

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: 11313

EVENT NAME: Pajarito (TA-54) MY2017 Q4

SAMPLE ID: CAPA-17-139142

WORK ORDER:

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
Date Collected (MM/DD/YYYY):	7/10/17	OK	FIELD MATRIX:	WG	OK
TIME COLLECTED (HH:MM):	1056		MEDIA:	UA	
PRS ID:	OK		SAMPLE TECH CODE:	GSP	
LOCATION ID:	R-23		FIELD PREP:	UF	
LOCATION TYPE:	OK		FIELD QC TYPE:	REG	
TOP DEPTH:	↓		SAMPLE USAGE:	INV	
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	HCL	Y	NA
↓	WSP-LL-H-3	1 LITER POLY	1	NONE	↓	↓

SAMPLE COMMENTS: Sampled 40 ft. from running diesel generators

LOCATION COMMENTS: None

## FIELD PARAMETERS:

Sample Time	1056	HH:MM	Dissolved Oxygen	6.77	Flow (in gpm)	16.11
Oxidation-Reduction Potential	180.7		pH	8.04	Specific Conductance	169.5
Temperature	21.9		Turbidity	2.11		

COLLECTED BY (PRINT): M. Shendog, A. Vizil

RELINQUISHED BY (Printed Name) ANDREW VIZIL (Signature) <i>Andrew Vizil</i>	Date/Time 7/10/17 1200	RECEIVED BY (Printed Name) <i>M. Shendog</i> (Signature) <i>M. Shendog</i>	Date/Time 7/10/17 1200
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date: 07/06/2017



## SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 11313

EVENT NAME: Pajarito (TA-54) MY2017 Q4

SAMPLE ID: CAPA-17-139149

WORK ORDER:

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
Date Collected (MM/DD/YYYY):	07/10/2017	OK	FIELD MATRIX:	WG	OK
TIME COLLECTED (HH:MM):	1223		MEDIA:	UA	
PRS ID:	OK		SAMPLE TECH CODE:	GSP	
LOCATION ID:	R-53 S1		FIELD PREP:	UF	
LOCATION TYPE:	OK		FIELD QC TYPE:	REG	
TOP DEPTH:			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	V	NA
↓	WSP-LL-H-3	1 LITER POLY	1	NONE	↓	↓

SAMPLE COMMENTS: Sampled soft. from running diesel generator

LOCATION COMMENTS: NA

## FIELD PARAMETERS:

Sample Time	1223	HH:MM	Dissolved Oxygen	6.34	Flow (in gpm)	3.85
Oxidation-Reduction Potential	215.4		pH	8.10	Specific Conductance	124.5
Temperature	21.8		Turbidity	0.19		

COLLECTED BY (PRINT): T. VanderVis

RELINQUISHED BY (Printed Name) Tanya VanderVis (Signature) Tanya VanderVis	Date/Time 07/10/2017 1305	RECEIVED BY (Printed Name) M. Mark (Signature) M. Mark	Date/Time 7/10/17 1305
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date: 07/06/2017

## SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 11313

EVENT NAME: Pajarito (TA-54) MY2017 Q4

SAMPLE ID: CAPA-17-139152

WORK ORDER:

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
Date Collected (MM/DD/YYYY):	7/10/17	OK	FIELD MATRIX:	WG	OK
TIME COLLECTED (HH:MM):	1056		MEDIA:	UA	
PRS ID:	OK		SAMPLE TECH CODE:	GSP	
LOCATION ID:	R-23		FIELD PREP:	UF	
LOCATION TYPE:	OK		FIELD QC TYPE:	FD	
TOP DEPTH:	↓		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	HCL	Y	NA
✓	WSP-LL-H-3	1 LITER POLY	1	NONE	NA	

SAMPLE COMMENTS:

LOCATION COMMENTS:

FIELD PARAMETERS:

Sample Time \_\_\_\_\_ HH:MM \_\_\_\_\_ Dissolved Oxygen \_\_\_\_\_ Flow (in gpm) \_\_\_\_\_  
 Oxidation-Reduction Potential \_\_\_\_\_ pH \_\_\_\_\_ Specific Conductance \_\_\_\_\_  
 Temperature \_\_\_\_\_ Turbidity \_\_\_\_\_

COLLECTED BY (PRINT): M. Shendoy A. Vigil

RELINQUISHED BY (Printed Name) ANDREW VIGIL (Signature) <i>Andrew Vigil</i>	Date/Time 7/10/17 1200	RECEIVED BY (Printed Name) M. Montoya (Signature) <i>M. Montoya</i>	Date/Time 7/10/17 1200
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date: 07/06/2017



## SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 11313

EVENT NAME: Pajarito (TA-54) MY2017 Q4

SAMPLE ID: CAPA-17-139154

WORK ORDER:

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
Date Collected (MM/DD/YYYY):	7/10/17	OK	FIELD MATRIX:	WG	OK
TIME COLLECTED (HH:MM):	1056		MEDIA:	UA	
PRS ID:	OK		SAMPLE TECH CODE:	DC	
LOCATION ID:	R-23		FIELD PREP:	UF	
LOCATION TYPE:	OK		FIELD QC TYPE:	FB	
TOP DEPTH:	↓	↓	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	X2 AS 7/10/17 AS 7/10/17	HCL	Y	NA

SAMPLE COMMENTS:

LOCATION COMMENTS:

FIELD PARAMETERS:

Sample Time \_\_\_\_\_ HH:MM Dissolved Oxygen \_\_\_\_\_ Flow (in gpm) \_\_\_\_\_  
Oxidation-Reduction \_\_\_\_\_ pH \_\_\_\_\_ Specific \_\_\_\_\_  
Potential \_\_\_\_\_ Conductance \_\_\_\_\_  
Temperature \_\_\_\_\_ Turbidity \_\_\_\_\_

COLLECTED BY (PRINT): M. Shendog, A. Vigil

RELINQUISHED BY (Printed Name) ANDREW VIGIL (Signature) <i>Andrew Vigil</i>	Date/Time 7/10/17 1200	RECEIVED BY (Printed Name) M. Shendog (Signature) <i>M. Shendog</i>	Date/Time 7/10/17 1200
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date: 07/06/2017

## SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 11313

EVENT NAME: Pajarito (TA-54) MY2017 Q4

SAMPLE ID: CAPA-17-139155

WORK ORDER:

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
Date Collected (MM/DD/YYYY):	7/10/17	OK	FIELD MATRIX:	WG	OK
TIME COLLECTED (HH:MM):	1056		MEDIA:	UA	
PRS ID:	OK		SAMPLE TECH CODE:	DK	
LOCATION ID:	R-23		FIELD PREP:	UF	
LOCATION TYPE:	OK		FIELD QC TYPE:	FTB	
TOP DEPTH:	↓		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	1/2 AS 7/10/17	HCL	Y	NA

SAMPLE COMMENTS:

LOCATION COMMENTS:

FIELD PARAMETERS:

Sample Time \_\_\_\_\_ HH:MM \_\_\_\_\_ Dissolved Oxygen \_\_\_\_\_ Flow (in gpm) \_\_\_\_\_  
Oxidation-Reduction \_\_\_\_\_ pH \_\_\_\_\_ Specific \_\_\_\_\_  
Potential \_\_\_\_\_ Conductance \_\_\_\_\_  
Temperature \_\_\_\_\_ Turbidity \_\_\_\_\_

COLLECTED BY (PRINT):

M. Shendo, A. Vigil

RELINQUISHED BY (Printed Name) ANDREW VIGIL (Signature) <i>Andrew Vigil</i>	Date/Time 7/10/17 1200	RECEIVED BY (Printed Name) M. Montoya (Signature) <i>M. Montoya</i>	Date/Time 7/10/17 12:00
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date: 07/06/2017



## SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 11313

EVENT NAME: Pajarito (TA-54) MY2017 Q4

SAMPLE ID: CAPA-17-139162

WORK ORDER:

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
Date Collected (MM/DD/YYYY):	07/10/2017	OK	FIELD MATRIX:	WG	OK
TIME COLLECTED (HH:MM):	1223		MEDIA:	UA	
PRS ID:	OK		SAMPLE TECH CODE:	DC	
LOCATION ID:	R-53 S1		FIELD PREP:	UF	
LOCATION TYPE:	OK		FIELD QC TYPE:	FTB	
TOP DEPTH:			SAMPLE USAGE:	QC	
BOTTOM DEPTH:			EXCAVATED:		YES / <u>NO</u> / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
NA	WSP-8260B- VOA	40 ML SEPTUM AMBER GLASS	1 2 7/10/2017	HCL	Y	NA

SAMPLE COMMENTS:

LOCATION COMMENTS:

FIELD PARAMETERS:

Sample Time \_\_\_\_\_ HH:MM Dissolved Oxygen \_\_\_\_\_ Flow (in gpm) \_\_\_\_\_  
Oxidation-Reduction \_\_\_\_\_ pH \_\_\_\_\_ Specific \_\_\_\_\_  
Potential \_\_\_\_\_ Conductance \_\_\_\_\_  
Temperature \_\_\_\_\_ Turbidity \_\_\_\_\_

COLLECTED BY (PRINT): A. T. VanderVis  
7-10-2017

RELINQUISHED BY (Printed Name) <u>Tanya VanderVis</u> (Signature) <u>Tanya VanderVis</u>	Date/Time 07/10/2017 1305	RECEIVED BY (Printed Name) <u>M. I. Martinez</u> (Signature) <u>M. I. Martinez</u>	Date/Time 7/10/17 1307
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date: 07/06/2017



## DATA VALIDATION REPORT

Chain Of Custody No. 2017-1930

### 1. Distribution Of Samples In EDD.

SDG	Analytical Method	Regular Samples	Field Duplicates	Trip Blanks	Field Blanks	Equipment Blanks
427599	EPA:170.0	2	1	2	1	
427599	SW-846:8260B	2	1	2	1	

SDG	Analytical Method	Analysis Lot ID	Prep Lot ID	Regular Samples	Field Duplicates	Trip Blanks	Field Blanks	Equipment Blanks	Method Blanks	Matrix Spikes	Matrix Spike Dups	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
427599	EPA:170.0	NA	NA	2	1	2	1														
427599	SW-846:8260B	1683272	1683272	2	1	2	1		2					3							

### 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:170.0	VOC	CAPA-17-139142	427599001	REG	1	0	0	0
EPA:170.0	VOC	CAPA-17-139149	427599005	REG	1	0	0	0
EPA:170.0	VOC	CAPA-17-139152	427599002	FD	1	0	0	0
EPA:170.0	VOC	CAPA-17-139154	427599003	FB	1	0	0	0
EPA:170.0	VOC	CAPA-17-139155	427599004	FTB	1	0	0	0
EPA:170.0	VOC	CAPA-17-139162	427599006	FTB	1	0	0	0
SW-846:8260B	VOC	CAPA-17-139142	427599001	REG	80	3	0	0
SW-846:8260B	VOC	CAPA-17-139149	427599005	REG	80	3	0	0
SW-846:8260B	VOC	CAPA-17-139152	427599002	FD	80	3	0	0
SW-846:8260B	VOC	CAPA-17-139154	427599003	FB	80	3	0	0
SW-846:8260B	VOC	CAPA-17-139155	427599004	FTB	80	3	0	0
SW-846:8260B	VOC	CAPA-17-139162	427599006	FTB	80	3	0	0
SW-846:8260B	VOC	LCS	1203833453	LCS	0	3	70	0
SW-846:8260B	VOC	LCS	1203833454	LCS	0	3	10	0
SW-846:8260B	VOC	LCS	1203834057	LCS	0	3	10	0
SW-846:8260B	VOC	MB	1203833452	MB	80	3	0	0
SW-846:8260B	VOC	MB	1203834056	MB	80	3	0	0

## DATA VALIDATION REPORT

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
CAPA-17-139154	427599003	FIELD BLANK	EPA:170.0	W	Temperature	2		Deg C	
CAPA-17-139155	427599004	TRIP BLANK	EPA:170.0	W	Temperature	2		Deg C	
CAPA-17-139162	427599006	TRIP BLANK	EPA:170.0	W	Temperature	2		Deg C	

No.

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.



## DATA VALIDATION REPORT

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.

None.

### **Reason Code**

### **Description**

NQ

The analytical laboratory did not qualify the analyte as not detected and/or any other standard qualify. The analyte is detected in the sample.

U\_LAB

The analytical laboratory qualified the analyte as not detected.

