

The order of this data package is as follows:

1. Chain-of-Custody/Lab Request
2. Copies of field COCs
3. Validation Report
4. Laboratory analysis

Comments:

[illegible]

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 11096

EVENT NAME: Pajarito (TA-54) MY2017 Q2

SAMPLE ID: CAPA-17-129180

WORK ORDER: NA

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
Date Collected (MM/DD/YYYY):	1/13/17	OK	FIELD MATRIX:	WG	OK
TIME COLLECTED (HH:MM):	1240		MEDIA:	UA	
PRS ID:	OK		SAMPLE TECH CODE:	GSP	
LOCATION ID:	R-32 S1		FIELD PREP:	UF	
LOCATION TYPE:	Mon		FIELD QC TYPE:	REG	
TOP DEPTH:	NA		SAMPLE USAGE:	INV	
BOTTOM DEPTH:	↓	↓	EXCAVATED:		YES / NO / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
NA	WSP-8260B- VOA	40 ML SEPTUM AMBER GLASS	2	HCL	Y	NA
↓	WSP-LL-H-3	1 LITER POLY	1	NONE	↓	↓

SAMPLE COMMENTS: Sampled 50ft from running diesel generator

LOCATION COMMENTS: None

FIELD PARAMETERS:

Dissolved Oxygen	4.72	mg/L	Flow (in gpm)	2.13	GPM	Oxidation-Reduction Potential	201.9	mV
pH	7.12	SU	Specific Conductance	164.4	uS/cm	Temperature	17.4	deg C
Turbidity	0.49	NTU						

COLLECTED BY (PRINT): A. Vizily, D. Jaramillo

RELINQUISHED BY (Printed Name) Allizyn Stanfield (Signature)	Date/Time 1/13/17 1325	RECEIVED BY (Printed Name) S. Sherwood (Signature) S. Sherwood	Date/Time 1/13/17 1325
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 11096

EVENT NAME: Pajarito (TA-54) MY2017 Q2

SAMPLE ID: CAPA-17-129189

WORK ORDER: NA

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
Date Collected (MM/DD/YYYY):	01/13/2017	ok	FIELD MATRIX:	WG	ok
TIME COLLECTED (HH:MM):	12:23		MEDIA:	UA	
PRS ID:	ok		SAMPLE TECH CODE:	GSP	
LOCATION ID:	R-53 S1		FIELD PREP:	UF	
LOCATION TYPE:	Mon		FIELD QC TYPE:	REG	
TOP DEPTH:	NA		SAMPLE USAGE:	INV	
BOTTOM DEPTH:	NA		EXCAVATED:		YES / NO / <u>NA</u>

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
NA ↓	WSP-8260B-VOA	40 ML SEPTUM AMBER GLASS	2	HCL	↓	NA ↓
↓	WSP-LL-H-3	1 LITER POLY	1	NONE	↓	↓

SAMPLE COMMENTS: generator Running about 50' away,

LOCATION COMMENTS: none

FIELD PARAMETERS:

Dissolved Oxygen	<u>6.36</u>	mg/L	Flow (in gpm)	<u>3.84</u>	GPM	Oxidation-Reduction Potential	<u>171.7</u>	mV
pH	<u>7.99</u>	SU	Specific Conductance	<u>124.5</u>	uS/cm	Temperature	<u>18.8</u>	deg C
Turbidity	<u>0.52</u>	NTU						

COLLECTED BY (PRINT): L. Tow

RELINQUISHED BY (Printed Name) <u>Maurice Sando</u> (Signature) <u>[Signature]</u>	Date/Time <u>1/13/17</u> <u>1400</u>	RECEIVED BY <u>Sherwood</u> (Printed Name) <u>Sherwood</u> (Signature) <u>[Signature]</u>	Date/Time <u>1/13/17</u> <u>1400</u>
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date: 12/29/2016

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 11096

EVENT NAME: Pajarito (TA-54) MY2017 Q2

SAMPLE ID: CAPA-17-129209

WORK ORDER: NA

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
Date Collected (MM/DD/YYYY):	01/13/2017	ok	FIELD MATRIX:	WG	ok
TIME COLLECTED (HH:MM):	9:53		MEDIA:	UA	
PRS ID:	ok		SAMPLE TECH CODE:	DC	
LOCATION ID:	R-53 S1		FIELD PREP:	UF	
LOCATION TYPE:	man		FIELD QC TYPE:	PEB	
TOP DEPTH:	NA		SAMPLE USAGE:	QC	
BOTTOM DEPTH:	NA		EXCAVATED:		YES / NO / (NA)

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

SAMPLE COMMENTS: none

LOCATION COMMENTS: none

FIELD PARAMETERS:

Dissolved Oxygen	NA	mg/L	Flow (in gpm)	NA	GPM	Oxidation-Reduction Potential	NA	mV
pH	NA	SU	Specific Conductance	NA	uS/cm	Temperature	NA	deg C
Turbidity	NA	NTU						

COLLECTED BY (PRINT): K. Tow

RELINQUISHED BY (Printed Name) Maurice Shundo (Signature) <i>Maurice Shundo</i>	Date/Time 11/13/17 1400	RECEIVED BY (Printed Name) Sherwood (Signature) <i>Sherwood</i>	Date/Time 11/13/17 1400
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 11096

EVENT NAME: Pajarito (TA-54) MY2017 Q2

SAMPLE ID: CAPA-17-129211

WORK ORDER: NA

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
Date Collected (MM/DD/YYYY):	01/13/2017	ok	FIELD MATRIX:	WG	ok
TIME COLLECTED (HH:MM):	12:23		MEDIA:	UA	
PRS ID:	ok		SAMPLE TECH CODE:	DC	
LOCATION ID:	R-53 S1		FIELD PREP:	UF	
LOCATION TYPE:	mon		FIELD QC TYPE:	FB	
TOP DEPTH:	NA		SAMPLE USAGE:	QC	
BOTTOM DEPTH:	NA		EXCAVATED:		YES / NO / <u>NA</u>

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
NA	WSP-8260B- VOA	40 ML SEPTUM AMBER GLASS	2	HCL	y	NA

SAMPLE COMMENTS: none

LOCATION COMMENTS: none

FIELD PARAMETERS:

Dissolved Oxygen	NA	mg/L	Flow (in gpm)	NA	GPM	Oxidation-Reduction Potential	NA	mV
pH	NA	SU	Specific Conductance	NA	uS/cm	Temperature	NA	deg C
Turbidity	NA	NTU						

COLLECTED BY (PRINT): K. Tow

RELINQUISHED BY (Printed Name) Maurice Shendo (Signature) <i>Maurice Shendo</i>	Date/Time 11/13/17 1400	RECEIVED BY (Printed Name) S. Sherwood (Signature) <i>S. Sherwood</i>	Date/Time 11/13/17 1400
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date: 12/29/2016

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 11096

EVENT NAME: Pajarito (TA-54) MY2017 Q2

SAMPLE ID: CAPA-17-129213

WORK ORDER: NA

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
Date Collected (MM/DD/YYYY):	01/13/2017	ok	FIELD MATRIX:	WG	ok
TIME COLLECTED (HH:MM):	12:23		MEDIA:	UA	
PRS ID:	ok		SAMPLE TECH CODE:	GSP	
LOCATION ID:	R-53 S1		FIELD PREP:	UF	
LOCATION TYPE:	MON		FIELD QC TYPE:	FD	
TOP DEPTH:	NA		SAMPLE USAGE:	QC	↓
BOTTOM DEPTH:	NA	↓	EXCAVATED:		YES / NO / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
NA ↓	WSP-8260B-VOA	40 ML SEPTUM AMBER GLASS	2	HCL	Y ↓	NA ↓
	WSP-LL-H-3	1 LITER POLY	1	NONE	↓	↓

SAMPLE COMMENTS: none

LOCATION COMMENTS: none

FIELD PARAMETERS:

Dissolved Oxygen	NA	mg/L	Flow (in gpm)	NA	GPM	Oxidation-Reduction Potential	NA	mV
pH	NA	SU	Specific Conductance	NA	uS/cm	Temperature	NA	deg C
Turbidity	NA	NTU						

COLLECTED BY (PRINT): K. Tow

RELINQUISHED BY (Printed Name) <i>Maurice Stenilo</i> (Signature) <i>Maurice Stenilo</i>	Date/Time 11/13/17 1400	RECEIVED BY <i>Sherwood</i> (Printed Name) <i>Sherwood</i> (Signature) <i>Sherwood</i>	Date/Time 11/13/17 1400
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date: 12/29/2016

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 11096

EVENT NAME: Pajarito (TA-54) MY2017 Q2

SAMPLE ID: CAPA-17-129227

WORK ORDER: NA

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
Date Collected (MM/DD/YYYY):	01/13/2017	ok	FIELD MATRIX:	WG	ok
TIME COLLECTED (HH:MM):	12:23		MEDIA:	VA	
PRS ID:	ok		SAMPLE TECH CODE:	DC	
LOCATION ID:	R-53 S1		FIELD PREP:	UF	
LOCATION TYPE:	NA		FIELD QC TYPE:	FTB	
TOP DEPTH:	NA		SAMPLE USAGE:	QC	✓
BOTTOM DEPTH:	NA	↓	EXCAVATED:		YES / NO / <input checked="" type="radio"/> NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
NA	WSP-8260B- VOA	40 ML SEPTUM AMBER GLASS	2 11/2/17	HCL	y	NA

SAMPLE COMMENTS: none

LOCATION COMMENTS: none

FIELD PARAMETERS:

Dissolved Oxygen	NA	mg/L	Flow (in gpm)	NA	GPM	Oxidation-Reduction Potential	NA	mV
pH	NA	SU	Specific Conductance	NA	uS/cm	Temperature	NA	deg C
Turbidity	NA	NTU						

COLLECTED BY (PRINT): K. Tow

RELINQUISHED BY (Printed Name) Maurice Shendo (Signature) <i>Maurice Shendo</i>	Date/Time 01/13/17 1400	RECEIVED BY (Printed Name) S. Spierwood (Signature) <i>S. Spierwood</i>	Date/Time 1/13/17 1400
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date: 12/29/2016

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 11096

EVENT NAME: Pajarito (TA-54) MY2017 Q2

SAMPLE ID: CAPA-17-129230

WORK ORDER: NA

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
Date Collected (MM/DD/YYYY):	1/13/17	OK	FIELD MATRIX:	WG	OK
TIME COLLECTED (HH:MM):	1240		MEDIA:	UA	
PRS ID:	OK		SAMPLE TECH CODE:	GSP	
LOCATION ID:	R-32 S1		FIELD PREP:	UF	
LOCATION TYPE:	Mon		FIELD QC TYPE:	FTB	
TOP DEPTH:	OK		SAMPLE USAGE:	QC	↓
BOTTOM DEPTH:	↓	↓	EXCAVATED:		YES / NO / <u>NA</u>

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
NA	WSP-8260B- VOA	40 ML SEPTUM AMBER GLASS	2 11/2/17	HCL	Y	NA

SAMPLE COMMENTS:

LOCATION COMMENTS:

FIELD PARAMETERS:

Dissolved Oxygen _____ mg/L Flow (in gpm) _____ GPM Oxidation-Reduction Potential _____ mV
pH _____ SU Specific Conductance _____ uS/cm Temperature _____ deg C
Turbidity _____ NTU

COLLECTED BY (PRINT): A. Vigil, D. Jaramillo

RELINQUISHED BY (Printed Name) Allison Stanford (Signature) <i>[Signature]</i>	Date/Time 1/13/17 1325	RECEIVED BY (Printed Name) S. Sherwood (Signature) <i>[Signature]</i>	Date/Time 1/13/17 1325
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

DATA VALIDATION REPORT

Chain Of Custody No. 2017-865

1. Distribution Of Samples In EDD.

SDG	Analytical Method	Regular Samples	Field Duplicates	Trip Blanks	Field Blanks	Equipment Blanks
414461	EPA:351.2					
414461	SW-846:8260B	2	1	2	1	
414461	SW-846:9060					

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	Analytical Spikes	Post-Digestion Spikes	Lab Control Samples	Lab Control Sample Dups	Blank Spike	Blank Spike Dups	Lab Duplicates	Storage Blanks	Preparation Blanks	Reagent Blanks
414461	EPA:351.2	1632411	1632410						1	1				1			1				
414461	SW-846:8260B	1633830	1633830	2	1	2	1		2					4							
414461	SW-846:9060	1632179	1632179						1					1			1				

2. Distribution Of Analytes In EDD.

Analytical Method	Analytical Method Category	Field Sample ID	Lab Sample ID	Sample Purpose	Target Analytes	Surrogates	Spiked Compounds	TICS
EPA:351.2	GENERAL CHEMISTRY	CAPA-17-129209	1203710655	DUP	1	0	0	0
EPA:351.2	GENERAL CHEMISTRY	CAPA-17-129209	1203710659	MS	0	0	1	0
EPA:351.2	GENERAL CHEMISTRY	CAPA-17-129209	414461004	PEB	1	0	0	0
EPA:351.2	GENERAL CHEMISTRY	LCS	1203710654	LCS	0	0	1	0
EPA:351.2	GENERAL CHEMISTRY	MB	1203710653	MB	1	0	0	0
SW-846:8260B	VOC	CAPA-17-129180	414461001	REG	80	3	0	0
SW-846:8260B	VOC	CAPA-17-129189	414461003	REG	80	3	0	0
SW-846:8260B	VOC	CAPA-17-129209	414461004	PEB	80	3	0	0
SW-846:8260B	VOC	CAPA-17-129211	414461005	FB	80	3	0	0
SW-846:8260B	VOC	CAPA-17-129213	414461006	FD	80	3	0	0
SW-846:8260B	VOC	CAPA-17-129227	414461007	FTB	80	3	0	0
SW-846:8260B	VOC	CAPA-17-129230	414461002	FTB	80	3	0	0
SW-846:8260B	VOC	LCS	1203714351	LCS	0	3	70	0
SW-846:8260B	VOC	LCS	1203714352	LCS	0	3	10	0
SW-846:8260B	VOC	LCS	1203714353	LCS	0	3	70	0
SW-846:8260B	VOC	LCS	1203714354	LCS	0	3	10	0

DATA VALIDATION REPORT

Analytical Method	Analytical Method Category	Field Sample ID	Lab Sample ID	Sample Purpose	Target Analytes	Surrogates	Spiked Compounds	TICS
SW-846:8260B	VOC	MB	1203714349	MB	80	3	0	0
SW-846:8260B	VOC	MB	1203714350	MB	80	3	0	0
SW-846:9060	GENERAL CHEMISTRY	CAPA-17-129209	414461004	PEB	1	0	0	0
SW-846:9060	GENERAL CHEMISTRY	CAWR-17-127835	1203710095	DUP	1	0	0	0
SW-846:9060	GENERAL CHEMISTRY	LCS	1203710094	LCS	0	0	1	0
SW-846:9060	GENERAL CHEMISTRY	MB	1203710093	MB	1	0	0	0

3. Are any analytes missing?

No.

4. Were any holding times exceeded?

No.

5. Any contaminants in blanks?

Blank FS ID	Blank Lab Sample	Blank Type	Analytical Method	Sample	Parameter Name	Blank Lab Result	Lab Qualifier	Blank Lab Units	Blank Lab Detection Limit
MB	1203714349	METHOD BLANK	SW-846:8260B	W	Acetone	4.35	J	ug/L	10.0
CAPA-17-129230	414461002	TRIP BLANK	SW-846:8260B	W	Acetone	1.66	BJ	ug/L	10.0

Field Sample ID	Blank Lab	Blank Type	Analytical Method	Parameter Name	Blank Lab Result	Blank Lab Units	Lab Result	Lab Qualifier	Lab Detection Limit	Detect Flag	Detect to Nondetect Factor	Detect to Estimated Factor	Use Factors
CAPA-17-129180	1203714349	METHOD BLANK	SW-846:8260B	Acetone	4.35	ug/L	1.66	BJ	10.0	Y	5	100	Y
CAPA-17-129180	414461002	TRIP BLANK	SW-846:8260B	Acetone	1.66	ug/L	1.66	BJ	10.0	Y	5	100	Y
CAPA-17-129230	1203714349	METHOD BLANK	SW-846:8260B	Acetone	4.35	ug/L	1.66	BJ	10.0	Y	5	100	Y

DATA VALIDATION REPORT

6. Any surrogate recoveries outside the control limits?

No.

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

No.

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

No.

9. Any Field Duplicate RPDs outside the desired limits?

No.

10. Any Lab Duplicate RPDs outside the desired limits?

No.

11. Any required reporting limits exceeded?

No.

12. Additional Validator's Comments.

13. Display Flagged Data.

Location ID	COC Number	Field Sample ID	Sample Purpose	Analysis Type Code	Analytical Suite	Analytical Method	Paramter Name	Lab Qualifier	Validation Qualifier	Validation Reason Codes	Detect Flag	Lab Result	Lab Units	Report Result	Report Units	Report MDA	Report Uncertainty	Lab Matrix	Sample Date	Percent	Analysis Lot ID	Validation Status Code	Use Flag
R-32 S1	2017-865	CAPA-17-129180	REG	INIT	VOC	SW-846:8260B	Acetone	BJ	U	V4d	N	1.66	ug/L	1.66	ug/L			W	01/13/2017		1633830	VAL	Y
R-32 S1	2017-865	CAPA-17-129230	FTB	INIT	VOC	SW-846:8260B	Acetone	BJ	U	V4	N	1.66	ug/L	1.66	ug/L			W	01/13/2017		1633830	VAL	Y

DATA VALIDATION REPORT

Reason Code

Description

J_LAB

The analytical laboratory qualified the detected result as estimated (J) because the result was less the PQL but greater than the MDL

U_LAB

The analytical laboratory qualified the analyte as not detected.

V4

The sample result is less than or equal to 5 times (10 times for acetone, methylene chloride, and 2-butanone) the concentration of the related analyte in the method blank, which indicates the reported detection is considered indistinguishable from contamination in the blank.

V4d

The samples result is $\leq 5x$ the concentration of the related analyte in the trip, rinsate and/or equipment blank.

14. Usable Result Count.

Field Sample ID	Location ID	Sample Purpose	Analytical Method	No. Unuseable Records	Total Records
CAPA-17-129180	R-32 S1	REG	SW-846:8260B	0	80
CAPA-17-129189	R-53 S1	REG	SW-846:8260B	0	80
CAPA-17-129209	R-53 S1	PEB	EPA:351.2	0	1
CAPA-17-129209	R-53 S1	PEB	SW-846:8260B	0	80
CAPA-17-129209	R-53 S1	PEB	SW-846:9060	0	1
CAPA-17-129211	R-53 S1	FB	SW-846:8260B	0	80
CAPA-17-129213	R-53 S1	FD	SW-846:8260B	0	80
CAPA-17-129227	R-53 S1	FTB	SW-846:8260B	0	80
CAPA-17-129230	R-32 S1	FTB	SW-846:8260B	0	80

February 06, 2017

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

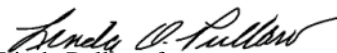
Re: LANL- WQH Water Samples
Work Order: 414461
SDG: 2017-865

Dear Mr. Greene:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the following analytical results for the sample(s) we received on January 18, 2017, and analyzed for GC/MS Volatile and General Chemistry. 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,


Linda Pullano for
Valerie Davis
Project Manager

Chain of Custody: 2017-865
Enclosures



ARS International, LLC (ARS-LANS-MTOA6-25093-GEL)
LANL- WQH Water Samples
Work Order #: 414461
SDG: 2017-865

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Case Narrative

**Case Narrative for
ARS International, LLC (ARS-LANS-MTOA6-25093-GEL)
LANL- WQH Water Samples
Workorder #: 414461
SDG # : 2017-865**

February 06, 2017

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 January 18, 2017 for analysis. The samples were delivered with proper chain of custody documentation and signatures. 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:

<u>Laboratory ID</u>	<u>Client ID</u>
414461001	CAPA-17-129180
414461002	CAPA-17-129230
414461003	CAPA-17-129189
414461004	CAPA-17-129209
414461005	CAPA-17-129211
414461006	CAPA-17-129213
414461007	CAPA-17-129227

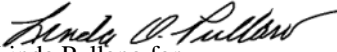
Case Narrative

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 Volatile and General Chemistry.

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.


