SW-846:6010B	W	Sodium	236	J	ug/L	300
MB	1202773560	METHOD BLANK	SW-846:6010B	W	Strontium	1.55	J	ug/L	5

Any samples affected by the presence of contaminants in blanks?

Field Sample ID	Blank Field Sample ID	Blank Lab Sample ID	Blank Type	Analytical Method	Parameter Name	Units	Blank Result	Sample Result	Lab Qualifier	Detect Limit	Detected
CAMO-13-24279	MB	1202772707	METHOD BLANK	EPA:351.2	Total Kjeldahl Nitrogen	mg/L	0.0602	0.0882	J	0.1	Y
CAMO-13-24283	MB	1202772694	METHOD BLANK	EPA:365.4	Total Phosphate as Phosphorus	mg/L	0.0459	0.0274	J	0.05	Y

6. Any surrogate recoveries outside the control limits?

No.

7. Any MS/MSD recoveries or RPDs outside the control limits?

Field Sample ID	Matrix Spike ID	Matrix Spike Dup ID	Analytical Method	Parameter Name	Analysis Lot ID	Analysis Date	Sample Matrix	MS % Recvry	MSD % Recvry	Upper Limit	Lower Limit
CAMO-13-24238	1202772709	1202772710	EPA:351.2	Total Kjeldahl Nitrogen	1260283	11/6/2012	W	84.8	96	110	90
CAMO-13-24279	1202774964	1202774965	SW-846:8270C	Benzidine	1261144	11/8/2012	W	50	21	125	10

8. Any LCS/LCSD or BS/BSD recoveries or RPDs outside the control limits?

LCS Sample ID	LCSD Sample ID	Analytical Method	Parameter Name	Lab Lot ID	Analysis Date	Sample Matrix	LCS Recovery	LCSD Recovery	Upper Limit	Lower Limit	Lower Reject Limit
1202778863		SW-846:8260B	Bromoform	1262779	11/13/2012	W	128		125	72	10
1202778863		SW-846:8260B	Dibromo-3-Chloropropane[1,2-]	1262779	11/13/2012	W	129		128	69	10
1202778863		SW-846:8260B	Trichlorofluoromethane	1262779	11/13/2012	W	124		123	65	10
1202774966		SW-846:8270C	Benzidine	1261144	11/8/2012	W	6		124	19	10

9. Any Field Duplicate RPDs outside the desired limits?

No.

10. Any Lab Duplicate RPDs outside the desired limits?

No.

Correction Factor (ND)	Correction Factor (J)	Use Factors
5		Y
5		Y

Rejection Limit	RPD	RPD Limit
10	11.6	20
10	80	30

Upper Reject Limit	RPD	RPD Limit

11. Any required reporting limits exceeded?

No.

12. Additional Validator's Coments.

None.

13. Display Flagged Data.

Location ID	Chain Of Custody No	Field Sample ID	Sample Purpose	Analysis Type Code	Analytical Suite	Analytical Method	Parameter Name	Lab Qualifier	Validation Qualifier	Validation Reason Codes	Detected
R-60	2013-265	CAMO-13-24279	REG	INIT	RAD	HASL-300:AM-241	Americium-241	U	U	R5	N
R-60	2013-265	CAMO-13-24279	REG	INIT	SVOC	SW-846:8270C	Benzidine	U	R	SV12	N
R-60	2013-265	CAMO-13-24279	REG	INIT	RAD	EPA:901.1	Cesium-137	U	U	R5	N
R-60	2013-265	CAMO-13-24279	REG	INIT	RAD	EPA:901.1	Cobalt-60	U	U	R5	N
R-60	2013-265	CAMO-13-24279	REG	INIT	RAD	EPA:901.1	Neptunium-237	U	U	R5	N
R-60	2013-265	CAMO-13-24279	REG	INIT	RAD	HASL-300:ISOPU	Plutonium-238	U	U	R5	N
R-60	2013-265	CAMO-13-24279	REG	INIT	RAD	HASL-300:ISOPU	Plutonium-239/240	U	U	R5	N
R-60	2013-265	CAMO-13-24279	REG	INIT	RAD	EPA:901.1	Potassium-40	U	U	R5	N
R-60	2013-265	CAMO-13-24279	REG	INIT	RAD	EPA:901.1	Sodium-22	U	U	R5	N
R-60	2013-265	CAMO-13-24279	REG	INIT	RAD	EPA:905.0	Strontium-90	U	U	R5	N
R-60	2013-265	CAMO-13-24279	REG	INIT	GENERAL CHEMISTRY	EPA:351.2	Total Kjeldahl Nitrogen	J	U	I4	N
R-60	2013-265	CAMO-13-24279	REG	INIT	RAD	HASL-300:ISOU	Uranium-235/236	U	U	R5	N
R-60	2013-265	CAMO-13-24283	REG	INIT	GENERAL CHEMISTRY	EPA:365.4	Total Phosphate as Phosphorus	J	U	I4	N

Reason Code	Description
I4	the sample result is =<5x the concentration of related analyte in the method blank.
J_LAB	The analytical laboratory qualified the detected result as estimated (J) because the result was less the PQL but greater than the MDL
NQ	The analytical laboratory did not qualifiy the analyte as not detected and/or any other standard qualifire. The analyte is detected in the sample.
R5	Analyte is not detected because the amount reported is less than the MDC.
SV12	The LCS percent recovery was <10%. Follow the external laboratory limits located within the associated data package.
U_LAB	The analytical laboratory qualified the analyte as not detected.

14. Useable Result Count.

Field Sample ID	Location ID	Sample Purpose	Analytical Method	No. Unuseable Records	Total No. Of Records
CAMO-13-24274	R-60	FTB	SW-846:8260B	0	80
CAMO-13-24279	R-60	REG	EPA:351.2	0	1
CAMO-13-24279	R-60	REG	EPA:900	0	2
CAMO-13-24279	R-60	REG	EPA:901.1	0	5
CAMO-13-24279	R-60	REG	EPA:905.0	0	1
CAMO-13-24279	R-60	REG	HASL-300:AM-241	0	1
CAMO-13-24279	R-60	REG	HASL-300:ISOPU	0	2
CAMO-13-24279	R-60	REG	HASL-300:ISOU	0	3
CAMO-13-24279	R-60	REG	SW-846:8260B	0	80
CAMO-13-24279	R-60	REG	SW-846:8270C	0	80
CAMO-13-24279	R-60	REG	SW-846:9060	0	1

Lab Result	Lab Units	Report Result	Report Units	Report MDA	Report Uncertainty	Lab Matrix	Sample Date	Percent Moisture	Analysis Lot ID	Validation Status Code	Use Flag
0.0104	pCi/L	0.0104	pCi/L	0.0297	0.00737	W	11/1/2012		1259852	VAL	Y
3	ug/L	3	ug/L			W	11/1/2012		1261145	VAL	Y
1.76	pCi/L	1.76	pCi/L	5.07	1.34	W	11/1/2012		1260199	VAL	Y
0.442	pCi/L	0.442	pCi/L	4.89	1.3	W	11/1/2012		1260199	VAL	Y
-0.2	pCi/L	-0.2	pCi/L	8.69	2.48	W	11/1/2012		1260199	VAL	Y
0.0085	pCi/L	0.0085	pCi/L	0.0237	0.00637	W	11/1/2012		1259851	VAL	Y
0.00637	pCi/L	0.00637	pCi/L	0.0402	0.00601	W	11/1/2012		1259851	VAL	Y
-29.9	pCi/L	-29.9	pCi/L	61.6	16.8	W	11/1/2012		1260199	VAL	Y
-1.35	pCi/L	-1.35	pCi/L	4.96	1.46	W	11/1/2012		1260199	VAL	Y
0.285	pCi/L	0.285	pCi/L	0.484	0.15	W	11/1/2012		1260884	VAL	Y
0.0882	mg/L	0.0882	mg/L			W	11/1/2012		1260284	VAL	Y
0.00362	pCi/L	0.00362	pCi/L	0.0424	0.00627	W	11/1/2012		1259850	VAL	Y
0.0274	mg/L	0.0274	mg/L			W	11/1/2012		1260281	VAL	Y

CAMO-13-24283	R-60	REG	EPA:120.1	0	1
CAMO-13-24283	R-60	REG	EPA:150.1	0	1
CAMO-13-24283	R-60	REG	EPA:160.1	0	1
CAMO-13-24283	R-60	REG	EPA:245.2	0	1
CAMO-13-24283	R-60	REG	EPA:300.0	0	4
CAMO-13-24283	R-60	REG	EPA:310.1	0	2
CAMO-13-24283	R-60	REG	EPA:350.1	0	1
CAMO-13-24283	R-60	REG	EPA:353.2	0	1
CAMO-13-24283	R-60	REG	EPA:365.4	0	1
CAMO-13-24283	R-60	REG	SM:A2340B	0	1
CAMO-13-24283	R-60	REG	SW-846:6010B	0	17
CAMO-13-24283	R-60	REG	SW-846:6020	0	11

GEL Laboratories LLC

a member of The GEL Group INC

PO Box 30712 Charleston, SC 29417
2040 Savage Road Charleston, SC 29407

P 843.556.8171 F 843.766.1178

www.gel.com

November 29, 2012

Keith Greene
Los Alamos National Laboratory
PO Box 1663
TA-03, SM271, Drop Pt. 02U, Rm111
Los Alamos, New Mexico 87545

Re: LANL-WQH Water Samples
Work Order: 314528
SDG: 2013-265

Dear Keith Greene:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the following analytical results for the sample(s) we received on November 03, 2012, and analyzed for GC/MS Semivolatile, GC/MS Volatile, General Chemistry, Metals and Radiochemistry. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4485.

Sincerely,

for

Valerie Davis
Project Manager

Purchase Order: 63641-10
Chain of Custody: 2013-265
Enclosures

ARS International (63641-10)
LANL-WQH Water Samples
Work Order #: 314528
SDG: 2013-265

Table of Contents

Case Narrative

Case Narrative for
ARS International (63641-10)
LANL-WQH Water Samples
Workorder #: 314528
SDG # : 2013-265

November 29, 2012

Laboratory Identification:

GEL Laboratories LLC
2040 Savage Road
Charleston, South Carolina 29407
(843) 556-8171

Summary

Sample receipt The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on November 03, 2012 for analysis. Please see attached email for discrepancies. The samples were screened according to GEL Standard Operating Procedure. All sample containers arrived without any visible signs of tampering or breakage. Containers were checked for pH, where appropriate, and matched the preservative as documented on the accompanying chain of custody. Shipping container temperature was within specification (0 - 6C). Shipping container temperatures were checked, documented, and within specifications. There are no additional comments concerning sample receipt.

Sample Identification The laboratory received the following samples:

Laboratory ID	Client ID
314528001	CAMO-13-24279
314528002	CAMO-13-24283
314528003	CAMO-13-24274

Case Narrative

Sample analyses were conducted using methodology as outlined in GEL Laboratories, LLC (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

Data Package

The enclosed data package contains the following sections: Case Narrative, Chain of Custody, Cooler Receipt Checklist, Data Package Qualifier Definitions and data from the following fractions: GC/MS Semivolatile, GC/MS Volatile, General Chemistry, Metals and Radiochemistry.

I certify that this data report is in compliance with the terms and conditions of the subcontract and task order, both technically and for completeness, for other than the conditions detailed in the attached case narrative.

for
Valerie Davis
Project Manager

List of current GEL Certifications as of 29 November 2012

State	Certification
Arkansas	88−0651
CLIA	42D0904046
California NELAP	01151CA
Colorado	SC00012
Connecticut	PH−0169
Delaware	SC00012
DoD ELAP A2LA ISO 17025	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330−12−00283, P330−12−00284
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho	SC00012
Illinois NELAP	200029
Indiana	C−SC−01
Kansas NELAP	E−10332
Kentucky	90129
Louisiana NELAP	03046 (AI33904)
Louisiana SDWA	LA120008
Maryland	270
Massachusetts	M−SC012
Mississippi	SC00012
Nevada	SC000122011−1
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
Oklahoma	9904
Pennsylvania NELAP	68−00485
Plant Material Permit	PDEP−12−00260
South Carolina Chemistry	10120001
South Carolina Radiochemi	10120002
Tennessee	TN 02934
Texas NELAP	T104704235−12−7
Utah NELAP	SC00012
Vermont	VT87156
Virginia NELAP	460202
Washington	C780−12
Wisconsin	999887790

Chain of Custody and Supporting Documentation

General Engineering Laboratories, Inc. 2040 Savage Road Charleston SC 29407	**Chain of Custody/Analysis Request** 314528	**COC/Lab Request #:** 2013-265 Page 1 of 1

Client Contact:

Lab Agreement # : 126310011
Project Number :
Analysis Turnaround Time:
24 Hour - ☐ Other - ☐
7 Day - ☐
14 Day - ☐
21 Day - ☐
28 Day - ☒

Site Name: Los Alamos National Laboratory

Rad Screening Info: Yes, Below Background

Special Instructions:

Field Sample ID	Sample Date	Sample Time	Sample Matrix	WSP-8260B-VOA	WSP-8270C-SVOA	WSP-GENINORG	WSP-GrossA/B	WSP-LL-H-3	WSP-Met+B+SN+SR+U	WSP-NH3+NO3/NO2+PO4	WSP-RAD	WSP-TKN+TOC
CAMO-13-24279	Nov 1 2012	11:34	W	2	3		1	1			1	1
CAMO-13-24283	Nov 1 2012	11:34	W			1			1	1		
CAMO-13-24274	Nov 1 2012	11:34	W	2								

Special Instructions:

Relinquished by: Steven Sherwood	S. Sherwood	Date/Time: 11/2/12 3pm	Received by: [signature] 11-3-12 0930
Relinquished by:		Date/Time:	Received by:
Relinquished by:		Date/Time:	Received by:

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: LANL	**SDG/AR/COC/Work Order:** 2013-264 2013-265
Received By: MK	**Date Received:** 11-3-12

Suspected Hazard Information	Yes	No	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
COC/Samples marked as radioactive?		✓	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): cpm 0
Classified Radioactive II or III by RSO?		✓	If yes, Were swipes taken of sample contatiners < action levels?
COC/Samples marked containing PCBs?		✓	
Package, COC, and/or Samples marked as beryllium or asbestos containing?		✓	If yes, samples are to be segregeated as Safety Controlled Samples, and opened by the GEL Safety Group.
Shipped as a DOT Hazardous?		✓	Hazard Class Shipped: UN#:
Samples identified as Foreign Soil?		✓	

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	✓			Preservation Method: Ice bags (Blue ice) Dry ice None Other (describe) *all temperatures are recorded in Celsius. 4c
2a	Daily check performed and passed on IR temperature gun?	✓			Temperature Device Serial #: 415018L Secondary Temperature Device Serial # (If Applicable):
3	Chain of custody documents included with shipment?	✓			
4	Sample containers intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
5	Samples requiring chemical preservation at proper pH?	✓			Sample ID's, containers affected and observed pH: If Preservation added, Lot#:
6	VOA vials free of headspace (defined as < 6mm bubble)?	✓			Sample ID's and containers affected:
7	Are Encore containers present?			✓	(If yes, immediately deliver to Volatiles laboratory)
8	Samples received within holding time?	✓			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	✓			Sample ID's and containers affected:
10	Date & time on COC match date & time on bottles?	✓			Sample ID's affected:
11	Number of containers received match number indicated on COC?			✓	Sample ID's affected: * see Below
12	Are sample containers identifiable as GEL provided?			✓	
13	COC form is properly signed in relinquished/received sections?	✓			
14	Carrier and tracking number.	✓			Circle Applicable: (FedEx Air) FedEx Ground UPS Field Services Courier Other. 5462 9832 4911 4c 4922 18c no ice

Comments (Use Continuation Form if needed):

* MISSING 1 VIAL FOR CAMO-13-24274
MISSING 1 PCB Bottle FOR CASA-13-24215

PM (or PMA) review: Initials HF Date 110512 Page 1 of 1

Subject: Sample Receipt for 110212 and 110312
From: Hope Taylor <Hope.Taylor@gel.com>
Date: 11/5/2012 11:00 AM
To: "Keith R. Greene" <kgreene@lanl.gov>, LANL@amrad.com, "team.davis" <team.davis@gel.com>

Good morning Keith,

The containers for Gross A/B were preserved prior to analysis.

RN 2013-259 The lab received one container each for HEXP, SVOA and PCB for ID CAMO-13-24225, chain indicates three.
Received a broken vial(8260) for ID CAMO-13-24225.

RN 2013-263 The lab received one container for ID WST55-13-24513, chain indicates six.

RN 2013-265 The lab received one container for 8260 for ID CAMO-13-24274, chain indicates two

RN 2013-264 The lab received two containers for PCB for ID CASA-13-24215, chain indicates three.

Thanks

--
Hope Taylor
Project Manager Assistant
GEL Laboratories, LLC
2040 Savage Road
Charleston, SC 29407
Direct: 843.769.7376 ext. 4778
Main: 843.556.8171
Fax: 843.766.1178
E-mail: hop01200@gel.com
Web: www.gel.com

ORIGIN ID: SAFA (505) 665-9966
KEITH GREENE
LOS ALAMOS NATL LAB.
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 02NOV12
ACTWGT: 51.0 LB MAN
CAD: 0014176/CAFE2511

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407
(843) 556-8171
REF: MRIA015AGWLO

4°C

58DC1/9CCB/18BC

FedEx Express

J111311066050125

1 of 2
TRK# 0201 5462 9832 4911
MASTER

SATURDAY ### A1
PRIORITY OVERNIGHT

X0 CHSA

29407
SC-US CHS

Part # 156148-434 RIT2 08/10 ®

ORIGIN ID: SAFA (505) 665-9966
KEITH GREENE
LOS ALAMOS NATL LAB.
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 02NOV12
ACTWGT: 29.0 LB MAN
CAD: 0014176/CAFE2511

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407
(843) 556-8171
REF: MRIA015AGWLO

18°C
No ice

FedEx Express

2 of 2
MPS# 0263 5462 9832 4922
Mstr# 5462 9832 4911

SATURDAY ### A1
PRIORITY OVERNIGHT
0201

X0 CHSA

29407
SC-US CHS

Part # 156148-434 RIT2 08/10 ®

Data Review Qualifier Flag Definition Sheet

Data Review Qualifier Definitions

Qualifier	Explanation
*	A quality control analyte recovery is outside of specified acceptance criteria
**	Analyte is a surrogate compound
<	Result is less than value reported
>	Result is greater than value reported
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
A	The TIC is a suspected aldol-condensation product
B	Target analyte was detected in the associated blank
B	Metals-Either presence of analyte detected in the associated blank, or MDL/IDL < sample value < PQL
BD	Results are either below the MDC or tracer recovery is low
C	Analyte has been confirmed by GC/MS analysis
D	Results are reported from a diluted aliquot of the sample
d	5-day BOD-The 2:1 depletion requirement was not met for this sample
E	Organics-Concentration of the target analyte exceeds the instrument calibration range
E	Metals-%difference of sample and SD is >10%. Sample concentration must meet flagging criteria
H	Analytical holding time was exceeded
h	Preparation or preservation holding time was exceeded
J	Value is estimated
N	Metals-The Matrix spike sample recovery is not within specified control limits
N	Organics-Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor
N/A	Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
ND	Analyte concentration is not detected above the reporting limit
UI	Gamma Spectroscopy-Uncertain identification
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y	QC Samples were not spiked with this compound
Z	Paint Filter Test-Particulates passed through the filter, however no free liquids were observed.

Volatile Analysis

Case Narrative

ChemStation Case Narrative
ARS International (ARSL)
SDG 2013-265

Method/Analysis Information

Procedure:	**Volatile Organic Compounds (VOC) by Gas Chromatograph/Mass Spectrometer**
Analytical Method:	SW846 8260B DOE-AL
Analytical Batch Number:	1262779

Sample Analysis

The following client and quality control samples were analyzed to complete this SDG using the methods referenced in the Analysis Information section:

Sample ID	Client ID
314528001	CAMO-13-24279
314528003	CAMO-13-24274
1202778860	Method Blank (MB)
1202778861	314528001(CAMO-13-24279) Post Spike (PS)
1202778862	314528001(CAMO-13-24279) Post Spike Duplicate (PSD)
1202778863	Laboratory Control Sample (LCS)
1202778864	Laboratory Control Sample (LCS)
1202780090	Method Blank (MB)
1202780091	Laboratory Control Sample (LCS)
1202780092	Laboratory Control Sample (LCS)

NOTE: For volatile organic analyses the matrix spike designations may be indicated as "PS" or "PSD". The "PS" designation (post spike) indicates that the matrix was fortified prior to analysis but after applying any prep factors, such as a dilution. The laboratory considers the MS/MSD and PS/PSD designations interchangeable.

The samples in this SDG were analyzed on an "as received" basis.

Preparation/Analytical Method Verification

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-OA-E-038 REV# 18.

Raw data reports are processed and reviewed by the analyst using the Chemstation software package. False positives have been removed from the quantitation reports per standard operating procedures (SOP) section 19.1.2. False positive analytes are designated on the quantitation report with a ’d’ qualifier.

Calibration Information

A complete list of the initial calibration data files with the correct dates and times of analysis are shown in the

Calibration History report located in the Standard Data section of the data package.

The surrogate compounds were calibrated using a minimum five-point calibration curve. The surrogates were added by the auto sampler at a concentration of 50 ug/L or 20 ug/L for low level analyses. GEL Laboratories LLC will not have surrogate recoveries reported for Dibromofluoromethane. This is due to increased regulations for this analyte and an industry shortage.

Initial Calibration
At the request of the client, linear curve fits, for target analytes that did not meet the x-intercept criteria of less than or equal to 3 times the MDL and had %RSDs less than 60%, were set to use the average response factor to quantitate data in this SDG.

Continuing Calibration Verification Requirements
All associated calibration verification standard(s) (CCV) met the acceptance criteria.

Quality Control (QC) Information

Blank (MB) Statement
Target analytes were detected in the blank 1202778860 (MB) below the reporting limit.

Surrogate Recoveries
Surrogate recoveries in all client and quality control samples were within the acceptance limits.

Laboratory Control Sample (LCS) Recovery
The LCS 1202778863 (LCS) recoveries were not all within the acceptance limits. The unacceptable recoveries were less than 5% of the requested analyte list. This satisfies the client criteria. The results are reported. See the Data Exception Report in the miscellaneous section of the data package.

QC Sample Designation
Sample 314528001 (CAMO-13-24279) was designated for spike analysis.

Matrix Spike (PS) Recovery Statement
The spike recoveries were within the required acceptance limits.

Matrix Spike Duplicate (PSD) Recovery Statement
The spike duplicate recoveries were within the required acceptance limits.

Relative Percent Difference (RPD) Statement
The RPDs between the matrix spike pair met the acceptance limits.

Internal Standard (ISTD) Acceptance
The internal standard responses in all client and quality control samples met the required acceptance criteria.

Technical Information

Holding Time Specifications
GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection or sample receipt. Those holding times expressed in hours are calculated in the ALPHALIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Sample Preservation and Integrity
All samples met the sample preservation and integrity requirements.

Sample Dilutions/Methanol Dilutions
The samples in this SDG did not require dilutions.

Sample Re-extraction/Re-analysis
Samples 1202778861 (CAMO-13-24279) and 1202778862 (CAMO-13-24279) were re-analyzed due to unacceptable surrogate or internal standard recoveries in the initial analysis.

Miscellaneous Information

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Data Exception (DER) Documentation
Data exception reports (DERs) are generated to document procedural anomalies that may deviate from referenced SOP or contractual documents. The following DER was generated for this SDG: DER# 1141833.

Manual Integrations
Data files associated with the initial calibration, continuing calibration check, and samples did not require manual integrations.

TIC Comment
Tentatively identified compounds (TIC) may be requested for this sample delivery group/work order. Please note that non-requested target analytes that are reported on the quantitation reports will be present on the Form I. These detected analytes are included in the calibrated method and as a result will be reported on the Sample Data Summary (Form I) or Certificate of Analysis (C of A). TIC data, if requested, are included on the Sample Data Summary (Form I) and are also included with the sample raw data.

Additional Comments
Additional comments were not required for this SDG.

Residual Chlorine
Residual Chlorine was not detected in any of the samples in this SDG.

System Configuration

The Volatile-GC/MS analysis was performed on the following instrument configuration:

Instrument ID	Instrument	System Configuration	Column ID	Column Description	P & T Trap
VOA9.I	Agilent 6890/5973 GC/MS w/ OI Eclipse/Archon Autosampler	HP6890/HP5973	DB-624	J&W, 60m x 0.25mm x 1.4um	Trap 10

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report
for

ARSL001 ARS International (63641-10)

Client SDG: 2013-265 GEL Work Order: 314528

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria

** Analyte is a surrogate compound

B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.

J Value is estimated

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

DL Indicates that sample is diluted.
RA Indicates that sample is re-analyzed without re-extraction.
RE Indicates that sample is re-extracted.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: Erin Haubert **Name: Erin Haubert**

Date: 28 NOV 2012 **Title: Data Validator**

Sample Data Summary

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-265**	**Date Collected:**	**11/01/2012 11:34**	**Matrix:**	**W**
Lab Sample ID:	**314528001**	**Date Received:**	**11/03/2012 09:30**		
		Client:	**ARSL001**	**Project:**	**ESHL00210**
Client ID:	**CAMO-13-24279**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1262779**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**11/13/2012 11:58**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/13/2012 11:58**				
Data File:	**111312V9\9M211.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
75-71-8	Dichlorodifluoromethane	U	1.00	ug/L	0.300	1.00
74-87-3	Chloromethane	U	1.00	ug/L	0.300	1.00
75-01-4	Vinyl chloride	U	1.00	ug/L	0.300	1.00
74-83-9	Bromomethane	U	1.00	ug/L	0.300	1.00
75-00-3	Chloroethane	U	1.00	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane	U	1.00	ug/L	0.300	1.00
60-29-7	Ethyl ether	U	1.00	ug/L	0.300	1.00
67-64-1	Acetone	U	10.0	ug/L	3.00	10.0
75-05-8	Acetonitrile	U	25.0	ug/L	8.00	25.0
75-35-4	1,1-Dichloroethylene	U	1.00	ug/L	0.300	1.00
74-88-4	Iodomethane	U	5.00	ug/L	1.50	5.00
75-09-2	Methylene chloride	U	10.0	ug/L	3.00	10.0
75-15-0	Carbon disulfide	U	5.00	ug/L	1.50	5.00
1634-04-4	tert-Butyl methyl ether	U	1.00	ug/L	0.300	1.00
156-60-5	trans-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
108-05-4	Vinyl acetate	U	5.00	ug/L	1.50	5.00
75-34-3	1,1-Dichloroethane	U	1.00	ug/L	0.300	1.00
78-93-3	2-Butanone	U	5.00	ug/L	2.00	5.00
156-59-2	cis-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
67-66-3	Chloroform	U	1.00	ug/L	0.300	1.00
74-97-5	Bromochloromethane	U	1.00	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane	U	1.00	ug/L	0.300	1.00
563-58-6	1,1-Dichloropropene	U	1.00	ug/L	0.300	1.00
71-36-3	n-Butyl alcohol	U	50.0	ug/L	15.0	50.0
56-23-5	Carbon tetrachloride	U	1.00	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane	U	1.00	ug/L	0.300	1.00
71-43-2	Benzene	U	1.00	ug/L	0.300	1.00
79-01-6	Trichloroethylene	U	1.00	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
75-27-4	Bromodichloromethane	U	1.00	ug/L	0.300	1.00
74-95-3	Dibromomethane	U	1.00	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone	U	5.00	ug/L	1.50	5.00
10061-01-5	cis-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00
108-88-3	Toluene	U	1.00	ug/L	0.300	1.00
10061-02-6	trans-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00
79-00-5	1,1,2-Trichloroethane	U	1.00	ug/L	0.300	1.00
591-78-6	2-Hexanone	U	5.00	ug/L	2.20	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-265**	**Date Collected:**	**11/01/2012 11:34**	**Matrix:**	**W**
Lab Sample ID:	**314528001**	**Date Received:**	**11/03/2012 09:30**		
		Client:	**ARSL001**	**Project:**	**ESHL00210**
Client ID:	**CAMO-13-24279**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1262779**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**11/13/2012 11:58**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/13/2012 11:58**				
Data File:	**111312V9\9M211.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
142-28-9	1,3-Dichloropropane	U	1.00	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene	U	1.00	ug/L	0.300	1.00
124-48-1	Dibromochloromethane	U	1.00	ug/L	0.300	1.00
106-93-4	1,2-Dibromoethane	U	1.00	ug/L	0.300	1.00
108-90-7	Chlorobenzene	U	1.00	ug/L	0.300	1.00
100-41-4	Ethylbenzene	U	1.00	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes	U	2.00	ug/L	0.300	2.00
95-47-6	o-Xylene	U	1.00	ug/L	0.300	1.00
100-42-5	Styrene	U	1.00	ug/L	0.300	1.00
75-25-2	Bromoform	U	1.00	ug/L	0.300	1.00
79-34-5	1,1,2,2-Tetrachloroethane	U	1.00	ug/L	0.300	1.00
96-18-4	1,2,3-Trichloropropane	U	1.00	ug/L	0.300	1.00
108-86-1	Bromobenzene	U	1.00	ug/L	0.300	1.00
103-65-1	n-Propylbenzene	U	1.00	ug/L	0.300	1.00
95-49-8	2-Chlorotoluene	U	1.00	ug/L	0.300	1.00
98-82-8	Isopropylbenzene	U	1.00	ug/L	0.300	1.00
108-67-8	1,3,5-Trimethylbenzene	U	1.00	ug/L	0.300	1.00
106-43-4	4-Chlorotoluene	U	1.00	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene	U	1.00	ug/L	0.300	1.00
95-63-6	1,2,4-Trimethylbenzene	U	1.00	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene	U	1.00	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene	U	1.00	ug/L	0.300	1.00
541-73-1	1,3-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
104-51-8	n-Butylbenzene	U	1.00	ug/L	0.300	1.00
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene	U	1.00	ug/L	0.300	1.00
91-20-3	Naphthalene	U	1.00	ug/L	0.400	1.00
87-61-6	1,2,3-Trichlorobenzene	U	1.00	ug/L	0.300	1.00
107-02-8	Acrolein	U	5.00	ug/L	1.50	5.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	1.50	5.00
107-05-1	Allyl chloride	U	5.00	ug/L	1.50	5.00
107-13-1	Acrylonitrile	U	5.00	ug/L	1.50	5.00
126-99-8	2-Chloro-1,3-butadiene	U	1.00	ug/L	0.300	1.00
107-12-0	Propionitrile	U	5.00	ug/L	1.50	5.00
126-98-7	Methacrylonitrile	U	5.00	ug/L	1.50	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	15.0	50.0
80-62-6	Methyl methacrylate	U	5.00	ug/L	1.50	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-265**	**Date Collected:**	**11/01/2012 11:34**	**Matrix:**	**W**
Lab Sample ID:	**314528001**	**Date Received:**	**11/03/2012 09:30**		
		Client:	**ARSL001**	**Project:**	**ESHL00210**
Client ID:	**CAMO-13-24279**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1262779**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**11/13/2012 11:58**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/13/2012 11:58**				
Data File:	**111312V9\9M211.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.50	5.00
630-20-6	1,1,1,2-Tetrachloroethane	U	1.00	ug/L	0.300	1.00
120-82-1	1,2,4-Trichlorobenzene	U	1.00	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene	U	1.00	ug/L	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	61.9	50.0	ug/L	124	(78%-124%)
Bromofluorobenzene	51.7	50.0	ug/L	103	(80%-120%)
Toluene-d8	48.7	50.0	ug/L	97.4	(80%-120%)

Tentatively Identified Compound Summary

CAS No.	Tentatively Identified Compound (TIC)	RT	Estimated	Units	Fit	Qual
	unknown hydrocarbon	4.36	14.2	ug/L	0	J

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-265**	**Date Collected:**	**11/01/2012 11:34**	**Matrix:**	**W**
Lab Sample ID:	**314528003**	**Date Received:**	**11/03/2012 09:30**		
		Client:	**ARSL001**	**Project:**	**ESHL00210**
Client ID:	**CAMO-13-24274**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1262779**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**11/13/2012 11:04**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/13/2012 11:04**				
Data File:	**111312V9\9M209.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
75-71-8	Dichlorodifluoromethane	U	1.00	ug/L	0.300	1.00
74-87-3	Chloromethane	U	1.00	ug/L	0.300	1.00
75-01-4	Vinyl chloride	U	1.00	ug/L	0.300	1.00
74-83-9	Bromomethane	U	1.00	ug/L	0.300	1.00
75-00-3	Chloroethane	U	1.00	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane	U	1.00	ug/L	0.300	1.00
60-29-7	Ethyl ether	U	1.00	ug/L	0.300	1.00
67-64-1	Acetone	U	10.0	ug/L	3.00	10.0
75-05-8	Acetonitrile	U	25.0	ug/L	8.00	25.0
75-35-4	1,1-Dichloroethylene	U	1.00	ug/L	0.300	1.00
74-88-4	Iodomethane	U	5.00	ug/L	1.50	5.00
75-09-2	Methylene chloride	U	10.0	ug/L	3.00	10.0
75-15-0	Carbon disulfide	U	5.00	ug/L	1.50	5.00
1634-04-4	tert-Butyl methyl ether	U	1.00	ug/L	0.300	1.00
156-60-5	trans-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
108-05-4	Vinyl acetate	U	5.00	ug/L	1.50	5.00
75-34-3	1,1-Dichloroethane	U	1.00	ug/L	0.300	1.00
78-93-3	2-Butanone	U	5.00	ug/L	2.00	5.00
156-59-2	cis-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
67-66-3	Chloroform	U	1.00	ug/L	0.300	1.00
74-97-5	Bromochloromethane	U	1.00	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane	U	1.00	ug/L	0.300	1.00
563-58-6	1,1-Dichloropropene	U	1.00	ug/L	0.300	1.00
71-36-3	n-Butyl alcohol	U	50.0	ug/L	15.0	50.0
56-23-5	Carbon tetrachloride	U	1.00	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane	U	1.00	ug/L	0.300	1.00
71-43-2	Benzene	U	1.00	ug/L	0.300	1.00
79-01-6	Trichloroethylene	U	1.00	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
75-27-4	Bromodichloromethane	U	1.00	ug/L	0.300	1.00
74-95-3	Dibromomethane	U	1.00	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone	U	5.00	ug/L	1.50	5.00
10061-01-5	cis-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00
108-88-3	Toluene	U	1.00	ug/L	0.300	1.00
10061-02-6	trans-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00
79-00-5	1,1,2-Trichloroethane	U	1.00	ug/L	0.300	1.00
591-78-6	2-Hexanone	U	5.00	ug/L	2.20	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-265**	**Date Collected:**	**11/01/2012 11:34**	**Matrix:**	**W**
Lab Sample ID:	**314528003**	**Date Received:**	**11/03/2012 09:30**		
		Client:	**ARSL001**	**Project:**	**ESHL00210**
Client ID:	**CAMO-13-24274**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1262779**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**11/13/2012 11:04**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/13/2012 11:04**				
Data File:	**111312V9\9M209.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
142-28-9	1,3-Dichloropropane	U	1.00	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene	U	1.00	ug/L	0.300	1.00
124-48-1	Dibromochloromethane	U	1.00	ug/L	0.300	1.00
106-93-4	1,2-Dibromoethane	U	1.00	ug/L	0.300	1.00
108-90-7	Chlorobenzene	U	1.00	ug/L	0.300	1.00
100-41-4	Ethylbenzene	U	1.00	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes	U	2.00	ug/L	0.300	2.00
95-47-6	o-Xylene	U	1.00	ug/L	0.300	1.00
100-42-5	Styrene	U	1.00	ug/L	0.300	1.00
75-25-2	Bromoform	U	1.00	ug/L	0.300	1.00
79-34-5	1,1,2,2-Tetrachloroethane	U	1.00	ug/L	0.300	1.00
96-18-4	1,2,3-Trichloropropane	U	1.00	ug/L	0.300	1.00
108-86-1	Bromobenzene	U	1.00	ug/L	0.300	1.00
103-65-1	n-Propylbenzene	U	1.00	ug/L	0.300	1.00
95-49-8	2-Chlorotoluene	U	1.00	ug/L	0.300	1.00
98-82-8	Isopropylbenzene	U	1.00	ug/L	0.300	1.00
108-67-8	1,3,5-Trimethylbenzene	U	1.00	ug/L	0.300	1.00
106-43-4	4-Chlorotoluene	U	1.00	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene	U	1.00	ug/L	0.300	1.00
95-63-6	1,2,4-Trimethylbenzene	U	1.00	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene	U	1.00	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene	U	1.00	ug/L	0.300	1.00
541-73-1	1,3-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
104-51-8	n-Butylbenzene	U	1.00	ug/L	0.300	1.00
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene	U	1.00	ug/L	0.300	1.00
91-20-3	Naphthalene	U	1.00	ug/L	0.400	1.00
87-61-6	1,2,3-Trichlorobenzene	U	1.00	ug/L	0.300	1.00
107-02-8	Acrolein	U	5.00	ug/L	1.50	5.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	1.50	5.00
107-05-1	Allyl chloride	U	5.00	ug/L	1.50	5.00
107-13-1	Acrylonitrile	U	5.00	ug/L	1.50	5.00
126-99-8	2-Chloro-1,3-butadiene	U	1.00	ug/L	0.300	1.00
107-12-0	Propionitrile	U	5.00	ug/L	1.50	5.00
126-98-7	Methacrylonitrile	U	5.00	ug/L	1.50	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	15.0	50.0
80-62-6	Methyl methacrylate	U	5.00	ug/L	1.50	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-265**	**Date Collected:**	**11/01/2012 11:34**	**Matrix:**	**W**
Lab Sample ID:	**314528003**	**Date Received:**	**11/03/2012 09:30**		
		Client:	**ARSL001**	**Project:**	**ESHL00210**
Client ID:	**CAMO-13-24274**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1262779**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**11/13/2012 11:04**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/13/2012 11:04**				
Data File:	**111312V9\9M209.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.50	5.00
630-20-6	1,1,1,2-Tetrachloroethane	U	1.00	ug/L	0.300	1.00
120-82-1	1,2,4-Trichlorobenzene	U	1.00	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene	U	1.00	ug/L	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	59.0	50.0	ug/L	118	(78%-124%)
Bromofluorobenzene	50.1	50.0	ug/L	100	(80%-120%)
Toluene-d8	47.0	50.0	ug/L	94.1	(80%-120%)

Tentatively Identified Compound Summary

CAS No.	Tentatively Identified Compound (TIC)	RT	Estimated	Units	Fit	Qual
	unknown hydrocarbon	4.316	13.3	ug/L	0	J