14. Usable Result Count.

Field Sample ID	Location ID	Sample Purpose	Analytical Method	No. Unuseable Records	Total Records
CAPA-17-139142	R-23	REG	EPA:170.0	0	1
CAPA-17-139142	R-23	REG	SW-846:8260B	0	80
CAPA-17-139149	R-53 S1	REG	EPA:170.0	0	1
CAPA-17-139149	R-53 S1	REG	SW-846:8260B	0	80
CAPA-17-139152	R-23	FD	EPA:170.0	0	1
CAPA-17-139152	R-23	FD	SW-846:8260B	0	80
CAPA-17-139154	R-23	FB	EPA:170.0	0	1
CAPA-17-139154	R-23	FB	SW-846:8260B	0	80
CAPA-17-139155	R-23	FTB	EPA:170.0	0	1
CAPA-17-139155	R-23	FTB	SW-846:8260B	0	80

## DATA VALIDATION REPORT

Field Sample ID	Location ID	Sample Purpose	Analytical Method	No. Unuseable Records	Total Records
CAPA-17-139162	R-53 S1	FTB	EPA:170.0	0	1
CAPA-17-139162	R-53 S1	FTB	SW-846:8260B	0	80



August 04, 2017

[gel.com](http://gel.com)

Ms. Nita Patel  
Los Alamos National Laboratory  
TA-00, SM1237, Rm104C  
Los Alamos, New Mexico 87545

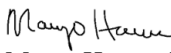
Re: LANL- WQH Water Samples  
Work Order: 427599  
SDG: 2017-1930

Dear Ms. Patel:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the following analytical results for the sample(s) we received on July 12, 2017, and analyzed for GC/MS Volatile. 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,

  
Margo Herron for  
Valerie Davis  
Project Manager

Chain of Custody: 2017-1930  
Enclosures



**ARS International, LLC (ARS-LANS-MTOA6-25093-GEL)**  
**LANL- WQH Water Samples**  
**Work Order #: 427599**  
**SDG: 2017-1930**



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# Case Narrative

**Case Narrative for  
ARS International, LLC (ARS-LANS-MTOA6-25093-GEL)  
LANL- WQH Water Samples  
Workorder #: 427599  
SDG # : 2017-1930**

**August 04, 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 July 12, 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:

<b><u>Laboratory ID</u></b>	<b><u>Client ID</u></b>
427599001	CAPA-17-139142
427599002	CAPA-17-139152
427599003	CAPA-17-139154
427599004	CAPA-17-139155
427599005	CAPA-17-139149
427599006	CAPA-17-139162

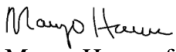
**Case Narrative**

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.

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.

  
Margo Herron for  
Valerie Davis  
Project Manager



**List of current GEL Certifications as of 04 August 2017**

<b>State</b>	<b>Certification</b>
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	SC000122018-1
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	T104704235-17-12
Utah NELAP	SC000122017-23
Vermont	VT87156
Virginia NELAP	460202
Washington	C780
West Virginia	997404

# **Chain of Custody and Supporting Documentation**

General Engineering  
Charleston SC

Chain of Custody/Analysis Request

427509  
2017-1930  
Page 1 of 1

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

Site Name: Los Alamos National Laboratory

WSP-8260B-VOA

Field Sample ID

CAPA-17-139142  
CAPA-17-139152  
CAPA-17-139154  
CAPA-17-139155  
CAPA-17-139149  
CAPA-17-139162

Sample Date  
Jul 10 2017  
Jul 10 2017  
Jul 10 2017  
Jul 10 2017  
Jul 10 2017  
Jul 10 2017

Sample Time  
10:56  
10:56  
10:56  
10:56  
12:23  
12:23

Sample Matrix  
W  
W  
W  
W  
W  
W

Rad Screening Info:  
Yes, Below Background

Lab Reporting Limit Type:  
Sample Quantitation Limit

Special Instructions:

Relinquished by: [Signature]  
Relinquished by: [Signature]  
Relinquished by: [Signature]

Print Name: [Signature]  
Print Name: [Signature]  
Print Name: [Signature]

Date/Time: [Signature]  
Date/Time: [Signature]  
Date/Time: [Signature]

Received by: [Signature]  
Received by: [Signature]  
Received by: [Signature]

Print Name: [Signature]  
Print Name: [Signature]  
Print Name: [Signature]

Date/Time: [Signature]  
Date/Time: [Signature]  
Date/Time: [Signature]



Laboratories LLC

## SAMPLE RECEIPT &amp; REVIEW FORM

Client: <u>ESUL</u>		SDG/AR/COC/Work Order: <u>4275991</u>	
Received By: <u>ZKW</u>		Date Received: <u>7/12/17</u>	
Carrier and Tracking Number		Circle Applicable: <input checked="" type="checkbox"/> FedEx Express <input type="checkbox"/> FedEx Ground <input type="checkbox"/> UPS <input type="checkbox"/> Field Services <input type="checkbox"/> Courier <input type="checkbox"/> Other	
		<u>5908 1782 3193</u>	
Suspected Hazard Information	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.	
Shipped as a DOT Hazardous?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Hazard Class Shipped: _____ UN#: _____	
COC/Samples marked or classified as radioactive?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): <u>0</u> CPM/mR/Hr Classified as: Rad 1 Rad 2 Rad 3	
Is package, COC, and/or Samples marked HAZ?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes, select Hazards below, and contact the GEL Safety Group. <input type="checkbox"/> PCB's <input type="checkbox"/> Flammable <input type="checkbox"/> Foreign Soil <input type="checkbox"/> RCRA <input type="checkbox"/> Asbestos <input type="checkbox"/> Beryllium <input type="checkbox"/> Other:	

Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1 Shipping containers received intact and sealed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2 Chain of custody documents included with shipment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3 Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Preservation Method: Wet Ice <input checked="" type="checkbox"/> Ice Packs Dry ice None Other: _____ *all temperatures are recorded in Celsius TEMP: <u>2°C</u>
4 Daily check performed and passed on IR temperature gun?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Temperature Device Serial #: <u>IR3-16</u> Secondary Temperature Device Serial # (If Applicable): _____
5 Sample containers intact and sealed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
6 Samples requiring chemical preservation at proper pH?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Sample ID's and Containers Affected: If Preservation added, Lot#: _____
7 Do any samples require Volatile Analysis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	If Yes, Are Encores or Soil Kits present? Yes ___ No <input checked="" type="checkbox"/> (If yes, take to VOA Freezer) Do VOA vials contain acid preservation? Yes <input checked="" type="checkbox"/> No ___ N/A ___ (If unknown, select No) VOA vials free of headspace? Yes ___ No <input checked="" type="checkbox"/> N/A ___ Sample ID's and containers affected: <u>-139162 and -139155 rec'd w/ headspace</u>
8 Samples received within holding time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ID's and tests affected:
9 Sample ID's on COC match ID's on bottles?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sample ID's and containers affected:
10 Date & time on COC match date & time on bottles?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sample ID's affected:
11 Number of containers received match number indicated on COC?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sample ID's affected:
12 Are sample containers identifiable as GEL provided?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
13 COC form is properly signed in relinquished/received sections?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials

MGUA

Date

7/12/17

Page

1

of

1

GL-CHL-SR-001 Rev 5



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: 11JUL17  
ACTWGT: 15.0 LB MAN  
CAD: 0014176/CAFE2916

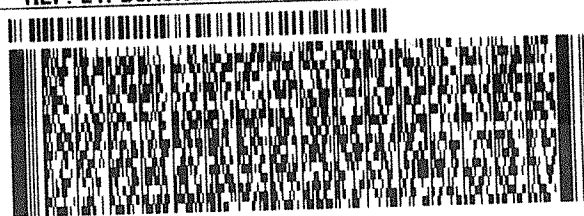
BILL SENDER

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

**CHARLESTON SC 29407**

(843) 556-8171

REF: 21PD0ASRGW04BAGWEO



**FedEx**  
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TRK# 5908 1782 3193  
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**WED - 12 JUL 10:30A**  
**PRIORITY OVERNIGHT**

**X7 RBWA**

**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 #: 2017-1930  
Work Order #: 427599**

**Method/Analysis Information**

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

Analytical Method: SW-846:8260B

Analytical Batch Number: 1683272

**Sample Analysis**

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

<b>Sample ID</b>	<b>Client ID</b>
427599001	CAPA-17-139142
427599002	CAPA-17-139152
427599003	CAPA-17-139154
427599004	CAPA-17-139155
427599005	CAPA-17-139149
427599006	CAPA-17-139162
1203833452	Method Blank (MB)
1203833453	Laboratory Control Sample (LCS)
1203833454	Laboratory Control Sample (LCS)
1203833455	427599003(CAPA-17-139154) Post Spike (PS)
1203833456	427599003(CAPA-17-139154) Post Spike (PS)
1203833457	427599003(CAPA-17-139154) Post Spike Duplicate (PSD)
1203833458	427599003(CAPA-17-139154) Post Spike Duplicate (PSD)
1203834056	Method Blank (MB)
1203834057	Laboratory Control Sample (LCS)

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

The 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# 26.

**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 1203834056 (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 427599003 (CAPA-17-139154) 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**

Samples 427599004 (CAPA-17-139155) and 427599006 (CAPA-17-139162) contained head-space greater than pea size. The Project Manager was notified and the results are reported.

##### **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**

##### **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 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:

<b>Instrument ID</b>	<b>Instrument</b>	<b>System Configuration</b>	<b>Column ID</b>	<b>Column Description</b>	<b>P &amp; T Trap</b>
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: 2017-1930 GEL Work Order: 427599

#### The Qualifiers in this report are defined as follows:

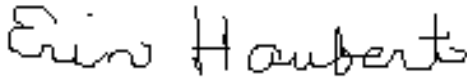
- \* A quality control analyte recovery is outside of specified acceptance criteria
- \*\* Analyte is a surrogate compound
- E Concentration of the target analyte exceeds the instrument calibration range
- J Value is estimated
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or 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: 24 JUL 2017

Title: Data Validator

# **Sample Data Summary**

**Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: 2017-1930

Lab Sample ID: 427599001

Date Collected: 07/10/2017 10:56

Date Received: 07/12/2017 09:15

Matrix: W

Client: ARSL004

Project: ESHL00114

Client ID: CAPA-17-139142

Method: SW-846:8260B

SOP Ref: GL-OA-E-038

Batch ID: 1683272

Inst: VOA9.I

Dilution: 1

Run Date: 07/18/2017 15:09

Analyst: RXY1

Purge Vol: 5 mL

Prep Date: 07/18/2017 15:09

Data File: 071817V9\9B214.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: 2017-1930

Lab Sample ID: 427599001

Date Collected: 07/10/2017 10:56

Date Received: 07/12/2017 09:15

Matrix: W

Client ID: CAPA-17-139142

Batch ID: 1683272

Run Date: 07/18/2017 15:09

Prep Date: 07/18/2017 15:09

Data File: 071817V9\9B214.D

Client: ARSL004

Method: SW-846:8260B

Inst: VOA9.I

Analyst: RXY1

Project: ESHL00114

SOP Ref: GL-OA-E-038

Dilution: 1

Purge Vol: 5 mL

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**

Page 3 of 3

SDG Number: 2017-1930

Lab Sample ID: 427599001

Date Collected: 07/10/2017 10:56

Date Received: 07/12/2017 09:15

Matrix: W

Client: ARSL004

Project: ESHL00114

Method: SW-846:8260B

SOP Ref: GL-OA-E-038

Batch ID: 1683272

Inst: VOA9.I

Dilution: 1

Run Date: 07/18/2017 15:09

Analyst: RXY1

Purge Vol: 5 mL

Prep Date: 07/18/2017 15:09

Data File: 071817V9\9B214.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	53.2	50.0	ug/L 106	(70%-131%)
Toluene-d8	49.5	50.0	ug/L 99	(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**

SDG Number: 2017-1930

Lab Sample ID: 427599002

Date Collected: 07/10/2017 10:56

Date Received: 07/12/2017 09:15

Matrix: W

Client ID: CAPA-17-139152

Batch ID: 1683272

Run Date: 07/18/2017 15:39

Prep Date: 07/18/2017 15:39

Data File: 071817V9\9B215.D

Client: ARSL004

Method: SW-846:8260B

Inst: VOA9.I

Analyst: RXY1

Column: DB-624

Project: ESHL00114

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	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: 2017-1930