Linda Pullano for
Valerie Davis
Project Manager

List of current GEL Certifications as of 06 February 2017

State	Certification
Alaska	UST-0110
Arkansas	88-0651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH-0169
Delaware	SC00012
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-15-00283, P330-15-00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho Chemistry	SC00012
Idaho Radiochemistry	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky SDWA	90129
Kentucky Wastewater	90129
Louisiana NELAP	03046 (AI33904)
Louisiana SDWA	LA170010
Maryland	270
Massachusetts	M-SC012
Michigan	9976
Mississippi	SC00012
Nebraska	NE-OS-26-13
Nevada	SC000122016-1
New Hampshire NELAP	205415
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R-158
Oklahoma	9904
Pennsylvania NELAP	68-00485
S.Carolina Radchem	10120002
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235-16-11
Utah NELAP	SC000122016-21
Vermont	VT87156
Virginia NELAP	460202
Washington	C780
West Virginia	997404

Chain of Custody and Supporting Documentation

Chain of Custody/Analysis Request

[illegible]

Special Instructions:

Relinquished by: <i>Shenwood</i>	Print Name: <i>Shenwood</i>	Date/Time: <i>4/17/17 3pm</i>	Received by: <i>Robert Walker</i>	Print Name: <i>Robert Walker</i>	Date/Time: <i>4/18/17 8:55</i>
Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:
Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:



Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: <u>LANL</u>			SDG/AR/COC/Work Order: <u>414461</u>		
Received By: <u>LOP</u>			Date Received: <u>1/18/17</u>		
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?			<input checked="" type="checkbox"/>	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): <u>0cpm</u>	
Classified Radioactive II or III by RSO?			<input checked="" type="checkbox"/>	If yes, Were swipes taken of sample containers < action levels?	
COC/Samples marked containing PCBs?			<input checked="" type="checkbox"/>		
Package, COC, and/or Samples marked as beryllium or asbestos containing?			<input checked="" type="checkbox"/>	If yes, samples are to be segregated as Safety Controlled Samples, and opened by the GEL Safety Group.	
Shipped as a DOT Hazardous?			<input checked="" type="checkbox"/>	Hazard Class Shipped: UN#:	
Samples identified as Foreign Soil?			<input checked="" type="checkbox"/>		

Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1 Shipping containers received intact and sealed?	<input checked="" type="checkbox"/>			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2 Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	<input checked="" type="checkbox"/>			Preservation Method: Ice bags <u>Blue ice</u> Dry ice None Other (describe) *all temperatures are recorded in Celsius <u>3°</u>
2a Daily check performed and passed on IR temperature gun?	<input checked="" type="checkbox"/>			Temperature Device Serial #: Secondary Temperature Device Serial # (If Applicable): <u>E5032015830</u>
3 Chain of custody documents included with shipment?	<input checked="" type="checkbox"/>			
4 Sample containers intact and sealed?	<input checked="" type="checkbox"/>			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
5 Samples requiring chemical preservation at proper pH?	<input checked="" type="checkbox"/>			Sample ID's, containers affected and observed pH: If Preservation added, Lot#:
6 Do Low Level Perchlorate samples have headspace as required?	<input checked="" type="checkbox"/>			Sample ID's and containers affected:
7 VOA vials contain acid preservation?	<input checked="" type="checkbox"/>			(If unknown, select No)
8 VOA vials free of headspace (defined as < 6mm bubble)?	<input checked="" type="checkbox"/>			Sample ID's and containers affected:
9 Are Encore containers present?			<input checked="" type="checkbox"/>	(If yes, immediately deliver to Volatiles laboratory)
10 Samples received within holding time?	<input checked="" type="checkbox"/>			ID's and tests affected:
11 Sample ID's on COC match ID's on bottles?	<input checked="" type="checkbox"/>			Sample ID's and containers affected:
12 Date & time on COC match date & time on bottles?	<input checked="" type="checkbox"/>			Sample ID's affected:
13 Number of containers received match number indicated on COC?			<input checked="" type="checkbox"/>	Sample ID's affected: <u>CAPA-17-129230 / CAPA-17-129227 1 VOA Received</u>
14 Are sample containers identifiable as GEL provided?			<input checked="" type="checkbox"/>	<u>NOT 2.</u>
15 COC form is properly signed in relinquished/received sections?	<input checked="" type="checkbox"/>			
16 Carrier and tracking number.				Circle Applicable: <u>FedEx Air</u> FedEx Ground UPS Field Services Courier Other <u>5908 1781 6423 3°</u>

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials LOP Date 1/18/17 Page 1 of 1

GL-CHL-SR-001 Rev 3

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: 17 JAN 17
ACTWGT: 40.0 LB MAN
CAD: 0014176/CAFE2916

BILL SENDER

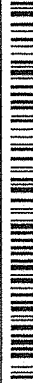
TO **VALERIE DAVIS**
GENERAL ENGINEERING LAB
2040 SAVAGE RD

3

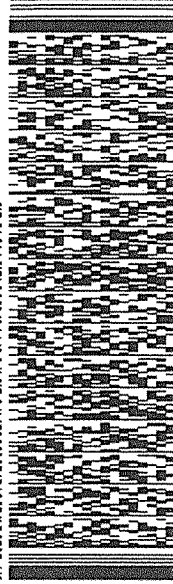
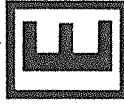
CHARLESTON SC 29407

(843) 556-8171

REF: 6A000ASRGW04BAGWSO



FedEx
Express

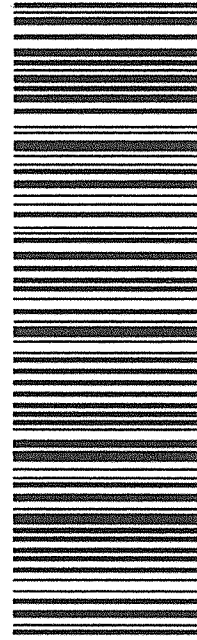


WED - 18 JAN 10:30A
PRIORITY OVERNIGHT

TRK# 5908 1781 6423
0201

X7 CHSA

29407
SC-US CHS



Part # 156148V-434 RIT2 06/15

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.

P Organics-The concentrations between the primary and confirmation columns/detectors is >40% difference.
For HPLC, the difference is >70%.

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

Volatile Analysis

Case Narrative

**GC/MS Volatile
Technical Case Narrative
ARS International, LLC (ARSL)
SDG #: 2017-865
Work Order #: 414461**

Method/Analysis Information

Procedure: Volatile Organic Compounds (VOC) by Gas Chromatograph/Mass Spectrometer

Analytical Method: SW-846:8260B

Analytical Batch Number: 1633830

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
414461001	CAPA-17-129180
414461002	CAPA-17-129230
414461003	CAPA-17-129189
414461004	CAPA-17-129209
414461005	CAPA-17-129211
414461006	CAPA-17-129213
414461007	CAPA-17-129227
1203714350	Method Blank (MB)
1203714353	Laboratory Control Sample (LCS)
1203714354	Laboratory Control Sample (LCS)
1203714357	414461004(CAPA-17-129209) Post Spike (PS)
1203714358	414461004(CAPA-17-129209) Post Spike (PS)
1203714361	414461004(CAPA-17-129209) Post Spike Duplicate (PSD)
1203714362	414461004(CAPA-17-129209) Post Spike Duplicate (PSD)

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 data results reported met all SOP and method criteria, unless otherwise discussed below.

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# 23.

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

All initial calibration requirements have been met for this sample delivery group (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 1203714350 (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 spike recoveries met the acceptance limits.

QC Sample Designation

Sample 414461004 (CAPA-17-129209) was designated for spike analysis.

Matrix Spike/Matrix Spike Duplicate Recovery Statement

The matrix spike (MS) and matrix spike duplicate (MSD) 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

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

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

Re-analyses were not required for samples in this SDG.

Miscellaneous Information

Data Exception (DER) Documentation

A Data exception reports (DERs) was not generated to document procedural anomalies that may deviate from referenced SOP or contractual documents.

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 samples 414461001 (CAPA-17-129180), 414461002 (CAPA-17-129230), 414461003 (CAPA-17-129189), 414461004 (CAPA-17-129209), 414461005 (CAPA-17-129211), 414461006 (CAPA-17-129213) and 414461007 (CAPA-17-129227) 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, were included on the Sample Data Summary (Form 1) and 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.

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 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 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

ARSL004 ARS International, LLC (ARS-LANS-MTOA6-25093-GEL)

Client SDG: 2017-865 GEL Work Order: 414461

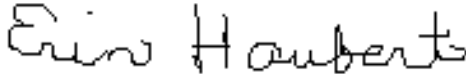
The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a surrogate compound
- B 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, MDC 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: 

Name: Erin Haubert

Date: 13 FEB 2017

Title: Data Validator

Sample Data Summary

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 2017-865	Date Collected: 01/13/2017 12:40	Matrix: W
Lab Sample ID: 414461001	Date Received: 01/18/2017 08:50	
Client Sample: VOA	Client: ARSL004	Project: ESHL00114
Client ID: CAPA-17-129180	Method: SW-846:8260B	SOP Ref: GL-OA-E-038
Batch ID: 1633830	Inst: VOA9.I	Dilution: 1
Run Date: 01/25/2017 03:57	Analyst: RXY1	Purge Vol: 5 mL
Prep Date: 01/25/2017 03:57		
Data File: 012417V9\9C239.D	Column: DB-624	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
630-20-6	1,1,1,2-Tetrachloroethane	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
79-34-5	1,1,2,2-Tetrachloroethane	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
75-34-3	1,1-Dichloroethane	U	1.00	ug/L	0.300	1.00
75-35-4	1,1-Dichloroethylene	U	1.00	ug/L	0.300	1.00
563-58-6	1,1-Dichloropropene	U	1.00	ug/L	0.300	1.00
87-61-6	1,2,3-Trichlorobenzene	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
120-82-1	1,2,4-Trichlorobenzene	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
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.500	1.00
106-93-4	1,2-Dibromoethane	U	1.00	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane	U	1.00	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane	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
541-73-1	1,3-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
142-28-9	1,3-Dichloropropane	U	1.00	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
78-93-3	2-Butanone	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
95-49-8	2-Chlorotoluene	U	1.00	ug/L	0.300	1.00
591-78-6	2-Hexanone	U	5.00	ug/L	1.50	5.00
106-43-4	4-Chlorotoluene	U	1.00	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene	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
67-64-1	Acetone	BJ	1.66	ug/L	1.50	10.0
75-05-8	Acetonitrile	U	25.0	ug/L	8.00	25.0
107-02-8	Acrolein	U	5.00	ug/L	1.50	5.00
107-13-1	Acrylonitrile	U	5.00	ug/L	1.50	5.00
107-05-1	Allyl chloride	U	5.00	ug/L	1.50	5.00
71-43-2	Benzene	U	1.00	ug/L	0.300	1.00
108-86-1	Bromobenzene	U	1.00	ug/L	0.300	1.00
74-97-5	Bromochloromethane	U	1.00	ug/L	0.300	1.00
75-27-4	Bromodichloromethane	U	1.00	ug/L	0.300	1.00
75-25-2	Bromoform	U	1.00	ug/L	0.300	1.00

**Volatile
Certificate of Analysis
Sample Summary**

SDG Number:	2017-865	Date Collected:	01/13/2017 12:40	Matrix:	W
Lab Sample ID:	414461001	Date Received:	01/18/2017 08:50		
Client Sample:	VOA	Client:	ARSL004	Project:	ESHL00114
Client ID:	CAPA-17-129180	Method:	SW-846:8260B	SOP Ref:	GL-OA-E-038
Batch ID:	1633830	Inst:	VOA9.I	Dilution:	1
Run Date:	01/25/2017 03:57	Analyst:	RXY1	Purge Vol:	5 mL
Prep Date:	01/25/2017 03:57				
Data File:	012417V9\9C239.D	Column:	DB-624		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
74-83-9	Bromomethane	U	1.00	ug/L	0.300	1.00
75-15-0	Carbon disulfide	U	5.00	ug/L	1.50	5.00
56-23-5	Carbon tetrachloride	U	1.00	ug/L	0.300	1.00
108-90-7	Chlorobenzene	U	1.00	ug/L	0.300	1.00
75-00-3	Chloroethane	U	1.00	ug/L	0.300	1.00
67-66-3	Chloroform	U	1.00	ug/L	0.300	1.00
74-87-3	Chloromethane	U	1.00	ug/L	0.300	1.00
124-48-1	Dibromochloromethane	U	1.00	ug/L	0.300	1.00
74-95-3	Dibromomethane	U	1.00	ug/L	0.300	1.00
75-71-8	Dichlorodifluoromethane	U	1.00	ug/L	0.300	1.00
60-29-7	Ethyl ether	U	1.00	ug/L	0.300	1.00
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.50	5.00
100-41-4	Ethylbenzene	U	1.00	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene	U	1.00	ug/L	0.300	1.00
74-88-4	Iodomethane	U	5.00	ug/L	1.50	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	15.0	50.0
98-82-8	Isopropylbenzene	U	1.00	ug/L	0.300	1.00
126-98-7	Methacrylonitrile	U	5.00	ug/L	1.50	5.00
80-62-6	Methyl methacrylate	U	5.00	ug/L	1.50	5.00
75-09-2	Methylene chloride	U	10.0	ug/L	1.00	10.0
91-20-3	Naphthalene	U	1.00	ug/L	0.300	1.00
107-12-0	Propionitrile	U	5.00	ug/L	1.50	5.00
100-42-5	Styrene	U	1.00	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene	U	1.00	ug/L	0.300	1.00
108-88-3	Toluene	U	1.00	ug/L	0.300	1.00
79-01-6	Trichloroethylene	U	1.00	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane	U	1.00	ug/L	0.300	1.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	2.00	5.00
108-05-4	Vinyl acetate	U	5.00	ug/L	1.50	5.00
75-01-4	Vinyl chloride	U	1.00	ug/L	0.300	1.00
156-59-2	cis-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
10061-01-5	cis-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes	U	2.00	ug/L	0.300	2.00
71-36-3	n-Butyl alcohol	U	50.0	ug/L	15.0	50.0
104-51-8	n-Butylbenzene	U	1.00	ug/L	0.300	1.00
103-65-1	n-Propylbenzene	U	1.00	ug/L	0.300	1.00
95-47-6	o-Xylene	U	1.00	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene	U	1.00	ug/L	0.300	1.00

**Volatile
Certificate of Analysis
Sample Summary**

SDG Number: 2017-865	Date Collected: 01/13/2017 12:40	Matrix: W
Lab Sample ID: 414461001	Date Received: 01/18/2017 08:50	
Client Sample: VOA	Client: ARSL004	Project: ESHL00114
Client ID: CAPA-17-129180	Method: SW-846:8260B	SOP Ref: GL-OA-E-038
Batch ID: 1633830	Inst: VOA9.I	Dilution: 1
Run Date: 01/25/2017 03:57	Analyst: RXY1	Purge Vol: 5 mL
Prep Date: 01/25/2017 03:57		
Data File: 012417V9\9C239.D	Column: DB-624	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
1634-04-4	tert-Butyl methyl ether	U	1.00	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene	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
10061-02-6	trans-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	54.5	50.0	ug/L 109	(71%-134%)
Bromofluorobenzene	52.6	50.0	ug/L 105	(70%-131%)
Toluene-d8	50.3	50.0	ug/L 101	(74%-124%)

Tentatively Identified Compound Summary

CAS No.	Tentatively Identified Compound (TIC)	RT	Estimated	Units	Fit	Qual
	unknown siloxane	14.651	12.5	ug/L	0	J

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 2017-865	Date Collected: 01/13/2017 12:40	Matrix: W
Lab Sample ID: 414461002	Date Received: 01/18/2017 08:50	
Client Sample: VOA	Client: ARSL004	Project: ESHL00114
Client ID: CAPA-17-129230	Method: SW-846:8260B	SOP Ref: GL-OA-E-038
Batch ID: 1633830	Inst: VOA9.I	Dilution: 1
Run Date: 01/25/2017 03:04	Analyst: RXY1	Purge Vol: 5 mL
Prep Date: 01/25/2017 03:04		
Data File: 012417V9\9C237.D	Column: DB-624	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
630-20-6	1,1,1,2-Tetrachloroethane	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
79-34-5	1,1,2,2-Tetrachloroethane	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
75-34-3	1,1-Dichloroethane	U	1.00	ug/L	0.300	1.00
75-35-4	1,1-Dichloroethylene	U	1.00	ug/L	0.300	1.00
563-58-6	1,1-Dichloropropene	U	1.00	ug/L	0.300	1.00
87-61-6	1,2,3-Trichlorobenzene	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
120-82-1	1,2,4-Trichlorobenzene	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
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.500	1.00
106-93-4	1,2-Dibromoethane	U	1.00	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane	U	1.00	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane	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
541-73-1	1,3-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
142-28-9	1,3-Dichloropropane	U	1.00	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
78-93-3	2-Butanone	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
95-49-8	2-Chlorotoluene	U	1.00	ug/L	0.300	1.00
591-78-6	2-Hexanone	U	5.00	ug/L	1.50	5.00
106-43-4	4-Chlorotoluene	U	1.00	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene	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
67-64-1	Acetone	BJ	1.66	ug/L	1.50	10.0
75-05-8	Acetonitrile	U	25.0	ug/L	8.00	25.0
107-02-8	Acrolein	U	5.00	ug/L	1.50	5.00
107-13-1	Acrylonitrile	U	5.00	ug/L	1.50	5.00
107-05-1	Allyl chloride	U	5.00	ug/L	1.50	5.00
71-43-2	Benzene	U	1.00	ug/L	0.300	1.00
108-86-1	Bromobenzene	U	1.00	ug/L	0.300	1.00
74-97-5	Bromochloromethane	U	1.00	ug/L	0.300	1.00
75-27-4	Bromodichloromethane	U	1.00	ug/L	0.300	1.00
75-25-2	Bromoform	U	1.00	ug/L	0.300	1.00

**Volatile
Certificate of Analysis
Sample Summary**

SDG Number:	2017-865	Date Collected:	01/13/2017 12:40	Matrix:	W
Lab Sample ID:	414461002	Date Received:	01/18/2017 08:50		
Client Sample:	VOA	Client:	ARSL004	Project:	ESHL00114
Client ID:	CAPA-17-129230	Method:	SW-846:8260B	SOP Ref:	GL-OA-E-038
Batch ID:	1633830	Inst:	VOA9.I	Dilution:	1
Run Date:	01/25/2017 03:04	Analyst:	RXY1	Purge Vol:	5 mL
Prep Date:	01/25/2017 03:04				
Data File:	012417V9\9C237.D	Column:	DB-624		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
74-83-9	Bromomethane	U	1.00	ug/L	0.300	1.00
75-15-0	Carbon disulfide	J	3.09	ug/L	1.50	5.00
56-23-5	Carbon tetrachloride	U	1.00	ug/L	0.300	1.00
108-90-7	Chlorobenzene	U	1.00	ug/L	0.300	1.00
75-00-3	Chloroethane	U	1.00	ug/L	0.300	1.00
67-66-3	Chloroform	U	1.00	ug/L	0.300	1.00
74-87-3	Chloromethane	U	1.00	ug/L	0.300	1.00
124-48-1	Dibromochloromethane	U	1.00	ug/L	0.300	1.00
74-95-3	Dibromomethane	U	1.00	ug/L	0.300	1.00
75-71-8	Dichlorodifluoromethane	U	1.00	ug/L	0.300	1.00
60-29-7	Ethyl ether	U	1.00	ug/L	0.300	1.00
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.50	5.00
100-41-4	Ethylbenzene	U	1.00	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene	U	1.00	ug/L	0.300	1.00
74-88-4	Iodomethane	U	5.00	ug/L	1.50	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	15.0	50.0
98-82-8	Isopropylbenzene	U	1.00	ug/L	0.300	1.00
126-98-7	Methacrylonitrile	U	5.00	ug/L	1.50	5.00
80-62-6	Methyl methacrylate	U	5.00	ug/L	1.50	5.00
75-09-2	Methylene chloride	U	10.0	ug/L	1.00	10.0
91-20-3	Naphthalene	U	1.00	ug/L	0.300	1.00
107-12-0	Propionitrile	U	5.00	ug/L	1.50	5.00
100-42-5	Styrene	U	1.00	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene	U	1.00	ug/L	0.300	1.00
108-88-3	Toluene	U	1.00	ug/L	0.300	1.00
79-01-6	Trichloroethylene	U	1.00	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane	U	1.00	ug/L	0.300	1.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	2.00	5.00
108-05-4	Vinyl acetate	U	5.00	ug/L	1.50	5.00
75-01-4	Vinyl chloride	U	1.00	ug/L	0.300	1.00
156-59-2	cis-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
10061-01-5	cis-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes	U	2.00	ug/L	0.300	2.00
71-36-3	n-Butyl alcohol	U	50.0	ug/L	15.0	50.0
104-51-8	n-Butylbenzene	U	1.00	ug/L	0.300	1.00
103-65-1	n-Propylbenzene	U	1.00	ug/L	0.300	1.00
95-47-6	o-Xylene	U	1.00	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene	U	1.00	ug/L	0.300	1.00