Quality Control Summary

Volatile

Surrogate Recovery Report

SDG Number: 2013-265

Matrix Type: LIQUID

Sample ID	Client ID	DCED4 %REC	TOL %REC	BFB %REC
1202778863	LCS for batch 1262779	121	96	102
1202778864	LCS for batch 1262779	112	94	98
1202778860	MB for batch 1262779	111	95	98
314528003	CAMO-13-24274	118	94	100
314528001	CAMO-13-24279	124	97	103
1202780091	LCS for batch 1262779	96	97	98
1202780092	LCS for batch 1262779	91	94	99
1202780090	MB for batch 1262779	99	97	103
1202778861	CAMO-13-24279PS	101	98	102
1202778862	CAMO-13-24279PSD	108	105	106

Surrogate		Acceptance Limits
DCED4	= 1,2-Dichloroethane-d4	(78%-124%)
TOL	= Toluene-d8	(80%-120%)
BFB	= Bromofluorobenzene	(80%-120%)

* Recovery outside Acceptance Limits

Column to be used to flag recovery values

D Sample Diluted

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 2013-265 **Sample Type:** Post Spike
Client ID: CAMO-13-24279PS **Matrix:** W
Lab Sample ID: 1202778861
Instrument: VOA9.I **Analysis Date:** 11/15/2012 17:05 **Dilution:** 1
Analyst: RXY1 **Prep Batch ID** 1262779
Purge Vol: 5 mL **Batch ID:** 1262779

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits
75-71-8	PS	Dichlorodifluoromethane	50.0	0.00	U	43.8	88	36-123
74-87-3	PS	Chloromethane	50.0	0.00	U	45.3	91	47-134
75-01-4	PS	Vinyl chloride	50.0	0.00	U	43.0	86	49-129
74-83-9	PS	Bromomethane	50.0	0.00	U	45.5	91	56-127
75-00-3	PS	Chloroethane	50.0	0.00	U	47.0	94	67-122
75-69-4	PS	Trichlorofluoromethane	50.0	0.00	U	46.2	92	60-123
60-29-7	PS	Ethyl ether	50.0	0.00	U	45.6	91	69-121
67-64-1	PS	Acetone	250	0.00	U	146	58	30-143
75-05-8	PS	Acetonitrile	1250	0.00	U	1230	99	60-133
75-35-4	PS	1,1-Dichloroethylene	50.0	0.00	U	49.2	98	67-132
74-88-4	PS	Iodomethane	250	0.00	U	257	103	69-147
75-09-2	PS	Methylene chloride	50.0	0.00	U	47.1	94	56-135
75-15-0	PS	Carbon disulfide	250	0.00	U	253	101	65-153
1634-04-4	PS	tert-Butyl methyl ether	50.0	0.00	U	47.1	94	73-126
156-60-5	PS	trans-1,2-Dichloroethylene	50.0	0.00	U	48.4	97	69-128
108-05-4	PS	Vinyl acetate	250	0.00	U	226	90	50-143
75-34-3	PS	1,1-Dichloroethane	50.0	0.00	U	47.4	95	75-124
78-93-3	PS	2-Butanone	250	0.00	U	182	73	30-140
156-59-2	PS	cis-1,2-Dichloroethylene	50.0	0.00	U	47.2	94	52-147
594-20-7	PS	2,2-Dichloropropane	50.0	0.00	U	49.8	100	67-143
67-66-3	PS	Chloroform	50.0	0.00	U	47.0	94	75-125
74-97-5	PS	Bromochloromethane	50.0	0.00	U	49.0	98	80-120

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 2013-265 **Sample Type:** Post Spike
Client ID: CAMO-13-24279PS **Matrix:** W
Lab Sample ID: 1202778861
Instrument: VOA9.I **Analysis Date:** 11/15/2012 17:05 **Dilution:** 1
Analyst: RXY1 **Prep Batch ID** 1262779
Purge Vol: 5 mL **Batch ID:** 1262779

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits
71-55-6	PS	1,1,1-Trichloroethane	50.0	0.00	U	50.2	100	69-140
563-58-6	PS	1,1-Dichloropropene	50.0	0.00	U	49.7	99	71-130
71-36-3	PS	n-Butyl alcohol	5000	0.00	U	5480	110	53-150
56-23-5	PS	Carbon tetrachloride	50.0	0.00	U	53.1	106	69-142
107-06-2	PS	1,2-Dichloroethane	50.0	0.00	U	47.1	94	72-126
71-43-2	PS	Benzene	50.0	0.00	U	47.2	94	73-119
79-01-6	PS	Trichloroethylene	50.0	0.00	U	49.2	98	54-147
78-87-5	PS	1,2-Dichloropropane	50.0	0.00	U	47.8	96	78-123
75-27-4	PS	Bromodichloromethane	50.0	0.00	U	51.3	103	76-131
74-95-3	PS	Dibromomethane	50.0	0.00	U	49.2	98	79-120
108-10-1	PS	4-Methyl-2-pentanone	250	0.00	U	246	98	68-136
10061-01-5	PS	cis-1,3-Dichloropropylene	50.0	0.00	U	52.7	105	72-134
108-88-3	PS	Toluene	50.0	0.00	U	45.2	90	62-126
10061-02-6	PS	trans-1,3-Dichloropropylene	50.0	0.00	U	51.1	102	72-133
79-00-5	PS	1,1,2-Trichloroethane	50.0	0.00	U	47.5	95	74-120
591-78-6	PS	2-Hexanone	250	0.00	U	191	76	31-132
142-28-9	PS	1,3-Dichloropropane	50.0	0.00	U	46.5	93	73-121
127-18-4	PS	Tetrachloroethylene	50.0	0.00	U	47.9	96	54-139
124-48-1	PS	Dibromochloromethane	50.0	0.00	U	52.6	105	74-128
106-93-4	PS	1,2-Dibromoethane	50.0	0.00	U	51.6	103	80-120
108-90-7	PS	Chlorobenzene	50.0	0.00	U	46.3	93	73-119
100-41-4	PS	Ethylbenzene	50.0	0.00	U	46.3	93	66-125

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 2013-265 **Sample Type:** Post Spike
Client ID: CAMO-13-24279PS **Matrix:** W
Lab Sample ID: 1202778861
Instrument: VOA9.I **Analysis Date:** 11/15/2012 17:05 **Dilution:** 1
Analyst: RXY1 **Prep Batch ID** 1262779
Purge Vol: 5 mL **Batch ID:** 1262779

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits
179601-23-1	PS	m,p-Xylenes	100	0.00	U	97.2	97	56-134
95-47-6	PS	o-Xylene	50.0	0.00	U	47.8	96	68-126
100-42-5	PS	Styrene	50.0	0.00	U	50.0	100	57-138
75-25-2	PS	Bromoform	50.0	0.00	U	57.6	115	66-129
79-34-5	PS	1,1,2,2-Tetrachloroethane	50.0	0.00	U	49.6	99	44-146
96-18-4	PS	1,2,3-Trichloropropane	50.0	0.00	U	48.9	98	68-129
108-86-1	PS	Bromobenzene	50.0	0.00	U	48.5	97	70-122
103-65-1	PS	n-Propylbenzene	50.0	0.00	U	46.6	93	61-131
95-49-8	PS	2-Chlorotoluene	50.0	0.00	U	48.0	96	66-126
98-82-8	PS	Isopropylbenzene	50.0	0.00	U	47.3	95	65-130
108-67-8	PS	1,3,5-Trimethylbenzene	50.0	0.00	U	47.7	95	58-134
106-43-4	PS	4-Chlorotoluene	50.0	0.00	U	46.8	94	63-125
98-06-6	PS	tert-Butylbenzene	50.0	0.00	U	48.3	97	66-129
95-63-6	PS	1,2,4-Trimethylbenzene	50.0	0.00	U	47.2	94	60-131
135-98-8	PS	sec-Butylbenzene	50.0	0.00	U	47.6	95	62-130
99-87-6	PS	4-Isopropyltoluene	50.0	0.00	U	47.7	95	62-132
541-73-1	PS	1,3-Dichlorobenzene	50.0	0.00	U	47.0	94	66-121
106-46-7	PS	1,4-Dichlorobenzene	50.0	0.00	U	46.5	93	65-119
104-51-8	PS	n-Butylbenzene	50.0	0.00	U	47.4	95	55-134
96-12-8	PS	1,2-Dibromo-3-chloropropane	50.0	0.00	U	57.1	114	58-137
87-68-3	PS	Hexachlorobutadiene	50.0	0.00	U	48.5	97	49-139
91-20-3	PS	Naphthalene	50.0	0.00	U	48.0	96	46-145

Quality Control Summary
Spike Recovery Report

SDG Number: 2013-265 **Sample Type:** Post Spike

Client ID: CAMO-13-24279PS **Matrix:** W

Lab Sample ID: 1202778861

Instrument: VOA9.I **Analysis Date:** 11/15/2012 17:05 **Dilution:** 1

Analyst: RXY1 **Prep Batch ID** 1262779

Purge Vol: 5 mL **Batch ID:** 1262779

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits
87-61-6	PS	1,2,3-Trichlorobenzene	50.0	0.00	U	45.5	91	54-134
630-20-6	PS	1,1,1,2-Tetrachloroethane	50.0	0.00	U	47.0	94	79-128
120-82-1	PS	1,2,4-Trichlorobenzene	50.0	0.00	U	45.0	90	55-128
95-50-1	PS	1,2-Dichlorobenzene	50.0	0.00	U	46.7	93	68-121

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 2013-265 **Sample Type:** Post Spike Duplicate
Client ID: CAMO-13-24279PSD **Matrix:** W
Lab Sample ID: 1202778862
Instrument: VOA9.I **Analysis Date:** 11/15/2012 17:33 **Dilution:** 1
Analyst: RXY1 **Prep Batch ID** 1262779
Purge Vol: 5 mL **Batch ID:** 1262779

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
75-71-8	PSD	Dichlorodifluoromethane	50.0	0.00	U	43.7	87	36-123	0	0-20
74-87-3	PSD	Chloromethane	50.0	0.00	U	42.9	86	47-134	5	0-20
75-01-4	PSD	Vinyl chloride	50.0	0.00	U	41.0	82	49-129	5	0-20
74-83-9	PSD	Bromomethane	50.0	0.00	U	43.6	87	56-127	4	0-20
75-00-3	PSD	Chloroethane	50.0	0.00	U	45.4	91	67-122	4	0-20
75-69-4	PSD	Trichlorofluoromethane	50.0	0.00	U	45.5	91	60-123	2	0-20
60-29-7	PSD	Ethyl ether	50.0	0.00	U	46.2	92	69-121	1	0-20
67-64-1	PSD	Acetone	250	0.00	U	142	57	30-143	3	0-20
75-05-8	PSD	Acetonitrile	1250	0.00	U	1180	94	60-133	4	0-20
75-35-4	PSD	1,1-Dichloroethylene	50.0	0.00	U	48.6	97	67-132	1	0-20
74-88-4	PSD	Iodomethane	250	0.00	U	254	102	69-147	1	0-20
75-09-2	PSD	Methylene chloride	50.0	0.00	U	46.7	93	56-135	1	0-20
75-15-0	PSD	Carbon disulfide	250	0.00	U	248	99	65-153	2	0-20
1634-04-4	PSD	tert-Butyl methyl ether	50.0	0.00	U	45.8	92	73-126	3	0-20
156-60-5	PSD	trans-1,2-Dichloroethylene	50.0	0.00	U	47.6	95	69-128	2	0-20
108-05-4	PSD	Vinyl acetate	250	0.00	U	212	85	50-143	6	0-20
75-34-3	PSD	1,1-Dichloroethane	50.0	0.00	U	46.7	93	75-124	2	0-20
78-93-3	PSD	2-Butanone	250	0.00	U	175	70	30-140	4	0-20
156-59-2	PSD	cis-1,2-Dichloroethylene	50.0	0.00	U	46.1	92	52-147	2	0-20
594-20-7	PSD	2,2-Dichloropropane	50.0	0.00	U	48.0	96	67-143	4	0-20
67-66-3	PSD	Chloroform	50.0	0.00	U	46.0	92	75-125	2	0-20
74-97-5	PSD	Bromochloromethane	50.0	0.00	U	47.2	94	80-120	4	0-20

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 2013-265 **Sample Type:** Post Spike Duplicate
Client ID: CAMO-13-24279PSD **Matrix:** W
Lab Sample ID: 1202778862
Instrument: VOA9.I **Analysis Date:** 11/15/2012 17:33 **Dilution:** 1
Analyst: RXY1 **Prep Batch ID** 1262779
Purge Vol: 5 mL **Batch ID:** 1262779

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
71-55-6	PSD	1,1,1-Trichloroethane	50.0	0.00	U	48.9	98	69-140	3	0-20
563-58-6	PSD	1,1-Dichloropropene	50.0	0.00	U	48.8	98	71-130	2	0-20
71-36-3	PSD	n-Butyl alcohol	5000	0.00	U	5090	102	53-150	7	0-20
56-23-5	PSD	Carbon tetrachloride	50.0	0.00	U	52.0	104	69-142	2	0-20
107-06-2	PSD	1,2-Dichloroethane	50.0	0.00	U	45.0	90	72-126	5	0-20
71-43-2	PSD	Benzene	50.0	0.00	U	45.7	91	73-119	3	0-20
79-01-6	PSD	Trichloroethylene	50.0	0.00	U	47.7	95	54-147	3	0-20
78-87-5	PSD	1,2-Dichloropropane	50.0	0.00	U	45.9	92	78-123	4	0-20
75-27-4	PSD	Bromodichloromethane	50.0	0.00	U	49.5	99	76-131	4	0-20
74-95-3	PSD	Dibromomethane	50.0	0.00	U	47.2	94	79-120	4	0-20
108-10-1	PSD	4-Methyl-2-pentanone	250	0.00	U	249	100	68-136	1	0-20
10061-01-5	PSD	cis-1,3-Dichloropropylene	50.0	0.00	U	50.0	100	72-134	5	0-20
108-88-3	PSD	Toluene	50.0	0.00	U	44.8	90	62-126	1	0-20
10061-02-6	PSD	trans-1,3-Dichloropropylene	50.0	0.00	U	49.9	100	72-133	2	0-20
79-00-5	PSD	1,1,2-Trichloroethane	50.0	0.00	U	46.0	92	74-120	3	0-20
591-78-6	PSD	2-Hexanone	250	0.00	U	187	75	31-132	2	0-20
142-28-9	PSD	1,3-Dichloropropane	50.0	0.00	U	44.5	89	73-121	4	0-20
127-18-4	PSD	Tetrachloroethylene	50.0	0.00	U	47.1	94	54-139	2	0-20
124-48-1	PSD	Dibromochloromethane	50.0	0.00	U	51.3	103	74-128	2	0-20
106-93-4	PSD	1,2-Dibromoethane	50.0	0.00	U	49.5	99	80-120	4	0-20
108-90-7	PSD	Chlorobenzene	50.0	0.00	U	45.8	92	73-119	1	0-20
100-41-4	PSD	Ethylbenzene	50.0	0.00	U	45.4	91	66-125	2	0-20

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 2013-265 **Sample Type:** Post Spike Duplicate
Client ID: CAMO-13-24279PSD **Matrix:** W
Lab Sample ID: 1202778862
Instrument: VOA9.I **Analysis Date:** 11/15/2012 17:33 **Dilution:** 1
Analyst: RXY1 **Prep Batch ID** 1262779
Purge Vol: 5 mL **Batch ID:** 1262779

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
179601-23-1	PSD	m,p-Xylenes	100	0.00	U	94.8	95	56-134	3	0-20
95-47-6	PSD	o-Xylene	50.0	0.00	U	47.1	94	68-126	2	0-20
100-42-5	PSD	Styrene	50.0	0.00	U	48.5	97	57-138	3	0-20
75-25-2	PSD	Bromoform	50.0	0.00	U	55.2	110	66-129	4	0-20
79-34-5	PSD	1,1,2,2-Tetrachloroethane	50.0	0.00	U	47.2	94	44-146	5	0-20
96-18-4	PSD	1,2,3-Trichloropropane	50.0	0.00	U	46.8	94	68-129	5	0-20
108-86-1	PSD	Bromobenzene	50.0	0.00	U	46.1	92	70-122	5	0-20
103-65-1	PSD	n-Propylbenzene	50.0	0.00	U	44.5	89	61-131	5	0-20
95-49-8	PSD	2-Chlorotoluene	50.0	0.00	U	45.5	91	66-126	5	0-20
98-82-8	PSD	Isopropylbenzene	50.0	0.00	U	46.2	92	65-130	2	0-20
108-67-8	PSD	1,3,5-Trimethylbenzene	50.0	0.00	U	45.5	91	58-134	5	0-20
106-43-4	PSD	4-Chlorotoluene	50.0	0.00	U	43.6	87	63-125	7	0-20
98-06-6	PSD	tert-Butylbenzene	50.0	0.00	U	47.9	96	66-129	1	0-20
95-63-6	PSD	1,2,4-Trimethylbenzene	50.0	0.00	U	45.0	90	60-131	5	0-20
135-98-8	PSD	sec-Butylbenzene	50.0	0.00	U	46.7	93	62-130	2	0-20
99-87-6	PSD	4-Isopropyltoluene	50.0	0.00	U	46.1	92	62-132	3	0-20
541-73-1	PSD	1,3-Dichlorobenzene	50.0	0.00	U	44.5	89	66-121	5	0-20
106-46-7	PSD	1,4-Dichlorobenzene	50.0	0.00	U	43.8	88	65-119	6	0-20
104-51-8	PSD	n-Butylbenzene	50.0	0.00	U	45.0	90	55-134	5	0-20
96-12-8	PSD	1,2-Dibromo-3-chloropropane	50.0	0.00	U	57.2	114	58-137	0	0-20
87-68-3	PSD	Hexachlorobutadiene	50.0	0.00	U	48.8	98	49-139	1	0-20
91-20-3	PSD	Naphthalene	50.0	0.00	U	48.5	97	46-145	1	0-20

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 2013-265 **Sample Type:** Post Spike Duplicate

Client ID: CAMO-13-24279PSD **Matrix:** W

Lab Sample ID: 1202778862

Instrument: VOA9.I **Analysis Date:** 11/15/2012 17:33 **Dilution:** 1

Analyst: RXY1 **Prep Batch ID** 1262779

Purge Vol: 5 mL **Batch ID:** 1262779

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
87-61-6	PSD	1,2,3-Trichlorobenzene	50.0	0.00	U	45.8	92	54-134	1	0-20
630-20-6	PSD	1,1,1,2-Tetrachloroethane	50.0	0.00	U	47.2	94	79-128	1	0-20
120-82-1	PSD	1,2,4-Trichlorobenzene	50.0	0.00	U	44.2	88	55-128	2	0-20
95-50-1	PSD	1,2-Dichlorobenzene	50.0	0.00	U	44.7	89	68-121	4	0-20

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 2013-265
Sample Type: Laboratory Control Sample
Client ID: LCS for batch 1262779
Matrix: WATER
Lab Sample ID: 1202778863
Instrument: VOA9.I
Analysis Date: 11/13/2012 08:24
Dilution: 1
Analyst: RXY1
Prep Batch ID: 1262779
Purge Vol: 5 mL
Batch ID: 1262779

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
75-71-8	LCS	Dichlorodifluoromethane	50.0	0.0	58.5	117	39-124
74-87-3	LCS	Chloromethane	50.0	0.0	57.9	116	57-126
75-01-4	LCS	Vinyl chloride	50.0	0.0	53.1	106	62-121
74-83-9	LCS	Bromomethane	50.0	0.0	50.1	100	68-120
75-00-3	LCS	Chloroethane	50.0	0.0	50.2	100	73-120
75-69-4	LCS	Trichlorofluoromethane	50.0	0.0	62.1	124 *	65-123
60-29-7	LCS	Ethyl ether	50.0	0.0	54.1	108	74-120
67-64-1	LCS	Acetone	250	0.0	354	141	36-163
75-05-8	LCS	Acetonitrile	1250	0.0	1330	106	64-127
75-35-4	LCS	1,1-Dichloroethylene	50.0	0.0	56.7	113	76-127
74-88-4	LCS	Iodomethane	250	0.0	273	109	80-134
75-09-2	LCS	Methylene chloride	50.0	0.0	46.9	94	72-121
75-15-0	LCS	Carbon disulfide	250	0.0	239	96	80-143
1634-04-4	LCS	tert-Butyl methyl ether	50.0	0.0	55.9	112	76-123
156-60-5	LCS	trans-1,2-Dichloroethylene	50.0	0.0	54.1	108	77-123
108-05-4	LCS	Vinyl acetate	250	0.0	305	122	75-144
75-34-3	LCS	1,1-Dichloroethane	50.0	0.0	52.1	104	79-120
78-93-3	LCS	2-Butanone	250	0.0	381	152	46-158
156-59-2	LCS	cis-1,2-Dichloroethylene	50.0	0.0	55.9	112	80-122
594-20-7	LCS	2,2-Dichloropropane	50.0	0.0	63.4	127	76-145
67-66-3	LCS	Chloroform	50.0	0.0	56.6	113	80-120
74-97-5	LCS	Bromochloromethane	50.0	0.0	55.9	112	83-120

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 2013-265
Sample Type: Laboratory Control Sample
Client ID: LCS for batch 1262779
Matrix: WATER
Lab Sample ID: 1202778863
Instrument: VOA9.I
Analysis Date: 11/13/2012 08:24
Dilution: 1
Analyst: RXY1
Prep Batch ID: 1262779
Purge Vol: 5 mL
Batch ID: 1262779

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
71-55-6	LCS	1,1,1-Trichloroethane	50.0	0.0	63.9	128	80-133
563-58-6	LCS	1,1-Dichloropropene	50.0	0.0	54.0	108	80-127
71-36-3	LCS	n-Butyl alcohol	5000	0.0	6690	134	66-138
56-23-5	LCS	Carbon tetrachloride	50.0	0.0	68.8	138	77-139
107-06-2	LCS	1,2-Dichloroethane	50.0	0.0	59.6	119	75-121
71-43-2	LCS	Benzene	50.0	0.0	48.1	96	79-120
79-01-6	LCS	Trichloroethylene	50.0	0.0	52.8	106	80-121
78-87-5	LCS	1,2-Dichloropropane	50.0	0.0	48.6	97	80-120
75-27-4	LCS	Bromodichloromethane	50.0	0.0	61.3	123	80-127
74-95-3	LCS	Dibromomethane	50.0	0.0	54.0	108	80-120
108-10-1	LCS	4-Methyl-2-pentanone	250	0.0	286	114	76-131
10061-01-5	LCS	cis-1,3-Dichloropropylene	50.0	0.0	56.7	113	80-127
108-88-3	LCS	Toluene	50.0	0.0	45.9	92	77-120
10061-02-6	LCS	trans-1,3-Dichloropropylene	50.0	0.0	56.7	113	80-128
79-00-5	LCS	1,1,2-Trichloroethane	50.0	0.0	47.1	94	79-120
591-78-6	LCS	2-Hexanone	250	0.0	362	145	53-158
142-28-9	LCS	1,3-Dichloropropane	50.0	0.0	44.7	89	77-120
127-18-4	LCS	Tetrachloroethylene	50.0	0.0	50.4	101	77-125
124-48-1	LCS	Dibromochloromethane	50.0	0.0	61.0	122	77-126
106-93-4	LCS	1,2-Dibromoethane	50.0	0.0	52.3	105	80-120
108-90-7	LCS	Chlorobenzene	50.0	0.0	47.6	95	80-120
100-41-4	LCS	Ethylbenzene	50.0	0.0	46.4	93	78-120

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 2013-265
Sample Type: Laboratory Control Sample
Client ID: LCS for batch 1262779
Matrix: WATER
Lab Sample ID: 1202778863
Instrument: VOA9.I
Analysis Date: 11/13/2012 08:24
Dilution: 1
Analyst: RXY1
Prep Batch ID: 1262779
Purge Vol: 5 mL
Batch ID: 1262779

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
179601-23-1	LCS	m,p-Xylenes	100	0.0	96.6	97	79-120
95-47-6	LCS	o-Xylene	50.0	0.0	48.0	96	80-120
100-42-5	LCS	Styrene	50.0	0.0	49.2	98	80-121
75-25-2	LCS	Bromoform	50.0	0.0	64.0	128 *	72-125
79-34-5	LCS	1,1,2,2-Tetrachloroethane	50.0	0.0	45.4	91	73-120
96-18-4	LCS	1,2,3-Trichloropropane	50.0	0.0	50.7	101	74-121
108-86-1	LCS	Bromobenzene	50.0	0.0	47.6	95	79-120
103-65-1	LCS	n-Propylbenzene	50.0	0.0	45.9	92	75-125
95-49-8	LCS	2-Chlorotoluene	50.0	0.0	46.2	92	77-121
98-82-8	LCS	Isopropylbenzene	50.0	0.0	48.8	98	76-125
108-67-8	LCS	1,3,5-Trimethylbenzene	50.0	0.0	50.1	100	77-123
106-43-4	LCS	4-Chlorotoluene	50.0	0.0	48.3	97	75-120
98-06-6	LCS	tert-Butylbenzene	50.0	0.0	51.0	102	79-123
95-63-6	LCS	1,2,4-Trimethylbenzene	50.0	0.0	49.0	98	77-121
135-98-8	LCS	sec-Butylbenzene	50.0	0.0	48.2	96	76-124
99-87-6	LCS	4-Isopropyltoluene	50.0	0.0	50.2	100	79-125
541-73-1	LCS	1,3-Dichlorobenzene	50.0	0.0	46.3	93	78-120
106-46-7	LCS	1,4-Dichlorobenzene	50.0	0.0	47.3	95	77-120
104-51-8	LCS	n-Butylbenzene	50.0	0.0	47.4	95	75-127
96-12-8	LCS	1,2-Dibromo-3-chloropropane	50.0	0.0	64.4	129 *	69-128
87-68-3	LCS	Hexachlorobutadiene	50.0	0.0	59.1	118	75-128
91-20-3	LCS	Naphthalene	50.0	0.0	59.2	118	71-125

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 2013-265
Sample Type: Laboratory Control Sample
Client ID: LCS for batch 1262779
Matrix: WATER
Lab Sample ID: 1202778863
Instrument: VOA9.I
Analysis Date: 11/13/2012 08:24
Dilution: 1
Analyst: RXY1
Prep Batch ID: 1262779
Purge Vol: 5 mL
Batch ID: 1262779

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
87-61-6	LCS	1,2,3-Trichlorobenzene	50.0	0.0	60.2	120	73-125
630-20-6	LCS	1,1,1,2-Tetrachloroethane	50.0	0.0	58.0	116	80-124
120-82-1	LCS	1,2,4-Trichlorobenzene	50.0	0.0	57.6	115	75-123
95-50-1	LCS	1,2-Dichlorobenzene	50.0	0.0	47.6	95	79-120

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 2013-265
Sample Type: Laboratory Control Sample
Client ID: LCS for batch 1262779
Matrix: WATER
Lab Sample ID: 1202778864
Instrument: VOA9.I
Analysis Date: 11/13/2012 09:43
Dilution: 1
Analyst: RXY1
Prep Batch ID: 1262779
Purge Vol: 5 mL
Batch ID: 1262779

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
107-02-8	LCS	Acrolein	250	0.0	279	111	28-152
76-13-1	LCS	Trichlorotrifluoroethane	250	0.0	302	121	65-157
107-05-1	LCS	Allyl chloride	250	0.0	267	107	60-135
107-13-1	LCS	Acrylonitrile	250	0.0	267	107	64-131
126-99-8	LCS	2-Chloro-1,3-butadiene	50.0	0.0	65.9	132	45-159
107-12-0	LCS	Propionitrile	250	0.0	278	111	67-135
126-98-7	LCS	Methacrylonitrile	250	0.0	269	108	64-132
78-83-1	LCS	Isobutyl alcohol	2500	0.0	2780	111	60-136
80-62-6	LCS	Methyl methacrylate	250	0.0	239	96	66-129
97-63-2	LCS	Ethyl methacrylate	250	0.0	224	90	66-132

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 2013-265
Sample Type: Laboratory Control Sample
Client ID: LCS for batch 1262779
Matrix: WATER
Lab Sample ID: 1202780091
Instrument: VOA9.I
Analysis Date: 11/15/2012 11:07
Dilution: 1
Analyst: RXY1
Prep Batch ID 1262779
Purge Vol: 5 mL
Batch ID: 1262779

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
75-71-8	LCS	Dichlorodifluoromethane	50.0	0.0	41.2	82	39-124
74-87-3	LCS	Chloromethane	50.0	0.0	40.7	81	57-126
75-01-4	LCS	Vinyl chloride	50.0	0.0	40.2	80	62-121
74-83-9	LCS	Bromomethane	50.0	0.0	42.3	85	68-120
75-00-3	LCS	Chloroethane	50.0	0.0	44.8	90	73-120
75-69-4	LCS	Trichlorofluoromethane	50.0	0.0	44.1	88	65-123
60-29-7	LCS	Ethyl ether	50.0	0.0	46.7	93	74-120
67-64-1	LCS	Acetone	250	0.0	222	89	36-163
75-05-8	LCS	Acetonitrile	1250	0.0	1130	90	64-127
75-35-4	LCS	1,1-Dichloroethylene	50.0	0.0	46.2	92	76-127
74-88-4	LCS	Iodomethane	250	0.0	254	101	80-134
75-09-2	LCS	Methylene chloride	50.0	0.0	44.5	89	72-121
75-15-0	LCS	Carbon disulfide	250	0.0	230	92	80-143
1634-04-4	LCS	tert-Butyl methyl ether	50.0	0.0	46.7	93	76-123
156-60-5	LCS	trans-1,2-Dichloroethylene	50.0	0.0	45.7	91	77-123
108-05-4	LCS	Vinyl acetate	250	0.0	242	97	75-144
75-34-3	LCS	1,1-Dichloroethane	50.0	0.0	45.2	90	79-120
78-93-3	LCS	2-Butanone	250	0.0	260	104	46-158
156-59-2	LCS	cis-1,2-Dichloroethylene	50.0	0.0	44.9	90	80-122
594-20-7	LCS	2,2-Dichloropropane	50.0	0.0	47.5	95	76-145
67-66-3	LCS	Chloroform	50.0	0.0	44.1	88	80-120
74-97-5	LCS	Bromochloromethane	50.0	0.0	49.7	99	83-120

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 2013-265
Sample Type: Laboratory Control Sample
Client ID: LCS for batch 1262779
Matrix: WATER
Lab Sample ID: 1202780091
Instrument: VOA9.I
Analysis Date: 11/15/2012 11:07
Dilution: 1
Analyst: RXY1
Prep Batch ID 1262779
Purge Vol: 5 mL
Batch ID: 1262779

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
71-55-6	LCS	1,1,1-Trichloroethane	50.0	0.0	48.0	96	80-133
563-58-6	LCS	1,1-Dichloropropene	50.0	0.0	46.1	92	80-127
71-36-3	LCS	n-Butyl alcohol	5000	0.0	5280	106	66-138
56-23-5	LCS	Carbon tetrachloride	50.0	0.0	50.6	101	77-139
107-06-2	LCS	1,2-Dichloroethane	50.0	0.0	45.4	91	75-121
71-43-2	LCS	Benzene	50.0	0.0	45.0	90	79-120
79-01-6	LCS	Trichloroethylene	50.0	0.0	47.5	95	80-121
78-87-5	LCS	1,2-Dichloropropane	50.0	0.0	46.7	93	80-120
75-27-4	LCS	Bromodichloromethane	50.0	0.0	50.7	101	80-127
74-95-3	LCS	Dibromomethane	50.0	0.0	49.3	99	80-120
108-10-1	LCS	4-Methyl-2-pentanone	250	0.0	269	108	76-131
10061-01-5	LCS	cis-1,3-Dichloropropylene	50.0	0.0	51.7	103	80-127
108-88-3	LCS	Toluene	50.0	0.0	43.8	88	77-120
10061-02-6	LCS	trans-1,3-Dichloropropylene	50.0	0.0	50.8	102	80-128
79-00-5	LCS	1,1,2-Trichloroethane	50.0	0.0	46.2	92	79-120
591-78-6	LCS	2-Hexanone	250	0.0	279	112	53-158
142-28-9	LCS	1,3-Dichloropropane	50.0	0.0	43.8	88	77-120
127-18-4	LCS	Tetrachloroethylene	50.0	0.0	48.5	97	77-125
124-48-1	LCS	Dibromochloromethane	50.0	0.0	53.1	106	77-126
106-93-4	LCS	1,2-Dibromoethane	50.0	0.0	50.5	101	80-120
108-90-7	LCS	Chlorobenzene	50.0	0.0	45.8	92	80-120
100-41-4	LCS	Ethylbenzene	50.0	0.0	44.0	88	78-120

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 2013-265
Sample Type: Laboratory Control Sample
Client ID: LCS for batch 1262779
Matrix: WATER
Lab Sample ID: 1202780091
Instrument: VOA9.I
Analysis Date: 11/15/2012 11:07
Dilution: 1
Analyst: RXY1
Prep Batch ID 1262779
Purge Vol: 5 mL
Batch ID: 1262779

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
179601-23-1	LCS	m,p-Xylenes	100	0.0	94.5	95	79-120
95-47-6	LCS	o-Xylene	50.0	0.0	46.6	93	80-120
100-42-5	LCS	Styrene	50.0	0.0	49.3	99	80-121
75-25-2	LCS	Bromoform	50.0	0.0	58.5	117	72-125
79-34-5	LCS	1,1,2,2-Tetrachloroethane	50.0	0.0	46.4	93	73-120
96-18-4	LCS	1,2,3-Trichloropropane	50.0	0.0	49.2	98	74-121
108-86-1	LCS	Bromobenzene	50.0	0.0	47.6	95	79-120
103-65-1	LCS	n-Propylbenzene	50.0	0.0	43.5	87	75-125
95-49-8	LCS	2-Chlorotoluene	50.0	0.0	46.8	94	77-121
98-82-8	LCS	Isopropylbenzene	50.0	0.0	45.7	91	76-125
108-67-8	LCS	1,3,5-Trimethylbenzene	50.0	0.0	45.9	92	77-123
106-43-4	LCS	4-Chlorotoluene	50.0	0.0	44.2	88	75-120
98-06-6	LCS	tert-Butylbenzene	50.0	0.0	48.8	98	79-123
95-63-6	LCS	1,2,4-Trimethylbenzene	50.0	0.0	45.7	91	77-121
135-98-8	LCS	sec-Butylbenzene	50.0	0.0	45.4	91	76-124
99-87-6	LCS	4-Isopropyltoluene	50.0	0.0	46.3	93	79-125
541-73-1	LCS	1,3-Dichlorobenzene	50.0	0.0	47.2	94	78-120
106-46-7	LCS	1,4-Dichlorobenzene	50.0	0.0	46.5	93	77-120
104-51-8	LCS	n-Butylbenzene	50.0	0.0	45.2	90	75-127
96-12-8	LCS	1,2-Dibromo-3-chloropropane	50.0	0.0	58.8	118	69-128
87-68-3	LCS	Hexachlorobutadiene	50.0	0.0	50.6	101	75-128
91-20-3	LCS	Naphthalene	50.0	0.0	49.1	98	71-125

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 2013-265
Sample Type: Laboratory Control Sample
Client ID: LCS for batch 1262779
Matrix: WATER
Lab Sample ID: 1202780091
Instrument: VOA9.I
Analysis Date: 11/15/2012 11:07
Dilution: 1
Analyst: RXY1
Prep Batch ID: 1262779
Purge Vol: 5 mL
Batch ID: 1262779

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
87-61-6	LCS	1,2,3-Trichlorobenzene	50.0	0.0	48.3	97	73-125
630-20-6	LCS	1,1,1,2-Tetrachloroethane	50.0	0.0	49.0	98	80-124
120-82-1	LCS	1,2,4-Trichlorobenzene	50.0	0.0	49.6	99	75-123
95-50-1	LCS	1,2-Dichlorobenzene	50.0	0.0	47.0	94	79-120

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 2013-265
Sample Type: Laboratory Control Sample
Client ID: LCS for batch 1262779
Matrix: WATER
Lab Sample ID: 1202780092
Instrument: VOA9.I
Analysis Date: 11/15/2012 14:23
Dilution: 1
Analyst: RXY1
Prep Batch ID: 1262779
Purge Vol: 5 mL
Batch ID: 1262779

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
107-02-8	LCS	Acrolein	250	0.0	212	85	28-152
76-13-1	LCS	Trichlorotrifluoroethane	250	0.0	292	117	65-157
107-05-1	LCS	Allyl chloride	250	0.0	258	103	60-135
107-13-1	LCS	Acrylonitrile	250	0.0	250	100	64-131
126-99-8	LCS	2-Chloro-1,3-butadiene	50.0	0.0	58.6	117	45-159
107-12-0	LCS	Propionitrile	250	0.0	258	103	67-135
126-98-7	LCS	Methacrylonitrile	250	0.0	242	97	64-132
78-83-1	LCS	Isobutyl alcohol	2500	0.0	2290	92	60-136
80-62-6	LCS	Methyl methacrylate	250	0.0	247	99	66-129
97-63-2	LCS	Ethyl methacrylate	250	0.0	243	97	66-132

Method Blank Summary

SDG Number:	**2013-265**	**Client:**	**ARSL001**	**Matrix:**	**WATER**
Client ID:	**MB for batch 1262779**	**Instrument ID:**	**VOA9.I**	**Data File:**	**111312V9\9M207B3.D**
Lab Sample ID:	**1202778860**	**Prep Date:**	**11/13/2012 10:10**	**Analyzed:**	**11/13/12 10:10**
Column:	**DB-624**				

This method blank applies to the following samples and quality control samples:

	Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01	LCS for batch 1262779	1202778863	111312V9\9M203L3.D	11/13/12	0824
02	LCS for batch 1262779	1202778864	111312V9\9M206L.D	11/13/12	0943
03	CAMO-13-24274	314528003	111312V9\9M209.D	11/13/12	1104
04	CAMO-13-24279	314528001	111312V9\9M211.D	11/13/12	1158

Method Blank Summary

SDG Number:	**2013-265**	**Client:**	**ARSL001**	**Matrix:**	**WATER**
Client ID:	**MB for batch 1262779**	**Instrument ID:**	**VOA9.I**	**Data File:**	**111512V9\9M411B1.D**
Lab Sample ID:	**1202780090**	**Prep Date:**	**11/15/2012 14:49**	**Analyzed:**	**11/15/12 14:49**
Column:	**DB-624**				

This method blank applies to the following samples and quality control samples:

	Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
06	LCS for batch 1262779	1202780091	111512V9\9M403L1.D	11/15/12	1107
07	LCS for batch 1262779	1202780092	111512V9\9M410L.D	11/15/12	1423
08	CAMO-13-24279PS	1202778861	111512V9\9M416.D	11/15/12	1705
09	CAMO-13-24279PSD	1202778862	111512V9\9M417.D	11/15/12	1733