Lab Sample ID: 427599002

Date Collected: 07/10/2017 10:56

Date Received: 07/12/2017 09:15

Matrix: W

Client ID: CAPA-17-139152

Batch ID: 1683272

Run Date: 07/18/2017 15:39

Prep Date: 07/18/2017 15:39

Data File: 071817V9\9B215.D

Client: ARSL004

Method: SW-846:8260B

Inst: VOA9.I

Analyst: RXY1

Column: DB-624

Project: ESHL00114

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: 2017-1930

Lab Sample ID: 427599002

Date Collected: 07/10/2017 10:56

Date Received: 07/12/2017 09:15

Matrix: W

Client: ARSL004

Project: ESHL00114

Client ID: CAPA-17-139152

Method: SW-846:8260B

SOP Ref: GL-OA-E-038

Batch ID: 1683272

Inst: VOA9.I

Dilution: 1

Run Date: 07/18/2017 15:39

Analyst: RXY1

Purge Vol: 5 mL

Prep Date: 07/18/2017 15:39

Data File: 071817V9\9B215.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	54.2	50.0	ug/L 108	(71%-134%)
Bromofluorobenzene	53.9	50.0	ug/L 108	(70%-131%)
Toluene-d8	50.5	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	5.05	ug/L	0	J
	unknown siloxane	14.663	7.61	ug/L	0	J

**Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: 2017-1930

Lab Sample ID: 427599003

Date Collected: 07/10/2017 10:56

Date Received: 07/12/2017 09:15

Matrix: W

Client ID: CAPA-17-139154

Batch ID: 1683272

Run Date: 07/18/2017 16:08

Prep Date: 07/18/2017 16:08

Data File: 071817V9\9B216.D

Client: ARSL004

Method: SW-846:8260B

Inst: VOA9.I

Analyst: RXY1

Column: DB-624

Project: ESHL00114

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	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: 2017-1930

Lab Sample ID: 427599003

Date Collected: 07/10/2017 10:56

Date Received: 07/12/2017 09:15

Matrix: W

Client ID: CAPA-17-139154

Batch ID: 1683272

Run Date: 07/18/2017 16:08

Prep Date: 07/18/2017 16:08

Data File: 071817V9\9B216.D

Client: ARSL004

Method: SW-846:8260B

Inst: VOA9.I

Analyst: RXY1

Project: ESHL00114

SOP Ref: GL-OA-E-038

Dilution: 1

Purge Vol: 5 mL

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: 2017-1930

Lab Sample ID: 427599003

Date Collected: 07/10/2017 10:56

Date Received: 07/12/2017 09:15

Matrix: W

Client ID: CAPA-17-139154

Batch ID: 1683272

Run Date: 07/18/2017 16:08

Prep Date: 07/18/2017 16:08

Data File: 071817V9\9B216.D

Client: ARSL004

Method: SW-846:8260B

Inst: VOA9.I

Analyst: RXY1

Project: ESHL00114

SOP Ref: GL-OA-E-038

Dilution: 1

Purge Vol: 5 mL

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	54.0	50.0	ug/L 108	(70%-131%)
Toluene-d8	50.5	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	7.85	ug/L	0	J
	unknown siloxane	14.663	11	ug/L	0	J

**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

SDG Number: 2017-1930

Lab Sample ID: 427599004

Date Collected: 07/10/2017 10:56

Date Received: 07/12/2017 09:15

Matrix: W

Client: ARSL004

Project: ESHL00114

Client ID: CAPA-17-139155

Method: SW-846:8260B

SOP Ref: GL-OA-E-038

Batch ID: 1683272

Inst: VOA9.I

Dilution: 1

Run Date: 07/18/2017 13:42

Analyst: RXY1

Purge Vol: 5 mL

Prep Date: 07/18/2017 13:42

Data File: 071817V9\9B211.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: 2017-1930

Lab Sample ID: 427599004

Date Collected: 07/10/2017 10:56

Date Received: 07/12/2017 09:15

Matrix: W

Client: ARSL004

Project: ESHL00114

Client ID: CAPA-17-139155

Method: SW-846:8260B

SOP Ref: GL-OA-E-038

Batch ID: 1683272

Inst: VOA9.I

Dilution: 1

Run Date: 07/18/2017 13:42

Analyst: RXY1

Purge Vol: 5 mL

Prep Date: 07/18/2017 13:42

Data File: 071817V9\9B211.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**

Page 3 of 3

SDG Number: 2017-1930

Lab Sample ID: 427599004

Date Collected: 07/10/2017 10:56

Date Received: 07/12/2017 09:15

Matrix: W

Client: ARSL004

Project: ESHL00114

Client ID: CAPA-17-139155

Method: SW-846:8260B

SOP Ref: GL-OA-E-038

Batch ID: 1683272

Inst: VOA9.I

Dilution: 1

Run Date: 07/18/2017 13:42

Analyst: RXY1

Purge Vol: 5 mL

Prep Date: 07/18/2017 13:42

Data File: 071817V9\9B211.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	53.6	50.0	ug/L 107	(71%-134%)
Bromofluorobenzene	52.4	50.0	ug/L 105	(70%-131%)
Toluene-d8	51.3	50.0	ug/L 103	(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**

SDG Number: 2017-1930

Lab Sample ID: 427599005

Date Collected: 07/10/2017 12:23

Date Received: 07/12/2017 09:15

Matrix: W

Client ID: CAPA-17-139149

Batch ID: 1683272

Run Date: 07/18/2017 16:37

Prep Date: 07/18/2017 16:37

Data File: 071817V9\9B217.D

Client: ARSL004

Method: SW-846:8260B

Inst: VOA9.I

Analyst: RXY1

Project: ESHL00114

SOP Ref: GL-OA-E-038

Dilution: 1

Purge Vol: 5 mL

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: 2017-1930

Lab Sample ID: 427599005

Date Collected: 07/10/2017 12:23

Date Received: 07/12/2017 09:15

Matrix: W

Client ID: CAPA-17-139149

Batch ID: 1683272

Run Date: 07/18/2017 16:37

Prep Date: 07/18/2017 16:37

Data File: 071817V9\9B217.D

Client: ARSL004

Method: SW-846:8260B

Inst: VOA9.I

Analyst: RXY1

Column: DB-624

Project: ESHL00114

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: 2017-1930

Lab Sample ID: 427599005

Date Collected: 07/10/2017 12:23

Date Received: 07/12/2017 09:15

Matrix: W

Client: ARSL004

Project: ESHL00114

Client ID: CAPA-17-139149

Method: SW-846:8260B

SOP Ref: GL-OA-E-038

Batch ID: 1683272

Inst: VOA9.I

Dilution: 1

Run Date: 07/18/2017 16:37

Analyst: RXY1

Purge Vol: 5 mL

Prep Date: 07/18/2017 16:37

Data File: 071817V9\9B217.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	53.3	50.0	ug/L 107	(70%-131%)
Toluene-d8	49.8	50.0	ug/L 100	(74%-124%)