**Volatile
Certificate of Analysis
Sample Summary**

SDG Number: 2017-865	Date Collected: 01/13/2017 12:40	Matrix: W
Lab Sample ID: 414461002	Date Received: 01/18/2017 08:50	
Client Sample: VOA	Client: ARSL004	Project: ESHL00114
Client ID: CAPA-17-129230	Method: SW-846:8260B	SOP Ref: GL-OA-E-038
Batch ID: 1633830	Inst: VOA9.I	Dilution: 1
Run Date: 01/25/2017 03:04	Analyst: RXY1	Purge Vol: 5 mL
Prep Date: 01/25/2017 03:04		
Data File: 012417V9\9C237.D	Column: DB-624	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
1634-04-4	tert-Butyl methyl ether	U	1.00	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene	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
10061-02-6	trans-1,3-Dichloropropylene	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	(71%-134%)
Bromofluorobenzene	53.2	50.0	ug/L 106	(70%-131%)
Toluene-d8	51.6	50.0	ug/L 103	(74%-124%)

Tentatively Identified Compound Summary

CAS No.	Tentatively Identified Compound (TIC)	RT	Estimated	Units	Fit	Qual
	unknown siloxane	14.651	23.4	ug/L	0	J

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 2017-865	Date Collected: 01/13/2017 12:23	Matrix: W
Lab Sample ID: 414461003	Date Received: 01/18/2017 08:50	
Client Sample: VOA	Client: ARSL004	Project: ESHL00114
Client ID: CAPA-17-129189	Method: SW-846:8260B	SOP Ref: GL-OA-E-038
Batch ID: 1633830	Inst: VOA9.I	Dilution: 1
Run Date: 01/25/2017 04:24	Analyst: RXY1	Purge Vol: 5 mL
Prep Date: 01/25/2017 04:24		
Data File: 012417V9\9C240.D	Column: DB-624	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
630-20-6	1,1,1,2-Tetrachloroethane	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
79-34-5	1,1,2,2-Tetrachloroethane	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
75-34-3	1,1-Dichloroethane	U	1.00	ug/L	0.300	1.00
75-35-4	1,1-Dichloroethylene	U	1.00	ug/L	0.300	1.00
563-58-6	1,1-Dichloropropene	U	1.00	ug/L	0.300	1.00
87-61-6	1,2,3-Trichlorobenzene	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
120-82-1	1,2,4-Trichlorobenzene	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
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.500	1.00
106-93-4	1,2-Dibromoethane	U	1.00	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane	U	1.00	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane	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
541-73-1	1,3-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
142-28-9	1,3-Dichloropropane	U	1.00	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
78-93-3	2-Butanone	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
95-49-8	2-Chlorotoluene	U	1.00	ug/L	0.300	1.00
591-78-6	2-Hexanone	U	5.00	ug/L	1.50	5.00
106-43-4	4-Chlorotoluene	U	1.00	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene	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
67-64-1	Acetone	U	10.0	ug/L	1.50	10.0
75-05-8	Acetonitrile	U	25.0	ug/L	8.00	25.0
107-02-8	Acrolein	U	5.00	ug/L	1.50	5.00
107-13-1	Acrylonitrile	U	5.00	ug/L	1.50	5.00
107-05-1	Allyl chloride	U	5.00	ug/L	1.50	5.00
71-43-2	Benzene	U	1.00	ug/L	0.300	1.00
108-86-1	Bromobenzene	U	1.00	ug/L	0.300	1.00
74-97-5	Bromochloromethane	U	1.00	ug/L	0.300	1.00
75-27-4	Bromodichloromethane	U	1.00	ug/L	0.300	1.00
75-25-2	Bromoform	U	1.00	ug/L	0.300	1.00

**Volatile
Certificate of Analysis
Sample Summary**

SDG Number:	2017-865	Date Collected:	01/13/2017 12:23	Matrix:	W
Lab Sample ID:	414461003	Date Received:	01/18/2017 08:50		
Client Sample:	VOA	Client:	ARSL004	Project:	ESHL00114
Client ID:	CAPA-17-129189	Method:	SW-846:8260B	SOP Ref:	GL-OA-E-038
Batch ID:	1633830	Inst:	VOA9.I	Dilution:	1
Run Date:	01/25/2017 04:24	Analyst:	RXY1	Purge Vol:	5 mL
Prep Date:	01/25/2017 04:24				
Data File:	012417V9\9C240.D	Column:	DB-624		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
74-83-9	Bromomethane	U	1.00	ug/L	0.300	1.00
75-15-0	Carbon disulfide	U	5.00	ug/L	1.50	5.00
56-23-5	Carbon tetrachloride	U	1.00	ug/L	0.300	1.00
108-90-7	Chlorobenzene	U	1.00	ug/L	0.300	1.00
75-00-3	Chloroethane	U	1.00	ug/L	0.300	1.00
67-66-3	Chloroform	U	1.00	ug/L	0.300	1.00
74-87-3	Chloromethane	U	1.00	ug/L	0.300	1.00
124-48-1	Dibromochloromethane	U	1.00	ug/L	0.300	1.00
74-95-3	Dibromomethane	U	1.00	ug/L	0.300	1.00
75-71-8	Dichlorodifluoromethane	U	1.00	ug/L	0.300	1.00
60-29-7	Ethyl ether	U	1.00	ug/L	0.300	1.00
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.50	5.00
100-41-4	Ethylbenzene	U	1.00	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene	U	1.00	ug/L	0.300	1.00
74-88-4	Iodomethane	U	5.00	ug/L	1.50	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	15.0	50.0
98-82-8	Isopropylbenzene	U	1.00	ug/L	0.300	1.00
126-98-7	Methacrylonitrile	U	5.00	ug/L	1.50	5.00
80-62-6	Methyl methacrylate	U	5.00	ug/L	1.50	5.00
75-09-2	Methylene chloride	U	10.0	ug/L	1.00	10.0
91-20-3	Naphthalene	U	1.00	ug/L	0.300	1.00
107-12-0	Propionitrile	U	5.00	ug/L	1.50	5.00
100-42-5	Styrene	U	1.00	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene	U	1.00	ug/L	0.300	1.00
108-88-3	Toluene	U	1.00	ug/L	0.300	1.00
79-01-6	Trichloroethylene	U	1.00	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane	U	1.00	ug/L	0.300	1.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	2.00	5.00
108-05-4	Vinyl acetate	U	5.00	ug/L	1.50	5.00
75-01-4	Vinyl chloride	U	1.00	ug/L	0.300	1.00
156-59-2	cis-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
10061-01-5	cis-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes	U	2.00	ug/L	0.300	2.00
71-36-3	n-Butyl alcohol	U	50.0	ug/L	15.0	50.0
104-51-8	n-Butylbenzene	U	1.00	ug/L	0.300	1.00
103-65-1	n-Propylbenzene	U	1.00	ug/L	0.300	1.00
95-47-6	o-Xylene	U	1.00	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene	U	1.00	ug/L	0.300	1.00

**Volatile
Certificate of Analysis
Sample Summary**

SDG Number:	2017-865	Date Collected:	01/13/2017 12:23	Matrix:	W
Lab Sample ID:	414461003	Date Received:	01/18/2017 08:50		
Client Sample:	VOA	Client:	ARSL004	Project:	ESHL00114
Client ID:	CAPA-17-129189	Method:	SW-846:8260B	SOP Ref:	GL-OA-E-038
Batch ID:	1633830	Inst:	VOA9.I	Dilution:	1
Run Date:	01/25/2017 04:24	Analyst:	RXY1	Purge Vol:	5 mL
Prep Date:	01/25/2017 04:24				
Data File:	012417V9\9C240.D	Column:	DB-624		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
1634-04-4	tert-Butyl methyl ether	U	1.00	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene	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
10061-02-6	trans-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	54.9	50.0	ug/L 110	(71%-134%)
Bromofluorobenzene	51.0	50.0	ug/L 102	(70%-131%)
Toluene-d8	50.1	50.0	ug/L 100	(74%-124%)

Tentatively Identified Compound Summary

CAS No.	Tentatively Identified Compound (TIC)	RT	Estimated	Units	Fit	Qual
	unknown siloxane	14.651	5.21	ug/L	0	J

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 2017-865	Date Collected: 01/13/2017 09:53	Matrix: W
Lab Sample ID: 414461004	Date Received: 01/18/2017 08:50	
Client Sample: VOA/TKN/TOC	Client: ARSL004	Project: ESHL00114
Client ID: CAPA-17-129209	Method: SW-846:8260B	SOP Ref: GL-OA-E-038
Batch ID: 1633830	Inst: VOA9.I	Dilution: 1
Run Date: 01/25/2017 04:50	Analyst: RXY1	Purge Vol: 5 mL
Prep Date: 01/25/2017 04:50		
Data File: 012417V9\9C241.D	Column: DB-624	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
630-20-6	1,1,1,2-Tetrachloroethane	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
79-34-5	1,1,2,2-Tetrachloroethane	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
75-34-3	1,1-Dichloroethane	U	1.00	ug/L	0.300	1.00
75-35-4	1,1-Dichloroethylene	U	1.00	ug/L	0.300	1.00
563-58-6	1,1-Dichloropropene	U	1.00	ug/L	0.300	1.00
87-61-6	1,2,3-Trichlorobenzene	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
120-82-1	1,2,4-Trichlorobenzene	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
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.500	1.00
106-93-4	1,2-Dibromoethane	U	1.00	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane	U	1.00	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane	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
541-73-1	1,3-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
142-28-9	1,3-Dichloropropane	U	1.00	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
78-93-3	2-Butanone	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
95-49-8	2-Chlorotoluene	U	1.00	ug/L	0.300	1.00
591-78-6	2-Hexanone	U	5.00	ug/L	1.50	5.00
106-43-4	4-Chlorotoluene	U	1.00	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene	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
67-64-1	Acetone	U	10.0	ug/L	1.50	10.0
75-05-8	Acetonitrile	U	25.0	ug/L	8.00	25.0
107-02-8	Acrolein	U	5.00	ug/L	1.50	5.00
107-13-1	Acrylonitrile	U	5.00	ug/L	1.50	5.00
107-05-1	Allyl chloride	U	5.00	ug/L	1.50	5.00
71-43-2	Benzene	U	1.00	ug/L	0.300	1.00
108-86-1	Bromobenzene	U	1.00	ug/L	0.300	1.00
74-97-5	Bromochloromethane	U	1.00	ug/L	0.300	1.00
75-27-4	Bromodichloromethane	U	1.00	ug/L	0.300	1.00
75-25-2	Bromoform	U	1.00	ug/L	0.300	1.00

**Volatile
Certificate of Analysis
Sample Summary**

SDG Number:	2017-865	Date Collected:	01/13/2017 09:53	Matrix:	W
Lab Sample ID:	414461004	Date Received:	01/18/2017 08:50		
Client Sample:	VOA/TKN/TOC	Client:	ARSL004	Project:	ESHL00114
Client ID:	CAPA-17-129209	Method:	SW-846:8260B	SOP Ref:	GL-OA-E-038
Batch ID:	1633830	Inst:	VOA9.I	Dilution:	1
Run Date:	01/25/2017 04:50	Analyst:	RXY1	Purge Vol:	5 mL
Prep Date:	01/25/2017 04:50				
Data File:	012417V9\9C241.D	Column:	DB-624		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
74-83-9	Bromomethane	U	1.00	ug/L	0.300	1.00
75-15-0	Carbon disulfide	U	5.00	ug/L	1.50	5.00
56-23-5	Carbon tetrachloride	U	1.00	ug/L	0.300	1.00
108-90-7	Chlorobenzene	U	1.00	ug/L	0.300	1.00
75-00-3	Chloroethane	U	1.00	ug/L	0.300	1.00
67-66-3	Chloroform	U	1.00	ug/L	0.300	1.00
74-87-3	Chloromethane	U	1.00	ug/L	0.300	1.00
124-48-1	Dibromochloromethane	U	1.00	ug/L	0.300	1.00
74-95-3	Dibromomethane	U	1.00	ug/L	0.300	1.00
75-71-8	Dichlorodifluoromethane	U	1.00	ug/L	0.300	1.00
60-29-7	Ethyl ether	U	1.00	ug/L	0.300	1.00
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.50	5.00
100-41-4	Ethylbenzene	U	1.00	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene	U	1.00	ug/L	0.300	1.00
74-88-4	Iodomethane	U	5.00	ug/L	1.50	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	15.0	50.0
98-82-8	Isopropylbenzene	U	1.00	ug/L	0.300	1.00
126-98-7	Methacrylonitrile	U	5.00	ug/L	1.50	5.00
80-62-6	Methyl methacrylate	U	5.00	ug/L	1.50	5.00
75-09-2	Methylene chloride	U	10.0	ug/L	1.00	10.0
91-20-3	Naphthalene	U	1.00	ug/L	0.300	1.00
107-12-0	Propionitrile	U	5.00	ug/L	1.50	5.00
100-42-5	Styrene	U	1.00	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene	U	1.00	ug/L	0.300	1.00
108-88-3	Toluene	U	1.00	ug/L	0.300	1.00
79-01-6	Trichloroethylene	U	1.00	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane	U	1.00	ug/L	0.300	1.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	2.00	5.00
108-05-4	Vinyl acetate	U	5.00	ug/L	1.50	5.00
75-01-4	Vinyl chloride	U	1.00	ug/L	0.300	1.00
156-59-2	cis-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
10061-01-5	cis-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes	U	2.00	ug/L	0.300	2.00
71-36-3	n-Butyl alcohol	U	50.0	ug/L	15.0	50.0
104-51-8	n-Butylbenzene	U	1.00	ug/L	0.300	1.00
103-65-1	n-Propylbenzene	U	1.00	ug/L	0.300	1.00
95-47-6	o-Xylene	U	1.00	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene	U	1.00	ug/L	0.300	1.00

**Volatile
Certificate of Analysis
Sample Summary**

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SDG Number: 2017-865	Date Collected: 01/13/2017 09:53	Matrix: W
Lab Sample ID: 414461004	Date Received: 01/18/2017 08:50	
Client Sample: VOA/TKN/TOC	Client: ARSL004	Project: ESHL00114
Client ID: CAPA-17-129209	Method: SW-846:8260B	SOP Ref: GL-OA-E-038
Batch ID: 1633830	Inst: VOA9.I	Dilution: 1
Run Date: 01/25/2017 04:50	Analyst: RXY1	Purge Vol: 5 mL
Prep Date: 01/25/2017 04:50		
Data File: 012417V9\9C241.D	Column: DB-624	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
1634-04-4	tert-Butyl methyl ether	U	1.00	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene	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
10061-02-6	trans-1,3-Dichloropropylene	U	1.00	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	(71%-134%)
Bromofluorobenzene	52.2	50.0	ug/L 104	(70%-131%)
Toluene-d8	50.9	50.0	ug/L 102	(74%-124%)

Tentatively Identified Compound Summary

CAS No.	Tentatively Identified Compound (TIC)	RT	Estimated	Units	Fit	Qual
	unknown siloxane	14.652	15.4	ug/L	0	J

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 2017-865	Date Collected: 01/13/2017 12:23	Matrix: W
Lab Sample ID: 414461005	Date Received: 01/18/2017 08:50	
Client Sample: VOA	Client: ARSL004	Project: ESHL00114
Client ID: CAPA-17-129211	Method: SW-846:8260B	SOP Ref: GL-OA-E-038
Batch ID: 1633830	Inst: VOA9.I	Dilution: 1
Run Date: 01/25/2017 05:17	Analyst: RXY1	Purge Vol: 5 mL
Prep Date: 01/25/2017 05:17		
Data File: 012417V9\9C242.D	Column: DB-624	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
630-20-6	1,1,1,2-Tetrachloroethane	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
79-34-5	1,1,2,2-Tetrachloroethane	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
75-34-3	1,1-Dichloroethane	U	1.00	ug/L	0.300	1.00
75-35-4	1,1-Dichloroethylene	U	1.00	ug/L	0.300	1.00
563-58-6	1,1-Dichloropropene	U	1.00	ug/L	0.300	1.00
87-61-6	1,2,3-Trichlorobenzene	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
120-82-1	1,2,4-Trichlorobenzene	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
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.500	1.00
106-93-4	1,2-Dibromoethane	U	1.00	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane	U	1.00	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane	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
541-73-1	1,3-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
142-28-9	1,3-Dichloropropane	U	1.00	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
78-93-3	2-Butanone	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
95-49-8	2-Chlorotoluene	U	1.00	ug/L	0.300	1.00
591-78-6	2-Hexanone	U	5.00	ug/L	1.50	5.00
106-43-4	4-Chlorotoluene	U	1.00	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene	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
67-64-1	Acetone	U	10.0	ug/L	1.50	10.0
75-05-8	Acetonitrile	U	25.0	ug/L	8.00	25.0
107-02-8	Acrolein	U	5.00	ug/L	1.50	5.00
107-13-1	Acrylonitrile	U	5.00	ug/L	1.50	5.00
107-05-1	Allyl chloride	U	5.00	ug/L	1.50	5.00
71-43-2	Benzene	U	1.00	ug/L	0.300	1.00
108-86-1	Bromobenzene	U	1.00	ug/L	0.300	1.00
74-97-5	Bromochloromethane	U	1.00	ug/L	0.300	1.00
75-27-4	Bromodichloromethane	U	1.00	ug/L	0.300	1.00
75-25-2	Bromoform	U	1.00	ug/L	0.300	1.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 2017-865	Date Collected: 01/13/2017 12:23	Matrix: W
Lab Sample ID: 414461005	Date Received: 01/18/2017 08:50	
Client Sample: VOA	Client: ARSL004	Project: ESHL00114
Client ID: CAPA-17-129211	Method: SW-846:8260B	SOP Ref: GL-OA-E-038
Batch ID: 1633830	Inst: VOA9.I	Dilution: 1
Run Date: 01/25/2017 05:17	Analyst: RXY1	Purge Vol: 5 mL
Prep Date: 01/25/2017 05:17		
Data File: 012417V9\9C242.D	Column: DB-624	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
74-83-9	Bromomethane	U	1.00	ug/L	0.300	1.00
75-15-0	Carbon disulfide	U	5.00	ug/L	1.50	5.00
56-23-5	Carbon tetrachloride	U	1.00	ug/L	0.300	1.00
108-90-7	Chlorobenzene	U	1.00	ug/L	0.300	1.00
75-00-3	Chloroethane	U	1.00	ug/L	0.300	1.00
67-66-3	Chloroform	U	1.00	ug/L	0.300	1.00
74-87-3	Chloromethane	U	1.00	ug/L	0.300	1.00
124-48-1	Dibromochloromethane	U	1.00	ug/L	0.300	1.00
74-95-3	Dibromomethane	U	1.00	ug/L	0.300	1.00
75-71-8	Dichlorodifluoromethane	U	1.00	ug/L	0.300	1.00
60-29-7	Ethyl ether	U	1.00	ug/L	0.300	1.00
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.50	5.00
100-41-4	Ethylbenzene	U	1.00	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene	U	1.00	ug/L	0.300	1.00
74-88-4	Iodomethane	U	5.00	ug/L	1.50	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	15.0	50.0
98-82-8	Isopropylbenzene	U	1.00	ug/L	0.300	1.00
126-98-7	Methacrylonitrile	U	5.00	ug/L	1.50	5.00
80-62-6	Methyl methacrylate	U	5.00	ug/L	1.50	5.00
75-09-2	Methylene chloride	U	10.0	ug/L	1.00	10.0
91-20-3	Naphthalene	U	1.00	ug/L	0.300	1.00
107-12-0	Propionitrile	U	5.00	ug/L	1.50	5.00
100-42-5	Styrene	U	1.00	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene	U	1.00	ug/L	0.300	1.00
108-88-3	Toluene	U	1.00	ug/L	0.300	1.00
79-01-6	Trichloroethylene	U	1.00	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane	U	1.00	ug/L	0.300	1.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	2.00	5.00
108-05-4	Vinyl acetate	U	5.00	ug/L	1.50	5.00
75-01-4	Vinyl chloride	U	1.00	ug/L	0.300	1.00
156-59-2	cis-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
10061-01-5	cis-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes	U	2.00	ug/L	0.300	2.00
71-36-3	n-Butyl alcohol	U	50.0	ug/L	15.0	50.0
104-51-8	n-Butylbenzene	U	1.00	ug/L	0.300	1.00
103-65-1	n-Propylbenzene	U	1.00	ug/L	0.300	1.00
95-47-6	o-Xylene	U	1.00	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene	U	1.00	ug/L	0.300	1.00