Quality Control Data

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-265**			**Matrix:**	**WATER**
Lab Sample ID:	**1202778860**				
Client Sample:	**QC for batch 1262779**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**MB for batch 1262779**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1262779**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**11/13/2012 10:10**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/13/2012 10:10**				
Data File:	**111312V9\9M207B3.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
75-71-8	Dichlorodifluoromethane	U	1.00	ug/L	0.300	1.00
74-87-3	Chloromethane	U	1.00	ug/L	0.300	1.00
75-01-4	Vinyl chloride	U	1.00	ug/L	0.300	1.00
74-83-9	Bromomethane	U	1.00	ug/L	0.300	1.00
75-00-3	Chloroethane	U	1.00	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane	U	1.00	ug/L	0.300	1.00
60-29-7	Ethyl ether	J	0.390	ug/L	0.300	1.00
67-64-1	Acetone	U	10.0	ug/L	3.00	10.0
75-05-8	Acetonitrile	U	25.0	ug/L	8.00	25.0
75-35-4	1,1-Dichloroethylene	U	1.00	ug/L	0.300	1.00
74-88-4	Iodomethane	U	5.00	ug/L	1.50	5.00
75-09-2	Methylene chloride	U	10.0	ug/L	3.00	10.0
75-15-0	Carbon disulfide	U	5.00	ug/L	1.50	5.00
1634-04-4	tert-Butyl methyl ether	U	1.00	ug/L	0.300	1.00
156-60-5	trans-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
108-05-4	Vinyl acetate	U	5.00	ug/L	1.50	5.00
75-34-3	1,1-Dichloroethane	U	1.00	ug/L	0.300	1.00
78-93-3	2-Butanone	U	5.00	ug/L	2.00	5.00
156-59-2	cis-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
67-66-3	Chloroform	U	1.00	ug/L	0.300	1.00
74-97-5	Bromochloromethane	U	1.00	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane	U	1.00	ug/L	0.300	1.00
563-58-6	1,1-Dichloropropene	U	1.00	ug/L	0.300	1.00
71-36-3	n-Butyl alcohol	U	50.0	ug/L	15.0	50.0
56-23-5	Carbon tetrachloride	U	1.00	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane	U	1.00	ug/L	0.300	1.00
71-43-2	Benzene	U	1.00	ug/L	0.300	1.00
79-01-6	Trichloroethylene	U	1.00	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
75-27-4	Bromodichloromethane	U	1.00	ug/L	0.300	1.00
74-95-3	Dibromomethane	U	1.00	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone	U	5.00	ug/L	1.50	5.00
10061-01-5	cis-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00
108-88-3	Toluene	U	1.00	ug/L	0.300	1.00
10061-02-6	trans-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00
79-00-5	1,1,2-Trichloroethane	U	1.00	ug/L	0.300	1.00
591-78-6	2-Hexanone	U	5.00	ug/L	2.20	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-265**			**Matrix:**	**WATER**
Lab Sample ID:	**1202778860**				
Client Sample:	**QC for batch 1262779**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**MB for batch 1262779**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1262779**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**11/13/2012 10:10**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/13/2012 10:10**				
Data File:	**111312V9\9M207B3.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
142-28-9	1,3-Dichloropropane	U	1.00	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene	U	1.00	ug/L	0.300	1.00
124-48-1	Dibromochloromethane	U	1.00	ug/L	0.300	1.00
106-93-4	1,2-Dibromoethane	U	1.00	ug/L	0.300	1.00
108-90-7	Chlorobenzene	U	1.00	ug/L	0.300	1.00
100-41-4	Ethylbenzene	U	1.00	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes	U	2.00	ug/L	0.300	2.00
95-47-6	o-Xylene	U	1.00	ug/L	0.300	1.00
100-42-5	Styrene	U	1.00	ug/L	0.300	1.00
75-25-2	Bromoform	U	1.00	ug/L	0.300	1.00
79-34-5	1,1,2,2-Tetrachloroethane	U	1.00	ug/L	0.300	1.00
96-18-4	1,2,3-Trichloropropane	U	1.00	ug/L	0.300	1.00
108-86-1	Bromobenzene	U	1.00	ug/L	0.300	1.00
103-65-1	n-Propylbenzene	U	1.00	ug/L	0.300	1.00
95-49-8	2-Chlorotoluene	U	1.00	ug/L	0.300	1.00
98-82-8	Isopropylbenzene	U	1.00	ug/L	0.300	1.00
108-67-8	1,3,5-Trimethylbenzene	U	1.00	ug/L	0.300	1.00
106-43-4	4-Chlorotoluene	U	1.00	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene	U	1.00	ug/L	0.300	1.00
95-63-6	1,2,4-Trimethylbenzene	U	1.00	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene	U	1.00	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene	U	1.00	ug/L	0.300	1.00
541-73-1	1,3-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
104-51-8	n-Butylbenzene	U	1.00	ug/L	0.300	1.00
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene	U	1.00	ug/L	0.300	1.00
91-20-3	Naphthalene	U	1.00	ug/L	0.400	1.00
87-61-6	1,2,3-Trichlorobenzene	U	1.00	ug/L	0.300	1.00
107-02-8	Acrolein	U	5.00	ug/L	1.50	5.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	1.50	5.00
107-05-1	Allyl chloride	U	5.00	ug/L	1.50	5.00
107-13-1	Acrylonitrile	U	5.00	ug/L	1.50	5.00
126-99-8	2-Chloro-1,3-butadiene	U	1.00	ug/L	0.300	1.00
107-12-0	Propionitrile	U	5.00	ug/L	1.50	5.00
126-98-7	Methacrylonitrile	U	5.00	ug/L	1.50	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	15.0	50.0
80-62-6	Methyl methacrylate	U	5.00	ug/L	1.50	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-265**			**Matrix:**	**WATER**
Lab Sample ID:	**1202778860**				
Client Sample:	**QC for batch 1262779**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**MB for batch 1262779**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1262779**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**11/13/2012 10:10**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/13/2012 10:10**				
Data File:	**111312V9\9M207B3.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.50	5.00
630-20-6	1,1,1,2-Tetrachloroethane	U	1.00	ug/L	0.300	1.00
120-82-1	1,2,4-Trichlorobenzene	U	1.00	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene	U	1.00	ug/L	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	55.5	50.0	ug/L	111	(78%-124%)
Bromofluorobenzene	49.1	50.0	ug/L	98.2	(80%-120%)
Toluene-d8	47.4	50.0	ug/L	94.8	(80%-120%)

Tentatively Identified Compound Summary

CAS No.	Tentatively Identified Compound (TIC)	RT	Estimated	Units	Fit	Qual
	unknown hydrocarbon	4.286	6.46	ug/L	0	J

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-265**	**Date Collected:**	**11/01/2012 11:34**	**Matrix:**	**W**
Lab Sample ID:	**1202778861**	**Date Received:**	**11/03/2012 09:30**		
Client Sample:	**QC for batch 1262779**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**CAMO-13-24279PS**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1262779**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**11/15/2012 17:05**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/15/2012 17:05**				
Data File:	**111512V9\9M416.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
75-71-8	Dichlorodifluoromethane		43.8	ug/L	0.300	1.00
74-87-3	Chloromethane		45.3	ug/L	0.300	1.00
75-01-4	Vinyl chloride		43.0	ug/L	0.300	1.00
74-83-9	Bromomethane		45.5	ug/L	0.300	1.00
75-00-3	Chloroethane		47.0	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane		46.2	ug/L	0.300	1.00
60-29-7	Ethyl ether		45.6	ug/L	0.300	1.00
67-64-1	Acetone		146	ug/L	3.00	10.0
75-05-8	Acetonitrile		1230	ug/L	8.00	25.0
75-35-4	1,1-Dichloroethylene		49.2	ug/L	0.300	1.00
74-88-4	Iodomethane		257	ug/L	1.50	5.00
75-09-2	Methylene chloride		47.1	ug/L	3.00	10.0
75-15-0	Carbon disulfide		253	ug/L	1.50	5.00
1634-04-4	tert-Butyl methyl ether		47.1	ug/L	0.300	1.00
156-60-5	trans-1,2-Dichloroethylene		48.4	ug/L	0.300	1.00
108-05-4	Vinyl acetate		226	ug/L	1.50	5.00
75-34-3	1,1-Dichloroethane		47.4	ug/L	0.300	1.00
78-93-3	2-Butanone		182	ug/L	2.00	5.00
156-59-2	cis-1,2-Dichloroethylene		47.2	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane		49.8	ug/L	0.300	1.00
67-66-3	Chloroform		47.0	ug/L	0.300	1.00
74-97-5	Bromochloromethane		49.0	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane		50.2	ug/L	0.300	1.00
563-58-6	1,1-Dichloropropene		49.7	ug/L	0.300	1.00
71-36-3	n-Butyl alcohol		5480	ug/L	15.0	50.0
56-23-5	Carbon tetrachloride		53.1	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane		47.1	ug/L	0.300	1.00
71-43-2	Benzene		47.2	ug/L	0.300	1.00
79-01-6	Trichloroethylene		49.2	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane		47.8	ug/L	0.300	1.00
75-27-4	Bromodichloromethane		51.3	ug/L	0.300	1.00
74-95-3	Dibromomethane		49.2	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone		246	ug/L	1.50	5.00
10061-01-5	cis-1,3-Dichloropropylene		52.7	ug/L	0.300	1.00
108-88-3	Toluene		45.2	ug/L	0.300	1.00
10061-02-6	trans-1,3-Dichloropropylene		51.1	ug/L	0.300	1.00
79-00-5	1,1,2-Trichloroethane		47.5	ug/L	0.300	1.00
591-78-6	2-Hexanone		191	ug/L	2.20	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-265**	**Date Collected:**	**11/01/2012 11:34**	**Matrix:**	**W**
Lab Sample ID:	**1202778861**	**Date Received:**	**11/03/2012 09:30**		
Client Sample:	**QC for batch 1262779**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**CAMO-13-24279PS**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1262779**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**11/15/2012 17:05**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/15/2012 17:05**				
Data File:	**111512V9\9M416.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
142-28-9	1,3-Dichloropropane		46.5	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene		47.9	ug/L	0.300	1.00
124-48-1	Dibromochloromethane		52.6	ug/L	0.300	1.00
106-93-4	1,2-Dibromoethane		51.6	ug/L	0.300	1.00
108-90-7	Chlorobenzene		46.3	ug/L	0.300	1.00
100-41-4	Ethylbenzene		46.3	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes		97.2	ug/L	0.300	2.00
95-47-6	o-Xylene		47.8	ug/L	0.300	1.00
100-42-5	Styrene		50.0	ug/L	0.300	1.00
75-25-2	Bromoform		57.6	ug/L	0.300	1.00
79-34-5	1,1,2,2-Tetrachloroethane		49.6	ug/L	0.300	1.00
96-18-4	1,2,3-Trichloropropane		48.9	ug/L	0.300	1.00
108-86-1	Bromobenzene		48.5	ug/L	0.300	1.00
103-65-1	n-Propylbenzene		46.6	ug/L	0.300	1.00
95-49-8	2-Chlorotoluene		48.0	ug/L	0.300	1.00
98-82-8	Isopropylbenzene		47.3	ug/L	0.300	1.00
108-67-8	1,3,5-Trimethylbenzene		47.7	ug/L	0.300	1.00
106-43-4	4-Chlorotoluene		46.8	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene		48.3	ug/L	0.300	1.00
95-63-6	1,2,4-Trimethylbenzene		47.2	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene		47.6	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene		47.7	ug/L	0.300	1.00
541-73-1	1,3-Dichlorobenzene		47.0	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene		46.5	ug/L	0.300	1.00
104-51-8	n-Butylbenzene		47.4	ug/L	0.300	1.00
96-12-8	1,2-Dibromo-3-chloropropane		57.1	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene		48.5	ug/L	0.300	1.00
91-20-3	Naphthalene		48.0	ug/L	0.400	1.00
87-61-6	1,2,3-Trichlorobenzene		45.5	ug/L	0.300	1.00
107-02-8	Acrolein	U	5.00	ug/L	1.50	5.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	1.50	5.00
107-05-1	Allyl chloride	U	5.00	ug/L	1.50	5.00
107-13-1	Acrylonitrile	U	5.00	ug/L	1.50	5.00
126-99-8	2-Chloro-1,3-butadiene	U	1.00	ug/L	0.300	1.00
107-12-0	Propionitrile	U	5.00	ug/L	1.50	5.00
126-98-7	Methacrylonitrile	U	5.00	ug/L	1.50	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	15.0	50.0
80-62-6	Methyl methacrylate	U	5.00	ug/L	1.50	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-265**	**Date Collected:**	**11/01/2012 11:34**	**Matrix:**	**W**
Lab Sample ID:	**1202778861**	**Date Received:**	**11/03/2012 09:30**		
Client Sample:	**QC for batch 1262779**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**CAMO-13-24279PS**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1262779**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**11/15/2012 17:05**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/15/2012 17:05**				
Data File:	**111512V9\9M416.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.50	5.00
630-20-6	1,1,1,2-Tetrachloroethane		47.0	ug/L	0.300	1.00
120-82-1	1,2,4-Trichlorobenzene		45.0	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene		46.7	ug/L	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	50.3	50.0	ug/L	101	(78%-124%)
Bromofluorobenzene	50.9	50.0	ug/L	102	(80%-120%)
Toluene-d8	48.8	50.0	ug/L	97.6	(80%-120%)

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-265**	**Date Collected:**	**11/01/2012 11:34**	**Matrix:**	**W**
Lab Sample ID:	**1202778862**	**Date Received:**	**11/03/2012 09:30**		
Client Sample:	**QC for batch 1262779**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**CAMO-13-24279PSD**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1262779**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**11/15/2012 17:33**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/15/2012 17:33**				
Data File:	**111512V9\9M417.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
75-71-8	Dichlorodifluoromethane		43.7	ug/L	0.300	1.00
74-87-3	Chloromethane		42.9	ug/L	0.300	1.00
75-01-4	Vinyl chloride		41.0	ug/L	0.300	1.00
74-83-9	Bromomethane		43.6	ug/L	0.300	1.00
75-00-3	Chloroethane		45.4	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane		45.5	ug/L	0.300	1.00
60-29-7	Ethyl ether		46.2	ug/L	0.300	1.00
67-64-1	Acetone		142	ug/L	3.00	10.0
75-05-8	Acetonitrile		1180	ug/L	8.00	25.0
75-35-4	1,1-Dichloroethylene		48.6	ug/L	0.300	1.00
74-88-4	Iodomethane		254	ug/L	1.50	5.00
75-09-2	Methylene chloride		46.7	ug/L	3.00	10.0
75-15-0	Carbon disulfide		248	ug/L	1.50	5.00
1634-04-4	tert-Butyl methyl ether		45.8	ug/L	0.300	1.00
156-60-5	trans-1,2-Dichloroethylene		47.6	ug/L	0.300	1.00
108-05-4	Vinyl acetate		212	ug/L	1.50	5.00
75-34-3	1,1-Dichloroethane		46.7	ug/L	0.300	1.00
78-93-3	2-Butanone		175	ug/L	2.00	5.00
156-59-2	cis-1,2-Dichloroethylene		46.1	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane		48.0	ug/L	0.300	1.00
67-66-3	Chloroform		46.0	ug/L	0.300	1.00
74-97-5	Bromochloromethane		47.2	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane		48.9	ug/L	0.300	1.00
563-58-6	1,1-Dichloropropene		48.8	ug/L	0.300	1.00
71-36-3	n-Butyl alcohol		5090	ug/L	15.0	50.0
56-23-5	Carbon tetrachloride		52.0	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane		45.0	ug/L	0.300	1.00
71-43-2	Benzene		45.7	ug/L	0.300	1.00
79-01-6	Trichloroethylene		47.7	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane		45.9	ug/L	0.300	1.00
75-27-4	Bromodichloromethane		49.5	ug/L	0.300	1.00
74-95-3	Dibromomethane		47.2	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone		249	ug/L	1.50	5.00
10061-01-5	cis-1,3-Dichloropropylene		50.0	ug/L	0.300	1.00
108-88-3	Toluene		44.8	ug/L	0.300	1.00
10061-02-6	trans-1,3-Dichloropropylene		49.9	ug/L	0.300	1.00
79-00-5	1,1,2-Trichloroethane		46.0	ug/L	0.300	1.00
591-78-6	2-Hexanone		187	ug/L	2.20	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-265**	**Date Collected:**	**11/01/2012 11:34**	**Matrix:**	**W**
Lab Sample ID:	**1202778862**	**Date Received:**	**11/03/2012 09:30**		
Client Sample:	**QC for batch 1262779**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**CAMO-13-24279PSD**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1262779**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**11/15/2012 17:33**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/15/2012 17:33**				
Data File:	**111512V9\9M417.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
142-28-9	1,3-Dichloropropane		44.5	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene		47.1	ug/L	0.300	1.00
124-48-1	Dibromochloromethane		51.3	ug/L	0.300	1.00
106-93-4	1,2-Dibromoethane		49.5	ug/L	0.300	1.00
108-90-7	Chlorobenzene		45.8	ug/L	0.300	1.00
100-41-4	Ethylbenzene		45.4	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes		94.8	ug/L	0.300	2.00
95-47-6	o-Xylene		47.1	ug/L	0.300	1.00
100-42-5	Styrene		48.5	ug/L	0.300	1.00
75-25-2	Bromoform		55.2	ug/L	0.300	1.00
79-34-5	1,1,2,2-Tetrachloroethane		47.2	ug/L	0.300	1.00
96-18-4	1,2,3-Trichloropropane		46.8	ug/L	0.300	1.00
108-86-1	Bromobenzene		46.1	ug/L	0.300	1.00
103-65-1	n-Propylbenzene		44.5	ug/L	0.300	1.00
95-49-8	2-Chlorotoluene		45.5	ug/L	0.300	1.00
98-82-8	Isopropylbenzene		46.2	ug/L	0.300	1.00
108-67-8	1,3,5-Trimethylbenzene		45.5	ug/L	0.300	1.00
106-43-4	4-Chlorotoluene		43.6	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene		47.9	ug/L	0.300	1.00
95-63-6	1,2,4-Trimethylbenzene		45.0	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene		46.7	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene		46.1	ug/L	0.300	1.00
541-73-1	1,3-Dichlorobenzene		44.5	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene		43.8	ug/L	0.300	1.00
104-51-8	n-Butylbenzene		45.0	ug/L	0.300	1.00
96-12-8	1,2-Dibromo-3-chloropropane		57.2	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene		48.8	ug/L	0.300	1.00
91-20-3	Naphthalene		48.5	ug/L	0.400	1.00
87-61-6	1,2,3-Trichlorobenzene		45.8	ug/L	0.300	1.00
107-02-8	Acrolein	U	5.00	ug/L	1.50	5.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	1.50	5.00
107-05-1	Allyl chloride	U	5.00	ug/L	1.50	5.00
107-13-1	Acrylonitrile	U	5.00	ug/L	1.50	5.00
126-99-8	2-Chloro-1,3-butadiene	U	1.00	ug/L	0.300	1.00
107-12-0	Propionitrile	U	5.00	ug/L	1.50	5.00
126-98-7	Methacrylonitrile	U	5.00	ug/L	1.50	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	15.0	50.0
80-62-6	Methyl methacrylate	U	5.00	ug/L	1.50	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-265**	**Date Collected:**	**11/01/2012 11:34**	**Matrix:**	**W**
Lab Sample ID:	**1202778862**	**Date Received:**	**11/03/2012 09:30**		
Client Sample:	**QC for batch 1262779**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**CAMO-13-24279PSD**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1262779**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**11/15/2012 17:33**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/15/2012 17:33**				
Data File:	**111512V9\9M417.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.50	5.00
630-20-6	1,1,1,2-Tetrachloroethane		47.2	ug/L	0.300	1.00
120-82-1	1,2,4-Trichlorobenzene		44.2	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene		44.7	ug/L	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	53.9	50.0	ug/L	108	(78%-124%)
Bromofluorobenzene	53.0	50.0	ug/L	106	(80%-120%)
Toluene-d8	52.7	50.0	ug/L	105	(80%-120%)

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-265**			**Matrix:**	**WATER**
Lab Sample ID:	**1202778863**				
Client Sample:	**QC for batch 1262779**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**LCS for batch 1262779**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1262779**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**11/13/2012 08:24**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/13/2012 08:24**				
Data File:	**111312V9\9M203L3.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
75-71-8	Dichlorodifluoromethane		58.5	ug/L	0.300	1.00
74-87-3	Chloromethane		57.9	ug/L	0.300	1.00
75-01-4	Vinyl chloride		53.1	ug/L	0.300	1.00
74-83-9	Bromomethane		50.1	ug/L	0.300	1.00
75-00-3	Chloroethane		50.2	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane		62.1	ug/L	0.300	1.00
60-29-7	Ethyl ether	B	54.1	ug/L	0.300	1.00
67-64-1	Acetone		354	ug/L	3.00	10.0
75-05-8	Acetonitrile		1330	ug/L	8.00	25.0
75-35-4	1,1-Dichloroethylene		56.7	ug/L	0.300	1.00
74-88-4	Iodomethane		273	ug/L	1.50	5.00
75-09-2	Methylene chloride		46.9	ug/L	3.00	10.0
75-15-0	Carbon disulfide		239	ug/L	1.50	5.00
1634-04-4	tert-Butyl methyl ether		55.9	ug/L	0.300	1.00
156-60-5	trans-1,2-Dichloroethylene		54.1	ug/L	0.300	1.00
108-05-4	Vinyl acetate		305	ug/L	1.50	5.00
75-34-3	1,1-Dichloroethane		52.1	ug/L	0.300	1.00
78-93-3	2-Butanone		381	ug/L	2.00	5.00
156-59-2	cis-1,2-Dichloroethylene		55.9	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane		63.4	ug/L	0.300	1.00
67-66-3	Chloroform		56.6	ug/L	0.300	1.00
74-97-5	Bromochloromethane		55.9	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane		63.9	ug/L	0.300	1.00
563-58-6	1,1-Dichloropropene		54.0	ug/L	0.300	1.00
71-36-3	n-Butyl alcohol		6690	ug/L	15.0	50.0
56-23-5	Carbon tetrachloride		68.8	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane		59.6	ug/L	0.300	1.00
71-43-2	Benzene		48.1	ug/L	0.300	1.00
79-01-6	Trichloroethylene		52.8	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane		48.6	ug/L	0.300	1.00
75-27-4	Bromodichloromethane		61.3	ug/L	0.300	1.00
74-95-3	Dibromomethane		54.0	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone		286	ug/L	1.50	5.00
10061-01-5	cis-1,3-Dichloropropylene		56.7	ug/L	0.300	1.00
108-88-3	Toluene		45.9	ug/L	0.300	1.00
10061-02-6	trans-1,3-Dichloropropylene		56.7	ug/L	0.300	1.00
79-00-5	1,1,2-Trichloroethane		47.1	ug/L	0.300	1.00
591-78-6	2-Hexanone		362	ug/L	2.20	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-265**			**Matrix:**	**WATER**
Lab Sample ID:	**1202778863**				
Client Sample:	**QC for batch 1262779**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**LCS for batch 1262779**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1262779**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**11/13/2012 08:24**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/13/2012 08:24**				
Data File:	**111312V9\9M203L3.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
142-28-9	1,3-Dichloropropane		44.7	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene		50.4	ug/L	0.300	1.00
124-48-1	Dibromochloromethane		61.0	ug/L	0.300	1.00
106-93-4	1,2-Dibromoethane		52.3	ug/L	0.300	1.00
108-90-7	Chlorobenzene		47.6	ug/L	0.300	1.00
100-41-4	Ethylbenzene		46.4	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes		96.6	ug/L	0.300	2.00
95-47-6	o-Xylene		48.0	ug/L	0.300	1.00
100-42-5	Styrene		49.2	ug/L	0.300	1.00
75-25-2	Bromoform		64.0	ug/L	0.300	1.00
79-34-5	1,1,2,2-Tetrachloroethane		45.4	ug/L	0.300	1.00
96-18-4	1,2,3-Trichloropropane		50.7	ug/L	0.300	1.00
108-86-1	Bromobenzene		47.6	ug/L	0.300	1.00
103-65-1	n-Propylbenzene		45.9	ug/L	0.300	1.00
95-49-8	2-Chlorotoluene		46.2	ug/L	0.300	1.00
98-82-8	Isopropylbenzene		48.8	ug/L	0.300	1.00
108-67-8	1,3,5-Trimethylbenzene		50.1	ug/L	0.300	1.00
106-43-4	4-Chlorotoluene		48.3	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene		51.0	ug/L	0.300	1.00
95-63-6	1,2,4-Trimethylbenzene		49.0	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene		48.2	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene		50.2	ug/L	0.300	1.00
541-73-1	1,3-Dichlorobenzene		46.3	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene		47.3	ug/L	0.300	1.00
104-51-8	n-Butylbenzene		47.4	ug/L	0.300	1.00
96-12-8	1,2-Dibromo-3-chloropropane		64.4	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene		59.1	ug/L	0.300	1.00
91-20-3	Naphthalene		59.2	ug/L	0.400	1.00
87-61-6	1,2,3-Trichlorobenzene		60.2	ug/L	0.300	1.00
107-02-8	Acrolein	U	5.00	ug/L	1.50	5.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	1.50	5.00
107-05-1	Allyl chloride	U	5.00	ug/L	1.50	5.00
107-13-1	Acrylonitrile	U	5.00	ug/L	1.50	5.00
126-99-8	2-Chloro-1,3-butadiene	U	1.00	ug/L	0.300	1.00
107-12-0	Propionitrile	U	5.00	ug/L	1.50	5.00
126-98-7	Methacrylonitrile	U	5.00	ug/L	1.50	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	15.0	50.0
80-62-6	Methyl methacrylate	U	5.00	ug/L	1.50	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-265**			**Matrix:**	**WATER**
Lab Sample ID:	**1202778863**				
Client Sample:	**QC for batch 1262779**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**LCS for batch 1262779**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1262779**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**11/13/2012 08:24**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/13/2012 08:24**				
Data File:	**111312V9\9M203L3.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.50	5.00
630-20-6	1,1,1,2-Tetrachloroethane		58.0	ug/L	0.300	1.00
120-82-1	1,2,4-Trichlorobenzene		57.6	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene		47.6	ug/L	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	60.3	50.0	ug/L	121	(78%-124%)
Bromofluorobenzene	50.8	50.0	ug/L	102	(80%-120%)
Toluene-d8	48.1	50.0	ug/L	96.2	(80%-120%)

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-265**			**Matrix:**	**WATER**
Lab Sample ID:	**1202778864**				
Client Sample:	**QC for batch 1262779**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**LCS for batch 1262779**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1262779**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**11/13/2012 09:43**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/13/2012 09:43**				
Data File:	**111312V9\9M206L.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
75-71-8	Dichlorodifluoromethane	U	1.00	ug/L	0.300	1.00
74-87-3	Chloromethane	U	1.00	ug/L	0.300	1.00
75-01-4	Vinyl chloride	U	1.00	ug/L	0.300	1.00
74-83-9	Bromomethane	U	1.00	ug/L	0.300	1.00
75-00-3	Chloroethane	U	1.00	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane	U	1.00	ug/L	0.300	1.00
60-29-7	Ethyl ether	U	1.00	ug/L	0.300	1.00
67-64-1	Acetone	U	10.0	ug/L	3.00	10.0
75-05-8	Acetonitrile	U	25.0	ug/L	8.00	25.0
75-35-4	1,1-Dichloroethylene	U	1.00	ug/L	0.300	1.00
74-88-4	Iodomethane	U	5.00	ug/L	1.50	5.00
75-09-2	Methylene chloride	U	10.0	ug/L	3.00	10.0
75-15-0	Carbon disulfide	U	5.00	ug/L	1.50	5.00
1634-04-4	tert-Butyl methyl ether	U	1.00	ug/L	0.300	1.00
156-60-5	trans-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
108-05-4	Vinyl acetate	U	5.00	ug/L	1.50	5.00
75-34-3	1,1-Dichloroethane	U	1.00	ug/L	0.300	1.00
78-93-3	2-Butanone	U	5.00	ug/L	2.00	5.00
156-59-2	cis-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
67-66-3	Chloroform	U	1.00	ug/L	0.300	1.00
74-97-5	Bromochloromethane	U	1.00	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane	U	1.00	ug/L	0.300	1.00
563-58-6	1,1-Dichloropropene	U	1.00	ug/L	0.300	1.00
71-36-3	n-Butyl alcohol	U	50.0	ug/L	15.0	50.0
56-23-5	Carbon tetrachloride	U	1.00	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane	U	1.00	ug/L	0.300	1.00
71-43-2	Benzene	U	1.00	ug/L	0.300	1.00
79-01-6	Trichloroethylene	U	1.00	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
75-27-4	Bromodichloromethane	U	1.00	ug/L	0.300	1.00
74-95-3	Dibromomethane	U	1.00	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone	U	5.00	ug/L	1.50	5.00
10061-01-5	cis-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00
108-88-3	Toluene	U	1.00	ug/L	0.300	1.00
10061-02-6	trans-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00
79-00-5	1,1,2-Trichloroethane	U	1.00	ug/L	0.300	1.00
591-78-6	2-Hexanone	U	5.00	ug/L	2.20	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-265**			**Matrix:**	**WATER**
Lab Sample ID:	**1202778864**				
Client Sample:	**QC for batch 1262779**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**LCS for batch 1262779**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1262779**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**11/13/2012 09:43**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/13/2012 09:43**				
Data File:	**111312V9\9M206L.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
142-28-9	1,3-Dichloropropane	U	1.00	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene	U	1.00	ug/L	0.300	1.00
124-48-1	Dibromochloromethane	U	1.00	ug/L	0.300	1.00
106-93-4	1,2-Dibromoethane	U	1.00	ug/L	0.300	1.00
108-90-7	Chlorobenzene	U	1.00	ug/L	0.300	1.00
100-41-4	Ethylbenzene	U	1.00	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes	U	2.00	ug/L	0.300	2.00
95-47-6	o-Xylene	U	1.00	ug/L	0.300	1.00
100-42-5	Styrene	U	1.00	ug/L	0.300	1.00
75-25-2	Bromoform	U	1.00	ug/L	0.300	1.00
79-34-5	1,1,2,2-Tetrachloroethane	U	1.00	ug/L	0.300	1.00
96-18-4	1,2,3-Trichloropropane	U	1.00	ug/L	0.300	1.00
108-86-1	Bromobenzene	U	1.00	ug/L	0.300	1.00
103-65-1	n-Propylbenzene	U	1.00	ug/L	0.300	1.00
95-49-8	2-Chlorotoluene	U	1.00	ug/L	0.300	1.00
98-82-8	Isopropylbenzene	U	1.00	ug/L	0.300	1.00
108-67-8	1,3,5-Trimethylbenzene	U	1.00	ug/L	0.300	1.00
106-43-4	4-Chlorotoluene	U	1.00	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene	U	1.00	ug/L	0.300	1.00
95-63-6	1,2,4-Trimethylbenzene	U	1.00	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene	U	1.00	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene	U	1.00	ug/L	0.300	1.00
541-73-1	1,3-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
104-51-8	n-Butylbenzene	U	1.00	ug/L	0.300	1.00
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene	U	1.00	ug/L	0.300	1.00
91-20-3	Naphthalene	U	1.00	ug/L	0.400	1.00
87-61-6	1,2,3-Trichlorobenzene	U	1.00	ug/L	0.300	1.00
107-02-8	Acrolein		279	ug/L	1.50	5.00
76-13-1	Trichlorotrifluoroethane		302	ug/L	1.50	5.00
107-05-1	Allyl chloride		267	ug/L	1.50	5.00
107-13-1	Acrylonitrile		267	ug/L	1.50	5.00
126-99-8	2-Chloro-1,3-butadiene		65.9	ug/L	0.300	1.00
107-12-0	Propionitrile		278	ug/L	1.50	5.00
126-98-7	Methacrylonitrile		269	ug/L	1.50	5.00
78-83-1	Isobutyl alcohol		2780	ug/L	15.0	50.0
80-62-6	Methyl methacrylate		239	ug/L	1.50	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-265**			**Matrix:**	**WATER**
Lab Sample ID:	**1202778864**				
Client Sample:	**QC for batch 1262779**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**LCS for batch 1262779**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1262779**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**11/13/2012 09:43**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/13/2012 09:43**				
Data File:	**111312V9\9M206L.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
97-63-2	Ethyl methacrylate		224	ug/L	1.50	5.00
630-20-6	1,1,1,2-Tetrachloroethane	U	1.00	ug/L	0.300	1.00
120-82-1	1,2,4-Trichlorobenzene	U	1.00	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene	U	1.00	ug/L	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	56.0	50.0	ug/L	112	(78%-124%)
Bromofluorobenzene	49.0	50.0	ug/L	98.0	(80%-120%)
Toluene-d8	46.9	50.0	ug/L	93.8	(80%-120%)

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-265**			**Matrix:**	**WATER**
Lab Sample ID:	**1202780090**				
Client Sample:	**QC for batch 1262779**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**MB for batch 1262779**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1262779**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**11/15/2012 14:49**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/15/2012 14:49**				
Data File:	**111512V9\9M411B1.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
75-71-8	Dichlorodifluoromethane	U	1.00	ug/L	0.300	1.00
74-87-3	Chloromethane	U	1.00	ug/L	0.300	1.00
75-01-4	Vinyl chloride	U	1.00	ug/L	0.300	1.00
74-83-9	Bromomethane	U	1.00	ug/L	0.300	1.00
75-00-3	Chloroethane	U	1.00	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane	U	1.00	ug/L	0.300	1.00
60-29-7	Ethyl ether	U	1.00	ug/L	0.300	1.00
67-64-1	Acetone	U	10.0	ug/L	3.00	10.0
75-05-8	Acetonitrile	U	25.0	ug/L	8.00	25.0
75-35-4	1,1-Dichloroethylene	U	1.00	ug/L	0.300	1.00
74-88-4	Iodomethane	U	5.00	ug/L	1.50	5.00
75-09-2	Methylene chloride	U	10.0	ug/L	3.00	10.0
75-15-0	Carbon disulfide	U	5.00	ug/L	1.50	5.00
1634-04-4	tert-Butyl methyl ether	U	1.00	ug/L	0.300	1.00
156-60-5	trans-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
108-05-4	Vinyl acetate	U	5.00	ug/L	1.50	5.00
75-34-3	1,1-Dichloroethane	U	1.00	ug/L	0.300	1.00
78-93-3	2-Butanone	U	5.00	ug/L	2.00	5.00
156-59-2	cis-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
67-66-3	Chloroform	U	1.00	ug/L	0.300	1.00
74-97-5	Bromochloromethane	U	1.00	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane	U	1.00	ug/L	0.300	1.00
563-58-6	1,1-Dichloropropene	U	1.00	ug/L	0.300	1.00
71-36-3	n-Butyl alcohol	U	50.0	ug/L	15.0	50.0
56-23-5	Carbon tetrachloride	U	1.00	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane	U	1.00	ug/L	0.300	1.00
71-43-2	Benzene	U	1.00	ug/L	0.300	1.00
79-01-6	Trichloroethylene	U	1.00	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
75-27-4	Bromodichloromethane	U	1.00	ug/L	0.300	1.00
74-95-3	Dibromomethane	U	1.00	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone	U	5.00	ug/L	1.50	5.00
10061-01-5	cis-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00
108-88-3	Toluene	U	1.00	ug/L	0.300	1.00
10061-02-6	trans-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00
79-00-5	1,1,2-Trichloroethane	U	1.00	ug/L	0.300	1.00
591-78-6	2-Hexanone	U	5.00	ug/L	2.20	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-265**			**Matrix:**	**WATER**
Lab Sample ID:	**1202780090**				
Client Sample:	**QC for batch 1262779**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**MB for batch 1262779**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1262779**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**11/15/2012 14:49**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/15/2012 14:49**				
Data File:	**111512V9\9M411B1.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
142-28-9	1,3-Dichloropropane	U	1.00	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene	U	1.00	ug/L	0.300	1.00
124-48-1	Dibromochloromethane	U	1.00	ug/L	0.300	1.00
106-93-4	1,2-Dibromoethane	U	1.00	ug/L	0.300	1.00
108-90-7	Chlorobenzene	U	1.00	ug/L	0.300	1.00
100-41-4	Ethylbenzene	U	1.00	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes	U	2.00	ug/L	0.300	2.00
95-47-6	o-Xylene	U	1.00	ug/L	0.300	1.00
100-42-5	Styrene	U	1.00	ug/L	0.300	1.00
75-25-2	Bromoform	U	1.00	ug/L	0.300	1.00
79-34-5	1,1,2,2-Tetrachloroethane	U	1.00	ug/L	0.300	1.00
96-18-4	1,2,3-Trichloropropane	U	1.00	ug/L	0.300	1.00
108-86-1	Bromobenzene	U	1.00	ug/L	0.300	1.00
103-65-1	n-Propylbenzene	U	1.00	ug/L	0.300	1.00
95-49-8	2-Chlorotoluene	U	1.00	ug/L	0.300	1.00
98-82-8	Isopropylbenzene	U	1.00	ug/L	0.300	1.00
108-67-8	1,3,5-Trimethylbenzene	U	1.00	ug/L	0.300	1.00
106-43-4	4-Chlorotoluene	U	1.00	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene	U	1.00	ug/L	0.300	1.00
95-63-6	1,2,4-Trimethylbenzene	U	1.00	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene	U	1.00	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene	U	1.00	ug/L	0.300	1.00
541-73-1	1,3-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
104-51-8	n-Butylbenzene	U	1.00	ug/L	0.300	1.00
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene	U	1.00	ug/L	0.300	1.00
91-20-3	Naphthalene	U	1.00	ug/L	0.400	1.00
87-61-6	1,2,3-Trichlorobenzene	U	1.00	ug/L	0.300	1.00
107-02-8	Acrolein	U	5.00	ug/L	1.50	5.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	1.50	5.00
107-05-1	Allyl chloride	U	5.00	ug/L	1.50	5.00
107-13-1	Acrylonitrile	U	5.00	ug/L	1.50	5.00
126-99-8	2-Chloro-1,3-butadiene	U	1.00	ug/L	0.300	1.00
107-12-0	Propionitrile	U	5.00	ug/L	1.50	5.00
126-98-7	Methacrylonitrile	U	5.00	ug/L	1.50	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	15.0	50.0
80-62-6	Methyl methacrylate	U	5.00	ug/L	1.50	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-265**			**Matrix:**	**WATER**
Lab Sample ID:	**1202780090**				
Client Sample:	**QC for batch 1262779**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**MB for batch 1262779**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1262779**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**11/15/2012 14:49**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/15/2012 14:49**				
Data File:	**111512V9\9M411B1.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.50	5.00
630-20-6	1,1,1,2-Tetrachloroethane	U	1.00	ug/L	0.300	1.00
120-82-1	1,2,4-Trichlorobenzene	U	1.00	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene	U	1.00	ug/L	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	49.7	50.0	ug/L	99.3	(78%-124%)
Bromofluorobenzene	51.4	50.0	ug/L	103	(80%-120%)
Toluene-d8	48.4	50.0	ug/L	96.8	(80%-120%)