**Tentatively Identified Compound Summary**

CAS No.	Tentatively Identified Compound (TIC)	RT	Estimated	Units	Fit	Qual
	unknown siloxane	12.291	10.1	ug/L	0	J
	unknown siloxane	14.663	22.1	ug/L	0	J

**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

SDG Number: 2017-1930

Lab Sample ID: 427599006

Date Collected: 07/10/2017 12:23

Date Received: 07/12/2017 09:15

Matrix: W

Client: ARSL004

Project: ESHL00114

Client ID: CAPA-17-139162

Method: SW-846:8260B

SOP Ref: GL-OA-E-038

Batch ID: 1683272

Inst: VOA9.I

Dilution: 1

Run Date: 07/18/2017 14:11

Analyst: RXY1

Purge Vol: 5 mL

Prep Date: 07/18/2017 14:11

Data File: 071817V9\9B212.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: 2017-1930

Lab Sample ID: 427599006

Date Collected: 07/10/2017 12:23

Date Received: 07/12/2017 09:15

Matrix: W

Client ID: CAPA-17-139162

Batch ID: 1683272

Run Date: 07/18/2017 14:11

Prep Date: 07/18/2017 14:11

Data File: 071817V9\9B212.D

Client: ARSL004

Method: SW-846:8260B

Inst: VOA9.I

Analyst: RXY1

Project: ESHL00114

SOP Ref: GL-OA-E-038

Dilution: 1

Purge Vol: 5 mL

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: 2017-1930

Lab Sample ID: 427599006

Date Collected: 07/10/2017 12:23

Date Received: 07/12/2017 09:15

Matrix: W

Client: ARSL004

Project: ESHL00114

Client ID: CAPA-17-139162

Method: SW-846:8260B

SOP Ref: GL-OA-E-038

Batch ID: 1683272

Inst: VOA9.I

Dilution: 1

Run Date: 07/18/2017 14:11

Analyst: RXY1

Purge Vol: 5 mL

Prep Date: 07/18/2017 14:11

Data File: 071817V9\9B212.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	54.3	50.0	ug/L 109	(71%-134%)
Bromofluorobenzene	53.0	50.0	ug/L 106	(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	8.97	ug/L	0	J
	unknown siloxane	14.663	7.92	ug/L	0	J

# **Quality Control Summary**

**Volatile**  
**Surrogate Recovery Report**

Page 1 of 1

**SDG Number: 2017-1930****Matrix Type: LIQUID**

Sample ID	Client ID	DCED4 %REC	TOL %REC	BFB %REC
1203833453	LCS for batch 1683272	102	103	102
1203833454	LCS for batch 1683272	103	101	102
1203833452	MB for batch 1683272	107	102	104
427599004	CAPA-17-139155	107	103	105
427599006	CAPA-17-139162	109	101	106
427599001	CAPA-17-139142	110	99	106
427599002	CAPA-17-139152	108	101	108
427599003	CAPA-17-139154	109	101	108
427599005	CAPA-17-139149	108	100	107
1203833455	CAPA-17-139154PS	106	102	101
1203833457	CAPA-17-139154PSD	103	100	102
1203834057	LCS for batch 1683272	105	102	103
1203834056	MB for batch 1683272	110	102	105
1203833456	CAPA-17-139154PS	105	100	103
1203833458	CAPA-17-139154PSD	105	99	104

**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

Page 1 of 4

SDG Number: 2017-1930

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1683272

Matrix: WATER

Lab Sample ID 1203833453

Instrument: VOA9.I

Analysis Date: 07/18/2017 10:19

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1683272

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	107	107	71-127
75-05-8	LCS Acetonitrile	1250	0.0	1240	100	61-125
67-64-1	LCS Acetone	250	0.0	281	112	48-157
74-88-4	LCS Iodomethane	250	0.0	238	95	72-128
75-15-0	LCS Carbon disulfide	250	0.0	247	99	69-138
108-05-4	LCS Vinyl acetate	250	0.0	273	109	67-125
78-93-3	LCS 2-Butanone	250	0.0	294	117	55-138
108-10-1	LCS 4-Methyl-2-pentanone	250	0.0	268	107	66-124
591-78-6	LCS 2-Hexanone	250	0.0	301	120	56-140
75-71-8	LCS Dichlorodifluoromethane	50.0	0.0	49.3	99	40-160
74-87-3	LCS Chloromethane	50.0	0.0	57.1	114	58-135
75-01-4	LCS Vinyl chloride	50.0	0.0	56.2	112	65-137
74-83-9	LCS Bromomethane	50.0	0.0	53.0	106	63-137
75-00-3	LCS Chloroethane	50.0	0.0	55.5	111	69-129
75-69-4	LCS Trichlorofluoromethane	50.0	0.0	57.8	116	69-138
60-29-7	LCS Ethyl ether	50.0	0.0	56.1	112	72-125
75-35-4	LCS 1,1-Dichloroethylene	50.0	0.0	54.7	109	66-126
75-09-2	LCS Methylene chloride	50.0	0.0	46.8	94	68-119
1634-04-4	LCS tert-Butyl methyl ether	50.0	0.0	51.6	103	76-128
156-60-5	LCS trans-1,2-Dichloroethylene	50.0	0.0	54.3	109	71-124
75-34-3	LCS 1,1-Dichloroethane	50.0	0.0	52.9	106	73-123
156-59-2	LCS cis-1,2-Dichloroethylene	50.0	0.0	53.0	106	75-123