**Volatile
Certificate of Analysis
Sample Summary**

SDG Number: 2017-865	Date Collected: 01/13/2017 12:23	Matrix: W
Lab Sample ID: 414461005	Date Received: 01/18/2017 08:50	
Client Sample: VOA	Client: ARSL004	Project: ESHL00114
Client ID: CAPA-17-129211	Method: SW-846:8260B	SOP Ref: GL-OA-E-038
Batch ID: 1633830	Inst: VOA9.I	Dilution: 1
Run Date: 01/25/2017 05:17	Analyst: RXY1	Purge Vol: 5 mL
Prep Date: 01/25/2017 05:17		
Data File: 012417V9\9C242.D	Column: DB-624	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
1634-04-4	tert-Butyl methyl ether	U	1.00	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene	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
10061-02-6	trans-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	55.4	50.0	ug/L 111	(71%-134%)
Bromofluorobenzene	52.7	50.0	ug/L 105	(70%-131%)
Toluene-d8	50.7	50.0	ug/L 101	(74%-124%)

Tentatively Identified Compound Summary

CAS No.	Tentatively Identified Compound (TIC)	RT	Estimated	Units	Fit	Qual
	unknown siloxane	12.292	6.07	ug/L	0	J
	unknown siloxane	14.663	14.6	ug/L	0	J

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 2017-865	Date Collected: 01/13/2017 12:23	Matrix: W
Lab Sample ID: 414461006	Date Received: 01/18/2017 08:50	
Client Sample: VOA	Client: ARSL004	Project: ESHL00114
Client ID: CAPA-17-129213	Method: SW-846:8260B	SOP Ref: GL-OA-E-038
Batch ID: 1633830	Inst: VOA9.I	Dilution: 1
Run Date: 01/25/2017 05:43	Analyst: RXY1	Purge Vol: 5 mL
Prep Date: 01/25/2017 05:43		
Data File: 012417V9\9C243.D	Column: DB-624	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
630-20-6	1,1,1,2-Tetrachloroethane	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
79-34-5	1,1,2,2-Tetrachloroethane	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
75-34-3	1,1-Dichloroethane	U	1.00	ug/L	0.300	1.00
75-35-4	1,1-Dichloroethylene	U	1.00	ug/L	0.300	1.00
563-58-6	1,1-Dichloropropene	U	1.00	ug/L	0.300	1.00
87-61-6	1,2,3-Trichlorobenzene	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
120-82-1	1,2,4-Trichlorobenzene	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
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.500	1.00
106-93-4	1,2-Dibromoethane	U	1.00	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane	U	1.00	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane	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
541-73-1	1,3-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
142-28-9	1,3-Dichloropropane	U	1.00	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
78-93-3	2-Butanone	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
95-49-8	2-Chlorotoluene	U	1.00	ug/L	0.300	1.00
591-78-6	2-Hexanone	U	5.00	ug/L	1.50	5.00
106-43-4	4-Chlorotoluene	U	1.00	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene	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
67-64-1	Acetone	U	10.0	ug/L	1.50	10.0
75-05-8	Acetonitrile	U	25.0	ug/L	8.00	25.0
107-02-8	Acrolein	U	5.00	ug/L	1.50	5.00
107-13-1	Acrylonitrile	U	5.00	ug/L	1.50	5.00
107-05-1	Allyl chloride	U	5.00	ug/L	1.50	5.00
71-43-2	Benzene	U	1.00	ug/L	0.300	1.00
108-86-1	Bromobenzene	U	1.00	ug/L	0.300	1.00
74-97-5	Bromochloromethane	U	1.00	ug/L	0.300	1.00
75-27-4	Bromodichloromethane	U	1.00	ug/L	0.300	1.00
75-25-2	Bromoform	U	1.00	ug/L	0.300	1.00

**Volatile
Certificate of Analysis
Sample Summary**

SDG Number:	2017-865	Date Collected:	01/13/2017 12:23	Matrix:	W
Lab Sample ID:	414461006	Date Received:	01/18/2017 08:50		
Client Sample:	VOA	Client:	ARSL004	Project:	ESHL00114
Client ID:	CAPA-17-129213	Method:	SW-846:8260B	SOP Ref:	GL-OA-E-038
Batch ID:	1633830	Inst:	VOA9.I	Dilution:	1
Run Date:	01/25/2017 05:43	Analyst:	RXY1	Purge Vol:	5 mL
Prep Date:	01/25/2017 05:43				
Data File:	012417V9\9C243.D	Column:	DB-624		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
74-83-9	Bromomethane	U	1.00	ug/L	0.300	1.00
75-15-0	Carbon disulfide	U	5.00	ug/L	1.50	5.00
56-23-5	Carbon tetrachloride	U	1.00	ug/L	0.300	1.00
108-90-7	Chlorobenzene	U	1.00	ug/L	0.300	1.00
75-00-3	Chloroethane	U	1.00	ug/L	0.300	1.00
67-66-3	Chloroform	U	1.00	ug/L	0.300	1.00
74-87-3	Chloromethane	U	1.00	ug/L	0.300	1.00
124-48-1	Dibromochloromethane	U	1.00	ug/L	0.300	1.00
74-95-3	Dibromomethane	U	1.00	ug/L	0.300	1.00
75-71-8	Dichlorodifluoromethane	U	1.00	ug/L	0.300	1.00
60-29-7	Ethyl ether	U	1.00	ug/L	0.300	1.00
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.50	5.00
100-41-4	Ethylbenzene	U	1.00	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene	U	1.00	ug/L	0.300	1.00
74-88-4	Iodomethane	U	5.00	ug/L	1.50	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	15.0	50.0
98-82-8	Isopropylbenzene	U	1.00	ug/L	0.300	1.00
126-98-7	Methacrylonitrile	U	5.00	ug/L	1.50	5.00
80-62-6	Methyl methacrylate	U	5.00	ug/L	1.50	5.00
75-09-2	Methylene chloride	U	10.0	ug/L	1.00	10.0
91-20-3	Naphthalene	U	1.00	ug/L	0.300	1.00
107-12-0	Propionitrile	U	5.00	ug/L	1.50	5.00
100-42-5	Styrene	U	1.00	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene	U	1.00	ug/L	0.300	1.00
108-88-3	Toluene	U	1.00	ug/L	0.300	1.00
79-01-6	Trichloroethylene	U	1.00	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane	U	1.00	ug/L	0.300	1.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	2.00	5.00
108-05-4	Vinyl acetate	U	5.00	ug/L	1.50	5.00
75-01-4	Vinyl chloride	U	1.00	ug/L	0.300	1.00
156-59-2	cis-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
10061-01-5	cis-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes	U	2.00	ug/L	0.300	2.00
71-36-3	n-Butyl alcohol	U	50.0	ug/L	15.0	50.0
104-51-8	n-Butylbenzene	U	1.00	ug/L	0.300	1.00
103-65-1	n-Propylbenzene	U	1.00	ug/L	0.300	1.00
95-47-6	o-Xylene	U	1.00	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene	U	1.00	ug/L	0.300	1.00

**Volatile
Certificate of Analysis
Sample Summary**

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SDG Number:	2017-865	Date Collected:	01/13/2017 12:23	Matrix:	W
Lab Sample ID:	414461006	Date Received:	01/18/2017 08:50		
Client Sample:	VOA	Client:	ARSL004	Project:	ESHL00114
Client ID:	CAPA-17-129213	Method:	SW-846:8260B	SOP Ref:	GL-OA-E-038
Batch ID:	1633830	Inst:	VOA9.I	Dilution:	1
Run Date:	01/25/2017 05:43	Analyst:	RXY1	Purge Vol:	5 mL
Prep Date:	01/25/2017 05:43				
Data File:	012417V9\9C243.D	Column:	DB-624		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
1634-04-4	tert-Butyl methyl ether	U	1.00	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene	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
10061-02-6	trans-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	54.1	50.0	ug/L 108	(71%-134%)
Bromofluorobenzene	52.1	50.0	ug/L 104	(70%-131%)
Toluene-d8	50.7	50.0	ug/L 101	(74%-124%)

Tentatively Identified Compound Summary

CAS No.	Tentatively Identified Compound (TIC)	RT	Estimated	Units	Fit	Qual
	unknown siloxane	14.651	18.7	ug/L	0	J

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 2017-865	Date Collected: 01/13/2017 12:23	Matrix: W
Lab Sample ID: 414461007	Date Received: 01/18/2017 08:50	
Client Sample: VOA	Client: ARSL004	Project: ESHL00114
Client ID: CAPA-17-129227	Method: SW-846:8260B	SOP Ref: GL-OA-E-038
Batch ID: 1633830	Inst: VOA9.I	Dilution: 1
Run Date: 01/25/2017 03:30	Analyst: RXY1	Purge Vol: 5 mL
Prep Date: 01/25/2017 03:30		
Data File: 012417V9\9C238.D	Column: DB-624	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
630-20-6	1,1,1,2-Tetrachloroethane	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
79-34-5	1,1,2,2-Tetrachloroethane	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
75-34-3	1,1-Dichloroethane	U	1.00	ug/L	0.300	1.00
75-35-4	1,1-Dichloroethylene	U	1.00	ug/L	0.300	1.00
563-58-6	1,1-Dichloropropene	U	1.00	ug/L	0.300	1.00
87-61-6	1,2,3-Trichlorobenzene	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
120-82-1	1,2,4-Trichlorobenzene	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
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.500	1.00
106-93-4	1,2-Dibromoethane	U	1.00	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane	U	1.00	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane	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
541-73-1	1,3-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
142-28-9	1,3-Dichloropropane	U	1.00	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
78-93-3	2-Butanone	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
95-49-8	2-Chlorotoluene	U	1.00	ug/L	0.300	1.00
591-78-6	2-Hexanone	U	5.00	ug/L	1.50	5.00
106-43-4	4-Chlorotoluene	U	1.00	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene	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
67-64-1	Acetone	U	10.0	ug/L	1.50	10.0
75-05-8	Acetonitrile	U	25.0	ug/L	8.00	25.0
107-02-8	Acrolein	U	5.00	ug/L	1.50	5.00
107-13-1	Acrylonitrile	U	5.00	ug/L	1.50	5.00
107-05-1	Allyl chloride	U	5.00	ug/L	1.50	5.00
71-43-2	Benzene	U	1.00	ug/L	0.300	1.00
108-86-1	Bromobenzene	U	1.00	ug/L	0.300	1.00
74-97-5	Bromochloromethane	U	1.00	ug/L	0.300	1.00
75-27-4	Bromodichloromethane	U	1.00	ug/L	0.300	1.00
75-25-2	Bromoform	U	1.00	ug/L	0.300	1.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 2017-865	Date Collected: 01/13/2017 12:23	Matrix: W
Lab Sample ID: 414461007	Date Received: 01/18/2017 08:50	
Client Sample: VOA	Client: ARSL004	Project: ESHL00114
Client ID: CAPA-17-129227	Method: SW-846:8260B	SOP Ref: GL-OA-E-038
Batch ID: 1633830	Inst: VOA9.I	Dilution: 1
Run Date: 01/25/2017 03:30	Analyst: RXY1	Purge Vol: 5 mL
Prep Date: 01/25/2017 03:30		
Data File: 012417V9\9C238.D	Column: DB-624	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
74-83-9	Bromomethane	U	1.00	ug/L	0.300	1.00
75-15-0	Carbon disulfide	U	5.00	ug/L	1.50	5.00
56-23-5	Carbon tetrachloride	U	1.00	ug/L	0.300	1.00
108-90-7	Chlorobenzene	U	1.00	ug/L	0.300	1.00
75-00-3	Chloroethane	U	1.00	ug/L	0.300	1.00
67-66-3	Chloroform	U	1.00	ug/L	0.300	1.00
74-87-3	Chloromethane	U	1.00	ug/L	0.300	1.00
124-48-1	Dibromochloromethane	U	1.00	ug/L	0.300	1.00
74-95-3	Dibromomethane	U	1.00	ug/L	0.300	1.00
75-71-8	Dichlorodifluoromethane	U	1.00	ug/L	0.300	1.00
60-29-7	Ethyl ether	U	1.00	ug/L	0.300	1.00
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.50	5.00
100-41-4	Ethylbenzene	U	1.00	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene	U	1.00	ug/L	0.300	1.00
74-88-4	Iodomethane	U	5.00	ug/L	1.50	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	15.0	50.0
98-82-8	Isopropylbenzene	U	1.00	ug/L	0.300	1.00
126-98-7	Methacrylonitrile	U	5.00	ug/L	1.50	5.00
80-62-6	Methyl methacrylate	U	5.00	ug/L	1.50	5.00
75-09-2	Methylene chloride	U	10.0	ug/L	1.00	10.0
91-20-3	Naphthalene	U	1.00	ug/L	0.300	1.00
107-12-0	Propionitrile	U	5.00	ug/L	1.50	5.00
100-42-5	Styrene	U	1.00	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene	U	1.00	ug/L	0.300	1.00
108-88-3	Toluene	U	1.00	ug/L	0.300	1.00
79-01-6	Trichloroethylene	U	1.00	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane	U	1.00	ug/L	0.300	1.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	2.00	5.00
108-05-4	Vinyl acetate	U	5.00	ug/L	1.50	5.00
75-01-4	Vinyl chloride	U	1.00	ug/L	0.300	1.00
156-59-2	cis-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
10061-01-5	cis-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes	U	2.00	ug/L	0.300	2.00
71-36-3	n-Butyl alcohol	U	50.0	ug/L	15.0	50.0
104-51-8	n-Butylbenzene	U	1.00	ug/L	0.300	1.00
103-65-1	n-Propylbenzene	U	1.00	ug/L	0.300	1.00
95-47-6	o-Xylene	U	1.00	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene	U	1.00	ug/L	0.300	1.00

**Volatile
Certificate of Analysis
Sample Summary**

SDG Number: 2017-865	Date Collected: 01/13/2017 12:23	Matrix: W
Lab Sample ID: 414461007	Date Received: 01/18/2017 08:50	
Client Sample: VOA	Client: ARSL004	Project: ESHL00114
Client ID: CAPA-17-129227	Method: SW-846:8260B	SOP Ref: GL-OA-E-038
Batch ID: 1633830	Inst: VOA9.I	Dilution: 1
Run Date: 01/25/2017 03:30	Analyst: RXY1	Purge Vol: 5 mL
Prep Date: 01/25/2017 03:30		
Data File: 012417V9\9C238.D	Column: DB-624	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
1634-04-4	tert-Butyl methyl ether	U	1.00	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene	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
10061-02-6	trans-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	54.1	50.0	ug/L 108	(71%-134%)
Bromofluorobenzene	51.6	50.0	ug/L 103	(70%-131%)
Toluene-d8	51.1	50.0	ug/L 102	(74%-124%)

Tentatively Identified Compound Summary

CAS No.	Tentatively Identified Compound (TIC)	RT	Estimated	Units	Fit	Qual
	unknown siloxane	14.651	11.4	ug/L	0	J

Quality Control Summary

Volatile
Surrogate Recovery Report

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SDG Number: 2017-865**Matrix Type: LIQUID**

Sample ID	Client ID	DCED4 %REC	TOL %REC	BFB %REC
1203714353	LCS for batch 1633830	100	101	100
1203714354	LCS for batch 1633830	98	99	100
1203714350	MB for batch 1633830	107	102	105
414461002	CAPA-17-129230	111	103	106
414461007	CAPA-17-129227	108	102	103
414461001	CAPA-17-129180	109	101	105
414461003	CAPA-17-129189	110	100	102
414461004	CAPA-17-129209	108	102	104
414461005	CAPA-17-129211	111	101	105
414461006	CAPA-17-129213	108	101	104
1203714357	CAPA-17-129209PS	103	100	100
1203714361	CAPA-17-129209PSD	102	103	101
1203714358	CAPA-17-129209PS	100	100	100
1203714362	CAPA-17-129209PSD	98	101	100

Surrogate**Acceptance Limits**

DCED4	= 1,2-Dichloroethane-d4	(71%-134%)
TOL	= Toluene-d8	(74%-124%)
BFB	= Bromofluorobenzene	(70%-131%)

* Recovery outside Acceptance Limits

Column to be used to flag recovery values

D Sample Diluted

Volatile
Quality Control Summary
Spike Recovery Report

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SDG Number: 2017-865

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1633830

Matrix: GROUND WATER

Lab Sample ID 1203714353

Instrument: VOA9.I

Analysis Date: 01/24/2017 23:31

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1633830

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	98.2	98	71-127
75-05-8	LCS Acetonitrile	1250	0.0	1180	94	61-125
67-64-1	LCS Acetone	250	0.0	187	75	48-157
74-88-4	LCS Iodomethane	250	0.0	229	92	72-128
75-15-0	LCS Carbon disulfide	250	0.0	224	90	69-138
108-05-4	LCS Vinyl acetate	250	0.0	253	101	67-125
78-93-3	LCS 2-Butanone	250	0.0	206	82	55-138
108-10-1	LCS 4-Methyl-2-pentanone	250	0.0	242	97	66-124
591-78-6	LCS 2-Hexanone	250	0.0	214	86	56-140
75-71-8	LCS Dichlorodifluoromethane	50.0	0.0	50.5	101	40-160
74-87-3	LCS Chloromethane	50.0	0.0	53.4	107	58-135
75-01-4	LCS Vinyl chloride	50.0	0.0	53.6	107	65-137
74-83-9	LCS Bromomethane	50.0	0.0	52.1	104	63-137
75-00-3	LCS Chloroethane	50.0	0.0	51.3	103	69-129
75-69-4	LCS Trichlorofluoromethane	50.0	0.0	51.3	103	69-138
60-29-7	LCS Ethyl ether	50.0	0.0	50.1	100	72-125
75-35-4	LCS 1,1-Dichloroethylene	50.0	0.0	43.9	88	66-126
75-09-2	LCS Methylene chloride	50.0	0.0	44.5	89	68-119
1634-04-4	LCS tert-Butyl methyl ether	50.0	0.0	49.9	100	76-128
156-60-5	LCS trans-1,2-Dichloroethylene	50.0	0.0	47.0	94	71-124
75-34-3	LCS 1,1-Dichloroethane	50.0	0.0	46.1	92	73-123
156-59-2	LCS cis-1,2-Dichloroethylene	50.0	0.0	47.6	95	75-123