Tentatively Identified Compound Summary

CAS No.	Tentatively Identified Compound (TIC)	RT	Estimated	Units	Fit	Qual
	unknown hydrocarbon	4.286	6.07	ug/L	0	J

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-265**			**Matrix:**	**WATER**
Lab Sample ID:	**1202780091**				
Client Sample:	**QC for batch 1262779**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**LCS for batch 1262779**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1262779**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**11/15/2012 11:07**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/15/2012 11:07**				
Data File:	**111512V9\9M403L1.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
75-71-8	Dichlorodifluoromethane		41.2	ug/L	0.300	1.00
74-87-3	Chloromethane		40.7	ug/L	0.300	1.00
75-01-4	Vinyl chloride		40.2	ug/L	0.300	1.00
74-83-9	Bromomethane		42.3	ug/L	0.300	1.00
75-00-3	Chloroethane		44.8	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane		44.1	ug/L	0.300	1.00
60-29-7	Ethyl ether		46.7	ug/L	0.300	1.00
67-64-1	Acetone		222	ug/L	3.00	10.0
75-05-8	Acetonitrile		1130	ug/L	8.00	25.0
75-35-4	1,1-Dichloroethylene		46.2	ug/L	0.300	1.00
74-88-4	Iodomethane		254	ug/L	1.50	5.00
75-09-2	Methylene chloride		44.5	ug/L	3.00	10.0
75-15-0	Carbon disulfide		230	ug/L	1.50	5.00
1634-04-4	tert-Butyl methyl ether		46.7	ug/L	0.300	1.00
156-60-5	trans-1,2-Dichloroethylene		45.7	ug/L	0.300	1.00
108-05-4	Vinyl acetate		242	ug/L	1.50	5.00
75-34-3	1,1-Dichloroethane		45.2	ug/L	0.300	1.00
78-93-3	2-Butanone		260	ug/L	2.00	5.00
156-59-2	cis-1,2-Dichloroethylene		44.9	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane		47.5	ug/L	0.300	1.00
67-66-3	Chloroform		44.1	ug/L	0.300	1.00
74-97-5	Bromochloromethane		49.7	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane		48.0	ug/L	0.300	1.00
563-58-6	1,1-Dichloropropene		46.1	ug/L	0.300	1.00
71-36-3	n-Butyl alcohol		5280	ug/L	15.0	50.0
56-23-5	Carbon tetrachloride		50.6	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane		45.4	ug/L	0.300	1.00
71-43-2	Benzene		45.0	ug/L	0.300	1.00
79-01-6	Trichloroethylene		47.5	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane		46.7	ug/L	0.300	1.00
75-27-4	Bromodichloromethane		50.7	ug/L	0.300	1.00
74-95-3	Dibromomethane		49.3	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone		269	ug/L	1.50	5.00
10061-01-5	cis-1,3-Dichloropropylene		51.7	ug/L	0.300	1.00
108-88-3	Toluene		43.8	ug/L	0.300	1.00
10061-02-6	trans-1,3-Dichloropropylene		50.8	ug/L	0.300	1.00
79-00-5	1,1,2-Trichloroethane		46.2	ug/L	0.300	1.00
591-78-6	2-Hexanone		279	ug/L	2.20	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-265**			**Matrix:**	**WATER**
Lab Sample ID:	**1202780091**				
Client Sample:	**QC for batch 1262779**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**LCS for batch 1262779**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1262779**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**11/15/2012 11:07**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/15/2012 11:07**				
Data File:	**111512V9\9M403L1.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
142-28-9	1,3-Dichloropropane		43.8	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene		48.5	ug/L	0.300	1.00
124-48-1	Dibromochloromethane		53.1	ug/L	0.300	1.00
106-93-4	1,2-Dibromoethane		50.5	ug/L	0.300	1.00
108-90-7	Chlorobenzene		45.8	ug/L	0.300	1.00
100-41-4	Ethylbenzene		44.0	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes		94.5	ug/L	0.300	2.00
95-47-6	o-Xylene		46.6	ug/L	0.300	1.00
100-42-5	Styrene		49.3	ug/L	0.300	1.00
75-25-2	Bromoform		58.5	ug/L	0.300	1.00
79-34-5	1,1,2,2-Tetrachloroethane		46.4	ug/L	0.300	1.00
96-18-4	1,2,3-Trichloropropane		49.2	ug/L	0.300	1.00
108-86-1	Bromobenzene		47.6	ug/L	0.300	1.00
103-65-1	n-Propylbenzene		43.5	ug/L	0.300	1.00
95-49-8	2-Chlorotoluene		46.8	ug/L	0.300	1.00
98-82-8	Isopropylbenzene		45.7	ug/L	0.300	1.00
108-67-8	1,3,5-Trimethylbenzene		45.9	ug/L	0.300	1.00
106-43-4	4-Chlorotoluene		44.2	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene		48.8	ug/L	0.300	1.00
95-63-6	1,2,4-Trimethylbenzene		45.7	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene		45.4	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene		46.3	ug/L	0.300	1.00
541-73-1	1,3-Dichlorobenzene		47.2	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene		46.5	ug/L	0.300	1.00
104-51-8	n-Butylbenzene		45.2	ug/L	0.300	1.00
96-12-8	1,2-Dibromo-3-chloropropane		58.8	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene		50.6	ug/L	0.300	1.00
91-20-3	Naphthalene		49.1	ug/L	0.400	1.00
87-61-6	1,2,3-Trichlorobenzene		48.3	ug/L	0.300	1.00
107-02-8	Acrolein	U	5.00	ug/L	1.50	5.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	1.50	5.00
107-05-1	Allyl chloride	U	5.00	ug/L	1.50	5.00
107-13-1	Acrylonitrile	U	5.00	ug/L	1.50	5.00
126-99-8	2-Chloro-1,3-butadiene	U	1.00	ug/L	0.300	1.00
107-12-0	Propionitrile	U	5.00	ug/L	1.50	5.00
126-98-7	Methacrylonitrile	U	5.00	ug/L	1.50	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	15.0	50.0
80-62-6	Methyl methacrylate	U	5.00	ug/L	1.50	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-265**			**Matrix:**	**WATER**
Lab Sample ID:	**1202780091**				
Client Sample:	**QC for batch 1262779**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**LCS for batch 1262779**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1262779**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**11/15/2012 11:07**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/15/2012 11:07**				
Data File:	**111512V9\9M403L1.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.50	5.00
630-20-6	1,1,1,2-Tetrachloroethane		49.0	ug/L	0.300	1.00
120-82-1	1,2,4-Trichlorobenzene		49.6	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene		47.0	ug/L	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	48.2	50.0	ug/L	96.3	(78%-124%)
Bromofluorobenzene	48.9	50.0	ug/L	97.8	(80%-120%)
Toluene-d8	48.6	50.0	ug/L	97.2	(80%-120%)

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-265**			**Matrix:**	**WATER**
Lab Sample ID:	**1202780092**				
Client Sample:	**QC for batch 1262779**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**LCS for batch 1262779**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1262779**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**11/15/2012 14:23**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/15/2012 14:23**				
Data File:	**111512V9\9M410L.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
75-71-8	Dichlorodifluoromethane	U	1.00	ug/L	0.300	1.00
74-87-3	Chloromethane	U	1.00	ug/L	0.300	1.00
75-01-4	Vinyl chloride	U	1.00	ug/L	0.300	1.00
74-83-9	Bromomethane	U	1.00	ug/L	0.300	1.00
75-00-3	Chloroethane	U	1.00	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane	U	1.00	ug/L	0.300	1.00
60-29-7	Ethyl ether	U	1.00	ug/L	0.300	1.00
67-64-1	Acetone	U	10.0	ug/L	3.00	10.0
75-05-8	Acetonitrile	U	25.0	ug/L	8.00	25.0
75-35-4	1,1-Dichloroethylene	U	1.00	ug/L	0.300	1.00
74-88-4	Iodomethane	U	5.00	ug/L	1.50	5.00
75-09-2	Methylene chloride	U	10.0	ug/L	3.00	10.0
75-15-0	Carbon disulfide	U	5.00	ug/L	1.50	5.00
1634-04-4	tert-Butyl methyl ether	U	1.00	ug/L	0.300	1.00
156-60-5	trans-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
108-05-4	Vinyl acetate	U	5.00	ug/L	1.50	5.00
75-34-3	1,1-Dichloroethane	U	1.00	ug/L	0.300	1.00
78-93-3	2-Butanone	U	5.00	ug/L	2.00	5.00
156-59-2	cis-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
67-66-3	Chloroform	U	1.00	ug/L	0.300	1.00
74-97-5	Bromochloromethane	U	1.00	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane	U	1.00	ug/L	0.300	1.00
563-58-6	1,1-Dichloropropene	U	1.00	ug/L	0.300	1.00
71-36-3	n-Butyl alcohol	U	50.0	ug/L	15.0	50.0
56-23-5	Carbon tetrachloride	U	1.00	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane	U	1.00	ug/L	0.300	1.00
71-43-2	Benzene	U	1.00	ug/L	0.300	1.00
79-01-6	Trichloroethylene	U	1.00	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
75-27-4	Bromodichloromethane	U	1.00	ug/L	0.300	1.00
74-95-3	Dibromomethane	U	1.00	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone	U	5.00	ug/L	1.50	5.00
10061-01-5	cis-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00
108-88-3	Toluene	U	1.00	ug/L	0.300	1.00
10061-02-6	trans-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00
79-00-5	1,1,2-Trichloroethane	U	1.00	ug/L	0.300	1.00
591-78-6	2-Hexanone	U	5.00	ug/L	2.20	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-265**			**Matrix:**	**WATER**
Lab Sample ID:	**1202780092**				
Client Sample:	**QC for batch 1262779**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**LCS for batch 1262779**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1262779**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**11/15/2012 14:23**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/15/2012 14:23**				
Data File:	**111512V9\9M410L.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
142-28-9	1,3-Dichloropropane	U	1.00	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene	U	1.00	ug/L	0.300	1.00
124-48-1	Dibromochloromethane	U	1.00	ug/L	0.300	1.00
106-93-4	1,2-Dibromoethane	U	1.00	ug/L	0.300	1.00
108-90-7	Chlorobenzene	U	1.00	ug/L	0.300	1.00
100-41-4	Ethylbenzene	U	1.00	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes	U	2.00	ug/L	0.300	2.00
95-47-6	o-Xylene	U	1.00	ug/L	0.300	1.00
100-42-5	Styrene	U	1.00	ug/L	0.300	1.00
75-25-2	Bromoform	U	1.00	ug/L	0.300	1.00
79-34-5	1,1,2,2-Tetrachloroethane	U	1.00	ug/L	0.300	1.00
96-18-4	1,2,3-Trichloropropane	U	1.00	ug/L	0.300	1.00
108-86-1	Bromobenzene	U	1.00	ug/L	0.300	1.00
103-65-1	n-Propylbenzene	U	1.00	ug/L	0.300	1.00
95-49-8	2-Chlorotoluene	U	1.00	ug/L	0.300	1.00
98-82-8	Isopropylbenzene	U	1.00	ug/L	0.300	1.00
108-67-8	1,3,5-Trimethylbenzene	U	1.00	ug/L	0.300	1.00
106-43-4	4-Chlorotoluene	U	1.00	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene	U	1.00	ug/L	0.300	1.00
95-63-6	1,2,4-Trimethylbenzene	U	1.00	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene	U	1.00	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene	U	1.00	ug/L	0.300	1.00
541-73-1	1,3-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
104-51-8	n-Butylbenzene	U	1.00	ug/L	0.300	1.00
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene	U	1.00	ug/L	0.300	1.00
91-20-3	Naphthalene	U	1.00	ug/L	0.400	1.00
87-61-6	1,2,3-Trichlorobenzene	U	1.00	ug/L	0.300	1.00
107-02-8	Acrolein		212	ug/L	1.50	5.00
76-13-1	Trichlorotrifluoroethane		292	ug/L	1.50	5.00
107-05-1	Allyl chloride		258	ug/L	1.50	5.00
107-13-1	Acrylonitrile		250	ug/L	1.50	5.00
126-99-8	2-Chloro-1,3-butadiene		58.6	ug/L	0.300	1.00
107-12-0	Propionitrile		258	ug/L	1.50	5.00
126-98-7	Methacrylonitrile		242	ug/L	1.50	5.00
78-83-1	Isobutyl alcohol		2290	ug/L	15.0	50.0
80-62-6	Methyl methacrylate		247	ug/L	1.50	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-265**			**Matrix:**	**WATER**
Lab Sample ID:	**1202780092**				
Client Sample:	**QC for batch 1262779**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**LCS for batch 1262779**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1262779**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**11/15/2012 14:23**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/15/2012 14:23**				
Data File:	**111512V9\9M410L.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
97-63-2	Ethyl methacrylate		243	ug/L	1.50	5.00
630-20-6	1,1,1,2-Tetrachloroethane	U	1.00	ug/L	0.300	1.00
120-82-1	1,2,4-Trichlorobenzene	U	1.00	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene	U	1.00	ug/L	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	45.3	50.0	ug/L	90.7	(78%-124%)
Bromofluorobenzene	49.5	50.0	ug/L	99.0	(80%-120%)
Toluene-d8	47.1	50.0	ug/L	94.3	(80%-120%)

Miscellaneous

DATA EXCEPTION REPORT

Mo.Day Yr.	**Division:**	**Quality Criteria:**	**Type:**
19-NOV-12	Federal	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
VOA GC/MS	SW846 8260B DOE-AL	Liquid	ESHL 314528, 314591
Batch ID:	**Sample Numbers:**		
1262779	1202778863		

Potentially affected work order(s)(SDG): 314528(2013-265),314591(2013-267)

Application Issues:

Failed Recovery for LCS/LCSD

Specification and Requirements Exception Description:	**DER Disposition:**
1. The LCS 1202778863 did not meet the acceptable recovery criteria for several of the compounds of interest.	1. The unacceptable recoveries were less than 5% of the required analyte list. This satified the client's criteria. The data were narrated and reported.

Originator's Name:

Ramona Yarbrough 19-NOV-12

Data Validator/Group Leader:

Kelle Bellamy 27-NOV-12

Semi-Volatile Analysis

Case Narrative

Semi-Volatile Case Narrative
ARS International (ARSL)
SDG 2013-265

Method/Analysis Information

Procedure:	**Analysis of Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry**
Analytical Method:	SW846 8270C
Prep Method:	SW846 3510C
Analytical Batch Number:	1261145
Prep Batch Number:	1261144

Sample Analysis

The following samples were analyzed using the analytical protocol as established in SW846 8270C:

Sample ID	Client ID
314528001	CAMO-13-24279
1202774963	Method Blank (MB)
1202774964	314528001(CAMO-13-24279) Matrix Spike (MS)
1202774965	314528001(CAMO-13-24279) Matrix Spike Duplicate (MSD)
1202774966	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

Preparation/Analytical Method Verification

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-OA-E-009 REV# 29.

Raw data reports are processed and reviewed by the analyst using the data analysis software package. False positives have been removed from the quantitation reports per standard operating procedures (SOP) section 18.2.

Calibration Information

A complete list of the initial calibration data files are shown in the Calibration History report located in the Standard Data section of the data package. The various calibration mixes may not be calibrated using all of the calibration levels. In addition, not all of the mixes are calibrated using the same levels.

Diphenylamine has now superseded N-Nitroso-diphenylamine on Quantitation Reports, Initial Calibration Reports, Calibration Check Standard Reports, etc. Previous versions of EPA Methodologies referenced N-Nitroso-diphenylamine. However, as stated in EPA Methodology, "N-Nitroso-diphenylamine decomposes in

the gas chromatographic inlet and cannot be separated from Diphenylamine." Studies of these two compounds at GEL, both independent of each other and together, showed that they not only co-elute, but also have similar mass spectra. N-Nitroso-diphenylamine and Diphenylamine will be reported as Diphenylamine on all reports and forms.

Initial Calibration
All initial calibration requirements have been met for this sample delivery group (SDG) in this batch. A second source initial calibration verification (ICV) was included in the standard section directly behind the initial calibration.

CCV Requirements
All associated calibration verification standard(s) (ICV or CCV) met the acceptance criteria.

Quality Control (QC) Information

Method Blank (MB) Statement
The MB analyzed with this SDG in this batch met the acceptance criteria.

Surrogate Recoveries
All the surrogate recoveries were within the established acceptance criteria for this SDG in this batch.

Laboratory Control Sample (LCS) Recovery
The LCS(1202774966) recovered Benzidine at 6.32%. The limits are 19%-124%. Benzidine is identified as poor responding analyte in the analytical method (EPA 8270) and is subject to oxidative loss during extraction. This may account for the low recovery of the analyte. The data results have been reported.

QC Sample Designation
Sample 314528001 (CAMO-13-24279) was selected for analysis as the matrix spike and matrix spike duplicate.

Matrix Spike (MS) Recovery Statement
The MS recoveries were within the established acceptance limits.

Matrix Spike Duplicate (MSD) Recovery Statement
The MSD recoveries were within the established acceptance limits.

MS/MSD Relative Percent Difference (RPD) Statement
The MS(1202774964(CAMO-13-24279))/MSD(1202774965(CAMO-13-24279)) RPD value for Benzidine was outside of the acceptance limits. Please see the QC Summary report for specific failure. Since Benzidine was individually within the acceptance limits for the MS and MSD, the non-conformance had no adverse impact on the data and the results have been reported.

Internal Standard (ISTD) Acceptance
The internal standard responses used to quantitate the requested target analytes were within the required acceptance criteria for the SDG associated samples in this batch.

Technical Information:

Holding Time Specifications
All samples in this SDG in this batch met the specified holding time. GEL assigns holding times based on the associated methodology that assigns the date and time from sample collection or sample receipt. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP. All reported compound mass spectra met the detection specifications in the method.

Sample Dilutions
The samples in this SDG in this batch did not require dilutions.

Sample Re-extraction/Re-analysis
Re-extractions or re-analyses were not required in this SDG in this analytical batch unless confirmations or dilutions were required.

Miscellaneous Information:

Data Exception (DER) Documentation
Data exception report 1138269 was generated for this SDG.

Manual Integrations
Some initial calibration standards, continuing calibration standards, and/or samples may require manual integrations due to software limitations. Manual integrations, if any, are included with the raw data.

TIC Comment
Tentatively identified compounds (TIC) may be requested for samples in this delivery group/work order. Please note that non-requested calibrated analytes detected in a client sample may be reported on the Form 1/Certificate of Analysis as TICs. TIC data, if requested, are included on the Sample Data Summary (Form 1) and are also included with the sample raw data.

Additional Comments
Due to rounding differences in the calculation, the data reported in the Surrogate Recovery Report may differ slightly from the raw data. Due to software issue, the raw data may not correctly display the updated SPC limits. Please see Sample Data Summary Report and Surrogate Recovery Report for the correct surrogate acceptance limits.

Electronic Package Comment

The following package was generated using an electronic data processing program referred to as "virtual packaging". In an effort to increase quality and efficiency, the laboratory is developing systems to eventually generate all data packages electronically. The following change from "traditional" packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative of each electronic package will indicate the reviewer name associated with the generation of the data and package. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

System Configuration

The Semi-Volatile-GC/MS analysis was performed on the following instrument configuration:

Instrument ID	Instrument	System Configuration	Column ID	Column Description
MSD3.I	Agilent 7890A/5975C GC/MS w/ 7683 Autosampler	HP7890A/HP5975C	DB-5MS	25m x 0.2mm, 0.33um (5% Phenylmethylpolysiloxane)

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report
for

ARSL001 ARS International (63641-10)

Client SDG: 2013-265 GEL Work Order: 314528

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria

** Analyte is a surrogate compound

J Value is estimated

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

DL Indicates that sample is diluted.
RA Indicates that sample is re-analyzed without re-extraction.
RE Indicates that sample is re-extracted.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: Barbara Bailey **Name: Barbara Bailey**

Date: 27 NOV 2012 **Title: Data Validator**

Sample Data Summary

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-265**	**Date Collected:**	**11/01/2012 11:34**	**Matrix:**	**W**
Lab Sample ID:	**314528001**	**Date Received:**	**11/03/2012 09:30**		
		Client:	**ARSL001**	**Project:**	**ESHL00210**
Client ID:	**CAMO-13-24279**	**Method:**	**SW846 8270C**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**1261145**	**Inst:**	**MSD3.I**	**Dilution:**	**1**
Run Date:	**11/08/2012 23:45**	**Analyst:**	**JLD1**	**Inj. Vol:**	**1 uL**
Prep Date:	**11/08/2012 07:25**	**Aliquot:**	**1000 mL**	**Final Volume:**	**1 mL**
Data File:	**S110812a.B\s3k0828.D**	**Column:**	**DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
62-75-9	N-Methyl-N-nitrosomethylamine	U	10.0	ug/L	3.00	10.0
110-86-1	Pyridine	U	10.0	ug/L	3.00	10.0
62-53-3	Aniline	U	10.0	ug/L	3.00	10.0
108-95-2	Phenol	U	10.0	ug/L	3.00	10.0
111-44-4	bis(2-Chloroethyl) ether	U	10.0	ug/L	3.00	10.0
95-57-8	2-Chlorophenol	U	10.0	ug/L	3.00	10.0
541-73-1	1,3-Dichlorobenzene	U	10.0	ug/L	3.00	10.0
106-46-7	1,4-Dichlorobenzene	U	10.0	ug/L	3.00	10.0
95-50-1	1,2-Dichlorobenzene	U	10.0	ug/L	3.00	10.0
39638-32-9	bis(2-Chloroisopropyl)ether	U	10.0	ug/L	3.00	10.0
100-51-6	Benzyl alcohol	U	10.0	ug/L	3.00	10.0
95-48-7	o-Cresol	U	10.0	ug/L	3.00	10.0
65794-96-9	m,p-Cresols	U	10.0	ug/L	3.00	10.0
621-64-7	N-Nitrosodi--n-propylamine *N-Nitrosodipropylamine*	U	10.0	ug/L	3.00	10.0
67-72-1	Hexachloroethane	U	10.0	ug/L	3.00	10.0
98-95-3	Nitrobenzene	U	10.0	ug/L	3.00	10.0
78-59-1	Isophorone	U	10.0	ug/L	3.00	10.0
88-75-5	2-Nitrophenol	U	10.0	ug/L	3.00	10.0
105-67-9	2,4-Dimethylphenol	U	10.0	ug/L	3.00	10.0
111-91-1	bis(2-Chloroethoxy)methane	U	10.0	ug/L	3.00	10.0
120-83-2	2,4-Dichlorophenol	U	10.0	ug/L	3.00	10.0
65-85-0	Benzoic acid	U	20.0	ug/L	6.00	20.0
106-47-8	4-Chloroaniline	U	10.0	ug/L	3.30	10.0
87-68-3	Hexachlorobutadiene	U	10.0	ug/L	3.00	10.0
59-50-7	Parachlorometa cresol *4-Chloro-3-methylphenol*	U	10.0	ug/L	3.00	10.0
91-57-6	2-Methylnaphthalene	U	1.00	ug/L	0.300	1.00
91-20-3	Naphthalene	U	1.00	ug/L	0.300	1.00
90-12-0	1-Methylnaphthalene	U	1.00	ug/L	0.300	1.00
77-47-4	Hexachlorocyclopentadiene	U	10.0	ug/L	3.00	10.0
88-06-2	2,4,6-Trichlorophenol	U	10.0	ug/L	3.00	10.0
95-95-4	2,4,5-Trichlorophenol	U	10.0	ug/L	3.00	10.0
91-58-7	2-Chloronaphthalene	U	1.00	ug/L	0.300	1.00
88-74-4	2-Nitroaniline	U	10.0	ug/L	3.00	10.0
99-09-2	3-Nitroaniline *m-Nitroaniline*	U	10.0	ug/L	3.00	10.0
131-11-3	Dimethylphthalate	U	10.0	ug/L	3.00	10.0
606-20-2	2,6-Dinitrotoluene	U	10.0	ug/L	3.00	10.0

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-265**	**Date Collected:**	**11/01/2012 11:34**	**Matrix:**	**W**
Lab Sample ID:	**314528001**	**Date Received:**	**11/03/2012 09:30**		
		Client:	**ARSL001**	**Project:**	**ESHL00210**
Client ID:	**CAMO-13-24279**	**Method:**	**SW846 8270C**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**1261145**	**Inst:**	**MSD3.I**	**Dilution:**	**1**
Run Date:	**11/08/2012 23:45**	**Analyst:**	**JLD1**	**Inj. Vol:**	**1 uL**
Prep Date:	**11/08/2012 07:25**	**Aliquot:**	**1000 mL**	**Final Volume:**	**1 mL**
Data File:	**S110812a.B\s3k0828.D**	**Column:**	**DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
121-14-2	2,4-Dinitrotoluene	U	10.0	ug/L	3.00	10.0
208-96-8	Acenaphthylene	U	1.00	ug/L	0.300	1.00
83-32-9	Acenaphthene	U	1.00	ug/L	0.300	1.00
51-28-5	2,4-Dinitrophenol	U	20.0	ug/L	5.00	20.0
132-64-9	Dibenzofuran	U	10.0	ug/L	3.00	10.0
58-90-2	2,3,4,6-Tetrachlorophenol	U	10.0	ug/L	3.00	10.0
84-66-2	Diethylphthalate	U	10.0	ug/L	3.00	10.0
100-02-7	4-Nitrophenol	U	10.0	ug/L	3.00	10.0
86-73-7	Fluorene	U	1.00	ug/L	0.300	1.00
7005-72-3	4-Chlorophenylphenylether	U	10.0	ug/L	3.00	10.0
100-01-6	4-Nitroaniline *p-Nitroaniline*	U	10.0	ug/L	3.00	10.0
534-52-1	2-Methyl-4,6-dinitrophenol	U	10.0	ug/L	3.00	10.0
122-39-4	Diphenylamine	U	10.0	ug/L	3.00	10.0
122-66-7	Azobenzene *1,2-Diphenylhydrazine*	U	10.0	ug/L	3.00	10.0
101-55-3	4-Bromophenylphenylether	U	10.0	ug/L	3.00	10.0
118-74-1	Hexachlorobenzene	U	10.0	ug/L	3.00	10.0
87-86-5	Pentachlorophenol	U	10.0	ug/L	3.00	10.0
88-85-7	Dinoseb	U	10.0	ug/L	3.00	10.0
85-01-8	Phenanthrene	U	1.00	ug/L	0.300	1.00
120-12-7	Anthracene	U	1.00	ug/L	0.300	1.00
84-74-2	Di-n-butylphthalate	U	10.0	ug/L	3.00	10.0
206-44-0	Fluoranthene	U	1.00	ug/L	0.300	1.00
129-00-0	Pyrene	U	1.00	ug/L	0.300	1.00
85-68-7	Butylbenzylphthalate	U	10.0	ug/L	3.00	10.0
117-81-7	bis(2-Ethylhexyl)phthalate	U	10.0	ug/L	3.00	10.0
56-55-3	Benzo(a)anthracene	U	1.00	ug/L	0.300	1.00
218-01-9	Chrysene	U	1.00	ug/L	0.300	1.00
117-84-0	Di-n-octylphthalate	U	10.0	ug/L	3.00	10.0
205-99-2	Benzo(b)fluoranthene	U	1.00	ug/L	0.300	1.00
207-08-9	Benzo(k)fluoranthene	U	1.00	ug/L	0.300	1.00
50-32-8	Benzo(a)pyrene	U	1.00	ug/L	0.440	1.00
193-39-5	Indeno(1,2,3-cd)pyrene	U	1.00	ug/L	0.300	1.00
53-70-3	Dibenzo(a,h)anthracene	U	1.00	ug/L	0.300	1.00
191-24-2	Benzo(ghi)perylene	U	1.00	ug/L	0.300	1.00
123-91-1	1,4-Dioxane	U	10.0	ug/L	3.00	10.0
55-18-5	N-Nitrosodiethylamine	U	10.0	ug/L	3.00	10.0
930-55-2	N-Nitrosopyrrolidine	U	10.0	ug/L	3.00	10.0

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-265**	**Date Collected:**	**11/01/2012 11:34**	**Matrix:**	**W**
Lab Sample ID:	**314528001**	**Date Received:**	**11/03/2012 09:30**		
		Client:	**ARSL001**	**Project:**	**ESHL00210**
Client ID:	**CAMO-13-24279**	**Method:**	**SW846 8270C**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**1261145**	**Inst:**	**MSD3.I**	**Dilution:**	**1**
Run Date:	**11/08/2012 23:45**	**Analyst:**	**JLD1**	**Inj. Vol:**	**1 uL**
Prep Date:	**11/08/2012 07:25**	**Aliquot:**	**1000 mL**	**Final Volume:**	**1 mL**
Data File:	**S110812a.B\s3k0828.D**	**Column:**	**DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
924-16-3	N-Nitrosodi-n-butylamine	U	10.0	ug/L	3.00	10.0
95-94-3	1,2,4,5-Tetrachlorobenzene	U	10.0	ug/L	3.00	10.0
608-93-5	Pentachlorobenzene	U	10.0	ug/L	3.00	10.0
1912-24-9	Atrazine	U	10.0	ug/L	3.00	10.0
92-87-5	Benzidine	U	10.0	ug/L	3.00	10.0
91-94-1	3,3'-Dichlorobenzidine	U	10.0	ug/L	3.00	10.0
120-82-1	1,2,4-Trichlorobenzene	U	10.0	ug/L	3.00	10.0

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
2,4,6-Tribromophenol	64.5	100	ug/L	64.5	(23%-130%)
2-Fluorobiphenyl	30.2	50.0	ug/L	60.3	(30%-104%)
2-Fluorophenol	47.7	100	ug/L	47.7	(14%-77%)
Nitrobenzene-d5	41.1	50.0	ug/L	82.3	(34%-125%)
Phenol-d5	30.7	100	ug/L	30.7	(10%-78%)
p-Terphenyl-d14	42.1	50.0	ug/L	84.1	(33%-136%)

Tentatively Identified Compound Summary

CAS No.	Tentatively Identified Compound (TIC)	RT	Estimated	Units	Fit	Qual
	unknown	1.892	5.66	ug/L	0	J
	unknown	2.065	46	ug/L	0	J
	unknown	2.156	14	ug/L	0	J
000110-83-8	Cyclohexene	2.19	20.1	ug/L	95	NJ
197390-29-7	Cyclopentene, 1,2,3,3,4-pentamethy	3.898	4.37	ug/L	91	NJ

Quality Control Summary

Surrogate Recovery Report

SDG Number: 2013-265

Matrix Type: LIQUID

Sample ID	Client ID	2FP %REC	PHL %REC	NBZ %REC	FBP %REC	TBP %REC	TPH %REC
1202774963	MB for batch 1261144	56	35	96	80	74	102
1202774966	LCS for batch 1261144	44	27	69	62	64	78
314528001	CAMO-13-24279	48	31	82	60	64	84
1202774964	CAMO-13-24279MS	64	50	75	62	63	74
1202774965	CAMO-13-24279MSD	62	48	73	64	58	73

Surrogate			Acceptance Limits
2FP	=	2-Fluorophenol	(14%-77%)
PHL	=	Phenol-d5	(10%-78%)
NBZ	=	Nitrobenzene-d5	(34%-125%)
FBP	=	2-Fluorobiphenyl	(30%-104%)
TBP	=	2,4,6-Tribromophenol	(23%-130%)
TPH	=	p-Terphenyl-d14	(33%-136%)

* Recovery outside Acceptance Limits

Column to be used to flag recovery values

D Sample Diluted

Semi-Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 2013-265 **Sample Type:** Matrix Spike

Client ID: CAMO-13-24279MS **Matrix:** W

Lab Sample ID: 1202774964

Instrument: MSD3.I **Analysis Date:** 11/09/2012 00:10 **Dilution:** 1

Analyst: JLD1 **Prep Batch ID** 1261144

Inj. Vol: 1 uL **Batch ID:** 1261145

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits
62-75-9	MS	N-Methyl-N-nitrosomethylam	120	0.00	U	81.8	68	27-85
110-86-1	MS	Pyridine	120	0.00	U	85.1	71	21-93
62-53-3	MS	Aniline	120	0.00	U	109	90	28-108
108-95-2	MS	Phenol	120	0.00	U	65.5	54	15-100
111-44-4	MS	bis(2-Chloroethyl) ether	120	0.00	U	94.5	78	27-114
95-57-8	MS	2-Chlorophenol	120	0.00	U	94.0	78	32-103
541-73-1	MS	1,3-Dichlorobenzene	120	0.00	U	81.7	68	23-84
106-46-7	MS	1,4-Dichlorobenzene	120	0.00	U	81.1	67	23-88
95-50-1	MS	1,2-Dichlorobenzene	120	0.00	U	82.0	68	24-86
39638-32-9	MS	bis(2-Chloroisopropyl)ether	120	0.00	U	89.7	74	19-122
100-51-6	MS	Benzyl alcohol	120	0.00	U	92.1	76	34-98
95-48-7	MS	o-Cresol	120	0.00	U	93.2	77	29-96
65794-96-9	MS	m,p-Cresols	120	0.00	U	116	96	26-111
621-64-7	MS	N-Nitrosodi--n-propylamine *N-Nitrosodipropylamine*	120	0.00	U	98.1	81	32-115
67-72-1	MS	Hexachloroethane	120	0.00	U	79.1	66	25-82
98-95-3	MS	Nitrobenzene	120	0.00	U	98.2	82	35-124
78-59-1	MS	Isophorone	120	0.00	U	101	84	37-140
88-75-5	MS	2-Nitrophenol	120	0.00	U	97.3	81	33-115
105-67-9	MS	2,4-Dimethylphenol	120	0.00	U	84.8	70	31-106
111-91-1	MS	bis(2-Chloroethoxy)methane	120	0.00	U	91.0	76	35-112
120-83-2	MS	2,4-Dichlorophenol	120	0.00	U	96.3	80	36-110
65-85-0	MS	Benzoic acid	241	0.00	U	147	61	12-108

Semi-Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 2013-265 **Sample Type:** Matrix Spike
Client ID: CAMO-13-24279MS **Matrix:** W
Lab Sample ID: 1202774964
Instrument: MSD3.I **Analysis Date:** 11/09/2012 00:10 **Dilution:** 1
Analyst: JLD1 **Prep Batch ID** 1261144
Inj. Vol: 1 uL **Batch ID:** 1261145

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits
106-47-8	MS	4-Chloroaniline	120	0.00	U	93.3	77	33-120
87-68-3	MS	Hexachlorobutadiene	120	0.00	U	90.8	75	19-96
59-50-7	MS	Parachlorometa cresol *4-Chloro-3-methylphenol*	120	0.00	U	96.4	80	36-116
91-57-6	MS	2-Methylnaphthalene	120	0.00	U	75.9	63	27-103
91-20-3	MS	Naphthalene	120	0.00	U	78.8	65	28-99
90-12-0	MS	1-Methylnaphthalene	120	0.00	U	80.5	67	29-107
77-47-4	MS	Hexachlorocyclopentadiene	120	0.00	U	55.1	46	25-75
88-06-2	MS	2,4,6-Trichlorophenol	120	0.00	U	94.3	78	36-111
95-95-4	MS	2,4,5-Trichlorophenol	120	0.00	U	94.6	79	34-115
91-58-7	MS	2-Chloronaphthalene	120	0.00	U	79.3	66	33-96
88-74-4	MS	2-Nitroaniline *o-Nitroaniline*	120	0.00	U	89.5	74	31-120
99-09-2	MS	3-Nitroaniline *m-Nitroaniline*	120	0.00	U	87.4	73	32-123
131-11-3	MS	Dimethylphthalate	120	0.00	U	103	85	43-115
606-20-2	MS	2,6-Dinitrotoluene	120	0.00	U	96.8	80	42-121
121-14-2	MS	2,4-Dinitrotoluene	120	0.00	U	97.6	81	37-125
208-96-8	MS	Acenaphthylene	120	0.00	U	80.6	67	34-103
83-32-9	MS	Acenaphthene	120	0.00	U	80.1	67	31-104
51-28-5	MS	2,4-Dinitrophenol	120	0.00	U	93.2	77	25-108
132-64-9	MS	Dibenzofuran	120	0.00	U	89.5	74	38-106
58-90-2	MS	2,3,4,6-Tetrachlorophenol	120	0.00	U	96.3	80	33-123
84-66-2	MS	Diethylphthalate	120	0.00	U	98.4	82	43-116
100-02-7	MS	4-Nitrophenol	120	0.00	U	53.3	44	26-72

Semi-Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 2013-265 **Sample Type:** Matrix Spike
Client ID: CAMO-13-24279MS **Matrix:** W
Lab Sample ID: 1202774964
Instrument: MSD3.I **Analysis Date:** 11/09/2012 00:10 **Dilution:** 1
Analyst: JLD1 **Prep Batch ID** 1261144
Inj. Vol: 1 uL **Batch ID:** 1261145

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits
86-73-7	MS	Fluorene	120	0.00	U	86.3	72	33-110
7005-72-3	MS	4-Chlorophenylphenylether	120	0.00	U	95.4	79	30-112
100-01-6	MS	4-Nitroaniline *p-Nitroaniline*	120	0.00	U	87.6	73	28-131
534-52-1	MS	2-Methyl-4,6-dinitrophenol	120	0.00	U	102	85	31-113
122-39-4	MS	Diphenylamine	120	0.00	U	86.8	72	36-110
122-66-7	MS	Azobenzene *1,2-Diphenylhydrazine*	120	0.00	U	91.1	76	33-110
101-55-3	MS	4-Bromophenylphenylether	120	0.00	U	99.9	83	33-111
118-74-1	MS	Hexachlorobenzene	120	0.00	U	86.4	72	36-113
87-86-5	MS	Pentachlorophenol	120	0.00	U	75.6	63	25-110
85-01-8	MS	Phenanthrene	120	0.00	U	88.5	73	36-111
120-12-7	MS	Anthracene	120	0.00	U	85.5	71	36-107
84-74-2	MS	Di-n-butylphthalate	120	0.00	U	94.5	78	38-116
206-44-0	MS	Fluoranthene	120	0.00	U	84.9	70	35-116
129-00-0	MS	Pyrene	120	0.00	U	106	88	28-126
85-68-7	MS	Butylbenzylphthalate	120	0.00	U	101	84	32-120
117-81-7	MS	bis(2-Ethylhexyl)phthalate	120	0.00	U	98.7	82	30-121
56-55-3	MS	Benzo(a)anthracene	120	0.00	U	96.7	80	38-110
218-01-9	MS	Chrysene	120	0.00	U	95.3	79	35-115
117-84-0	MS	Di-n-octylphthalate	120	0.00	U	86.4	72	30-115
205-99-2	MS	Benzo(b)fluoranthene	120	0.00	U	96.9	80	37-115
207-08-9	MS	Benzo(k)fluoranthene	120	0.00	U	96.3	80	36-118
50-32-8	MS	Benzo(a)pyrene	120	0.00	U	92.3	77	36-109