Volatile  
Quality Control Summary  
Spike Recovery Report

Page 2 of 4

SDG Number: 2017-1930

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1683272

Matrix: WATER

Lab Sample ID 1203833453

Instrument: VOA9.I

Analysis Date: 07/18/2017 10:19

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1683272

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	57.1	114	72-138
74-97-5	LCS Bromochloromethane	50.0	0.0	48.9	98	76-125
67-66-3	LCS Chloroform	50.0	0.0	50.7	101	76-123
71-55-6	LCS 1,1,1-Trichloroethane	50.0	0.0	53.5	107	74-136
563-58-6	LCS 1,1-Dichloropropene	50.0	0.0	51.8	104	72-129
56-23-5	LCS Carbon tetrachloride	50.0	0.0	54.6	109	72-140
107-06-2	LCS 1,2-Dichloroethane	50.0	0.0	50.8	102	74-122
71-43-2	LCS Benzene	50.0	0.0	50.5	101	72-121
79-01-6	LCS Trichloroethylene	50.0	0.0	52.0	104	74-125
78-87-5	LCS 1,2-Dichloropropane	50.0	0.0	50.8	102	73-121
74-95-3	LCS Dibromomethane	50.0	0.0	51.0	102	78-123
75-27-4	LCS Bromodichloromethane	50.0	0.0	55.1	110	77-131
10061-01-5	LCS cis-1,3-Dichloropropylene	50.0	0.0	55.0	110	78-131
108-88-3	LCS Toluene	50.0	0.0	51.5	103	71-121
10061-02-6	LCS trans-1,3-Dichloropropylene	50.0	0.0	58.7	117	78-131
79-00-5	LCS 1,1,2-Trichloroethane	50.0	0.0	53.3	107	74-118
142-28-9	LCS 1,3-Dichloropropane	50.0	0.0	49.5	99	74-118
127-18-4	LCS Tetrachloroethylene	50.0	0.0	50.1	100	69-129
124-48-1	LCS Dibromochloromethane	50.0	0.0	57.3	115	76-137
106-93-4	LCS 1,2-Dibromoethane	50.0	0.0	53.7	107	78-122
108-90-7	LCS Chlorobenzene	50.0	0.0	50.5	101	74-120
100-41-4	LCS Ethylbenzene	50.0	0.0	51.6	103	73-125

Volatile  
Quality Control Summary  
Spike Recovery Report

Page 3 of 4

SDG Number: 2017-1930

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1683272

Matrix: WATER

Lab Sample ID 1203833453

Instrument: VOA9.I

Analysis Date: 07/18/2017 10:19

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1683272

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	53.1	106	74-126
100-42-5	LCS Styrene	50.0	0.0	53.2	106	72-130
75-25-2	LCS Bromoform	50.0	0.0	50.0	100	72-136
98-82-8	LCS Isopropylbenzene	50.0	0.0	54.1	108	70-130
79-34-5	LCS 1,1,2,2-Tetrachloroethane	50.0	0.0	52.3	105	70-126
96-18-4	LCS 1,2,3-Trichloropropane	50.0	0.0	51.5	103	74-122
108-86-1	LCS Bromobenzene	50.0	0.0	47.9	96	74-120
103-65-1	LCS n-Propylbenzene	50.0	0.0	51.3	103	67-128
108-67-8	LCS 1,3,5-Trimethylbenzene	50.0	0.0	53.7	107	70-129
95-49-8	LCS 2-Chlorotoluene	50.0	0.0	51.4	103	71-124
106-43-4	LCS 4-Chlorotoluene	50.0	0.0	51.4	103	69-125
98-06-6	LCS tert-Butylbenzene	50.0	0.0	55.9	112	72-130
95-63-6	LCS 1,2,4-Trimethylbenzene	50.0	0.0	52.4	105	70-126
135-98-8	LCS sec-Butylbenzene	50.0	0.0	54.1	108	70-131
99-87-6	LCS 4-Isopropyltoluene	50.0	0.0	54.1	108	71-131
541-73-1	LCS 1,3-Dichlorobenzene	50.0	0.0	48.0	96	72-121
106-46-7	LCS 1,4-Dichlorobenzene	50.0	0.0	52.8	106	71-120
104-51-8	LCS n-Butylbenzene	50.0	0.0	52.6	105	68-134
96-12-8	LCS 1,2-Dibromo-3-chloropropane	50.0	0.0	48.6	97	68-141
87-68-3	LCS Hexachlorobutadiene	50.0	0.0	53.0	106	72-136
91-20-3	LCS Naphthalene	50.0	0.0	52.4	105	72-132
87-61-6	LCS 1,2,3-Trichlorobenzene	50.0	0.0	51.6	103	70-130

Volatile  
Quality Control Summary  
Spike Recovery Report

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SDG Number: 2017-1930

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1683272

Matrix: WATER

Lab Sample ID 1203833453

Instrument: VOA9.I

Analysis Date: 07/18/2017 10:19

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1683272

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	52.6	105	71-129
630-20-6	LCS 1,1,1,2-Tetrachloroethane	50.0	0.0	54.4	109	79-127
95-50-1	LCS 1,2-Dichlorobenzene	50.0	0.0	48.2	96	74-120
71-36-3	LCS n-Butyl alcohol	5000	0.0	5210	104	63-138

Volatile  
Quality Control Summary  
Spike Recovery Report

Page 1 of 1

SDG Number: 2017-1930

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1683272

Matrix: WATER

Lab Sample ID 1203833454

Instrument: VOA9.I

Analysis Date: 07/18/2017 12:15

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1683272

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	225	90	60-140
76-13-1	LCS Trichlorotrifluoroethane	250	0.0	244	98	61-148
107-05-1	LCS Allyl chloride	250	0.0	234	94	59-125
107-13-1	LCS Acrylonitrile	250	0.0	237	95	65-122
107-12-0	LCS Propionitrile	250	0.0	231	93	64-124
126-98-7	LCS Methacrylonitrile	250	0.0	236	95	64-126
80-62-6	LCS Methyl methacrylate	250	0.0	230	92	69-127
97-63-2	LCS Ethyl methacrylate	250	0.0	233	93	66-130
78-83-1	LCS Isobutyl alcohol	2500	0.0	2290	91	65-135
126-99-8	LCS 2-Chloro-1,3-butadiene	50.0	0.0	45.6	91	66-147