Volatile
Quality Control Summary
Spike Recovery Report

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SDG Number: 2017-865

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1633830

Matrix: GROUND WATER

Lab Sample ID 1203714353

Instrument: VOA9.I

Analysis Date: 01/24/2017 23:31

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1633830

CAS No	Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
594-20-7	LCS 2,2-Dichloropropane	50.0	0.0	48.0	96	72-138
74-97-5	LCS Bromochloromethane	50.0	0.0	46.4	93	76-125
67-66-3	LCS Chloroform	50.0	0.0	47.0	94	76-123
71-55-6	LCS 1,1,1-Trichloroethane	50.0	0.0	48.1	96	74-136
563-58-6	LCS 1,1-Dichloropropene	50.0	0.0	46.7	93	72-129
56-23-5	LCS Carbon tetrachloride	50.0	0.0	49.6	99	72-140
107-06-2	LCS 1,2-Dichloroethane	50.0	0.0	46.7	93	74-122
71-43-2	LCS Benzene	50.0	0.0	45.4	91	72-121
79-01-6	LCS Trichloroethylene	50.0	0.0	47.1	94	74-125
78-87-5	LCS 1,2-Dichloropropane	50.0	0.0	46.4	93	73-121
74-95-3	LCS Dibromomethane	50.0	0.0	46.7	93	78-123
75-27-4	LCS Bromodichloromethane	50.0	0.0	49.8	100	77-131
10061-01-5	LCS cis-1,3-Dichloropropylene	50.0	0.0	48.8	98	78-131
108-88-3	LCS Toluene	50.0	0.0	45.9	92	71-121
10061-02-6	LCS trans-1,3-Dichloropropylene	50.0	0.0	52.4	105	78-131
79-00-5	LCS 1,1,2-Trichloroethane	50.0	0.0	47.3	95	74-118
142-28-9	LCS 1,3-Dichloropropane	50.0	0.0	46.4	93	74-118
127-18-4	LCS Tetrachloroethylene	50.0	0.0	45.7	91	69-129
124-48-1	LCS Dibromochloromethane	50.0	0.0	52.8	106	76-137
106-93-4	LCS 1,2-Dibromoethane	50.0	0.0	49.0	98	78-122
108-90-7	LCS Chlorobenzene	50.0	0.0	46.3	93	74-120
100-41-4	LCS Ethylbenzene	50.0	0.0	47.2	94	73-125

Volatile
Quality Control Summary
Spike Recovery Report

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SDG Number: 2017-865

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1633830

Matrix: GROUND WATER

Lab Sample ID 1203714353

Instrument: VOA9.I

Analysis Date: 01/24/2017 23:31

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1633830

CAS No	Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
95-47-6	LCS o-Xylene	50.0	0.0	48.4	97	74-126
100-42-5	LCS Styrene	50.0	0.0	50.5	101	72-130
75-25-2	LCS Bromoform	50.0	0.0	47.1	94	72-136
98-82-8	LCS Isopropylbenzene	50.0	0.0	49.2	98	70-130
79-34-5	LCS 1,1,2,2-Tetrachloroethane	50.0	0.0	47.1	94	70-126
96-18-4	LCS 1,2,3-Trichloropropane	50.0	0.0	47.7	95	74-122
108-86-1	LCS Bromobenzene	50.0	0.0	46.8	94	74-120
103-65-1	LCS n-Propylbenzene	50.0	0.0	46.3	93	67-128
108-67-8	LCS 1,3,5-Trimethylbenzene	50.0	0.0	49.0	98	70-129
95-49-8	LCS 2-Chlorotoluene	50.0	0.0	47.9	96	71-124
106-43-4	LCS 4-Chlorotoluene	50.0	0.0	47.2	94	69-125
98-06-6	LCS tert-Butylbenzene	50.0	0.0	51.8	104	72-130
95-63-6	LCS 1,2,4-Trimethylbenzene	50.0	0.0	48.8	98	70-126
135-98-8	LCS sec-Butylbenzene	50.0	0.0	49.5	99	70-131
99-87-6	LCS 4-Isopropyltoluene	50.0	0.0	49.4	99	71-131
541-73-1	LCS 1,3-Dichlorobenzene	50.0	0.0	45.9	92	72-121
106-46-7	LCS 1,4-Dichlorobenzene	50.0	0.0	46.7	93	71-120
104-51-8	LCS n-Butylbenzene	50.0	0.0	49.6	99	68-134
96-12-8	LCS 1,2-Dibromo-3-chloropropane	50.0	0.0	45.8	92	68-141
87-68-3	LCS Hexachlorobutadiene	50.0	0.0	48.6	97	72-136
91-20-3	LCS Naphthalene	50.0	0.0	54.7	109	72-132
87-61-6	LCS 1,2,3-Trichlorobenzene	50.0	0.0	49.3	99	70-130

Volatile

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Quality Control Summary
Spike Recovery Report

SDG Number: 2017-865

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1633830

Matrix: GROUND WATER

Lab Sample ID 1203714353

Instrument: VOA9.I

Analysis Date: 01/24/2017 23:31

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1633830

CAS No	Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
120-82-1	LCS 1,2,4-Trichlorobenzene	50.0	0.0	48.6	97	71-129
630-20-6	LCS 1,1,1,2-Tetrachloroethane	50.0	0.0	50.4	101	79-127
95-50-1	LCS 1,2-Dichlorobenzene	50.0	0.0	47.6	95	74-120
71-36-3	LCS n-Butyl alcohol	5000	0.0	5280	106	63-138

Volatile
Quality Control Summary
Spike Recovery Report

Page 1 of 1

SDG Number: 2017-865

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1633830

Matrix: GROUND WATER

Lab Sample ID 1203714354

Instrument: VOA9.I

Analysis Date: 01/25/2017 00:24

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1633830

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	277	111	60-140
76-13-1	LCS Trichlorotrifluoroethane	250	0.0	233	93	61-148
107-05-1	LCS Allyl chloride	250	0.0	226	91	59-125
107-13-1	LCS Acrylonitrile	250	0.0	239	96	65-122
107-12-0	LCS Propionitrile	250	0.0	229	91	64-124
126-98-7	LCS Methacrylonitrile	250	0.0	232	93	64-126
80-62-6	LCS Methyl methacrylate	250	0.0	226	90	69-127
97-63-2	LCS Ethyl methacrylate	250	0.0	229	91	66-130
78-83-1	LCS Isobutyl alcohol	2500	0.0	2460	98	65-135
126-99-8	LCS 2-Chloro-1,3-butadiene	50.0	0.0	48.3	97	66-147

Volatile
Quality Control Summary
Spike Recovery Report

Page 1 of 8

SDG Number: 2017-865

Sample Type: Post Spike

Client ID: CAPA-17-129209PS

Matrix: W

Lab Sample ID 1203714357

Instrument: VOA9.I

Analysis Date: 01/25/2017 07:03

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1633830

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	110	110	59-132
75-05-8	PS Acetonitrile	1250	0.00 U	1440	115	56-131
67-64-1	PS Acetone	250	0.00 U	144	57	25-155
74-88-4	PS Iodomethane	250	0.00 U	260	104	66-133
75-15-0	PS Carbon disulfide	250	0.00 U	265	106	61-141
108-05-4	PS Vinyl acetate	250	0.00 U	238	95	48-133
78-93-3	PS 2-Butanone	250	0.00 U	195	78	25-143
108-10-1	PS 4-Methyl-2-pentanone	250	0.00 U	282	113	61-127
591-78-6	PS 2-Hexanone	250	0.00 U	237	95	33-138
75-71-8	PS Dichlorodifluoromethane	50.0	0.00 U	57.6	115	33-164
74-87-3	PS Chloromethane	50.0	0.00 U	57.6	115	53-139
75-01-4	PS Vinyl chloride	50.0	0.00 U	60.0	120	58-140
74-83-9	PS Bromomethane	50.0	0.00 U	55.2	110	59-146
75-00-3	PS Chloroethane	50.0	0.00 U	56.2	112	65-129
75-69-4	PS Trichlorofluoromethane	50.0	0.00 U	58.4	117	65-141
60-29-7	PS Ethyl ether	50.0	0.00 U	52.8	106	69-127
75-35-4	PS 1,1-Dichloroethylene	50.0	0.00 U	52.7	105	59-130
75-09-2	PS Methylene chloride	50.0	0.00 U	49.3	99	62-123
1634-04-4	PS tert-Butyl methyl ether	50.0	0.00 U	55.6	111	69-132
156-60-5	PS trans-1,2-Dichloroethylene	50.0	0.00 U	54.2	108	65-127
75-34-3	PS 1,1-Dichloroethane	50.0	0.00 U	53.0	106	67-127
156-59-2	PS cis-1,2-Dichloroethylene	50.0	0.00 U	53.7	107	69-127

Volatile
Quality Control Summary
Spike Recovery Report

Page 2 of 8

SDG Number: 2017-865

Sample Type: Post Spike

Client ID: CAPA-17-129209PS

Matrix: W

Lab Sample ID 1203714357

Instrument: VOA9.I

Analysis Date: 01/25/2017 07:03

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1633830

CAS No	Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
594-20-7	PS 2,2-Dichloropropane	50.0	0.00 U	54.7	109	66-137
74-97-5	PS Bromochloromethane	50.0	0.00 U	51.5	103	71-130
67-66-3	PS Chloroform	50.0	0.00 U	53.1	106	71-129
71-55-6	PS 1,1,1-Trichloroethane	50.0	0.00 U	56.0	112	69-139
563-58-6	PS 1,1-Dichloropropene	50.0	0.00 U	53.9	108	67-130
56-23-5	PS Carbon tetrachloride	50.0	0.00 U	59.3	119	66-143
107-06-2	PS 1,2-Dichloroethane	50.0	0.00 U	52.3	105	69-130
71-43-2	PS Benzene	50.0	0.00 U	50.8	102	66-125
79-01-6	PS Trichloroethylene	50.0	0.00 U	53.2	106	65-131
78-87-5	PS 1,2-Dichloropropane	50.0	0.00 U	51.4	103	67-127
74-95-3	PS Dibromomethane	50.0	0.00 U	52.3	105	72-129
75-27-4	PS Bromodichloromethane	50.0	0.00 U	56.4	113	70-138
10061-01-5	PS cis-1,3-Dichloropropylene	50.0	0.00 U	53.9	108	70-134
108-88-3	PS Toluene	50.0	0.00 U	51.1	102	60-126
10061-02-6	PS trans-1,3-Dichloropropylene	50.0	0.00 U	56.9	114	69-135
79-00-5	PS 1,1,2-Trichloroethane	50.0	0.00 U	52.9	106	66-125
142-28-9	PS 1,3-Dichloropropane	50.0	0.00 U	51.2	102	67-124
127-18-4	PS Tetrachloroethylene	50.0	0.00 U	51.9	104	60-130
124-48-1	PS Dibromochloromethane	50.0	0.00 U	58.9	118	68-143
106-93-4	PS 1,2-Dibromoethane	50.0	0.00 U	55.1	110	71-127
108-90-7	PS Chlorobenzene	50.0	0.00 U	51.3	103	64-124
100-41-4	PS Ethylbenzene	50.0	0.00 U	53.1	106	61-130

Volatile
Quality Control Summary
Spike Recovery Report

Page 3 of 8

SDG Number: 2017-865

Sample Type: Post Spike

Client ID: CAPA-17-129209PS

Matrix: W

Lab Sample ID 1203714357

Instrument: VOA9.I

Analysis Date: 01/25/2017 07:03

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1633830

CAS No	Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
95-47-6	PS o-Xylene	50.0	0.00 U	53.5	107	62-131
100-42-5	PS Styrene	50.0	0.00 U	55.1	110	59-135
75-25-2	PS Bromoform	50.0	0.00 U	53.5	107	64-138
98-82-8	PS Isopropylbenzene	50.0	0.00 U	55.7	111	55-133
79-34-5	PS 1,1,2,2-Tetrachloroethane	50.0	0.00 U	54.6	109	62-129
96-18-4	PS 1,2,3-Trichloropropane	50.0	0.00 U	56.5	113	70-124
108-86-1	PS Bromobenzene	50.0	0.00 U	51.3	103	62-124
103-65-1	PS n-Propylbenzene	50.0	0.00 U	52.4	105	50-133
108-67-8	PS 1,3,5-Trimethylbenzene	50.0	0.00 U	55.2	110	53-135
95-49-8	PS 2-Chlorotoluene	50.0	0.00 U	53.4	107	56-128
106-43-4	PS 4-Chlorotoluene	50.0	0.00 U	52.1	104	53-130
98-06-6	PS tert-Butylbenzene	50.0	0.00 U	57.7	115	55-135
95-63-6	PS 1,2,4-Trimethylbenzene	50.0	0.00 U	53.4	107	53-132
135-98-8	PS sec-Butylbenzene	50.0	0.00 U	56.9	114	50-138
99-87-6	PS 4-Isopropyltoluene	50.0	0.00 U	55.8	112	49-138
541-73-1	PS 1,3-Dichlorobenzene	50.0	0.00 U	49.6	99	56-126
106-46-7	PS 1,4-Dichlorobenzene	50.0	0.00 U	49.6	99	55-125
104-51-8	PS n-Butylbenzene	50.0	0.00 U	54.6	109	43-142
96-12-8	PS 1,2-Dibromo-3-chloropropane	50.0	0.00 U	54.8	110	62-141
87-68-3	PS Hexachlorobutadiene	50.0	0.00 U	56.1	112	40-147
91-20-3	PS Naphthalene	50.0	0.00 U	61.1	122	62-134
87-61-6	PS 1,2,3-Trichlorobenzene	50.0	0.00 U	51.9	104	52-135

Volatile
Quality Control Summary
Spike Recovery Report

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SDG Number: 2017-865

Sample Type: Post Spike

Client ID: CAPA-17-129209PS

Matrix: W

Lab Sample ID 1203714357

Instrument: VOA9.I

Analysis Date: 01/25/2017 07:03

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1633830

CAS No	Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
120-82-1	PS 1,2,4-Trichlorobenzene	50.0	0.00 U	49.5	99	50-133
630-20-6	PS 1,1,1,2-Tetrachloroethane	50.0	0.00 U	54.6	109	71-133
95-50-1	PS 1,2-Dichlorobenzene	50.0	0.00 U	51.0	102	60-125
71-36-3	PS n-Butyl alcohol	5000	0.00 U	6690	134	60-140

Volatile
Quality Control Summary
Spike Recovery Report

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SDG Number: 2017-865

Sample Type: Post Spike Duplicate

Client ID: CAPA-17-129209PSD

Matrix: W

Lab Sample ID 1203714361

Instrument: VOA9.I

Analysis Date: 01/25/2017 07:30

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1633830

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	111	111	59-132	1	0-20
75-05-8	PSD Acetonitrile	1250	0.00 U	1440	115	56-131	0	0-20
67-64-1	PSD Acetone	250	0.00 U	141	56	25-155	2	0-20
74-88-4	PSD Iodomethane	250	0.00 U	257	103	66-133	1	0-20
75-15-0	PSD Carbon disulfide	250	0.00 U	258	103	61-141	2	0-20
108-05-4	PSD Vinyl acetate	250	0.00 U	253	101	48-133	6	0-20
78-93-3	PSD 2-Butanone	250	0.00 U	196	78	25-143	0	0-20
108-10-1	PSD 4-Methyl-2-pentanone	250	0.00 U	291	117	61-127	3	0-20
591-78-6	PSD 2-Hexanone	250	0.00 U	241	96	33-138	2	0-20
75-71-8	PSD Dichlorodifluoromethane	50.0	0.00 U	60.8	122	33-164	6	0-20
74-87-3	PSD Chloromethane	50.0	0.00 U	60.7	121	53-139	5	0-20
75-01-4	PSD Vinyl chloride	50.0	0.00 U	63.9	128	58-140	6	0-20
74-83-9	PSD Bromomethane	50.0	0.00 U	58.5	117	59-146	6	0-20
75-00-3	PSD Chloroethane	50.0	0.00 U	59.8	120	65-129	6	0-20
75-69-4	PSD Trichlorofluoromethane	50.0	0.00 U	60.9	122	65-141	4	0-20
60-29-7	PSD Ethyl ether	50.0	0.00 U	56.3	113	69-127	6	0-20
75-35-4	PSD 1,1-Dichloroethylene	50.0	0.00 U	51.3	103	59-130	3	0-20
75-09-2	PSD Methylene chloride	50.0	0.00 U	49.2	98	62-123	0	0-20
1634-04-4	PSD tert-Butyl methyl ether	50.0	0.00 U	55.4	111	69-132	0	0-20
156-60-5	PSD trans-1,2-Dichloroethylene	50.0	0.00 U	53.2	106	65-127	2	0-20
75-34-3	PSD 1,1-Dichloroethane	50.0	0.00 U	51.6	103	67-127	3	0-20
156-59-2	PSD cis-1,2-Dichloroethylene	50.0	0.00 U	52.5	105	69-127	2	0-20

Volatile
Quality Control Summary
Spike Recovery Report

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SDG Number: 2017-865

Sample Type: Post Spike Duplicate

Client ID: CAPA-17-129209PSD

Matrix: W

Lab Sample ID 1203714361

Instrument: VOA9.I

Analysis Date: 01/25/2017 07:30

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1633830

CAS No	Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
594-20-7	PSD 2,2-Dichloropropane	50.0	0.00 U	53.9	108	66-137	2	0-20
74-97-5	PSD Bromochloromethane	50.0	0.00 U	51.7	103	71-130	0	0-20
67-66-3	PSD Chloroform	50.0	0.00 U	52.2	104	71-129	2	0-20
71-55-6	PSD 1,1,1-Trichloroethane	50.0	0.00 U	55.0	110	69-139	2	0-20
563-58-6	PSD 1,1-Dichloropropene	50.0	0.00 U	54.0	108	67-130	0	0-20
56-23-5	PSD Carbon tetrachloride	50.0	0.00 U	58.2	116	66-143	2	0-20
107-06-2	PSD 1,2-Dichloroethane	50.0	0.00 U	51.8	104	69-130	1	0-20
71-43-2	PSD Benzene	50.0	0.00 U	51.0	102	66-125	0	0-20
79-01-6	PSD Trichloroethylene	50.0	0.00 U	53.9	108	65-131	1	0-20
78-87-5	PSD 1,2-Dichloropropane	50.0	0.00 U	51.5	103	67-127	0	0-20
74-95-3	PSD Dibromomethane	50.0	0.00 U	52.4	105	72-129	0	0-20
75-27-4	PSD Bromodichloromethane	50.0	0.00 U	56.2	112	70-138	0	0-20
10061-01-5	PSD cis-1,3-Dichloropropylene	50.0	0.00 U	53.9	108	70-134	0	0-20
108-88-3	PSD Toluene	50.0	0.00 U	51.9	104	60-126	2	0-20
10061-02-6	PSD trans-1,3-Dichloropropylene	50.0	0.00 U	58.0	116	69-135	2	0-20
79-00-5	PSD 1,1,2-Trichloroethane	50.0	0.00 U	53.7	107	66-125	2	0-20
142-28-9	PSD 1,3-Dichloropropane	50.0	0.00 U	52.3	105	67-124	2	0-20
127-18-4	PSD Tetrachloroethylene	50.0	0.00 U	52.4	105	60-130	1	0-20
124-48-1	PSD Dibromochloromethane	50.0	0.00 U	60.3	121	68-143	2	0-20
106-93-4	PSD 1,2-Dibromoethane	50.0	0.00 U	55.8	112	71-127	1	0-20
108-90-7	PSD Chlorobenzene	50.0	0.00 U	51.2	102	64-124	0	0-20
100-41-4	PSD Ethylbenzene	50.0	0.00 U	53.4	107	61-130	1	0-20

Volatile
Quality Control Summary
Spike Recovery Report

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SDG Number: 2017-865

Sample Type: Post Spike Duplicate

Client ID: CAPA-17-129209PSD

Matrix: W

Lab Sample ID 1203714361

Instrument: VOA9.I

Analysis Date: 01/25/2017 07:30

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1633830

CAS No	Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
95-47-6	PSD o-Xylene	50.0	0.00 U	53.7	107	62-131	0	0-20
100-42-5	PSD Styrene	50.0	0.00 U	55.1	110	59-135	0	0-20
75-25-2	PSD Bromoform	50.0	0.00 U	54.5	109	64-138	2	0-20
98-82-8	PSD Isopropylbenzene	50.0	0.00 U	56.9	114	55-133	2	0-20
79-34-5	PSD 1,1,2,2-Tetrachloroethane	50.0	0.00 U	55.6	111	62-129	2	0-20
96-18-4	PSD 1,2,3-Trichloropropane	50.0	0.00 U	56.5	113	70-124	0	0-20
108-86-1	PSD Bromobenzene	50.0	0.00 U	51.5	103	62-124	0	0-20
103-65-1	PSD n-Propylbenzene	50.0	0.00 U	52.9	106	50-133	1	0-20
108-67-8	PSD 1,3,5-Trimethylbenzene	50.0	0.00 U	55.5	111	53-135	1	0-20
95-49-8	PSD 2-Chlorotoluene	50.0	0.00 U	53.9	108	56-128	1	0-20
106-43-4	PSD 4-Chlorotoluene	50.0	0.00 U	52.0	104	53-130	0	0-20
98-06-6	PSD tert-Butylbenzene	50.0	0.00 U	61.3	123	55-135	6	0-20
95-63-6	PSD 1,2,4-Trimethylbenzene	50.0	0.00 U	53.8	108	53-132	1	0-20
135-98-8	PSD sec-Butylbenzene	50.0	0.00 U	57.5	115	50-138	1	0-20
99-87-6	PSD 4-Isopropyltoluene	50.0	0.00 U	55.9	112	49-138	0	0-20
541-73-1	PSD 1,3-Dichlorobenzene	50.0	0.00 U	49.8	100	56-126	0	0-20
106-46-7	PSD 1,4-Dichlorobenzene	50.0	0.00 U	49.6	99	55-125	0	0-20
104-51-8	PSD n-Butylbenzene	50.0	0.00 U	54.8	110	43-142	0	0-20
96-12-8	PSD 1,2-Dibromo-3-chloropropane	50.0	0.00 U	55.0	110	62-141	0	0-20
87-68-3	PSD Hexachlorobutadiene	50.0	0.00 U	56.8	114	40-147	1	0-20
91-20-3	PSD Naphthalene	50.0	0.00 U	62.8	126	62-134	3	0-20
87-61-6	PSD 1,2,3-Trichlorobenzene	50.0	0.00 U	53.4	107	52-135	3	0-20