Semi-Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 2013-265 **Sample Type:** Matrix Spike

Client ID: CAMO-13-24279MS **Matrix:** W

Lab Sample ID: 1202774964

Instrument: MSD3.I **Analysis Date:** 11/09/2012 00:10 **Dilution:** 1

Analyst: JLD1 **Prep Batch ID** 1261144

Inj. Vol: 1 uL **Batch ID:** 1261145

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits
193-39-5	MS	Indeno(1,2,3-cd)pyrene	120	0.00	U	108	90	28-121
53-70-3	MS	Dibenzo(a,h)anthracene	120	0.00	U	113	94	26-124
191-24-2	MS	Benzo(ghi)perylene	120	0.00	U	106	88	25-122
123-91-1	MS	1,4-Dioxane	120	0.00	U	79.5	66	26-90
930-55-2	MS	N-Nitrosopyrrolidine	120	0.00	U	102	85	40-113
95-94-3	MS	1,2,4,5-Tetrachlorobenzene	120	0.00	U	76.7	64	32-94
1912-24-9	MS	Atrazine	120	0.00	U	67.3	56	36-119
92-87-5	MS	Benzidine	241	0.00	U	120	50	10-125
91-94-1	MS	3,3'-Dichlorobenzidine	120	0.00	U	87.4	73	27-109
120-82-1	MS	1,2,4-Trichlorobenzene	120	0.00	U	80.1	66	23-90

Quality Control Summary
Spike Recovery Report

SDG Number: 2013-265 **Sample Type:** Matrix Spike Duplicate
Client ID: CAMO-13-24279MSD **Matrix:** W
Lab Sample ID: 1202774965
Instrument: MSD3.I **Analysis Date:** 11/09/2012 00:35 **Dilution:** 1
Analyst: JLD1 **Prep Batch ID** 1261144
Inj. Vol: 1 uL **Batch ID:** 1261145

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
62-75-9	MSD	N-Methyl-N-nitrosomethylam	120	0.00	U	78.5	65	27-85	4	0-30
110-86-1	MSD	Pyridine	120	0.00	U	82.7	69	21-93	3	0-30
62-53-3	MSD	Aniline	120	0.00	U	104	86	28-108	5	0-30
108-95-2	MSD	Phenol	120	0.00	U	63.2	52	15-100	4	0-30
111-44-4	MSD	bis(2-Chloroethyl) ether	120	0.00	U	91.4	76	27-114	3	0-30
95-57-8	MSD	2-Chlorophenol	120	0.00	U	90.1	75	32-103	4	0-30
541-73-1	MSD	1,3-Dichlorobenzene	120	0.00	U	76.2	63	23-84	7	0-30
106-46-7	MSD	1,4-Dichlorobenzene	120	0.00	U	75.9	63	23-88	7	0-30
95-50-1	MSD	1,2-Dichlorobenzene	120	0.00	U	77.1	64	24-86	6	0-30
39638-32-9	MSD	bis(2-Chloroisopropyl)ether	120	0.00	U	87.1	72	19-122	3	0-30
100-51-6	MSD	Benzyl alcohol	120	0.00	U	88.7	74	34-98	4	0-30
95-48-7	MSD	o-Cresol	120	0.00	U	89.4	74	29-96	4	0-30
65794-96-9	MSD	m,p-Cresols	120	0.00	U	111	92	26-111	5	0-30
621-64-7	MSD	N-Nitrosodi--n-propylamine *N-Nitrosodipropylamine*	120	0.00	U	95.1	79	32-115	3	0-30
67-72-1	MSD	Hexachloroethane	120	0.00	U	72.5	60	25-82	9	0-30
98-95-3	MSD	Nitrobenzene	120	0.00	U	95.7	79	35-124	3	0-30
78-59-1	MSD	Isophorone	120	0.00	U	98.4	82	37-140	3	0-30
88-75-5	MSD	2-Nitrophenol	120	0.00	U	94.5	78	33-115	3	0-30
105-67-9	MSD	2,4-Dimethylphenol	120	0.00	U	83.1	69	31-106	2	0-30
111-91-1	MSD	bis(2-Chloroethoxy)methane	120	0.00	U	89.3	74	35-112	2	0-30
120-83-2	MSD	2,4-Dichlorophenol	120	0.00	U	92.1	76	36-110	4	0-30
65-85-0	MSD	Benzoic acid	241	0.00	U	134	55	12-108	10	0-30

Semi-Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 2013-265 **Sample Type:** Matrix Spike Duplicate
Client ID: CAMO-13-24279MSD **Matrix:** W
Lab Sample ID: 1202774965
Instrument: MSD3.I **Analysis Date:** 11/09/2012 00:35 **Dilution:** 1
Analyst: JLD1 **Prep Batch ID** 1261144
Inj. Vol: 1 uL **Batch ID:** 1261145

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
106-47-8	MSD	4-Chloroaniline	120	0.00	U	92.4	77	33-120	1	0-30
87-68-3	MSD	Hexachlorobutadiene	120	0.00	U	86.5	72	19-96	5	0-30
59-50-7	MSD	Parachlorometa cresol *4-Chloro-3-methylphenol*	120	0.00	U	93.2	77	36-116	3	0-30
91-57-6	MSD	2-Methylnaphthalene	120	0.00	U	73.9	61	27-103	3	0-30
91-20-3	MSD	Naphthalene	120	0.00	U	76.5	63	28-99	3	0-30
90-12-0	MSD	1-Methylnaphthalene	120	0.00	U	78.2	65	29-107	3	0-30
77-47-4	MSD	Hexachlorocyclopentadiene	120	0.00	U	45.7	38	25-75	19	0-30
88-06-2	MSD	2,4,6-Trichlorophenol	120	0.00	U	91.1	76	36-111	3	0-30
95-95-4	MSD	2,4,5-Trichlorophenol	120	0.00	U	91.5	76	34-115	3	0-30
91-58-7	MSD	2-Chloronaphthalene	120	0.00	U	77.1	64	33-96	3	0-30
88-74-4	MSD	2-Nitroaniline *o-Nitroaniline*	120	0.00	U	84.0	70	31-120	6	0-30
99-09-2	MSD	3-Nitroaniline *m-Nitroaniline*	120	0.00	U	78.9	66	32-123	10	0-30
131-11-3	MSD	Dimethylphthalate	120	0.00	U	98.4	82	43-115	4	0-30
606-20-2	MSD	2,6-Dinitrotoluene	120	0.00	U	93.9	78	42-121	3	0-30
121-14-2	MSD	2,4-Dinitrotoluene	120	0.00	U	91.5	76	37-125	6	0-30
208-96-8	MSD	Acenaphthylene	120	0.00	U	78.2	65	34-103	3	0-30
83-32-9	MSD	Acenaphthene	120	0.00	U	76.9	64	31-104	4	0-30
51-28-5	MSD	2,4-Dinitrophenol	120	0.00	U	71.4	59	25-108	26	0-30
132-64-9	MSD	Dibenzofuran	120	0.00	U	86.5	72	38-106	3	0-30
58-90-2	MSD	2,3,4,6-Tetrachlorophenol	120	0.00	U	90.2	75	33-123	6	0-30
84-66-2	MSD	Diethylphthalate	120	0.00	U	95.2	79	43-116	3	0-30
100-02-7	MSD	4-Nitrophenol	120	0.00	U	44.4	37	26-72	18	0-30

Semi-Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 2013-265 **Sample Type:** Matrix Spike Duplicate

Client ID: CAMO-13-24279MSD **Matrix:** W

Lab Sample ID: 1202774965

Instrument: MSD3.I **Analysis Date:** 11/09/2012 00:35 **Dilution:** 1

Analyst: JLD1 **Prep Batch ID** 1261144

Inj. Vol: 1 uL **Batch ID:** 1261145

CAS No	Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
86-73-7	MSD Fluorene	120	0.00	U	83.3	69	33-110	4	0-30
7005-72-3	MSD 4-Chlorophenylphenylether	120	0.00	U	93.0	77	30-112	3	0-30
100-01-6	MSD 4-Nitroaniline *p-Nitroaniline*	120	0.00	U	72.4	60	28-131	19	0-30
534-52-1	MSD 2-Methyl-4,6-dinitrophenol	120	0.00	U	89.8	75	31-113	13	0-30
122-39-4	MSD Diphenylamine	120	0.00	U	86.9	72	36-110	0	0-30
122-66-7	MSD Azobenzene *1,2-Diphenylhydrazine*	120	0.00	U	91.4	76	33-110	0	0-30
101-55-3	MSD 4-Bromophenylphenylether	120	0.00	U	101	83	33-111	1	0-30
118-74-1	MSD Hexachlorobenzene	120	0.00	U	87.7	73	36-113	1	0-30
87-86-5	MSD Pentachlorophenol	120	0.00	U	67.6	56	25-110	11	0-30
85-01-8	MSD Phenanthrene	120	0.00	U	86.2	72	36-111	3	0-30
120-12-7	MSD Anthracene	120	0.00	U	82.5	69	36-107	4	0-30
84-74-2	MSD Di-n-butylphthalate	120	0.00	U	95.1	79	38-116	1	0-30
206-44-0	MSD Fluoranthene	120	0.00	U	79.4	66	35-116	7	0-30
129-00-0	MSD Pyrene	120	0.00	U	104	86	28-126	2	0-30
85-68-7	MSD Butylbenzylphthalate	120	0.00	U	100	83	32-120	1	0-30
117-81-7	MSD bis(2-Ethylhexyl)phthalate	120	0.00	U	97.0	81	30-121	2	0-30
56-55-3	MSD Benzo(a)anthracene	120	0.00	U	91.5	76	38-110	6	0-30
218-01-9	MSD Chrysene	120	0.00	U	89.1	74	35-115	7	0-30
117-84-0	MSD Di-n-octylphthalate	120	0.00	U	82.4	68	30-115	5	0-30
205-99-2	MSD Benzo(b)fluoranthene	120	0.00	U	93.5	78	37-115	4	0-30
207-08-9	MSD Benzo(k)fluoranthene	120	0.00	U	95.5	79	36-118	1	0-30
50-32-8	MSD Benzo(a)pyrene	120	0.00	U	87.4	73	36-109	5	0-30

Semi-Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 2013-265 **Sample Type:** Matrix Spike Duplicate

Client ID: CAMO-13-24279MSD **Matrix:** W

Lab Sample ID: 1202774965

Instrument: MSD3.I **Analysis Date:** 11/09/2012 00:35 **Dilution:** 1

Analyst: JLD1 **Prep Batch ID** 1261144

Inj. Vol: 1 uL **Batch ID:** 1261145

CAS No	Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
193-39-5	MSD Indeno(1,2,3-cd)pyrene	120	0.00	U	86.8	72	28-121	22	0-30
53-70-3	MSD Dibenzo(a,h)anthracene	120	0.00	U	90.1	75	26-124	22	0-30
191-24-2	MSD Benzo(ghi)perylene	120	0.00	U	84.9	70	25-122	22	0-30
123-91-1	MSD 1,4-Dioxane	120	0.00	U	77.7	65	26-90	2	0-30
930-55-2	MSD N-Nitrosopyrrolidine	120	0.00	U	98.7	82	40-113	3	0-30
95-94-3	MSD 1,2,4,5-Tetrachlorobenzene	120	0.00	U	74.7	62	32-94	3	0-30
1912-24-9	MSD Atrazine	120	0.00	U	68.2	57	36-119	1	0-30
92-87-5	MSD Benzidine	241	0.00	U	51.7	21	10-125	80 *	0-30
91-94-1	MSD 3,3'-Dichlorobenzidine	120	0.00	U	77.4	64	27-109	12	0-30
120-82-1	MSD 1,2,4-Trichlorobenzene	120	0.00	U	76.3	63	23-90	5	0-30

Semi-Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 2013-265 **Sample Type:** Laboratory Control Sample

Client ID: LCS for batch 1261144 **Matrix:** WATER

Lab Sample ID: 1202774966

Instrument: MSD3.I **Analysis Date:** 11/08/2012 22:31 **Dilution:** 1

Analyst: JLD1 **Prep Batch ID** 1261144

Inj. Vol: 1 uL **Batch ID:** 1261145

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
62-75-9	LCS	N-Methyl-N-nitrosomethylam	50.0	0.0	24.4	49	29-86
110-86-1	LCS	Pyridine	50.0	0.0	15.6	31	25-96
62-53-3	LCS	Aniline	50.0	0.0	37.4	75	38-105
108-95-2	LCS	Phenol	50.0	0.0	14.3	29	13-137
111-44-4	LCS	bis(2-Chloroethyl) ether	50.0	0.0	34.8	70	37-110
95-57-8	LCS	2-Chlorophenol	50.0	0.0	35.0	70	41-98
541-73-1	LCS	1,3-Dichlorobenzene	50.0	0.0	29.7	59	33-86
106-46-7	LCS	1,4-Dichlorobenzene	50.0	0.0	29.8	60	33-87
95-50-1	LCS	1,2-Dichlorobenzene	50.0	0.0	30.2	60	34-86
39638-32-9	LCS	bis(2-Chloroisopropyl)ether	50.0	0.0	33.5	67	30-118
100-51-6	LCS	Benzyl alcohol	50.0	0.0	31.4	63	39-88
95-48-7	LCS	o-Cresol	50.0	0.0	31.2	62	37-89
65794-96-9	LCS	m,p-Cresols	50.0	0.0	35.8	72	33-99
621-64-7	LCS	N-Nitrosodi--n-propylamine *N-Nitrosodipropylamine*	50.0	0.0	35.8	72	40-112
67-72-1	LCS	Hexachloroethane	50.0	0.0	28.5	57	31-87
98-95-3	LCS	Nitrobenzene	50.0	0.0	36.7	73	42-118
78-59-1	LCS	Isophorone	50.0	0.0	38.4	77	50-132
88-75-5	LCS	2-Nitrophenol	50.0	0.0	36.4	73	45-109
105-67-9	LCS	2,4-Dimethylphenol	50.0	0.0	29.2	58	44-98
111-91-1	LCS	bis(2-Chloroethoxy)methane	50.0	0.0	34.0	68	45-109
120-83-2	LCS	2,4-Dichlorophenol	50.0	0.0	36.0	72	46-106
65-85-0	LCS	Benzoic acid	100	0.0	34.2	34	4-134

Semi-Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 2013-265
Sample Type: Laboratory Control Sample
Client ID: LCS for batch 1261144
Matrix: WATER
Lab Sample ID: 1202774966
Instrument: MSD3.I
Analysis Date: 11/08/2012 22:31
Dilution: 1
Analyst: JLD1
Prep Batch ID 1261144
Inj. Vol: 1 uL
Batch ID: 1261145

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
106-47-8	LCS	4-Chloroaniline	50.0	0.0	38.3	77	50-122
87-68-3	LCS	Hexachlorobutadiene	50.0	0.0	35.6	71	29-94
59-50-7	LCS	Parachlorometa cresol *4-Chloro-3-methylphenol*	50.0	0.0	37.3	75	47-110
91-57-6	LCS	2-Methylnaphthalene	50.0	0.0	32.0	64	37-100
91-20-3	LCS	Naphthalene	50.0	0.0	31.9	64	35-97
90-12-0	LCS	1-Methylnaphthalene	50.0	0.0	33.6	67	38-105
77-47-4	LCS	Hexachlorocyclopentadiene	50.0	0.0	23.3	47	38-79
88-06-2	LCS	2,4,6-Trichlorophenol	50.0	0.0	37.5	75	43-108
95-95-4	LCS	2,4,5-Trichlorophenol	50.0	0.0	38.7	77	43-110
91-58-7	LCS	2-Chloronaphthalene	50.0	0.0	33.6	67	40-96
88-74-4	LCS	2-Nitroaniline *o-Nitroaniline*	50.0	0.0	37.0	74	45-116
99-09-2	LCS	3-Nitroaniline *m-Nitroaniline*	50.0	0.0	37.0	74	46-123
131-11-3	LCS	Dimethylphthalate	50.0	0.0	42.7	85	53-111
606-20-2	LCS	2,6-Dinitrotoluene	50.0	0.0	39.9	80	52-117
121-14-2	LCS	2,4-Dinitrotoluene	50.0	0.0	40.6	81	46-124
208-96-8	LCS	Acenaphthylene	50.0	0.0	33.7	67	42-105
83-32-9	LCS	Acenaphthene	50.0	0.0	33.6	67	42-103
51-28-5	LCS	2,4-Dinitrophenol	50.0	0.0	37.3	75	33-105
132-64-9	LCS	Dibenzofuran	50.0	0.0	37.7	75	46-106
58-90-2	LCS	2,3,4,6-Tetrachlorophenol	50.0	0.0	39.5	79	46-119
84-66-2	LCS	Diethylphthalate	50.0	0.0	40.9	82	52-115
100-02-7	LCS	4-Nitrophenol	50.0	0.0	7.09	14	12-130

Semi-Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 2013-265 **Sample Type:** Laboratory Control Sample
Client ID: LCS for batch 1261144 **Matrix:** WATER
Lab Sample ID: 1202774966
Instrument: MSD3.I **Analysis Date:** 11/08/2012 22:31 **Dilution:** 1
Analyst: JLD1 **Prep Batch ID** 1261144
Inj. Vol: 1 uL **Batch ID:** 1261145

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
86-73-7	LCS	Fluorene	50.0	0.0	35.9	72	44-110
7005-72-3	LCS	4-Chlorophenylphenylether	50.0	0.0	40.1	80	41-113
100-01-6	LCS	4-Nitroaniline *p-Nitroaniline*	50.0	0.0	36.1	72	39-132
534-52-1	LCS	2-Methyl-4,6-dinitrophenol	50.0	0.0	43.1	86	39-111
122-39-4	LCS	Diphenylamine	50.0	0.0	37.7	75	47-111
122-66-7	LCS	Azobenzene *1,2-Diphenylhydrazine*	50.0	0.0	39.0	78	41-111
101-55-3	LCS	4-Bromophenylphenylether	50.0	0.0	42.8	86	42-113
118-74-1	LCS	Hexachlorobenzene	50.0	0.0	36.9	74	44-115
87-86-5	LCS	Pentachlorophenol	50.0	0.0	32.0	64	36-99
85-01-8	LCS	Phenanthrene	50.0	0.0	37.9	76	47-111
120-12-7	LCS	Anthracene	50.0	0.0	36.4	73	46-109
84-74-2	LCS	Di-n-butylphthalate	50.0	0.0	39.6	79	49-115
206-44-0	LCS	Fluoranthene	50.0	0.0	35.7	71	45-118
129-00-0	LCS	Pyrene	50.0	0.0	47.7	95	39-126
85-68-7	LCS	Butylbenzylphthalate	50.0	0.0	44.6	89	41-121
117-81-7	LCS	bis(2-Ethylhexyl)phthalate	50.0	0.0	42.2	84	38-124
56-55-3	LCS	Benzo(a)anthracene	50.0	0.0	40.4	81	49-110
218-01-9	LCS	Chrysene	50.0	0.0	39.6	79	45-117
117-84-0	LCS	Di-n-octylphthalate	50.0	0.0	35.3	71	34-121
205-99-2	LCS	Benzo(b)fluoranthene	50.0	0.0	42.2	84	47-116
207-08-9	LCS	Benzo(k)fluoranthene	50.0	0.0	44.2	88	47-119
50-32-8	LCS	Benzo(a)pyrene	50.0	0.0	39.8	80	48-109

Semi-Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 2013-265
Sample Type: Laboratory Control Sample
Client ID: LCS for batch 1261144
Matrix: WATER
Lab Sample ID: 1202774966
Instrument: MSD3.I
Analysis Date: 11/08/2012 22:31
Dilution: 1
Analyst: JLD1
Prep Batch ID 1261144
Inj. Vol: 1 uL
Batch ID: 1261145

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
193-39-5	LCS	Indeno(1,2,3-cd)pyrene	50.0	0.0	37.5	75	38-124
53-70-3	LCS	Dibenzo(a,h)anthracene	50.0	0.0	38.8	78	38-124
191-24-2	LCS	Benzo(ghi)perylene	50.0	0.0	36.2	72	36-124
123-91-1	LCS	1,4-Dioxane	50.0	0.0	24.2	48	41-69
930-55-2	LCS	N-Nitrosopyrrolidine	50.0	0.0	37.1	74	42-105
95-94-3	LCS	1,2,4,5-Tetrachlorobenzene	50.0	0.0	33.2	66	40-93
1912-24-9	LCS	Atrazine	50.0	0.0	29.1	58	47-115
92-87-5	LCS	Benzidine	100	0.0	6.32	6 *	19-124
91-94-1	LCS	3,3'-Dichlorobenzidine	50.0	0.0	32.2	64	36-111
120-82-1	LCS	1,2,4-Trichlorobenzene	50.0	0.0	32.5	65	32-92

Method Blank Summary

SDG Number:	**2013-265**	**Client:**	**ARSL001**	**Matrix:**	**WATER**
Client ID:	**MB for batch 1261144**	**Instrument ID:**	**MSD3.I**	**Data File:**	**S110812a.B\s3k0824.D**
Lab Sample ID:	**1202774963**	**Prep Date:**	**11/08/2012 07:25**	**Analyzed:**	**11/08/12 22:06**
Column:	**DB-5ms**				

This method blank applies to the following samples and quality control samples:

	Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01	LCS for batch 1261144	1202774966	S110812a.B\s3k0825.D	11/08/12	2231
02	CAMO-13-24279	314528001	S110812a.B\s3k0828.D	11/08/12	2345
03	CAMO-13-24279MS	1202774964	S110812a.B\s3k0829.D	11/09/12	0010
04	CAMO-13-24279MSD	1202774965	S110812a.B\s3k0830.D	11/09/12	0035

Quality Control Data

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-265**			**Matrix:**	**WATER**
Lab Sample ID:	**1202774963**				
Client Sample:	**QC for batch 1261144**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**MB for batch 1261144**	**Method:**	**SW846 8270C**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**1261145**	**Inst:**	**MSD3.I**	**Dilution:**	**1**
Run Date:	**11/08/2012 22:06**	**Analyst:**	**JLD1**	**Inj. Vol:**	**1 uL**
Prep Date:	**11/08/2012 07:25**	**Aliquot:**	**1000 mL**	**Final Volume:**	**1 mL**
Data File:	**S110812a.B\s3k0824.D**	**Column:**	**DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
62-75-9	N-Methyl-N-nitrosomethylamine	U	10.0	ug/L	3.00	10.0
110-86-1	Pyridine	U	10.0	ug/L	3.00	10.0
62-53-3	Aniline	U	10.0	ug/L	3.00	10.0
108-95-2	Phenol	U	10.0	ug/L	3.00	10.0
111-44-4	bis(2-Chloroethyl) ether	U	10.0	ug/L	3.00	10.0
95-57-8	2-Chlorophenol	U	10.0	ug/L	3.00	10.0
541-73-1	1,3-Dichlorobenzene	U	10.0	ug/L	3.00	10.0
106-46-7	1,4-Dichlorobenzene	U	10.0	ug/L	3.00	10.0
95-50-1	1,2-Dichlorobenzene	U	10.0	ug/L	3.00	10.0
39638-32-9	bis(2-Chloroisopropyl)ether	U	10.0	ug/L	3.00	10.0
100-51-6	Benzyl alcohol	U	10.0	ug/L	3.00	10.0
95-48-7	o-Cresol	U	10.0	ug/L	3.00	10.0
65794-96-9	m,p-Cresols	U	10.0	ug/L	3.00	10.0
621-64-7	N-Nitrosodi--n-propylamine *N-Nitrosodipropylamine*	U	10.0	ug/L	3.00	10.0
67-72-1	Hexachloroethane	U	10.0	ug/L	3.00	10.0
98-95-3	Nitrobenzene	U	10.0	ug/L	3.00	10.0
78-59-1	Isophorone	U	10.0	ug/L	3.00	10.0
88-75-5	2-Nitrophenol	U	10.0	ug/L	3.00	10.0
105-67-9	2,4-Dimethylphenol	U	10.0	ug/L	3.00	10.0
111-91-1	bis(2-Chloroethoxy)methane	U	10.0	ug/L	3.00	10.0
120-83-2	2,4-Dichlorophenol	U	10.0	ug/L	3.00	10.0
65-85-0	Benzoic acid	U	20.0	ug/L	6.00	20.0
106-47-8	4-Chloroaniline	U	10.0	ug/L	3.30	10.0
87-68-3	Hexachlorobutadiene	U	10.0	ug/L	3.00	10.0
59-50-7	Parachlorometa cresol *4-Chloro-3-methylphenol*	U	10.0	ug/L	3.00	10.0
91-57-6	2-Methylnaphthalene	U	1.00	ug/L	0.300	1.00
91-20-3	Naphthalene	U	1.00	ug/L	0.300	1.00
90-12-0	1-Methylnaphthalene	U	1.00	ug/L	0.300	1.00
77-47-4	Hexachlorocyclopentadiene	U	10.0	ug/L	3.00	10.0
88-06-2	2,4,6-Trichlorophenol	U	10.0	ug/L	3.00	10.0
95-95-4	2,4,5-Trichlorophenol	U	10.0	ug/L	3.00	10.0
91-58-7	2-Chloronaphthalene	U	1.00	ug/L	0.300	1.00
88-74-4	2-Nitroaniline	U	10.0	ug/L	3.00	10.0
99-09-2	*o-Nitroaniline* 3-Nitroaniline *m-Nitroaniline*	U	10.0	ug/L	3.00	10.0
131-11-3	Dimethylphthalate	U	10.0	ug/L	3.00	10.0
606-20-2	2,6-Dinitrotoluene	U	10.0	ug/L	3.00	10.0

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-265**			**Matrix:**	**WATER**
Lab Sample ID:	**1202774963**				
Client Sample:	**QC for batch 1261144**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**MB for batch 1261144**	**Method:**	**SW846 8270C**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**1261145**	**Inst:**	**MSD3.I**	**Dilution:**	**1**
Run Date:	**11/08/2012 22:06**	**Analyst:**	**JLD1**	**Inj. Vol:**	**1 uL**
Prep Date:	**11/08/2012 07:25**	**Aliquot:**	**1000 mL**	**Final Volume:**	**1 mL**
Data File:	**S110812a.B\s3k0824.D**	**Column:**	**DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
121-14-2	2,4-Dinitrotoluene	U	10.0	ug/L	3.00	10.0
208-96-8	Acenaphthylene	U	1.00	ug/L	0.300	1.00
83-32-9	Acenaphthene	U	1.00	ug/L	0.300	1.00
51-28-5	2,4-Dinitrophenol	U	20.0	ug/L	5.00	20.0
132-64-9	Dibenzofuran	U	10.0	ug/L	3.00	10.0
58-90-2	2,3,4,6-Tetrachlorophenol	U	10.0	ug/L	3.00	10.0
84-66-2	Diethylphthalate	U	10.0	ug/L	3.00	10.0
100-02-7	4-Nitrophenol	U	10.0	ug/L	3.00	10.0
86-73-7	Fluorene	U	1.00	ug/L	0.300	1.00
7005-72-3	4-Chlorophenylphenylether	U	10.0	ug/L	3.00	10.0
100-01-6	4-Nitroaniline *p-Nitroaniline*	U	10.0	ug/L	3.00	10.0
534-52-1	2-Methyl-4,6-dinitrophenol	U	10.0	ug/L	3.00	10.0
122-39-4	Diphenylamine	U	10.0	ug/L	3.00	10.0
122-66-7	Azobenzene *1,2-Diphenylhydrazine*	U	10.0	ug/L	3.00	10.0
101-55-3	4-Bromophenylphenylether	U	10.0	ug/L	3.00	10.0
118-74-1	Hexachlorobenzene	U	10.0	ug/L	3.00	10.0
87-86-5	Pentachlorophenol	U	10.0	ug/L	3.00	10.0
88-85-7	Dinoseb	U	10.0	ug/L	3.00	10.0
85-01-8	Phenanthrene	U	1.00	ug/L	0.300	1.00
120-12-7	Anthracene	U	1.00	ug/L	0.300	1.00
84-74-2	Di-n-butylphthalate	U	10.0	ug/L	3.00	10.0
206-44-0	Fluoranthene	U	1.00	ug/L	0.300	1.00
129-00-0	Pyrene	U	1.00	ug/L	0.300	1.00
85-68-7	Butylbenzylphthalate	U	10.0	ug/L	3.00	10.0
117-81-7	bis(2-Ethylhexyl)phthalate	U	10.0	ug/L	3.00	10.0
56-55-3	Benzo(a)anthracene	U	1.00	ug/L	0.300	1.00
218-01-9	Chrysene	U	1.00	ug/L	0.300	1.00
117-84-0	Di-n-octylphthalate	U	10.0	ug/L	3.00	10.0
205-99-2	Benzo(b)fluoranthene	U	1.00	ug/L	0.300	1.00
207-08-9	Benzo(k)fluoranthene	U	1.00	ug/L	0.300	1.00
50-32-8	Benzo(a)pyrene	U	1.00	ug/L	0.440	1.00
193-39-5	Indeno(1,2,3-cd)pyrene	U	1.00	ug/L	0.300	1.00
53-70-3	Dibenzo(a,h)anthracene	U	1.00	ug/L	0.300	1.00
191-24-2	Benzo(ghi)perylene	U	1.00	ug/L	0.300	1.00
123-91-1	1,4-Dioxane	U	10.0	ug/L	3.00	10.0
55-18-5	N-Nitrosodiethylamine	U	10.0	ug/L	3.00	10.0
930-55-2	N-Nitrosopyrrolidine	U	10.0	ug/L	3.00	10.0

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-265**			**Matrix:**	**WATER**
Lab Sample ID:	**1202774963**				
Client Sample:	**QC for batch 1261144**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**MB for batch 1261144**	**Method:**	**SW846 8270C**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**1261145**	**Inst:**	**MSD3.I**	**Dilution:**	**1**
Run Date:	**11/08/2012 22:06**	**Analyst:**	**JLD1**	**Inj. Vol:**	**1 uL**
Prep Date:	**11/08/2012 07:25**	**Aliquot:**	**1000 mL**	**Final Volume:**	**1 mL**
Data File:	**S110812a.B\s3k0824.D**	**Column:**	**DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
924-16-3	N-Nitrosodi-n-butylamine	U	10.0	ug/L	3.00	10.0
95-94-3	1,2,4,5-Tetrachlorobenzene	U	10.0	ug/L	3.00	10.0
608-93-5	Pentachlorobenzene	U	10.0	ug/L	3.00	10.0
1912-24-9	Atrazine	U	10.0	ug/L	3.00	10.0
92-87-5	Benzidine	U	10.0	ug/L	3.00	10.0
91-94-1	3,3'-Dichlorobenzidine	U	10.0	ug/L	3.00	10.0
120-82-1	1,2,4-Trichlorobenzene	U	10.0	ug/L	3.00	10.0

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
2,4,6-Tribromophenol	73.9	100	ug/L	73.9	(23%-130%)
2-Fluorobiphenyl	39.8	50.0	ug/L	79.7	(30%-104%)
2-Fluorophenol	55.7	100	ug/L	55.7	(14%-77%)
Nitrobenzene-d5	47.8	50.0	ug/L	95.7	(34%-125%)
Phenol-d5	34.5	100	ug/L	34.5	(10%-78%)
p-Terphenyl-d14	51.0	50.0	ug/L	102	(33%-136%)

Tentatively Identified Compound Summary

CAS No.	Tentatively Identified Compound (TIC)	RT	Estimated	Units	Fit	Qual
000067-66-3	Trichloromethane	1.895	7.24	ug/L	92	NJ
	unknown	2.068	63.7	ug/L	0	J
	unknown	2.105	6.46	ug/L	0	J
	unknown	2.159	22.1	ug/L	0	J
000110-83-8	Cyclohexene	2.193	26.5	ug/L	95	NJ
	unknown	2.972	5.24	ug/L	0	J

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-265**	**Date Collected:**	**11/01/2012 11:34**	**Matrix:**	**W**
Lab Sample ID:	**1202774964**	**Date Received:**	**11/03/2012 09:30**		
Client Sample:	**QC for batch 1261144**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**CAMO-13-24279MS**	**Method:**	**SW846 8270C**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**1261145**	**Inst:**	**MSD3.I**	**Dilution:**	**1**
Run Date:	**11/09/2012 00:10**	**Analyst:**	**JLD1**	**Inj. Vol:**	**1 uL**
Prep Date:	**11/08/2012 07:25**	**Aliquot:**	**415 mL**	**Final Volume:**	**1 mL**
Data File:	**S110812a.B\s3k0829.D**	**Column:**	**DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
62-75-9	N-Methyl-N-nitrosomethylamine		81.8	ug/L	7.23	24.1
110-86-1	Pyridine		85.1	ug/L	7.23	24.1
62-53-3	Aniline		109	ug/L	7.23	24.1
108-95-2	Phenol		65.5	ug/L	7.23	24.1
111-44-4	bis(2-Chloroethyl) ether		94.5	ug/L	7.23	24.1
95-57-8	2-Chlorophenol		94.0	ug/L	7.23	24.1
541-73-1	1,3-Dichlorobenzene		81.7	ug/L	7.23	24.1
106-46-7	1,4-Dichlorobenzene		81.1	ug/L	7.23	24.1
95-50-1	1,2-Dichlorobenzene		82.0	ug/L	7.23	24.1
39638-32-9	bis(2-Chloroisopropyl)ether		89.7	ug/L	7.23	24.1
100-51-6	Benzyl alcohol		92.1	ug/L	7.23	24.1
95-48-7	o-Cresol		93.2	ug/L	7.23	24.1
65794-96-9	m,p-Cresols		116	ug/L	7.23	24.1
621-64-7	N-Nitrosodi--n-propylamine *N-Nitrosodipropylamine*		98.1	ug/L	7.23	24.1
67-72-1	Hexachloroethane		79.1	ug/L	7.23	24.1
98-95-3	Nitrobenzene		98.2	ug/L	7.23	24.1
78-59-1	Isophorone		101	ug/L	7.23	24.1
88-75-5	2-Nitrophenol		97.3	ug/L	7.23	24.1
105-67-9	2,4-Dimethylphenol		84.8	ug/L	7.23	24.1
111-91-1	bis(2-Chloroethoxy)methane		91.0	ug/L	7.23	24.1
120-83-2	2,4-Dichlorophenol		96.3	ug/L	7.23	24.1
65-85-0	Benzoic acid		147	ug/L	14.5	48.2
106-47-8	4-Chloroaniline		93.3	ug/L	7.95	24.1
87-68-3	Hexachlorobutadiene		90.8	ug/L	7.23	24.1
59-50-7	Parachlorometa cresol *4-Chloro-3-methylphenol*		96.4	ug/L	7.23	24.1
91-57-6	2-Methylnaphthalene		75.9	ug/L	0.723	2.41
91-20-3	Naphthalene		78.8	ug/L	0.723	2.41
90-12-0	1-Methylnaphthalene		80.5	ug/L	0.723	2.41
77-47-4	Hexachlorocyclopentadiene		55.1	ug/L	7.23	24.1
88-06-2	2,4,6-Trichlorophenol		94.3	ug/L	7.23	24.1
95-95-4	2,4,5-Trichlorophenol		94.6	ug/L	7.23	24.1
91-58-7	2-Chloronaphthalene		79.3	ug/L	0.723	2.41
88-74-4	2-Nitroaniline		89.5	ug/L	7.23	24.1
99-09-2	*o-Nitroaniline* 3-Nitroaniline *m-Nitroaniline*		87.4	ug/L	7.23	24.1
131-11-3	Dimethylphthalate		103	ug/L	7.23	24.1
606-20-2	2,6-Dinitrotoluene		96.8	ug/L	7.23	24.1

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-265**	**Date Collected:**	**11/01/2012 11:34**	**Matrix:**	**W**
Lab Sample ID:	**1202774964**	**Date Received:**	**11/03/2012 09:30**		
Client Sample:	**QC for batch 1261144**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**CAMO-13-24279MS**	**Method:**	**SW846 8270C**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**1261145**	**Inst:**	**MSD3.I**	**Dilution:**	**1**
Run Date:	**11/09/2012 00:10**	**Analyst:**	**JLD1**	**Inj. Vol:**	**1 uL**
Prep Date:	**11/08/2012 07:25**	**Aliquot:**	**415 mL**	**Final Volume:**	**1 mL**
Data File:	**S110812a.B\s3k0829.D**	**Column:**	**DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
121-14-2	2,4-Dinitrotoluene		97.6	ug/L	7.23	24.1
208-96-8	Acenaphthylene		80.6	ug/L	0.723	2.41
83-32-9	Acenaphthene		80.1	ug/L	0.723	2.41
51-28-5	2,4-Dinitrophenol		93.2	ug/L	12.0	48.2
132-64-9	Dibenzofuran		89.5	ug/L	7.23	24.1
58-90-2	2,3,4,6-Tetrachlorophenol		96.3	ug/L	7.23	24.1
84-66-2	Diethylphthalate		98.4	ug/L	7.23	24.1
100-02-7	4-Nitrophenol		53.3	ug/L	7.23	24.1
86-73-7	Fluorene		86.3	ug/L	0.723	2.41
7005-72-3	4-Chlorophenylphenylether		95.4	ug/L	7.23	24.1
100-01-6	4-Nitroaniline		87.6	ug/L	7.23	24.1
	p-Nitroaniline					
534-52-1	2-Methyl-4,6-dinitrophenol		102	ug/L	7.23	24.1
122-39-4	Diphenylamine		86.8	ug/L	7.23	24.1
122-66-7	Azobenzene		91.1	ug/L	7.23	24.1
	1,2-Diphenylhydrazine					
101-55-3	4-Bromophenylphenylether		99.9	ug/L	7.23	24.1
118-74-1	Hexachlorobenzene		86.4	ug/L	7.23	24.1
87-86-5	Pentachlorophenol		75.6	ug/L	7.23	24.1
88-85-7	Dinoseb	U	24.1	ug/L	7.23	24.1
85-01-8	Phenanthrene		88.5	ug/L	0.723	2.41
120-12-7	Anthracene		85.5	ug/L	0.723	2.41
84-74-2	Di-n-butylphthalate		94.5	ug/L	7.23	24.1
206-44-0	Fluoranthene		84.9	ug/L	0.723	2.41
129-00-0	Pyrene		106	ug/L	0.723	2.41
85-68-7	Butylbenzylphthalate		101	ug/L	7.23	24.1
117-81-7	bis(2-Ethylhexyl)phthalate		98.7	ug/L	7.23	24.1
56-55-3	Benzo(a)anthracene		96.7	ug/L	0.723	2.41
218-01-9	Chrysene		95.3	ug/L	0.723	2.41
117-84-0	Di-n-octylphthalate		86.4	ug/L	7.23	24.1
205-99-2	Benzo(b)fluoranthene		96.9	ug/L	0.723	2.41
207-08-9	Benzo(k)fluoranthene		96.3	ug/L	0.723	2.41
50-32-8	Benzo(a)pyrene		92.3	ug/L	1.06	2.41
193-39-5	Indeno(1,2,3-cd)pyrene		108	ug/L	0.723	2.41
53-70-3	Dibenzo(a,h)anthracene		113	ug/L	0.723	2.41
191-24-2	Benzo(ghi)perylene		106	ug/L	0.723	2.41
123-91-1	1,4-Dioxane		79.5	ug/L	7.23	24.1
55-18-5	N-Nitrosodiethylamine	U	24.1	ug/L	7.23	24.1
930-55-2	N-Nitrosopyrrolidine		102	ug/L	7.23	24.1

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-265**	**Date Collected:**	**11/01/2012 11:34**	**Matrix:**	**W**
Lab Sample ID:	**1202774964**	**Date Received:**	**11/03/2012 09:30**		
Client Sample:	**QC for batch 1261144**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**CAMO-13-24279MS**	**Method:**	**SW846 8270C**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**1261145**	**Inst:**	**MSD3.I**	**Dilution:**	**1**
Run Date:	**11/09/2012 00:10**	**Analyst:**	**JLD1**	**Inj. Vol:**	**1 uL**
Prep Date:	**11/08/2012 07:25**	**Aliquot:**	**415 mL**	**Final Volume:**	**1 mL**
Data File:	**S110812a.B\s3k0829.D**	**Column:**	**DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
924-16-3	N-Nitrosodi-n-butylamine	U	24.1	ug/L	7.23	24.1
95-94-3	1,2,4,5-Tetrachlorobenzene		76.7	ug/L	7.23	24.1
608-93-5	Pentachlorobenzene	U	24.1	ug/L	7.23	24.1
1912-24-9	Atrazine		67.3	ug/L	7.23	24.1
92-87-5	Benzidine		120	ug/L	7.23	24.1
91-94-1	3,3'-Dichlorobenzidine		87.4	ug/L	7.23	24.1
120-82-1	1,2,4-Trichlorobenzene		80.1	ug/L	7.23	24.1

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
2,4,6-Tribromophenol	152	241	ug/L	63.1	(23%-130%)
2-Fluorobiphenyl	74.9	120	ug/L	62.2	(30%-104%)
2-Fluorophenol	154	241	ug/L	63.8	(14%-77%)
Nitrobenzene-d5	90.7	120	ug/L	75.3	(34%-125%)
Phenol-d5	121	241	ug/L	50.0	(10%-78%)
p-Terphenyl-d14	88.8	120	ug/L	73.7	(33%-136%)

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-265**	**Date Collected:**	**11/01/2012 11:34**	**Matrix:**	**W**
Lab Sample ID:	**1202774965**	**Date Received:**	**11/03/2012 09:30**		
Client Sample:	**QC for batch 1261144**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**CAMO-13-24279MSD**	**Method:**	**SW846 8270C**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**1261145**	**Inst:**	**MSD3.I**	**Dilution:**	**1**
Run Date:	**11/09/2012 00:35**	**Analyst:**	**JLD1**	**Inj. Vol:**	**1 uL**
Prep Date:	**11/08/2012 07:25**	**Aliquot:**	**415 mL**	**Final Volume:**	**1 mL**
Data File:	**S110812a.B\s3k0830.D**	**Column:**	**DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
62-75-9	N-Methyl-N-nitrosomethylamine		78.5	ug/L	7.23	24.1
110-86-1	Pyridine		82.7	ug/L	7.23	24.1
62-53-3	Aniline		104	ug/L	7.23	24.1
108-95-2	Phenol		63.2	ug/L	7.23	24.1
111-44-4	bis(2-Chloroethyl) ether		91.4	ug/L	7.23	24.1
95-57-8	2-Chlorophenol		90.1	ug/L	7.23	24.1
541-73-1	1,3-Dichlorobenzene		76.2	ug/L	7.23	24.1
106-46-7	1,4-Dichlorobenzene		75.9	ug/L	7.23	24.1
95-50-1	1,2-Dichlorobenzene		77.1	ug/L	7.23	24.1
39638-32-9	bis(2-Chloroisopropyl)ether		87.1	ug/L	7.23	24.1
100-51-6	Benzyl alcohol		88.7	ug/L	7.23	24.1
95-48-7	o-Cresol		89.4	ug/L	7.23	24.1
65794-96-9	m,p-Cresols		111	ug/L	7.23	24.1
621-64-7	N-Nitrosodi--n-propylamine *N-Nitrosodipropylamine*		95.1	ug/L	7.23	24.1
67-72-1	Hexachloroethane		72.5	ug/L	7.23	24.1
98-95-3	Nitrobenzene		95.7	ug/L	7.23	24.1
78-59-1	Isophorone		98.4	ug/L	7.23	24.1
88-75-5	2-Nitrophenol		94.5	ug/L	7.23	24.1
105-67-9	2,4-Dimethylphenol		83.1	ug/L	7.23	24.1
111-91-1	bis(2-Chloroethoxy)methane		89.3	ug/L	7.23	24.1
120-83-2	2,4-Dichlorophenol		92.1	ug/L	7.23	24.1
65-85-0	Benzoic acid		134	ug/L	14.5	48.2
106-47-8	4-Chloroaniline		92.4	ug/L	7.95	24.1
87-68-3	Hexachlorobutadiene		86.5	ug/L	7.23	24.1
59-50-7	Parachlorometa cresol *4-Chloro-3-methylphenol*		93.2	ug/L	7.23	24.1
91-57-6	2-Methylnaphthalene		73.9	ug/L	0.723	2.41
91-20-3	Naphthalene		76.5	ug/L	0.723	2.41
90-12-0	1-Methylnaphthalene		78.2	ug/L	0.723	2.41
77-47-4	Hexachlorocyclopentadiene		45.7	ug/L	7.23	24.1
88-06-2	2,4,6-Trichlorophenol		91.1	ug/L	7.23	24.1
95-95-4	2,4,5-Trichlorophenol		91.5	ug/L	7.23	24.1
91-58-7	2-Chloronaphthalene		77.1	ug/L	0.723	2.41
88-74-4	2-Nitroaniline		84.0	ug/L	7.23	24.1
99-09-2	3-Nitroaniline *m-Nitroaniline*		78.9	ug/L	7.23	24.1
131-11-3	Dimethylphthalate		98.4	ug/L	7.23	24.1
606-20-2	2,6-Dinitrotoluene		93.9	ug/L	7.23	24.1

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-265**	**Date Collected:**	**11/01/2012 11:34**	**Matrix:**	**W**
Lab Sample ID:	**1202774965**	**Date Received:**	**11/03/2012 09:30**		
Client Sample:	**QC for batch 1261144**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**CAMO-13-24279MSD**	**Method:**	**SW846 8270C**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**1261145**	**Inst:**	**MSD3.I**	**Dilution:**	**1**
Run Date:	**11/09/2012 00:35**	**Analyst:**	**JLD1**	**Inj. Vol:**	**1 uL**
Prep Date:	**11/08/2012 07:25**	**Aliquot:**	**415 mL**	**Final Volume:**	**1 mL**
Data File:	**S110812a.B\s3k0830.D**	**Column:**	**DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
121-14-2	2,4-Dinitrotoluene		91.5	ug/L	7.23	24.1
208-96-8	Acenaphthylene		78.2	ug/L	0.723	2.41
83-32-9	Acenaphthene		76.9	ug/L	0.723	2.41
51-28-5	2,4-Dinitrophenol		71.4	ug/L	12.0	48.2
132-64-9	Dibenzofuran		86.5	ug/L	7.23	24.1
58-90-2	2,3,4,6-Tetrachlorophenol		90.2	ug/L	7.23	24.1
84-66-2	Diethylphthalate		95.2	ug/L	7.23	24.1
100-02-7	4-Nitrophenol		44.4	ug/L	7.23	24.1
86-73-7	Fluorene		83.3	ug/L	0.723	2.41
7005-72-3	4-Chlorophenylphenylether		93.0	ug/L	7.23	24.1
100-01-6	4-Nitroaniline		72.4	ug/L	7.23	24.1
	p-Nitroaniline					
534-52-1	2-Methyl-4,6-dinitrophenol		89.8	ug/L	7.23	24.1
122-39-4	Diphenylamine		86.9	ug/L	7.23	24.1
122-66-7	Azobenzene		91.4	ug/L	7.23	24.1
	1,2-Diphenylhydrazine					
101-55-3	4-Bromophenylphenylether		101	ug/L	7.23	24.1
118-74-1	Hexachlorobenzene		87.7	ug/L	7.23	24.1
87-86-5	Pentachlorophenol		67.6	ug/L	7.23	24.1
88-85-7	Dinoseb	U	24.1	ug/L	7.23	24.1
85-01-8	Phenanthrene		86.2	ug/L	0.723	2.41
120-12-7	Anthracene		82.5	ug/L	0.723	2.41
84-74-2	Di-n-butylphthalate		95.1	ug/L	7.23	24.1
206-44-0	Fluoranthene		79.4	ug/L	0.723	2.41
129-00-0	Pyrene		104	ug/L	0.723	2.41
85-68-7	Butylbenzylphthalate		100	ug/L	7.23	24.1
117-81-7	bis(2-Ethylhexyl)phthalate		97.0	ug/L	7.23	24.1
56-55-3	Benzo(a)anthracene		91.5	ug/L	0.723	2.41
218-01-9	Chrysene		89.1	ug/L	0.723	2.41
117-84-0	Di-n-octylphthalate		82.4	ug/L	7.23	24.1
205-99-2	Benzo(b)fluoranthene		93.5	ug/L	0.723	2.41
207-08-9	Benzo(k)fluoranthene		95.5	ug/L	0.723	2.41
50-32-8	Benzo(a)pyrene		87.4	ug/L	1.06	2.41
193-39-5	Indeno(1,2,3-cd)pyrene		86.8	ug/L	0.723	2.41
53-70-3	Dibenzo(a,h)anthracene		90.1	ug/L	0.723	2.41
191-24-2	Benzo(ghi)perylene		84.9	ug/L	0.723	2.41
123-91-1	1,4-Dioxane		77.7	ug/L	7.23	24.1
55-18-5	N-Nitrosodiethylamine	U	24.1	ug/L	7.23	24.1
930-55-2	N-Nitrosopyrrolidine		98.7	ug/L	7.23	24.1

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-265**	**Date Collected:**	**11/01/2012 11:34**	**Matrix:**	**W**
Lab Sample ID:	**1202774965**	**Date Received:**	**11/03/2012 09:30**		
Client Sample:	**QC for batch 1261144**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**CAMO-13-24279MSD**	**Method:**	**SW846 8270C**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**1261145**	**Inst:**	**MSD3.I**	**Dilution:**	**1**
Run Date:	**11/09/2012 00:35**	**Analyst:**	**JLD1**	**Inj. Vol:**	**1 uL**
Prep Date:	**11/08/2012 07:25**	**Aliquot:**	**415 mL**	**Final Volume:**	**1 mL**
Data File:	**S110812a.B\s3k0830.D**	**Column:**	**DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
924-16-3	N-Nitrosodi-n-butylamine	U	24.1	ug/L	7.23	24.1
95-94-3	1,2,4,5-Tetrachlorobenzene		74.7	ug/L	7.23	24.1
608-93-5	Pentachlorobenzene	U	24.1	ug/L	7.23	24.1
1912-24-9	Atrazine		68.2	ug/L	7.23	24.1
92-87-5	Benzidine		51.7	ug/L	7.23	24.1
91-94-1	3,3'-Dichlorobenzidine		77.4	ug/L	7.23	24.1
120-82-1	1,2,4-Trichlorobenzene		76.3	ug/L	7.23	24.1

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
2,4,6-Tribromophenol	141	241	ug/L	58.4	(23%-130%)
2-Fluorobiphenyl	76.8	120	ug/L	63.7	(30%-104%)
2-Fluorophenol	148	241	ug/L	61.6	(14%-77%)
Nitrobenzene-d5	88.4	120	ug/L	73.4	(34%-125%)
Phenol-d5	116	241	ug/L	48.2	(10%-78%)
p-Terphenyl-d14	87.6	120	ug/L	72.7	(33%-136%)

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-265**			**Matrix:**	**WATER**
Lab Sample ID:	**1202774966**				
Client Sample:	**QC for batch 1261144**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**LCS for batch 1261144**	**Method:**	**SW846 8270C**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**1261145**	**Inst:**	**MSD3.I**	**Dilution:**	**1**
Run Date:	**11/08/2012 22:31**	**Analyst:**	**JLD1**	**Inj. Vol:**	**1 uL**
Prep Date:	**11/08/2012 07:25**	**Aliquot:**	**1000 mL**	**Final Volume:**	**1 mL**
Data File:	**S110812a.B\s3k0825.D**	**Column:**	**DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
62-75-9	N-Methyl-N-nitrosomethylamine		24.4	ug/L	3.00	10.0
110-86-1	Pyridine		15.6	ug/L	3.00	10.0
62-53-3	Aniline		37.4	ug/L	3.00	10.0
108-95-2	Phenol		14.3	ug/L	3.00	10.0
111-44-4	bis(2-Chloroethyl) ether		34.8	ug/L	3.00	10.0
95-57-8	2-Chlorophenol		35.0	ug/L	3.00	10.0
541-73-1	1,3-Dichlorobenzene		29.7	ug/L	3.00	10.0
106-46-7	1,4-Dichlorobenzene		29.8	ug/L	3.00	10.0
95-50-1	1,2-Dichlorobenzene		30.2	ug/L	3.00	10.0
39638-32-9	bis(2-Chloroisopropyl)ether		33.5	ug/L	3.00	10.0
100-51-6	Benzyl alcohol		31.4	ug/L	3.00	10.0
95-48-7	o-Cresol		31.2	ug/L	3.00	10.0
65794-96-9	m,p-Cresols		35.8	ug/L	3.00	10.0
621-64-7	N-Nitrosodi--n-propylamine *N-Nitrosodipropylamine*		35.8	ug/L	3.00	10.0
67-72-1	Hexachloroethane		28.5	ug/L	3.00	10.0
98-95-3	Nitrobenzene		36.7	ug/L	3.00	10.0
78-59-1	Isophorone		38.4	ug/L	3.00	10.0
88-75-5	2-Nitrophenol		36.4	ug/L	3.00	10.0
105-67-9	2,4-Dimethylphenol		29.2	ug/L	3.00	10.0
111-91-1	bis(2-Chloroethoxy)methane		34.0	ug/L	3.00	10.0
120-83-2	2,4-Dichlorophenol		36.0	ug/L	3.00	10.0
65-85-0	Benzoic acid		34.2	ug/L	6.00	20.0
106-47-8	4-Chloroaniline		38.3	ug/L	3.30	10.0
87-68-3	Hexachlorobutadiene		35.6	ug/L	3.00	10.0
59-50-7	Parachlorometa cresol *4-Chloro-3-methylphenol*		37.3	ug/L	3.00	10.0
91-57-6	2-Methylnaphthalene		32.0	ug/L	0.300	1.00
91-20-3	Naphthalene		31.9	ug/L	0.300	1.00
90-12-0	1-Methylnaphthalene		33.6	ug/L	0.300	1.00
77-47-4	Hexachlorocyclopentadiene		23.3	ug/L	3.00	10.0
88-06-2	2,4,6-Trichlorophenol		37.5	ug/L	3.00	10.0
95-95-4	2,4,5-Trichlorophenol		38.7	ug/L	3.00	10.0
91-58-7	2-Chloronaphthalene		33.6	ug/L	0.300	1.00
88-74-4	2-Nitroaniline *o-Nitroaniline*		37.0	ug/L	3.00	10.0
99-09-2	3-Nitroaniline *m-Nitroaniline*		37.0	ug/L	3.00	10.0
131-11-3	Dimethylphthalate		42.7	ug/L	3.00	10.0
606-20-2	2,6-Dinitrotoluene		39.9	ug/L	3.00	10.0

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-265**			**Matrix:**	**WATER**
Lab Sample ID:	**1202774966**				
Client Sample:	**QC for batch 1261144**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**LCS for batch 1261144**	**Method:**	**SW846 8270C**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**1261145**	**Inst:**	**MSD3.I**	**Dilution:**	**1**
Run Date:	**11/08/2012 22:31**	**Analyst:**	**JLD1**	**Inj. Vol:**	**1 uL**
Prep Date:	**11/08/2012 07:25**	**Aliquot:**	**1000 mL**	**Final Volume:**	**1 mL**
Data File:	**S110812a.B\s3k0825.D**	**Column:**	**DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
121-14-2	2,4-Dinitrotoluene		40.6	ug/L	3.00	10.0
208-96-8	Acenaphthylene		33.7	ug/L	0.300	1.00
83-32-9	Acenaphthene		33.6	ug/L	0.300	1.00
51-28-5	2,4-Dinitrophenol		37.3	ug/L	5.00	20.0
132-64-9	Dibenzofuran		37.7	ug/L	3.00	10.0
58-90-2	2,3,4,6-Tetrachlorophenol		39.5	ug/L	3.00	10.0
84-66-2	Diethylphthalate		40.9	ug/L	3.00	10.0
100-02-7	4-Nitrophenol	J	7.09	ug/L	3.00	10.0
86-73-7	Fluorene		35.9	ug/L	0.300	1.00
7005-72-3	4-Chlorophenylphenylether		40.1	ug/L	3.00	10.0
100-01-6	4-Nitroaniline		36.1	ug/L	3.00	10.0
	p-Nitroaniline					
534-52-1	2-Methyl-4,6-dinitrophenol		43.1	ug/L	3.00	10.0
122-39-4	Diphenylamine		37.7	ug/L	3.00	10.0
122-66-7	Azobenzene		39.0	ug/L	3.00	10.0
	1,2-Diphenylhydrazine					
101-55-3	4-Bromophenylphenylether		42.8	ug/L	3.00	10.0
118-74-1	Hexachlorobenzene		36.9	ug/L	3.00	10.0
87-86-5	Pentachlorophenol		32.0	ug/L	3.00	10.0
88-85-7	Dinoseb	U	10.0	ug/L	3.00	10.0
85-01-8	Phenanthrene		37.9	ug/L	0.300	1.00
120-12-7	Anthracene		36.4	ug/L	0.300	1.00
84-74-2	Di-n-butylphthalate		39.6	ug/L	3.00	10.0
206-44-0	Fluoranthene		35.7	ug/L	0.300	1.00
129-00-0	Pyrene		47.7	ug/L	0.300	1.00
85-68-7	Butylbenzylphthalate		44.6	ug/L	3.00	10.0
117-81-7	bis(2-Ethylhexyl)phthalate		42.2	ug/L	3.00	10.0
56-55-3	Benzo(a)anthracene		40.4	ug/L	0.300	1.00
218-01-9	Chrysene		39.6	ug/L	0.300	1.00
117-84-0	Di-n-octylphthalate		35.3	ug/L	3.00	10.0
205-99-2	Benzo(b)fluoranthene		42.2	ug/L	0.300	1.00
207-08-9	Benzo(k)fluoranthene		44.2	ug/L	0.300	1.00
50-32-8	Benzo(a)pyrene		39.8	ug/L	0.440	1.00
193-39-5	Indeno(1,2,3-cd)pyrene		37.5	ug/L	0.300	1.00
53-70-3	Dibenzo(a,h)anthracene		38.8	ug/L	0.300	1.00
191-24-2	Benzo(ghi)perylene		36.2	ug/L	0.300	1.00
123-91-1	1,4-Dioxane		24.2	ug/L	3.00	10.0
55-18-5	N-Nitrosodiethylamine	U	10.0	ug/L	3.00	10.0
930-55-2	N-Nitrosopyrrolidine		37.1	ug/L	3.00	10.0

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-265**			**Matrix:**	**WATER**
Lab Sample ID:	**1202774966**				
Client Sample:	**QC for batch 1261144**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**LCS for batch 1261144**	**Method:**	**SW846 8270C**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**1261145**	**Inst:**	**MSD3.I**	**Dilution:**	**1**
Run Date:	**11/08/2012 22:31**	**Analyst:**	**JLD1**	**Inj. Vol:**	**1 uL**
Prep Date:	**11/08/2012 07:25**	**Aliquot:**	**1000 mL**	**Final Volume:**	**1 mL**
Data File:	**S110812a.B\s3k0825.D**	**Column:**	**DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
924-16-3	N-Nitrosodi-n-butylamine	U	10.0	ug/L	3.00	10.0
95-94-3	1,2,4,5-Tetrachlorobenzene		33.2	ug/L	3.00	10.0
608-93-5	Pentachlorobenzene	U	10.0	ug/L	3.00	10.0
1912-24-9	Atrazine		29.1	ug/L	3.00	10.0
92-87-5	Benzidine	J	6.32	ug/L	3.00	10.0
91-94-1	3,3'-Dichlorobenzidine		32.2	ug/L	3.00	10.0
120-82-1	1,2,4-Trichlorobenzene		32.5	ug/L	3.00	10.0

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
2,4,6-Tribromophenol	64.1	100	ug/L	64.1	(23%-130%)
2-Fluorobiphenyl	31.2	50.0	ug/L	62.4	(30%-104%)
2-Fluorophenol	44.2	100	ug/L	44.2	(14%-77%)
Nitrobenzene-d5	34.7	50.0	ug/L	69.4	(34%-125%)
Phenol-d5	26.6	100	ug/L	26.6	(10%-78%)
p-Terphenyl-d14	39.2	50.0	ug/L	78.4	(33%-136%)

Miscellaneous

DATA EXCEPTION REPORT

Mo.Day Yr.	**Division:**	**Quality Criteria:**	**Type:**
09-NOV-12	Industrial	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
SEMIVOA GC/MS	SW846 8270C	Liquid	ESHL
Batch ID:	**Sample Numbers:**		
1261145	See Below		

Potentially affected work order(s)(SDG): 314137(2013-235),314528(2013-265),314591(2013-267)

Application Issues:

Failed RPD for MS/MSD, or PS/PSD

Failed Recovery for LCS/LCSD

Specification and Requirements Exception Description:	**DER Disposition:**
1. The LCS(1202774966) recovered Benzidine at 6.32%. The limits are 19%-124%.	1. Benzidine is identified as poor responding analyte in the analytical method (EPA 8270) and is subject to oxidative loss during extraction. This may account for the low recovery of the analyte. The data results have been reported.
2. The MS(1202774964)/MSD(1202774965) RPD value for Benzidine was outside of the acceptance limits. Please see the QC Summary report for specific failure.	2. Since Benzidine was individually within the acceptance limits for the MS and MSD, the non-conformance had no adverse impact on the data and the results have been reported.

Originator's Name:

Jennifer Dunagan Jones09-NOV-12

Data Validator/Group Leader:

Barbara Bailey 12-NOV-12

Metals Analysis

Case Narrative

Metals Fractional Narrative
ARS International (ARSL)
SDG 2013-265

Sample Analysis

Sample ID	Client ID
314528002	CAMO-13-24283
1202773560	Method Blank (MB) **ICP**
1202773561	Laboratory Control Sample (LCS)
1202773564	314528002(CAMO-13-24283L) Serial Dilution (SD)
1202773562	314528002(CAMO-13-24283D) Sample Duplicate (DUP)
1202773563	314528002(CAMO-13-24283S) Matrix Spike (MS)
1202773552	Method Blank (MB) **ICP-MS**
1202773553	Laboratory Control Sample (LCS)
1202773556	314528002(CAMO-13-24283L) Serial Dilution (SD)
1202773554	314528002(CAMO-13-24283D) Sample Duplicate (DUP)
1202773555	314528002(CAMO-13-24283S) Matrix Spike (MS)
1202783062	Method Blank (MB) **CVAA**
1202783069	Laboratory Control Sample (LCS)
1202783066	314445002(CAMO-13-24258L) Serial Dilution (SD)
1202783064	314445002(CAMO-13-24258D) Sample Duplicate (DUP)
1202783068	314445002(CAMO-13-24258S) Matrix Spike (MS)

Method/Analysis Information

Analytical Batch:	1260610, 1260607, 1264600 and 1266665
Prep Batch :	1260609, 1260605 and 1264596
Standard Operating Procedures:	GL-MA-E-013 REV# 21, GL-MA-E-006 REV# 9, GL-MA-E-014 REV# 24, GL-MA-E-010 REV# 25 and GL-GC-E-107 REV# 7
Analytical Method:	SW846 3005/6010B, SW846 3005/6020 DOE-AL, EPA 245.1/245.2 and SM 2340 B
Prep Method :	SW846 3005A and EPA 245.1/245.2 Prep

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC. and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

System Configuration

The Hardness as CaCO3 is calculated from Calcium and Magnesium results.

The Metals analysis-ICP was performed on a P E 5300 Optima radial/axial-viewing inductively coupled plasma atomic emission spectrometer. The instrument is equipped with a Burgener nebulizer, cyclonic spray chamber, and yttrium or scandium internal standard. Operating conditions for the ICP are set at a power level of 1500 watts. The instrument has a peristaltic pump flow rate of 1.4L/min, argon gas flows of 15 L/min and 0.2 L/min for the torch and auxiliary gases, and a flow setting of 0.65L/min for the nebulizer.

The Metals analysis - ICPMS was performed on a Perkin Elmer ELAN 9000 inductively coupled plasma mass spectrometer (ICP-MS). The instrument is equipped with a cross-flow nebulizer, quadrupole mass spectrometer, and dual mode electron multiplier detector. Internal standards of scandium, germanium, indium, tantalum, and/or lutetium were utilized to cover the mass spectrum. Operating conditions are set at 1400W power and combined argon pressures of 360+/-7 kPa for the plasma and auxiliary gases, and 0.85 L/min carrier gas flow, and an initial lens voltage of 5.2.

The Metals analysis-Mercury was performed on a Perkin-Elmer Flow Injection Mercury System (FIMS-100) automated mercury analyzer. The instrument consists of a cold vapor atomic absorption spectrometer set to detect mercury at a wavelength of 253.7 nm. Sample introduction through the flow injection system is performed via a peristaltic pump at 9 mL/min and nitrogen carrier gas rate of 80 mL/min.

Calibration Information

Instrument Calibration
All initial calibration requirements have been met for this sample delivery group (SDG).

CRDL Requirements
All CRDL standards met the advisory control limits with the exception of potassium that recovered outside the advisory control limits.

ICSA/ICSAB Statement
All interference check samples (ICSA and ICSAB) associated with this SDG met the established acceptance criteria.

Continuing Calibration Blank (CCB) Requirements
All continuing calibration blanks (CCB) bracketing this batch met the established acceptance criteria for all applicable analytes with the exception of sodium. The CCB recovered high for sodium but samples were 10x greater than the PQL.

Continuing Calibration Verification (CCV) Requirements
All continuing calibration verifications (CCV) bracketing this SDG met the acceptance criteria.

Quality Control (QC) Information

Method Blank (MB) Statement
The MBs analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries met the acceptance limits.

Quality Control (QC) Sample Statement
The following samples were selected as the quality control (QC) samples for this SDG: 314528002 (CAMO-13-24283)-ICP and ICP-MS and 314445002 (CAMO-13-24258)-CVAA.

Matrix Spike (MS) Recovery Statement
The percent recoveries (%R) obtained from the MS analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. All applicable elements met the acceptance criteria.

Duplicate Relative Percent Difference (RPD) Statement
The RPD obtained from the designated sample duplicate (DUP) is evaluated based on acceptance criteria of 20% when the sample is >5X the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control of +/-RL is used to evaluate the DUP results. All applicable analytes met these requirements.

Serial Dilution % Difference Statement
The serial dilution is used to assess matrix suppression or enhancement. Raw element concentrations 25x the IDL/MDL for CVAA, 50X the IDL/MDL for ICP and 100X the IDL/MDL for ICP-MS analyses are applicable for serial dilution assessment. All applicable analytes met the established criteria of less than 10% difference (%D) with the exceptions of sodium and strontium.

Technical Information

Holding Time Specifications
GEL assigns holding times based on the associated methodology, which assigns the date

and time from sample collection of sample receipt. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP.

Sample Dilutions
Dilutions are performed to minimize matrix interferences resulting from elevated mineral element concentrations present in solid samples and/or to bring over range target analyte concentrations into the linear calibration range of the instrument. The samples in this SDG did not require dilutions.

Preparation Information
The samples in this SDG were prepared exactly according to the cited SOP.

Miscellaneous Information

Electronic Packaging Comment
This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Data Exception (DER) Documentation
Data exception reports (DERs) are generated to document procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Additional Comments
Additional comments were not required for this SDG.
Total Hardness by Calculation is determined using the results of Total Calcium (Ca) and Total Magnesium (Mg) determined by ICP or ICP-MS.

Hardness = 2.497 (Ca) + 4.118 (Mg)

Please refer to the Total Ca and Total Mg data to validate results appearing on the

Hardness Summary sheet. Both results are in the Inorganic/metals section of the package. There is no Batch QC for calculated results, and thus no QC Summary for the Hardness by Calculation Batch. The MDLs and PQLs are calculated using the higher of the two calculated values of Ca or Mg.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

Review Validation:

GEL requires all analytical data to be verified by a qualified data validator. In addition, all data designated for CLP or CLP-like packaging will receive a third level validation upon completion of the data package.

The following data validator verified the information presented in this case narrative:

Reviewer:_____ **Date:** 11/29/12

Sample Data Summary

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report
for

ARSL001 ARS International (63641-10)

Client SDG: 2013-265 GEL Work Order: 314528

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria

** Analyte is a surrogate compound

E Metals--%difference of sample and SD is >10%. Sample concentration must meet flagging criteria

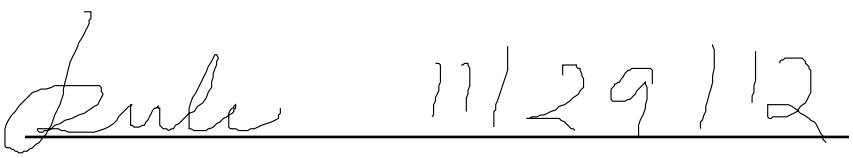
J Value is estimated

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the detection limit.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Valerie Davis.

Reviewed by  11/29/12

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2013-265 **CONTRACT:** ESHL00210 **METHOD TYPE:** EPA

SAMPLE ID: 314528002 **BASIS:** As Received **DATE COLLECTED** 01-NOV-12

CLIENT ID: CAMO-13-24283 **LEVEL:** Low **DATE RECEIVED** 03-NOV-12

MATRIX: W **%SOLIDS:** 0

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7439-97-6	Mercury	0.20	ug/L	U	0.067	0.2	0.2	1	AV	BYV1	11/20/12 09:47	112012W1-8	1264600

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2013-265 **CONTRACT:** ESHL00210 **METHOD TYPE:** SW846

SAMPLE ID: 314528002 **BASIS:** As Received **DATE COLLECTED** 01-NOV-12

CLIENT ID: CAMO-13-24283 **LEVEL:** Low **DATE RECEIVED** 03-NOV-12

MATRIX: W **%SOLIDS:** 0

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7429-90-5	Aluminum	200	ug/L	U	68	200	200	1	P	HSC	11/15/12 23:29	111512-1	1260610
7440-36-0	Antimony	3	ug/L	U	1	3	3	1	MS	BAJ	11/15/12 19:33	121115-2	1260607
7440-38-2	Arsenic	5	ug/L	U	1.7	5	5	1	MS	BAJ	11/15/12 19:33	121115-2	1260607
7440-39-3	Barium	25.8	ug/L		1	5	5	1	P	HSC	11/15/12 23:29	111512-1	1260610
7440-41-7	Beryllium	5	ug/L	U	1	5	5	1	P	HSC	11/15/12 23:29	111512-1	1260610
7440-42-8	Boron	50	ug/L	U	15	50	50	1	P	HSC	11/15/12 23:29	111512-1	1260610
7440-43-9	Cadmium	1	ug/L	U	0.11	1	1	1	MS	BAJ	11/16/12 09:19	121115-7	1260607
7440-70-2	Calcium	11000	ug/L		50	200	200	1	P	HSC	11/15/12 23:29	111512-1	1260610
7440-47-3	Chromium	5.44	ug/L	J	2	10	10	1	MS	BAJ	11/16/12 09:19	121115-7	1260607
7440-48-4	Cobalt	5	ug/L	U	1	5	5	1	P	HSC	11/15/12 23:29	111512-1	1260610
7440-50-8	Copper	10	ug/L	U	3	10	10	1	P	HSC	11/15/12 23:29	111512-1	1260610
7439-89-6	Iron	100	ug/L	U	30	100	100	1	P	HSC	11/15/12 23:29	111512-1	1260610
7439-92-1	Lead	2	ug/L	U	0.5	2	2	1	MS	BAJ	11/16/12 09:19	121115-7	1260607
7439-95-4	Magnesium	3840	ug/L		110	300	300	1	P	HSC	11/15/12 23:29	111512-1	1260610
7439-96-5	Manganese	10	ug/L	U	2	10	10	1	P	HSC	11/15/12 23:29	111512-1	1260610
7439-98-7	Molybdenum	1.2	ug/L		0.165	0.5	0.5	1	MS	BAJ	11/16/12 09:19	121115-7	1260607
7440-02-0	Nickel	1.11	ug/L	J	0.5	2	2	1	MS	BAJ	11/16/12 09:19	121115-7	1260607
7440-09-7	Potassium	1690	ug/L		50	150	150	1	P	HSC	11/15/12 23:29	111512-1	1260610
7782-49-2	Selenium	5	ug/L	U	1.5	5	5	1	MS	BAJ	11/15/12 19:33	121115-2	1260607
7631-86-9	Silica	74500	ug/L		53	213	213	1	P	HSC	11/15/12 23:29	111512-1	1260610
7440-22-4	Silver	1	ug/L	U	0.2	1	1	1	MS	BAJ	11/16/12 09:19	121115-7	1260607
7440-23-5	Sodium	9960	ug/L	E	100	300	300	1	P	HSC	11/15/12 23:29	111512-1	1260610
7440-24-6	Strontium	50.3	ug/L	E	1	5	5	1	P	HSC	11/15/12 23:29	111512-1	1260610
7440-28-0	Thallium	2	ug/L	U	0.45	2	2	1	MS	BAJ	11/15/12 19:33	121115-2	1260607
7440-31-5	Tin	10	ug/L	U	2.5	10	10	1	P	HSC	11/15/12 23:29	111512-1	1260610
7440-61-1	Uranium	0.582	ug/L		0.067	0.2	0.2	1	MS	BAJ	11/16/12 09:19	121115-7	1260607
7440-62-2	Vanadium	8.72	ug/L		1	5	5	1	P	HSC	11/15/12 23:29	111512-1	1260610
7440-66-6	Zinc	10	ug/L	U	3.3	10	10	1	P	HSC	11/15/12 23:29	111512-1	1260610

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2013-265 **CONTRACT:** ESHL00210 **METHOD TYPE:**

SAMPLE ID: 314528002 **BASIS:** As Received **DATE COLLECTED** 01-NOV-12

CLIENT ID: CAMO-13-24283 **LEVEL:** Low **DATE RECEIVED** 03-NOV-12

MATRIX: W **%SOLIDS:** 0

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
	Hardness as CaCO3	43.2	mg/L		0.453	1.24	1.24	1		JJ2	11/28/12 14:20		1266665

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1260607	1260605	SW846 3005A	50	mL	50	mL	11/09/12	MTM1
1260610	1260609	SW846 3005A	50	mL	50	mL	11/09/12	MTM1
1264600	1264596	EPA 245.1/245.2 Prep	20	mL	20	mL	11/19/12	AXS5

***Analytical Methods:**

MS **SW846 3005/6020 DOE-AL**
P **SW846 3005/6010B**
AV **EPA 245.1/245.2**

Quality Control Summary

METALS
−3b−
PREPARATION BLANK SUMMARY

SDG NO. 2013−265
Contract: ESHL00210
Matrix: W

Sample ID	Analyte	Result	Units	Acceptance Window	Conc Qual	M*	MDL	RDL
1202773552								
	Antimony	1	ug/L	+/−3	U	MS	1	3
	Arsenic	1.7	ug/L	+/−5	U	MS	1.7	5
	Cadmium	0.11	ug/L	+/−1	U	MS	0.11	1
	Chromium	2	ug/L	+/−10	U	MS	2	10
	Lead	0.5	ug/L	+/−2	U	MS	0.5	2
	Molybdenum	0.165	ug/L	+/−0.5	U	MS	0.165	0.5
	Nickel	0.5	ug/L	+/−2	U	MS	0.5	2
	Selenium	1.5	ug/L	+/−5	U	MS	1.5	5
	Silver	0.2	ug/L	+/−1	U	MS	0.2	1
	Thallium	0.45	ug/L	+/−2	U	MS	0.45	2
	Uranium	0.067	ug/L	+/−0.2	U	MS	0.067	0.2
1202773560								
	Aluminum	68	ug/L	+/−200	U	P	68	200
	Barium	1	ug/L	+/−5	U	P	1	5
	Beryllium	1	ug/L	+/−5	U	P	1	5
	Boron	15	ug/L	+/−50	U	P	15	50
	Calcium	50	ug/L	+/−200	U	P	50	200
	Cobalt	1	ug/L	+/−5	U	P	1	5
	Tin	2.5	ug/L	+/−10	U	P	2.5	10
	Copper	3	ug/L	+/−10	U	P	3	10
	Iron	30	ug/L	+/−100	U	P	30	100
	Magnesium	110	ug/L	+/−300	U	P	110	300
	Manganese	2	ug/L	+/−10	U	P	2	10
	Potassium	50	ug/L	+/−150	U	P	50	150
	Silica	53	ug/L	+/−213	U	P	53	213
	Sodium	236	ug/L	+/−300	J	P	100	300
	Strontium	1.55	ug/L	+/−5	J	P	1	5
	Vanadium	1	ug/L	+/−5	U	P	1	5
	Zinc	3.3	ug/L	+/−10	U	P	3.3	10
1202783062								
	Mercury	0.067	ug/L	+/−0.2	U	AV	0.067	0.2