Volatile
Quality Control Summary
Spike Recovery Report

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SDG Number: 2017-865

Sample Type: Post Spike Duplicate

Client ID: CAPA-17-129209PSD

Matrix: W

Lab Sample ID 1203714361

Instrument: VOA9.I

Analysis Date: 01/25/2017 07:30

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1633830

CAS No	Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
120-82-1	PSD 1,2,4-Trichlorobenzene	50.0	0.00 U	50.6	101	50-133	2	0-20
630-20-6	PSD 1,1,1,2-Tetrachloroethane	50.0	0.00 U	56.2	112	71-133	3	0-20
95-50-1	PSD 1,2-Dichlorobenzene	50.0	0.00 U	51.1	102	60-125	0	0-20
71-36-3	PSD n-Butyl alcohol	5000	0.00 U	6910	138	60-140	3	0-20

Volatile

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Quality Control Summary
Spike Recovery Report

SDG Number: 2017-865

Sample Type: Post Spike

Client ID: CAPA-17-129209PS

Matrix: W

Lab Sample ID 1203714358

Instrument: VOA9.I

Analysis Date: 01/25/2017 08:51

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1633830

CAS No	Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
107-02-8	PS Acrolein	250	0.00 U	309	124	49-141
76-13-1	PS Trichlorotrifluoroethane	250	0.00 U	266	106	57-149
107-05-1	PS Allyl chloride	250	0.00 U	251	100	54-128
107-13-1	PS Acrylonitrile	250	0.00 U	303	121	59-129
107-12-0	PS Propionitrile	250	0.00 U	297	119	58-131
126-98-7	PS Methacrylonitrile	250	0.00 U	284	114	59-134
80-62-6	PS Methyl methacrylate	250	0.00 U	267	107	62-135
97-63-2	PS Ethyl methacrylate	250	0.00 U	268	107	60-136
78-83-1	PS Isobutyl alcohol	2500	0.00 U	3160	126	60-143
126-99-8	PS 2-Chloro-1,3-butadiene	50.0	0.00 U	54.5	109	63-146

Volatile
Quality Control Summary
Spike Recovery Report

Page 2 of 2

SDG Number: 2017-865

Sample Type: Post Spike Duplicate

Client ID: CAPA-17-129209PSD

Matrix: W

Lab Sample ID 1203714362

Instrument: VOA9.I

Analysis Date: 01/25/2017 09:18

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1633830

CAS No	Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
107-02-8	PSD Acrolein	250	0.00 U	289	115	49-141	7	0-20
76-13-1	PSD Trichlorotrifluoroethane	250	0.00 U	252	101	57-149	5	0-20
107-05-1	PSD Allyl chloride	250	0.00 U	242	97	54-128	4	0-20
107-13-1	PSD Acrylonitrile	250	0.00 U	273	109	59-129	10	0-20
107-12-0	PSD Propionitrile	250	0.00 U	269	107	58-131	10	0-20
126-98-7	PSD Methacrylonitrile	250	0.00 U	263	105	59-134	8	0-20
80-62-6	PSD Methyl methacrylate	250	0.00 U	252	101	62-135	6	0-20
97-63-2	PSD Ethyl methacrylate	250	0.00 U	255	102	60-136	5	0-20
78-83-1	PSD Isobutyl alcohol	2500	0.00 U	2800	112	60-143	12	0-20
126-99-8	PSD 2-Chloro-1,3-butadiene	50.0	0.00 U	52.4	105	63-146	4	0-20

Method Blank Summary

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SDG Number:	2017-865	Client:	ARSL004	Matrix:	GROUND WATER
Client ID:	MB for batch 1633830	Instrument ID:	VOA9.I	Data File:	012417V9\9C233B.D
Lab Sample ID:	1203714350	Prep Date:	01/25/2017 01:18	Analyzed:	01/25/17 01:18
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 1633830	1203714353	012417V9\9C229L.D	01/24/17	2331
02 LCS for batch 1633830	1203714354	012417V9\9C231L.D	01/25/17	0024
03 CAPA-17-129230	414461002	012417V9\9C237.D	01/25/17	0304
04 CAPA-17-129227	414461007	012417V9\9C238.D	01/25/17	0330
05 CAPA-17-129180	414461001	012417V9\9C239.D	01/25/17	0357
06 CAPA-17-129189	414461003	012417V9\9C240.D	01/25/17	0424
07 CAPA-17-129209	414461004	012417V9\9C241.D	01/25/17	0450
08 CAPA-17-129211	414461005	012417V9\9C242.D	01/25/17	0517
09 CAPA-17-129213	414461006	012417V9\9C243.D	01/25/17	0543
10 CAPA-17-129209PS	1203714357	012417V9\9C246.D	01/25/17	0703
11 CAPA-17-129209PSD	1203714361	012417V9\9C247.D	01/25/17	0730
12 CAPA-17-129209PS	1203714358	012417V9\9C250.D	01/25/17	0851
13 CAPA-17-129209PSD	1203714362	012417V9\9C251.D	01/25/17	0918

Quality Control Data

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 2017-865

Matrix: GROUND WATER

Lab Sample ID: 1203714350

Client Sample: QC for batch 1633830

Client: ARSL004

Project: QC

Client ID: MB for batch 1633830

Method: SW-846:8260B

SOP Ref: GL-OA-E-038

Batch ID: 1633830

Inst: VOA9.I

Dilution: 1

Run Date: 01/25/2017 01:18

Analyst: RXY1

Purge Vol: 5 mL

Prep Date: 01/25/2017 01:18

Data File: 012417V9\9C233B.D

Column: DB-624

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
630-20-6	1,1,1,2-Tetrachloroethane	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
79-34-5	1,1,2,2-Tetrachloroethane	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
75-34-3	1,1-Dichloroethane	U	1.00	ug/L	0.300	1.00
75-35-4	1,1-Dichloroethylene	U	1.00	ug/L	0.300	1.00
563-58-6	1,1-Dichloropropene	U	1.00	ug/L	0.300	1.00
87-61-6	1,2,3-Trichlorobenzene	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
120-82-1	1,2,4-Trichlorobenzene	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
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.500	1.00
106-93-4	1,2-Dibromoethane	U	1.00	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane	U	1.00	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane	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
541-73-1	1,3-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
142-28-9	1,3-Dichloropropane	U	1.00	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
78-93-3	2-Butanone	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
95-49-8	2-Chlorotoluene	U	1.00	ug/L	0.300	1.00
591-78-6	2-Hexanone	U	5.00	ug/L	1.50	5.00
106-43-4	4-Chlorotoluene	U	1.00	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene	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
67-64-1	Acetone	J	3.04	ug/L	1.50	10.0
75-05-8	Acetonitrile	U	25.0	ug/L	8.00	25.0
107-02-8	Acrolein	U	5.00	ug/L	1.50	5.00
107-13-1	Acrylonitrile	U	5.00	ug/L	1.50	5.00
107-05-1	Allyl chloride	U	5.00	ug/L	1.50	5.00
71-43-2	Benzene	U	1.00	ug/L	0.300	1.00
108-86-1	Bromobenzene	U	1.00	ug/L	0.300	1.00
74-97-5	Bromochloromethane	U	1.00	ug/L	0.300	1.00
75-27-4	Bromodichloromethane	U	1.00	ug/L	0.300	1.00
75-25-2	Bromoform	U	1.00	ug/L	0.300	1.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 2017-865

Lab Sample ID: 1203714350

Client Sample: QC for batch 1633830

Client ID: MB for batch 1633830

Batch ID: 1633830

Run Date: 01/25/2017 01:18

Prep Date: 01/25/2017 01:18

Data File: 012417V9\9C233B.D

Client: ARSL004

Method: SW-846:8260B

Inst: VOA9.I

Analyst: RXY1

Column: DB-624

Matrix: GROUND WATER

Project: QC

SOP Ref: GL-OA-E-038

Dilution: 1

Purge Vol: 5 mL

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
74-83-9	Bromomethane	U	1.00	ug/L	0.300	1.00
75-15-0	Carbon disulfide	U	5.00	ug/L	1.50	5.00
56-23-5	Carbon tetrachloride	U	1.00	ug/L	0.300	1.00
108-90-7	Chlorobenzene	U	1.00	ug/L	0.300	1.00
75-00-3	Chloroethane	U	1.00	ug/L	0.300	1.00
67-66-3	Chloroform	U	1.00	ug/L	0.300	1.00
74-87-3	Chloromethane	U	1.00	ug/L	0.300	1.00
124-48-1	Dibromochloromethane	U	1.00	ug/L	0.300	1.00
74-95-3	Dibromomethane	U	1.00	ug/L	0.300	1.00
75-71-8	Dichlorodifluoromethane	U	1.00	ug/L	0.300	1.00
60-29-7	Ethyl ether	U	1.00	ug/L	0.300	1.00
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.50	5.00
100-41-4	Ethylbenzene	U	1.00	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene	U	1.00	ug/L	0.300	1.00
74-88-4	Iodomethane	U	5.00	ug/L	1.50	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	15.0	50.0
98-82-8	Isopropylbenzene	U	1.00	ug/L	0.300	1.00
126-98-7	Methacrylonitrile	U	5.00	ug/L	1.50	5.00
80-62-6	Methyl methacrylate	U	5.00	ug/L	1.50	5.00
75-09-2	Methylene chloride	U	10.0	ug/L	1.00	10.0
91-20-3	Naphthalene	U	1.00	ug/L	0.300	1.00
107-12-0	Propionitrile	U	5.00	ug/L	1.50	5.00
100-42-5	Styrene	U	1.00	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene	U	1.00	ug/L	0.300	1.00
108-88-3	Toluene	U	1.00	ug/L	0.300	1.00
79-01-6	Trichloroethylene	U	1.00	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane	U	1.00	ug/L	0.300	1.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	2.00	5.00
108-05-4	Vinyl acetate	U	5.00	ug/L	1.50	5.00
75-01-4	Vinyl chloride	U	1.00	ug/L	0.300	1.00
156-59-2	cis-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
10061-01-5	cis-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes	U	2.00	ug/L	0.300	2.00
71-36-3	n-Butyl alcohol	U	50.0	ug/L	15.0	50.0
104-51-8	n-Butylbenzene	U	1.00	ug/L	0.300	1.00
103-65-1	n-Propylbenzene	U	1.00	ug/L	0.300	1.00
95-47-6	o-Xylene	U	1.00	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene	U	1.00	ug/L	0.300	1.00

**Volatile
Certificate of Analysis
Sample Summary**

Page 3 of 3

SDG Number: 2017-865	Matrix: GROUND WATER	
Lab Sample ID: 1203714350		
Client Sample: QC for batch 1633830	Client: ARSL004	Project: QC
Client ID: MB for batch 1633830	Method: SW-846:8260B	SOP Ref: GL-OA-E-038
Batch ID: 1633830	Inst: VOA9.I	Dilution: 1
Run Date: 01/25/2017 01:18	Analyst: RXY1	Purge Vol: 5 mL
Prep Date: 01/25/2017 01:18		
Data File: 012417V9\9C233B.D	Column: DB-624	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
1634-04-4	tert-Butyl methyl ether	U	1.00	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene	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
10061-02-6	trans-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	53.5	50.0	ug/L 107	(71%-134%)
Bromofluorobenzene	52.4	50.0	ug/L 105	(70%-131%)
Toluene-d8	50.8	50.0	ug/L 102	(74%-124%)

Tentatively Identified Compound Summary

CAS No.	Tentatively Identified Compound (TIC)	RT	Estimated	Units	Fit	Qual
No Tentatively Identified Compounds Found				ug/L		

Volatile
Certificate of Analysis
Sample Summary

Page 1 of 3

SDG Number: 2017-865

Lab Sample ID: 1203714353

Client Sample: QC for batch 1633830

Client ID: LCS for batch 1633830

Batch ID: 1633830

Run Date: 01/24/2017 23:31

Prep Date: 01/24/2017 23:31

Data File: 012417V9\9C229L.D

Client: ARSL004

Method: SW-846:8260B

Inst: VOA9.I

Analyst: RXY1

Column: DB-624

Matrix: GROUND WATER

Project: QC

SOP Ref: GL-OA-E-038

Dilution: 1

Purge Vol: 5 mL

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
630-20-6	1,1,1,2-Tetrachloroethane		50.4	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane		48.1	ug/L	0.300	1.00
79-34-5	1,1,2,2-Tetrachloroethane		47.1	ug/L	0.300	1.00
79-00-5	1,1,2-Trichloroethane		47.3	ug/L	0.300	1.00
75-34-3	1,1-Dichloroethane		46.1	ug/L	0.300	1.00
75-35-4	1,1-Dichloroethylene		43.9	ug/L	0.300	1.00
563-58-6	1,1-Dichloropropene		46.7	ug/L	0.300	1.00
87-61-6	1,2,3-Trichlorobenzene		49.3	ug/L	0.300	1.00
96-18-4	1,2,3-Trichloropropane		47.7	ug/L	0.300	1.00
120-82-1	1,2,4-Trichlorobenzene		48.6	ug/L	0.300	1.00
95-63-6	1,2,4-Trimethylbenzene		48.8	ug/L	0.300	1.00
96-12-8	1,2-Dibromo-3-chloropropane		45.8	ug/L	0.500	1.00
106-93-4	1,2-Dibromoethane		49.0	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene		47.6	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane		46.7	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane		46.4	ug/L	0.300	1.00
108-67-8	1,3,5-Trimethylbenzene		49.0	ug/L	0.300	1.00
541-73-1	1,3-Dichlorobenzene		45.9	ug/L	0.300	1.00
142-28-9	1,3-Dichloropropane		46.4	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene		46.7	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane		48.0	ug/L	0.300	1.00
78-93-3	2-Butanone		206	ug/L	1.50	5.00
126-99-8	2-Chloro-1,3-butadiene	U	1.00	ug/L	0.300	1.00
95-49-8	2-Chlorotoluene		47.9	ug/L	0.300	1.00
591-78-6	2-Hexanone		214	ug/L	1.50	5.00
106-43-4	4-Chlorotoluene		47.2	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene		49.4	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone		242	ug/L	1.50	5.00
67-64-1	Acetone	B	187	ug/L	1.50	10.0
75-05-8	Acetonitrile		1180	ug/L	8.00	25.0
107-02-8	Acrolein	U	5.00	ug/L	1.50	5.00
107-13-1	Acrylonitrile	U	5.00	ug/L	1.50	5.00
107-05-1	Allyl chloride	U	5.00	ug/L	1.50	5.00
71-43-2	Benzene		45.4	ug/L	0.300	1.00
108-86-1	Bromobenzene		46.8	ug/L	0.300	1.00
74-97-5	Bromochloromethane		46.4	ug/L	0.300	1.00
75-27-4	Bromodichloromethane		49.8	ug/L	0.300	1.00
75-25-2	Bromoform		47.1	ug/L	0.300	1.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 2017-865

Lab Sample ID: 1203714353

Client Sample: QC for batch 1633830

Client ID: LCS for batch 1633830

Batch ID: 1633830

Run Date: 01/24/2017 23:31

Prep Date: 01/24/2017 23:31

Data File: 012417V9\9C229L.D

Client: ARSL004

Method: SW-846:8260B

Inst: VOA9.I

Analyst: RXY1

Column: DB-624

Matrix: GROUND WATER

Project: QC

SOP Ref: GL-OA-E-038

Dilution: 1

Purge Vol: 5 mL

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
74-83-9	Bromomethane		52.1	ug/L	0.300	1.00
75-15-0	Carbon disulfide		224	ug/L	1.50	5.00
56-23-5	Carbon tetrachloride		49.6	ug/L	0.300	1.00
108-90-7	Chlorobenzene		46.3	ug/L	0.300	1.00
75-00-3	Chloroethane		51.3	ug/L	0.300	1.00
67-66-3	Chloroform		47.0	ug/L	0.300	1.00
74-87-3	Chloromethane		53.4	ug/L	0.300	1.00
124-48-1	Dibromochloromethane		52.8	ug/L	0.300	1.00
74-95-3	Dibromomethane		46.7	ug/L	0.300	1.00
75-71-8	Dichlorodifluoromethane		50.5	ug/L	0.300	1.00
60-29-7	Ethyl ether		50.1	ug/L	0.300	1.00
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.50	5.00
100-41-4	Ethylbenzene		47.2	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene		48.6	ug/L	0.300	1.00
74-88-4	Iodomethane		229	ug/L	1.50	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	15.0	50.0
98-82-8	Isopropylbenzene		49.2	ug/L	0.300	1.00
126-98-7	Methacrylonitrile	U	5.00	ug/L	1.50	5.00
80-62-6	Methyl methacrylate	U	5.00	ug/L	1.50	5.00
75-09-2	Methylene chloride		44.5	ug/L	1.00	10.0
91-20-3	Naphthalene		54.7	ug/L	0.300	1.00
107-12-0	Propionitrile	U	5.00	ug/L	1.50	5.00
100-42-5	Styrene		50.5	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene		45.7	ug/L	0.300	1.00
108-88-3	Toluene		45.9	ug/L	0.300	1.00
79-01-6	Trichloroethylene		47.1	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane		51.3	ug/L	0.300	1.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	2.00	5.00
108-05-4	Vinyl acetate		253	ug/L	1.50	5.00
75-01-4	Vinyl chloride		53.6	ug/L	0.300	1.00
156-59-2	cis-1,2-Dichloroethylene		47.6	ug/L	0.300	1.00
10061-01-5	cis-1,3-Dichloropropylene		48.8	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes		98.2	ug/L	0.300	2.00
71-36-3	n-Butyl alcohol		5280	ug/L	15.0	50.0
104-51-8	n-Butylbenzene		49.6	ug/L	0.300	1.00
103-65-1	n-Propylbenzene		46.3	ug/L	0.300	1.00
95-47-6	o-Xylene		48.4	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene		49.5	ug/L	0.300	1.00

Volatile
Certificate of Analysis
Sample Summary

Page 3 of 3

SDG Number:	2017-865	Matrix:	GROUND WATER
Lab Sample ID:	1203714353		
Client Sample:	QC for batch 1633830	Client:	ARSL004
Client ID:	LCS for batch 1633830	Method:	SW-846:8260B
Batch ID:	1633830	Inst:	VOA9.I
Run Date:	01/24/2017 23:31	Analyst:	RXY1
Prep Date:	01/24/2017 23:31		
Data File:	012417V9\9C229L.D	Column:	DB-624

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
1634-04-4	tert-Butyl methyl ether		49.9	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene		51.8	ug/L	0.300	1.00
156-60-5	trans-1,2-Dichloroethylene		47.0	ug/L	0.300	1.00
10061-02-6	trans-1,3-Dichloropropylene		52.4	ug/L	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	49.9	50.0	ug/L 100	(71%-134%)
Bromofluorobenzene	49.9	50.0	ug/L 100	(70%-131%)
Toluene-d8	50.4	50.0	ug/L 101	(74%-124%)

Volatile
Certificate of Analysis
Sample Summary

Page 1 of 3

SDG Number: 2017-865		Matrix: GROUND WATER
Lab Sample ID: 1203714354		
Client Sample: QC for batch 1633830	Client: ARSL004	Project: QC
Client ID: LCS for batch 1633830	Method: SW-846:8260B	SOP Ref: GL-OA-E-038
Batch ID: 1633830	Inst: VOA9.I	Dilution: 1
Run Date: 01/25/2017 00:24	Analyst: RXY1	Purge Vol: 5 mL
Prep Date: 01/25/2017 00:24		
Data File: 012417V9\9C231L.D	Column: DB-624	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
630-20-6	1,1,1,2-Tetrachloroethane	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
79-34-5	1,1,2,2-Tetrachloroethane	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
75-34-3	1,1-Dichloroethane	U	1.00	ug/L	0.300	1.00
75-35-4	1,1-Dichloroethylene	U	1.00	ug/L	0.300	1.00
563-58-6	1,1-Dichloropropene	U	1.00	ug/L	0.300	1.00
87-61-6	1,2,3-Trichlorobenzene	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
120-82-1	1,2,4-Trichlorobenzene	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
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.500	1.00
106-93-4	1,2-Dibromoethane	U	1.00	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane	U	1.00	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane	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
541-73-1	1,3-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
142-28-9	1,3-Dichloropropane	U	1.00	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
78-93-3	2-Butanone	U	5.00	ug/L	1.50	5.00
126-99-8	2-Chloro-1,3-butadiene		48.3	ug/L	0.300	1.00
95-49-8	2-Chlorotoluene	U	1.00	ug/L	0.300	1.00
591-78-6	2-Hexanone	U	5.00	ug/L	1.50	5.00
106-43-4	4-Chlorotoluene	U	1.00	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene	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
67-64-1	Acetone	U	10.0	ug/L	1.50	10.0
75-05-8	Acetonitrile	U	25.0	ug/L	8.00	25.0
107-02-8	Acrolein		277	ug/L	1.50	5.00
107-13-1	Acrylonitrile		239	ug/L	1.50	5.00
107-05-1	Allyl chloride		226	ug/L	1.50	5.00
71-43-2	Benzene	U	1.00	ug/L	0.300	1.00
108-86-1	Bromobenzene	U	1.00	ug/L	0.300	1.00
74-97-5	Bromochloromethane	U	1.00	ug/L	0.300	1.00
75-27-4	Bromodichloromethane	U	1.00	ug/L	0.300	1.00
75-25-2	Bromoform	U	1.00	ug/L	0.300	1.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 2017-865

Lab Sample ID: 1203714354

Client Sample: QC for batch 1633830

Client ID: LCS for batch 1633830

Batch ID: 1633830

Run Date: 01/25/2017 00:24

Prep Date: 01/25/2017 00:24

Data File: 012417V9\9C231L.D

Client: ARSL004

Method: SW-846:8260B

Inst: VOA9.I

Analyst: RXY1

Column: DB-624

Matrix: GROUND WATER

Project: QC

SOP Ref: GL-OA-E-038

Dilution: 1

Purge Vol: 5 mL

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
74-83-9	Bromomethane	U	1.00	ug/L	0.300	1.00
75-15-0	Carbon disulfide	U	5.00	ug/L	1.50	5.00
56-23-5	Carbon tetrachloride	U	1.00	ug/L	0.300	1.00
108-90-7	Chlorobenzene	U	1.00	ug/L	0.300	1.00
75-00-3	Chloroethane	U	1.00	ug/L	0.300	1.00
67-66-3	Chloroform	U	1.00	ug/L	0.300	1.00
74-87-3	Chloromethane	U	1.00	ug/L	0.300	1.00
124-48-1	Dibromochloromethane	U	1.00	ug/L	0.300	1.00
74-95-3	Dibromomethane	U	1.00	ug/L	0.300	1.00
75-71-8	Dichlorodifluoromethane	U	1.00	ug/L	0.300	1.00
60-29-7	Ethyl ether	U	1.00	ug/L	0.300	1.00
97-63-2	Ethyl methacrylate		229	ug/L	1.50	5.00
100-41-4	Ethylbenzene	U	1.00	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene	U	1.00	ug/L	0.300	1.00
74-88-4	Iodomethane	U	5.00	ug/L	1.50	5.00
78-83-1	Isobutyl alcohol		2460	ug/L	15.0	50.0
98-82-8	Isopropylbenzene	U	1.00	ug/L	0.300	1.00
126-98-7	Methacrylonitrile		232	ug/L	1.50	5.00
80-62-6	Methyl methacrylate		226	ug/L	1.50	5.00
75-09-2	Methylene chloride	U	10.0	ug/L	1.00	10.0
91-20-3	Naphthalene	U	1.00	ug/L	0.300	1.00
107-12-0	Propionitrile		229	ug/L	1.50	5.00
100-42-5	Styrene	U	1.00	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene	U	1.00	ug/L	0.300	1.00
108-88-3	Toluene	U	1.00	ug/L	0.300	1.00
79-01-6	Trichloroethylene	U	1.00	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane	U	1.00	ug/L	0.300	1.00
76-13-1	Trichlorotrifluoroethane		233	ug/L	2.00	5.00
108-05-4	Vinyl acetate	U	5.00	ug/L	1.50	5.00
75-01-4	Vinyl chloride	U	1.00	ug/L	0.300	1.00
156-59-2	cis-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
10061-01-5	cis-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes	U	2.00	ug/L	0.300	2.00
71-36-3	n-Butyl alcohol	U	50.0	ug/L	15.0	50.0
104-51-8	n-Butylbenzene	U	1.00	ug/L	0.300	1.00
103-65-1	n-Propylbenzene	U	1.00	ug/L	0.300	1.00
95-47-6	o-Xylene	U	1.00	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene	U	1.00	ug/L	0.300	1.00

**Volatile
Certificate of Analysis
Sample Summary**

SDG Number: 2017-865		Matrix: GROUND WATER
Lab Sample ID: 1203714354		
Client Sample: QC for batch 1633830	Client: ARSL004	Project: QC
Client ID: LCS for batch 1633830	Method: SW-846:8260B	SOP Ref: GL-OA-E-038
Batch ID: 1633830	Inst: VOA9.I	Dilution: 1
Run Date: 01/25/2017 00:24	Analyst: RXY1	Purge Vol: 5 mL
Prep Date: 01/25/2017 00:24		
Data File: 012417V9\9C231L.D	Column: DB-624	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
1634-04-4	tert-Butyl methyl ether	U	1.00	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene	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
10061-02-6	trans-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	48.9	50.0	98	(71%-134%)
Bromofluorobenzene	50.1	50.0	100	(70%-131%)
Toluene-d8	49.7	50.0	99	(74%-124%)

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	2017-865	Date Collected:	01/13/2017 09:53	Matrix:	W
Lab Sample ID:	1203714357	Date Received:	01/18/2017 08:50		
Client Sample:	QC for batch 1633830	Client:	ARSL004	Project:	QC
Client ID:	CAPA-17-129209PS	Method:	SW-846:8260B	SOP Ref:	GL-OA-E-038
Batch ID:	1633830	Inst:	VOA9.I	Dilution:	1
Run Date:	01/25/2017 07:03	Analyst:	RXY1	Purge Vol:	5 mL
Prep Date:	01/25/2017 07:03				
Data File:	012417V9\9C246.D	Column:	DB-624		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
630-20-6	1,1,1,2-Tetrachloroethane		54.6	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane		56.0	ug/L	0.300	1.00
79-34-5	1,1,2,2-Tetrachloroethane		54.6	ug/L	0.300	1.00
79-00-5	1,1,2-Trichloroethane		52.9	ug/L	0.300	1.00
75-34-3	1,1-Dichloroethane		53.0	ug/L	0.300	1.00
75-35-4	1,1-Dichloroethylene		52.7	ug/L	0.300	1.00
563-58-6	1,1-Dichloropropene		53.9	ug/L	0.300	1.00
87-61-6	1,2,3-Trichlorobenzene		51.9	ug/L	0.300	1.00
96-18-4	1,2,3-Trichloropropane		56.5	ug/L	0.300	1.00
120-82-1	1,2,4-Trichlorobenzene		49.5	ug/L	0.300	1.00
95-63-6	1,2,4-Trimethylbenzene		53.4	ug/L	0.300	1.00
96-12-8	1,2-Dibromo-3-chloropropane		54.8	ug/L	0.500	1.00
106-93-4	1,2-Dibromoethane		55.1	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene		51.0	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane		52.3	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane		51.4	ug/L	0.300	1.00
108-67-8	1,3,5-Trimethylbenzene		55.2	ug/L	0.300	1.00
541-73-1	1,3-Dichlorobenzene		49.6	ug/L	0.300	1.00
142-28-9	1,3-Dichloropropane		51.2	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene		49.6	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane		54.7	ug/L	0.300	1.00
78-93-3	2-Butanone		195	ug/L	1.50	5.00
126-99-8	2-Chloro-1,3-butadiene	U	1.00	ug/L	0.300	1.00
95-49-8	2-Chlorotoluene		53.4	ug/L	0.300	1.00
591-78-6	2-Hexanone		237	ug/L	1.50	5.00
106-43-4	4-Chlorotoluene		52.1	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene		55.8	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone		282	ug/L	1.50	5.00
67-64-1	Acetone	B	144	ug/L	1.50	10.0
75-05-8	Acetonitrile		1440	ug/L	8.00	25.0
107-02-8	Acrolein	U	5.00	ug/L	1.50	5.00
107-13-1	Acrylonitrile	U	5.00	ug/L	1.50	5.00
107-05-1	Allyl chloride	U	5.00	ug/L	1.50	5.00
71-43-2	Benzene		50.8	ug/L	0.300	1.00
108-86-1	Bromobenzene		51.3	ug/L	0.300	1.00
74-97-5	Bromochloromethane		51.5	ug/L	0.300	1.00
75-27-4	Bromodichloromethane		56.4	ug/L	0.300	1.00
75-25-2	Bromoform		53.5	ug/L	0.300	1.00

**Volatile
Certificate of Analysis
Sample Summary**

SDG Number:	2017-865	Date Collected:	01/13/2017 09:53	Matrix:	W
Lab Sample ID:	1203714357	Date Received:	01/18/2017 08:50		
Client Sample:	QC for batch 1633830	Client:	ARSL004	Project:	QC
Client ID:	CAPA-17-129209PS	Method:	SW-846:8260B	SOP Ref:	GL-OA-E-038
Batch ID:	1633830	Inst:	VOA9.I	Dilution:	1
Run Date:	01/25/2017 07:03	Analyst:	RXY1	Purge Vol:	5 mL
Prep Date:	01/25/2017 07:03				
Data File:	012417V9\9C246.D	Column:	DB-624		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
74-83-9	Bromomethane		55.2	ug/L	0.300	1.00
75-15-0	Carbon disulfide		265	ug/L	1.50	5.00
56-23-5	Carbon tetrachloride		59.3	ug/L	0.300	1.00
108-90-7	Chlorobenzene		51.3	ug/L	0.300	1.00
75-00-3	Chloroethane		56.2	ug/L	0.300	1.00
67-66-3	Chloroform		53.1	ug/L	0.300	1.00
74-87-3	Chloromethane		57.6	ug/L	0.300	1.00
124-48-1	Dibromochloromethane		58.9	ug/L	0.300	1.00
74-95-3	Dibromomethane		52.3	ug/L	0.300	1.00
75-71-8	Dichlorodifluoromethane		57.6	ug/L	0.300	1.00
60-29-7	Ethyl ether		52.8	ug/L	0.300	1.00
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.50	5.00
100-41-4	Ethylbenzene		53.1	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene		56.1	ug/L	0.300	1.00
74-88-4	Iodomethane		260	ug/L	1.50	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	15.0	50.0
98-82-8	Isopropylbenzene		55.7	ug/L	0.300	1.00
126-98-7	Methacrylonitrile	U	5.00	ug/L	1.50	5.00
80-62-6	Methyl methacrylate	U	5.00	ug/L	1.50	5.00
75-09-2	Methylene chloride		49.3	ug/L	1.00	10.0
91-20-3	Naphthalene		61.1	ug/L	0.300	1.00
107-12-0	Propionitrile	U	5.00	ug/L	1.50	5.00
100-42-5	Styrene		55.1	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene		51.9	ug/L	0.300	1.00
108-88-3	Toluene		51.1	ug/L	0.300	1.00
79-01-6	Trichloroethylene		53.2	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane		58.4	ug/L	0.300	1.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	2.00	5.00
108-05-4	Vinyl acetate		238	ug/L	1.50	5.00
75-01-4	Vinyl chloride		60.0	ug/L	0.300	1.00
156-59-2	cis-1,2-Dichloroethylene		53.7	ug/L	0.300	1.00
10061-01-5	cis-1,3-Dichloropropylene		53.9	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes		110	ug/L	0.300	2.00
71-36-3	n-Butyl alcohol		6690	ug/L	15.0	50.0
104-51-8	n-Butylbenzene		54.6	ug/L	0.300	1.00
103-65-1	n-Propylbenzene		52.4	ug/L	0.300	1.00
95-47-6	o-Xylene		53.5	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene		56.9	ug/L	0.300	1.00

**Volatile
Certificate of Analysis
Sample Summary**

SDG Number: 2017-865	Date Collected: 01/13/2017 09:53	Matrix: W
Lab Sample ID: 1203714357	Date Received: 01/18/2017 08:50	
Client Sample: QC for batch 1633830	Client: ARSL004	Project: QC
Client ID: CAPA-17-129209PS	Method: SW-846:8260B	SOP Ref: GL-OA-E-038
Batch ID: 1633830	Inst: VOA9.I	Dilution: 1
Run Date: 01/25/2017 07:03	Analyst: RXY1	Purge Vol: 5 mL
Prep Date: 01/25/2017 07:03		
Data File: 012417V9\9C246.D	Column: DB-624	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
1634-04-4	tert-Butyl methyl ether		55.6	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene		57.7	ug/L	0.300	1.00
156-60-5	trans-1,2-Dichloroethylene		54.2	ug/L	0.300	1.00
10061-02-6	trans-1,3-Dichloropropylene		56.9	ug/L	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	51.4	50.0	103	(71%-134%)
Bromofluorobenzene	50.1	50.0	100	(70%-131%)
Toluene-d8	49.8	50.0	100	(74%-124%)

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	2017-865	Date Collected:	01/13/2017 09:53	Matrix:	W
Lab Sample ID:	1203714358	Date Received:	01/18/2017 08:50		
Client Sample:	QC for batch 1633830	Client:	ARSL004	Project:	QC
Client ID:	CAPA-17-129209PS	Method:	SW-846:8260B	SOP Ref:	GL-OA-E-038
Batch ID:	1633830	Inst:	VOA9.I	Dilution:	1
Run Date:	01/25/2017 08:51	Analyst:	RXY1	Purge Vol:	5 mL
Prep Date:	01/25/2017 08:51				
Data File:	012417V9\9C250.D	Column:	DB-624		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
630-20-6	1,1,1,2-Tetrachloroethane	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
79-34-5	1,1,2,2-Tetrachloroethane	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
75-34-3	1,1-Dichloroethane	U	1.00	ug/L	0.300	1.00
75-35-4	1,1-Dichloroethylene	U	1.00	ug/L	0.300	1.00
563-58-6	1,1-Dichloropropene	U	1.00	ug/L	0.300	1.00
87-61-6	1,2,3-Trichlorobenzene	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
120-82-1	1,2,4-Trichlorobenzene	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
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.500	1.00
106-93-4	1,2-Dibromoethane	U	1.00	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane	U	1.00	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane	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
541-73-1	1,3-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
142-28-9	1,3-Dichloropropane	U	1.00	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
78-93-3	2-Butanone	U	5.00	ug/L	1.50	5.00
126-99-8	2-Chloro-1,3-butadiene		54.5	ug/L	0.300	1.00
95-49-8	2-Chlorotoluene	U	1.00	ug/L	0.300	1.00
591-78-6	2-Hexanone	U	5.00	ug/L	1.50	5.00
106-43-4	4-Chlorotoluene	U	1.00	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene	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
67-64-1	Acetone	U	10.0	ug/L	1.50	10.0
75-05-8	Acetonitrile	U	25.0	ug/L	8.00	25.0
107-02-8	Acrolein		309	ug/L	1.50	5.00
107-13-1	Acrylonitrile		303	ug/L	1.50	5.00
107-05-1	Allyl chloride		251	ug/L	1.50	5.00
71-43-2	Benzene	U	1.00	ug/L	0.300	1.00
108-86-1	Bromobenzene	U	1.00	ug/L	0.300	1.00
74-97-5	Bromochloromethane	U	1.00	ug/L	0.300	1.00
75-27-4	Bromodichloromethane	U	1.00	ug/L	0.300	1.00
75-25-2	Bromoform	U	1.00	ug/L	0.300	1.00

**Volatile
Certificate of Analysis
Sample Summary**

SDG Number:	2017-865	Date Collected:	01/13/2017 09:53	Matrix:	W
Lab Sample ID:	1203714358	Date Received:	01/18/2017 08:50		
Client Sample:	QC for batch 1633830	Client:	ARSL004	Project:	QC
Client ID:	CAPA-17-129209PS	Method:	SW-846:8260B	SOP Ref:	GL-OA-E-038
Batch ID:	1633830	Inst:	VOA9.I	Dilution:	1
Run Date:	01/25/2017 08:51	Analyst:	RXY1	Purge Vol:	5 mL
Prep Date:	01/25/2017 08:51				
Data File:	012417V9\9C250.D	Column:	DB-624		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
74-83-9	Bromomethane	U	1.00	ug/L	0.300	1.00
75-15-0	Carbon disulfide	U	5.00	ug/L	1.50	5.00
56-23-5	Carbon tetrachloride	U	1.00	ug/L	0.300	1.00
108-90-7	Chlorobenzene	U	1.00	ug/L	0.300	1.00
75-00-3	Chloroethane	U	1.00	ug/L	0.300	1.00
67-66-3	Chloroform	U	1.00	ug/L	0.300	1.00
74-87-3	Chloromethane	U	1.00	ug/L	0.300	1.00
124-48-1	Dibromochloromethane	U	1.00	ug/L	0.300	1.00
74-95-3	Dibromomethane	U	1.00	ug/L	0.300	1.00
75-71-8	Dichlorodifluoromethane	U	1.00	ug/L	0.300	1.00
60-29-7	Ethyl ether	U	1.00	ug/L	0.300	1.00
97-63-2	Ethyl methacrylate		268	ug/L	1.50	5.00
100-41-4	Ethylbenzene	U	1.00	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene	U	1.00	ug/L	0.300	1.00
74-88-4	Iodomethane	U	5.00	ug/L	1.50	5.00
78-83-1	Isobutyl alcohol		3160	ug/L	15.0	50.0
98-82-8	Isopropylbenzene	U	1.00	ug/L	0.300	1.00
126-98-7	Methacrylonitrile		284	ug/L	1.50	5.00
80-62-6	Methyl methacrylate		267	ug/L	1.50	5.00
75-09-2	Methylene chloride	U	10.0	ug/L	1.00	10.0
91-20-3	Naphthalene	U	1.00	ug/L	0.300	1.00
107-12-0	Propionitrile		297	ug/L	1.50	5.00
100-42-5	Styrene	U	1.00	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene	U	1.00	ug/L	0.300	1.00
108-88-3	Toluene	U	1.00	ug/L	0.300	1.00
79-01-6	Trichloroethylene	U	1.00	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane	U	1.00	ug/L	0.300	1.00
76-13-1	Trichlorotrifluoroethane		266	ug/L	2.00	5.00
108-05-4	Vinyl acetate	U	5.00	ug/L	1.50	5.00
75-01-4	Vinyl chloride	U	1.00	ug/L	0.300	1.00
156-59-2	cis-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
10061-01-5	cis-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes	U	2.00	ug/L	0.300	2.00
71-36-3	n-Butyl alcohol	U	50.0	ug/L	15.0	50.0
104-51-8	n-Butylbenzene	U	1.00	ug/L	0.300	1.00
103-65-1	n-Propylbenzene	U	1.00	ug/L	0.300	1.00
95-47-6	o-Xylene	U	1.00	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene	U	1.00	ug/L	0.300	1.00