***Analytical Methods:**

MS	**SW846 3005/6020 DOE−AL**
P	**SW846 3005/6010B**
AV	**EPA 245.1/245.2**

METALS
−5a−

Matrix Spike Summary

SDG NO. 2013−265 **Client ID** CAMO−13−24283S

Contract: ESHL00210 **Level:** Low

Matrix: WATER **% Solids:**

Sample ID: 314528002 **Spike ID:** 1202773555

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Antimony	ug/L	75−125	223		1	U	200	111		MS
Arsenic	ug/L	75−125	77.7		1.7	U	80	95.8		MS
Cadmium	ug/L	75−125	9.86		0.11	U	10	98.6		MS
Chromium	ug/L	75−125	50.1		5.44	J	50	89.3		MS
Lead	ug/L	75−125	38.7		0.5	U	40	96.8		MS
Molybdenum	ug/L	75−125	54.6		1.2		50	107		MS
Nickel	ug/L	75−125	45.7		1.11	J	50	89.2		MS
Selenium	ug/L	75−125	20.1		1.5	U	20	99.1		MS
Silver	ug/L	75−125	55.2		0.2	U	50	110		MS
Thallium	ug/L	75−125	100		0.45	U	100	99.8		MS
Uranium	ug/L	75−125	51.9		0.582		50	103		MS

***Analytical Methods:**

MS SW846 3005/6020 DOE−AL

METALS
−5a−

Matrix Spike Summary

SDG NO. 2013−265 **Client ID** CAMO−13−24283S

Contract: ESHL00210 **Level:** Low

Matrix: WATER **% Solids:**

Sample ID: 314528002 **Spike ID:** 1202773563

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Aluminum	ug/L	75−125	4970		68	U	5000	99		P
Barium	ug/L	75−125	513		25.8		500	97.5		P
Beryllium	ug/L	75−125	504		1	U	500	101		P
Boron	ug/L	75−125	502		15	U	500	98.4		P
Calcium	ug/L	75−125	15800		11000		5000	97.2		P
Cobalt	ug/L	75−125	493		1	U	500	98.4		P
Copper	ug/L	75−125	512		3	U	500	102		P
Iron	ug/L	75−125	5020		30	U	5000	100		P
Magnesium	ug/L	75−125	8870		3840		5000	101		P
Manganese	ug/L	75−125	495		2	U	500	99		P
Potassium	ug/L	75−125	6340		1690		5000	93		P
Silica	ug/L		85700		74500		10700	105	N/A	P
Sodium	ug/L	75−125	14900		9960		5000	99.5		P
Strontium	ug/L	75−125	529		50.3		500	95.7		P
Tin	ug/L	75−125	498		2.5	U	500	99.6		P
Vanadium	ug/L	75−125	517		8.72		500	102		P
Zinc	ug/L	75−125	492		3.3	U	500	98.2		P

***Analytical Methods:**

P **SW846 3005/6010B**

METALS
−5a−

Matrix Spike Summary

SDG NO. 2013−265 **Client ID** CAMO−13−24258S

Contract: ESHL00210 **Level:** Low

Matrix: WATER **% Solids:**

Sample ID: 314445002 **Spike ID:** 1202783068

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Mercury	ug/L	75−125	1.95		0.067	U	2	97.3		AV

***Analytical Methods:**

AV **EPA 245.1/245.2**

Metals
−6−
Duplicate Sample Summary

SDG No.: 2013−265 **Lab Code:** GEL

Contract: ESHL00210 **Client ID:** CAMO−13−24283D

Matrix: LIQUID **Level:** Low

Sample ID: 314528002 **Duplicate ID:** 1202773554 **Percent Solids for Dup:** N/A

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M*
Antimony	ug/L		1	U	1	U			MS
Arsenic	ug/L		1.7	U	1.7	U			MS
Cadmium	ug/L		0.11	U	0.11	U			MS
Chromium	ug/L	+/−10	5.44	J	4.83	J	11.8		MS
Lead	ug/L		0.5	U	0.5	U			MS
Molybdenum	ug/L	+/−.5	1.2		1.1		9.23		MS
Nickel	ug/L	+/−2	1.11	J	1.06	J	4.15		MS
Selenium	ug/L		1.5	U	1.5	U			MS
Silver	ug/L		0.2	U	0.2	U			MS
Thallium	ug/L		0.45	U	0.45	U			MS
Uranium	ug/L	+/−.2	0.582		0.576		1.04		MS

***Analytical Methods:**

MS SW846 3005/6020 DOE−AL

Metals
−6−
Duplicate Sample Summary

SDG No.: 2013−265 **Lab Code:** GEL

Contract: ESHL00210 **Client ID:** CAMO−13−24283D

Matrix: LIQUID **Level:** Low

Sample ID: 314528002 **Duplicate ID:** 1202773562 **Percent Solids for Dup:** N/A

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M*
Aluminum	ug/L		68	U	68	U			P
Barium	ug/L	+/−20%	25.8		25		3.09		P
Beryllium	ug/L		1	U	1	U			P
Boron	ug/L		15	U	15	U			P
Calcium	ug/L	+/−20%	11000		10600		3.28		P
Cobalt	ug/L		1	U	1	U			P
Copper	ug/L		3	U	3	U			P
Iron	ug/L		30	U	30	U			P
Magnesium	ug/L	+/−20%	3840		3560		7.62		P
Manganese	ug/L		2	U	2	U			P
Potassium	ug/L	+/−20%	1690		1660		2.19		P
Silica	ug/L	+/−20%	74500		71900		3.46		P
Sodium	ug/L	+/−20%	9960		9630		3.31		P
Strontium	ug/L	+/−20%	50.3		48.6		3.27		P
Tin	ug/L		2.5	U	2.5	U			P
Vanadium	ug/L	+/−5	8.72		8.25		5.44		P
Zinc	ug/L		3.3	U	3.3	U			P

***Analytical Methods:**

P SW846 3005/6010B

Metals
−6−
Duplicate Sample Summary

SDG No.: 2013−265 **Lab Code:** GEL

Contract: ESHL00210 **Client ID:** CAMO−13−24258D

Matrix: LIQUID **Level:** Low

Sample ID: 314445002 **Duplicate ID:** 1202783064 **Percent Solids for Dup:** N/A

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M*
Mercury	ug/L		0.067	U	0.067	U			AV

***Analytical Methods:**

AV EPA 245.1/245.2

METALS
−7−
Laboratory Control Sample Summary

SDG NO. 2013−265

Contract: ESHL00210

Aqueous LCS Source: O2si **Solid LCS Source:**

Sample ID	Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limit	M*
1202773553								
	Antimony	ug/L	50	58.9		118	80−120	MS
	Arsenic	ug/L	50	58.2		116	80−120	MS
	Cadmium	ug/L	50	54.8		110	80−120	MS
	Chromium	ug/L	50	54.8		110	80−120	MS
	Lead	ug/L	50	55.8		112	80−120	MS
	Molybdenum	ug/L	50	54.3		109	80−120	MS
	Nickel	ug/L	50	56.5		113	80−120	MS
	Selenium	ug/L	50	58.8		118	80−120	MS
	Silver	ug/L	50	57.7		115	80−120	MS
	Thallium	ug/L	50	59.7		119	80−120	MS
	Uranium	ug/L	50	56.3		113	80−120	MS

***Analytical Methods:**

MS **SW846 3005/6020 DOE−AL**

METALS
−7−
Laboratory Control Sample Summary

SDG NO. 2013−265

Contract: ESHL00210

Aqueous LCS Source: OS2I **Solid LCS Source:**

Sample ID	Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limit	M*
1202773561								
	Aluminum	ug/L	5000	4910		98.1	80−120	P
	Barium	ug/L	500	479		95.8	80−120	P
	Beryllium	ug/L	500	487		97.5	80−120	P
	Boron	ug/L	500	476		95.2	80−120	P
	Calcium	ug/L	5000	4900		98.1	80−120	P
	Cobalt	ug/L	500	486		97.3	80−120	P
	Copper	ug/L	500	488		97.7	80−120	P
	Iron	ug/L	5000	4910		98.2	80−120	P
	Magnesium	ug/L	5000	5030		101	80−120	P
	Manganese	ug/L	500	488		97.6	80−120	P
	Potassium	ug/L	5000	4640		92.8	80−120	P
	Silica	ug/L	10700	10300		96.5	80−120	P
	Sodium	ug/L	5000	5070		101	80−120	P
	Strontium	ug/L	500	476		95.1	80−120	P
	Tin	ug/L	500	496		99.3	80−120	P
	Vanadium	ug/L	500	496		99.2	80−120	P
	Zinc	ug/L	500	477		95.5	80−120	P

***Analytical Methods:**

P **SW846 3005/6010B**

METALS
−7−
Laboratory Control Sample Summary

SDG NO. 2013−265

Contract: ESHL00210

Aqueous LCS Source: GEL **Solid LCS Source:**

Sample ID	Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limit	M*
1202783069								
	Mercury	ug/L	2	2.08		104	85−115	AV

***Analytical Methods:**

AV **EPA 245.1/245.2**

METALS
−9−
Serial Dilution Sample Summary

SDG NO. 2013−265 **Client ID** CAMO−13−24283L

Contract: ESHL00210

Matrix: LIQUID **Level:** Low

Sample ID: 314528002 **Serial Dilution ID:** 1202773556

Analyte	Initial Value ug/L	C	Serial Value ug/L	C	% Difference	Qual	Acceptance Limit	M*
Antimony	1	U	5	U				MS
Arsenic	1.7	U	8.5	U				MS
Cadmium	.11	U	.55	U				MS
Chromium	5.44	J	10	U	100			MS
Lead	.5	U	2.5	U				MS
Molybdenum	1.2		1.29	J	6.99			MS
Nickel	1.11	J	2.5	U	100			MS
Selenium	1.5	U	7.5	U				MS
Silver	.2	U	1	U				MS
Thallium	.45	U	2.25	U				MS
Uranium	.582		.535	J	8.08			MS

***Analytical Methods:**

MS **SW846 3005/6020 DOE−AL**

METALS
−9−
Serial Dilution Sample Summary

SDG NO. 2013−265 **Client ID** CAMO−13−24283L

Contract: ESHL00210

Matrix: LIQUID **Level:** Low

Sample ID: 314528002 **Serial Dilution ID:** 1202773564

Analyte	Initial Value ug/L	C	Serial Value ug/L	C	% Difference	Qual	Acceptance Limit	M*
Aluminum	68	U	340	U				P
Barium	25.8		27.5		6.33			P
Beryllium	1	U	5	U				P
Boron	15	U	75	U				P
Calcium	11000		11100		.743		10	P
Cobalt	1	U	5	U				P
Copper	3	U	15	U				P
Iron	30	U	150	U				P
Magnesium	3840		3840		.095			P
Manganese	2	U	10	U				P
Potassium	1690		1740		2.67			P
Silica	74500		76100		2.23		10	P
Sodium	9960		11100		11.2	E	10	P
Strontium	50.3		57		13.5	E	10	P
Tin	2.5	U	12.5	U				P
Vanadium	8.72		11	J	26.5			P
Zinc	3.3	U	16.5	U				P

***Analytical Methods:**

P **SW846 3005/6010B**

METALS
−9−
Serial Dilution Sample Summary

SDG NO. 2013−265 **Client ID** CAMO−13−24258L

Contract: ESHL00210

Matrix: LIQUID **Level:** Low

Sample ID: 314445002 **Serial Dilution ID:** 1202783066

Analyte	Initial Value ug/L	C	Serial Value ug/L	C	% Difference	Qual	Acceptance Limit	M*
Mercury	.067	U	.335	U				AV

***Analytical Methods:**

AV **EPA 245.1/245.2**

General Chem Analysis

Case Narrative

General Chemistry Narrative
ARS International (ARSL)
SDG 2013-265

Method/Analysis Information

Product: **Carbon, Total Organic**

Analytical Batch: 1260735 **Method:** SW 9060 Total Organic Carbon

Sample Analysis

The following samples were analyzed using the analytical protocol as established in SW846 9060:

Sample ID	Client ID
314528001	CAMO-13-24279
1202773871	Method Blank (MB)
1202773872	314445001(CAMO-13-24241) Sample Duplicate (DUP)
1202773874	314445001(CAMO-13-24241) Post Spike (PS)
1202773876	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-GC-E-093 REV# 10.

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC. and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

Calibration Information

The Carbon analysis was performed on a O-I Analytical Model 1010 Total Organic Carbon Analyzer.

Initial Calibration
All initial calibration requirements have been met for this SDG.

Continuing Calibration Blanks
All continuing calibration blanks (CCBs) associated with reported data from this batch were within acceptance limits.

Calibration Verification Information (CCV)

All continuing calibration verification standards (CCVs) associated with reported data from this batch were within acceptance limits.

Quality Control (QC) Information

Method Blank (MB) Statement
The MB analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample (LCS) Recovery
The LCS spike recovery met the acceptance limits.

Quality Control (QC) Designation
The following sample was selected for QC analysis: 314445001 (CAMO-13-24241).

Matrix Spike (MS)/Post Spike (PS) Recovery Statement
The MS/PS recovery for this sample set was within the required acceptance limits.

Duplicate Relative Percent Difference (RPD) Statement
The RPD between the sample and its duplicate met the acceptance limits.

Technical Information

GEL assigns holding times based on the date and time of sample collection. Those holding times expressed in hours are calculated in the AlphaLims system by hours. Those holding times expressed as days expire at midnight on the day of expiration.

Holding Times
All samples in this SDG met the specified holding time.

Sample Preservation/Integrity
All the samples from this sample group met the preservation and integrity requirements of the method.

Sample Dilutions
The samples in this SDG did not require dilutions.

Sample Re-analysis
The following sample was re-analyzed due to CCV failure: 314528001 (CAMO-13-24279).

Miscellaneous Information

Data Exception (DER) Documentation
Data exception reports (DERs) are generated to document procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Additional Comments
Additional comments were not required for this SDG.

Electronic Packaging Comment
This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Method/Analysis Information

Product:	**Specific Conductivity**		
Analytical Batch:	1265081	**Method:**	EPA120.1 Specific Conductivity

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA 120.1:

Sample ID	Client ID
314528002	CAMO-13-24283
1202784135	314340002(CAMO-13-24255) Sample Duplicate (DUP)
1202784136	314445002(CAMO-13-24258) Sample Duplicate (DUP)
1202784137	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-GC-E-009 REV# 11.

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC. and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

Calibration Information

The Conductivity analysis was performed on a Orion 160 Conductivity Meter.

Initial Calibration
All initial calibration requirements have been met for this SDG.

Quality Control (QC) Information

Laboratory Control Sample (LCS) Recovery
The LCS spike recovery met the acceptance limits.

Quality Control (QC) Designation
The following samples were selected for QC analysis: 314340002 (CAMO-13-24255) and 314445002 (CAMO-13-24258).

Duplicate Relative Percent Difference (RPD) Statement
The RPD between the sample and its duplicate met the acceptance limits.

Technical Information

GEL assigns holding times based on the date and time of sample collection. Those holding times expressed in hours are calculated in the AlphaLims system by hours. Those holding times expressed as days expire at midnight on the day of expiration.

Holding Times
All samples in this SDG met the specified holding time.

Sample Dilutions
The samples in this SDG did not require dilutions.

Sample Re-analysis
The samples in this SDG did not require re-analysis.

Miscellaneous Information

Data Exception (DER) Documentation
Data exception reports (DERs) are generated to document procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Additional Comments
Additional comments were not required for this SDG.

Electronic Packaging Comment
This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:
Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Method/Analysis Information

Product: **pH**

Analytical Batch: 1260327 **Method:** EPA 150.1 pH

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA 150.1:

Sample ID	Client ID
314528002	CAMO-13-24283
1202772818	314445002(CAMO-13-24258) Sample Duplicate (DUP)
1202772819	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-GC-E-008 REV# 21.

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC. and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

Calibration Information

The Electrode analysis was performed on a PerpHect pH Meter Orion 370.

Initial Calibration
All initial calibration requirements have been met for this SDG.

Calibration Verification Information (CCV)
All continuing calibration verification standards (CCVs) associated with reported data from this batch were within acceptance limits.

Quality Control (QC) Information

Laboratory Control Sample (LCS) Recovery
The LCS spike recovery met the acceptance limits.

Quality Control (QC) Designation

The following sample was selected for QC analysis: 314445002 (CAMO-13-24258).

Duplicate Relative Percent Difference (RPD) Statement
The RPD between the sample and its duplicate met the acceptance limits.

Technical Information

GEL assigns holding times based on the date and time of sample collection. Those holding times expressed in hours are calculated in the AlphaLims system by hours. Those holding times expressed as days expire at midnight on the day of expiration.

Holding Times
The following sample from this sample group was received by the lab outside of the method specified holding time: 314528002 (CAMO-13-24283).

Sample Re-analysis
The samples in this SDG did not require re-analysis.

Miscellaneous Information

Data Exception (DER) Documentation
The following DER was generated for this SDG: 1140480 314528002 (CAMO-13-24283).

Additional Comments
Additional comments were not required for this SDG.

Electronic Packaging Comment
This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:
Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Method/Analysis Information

Product:	**Ion Chromatography**		
Analytical Batch:	1259659	**Method:**	EPA 300.0 Anions Liquid 28 day

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA 300.0:

Sample ID	Client ID
314528002	CAMO-13-24283
1202771231	Method Blank (MB)
1202771232	314340002(CAMO-13-24255) Sample Duplicate (DUP)
1202771233	314340002(CAMO-13-24255) Post Spike (PS)
1202771234	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-GC-E-086 REV# 21.

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC. and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

Calibration Information

The Ion Chromatography analysis was performed on a Dionex ICS-3000 Ion Chromatograph.

Initial Calibration
All initial calibration requirements have been met for this SDG.

Continuing Calibration Blanks
All continuing calibration blanks (CCBs) associated with reported data from this batch were within acceptance limits.

Calibration Verification Information (CCV)
All continuing calibration verification standards (CCVs) associated with reported data from this batch were within acceptance limits.

Y Intercept Rule
The absolute value of the intercept is less than 3 times the MDL.

Quality Control (QC) Information

Method Blank (MB) Statement
The MBs analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries met the acceptance limits.

Quality Control (QC) Designation
The following sample was selected for QC analysis: 314340002 (CAMO-13-24255).

Matrix Spike (MS)/Post Spike (PS) Recovery Statement
The MS/PS recoveries for this sample set were within the required acceptance limits.

Duplicate Relative Percent Difference (RPD) Statement
The RPD between the sample and its duplicate met the acceptance limits.

Technical Information

GEL assigns holding times based on the date and time of sample collection. Those holding times expressed in hours are calculated in the AlphaLims system by hours. Those holding times expressed as days expire at midnight on the day of expiration.

Holding Times
All samples in this SDG met the specified holding time.

Sample Dilutions
The samples in this SDG did not require dilutions.

Sample Re-analysis
The following samples were re-analyzed due to CCV failure: 1202771231 (MB), 1202771232 (CAMO-13-24255), 1202771233 (CAMO-13-24255), 1202771234 (LCS) and 314528002 (CAMO-13-24283).

Miscellaneous Information

Data Exception (DER) Documentation
Data exception reports (DERs) are generated to document procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Manual Integrations
The following samples from this sample group had to be manually integrated due to errors in the instrument software peak integration: 1202771232 (CAMO-13-24255), 1202771233 (CAMO-13-24255) and 314528002 (CAMO-13-24283).

Additional Comments
Additional comments were not required for this SDG.

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:
Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Method/Analysis Information

Product:	**Ammonia Nitrogen**		
Analytical Batch:	1260275	**Method:**	EPA 350.1 Nitrogen and Ammonia L
Prep Batch :	1260272	**Method:**	EEPA 350.2 Prep

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA 350.1:

Sample ID	Client ID
314528002	CAMO-13-24283
1202772676	Method Blank (MB)
1202772677	314340002(CAMO-13-24255) Sample Duplicate (DUP)
1202772678	314341002(CAMO-13-24257) Sample Duplicate (DUP)
1202772679	314340002(CAMO-13-24255) Matrix Spike (MS)
1202772680	314341002(CAMO-13-24257) Matrix Spike (MS)
1202772681	314340002(CAMO-13-24255) Matrix Spike Duplicate (MSD)
1202772682	314341002(CAMO-13-24257) Matrix Spike Duplicate (MSD)
1202772683	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-GC-E-106 REV# 8.

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC. and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

Calibration Information

The Nutrient analysis was performed on a Lachat QuickChem FIA+ 8000 Series.

Initial Calibration
All initial calibration requirements have been met for this SDG.

Continuing Calibration Blanks
All continuing calibration blanks (CCBs) associated with reported data from this batch were within acceptance limits.

Calibration Verification Information (CCV)
All continuing calibration verification standards (CCVs) associated with reported data from this batch were within acceptance limits.

Y Intercept Rule
The absolute value of the intercept is less than 3 times the MDL.

Quality Control (QC) Information

Method Blank (MB) Statement
The MB analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample (LCS) Recovery
The LCS spike recovery met the acceptance limits.

Quality Control (QC) Designation
The following samples were selected for QC analysis: 314340002 (CAMO-13-24255) and 314341002 (CAMO-13-24257).

Matrix Spike (MS)/Post Spike (PS) Recovery Statement
The MS/PS recoveries for this sample set were within the required acceptance limits.

Matrix Spike Duplicate (MSD) Recovery Statement
The MSD recoveries for this sample set were within the required acceptance limits.

MS/MSD Relative Percent Difference (RPD) Statement
The RPDs between the spike and spike duplicate met the acceptance limits.

Duplicate Relative Percent Difference (RPD) Statement
The values for the sample and duplicate are less than the Practical Quantitation Limit (PQL); therefore, the RPD is not applicable. 1202772677 (CAMO-13-24255).

Technical Information

GEL assigns holding times based on the date and time of sample collection. Those holding times expressed in hours are calculated in the AlphaLims system by hours. Those holding times expressed as days expire at midnight on the day of expiration.

Holding Times
All samples in this SDG met the specified holding time.

Sample Preservation/Integrity
All the samples from this sample group met the preservation and integrity requirements of the method.

Sample Dilutions
The samples in this SDG did not require dilutions.

Sample Re-analysis
The samples in this SDG did not require re-analysis.

Miscellaneous Information

Data Exception (DER) Documentation
Data exception reports (DERs) are generated to document procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Additional Comments
Additional comments were not required for this SDG.

Electronic Packaging Comment
This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:
Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Method/Analysis Information

Product:	**Total Kjeldahl Nitrogen**		
Analytical Batch:	1260284	**Method:**	Nitrogen and Total Kjeldahl (TKN)
Prep Batch :	1260283	**Method:**	EEPA 351.2 Prep

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA 351.2:

Sample ID	Client ID
314528001	CAMO-13-24279
1202772707	Method Blank (MB)
1202772708	314340001(CAMO-13-24238) Sample Duplicate (DUP)
1202772709	314340001(CAMO-13-24238) Matrix Spike (MS)
1202772710	314340001(CAMO-13-24238) Matrix Spike Duplicate (MSD)
1202772711	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-GC-E-104 REV# 12.

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC. and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

Calibration Information

The Nutrient analysis was performed on a Lachat QuickChem FIA+ 8000 Series.

Continuing Calibration Blanks
All continuing calibration blanks (CCBs) associated with reported data from this batch were within acceptance limits.

Calibration Verification Information (CCV)
All continuing calibration verification standards (CCVs) associated with reported data from this batch were within acceptance limits.

Y Intercept Rule

The absolute value of the intercept is less than 3 times the MDL.

Quality Control (QC) Information

Method Blank (MB) Statement
The MB analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample (LCS) Recovery
The LCS spike recovery met the acceptance limits.

Quality Control (QC) Designation
The following sample was selected for QC analysis: 314340001 (CAMO-13-24238).

Matrix Spike (MS)/Post Spike (PS) Recovery Statement
The spike recovery falls outside of the GEL acceptance limits but within the client specified limits. 1202772709 (CAMO-13-24238).

Matrix Spike Duplicate (MSD) Recovery Statement
The MSD recovery for this sample set was within the required acceptance limits.

MS/MSD Relative Percent Difference (RPD) Statement
The RPD between the spike and spike duplicate met the acceptance limits.

Duplicate Relative Percent Difference (RPD) Statement
The values for the sample and duplicate are less than the Practical Quantitation Limit (PQL); therefore, the RPD is not applicable. 1202772708 (CAMO-13-24238).

Technical Information

GEL assigns holding times based on the date and time of sample collection. Those holding times expressed in hours are calculated in the AlphaLims system by hours. Those holding times expressed as days expire at midnight on the day of expiration.

Holding Times
All samples in this SDG met the specified holding time.

Sample Preservation/Integrity
All the samples from this sample group met the preservation and integrity requirements of the method.

Sample Dilutions
The samples in this SDG did not require dilutions.

Sample Re-analysis
The following sample was re-analyzed due to CCV failure: 314528001 (CAMO-13-24279).

Miscellaneous Information

Data Exception (DER) Documentation
The following DER was generated for this SDG: 1137073 1202772709 (CAMO-13-24238).

Additional Comments
Additional comments were not required for this SDG.

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Method/Analysis Information

Product:	**Nitrate Nitrite by Cadmium Reduction**		
Analytical Batch:	1260242	**Method:**	EPA 353.2 Nitrogen and Nitrate/Nitrite

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA 353.2:

Sample ID	Client ID
314528002	CAMO-13-24283
1202772621	Method Blank (MB)
1202772623	314528002(CAMO-13-24283) Sample Duplicate (DUP)
1202772625	314528002(CAMO-13-24283) Post Spike (PS)
1202772626	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-GC-E-128 REV# 7.

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC. and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

Calibration Information

The Nutrient analysis was performed on a Lachat QuickChem FIA+ 8500 Series.

Calibration Verification Information
All associated calibration verification standard(s) (ICV or CCV) met the acceptance criteria.

Continuing Calibration Blanks
All continuing calibration blanks (CCBs) associated with reported data from this batch were within acceptance limits.

Calibration Verification Information (CCV)
All continuing calibration verification standards (CCVs) associated with reported data from this batch were within

acceptance limits.

Y Intercept Rule
The absolute value of the intercept is less than 3 times the MDL.

Quality Control (QC) Information

Method Blank (MB) Statement
The MB analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample (LCS) Recovery
The LCS spike recovery met the acceptance limits.

Quality Control (QC) Designation
The following sample was selected for QC analysis: 314528002 (CAMO-13-24283).

Matrix Spike (MS)/Post Spike (PS) Recovery Statement
The MS/PS recovery for this sample set was within the required acceptance limits.

Duplicate Relative Percent Difference (RPD) Statement
The RPD between the sample and its duplicate met the acceptance limits.

Technical Information

GEL assigns holding times based on the date and time of sample collection. Those holding times expressed in hours are calculated in the AlphaLims system by hours. Those holding times expressed as days expire at midnight on the day of expiration.

Holding Times
All samples in this SDG met the specified holding time.

Sample Preservation/Integrity
All the samples from this sample group met the preservation and integrity requirements of the method.

Sample Dilutions
The samples in this SDG did not require dilutions.

Sample Re-analysis
The samples in this SDG did not require re-analysis.

Miscellaneous Information

Data Exception (DER) Documentation
Data exception reports (DERs) are generated to document procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Additional Comments
Additional comments were not required for this SDG.

Electronic Packaging Comment
This data package was generated using an electronic data processing program referred to as virtual packaging. In an

effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:
Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Method/Analysis Information

Product:	**Total Phosphorus**		
Analytical Batch:	1260281	**Method:**	EPA 365.4 Phosphorus and Total in
Prep Batch :	1260280	**Method:**	EEPA 365.4 Prep

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA 365.4:

Sample ID	Client ID
314528002	CAMO-13-24283
1202772694	Method Blank (MB)
1202772696	314340002(CAMO-13-24255) Sample Duplicate (DUP)
1202772698	314340002(CAMO-13-24255) Matrix Spike (MS)
1202772700	314340002(CAMO-13-24255) Matrix Spike Duplicate (MSD)
1202772701	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-GC-E-103 REV# 8.

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC. and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

Calibration Information

The Nutrient analysis was performed on a Lachat QuickChem FIA+ 8000 Series.

Continuing Calibration Blanks
All continuing calibration blanks (CCBs) associated with reported data from this batch were within acceptance limits.

Calibration Verification Information (CCV)
All continuing calibration verification standards (CCVs) associated with reported data from this batch were within acceptance limits.

Y Intercept Rule

The absolute value of the intercept is less than 3 times the MDL.

Quality Control (QC) Information

Method Blank (MB) Statement
The MB analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample (LCS) Recovery
The LCS spike recovery met the acceptance limits.

Quality Control (QC) Designation
The following sample was selected for QC analysis: 314340002 (CAMO-13-24255).

Matrix Spike (MS)/Post Spike (PS) Recovery Statement
The MS/PS recovery for this sample set was within the required acceptance limits.

Matrix Spike Duplicate (MSD) Recovery Statement
The MSD recovery for this sample set was within the required acceptance limits.

MS/MSD Relative Percent Difference (RPD) Statement
The RPD between the spike and spike duplicate met the acceptance limits.

Duplicate Relative Percent Difference (RPD) Statement
The RPD between the sample and its duplicate met the acceptance limits.

Technical Information

GEL assigns holding times based on the date and time of sample collection. Those holding times expressed in hours are calculated in the AlphaLims system by hours. Those holding times expressed as days expire at midnight on the day of expiration.

Holding Times
All samples in this SDG met the specified holding time.

Sample Preservation/Integrity
All the samples from this sample group met the preservation and integrity requirements of the method.

Sample Dilutions
The samples in this SDG did not require dilutions.

Sample Re-analysis
The samples in this SDG did not require re-analysis.

Miscellaneous Information

Data Exception (DER) Documentation
Data exception reports (DERs) are generated to document procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Additional Comments
Additional comments were not required for this SDG.

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Method/Analysis Information

Product:	**Solids, Total Dissolved**		
Analytical Batch:	1260149	**Method:**	EPA 160.1 Solids and Dissolved-F

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA 160.1:

Sample ID	Client ID
314528002	CAMO-13-24283
1202772396	Method Blank (MB)
1202772397	314445004(CAMO-13-24260) Sample Duplicate (DUP)
1202772398	314529002(CASA-13-24223) Sample Duplicate (DUP)
1202772399	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-GC-E-001 REV# 12.

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC. and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

Calibration Information

The Solids analysis was performed on a Sartorius Balance BAL216. Solids lab

Initial Calibration
All initial calibration requirements have been met for this SDG.

Quality Control (QC) Information

Method Blank (MB) Statement
The MB analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample (LCS) Recovery
The LCS spike recovery met the acceptance limits.

Quality Control (QC) Designation
The following samples were selected for QC analysis: 314445004 (CAMO-13-24260) and 314529002 (CASA-13-24223).

Duplicate Relative Percent Difference (RPD) Statement
The RPD between the sample and its duplicate met the acceptance limits.

Technical Information

GEL assigns holding times based on the date and time of sample collection. Those holding times expressed in hours are calculated in the AlphaLims system by hours. Those holding times expressed as days expire at midnight on the day of expiration.

Holding Times
All samples in this SDG met the specified holding time.

Sample Re-analysis
The samples in this SDG did not require re-analysis.

Sample Aliquot
A sufficient amount of sample was provided by the client for analysis.

Miscellaneous Information

Data Exception (DER) Documentation
Data exception reports (DERs) are generated to document procedural anomalies that may deviate from referenced SOP or contractual documents.

Additional Comments
Additional comments were not required for this SDG.

Electronic Packaging Comment
This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:
Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Method/Analysis Information

Product:	**Alkalinity**		
Analytical Batch:	1262945	**Method:**	EPA 310.1 Total Alkalinity

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA 310.1:

Sample ID	Client ID
314528002	CAMO-13-24283
1202779299	Laboratory Control Sample (LCS)
1202779306	314591002(CAMO-13-24256) Sample Duplicate (DUP)
1202779307	314591002(CAMO-13-24256) Matrix Spike (MS)

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-GC-E-033 REV# 10.

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC. and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

Calibration Information

The Titration analysis was performed on a manually operated buret.

Initial Standardization
The titrant was properly standardized

Quality Control (QC) Information

Laboratory Control Sample (LCS) Recovery
The LCS spike recovery met the acceptance limits.

Quality Control (QC) Designation
The following sample was selected for QC analysis: 314591002 (CAMO-13-24256).

Matrix Spike (MS)/Post Spike (PS) Recovery Statement

The MS/PS recovery for this sample set was within the required acceptance limits.

Duplicate Relative Percent Difference (RPD) Statement
The RPD between the sample and its duplicate met the acceptance limits.

Technical Information

GEL assigns holding times based on the date and time of sample collection. Those holding times expressed in hours are calculated in the AlphaLims system by hours. Those holding times expressed as days expire at midnight on the day of expiration.

Holding Times
All samples in this SDG met the specified holding time.

Sample Re-analysis
The samples in this SDG did not require re-analysis.

Miscellaneous Information

Data Exception (DER) Documentation
Data exception reports (DERs) are generated to document procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Additional Comments
Additional comments were not required for this SDG.

Electronic Packaging Comment
This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:
Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

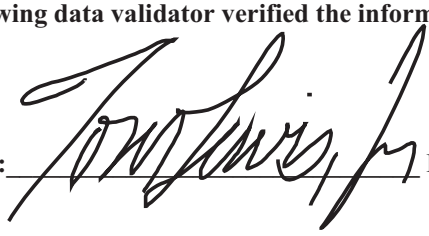
Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

Review Validation:

GEL requires all analytical data to be verified by a qualified data validator. In addition, all data designated for CLP or CLP-like packaging will receive a third level validation upon completion of the data package.

The following data validator verified the information presented in this case narrative:

Reviewer:  **Date:** 29Nov12

Sample Data Summary

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis Report
for

ARSL001 ARS International (63641-10)

Client SDG: 2013-265 GEL Work Order: 314528

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria

** Analyte is a surrogate compound

B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.

H Analytical holding time was exceeded

J Value is estimated

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the detection limit.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Valerie Davis.