**Volatile
Certificate of Analysis
Sample Summary**

SDG Number:	2017-865	Date Collected:	01/13/2017 09:53	Matrix:	W
Lab Sample ID:	1203714358	Date Received:	01/18/2017 08:50		
Client Sample:	QC for batch 1633830	Client:	ARSL004	Project:	QC
Client ID:	CAPA-17-129209PS	Method:	SW-846:8260B	SOP Ref:	GL-OA-E-038
Batch ID:	1633830	Inst:	VOA9.I	Dilution:	1
Run Date:	01/25/2017 08:51	Analyst:	RXY1	Purge Vol:	5 mL
Prep Date:	01/25/2017 08:51				
Data File:	012417V9\9C250.D	Column:	DB-624		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
1634-04-4	tert-Butyl methyl ether	U	1.00	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene	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
10061-02-6	trans-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	50.1	50.0	ug/L 100	(71%-134%)
Bromofluorobenzene	50.1	50.0	ug/L 100	(70%-131%)
Toluene-d8	50.2	50.0	ug/L 100	(74%-124%)

**Volatile
Certificate of Analysis
Sample Summary**

SDG Number:	2017-865	Date Collected:	01/13/2017 09:53	Matrix:	W
Lab Sample ID:	1203714361	Date Received:	01/18/2017 08:50		
Client Sample:	QC for batch 1633830	Client:	ARSL004	Project:	QC
Client ID:	CAPA-17-129209PSD	Method:	SW-846:8260B	SOP Ref:	GL-OA-E-038
Batch ID:	1633830	Inst:	VOA9.I	Dilution:	1
Run Date:	01/25/2017 07:30	Analyst:	RXY1	Purge Vol:	5 mL
Prep Date:	01/25/2017 07:30				
Data File:	012417V9\9C247.D	Column:	DB-624		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
630-20-6	1,1,1,2-Tetrachloroethane		56.2	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane		55.0	ug/L	0.300	1.00
79-34-5	1,1,2,2-Tetrachloroethane		55.6	ug/L	0.300	1.00
79-00-5	1,1,2-Trichloroethane		53.7	ug/L	0.300	1.00
75-34-3	1,1-Dichloroethane		51.6	ug/L	0.300	1.00
75-35-4	1,1-Dichloroethylene		51.3	ug/L	0.300	1.00
563-58-6	1,1-Dichloropropene		54.0	ug/L	0.300	1.00
87-61-6	1,2,3-Trichlorobenzene		53.4	ug/L	0.300	1.00
96-18-4	1,2,3-Trichloropropane		56.5	ug/L	0.300	1.00
120-82-1	1,2,4-Trichlorobenzene		50.6	ug/L	0.300	1.00
95-63-6	1,2,4-Trimethylbenzene		53.8	ug/L	0.300	1.00
96-12-8	1,2-Dibromo-3-chloropropane		55.0	ug/L	0.500	1.00
106-93-4	1,2-Dibromoethane		55.8	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene		51.1	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane		51.8	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane		51.5	ug/L	0.300	1.00
108-67-8	1,3,5-Trimethylbenzene		55.5	ug/L	0.300	1.00
541-73-1	1,3-Dichlorobenzene		49.8	ug/L	0.300	1.00
142-28-9	1,3-Dichloropropane		52.3	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene		49.6	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane		53.9	ug/L	0.300	1.00
78-93-3	2-Butanone		196	ug/L	1.50	5.00
126-99-8	2-Chloro-1,3-butadiene	U	1.00	ug/L	0.300	1.00
95-49-8	2-Chlorotoluene		53.9	ug/L	0.300	1.00
591-78-6	2-Hexanone		241	ug/L	1.50	5.00
106-43-4	4-Chlorotoluene		52.0	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene		55.9	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone		291	ug/L	1.50	5.00
67-64-1	Acetone	B	141	ug/L	1.50	10.0
75-05-8	Acetonitrile		1440	ug/L	8.00	25.0
107-02-8	Acrolein	U	5.00	ug/L	1.50	5.00
107-13-1	Acrylonitrile	U	5.00	ug/L	1.50	5.00
107-05-1	Allyl chloride	U	5.00	ug/L	1.50	5.00
71-43-2	Benzene		51.0	ug/L	0.300	1.00
108-86-1	Bromobenzene		51.5	ug/L	0.300	1.00
74-97-5	Bromochloromethane		51.7	ug/L	0.300	1.00
75-27-4	Bromodichloromethane		56.2	ug/L	0.300	1.00
75-25-2	Bromoform		54.5	ug/L	0.300	1.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 2017-865	Date Collected: 01/13/2017 09:53	Matrix: W
Lab Sample ID: 1203714361	Date Received: 01/18/2017 08:50	
Client Sample: QC for batch 1633830	Client: ARSL004	Project: QC
Client ID: CAPA-17-129209PSD	Method: SW-846:8260B	SOP Ref: GL-OA-E-038
Batch ID: 1633830	Inst: VOA9.I	Dilution: 1
Run Date: 01/25/2017 07:30	Analyst: RXY1	Purge Vol: 5 mL
Prep Date: 01/25/2017 07:30		
Data File: 012417V9\9C247.D	Column: DB-624	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
74-83-9	Bromomethane		58.5	ug/L	0.300	1.00
75-15-0	Carbon disulfide		258	ug/L	1.50	5.00
56-23-5	Carbon tetrachloride		58.2	ug/L	0.300	1.00
108-90-7	Chlorobenzene		51.2	ug/L	0.300	1.00
75-00-3	Chloroethane		59.8	ug/L	0.300	1.00
67-66-3	Chloroform		52.2	ug/L	0.300	1.00
74-87-3	Chloromethane		60.7	ug/L	0.300	1.00
124-48-1	Dibromochloromethane		60.3	ug/L	0.300	1.00
74-95-3	Dibromomethane		52.4	ug/L	0.300	1.00
75-71-8	Dichlorodifluoromethane		60.8	ug/L	0.300	1.00
60-29-7	Ethyl ether		56.3	ug/L	0.300	1.00
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.50	5.00
100-41-4	Ethylbenzene		53.4	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene		56.8	ug/L	0.300	1.00
74-88-4	Iodomethane		257	ug/L	1.50	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	15.0	50.0
98-82-8	Isopropylbenzene		56.9	ug/L	0.300	1.00
126-98-7	Methacrylonitrile	U	5.00	ug/L	1.50	5.00
80-62-6	Methyl methacrylate	U	5.00	ug/L	1.50	5.00
75-09-2	Methylene chloride		49.2	ug/L	1.00	10.0
91-20-3	Naphthalene		62.8	ug/L	0.300	1.00
107-12-0	Propionitrile	U	5.00	ug/L	1.50	5.00
100-42-5	Styrene		55.1	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene		52.4	ug/L	0.300	1.00
108-88-3	Toluene		51.9	ug/L	0.300	1.00
79-01-6	Trichloroethylene		53.9	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane		60.9	ug/L	0.300	1.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	2.00	5.00
108-05-4	Vinyl acetate		253	ug/L	1.50	5.00
75-01-4	Vinyl chloride		63.9	ug/L	0.300	1.00
156-59-2	cis-1,2-Dichloroethylene		52.5	ug/L	0.300	1.00
10061-01-5	cis-1,3-Dichloropropylene		53.9	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes		111	ug/L	0.300	2.00
71-36-3	n-Butyl alcohol		6910	ug/L	15.0	50.0
104-51-8	n-Butylbenzene		54.8	ug/L	0.300	1.00
103-65-1	n-Propylbenzene		52.9	ug/L	0.300	1.00
95-47-6	o-Xylene		53.7	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene		57.5	ug/L	0.300	1.00

**Volatile
Certificate of Analysis
Sample Summary**

SDG Number: 2017-865	Date Collected: 01/13/2017 09:53	Matrix: W
Lab Sample ID: 1203714361	Date Received: 01/18/2017 08:50	
Client Sample: QC for batch 1633830	Client: ARSL004	Project: QC
Client ID: CAPA-17-129209PSD	Method: SW-846:8260B	SOP Ref: GL-OA-E-038
Batch ID: 1633830	Inst: VOA9.I	Dilution: 1
Run Date: 01/25/2017 07:30	Analyst: RXY1	Purge Vol: 5 mL
Prep Date: 01/25/2017 07:30		
Data File: 012417V9\9C247.D	Column: DB-624	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
1634-04-4	tert-Butyl methyl ether		55.4	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene		61.3	ug/L	0.300	1.00
156-60-5	trans-1,2-Dichloroethylene		53.2	ug/L	0.300	1.00
10061-02-6	trans-1,3-Dichloropropylene		58.0	ug/L	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	51.2	50.0	ug/L 102	(71%-134%)
Bromofluorobenzene	50.4	50.0	ug/L 101	(70%-131%)
Toluene-d8	51.4	50.0	ug/L 103	(74%-124%)

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 2017-865	Date Collected: 01/13/2017 09:53	Matrix: W
Lab Sample ID: 1203714362	Date Received: 01/18/2017 08:50	
Client Sample: QC for batch 1633830	Client: ARSL004	Project: QC
Client ID: CAPA-17-129209PSD	Method: SW-846:8260B	SOP Ref: GL-OA-E-038
Batch ID: 1633830	Inst: VOA9.I	Dilution: 1
Run Date: 01/25/2017 09:18	Analyst: RXY1	Purge Vol: 5 mL
Prep Date: 01/25/2017 09:18		
Data File: 012417V9\9C251.D	Column: DB-624	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
630-20-6	1,1,1,2-Tetrachloroethane	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
79-34-5	1,1,2,2-Tetrachloroethane	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
75-34-3	1,1-Dichloroethane	U	1.00	ug/L	0.300	1.00
75-35-4	1,1-Dichloroethylene	U	1.00	ug/L	0.300	1.00
563-58-6	1,1-Dichloropropene	U	1.00	ug/L	0.300	1.00
87-61-6	1,2,3-Trichlorobenzene	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
120-82-1	1,2,4-Trichlorobenzene	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
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.500	1.00
106-93-4	1,2-Dibromoethane	U	1.00	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane	U	1.00	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane	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
541-73-1	1,3-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
142-28-9	1,3-Dichloropropane	U	1.00	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
78-93-3	2-Butanone	U	5.00	ug/L	1.50	5.00
126-99-8	2-Chloro-1,3-butadiene		52.4	ug/L	0.300	1.00
95-49-8	2-Chlorotoluene	U	1.00	ug/L	0.300	1.00
591-78-6	2-Hexanone	U	5.00	ug/L	1.50	5.00
106-43-4	4-Chlorotoluene	U	1.00	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene	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
67-64-1	Acetone	U	10.0	ug/L	1.50	10.0
75-05-8	Acetonitrile	U	25.0	ug/L	8.00	25.0
107-02-8	Acrolein		289	ug/L	1.50	5.00
107-13-1	Acrylonitrile		273	ug/L	1.50	5.00
107-05-1	Allyl chloride		242	ug/L	1.50	5.00
71-43-2	Benzene	U	1.00	ug/L	0.300	1.00
108-86-1	Bromobenzene	U	1.00	ug/L	0.300	1.00
74-97-5	Bromochloromethane	U	1.00	ug/L	0.300	1.00
75-27-4	Bromodichloromethane	U	1.00	ug/L	0.300	1.00
75-25-2	Bromoform	U	1.00	ug/L	0.300	1.00

**Volatile
Certificate of Analysis
Sample Summary**

SDG Number:	2017-865	Date Collected:	01/13/2017 09:53	Matrix:	W
Lab Sample ID:	1203714362	Date Received:	01/18/2017 08:50		
Client Sample:	QC for batch 1633830	Client:	ARSL004	Project:	QC
Client ID:	CAPA-17-129209PSD	Method:	SW-846:8260B	SOP Ref:	GL-OA-E-038
Batch ID:	1633830	Inst:	VOA9.I	Dilution:	1
Run Date:	01/25/2017 09:18	Analyst:	RXY1	Purge Vol:	5 mL
Prep Date:	01/25/2017 09:18				
Data File:	012417V9\9C251.D	Column:	DB-624		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
74-83-9	Bromomethane	U	1.00	ug/L	0.300	1.00
75-15-0	Carbon disulfide	U	5.00	ug/L	1.50	5.00
56-23-5	Carbon tetrachloride	U	1.00	ug/L	0.300	1.00
108-90-7	Chlorobenzene	U	1.00	ug/L	0.300	1.00
75-00-3	Chloroethane	U	1.00	ug/L	0.300	1.00
67-66-3	Chloroform	U	1.00	ug/L	0.300	1.00
74-87-3	Chloromethane	U	1.00	ug/L	0.300	1.00
124-48-1	Dibromochloromethane	U	1.00	ug/L	0.300	1.00
74-95-3	Dibromomethane	U	1.00	ug/L	0.300	1.00
75-71-8	Dichlorodifluoromethane	U	1.00	ug/L	0.300	1.00
60-29-7	Ethyl ether	U	1.00	ug/L	0.300	1.00
97-63-2	Ethyl methacrylate		255	ug/L	1.50	5.00
100-41-4	Ethylbenzene	U	1.00	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene	U	1.00	ug/L	0.300	1.00
74-88-4	Iodomethane	U	5.00	ug/L	1.50	5.00
78-83-1	Isobutyl alcohol		2800	ug/L	15.0	50.0
98-82-8	Isopropylbenzene	U	1.00	ug/L	0.300	1.00
126-98-7	Methacrylonitrile		263	ug/L	1.50	5.00
80-62-6	Methyl methacrylate		252	ug/L	1.50	5.00
75-09-2	Methylene chloride	U	10.0	ug/L	1.00	10.0
91-20-3	Naphthalene	U	1.00	ug/L	0.300	1.00
107-12-0	Propionitrile		269	ug/L	1.50	5.00
100-42-5	Styrene	U	1.00	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene	U	1.00	ug/L	0.300	1.00
108-88-3	Toluene	U	1.00	ug/L	0.300	1.00
79-01-6	Trichloroethylene	U	1.00	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane	U	1.00	ug/L	0.300	1.00
76-13-1	Trichlorotrifluoroethane		252	ug/L	2.00	5.00
108-05-4	Vinyl acetate	U	5.00	ug/L	1.50	5.00
75-01-4	Vinyl chloride	U	1.00	ug/L	0.300	1.00
156-59-2	cis-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
10061-01-5	cis-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes	U	2.00	ug/L	0.300	2.00
71-36-3	n-Butyl alcohol	U	50.0	ug/L	15.0	50.0
104-51-8	n-Butylbenzene	U	1.00	ug/L	0.300	1.00
103-65-1	n-Propylbenzene	U	1.00	ug/L	0.300	1.00
95-47-6	o-Xylene	U	1.00	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene	U	1.00	ug/L	0.300	1.00

**Volatile
Certificate of Analysis
Sample Summary**

SDG Number: 2017-865	Date Collected: 01/13/2017 09:53	Matrix: W
Lab Sample ID: 1203714362	Date Received: 01/18/2017 08:50	
Client Sample: QC for batch 1633830	Client: ARSL004	Project: QC
Client ID: CAPA-17-129209PSD	Method: SW-846:8260B	SOP Ref: GL-OA-E-038
Batch ID: 1633830	Inst: VOA9.I	Dilution: 1
Run Date: 01/25/2017 09:18	Analyst: RXY1	Purge Vol: 5 mL
Prep Date: 01/25/2017 09:18		
Data File: 012417V9\9C251.D	Column: DB-624	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
1634-04-4	tert-Butyl methyl ether	U	1.00	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene	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
10061-02-6	trans-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	49.0	50.0	ug/L 98	(71%-134%)
Bromofluorobenzene	50.1	50.0	ug/L 100	(70%-131%)
Toluene-d8	50.5	50.0	ug/L 101	(74%-124%)

General Chem Analysis

Case Narrative

**General Chemistry
Technical Case Narrative
ARS International, LLC (ARSL)
SDG #: 2017-865
Work Order #: 414461**

Method/Analysis Information

Product: Carbon and Total Organic

Analytical Batch: 1632179

Method: SW 9060 Total Organic Carbon

Sample Analysis

The following samples were analyzed using the analytical protocol as established in SW-846:9060:

Sample ID	Client ID
414461004	CAPA-17-129209
1203710093	Method Blank (MB)
1203710094	Laboratory Control Sample (LCS)
1203710095	414379001(CAWR-17-127835) Sample Duplicate (DUP)
1203710098	414379001(CAWR-17-127835) Post Spike (PS)

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# 14.

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 1030W 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

Sample 414379001 (CAWR-17-127835) was selected for QC analysis.

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

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

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 Kjeldahl Nitrogen		
Analytical Batch:	1632411	Method:	TKN
Prep Batch :	1632410	Method:	EPA 351.2 Prep

Sample Analysis

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

Sample ID	Client ID
414461004	CAPA-17-129209
1203710653	Method Blank (MB)
1203710654	Laboratory Control Sample (LCS)
1203710655	414461004(CAPA-17-129209) Sample Duplicate (DUP)
1203710659	414461004(CAPA-17-129209) 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-104 REV# 14.

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.

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

Sample 414461004 (CAPA-17-129209) was selected for QC analysis.

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

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

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.

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

ARSL004 ARS International, LLC (ARS-LANS-MTOA6-25093-GEL)

Client SDG: 2017-865 GEL Work Order: 414461

The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
- J Value is estimated
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC 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: Aubrey Kingsbury

Date: 03 FEB 2017

Title: Analyst I

Sample Data Summary

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: February 3, 2017

Company : Los Alamos National Laboratory
Address : TA-03, SM271, Drop Pt. 02U, Rm111

Los Alamos, New Mexico 87545
Contact: Mr. Keith Greene
Project: LANL- WQH Water Samples

Client SDG: 2017-865

Client Sample ID: CAPA-17-129209
Sample ID: 414461004
Matrix: W
Collect Date: 13-JAN-17 09:53
Receive Date: 18-JAN-17
Collector: Client

Project: ESHL00114
Client ID: ARSL004

Parameter	Qualifier	Result	DL	RL	Units	PF	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	01/20/17	2349	1632179	1
Nutrient Analysis												
TKN "As Received"												
Nitrogen, Total Kjeldahl	U	ND	0.033	0.100	mg/L	1.00	1	KLP1	01/20/17	0840	1632411	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	01/19/17	1630	1632410

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW-846:9060	
2	EPA:351.2	

Notes:

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

Quality Control Summary

GEL LABORATORIES LLC

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

QC Summary

Report Date: February 3, 2017

Page 1 of 2

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

Contact: Mr. Keith Greene

Workorder: 414461

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Carbon Analysis											
Batch	1632179										
QC1203710095	414379001	DUP									
Total Organic Carbon Average	J	0.374	J	0.383	mg/L	2.38	^	(+/-1.00)	TSM	01/20/17	21:40
QC1203710094	LCS										
Total Organic Carbon Average	10.0			10.6	mg/L			(80%-120%)		01/20/17	20:00
QC1203710093	MB										
Total Organic Carbon Average			U	ND	mg/L					01/20/17	19:49
QC1203710098	414379001	PS									
Total Organic Carbon Average	10.0	J	0.374	11.0	mg/L			(75%-125%)		01/20/17	22:22
Nutrient Analysis											
Batch	1632411										
QC1203710655	414461004	DUP									
Nitrogen, Total Kjeldahl	U	ND	U	ND	mg/L	N/A			KLP1	01/20/17	08:46
QC1203710654	LCS										
Nitrogen, Total Kjeldahl	1.00			0.931	mg/L			(90%-110%)		01/20/17	08:34
QC1203710653	MB										
Nitrogen, Total Kjeldahl			U	ND	mg/L					01/20/17	08:33
QC1203710659	414461004	MS									
Nitrogen, Total Kjeldahl	1.00	U	ND	1.06	mg/L			(90%-110%)		01/20/17	08:46

- Notes:**
- < Result is less than value reported
 - > Result is greater than value reported
 - B The target analyte was detected in the associated blank.
 - E General Chemistry--Concentration of the target analyte exceeds the instrument calibration range

GEL LABORATORIES LLC

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QC Summary

Workorder: 414461

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
H	Analytical holding time was exceeded										
J	Value is estimated										
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										
Q	One or more quality control criteria have not been met. Refer to the applicable narrative or DER.										
R	Per section 9.3.4.1 of Method 1664 Revision B, due to matrix spike recovery issues, this result may not be reported or used for regulatory compliance purposes.										
R	Sample results are rejected										
U	Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.										
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier										
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										
e	5-day BOD--Test replicates show more than 30% difference between high and low values. The data is qualified per the method and can be used for reporting purposes										
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 or %RPD not applicable.

^ 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.