Reviewed by 

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: November 28, 2012

Company :	Los Alamos National Laboratory
Address :	PO Box 1663 TA-03, SM271, Drop Pt. 02U, Rm111 Los Alamos, New Mexico 87545
Contact:	Keith Greene
Project:	LANL-WQH Water Samples

Client SDG: 2013-265

Client Sample ID:	CAMO-13-24279	Project:	ESHL00210
Sample ID:	314528001	Client ID:	ARSL001
Matrix:	W		
Collect Date:	01-NOV-12 11:34		
Receive Date:	03-NOV-12		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
SW 9060 Total Organic Carbon "As Received"											
Total Organic Carbon Average	U	ND	0.330	1.00	mg/L	1	TSM	11/09/12	1004	1260735	1
Nutrient Analysis											
Nitrogen, Total Kjeldahl (TKN) "As Received"											
Nitrogen, Total Kjeldahl	J	0.0882	0.035	0.100	mg/L	1	KLP1	11/06/12	1440	1260284	2

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 351.2 Prep	EPA 351.2 Total Kjeldahl Nitrogen Prep	KLP1	11/05/12	1700	1260283

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 9060	
2	EPA 351.2	

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: November 28, 2012

Company :	Los Alamos National Laboratory
Address :	PO Box 1663 TA-03, SM271, Drop Pt. 02U, Rm111 Los Alamos, New Mexico 87545
Contact:	Keith Greene
Project:	LANL-WQH Water Samples

Client SDG: 2013-265

Client Sample ID:	CAMO-13-24283	Project:	ESHL00210
Sample ID:	314528002	Client ID:	ARSL001
Matrix:	W		
Collect Date:	01-NOV-12 11:34		
Receive Date:	03-NOV-12		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Conductivity Analysis											
EPA120.1 Specific Conductivity "As Received"											
Conductivity		129	1.00	1.00	umhos/cm	1	TXT1	11/20/12	1127	1265081	1
Electrode Analysis											
EPA 150.1 pH "As Received"											
pH at Temp 15.1C	H	8.15	0.010	0.100	SU	1	LXA1	11/06/12	0840	1260327	2
Ion Chromatography											
EPA 300.0 Anions Liquid 28 day "As Received"											
Chloride		1.89	0.067	0.200	mg/L	1	MAR1	11/13/12	0349	1259659	3
Fluoride		0.177	0.033	0.100	mg/L	1					
Sulfate		2.20	0.133	0.400	mg/L	1					
Bromide	U	ND	0.067	0.200	mg/L	1	MAR1	11/14/12	0043	1259659	4
Nutrient Analysis											
EPA 350.1 Nitrogen, Ammonia L "As Received"											
Nitrogen, Ammonia	U	ND	0.017	0.050	mg/L	1	KLP1	11/06/12	0948	1260275	5
EPA 353.2 Nitrogen, Nitrate/Nitrite "As Received"											
Nitrogen, Nitrate/Nitrite		0.394	0.017	0.050	mg/L	1	AXH3	11/05/12	1417	1260242	6
EPA 365.4 Phosphorus, Total in "As Received"											
Phosphorus, Total as P	J	0.0274	0.017	0.050	mg/L	1	KLP1	11/06/12	1644	1260281	7
Solids Analysis											
EPA 160.1 Solids, Dissolved-F "As Received"											
Total Dissolved Solids		123	3.40	14.3	mg/L		LYG1	11/05/12	0758	1260149	8
Titration Analysis											
EPA 310.1 Total Alkalinity "As Received"											
Alkalinity, Total as CaCO3		60.1	0.725	1.00	mg/L		LXA1	11/14/12	1516	1262945	9
Carbonate alkalinity (CaCO3)	U	ND	0.725	1.00	mg/L						

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 350.2 Prep	EPA 350.1 Ammonia Nitrogen Prep	KLP1	11/05/12	1600	1260272
EPA 365.4 Prep	EPA 365.4 Phosphorus, Total in liquid PR	KLP1	11/05/12	1700	1260280

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: November 28, 2012

Company :	Los Alamos National Laboratory
Address :	PO Box 1663 TA-03, SM271, Drop Pt. 02U, Rm111 Los Alamos, New Mexico 87545
Contact:	Keith Greene
Project:	LANL-WQH Water Samples

Client SDG: 2013-265

Client Sample ID:	CAMO-13-24283	Project:	ESHL00210
Sample ID:	314528002	Client ID:	ARSL001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 120.1	
2	EPA 150.1	
3	EPA 300.0	
4	EPA 300.0	
5	EPA 350.1	
6	EPA 353.2	
7	EPA 365.4	
8	EPA 160.1	
9	EPA 310.1	

Quality Control Summary

GEL LABORATORIES LLC
2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Report Date: November 28, 2012

Los Alamos National Laboratory
PO Box 1663
TA-03, SM271, Drop Pt. 02U, Rm111
Los Alamos, New Mexico

Contact: **Keith Greene**

Workorder: **314528**

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Carbon Analysis											
Batch 1260735											
QC1202773872 314445001 DUP											
Total Organic Carbon Average		J	0.680	J	0.815	mg/L	18.1 ^		(+/-1.00)	TSM	11/08/12 23:32
QC1202773876 LCS											
Total Organic Carbon Average	10.0				9.75	mg/L		97.5	(85%-115%)		11/08/12 18:41
QC1202773871 MB											
Total Organic Carbon Average				J	0.488	mg/L					11/08/12 18:32
QC1202773874 314445001 PS											
Total Organic Carbon Average	10.0	J	0.680		10.4	mg/L		97.7	(65%-120%)		11/08/12 23:52
Conductivity Analysis											
Batch 1265081											
QC1202784135 314340002 DUP											
Conductivity			195		196	umhos/cm	0.307		(0%-10%)	TXT1	11/20/12 11:15
QC1202784136 314445002 DUP											
Conductivity			141		140	umhos/cm	0.142		(0%-10%)		11/20/12 11:23
QC1202784137 LCS											
Conductivity	1410				1420	umhos/cm		101	(95%-105%)		11/20/12 10:55
Electrode Analysis											
Batch 1260327											
QC1202772818 314445002 DUP											
pH		H	8.06	H	8.04	SU	0.248		(0%-10%)	LXA1	11/06/12 08:30
QC1202772819 LCS											
pH	7.00				7.03	SU		100	(99%-101%)		11/06/12 08:15
Ion Chromatography											
Batch 1259659											
QC1202771232 314340002 DUP											
Bromide		J	0.143	J	0.143	mg/L	0.00 ^		(+/-0.200)	MAR1	11/13/12 18:56
Chloride			7.86		7.94	mg/L	1.03		(0%-20%)		11/12/12 23:00
Fluoride			0.224		0.220	mg/L	1.44 ^		(+/-0.100)		
Sulfate			13.3		13.2	mg/L	0.107		(0%-20%)		
QC1202771234 LCS											
Bromide	2.50				2.47	mg/L		98.8	(90%-110%)		11/13/12 17:58
Chloride	10.0				9.24	mg/L		92.4	(90%-110%)		11/12/12 22:02
Fluoride	5.00				4.82	mg/L		96.5	(90%-110%)		
Sulfate	20.0				18.9	mg/L		94.7	(90%-110%)		
QC1202771231 MB											
Bromide				U	ND	mg/L					11/13/12 17:29
Chloride				U	ND	mg/L					11/12/12 21:33
Fluoride				U	ND	mg/L					
Sulfate				U	ND	mg/L					
QC1202771233 314340002 PS											

QC Summary

Workorder: 314528

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Ion Chromatography											
Batch 1259659											
Bromide	2.50	J	0.143		2.68	mg/L		101	(90%-110%)		11/13/12 19:25
Chloride	10.0		7.86		18.5	mg/L		107	(90%-110%)	MAR1	11/12/12 23:29
Fluoride	5.00		0.224		5.11	mg/L		97.7	(90%-110%)		
Sulfate	20.0		13.3		34.1	mg/L		104	(90%-110%)		
Nutrient Analysis											
Batch 1260242											
QC1202772623 314528002 DUP											
Nitrogen, Nitrate/Nitrite			0.394		0.389	mg/L	1.28		(0%-20%)	AXH3	11/05/12 14:18
QC1202772626 LCS											
Nitrogen, Nitrate/Nitrite	1.00				1.02	mg/L		102	(90%-110%)		11/05/12 13:50
QC1202772621 MB											
Nitrogen, Nitrate/Nitrite				U	ND	mg/L					11/05/12 13:48
QC1202772625 314528002 PS											
Nitrogen, Nitrate/Nitrite	1.00		0.394		1.42	mg/L		103	(90%-110%)		11/05/12 14:19
Batch 1260275											
QC1202772677 314340002 DUP											
Nitrogen, Ammonia		U	ND	U	ND	mg/L	N/A			KLP1	11/06/12 09:34
QC1202772678 314341002 DUP											
Nitrogen, Ammonia		U	ND	U	ND	mg/L	N/A				11/06/12 09:37
QC1202772683 LCS											
Nitrogen, Ammonia	1.00				1.06	mg/L		106	(90%-110%)		11/06/12 09:30
QC1202772676 MB											
Nitrogen, Ammonia				U	ND	mg/L					11/06/12 09:29
QC1202772679 314340002 MS											
Nitrogen, Ammonia	1.00	U	ND		1.09	mg/L		108	(90%-110%)		11/06/12 09:34
QC1202772680 314341002 MS											
Nitrogen, Ammonia	1.00	U	ND		1.02	mg/L		101	(90%-110%)		11/06/12 09:42
QC1202772681 314340002 MSD											
Nitrogen, Ammonia	1.00	U	ND		1.08	mg/L	0.922	107	(0%-15%)		11/06/12 09:35
QC1202772682 314341002 MSD											
Nitrogen, Ammonia	1.00	U	ND		0.980	mg/L	4.00	97.4	(0%-15%)		11/06/12 09:43
Batch 1260281											
QC1202772696 314340002 DUP											
Phosphorus, Total as P			0.327		0.331	mg/L	1.22		(0%-31%)	KLP1	11/06/12 16:31
QC1202772701 LCS											
Phosphorus, Total as P	1.00				1.07	mg/L		107	(76%-120%)		11/06/12 16:21
QC1202772694 MB											
Phosphorus, Total as P				J	0.0459	mg/L					11/06/12 16:20
QC1202772698 314340002 MS											
Phosphorus, Total as P	1.00		0.327		1.20	mg/L		87.3	(62%-139%)		11/06/12 16:32
QC1202772700 314340002 MSD											
Phosphorus, Total as P	1.00		0.327		1.18	mg/L	1.68	85.3	(0%-20%)		11/06/12 16:33
Batch 1260284											
QC1202772708 314340001 DUP											
Nitrogen, Total Kjeldahl		J	0.0596	J	0.0894	mg/L	40.0 ^		(+/-0.100)	KLP1	11/06/12 14:13
QC1202772711 LCS											

QC Summary

Workorder: 314528

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Nutrient Analysis											
Batch 1260284											
Nitrogen, Total Kjeldahl	1.00				0.942	mg/L		94.2	(90%-110%)		11/06/12 14:12
QC1202772707 MB											
Nitrogen, Total Kjeldahl				J	0.0602	mg/L				KLP1	11/06/12 14:11
QC1202772709 314340001 MS											
Nitrogen, Total Kjeldahl	1.00	J	0.0596		0.908	mg/L		84.8 *	(90%-110%)		11/06/12 14:14
QC1202772710 314340001 MSD											
Nitrogen, Total Kjeldahl	1.00	J	0.0596		1.02	mg/L	11.6	96	(0%-20%)		11/06/12 14:15
Solids Analysis											
Batch 1260149											
QC1202772397 314445004 DUP											
Total Dissolved Solids			303		317	mg/L	4.61		(0%-10%)	LYG1	11/05/12 07:58
QC1202772398 314529002 DUP											
Total Dissolved Solids			456		439	mg/L	3.83		(0%-10%)		11/05/12 07:58
QC1202772399 LCS											
Total Dissolved Solids	300				287	mg/L		95.7	(95%-105%)		11/05/12 07:58
QC1202772396 MB											
Total Dissolved Solids				U	ND	mg/L					11/05/12 07:58
Titration Analysis											
Batch 1262945											
QC1202779306 314591002 DUP											
Alkalinity, Total as CaCO3			96.0		97.1	mg/L	1.11		(0%-20%)	LXA1	11/14/12 15:32
Carbonate alkalinity (CaCO3)		U	ND	U	ND	mg/L	N/A				
QC1202779299 LCS											
Alkalinity, Total as CaCO3	50.0				52.6	mg/L		105	(90%-110%)		11/14/12 10:29
QC1202779307 314591002 MS											
Alkalinity, Total as CaCO3	50.0		96.0		145	mg/L		98.7	(80%-120%)		11/14/12 15:37

Notes:
RER is calculated at the 95% confidence level (2-sigma).
The Qualifiers in this report are defined as follows:

**	Analyte is a surrogate compound
<	Result is less than value reported
>	Result is greater than value reported
A	The TIC is a suspected aldol-condensation product
B	For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
BD	Results are either below the MDC or tracer recovery is low
C	Analyte has been confirmed by GC/MS analysis
D	Results are reported from a diluted aliquot of the sample
E	General Chemistry--Concentration of the target analyte exceeds the instrument calibration range
E	Metals--%difference of sample and SD is >10%. Sample concentration must meet flagging criteria
E	Organics--Concentration of the target analyte exceeds the instrument calibration range
F	Estimated Value
FB	Mercury was found present at quantifiable concentrations in field blanks received with these samples. Data associated with the blank are deemed

QC Summary

Workorder: 314528

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time

	invalid for reporting to regulatory agencies
H	Analytical holding time was exceeded
J	Value is estimated
JNX	Non Calibrated Compound
K	Analyte present. Reported value may be biased high. Actual value is expected to be lower.
L	Analyte present. Reported value may be biased low. Actual value is expected to be higher.
M	M if above MDC and less than LLD
M	Matrix Related Failure
N	Metals--The Matrix spike sample recovery is not within specified control limits
N	Organics--Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor
N/A	RPD or %Recovery limits do not apply.
N1	See case narrative
ND	Analyte concentration is not detected above the detection limit
NJ	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
P	Organics--The concentrations between the primary and confirmation columns/detectors is >40% different. For HPLC, difference is also <70%
Q	One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
R	Sample results are rejected
U	Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI	Gamma Spectroscopy--Uncertain identification
UJ	Compound cannot be extracted
UJ	Gamma Spectroscopy--Uncertain identification
UL	Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y	QC Samples were not spiked with this compound
Z	Paint Filter Test--Particulates passed through the filter, however no free liquids were observed.
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
d	5-day BOD--The 2:1 depletion requirement was not met for this sample
h	Preparation or preservation holding time was exceeded

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
* Indicates that a Quality Control parameter was not within specifications.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Miscellaneous

DATA EXCEPTION REPORT

Mo.Day Yr.	**Division:**	**Quality Criteria:**	**Type:**
06-NOV-12	Industrial	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
LACHAT Flow Injection Analyzer	EPA 351.2	Liquid	ESHL
Batch ID:	**Sample Numbers:**		
1260284	See Below		

Potentially affected work order(s)(SDG): 314340(2013-246),314341(2013-247),314443(2013-259),314445(2013-258),314528(2013-265),314529(2013-264)

Application Issues:

Failed Recovery for MS/PS

Specification and Requirements Exception Description:	**DER Disposition:**
1. Failed Recovery for MS/PS: QC 1202772709MS	1. The spike recovery falls outside of the GEL acceptance limits but within the client specified limits.

Originator's Name:

Kristen Parson 06-NOV-12

Data Validator/Group Leader:

Thomas Lewis 27-NOV-12

DATA EXCEPTION REPORT

Mo.Day Yr.	**Division:**	**Quality Criteria:**	**Type:**
15-NOV-12	Industrial	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
ELECTRODE	EPA 150.1	Liquid	ESHL, FBWP, TRIA
Batch ID:	**Sample Numbers:**		
1260327	See below.		

Potentially affected work order(s)(SDG): 314440(2013-263),314443(2013-259),314445(2013-258),314506,314519,314528(2013-265),314529(2013-264)

Application Issues:

Sample received out of holding

Specification and Requirements Exception Description:	**DER Disposition:**
1. Sample received out of holding: 314440 001 314443 002,005,007 314445 002,004 314506 001 314519 006,013 314528 002 314529 002	1. Samples were received out of holding.

Originator's Name:
Lisa Gregory 15-NOV-12

Data Validator/Group Leader:
Julia Hamilton 15-NOV-12

Radiological Analysis

Radiochemistry Case Narrative
ARS International (ARSL)
SDG 2013-265
Work Order 314528

Method/Analysis Information

Product:	**Alphaspec U, Liquid**
Analytical Method:	DOE EML HASL-300, U-02-RC Modified
Analytical Batch Number:	1259850

Sample ID	Client ID
314528001	CAMO-13-24279
1202771681	Method Blank (MB)
1202771682	314443005(CAMO-13-24225) Sample Duplicate (DUP)
1202771683	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-011 REV# 22.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met. Calibrations are performed monthly using mixed alpha standards comprised of the following: Gd-148, Np-237, and Cm-244.

Standards Information
Standard solutions for these analysis are NIST traceable or verified with a NIST traceable standard and used before the expiration dates.

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
Aliquots for samples 1202771681 (MB) and 1202771683 (LCS) were changed to 1.0 per client request.

Designated QC
The following sample was used for QC: 314443005 (CAMO-13-24225). The QC was from ARSL work order 314443.

QC Information

All of the QC samples met the required acceptance limits.

CSU
The blank result is less than 1.65 times the CSU.

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Sample Re-prep/Re-analysis
None of the samples in this sample set required reprep or reanalysis.

Miscellaneous Information:

Data Exception (DER) Documentation
Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Manual Integration
No manual integrations were performed on data in this batch.

Additional Comments
The MDCs are calculated using a blank population.

Blank Decision Level
The blank result is less than the decision level.

Qualifier Information

Manual qualifiers were not required.

Method/Analysis Information

Product:	**Alphaspec Pu, Liquid**
Analytical Method:	DOE EML HASL-300, Pu-11-RC Modified
Analytical Batch Number:	1259851

Sample ID	Client ID
314528001	CAMO-13-24279
1202771684	Method Blank (MB)
1202771686	314443005(CAMO-13-24225) Sample Duplicate (DUP)
1202771688	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as

Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-011 REV# 22.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met. Calibrations are performed monthly using mixed alpha standards comprised of the following: Gd-148, Np-237, and Cm-244.

Standards Information
Standard solutions for these analysis are NIST traceable or verified with a NIST traceable standard and used before the expiration dates.

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
Aliquots for samples 1202771684 (MB) and 1202771688 (LCS) were changed to 1.0 per client request.

Designated QC
The following sample was used for QC: 314443005 (CAMO-13-24225). The QC was from ARSL work order 314443.

QC Information
All of the QC samples met the required acceptance limits.

CSU
The blank result is less than 1.65 times the CSU.

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Sample Re-prep/Re-analysis
Sample 314528001 (CAMO-13-24279) was recounted due to low carrier/tracer yield. The recount is reported.

Miscellaneous Information:

Data Exception (DER) Documentation
Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Manual Integration
No manual integrations were performed on data in this batch.

Additional Comments
The MDCs are calculated using a blank population.

Blank Decision Level
The blank result is less than the decision level.

Qualifier Information

Manual qualifiers were not required.

Method/Analysis Information

Product:	**Alphaspec Am241 Liquid**
Analytical Method:	DOE EML HASL-300, Am-05-RC Modified
Analytical Batch Number:	1259852

Sample ID	Client ID
314528001	CAMO-13-24279
1202771689	Method Blank (MB)
1202771691	314443005(CAMO-13-24225) Sample Duplicate (DUP)
1202771693	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-011 REV# 22.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met. Calibrations are performed monthly using mixed alpha standards comprised of the following: Gd-148, Np-237, and Cm-244.

Standards Information
Standard solutions for these analysis are NIST traceable or verified with a NIST traceable standard and used before the expiration dates.

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
Aliquots for samples 1202771689 (MB) and 1202771693 (LCS) were changed to 1.0 per client request.

Designated QC
The following sample was used for QC: 314443005 (CAMO-13-24225). The QC was from ARSL work order 314443.

QC Information
All of the QC samples met the required acceptance limits.

CSU
The blank result is less than 1.65 times the CSU.

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Sample Re-prep/Re-analysis
None of the samples in this sample set required reprep or reanalysis.

Miscellaneous Information:

Data Exception (DER) Documentation
Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Manual Integration
No manual integrations were performed on data in this batch.

Additional Comments
The MDCs are calculated using a blank population.

Blank Decision Level
The blank result is less than the decision level.

Qualifier Information

Manual qualifiers were not required.

Method/Analysis Information

Product:	**Gammaspec**
Analytical Method:	EPA 901.1
Analytical Batch Number:	1260199

Sample ID	Client ID
314528001	CAMO-13-24279
1202772494	Method Blank (MB)
1202772495	314528001(CAMO-13-24279) Sample Duplicate (DUP)
1202772496	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-013 REV# 24.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met. The initial Calibrations were performed in June 2012, July 2012 and August 2012.

Standards Information
Standard solutions for these analysis are NIST traceable or verified with a NIST traceable standard and used before the expiration dates.

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
The blank volume is representative of the sample volume in this batch.

Designated QC
The following sample was used for QC: 314528001 (CAMO-13-24279). The QC was from ARSL work order 314528.

QC Information
All of the QC samples met the required acceptance limits.

CSU
The blank 1202772494 (MB) result is greater than 1.65 times the CSU but less than the MDC for Co-60.

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Sample Re-prep/Re-analysis
None of the samples in this sample set required reprep or reanalysis.

Miscellaneous Information:

Data Exception (DER) Documentation
Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Additional Comments
Additional comments were not required for this sample set.

Blank Decision Level
The blank 1202772494 (MB) result is greater than the decision level but less than the MDC for Co-60.

Qualifier Information

Manual qualifiers were not required.

Method/Analysis Information

Product:	**GFPC, Sr90, liquid**
Analytical Method:	EPA 905.0 Modified
Analytical Batch Number:	1260884

Sample ID	Client ID
314528001	CAMO-13-24279
1202774230	Method Blank (MB)
1202774231	314445001(CAMO-13-24241) Sample Duplicate (DUP)
1202774232	314445001(CAMO-13-24241) Matrix Spike (MS)
1202774233	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-004 REV# 16.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met. The initial Calibration was performed in April 2012.

Standards Information
Standard solutions for these analysis are NIST traceable or verified with a NIST traceable standard and used before the expiration dates.

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
Aliquots for samples 1202774230 (MB) and 1202774233 (LCS) were changed to 1.0 per client request.

Designated QC
The following sample was used for QC: 314445001 (CAMO-13-24241). The QC was from ARSL work order 314445.

QC Information
All of the QC samples met the required acceptance limits.

CSU
The blank result is less than 1.65 times the CSU.

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Sample Re-prep/Re-analysis
Sample 1202774231 (CAMO-13-24241) was recounted due to high MDC. The recount is reported.

Chemical Recoveries
All chemical recoveries meet the required acceptance limits for this sample set.

Miscellaneous Information:

Data Exception (DER) Documentation
Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Additional Comments
The matrix spike, 1202774232 (CAMO-13-24241), aliquot was reduced to conserve sample volume.

Blank Decision Level
The blank result is less than the decision level.

Qualifier Information

Manual qualifiers were not required.

Method/Analysis Information

Product:	**WSP-GrossA/B**
Analytical Method:	EPA 900.0/SW846 9310
Analytical Batch Number:	1260898

Sample ID	Client ID
314528001	CAMO-13-24279
1202774275	Method Blank (MB)
1202774276	314136001(CAPA-12-23808) Sample Duplicate (DUP)
1202774277	314136001(CAPA-12-23808) Matrix Spike (MS)
1202774278	314136001(CAPA-12-23808) Matrix Spike Duplicate (MSD)
1202774279	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-001 REV# 15.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met. The initial Calibration was performed in September 2011. The discrimination settings are calibrated in beta discriminating mode to reduce beta to alpha

crosstalk.

Standards Information
Standard solutions for these analysis are NIST traceable or verified with a NIST traceable standard and used before the expiration dates.

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
Aliquots for samples 1202774275 (MB) and 1202774279 (LCS) were changed to 1.0 per client request.

Designated QC
The following sample was used for QC: 314136001 (CAPA-12-23808). The QC was from ARSL work order 314136.

QC Information
All of the QC samples met the required acceptance limits.

CSU
The blank result is less than 1.65 times the CSU.

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Sample Re-prep/Re-analysis
Sample 1202774276 (CAPA-12-23808) was recounted due to high MDC. The recount is reported.

Chemical Recoveries
All chemical recoveries meet the required acceptance limits for this sample set.

Gross Alpha/Beta Preparation Information
High hygroscopic salt content in evaporated samples can cause the sample mass to fluctuate due to moisture absorption. To minimize this interference, the salts are converted to oxides by heating the sample under a flame until a dull red color is obtained. The conversion to oxides stabilizes the sample weight and ensures that proper alpha/beta efficiencies are assigned for each sample. Volatile radioisotopes of carbon, hydrogen, technetium, polonium and cesium may be lost during sample heating, especially to a dull red heat. For this sample set, the prepared planchet was counted for beta activity before being flamed. After flaming, the planchet was counted for alpha activity.

Miscellaneous Information:

Data Exception (DER) Documentation
Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Additional Comments
The matrix spike and matrix spike duplicate, 1202774277 (CAPA-12-23808) and 1202774278 (CAPA-12-23808), aliquots were reduced to conserve sample volume.

Blank Decision Level
The blank result is less than the decision level.

Qualifier Information

Manual qualifiers were not required.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report
for

ARSL001 ARS International (63641-10)

Client SDG: 2013-265 GEL Work Order: 314528

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria

** Analyte is a surrogate compound

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature:  **Name: Theresa Austin**

Date: 27 NOV 2012 **Title: Group Leader**

Sample Data Summary

GEL LABORATORIES LLC

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Certificate of Analysis

Company : Los Alamos National Laboratory
Address : PO Box 1663
TA-03, SM271, Drop Pt. 02U, Rm111
Los Alamos, New Mexico 87545

Report Date: November 27, 2012

Contact: Keith Greene
Project: LANL-WQH Water Samples

Client Sample ID: CAMO-13-24279
Sample ID: 314528001
Matrix: W
Collect Date: 01-NOV-12
Receive Date: 03-NOV-12
Collector: Client

Project: ESHL00210
Client ID: ARSL001

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis													
Alphaspec Am241 Liquid "As Received"													
Americium-241	U	0.0104	+/-0.00737	0.0297	+/-0.00738	0.050	pCi/L		LYS1	11/12/12	1058	1259852	1
Alphaspec Pu, Liquid "As Received"													
Plutonium-238	U	0.0085	+/-0.00637	0.0237	+/-0.00638	0.050	pCi/L		LYS1	11/16/12	1536	1259851	2
Plutonium-239/240	U	0.00637	+/-0.00601	0.0402	+/-0.00601	0.050	pCi/L						
Alphaspec U, Liquid "As Received"													
Uranium-234		0.331	+/-0.0349	0.0679	+/-0.0414	1.00	pCi/L		LYS1	11/12/12	1050	1259850	3
Uranium-235/236	U	0.00362	+/-0.00627	0.0424	+/-0.00627	1.00	pCi/L						
Uranium-238		0.158	+/-0.0219	0.0461	+/-0.0242	0.500	pCi/L						
Rad Gamma Spec Analysis													
Gammaspec "As Received"													
Cesium-137	U	1.76	+/-1.34	5.07	+/-1.34	8.00	pCi/L		KXG3	11/07/12	1058	1260199	4
Cobalt-60	U	0.442	+/-1.30	4.89	+/-1.30	8.00	pCi/L						
Neptunium-237	U	-0.20	+/-2.48	8.69	+/-2.48	10.0	pCi/L						
Potassium-40	U	-29.9	+/-16.8	61.6	+/-16.8	10.0	pCi/L						
Sodium-22	U	-1.35	+/-1.46	4.96	+/-1.46	10.0	pCi/L						
Rad Gas Flow Proportional Counting													
GFPC, Sr90, liquid "As Received"													
Strontium-90	U	0.285	+/-0.150	0.484	+/-0.152	0.500	pCi/L		VXC2	11/21/12	1702	1260884	5
WSP-GrossA/B "As Received"													
Beta		17.4	+/-1.55	2.86	+/-2.24	3.00	pCi/L		BXF1	11/15/12	1312	1260898	6
Alpha		62.8	+/-3.67	2.41	+/-6.46	3.00	pCi/L		BXF1	11/17/12	1640	1260898	7

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, U-02-RC Modified
4	EPA 901.1
5	EPA 905.0 Modified
6	EPA 900.0/SW846 9310
7	EPA 900.0/SW846 9310

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Americium-243 Tracer	Alphaspec Am241 Liquid "As Received"	1259852	94.5	(50%-105%)
Plutonium-242 Tracer	Alphaspec Pu, Liquid "As Received"	1259851	51.8	(50%-105%)
Uranium-232 Tracer	Alphaspec U, Liquid "As Received"	1259850	80.6	(50%-105%)
Strontium Carrier	GFPC, Sr90, liquid "As Received"	1260884	83.7	(50%-105%)

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Certificate of Analysis

Company : Los Alamos National Laboratory
Address : PO Box 1663
TA-03, SM271, Drop Pt. 02U, Rm111
Los Alamos, New Mexico 87545

Report Date: November 27, 2012

Contact: Keith Greene
Project: LANL-WQH Water Samples

Client Sample ID: CAMO-13-24279
Sample ID: 314528001

Project: ESHL00210
Client ID: ARSL001

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Surrogate/Tracer Recovery	**Test**						**Batch ID**	**Recovery%**	**Acceptable Limits**				

Notes:
TPU and Uncertainty are calculated at the 67% confidence level (1-sigma).

Quality Control Data

QC Summary

Report Date: November 27, 2012

Client : **Los Alamos National Laboratory**
PO Box 1663
TA-03, SM271, Drop Pt. 02U, Rm
Los Alamos, New Mexico
Contact: **Keith Greene**

Workorder: **314528**

Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date Time
Rad Alpha Spec										
Batch 1259850										
QC1202771682 314443005 DUP										
Uranium-234		U	U	-0.00844	pCi/L	0.187		(0-1)	LYS1	11/12/1210:50
		Uncert: +/-0.00984		+/-0.0139						
		TPU: +/-0.00984		+/-0.0139						
Uranium-235/236		U	U	0.00735	pCi/L	0.000488		(0-1)		
		Uncert: +/-0.00733		+/-0.009						
		TPU: +/-0.00735		+/-0.00901						
Uranium-238		U	U	0.00	pCi/L	0.00		(0-1)		
		Uncert: +/-0.00593		+/-0.00841						
		TPU: +/-0.00594		+/-0.00841						
**Uranium-232 Tracer	2.73	2.06		1.93	pCi/L		70.8	(50%-105%)		
		Uncert: +/-0.0913		+/-0.0907						
		TPU: +/-0.201		+/-0.201						
QC1202771683 LCS										
Uranium-234				2.73	pCi/L				LYS1	11/12/1210:50
		Uncert:		+/-0.0831						
		TPU:		+/-0.199						
Uranium-235/236				0.117	pCi/L					
		Uncert:		+/-0.0204						
		TPU:		+/-0.0218						
Uranium-238	2.70			2.80	pCi/L		103	(80%-120%)		
		Uncert:		+/-0.0836						
		TPU:		+/-0.202						
**Uranium-232 Tracer	2.19			1.49	pCi/L		68.4	(50%-105%)		
		Uncert:		+/-0.0746						
		TPU:		+/-0.162						
QC1202771681 MB										
Uranium-234			U	-0.0191	pCi/L				LYS1	11/12/1210:50
		Uncert:		+/-0.00958						
		TPU:		+/-0.00958						
Uranium-235/236			U	0.00611	pCi/L					
		Uncert:		+/-0.00611						
		TPU:		+/-0.00613						
Uranium-238			U	0.00	pCi/L					
		Uncert:		+/-0.00606						
		TPU:		+/-0.00606						
**Uranium-232 Tracer	2.19			1.56	pCi/L		71.4	(50%-105%)		
		Uncert:		+/-0.0742						
		TPU:		+/-0.162						
Batch 1259851										
QC1202771686 314443005 DUP										
Plutonium-238		U	U	-0.00289	pCi/L	0.344		(0-1)	LYS1	11/12/1210:59
		Uncert: +/-0.00497		+/-0.00647						

QC Summary

Workorder: 314528

Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date Time
Rad Alpha Spec										
Batch 1259851										
	TPU:	+/-0.00497		+/-0.00647						
Plutonium-239/240	U	-0.00248	U	0.00868	pCi/L	0.464		(0-1)		
	Uncert:	+/-0.00555		+/-0.00647						
	TPU:	+/-0.00556		+/-0.00648						
**Plutonium-242 Tracer	2.43	2.16		1.87	pCi/L		77.1	(50%-105%)		
	Uncert:	+/-0.0779		+/-0.0843						
	TPU:	+/-0.130		+/-0.138						
QC1202771688 LCS										
Plutonium-238			U	0.00506	pCi/L			(80%-120%)	LYS1	11/12/1210:59
	Uncert:			+/-0.0062						
	TPU:			+/-0.0062						
Plutonium-239/240	2.03			2.27	pCi/L		112	(80%-120%)		
	Uncert:			+/-0.0759						
	TPU:			+/-0.130						
**Plutonium-242 Tracer	1.94			1.36	pCi/L		70.1	(50%-105%)		
	Uncert:			+/-0.0705						
	TPU:			+/-0.114						
QC1202771684 MB										
Plutonium-238			U	-0.00491	pCi/L				LYS1	11/12/1210:59
	Uncert:			+/-0.00491						
	TPU:			+/-0.00491						
Plutonium-239/240			U	-0.00245	pCi/L					
	Uncert:			+/-0.00425						
	TPU:			+/-0.00425						
**Plutonium-242 Tracer	1.94			1.41	pCi/L		72.3	(50%-105%)		
	Uncert:			+/-0.0692						
	TPU:			+/-0.113						
Batch 1259852										
QC1202771691 314443005 DUP										
Americium-241	U	0.00252	U	-0.00298	pCi/L	0.255		(0-1)	LYS1	11/12/1210:59
	Uncert:	+/-0.00564		+/-0.00516						
	TPU:	+/-0.00564		+/-0.00517						
**Americium-243 Tracer	2.60	2.42		1.96	pCi/L		75.3	(50%-105%)		
	Uncert:	+/-0.0808		+/-0.0877						
	TPU:	+/-0.138		+/-0.146						
QC1202771693 LCS										
Americium-241	1.41			1.49	pCi/L		106	(80%-120%)	LYS1	11/12/1210:59
	Uncert:			+/-0.0544						
	TPU:			+/-0.0833						
**Americium-243 Tracer	2.08			1.83	pCi/L		88.1	(50%-105%)		
	Uncert:			+/-0.0638						
	TPU:			+/-0.109						
QC1202771689 MB										
Americium-241			U	0.00	pCi/L				LYS1	11/12/1210:59
	Uncert:			+/-0.00561						
	TPU:			+/-0.00561						
**Americium-243 Tracer	2.08			1.84	pCi/L		88.5	(50%-105%)		
	Uncert:			+/-0.0639						
	TPU:			+/-0.109						

QC Summary

Workorder: **314528**

Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date Time
Rad Gamma Spec										
Batch 1260199										
QC1202772495 314528001 DUP										
Cesium-137	U	1.76	U	-0.106	pCi/L	0.378		(0-1)	KXG3	11/08/1208:59
	Uncert:	+/-1.34		+/-1.13						
	TPU:	+/-1.34		+/-1.13						
Cobalt-60	U	0.442	U	-1.04	pCi/L	0.293		(0-1)		
	Uncert:	+/-1.30		+/-1.24						
	TPU:	+/-1.30		+/-1.24						
Neptunium-237	U	-0.20	U	1.91	pCi/L	0.217		(0-1)		
	Uncert:	+/-2.48		+/-2.37						
	TPU:	+/-2.48		+/-2.37						
Potassium-40	U	-29.9	U	-1.61	pCi/L	0.459		(0-1)		
	Uncert:	+/-16.8		+/-14.0						
	TPU:	+/-16.8		+/-14.0						
Sodium-22	U	-1.35	U	-1.23	pCi/L	0.0237		(0-1)		
	Uncert:	+/-1.46		+/-0.974						
	TPU:	+/-1.46		+/-0.974						
QC1202772496 LCS										
Americium-241	2780			2920	pCi/L		105	(80%-120%)	KXG3	11/08/1212:19
	Uncert:			+/-163						
	TPU:			+/-163						
Cesium-137	6090			6310	pCi/L		104	(80%-120%)		
	Uncert:			+/-264						
	TPU:			+/-264						
Cobalt-60	5670			5730	pCi/L		101	(80%-120%)		
	Uncert:			+/-241						
	TPU:			+/-241						
Neptunium-237			U	32.7	pCi/L					
	Uncert:			+/-21.0						
	TPU:			+/-21.0						
Potassium-40			U	-60.9	pCi/L					
	Uncert:			+/-46.6						
	TPU:			+/-46.6						
Sodium-22			U	-0.12	pCi/L					
	Uncert:			+/-6.61						
	TPU:			+/-6.61						
QC1202772494 MB										
Cesium-137			U	-0.192	pCi/L				KXG3	11/07/1210:58
	Uncert:			+/-1.11						
	TPU:			+/-1.11						
Cobalt-60			U	2.16	pCi/L					
	Uncert:			+/-1.07						
	TPU:			+/-1.07						
Neptunium-237			U	-0.975	pCi/L					
	Uncert:			+/-2.08						
	TPU:			+/-2.08						
Potassium-40			U	-6.92	pCi/L					
	Uncert:			+/-13.7						
	TPU:			+/-13.7						
Sodium-22			U	0.849	pCi/L					

QC Summary

Workorder: 314528

Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date Time
Rad Gamma Spec										
Batch 1260199										
	Uncert:			+/-0.975						
	TPU:			+/-0.975						
Rad Gas Flow										
Batch 1260884										
QC1202774231 314445001 DUP										
Strontium-90	U	0.224	U	-0.222	pCi/L	0.800		(0-1)	VXC2	11/24/1211:55
	Uncert:	+/-0.147		+/-0.130						
	TPU:	+/-0.148		+/-0.130						
**Strontium Carrier	7.17	6.40		6.20	mg		86.5	(50%-105%)		
QC1202774233 LCS										
Strontium-90	24.8			24.1	pCi/L		96.9	(80%-120%)	VXC2	11/21/1217:03
	Uncert:			+/-0.597						
	TPU:			+/-2.04						
**Strontium Carrier	7.17			6.00	mg		83.7	(50%-105%)		
QC1202774230 MB										
Strontium-90			U	-0.0606	pCi/L				VXC2	11/21/1217:02
	Uncert:			+/-0.0614						
	TPU:			+/-0.0614						
**Strontium Carrier	7.17			6.60	mg		92.1	(50%-105%)		
QC1202774232 314445001 MS										
Strontium-90	124 U	0.224		126	pCi/L		101	(75%-125%)	VXC2	11/21/1217:03
	Uncert:	+/-0.147		+/-2.95						
	TPU:	+/-0.148		+/-10.4						
**Strontium Carrier	7.17	6.40		6.40	mg		89.3	(50%-105%)		
Batch 1260898										
QC1202774276 314136001 DUP										
Alpha	U	0.899	U	0.189	pCi/L	0.288		(0-1)	BXF1	11/17/1216:40
	Uncert:	+/-0.682		+/-0.545						
	TPU:	+/-0.686		+/-0.545						
Beta	U	0.924	U	-1.31	pCi/L	0.667		(0-1)		11/16/1208:56
	Uncert:	+/-0.855		+/-0.816						
	TPU:	+/-0.859		+/-0.816						
QC1202774279 LCS										
Alpha	12.0			11.5	pCi/L		96	(80%-120%)	BXF1	11/18/1219:49
	Uncert:			+/-0.620						
	TPU:			+/-1.15						
Beta	49.7			45.8	pCi/L		92.2	(80%-120%)		11/15/1213:21
	Uncert:			+/-0.882						
	TPU:			+/-3.90						
QC1202774275 MB										
Alpha			U	0.00668	pCi/L				BXF1	11/17/1216:41
	Uncert:			+/-0.0924						
	TPU:			+/-0.0925						
Beta			U	0.0423	pCi/L					11/15/1213:19
	Uncert:			+/-0.096						
	TPU:			+/-0.0961						
QC1202774277 314136001 MS										
Alpha	481 U	0.899		408	pCi/L		84.7	(75%-125%)	BXF1	11/17/1216:40

QC Summary

Workorder: **314528**

Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date Time
Rad Gas Flow										
Batch 1260898										
	Uncert:	+/-0.682		+/-23.0						
	TPU:	+/-0.686		+/-41.4						
Beta	1990 U	0.924		1730	pCi/L		87.2	(75%-125%)		11/15/1213:20
	Uncert:	+/-0.855		+/-34.2						
	TPU:	+/-0.859		+/-151						
QC1202774278 314136001 MSD										
Alpha	481 U	0.899		370	pCi/L	0.236	76.9	(0-1)	BXF1	11/17/1216:40
	Uncert:	+/-0.682		+/-21.5						
	TPU:	+/-0.686		+/-37.6						
Beta	1990 U	0.924		1850	pCi/L	0.193	93.2	(0-1)		11/15/1213:21
	Uncert:	+/-0.855		+/-36.3						
	TPU:	+/-0.859		+/-158						

Notes:
The Qualifiers in this report are defined as follows:

**	Analyte is a surrogate compound
<	Result is less than value reported
>	Result is greater than value reported
A	The TIC is a suspected aldol-condensation product
B	For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
BD	Results are either below the MDC or tracer recovery is low
C	Analyte has been confirmed by GC/MS analysis
D	Results are reported from a diluted aliquot of the sample
E	General Chemistry--Concentration of the target analyte exceeds the instrument calibration range
E	Metals--%difference of sample and SD is >10%. Sample concentration must meet flagging criteria
E	Organics--Concentration of the target analyte exceeds the instrument calibration range
F	Estimated Value
FB	Mercury was found present at quantifiable concentrations in field blanks received with these samples. Data associated with the blank are deemed invalid for reporting to regulatory agencies
H	Analytical holding time was exceeded
J	Value is estimated
JNX	Non Calibrated Compound
K	Analyte present. Reported value may be biased high. Actual value is expected to be lower.
L	Analyte present. Reported value may be biased low. Actual value is expected to be higher.
M	M if above MDC and less than LLD
M	Matrix Related Failure
N	Metals--The Matrix spike sample recovery is not within specified control limits
N	Organics--Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor
N/A	RPD or %Recovery limits do not apply.
N1	See case narrative
ND	Analyte concentration is not detected above the detection limit
NJ	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

QC Summary

Workorder: **314528**

Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time

P	Organics--The concentrations between the primary and confirmation columns/detectors is >40% different. For HPLC, difference is also <70%
Q	One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
R	Sample results are rejected
U	Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI	Gamma Spectroscopy--Uncertain identification
UJ	Compound cannot be extracted
UJ	Gamma Spectroscopy--Uncertain identification
UL	Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y	QC Samples were not spiked with this compound
Z	Paint Filter Test--Particulates passed through the filter, however no free liquids were observed.
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
d	5-day BOD--The 2:1 depletion requirement was not met for this sample
h	Preparation or preservation holding time was exceeded

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more.
** Indicates analyte is a surrogate/tracer compound.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptence criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.