Volatile  
Quality Control Summary  
Spike Recovery Report

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SDG Number: 2017-1930

Sample Type: Post Spike

Client ID: CAPA-17-139154PS

Matrix: W

Lab Sample ID 1203833455

Instrument: VOA9.I

Analysis Date: 07/18/2017 19:29

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1683272

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	105	105	59-132
75-05-8	PS Acetonitrile	1250	0.00 U	1290	103	56-131
67-64-1	PS Acetone	250	0.00 U	202	81	25-155
74-88-4	PS Iodomethane	250	0.00 U	235	94	66-133
75-15-0	PS Carbon disulfide	250	0.00 U	249	100	61-141
108-05-4	PS Vinyl acetate	250	0.00 U	248	99	48-133
78-93-3	PS 2-Butanone	250	0.00 U	236	94	25-143
108-10-1	PS 4-Methyl-2-pentanone	250	0.00 U	260	104	61-127
591-78-6	PS 2-Hexanone	250	0.00 U	243	97	33-138
75-71-8	PS Dichlorodifluoromethane	50.0	0.00 U	53.3	107	33-164
74-87-3	PS Chloromethane	50.0	0.00 U	51.1	102	53-139
75-01-4	PS Vinyl chloride	50.0	0.00 U	51.5	103	58-140
74-83-9	PS Bromomethane	50.0	0.00 U	52.5	105	59-146
75-00-3	PS Chloroethane	50.0	0.00 U	51.1	102	65-129
75-69-4	PS Trichlorofluoromethane	50.0	0.00 U	54.9	110	65-141
60-29-7	PS Ethyl ether	50.0	0.00 U	51.0	102	69-127
75-35-4	PS 1,1-Dichloroethylene	50.0	0.00 U	53.6	107	59-130
75-09-2	PS Methylene chloride	50.0	0.00 U	46.7	93	62-123
1634-04-4	PS tert-Butyl methyl ether	50.0	0.00 U	50.3	101	69-132
156-60-5	PS trans-1,2-Dichloroethylene	50.0	0.00 U	53.7	107	65-127
75-34-3	PS 1,1-Dichloroethane	50.0	0.00 U	53.3	107	67-127
156-59-2	PS cis-1,2-Dichloroethylene	50.0	0.00 U	53.2	106	69-127

Volatile  
Quality Control Summary  
Spike Recovery Report

Page 2 of 8

SDG Number: 2017-1930

Sample Type: Post Spike

Client ID: CAPA-17-139154PS

Matrix: W

Lab Sample ID 1203833455

Instrument: VOA9.I

Analysis Date: 07/18/2017 19:29

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1683272

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	55.4	111	66-137
74-97-5	PS Bromochloromethane	50.0	0.00 U	49.5	99	71-130
67-66-3	PS Chloroform	50.0	0.00 U	51.6	103	71-129
71-55-6	PS 1,1,1-Trichloroethane	50.0	0.00 U	53.8	108	69-139
563-58-6	PS 1,1-Dichloropropene	50.0	0.00 U	51.2	102	67-130
56-23-5	PS Carbon tetrachloride	50.0	0.00 U	55.1	110	66-143
107-06-2	PS 1,2-Dichloroethane	50.0	0.00 U	52.2	104	69-130
71-43-2	PS Benzene	50.0	0.00 U	50.0	100	66-125
79-01-6	PS Trichloroethylene	50.0	0.00 U	51.0	102	65-131
78-87-5	PS 1,2-Dichloropropane	50.0	0.00 U	50.8	102	67-127
74-95-3	PS Dibromomethane	50.0	0.00 U	51.5	103	72-129
75-27-4	PS Bromodichloromethane	50.0	0.00 U	55.2	110	70-138
10061-01-5	PS cis-1,3-Dichloropropylene	50.0	0.00 U	52.1	104	70-134
108-88-3	PS Toluene	50.0	0.00 U	50.7	101	60-126
10061-02-6	PS trans-1,3-Dichloropropylene	50.0	0.00 U	57.2	114	69-135
79-00-5	PS 1,1,2-Trichloroethane	50.0	0.00 U	53.2	106	66-125
142-28-9	PS 1,3-Dichloropropane	50.0	0.00 U	50.9	102	67-124
127-18-4	PS Tetrachloroethylene	50.0	0.00 U	48.7	97	60-130
124-48-1	PS Dibromochloromethane	50.0	0.00 U	57.3	115	68-143
106-93-4	PS 1,2-Dibromoethane	50.0	0.00 U	52.4	105	71-127
108-90-7	PS Chlorobenzene	50.0	0.00 U	49.3	99	64-124
100-41-4	PS Ethylbenzene	50.0	0.00 U	50.9	102	61-130

Volatile  
Quality Control Summary  
Spike Recovery Report

Page 3 of 8

SDG Number: 2017-1930

Sample Type: Post Spike

Client ID: CAPA-17-139154PS

Matrix: W

Lab Sample ID 1203833455

Instrument: VOA9.I

Analysis Date: 07/18/2017 19:29

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1683272

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	52.4	105	62-131
100-42-5	PS Styrene	50.0	0.00 U	52.8	106	59-135
75-25-2	PS Bromoform	50.0	0.00 U	48.9	98	64-138
98-82-8	PS Isopropylbenzene	50.0	0.00 U	52.1	104	55-133
79-34-5	PS 1,1,2,2-Tetrachloroethane	50.0	0.00 U	52.9	106	62-129
96-18-4	PS 1,2,3-Trichloropropane	50.0	0.00 U	52.4	105	70-124
108-86-1	PS Bromobenzene	50.0	0.00 U	47.0	94	62-124
103-65-1	PS n-Propylbenzene	50.0	0.00 U	50.4	101	50-133
108-67-8	PS 1,3,5-Trimethylbenzene	50.0	0.00 U	52.5	105	53-135
95-49-8	PS 2-Chlorotoluene	50.0	0.00 U	49.7	99	56-128
106-43-4	PS 4-Chlorotoluene	50.0	0.00 U	50.0	100	53-130
98-06-6	PS tert-Butylbenzene	50.0	0.00 U	53.1	106	55-135
95-63-6	PS 1,2,4-Trimethylbenzene	50.0	0.00 U	51.4	103	53-132
135-98-8	PS sec-Butylbenzene	50.0	0.00 U	52.6	105	50-138
99-87-6	PS 4-Isopropyltoluene	50.0	0.00 U	53.0	106	49-138
541-73-1	PS 1,3-Dichlorobenzene	50.0	0.00 U	46.6	93	56-126
106-46-7	PS 1,4-Dichlorobenzene	50.0	0.00 U	51.3	103	55-125
104-51-8	PS n-Butylbenzene	50.0	0.00 U	51.9	104	43-142
96-12-8	PS 1,2-Dibromo-3-chloropropane	50.0	0.00 U	48.1	96	62-141
87-68-3	PS Hexachlorobutadiene	50.0	0.00 U	50.5	101	40-147
91-20-3	PS Naphthalene	50.0	0.00 U	49.5	99	62-134
87-61-6	PS 1,2,3-Trichlorobenzene	50.0	0.00 U	48.1	96	52-135



Volatile  
Quality Control Summary  
Spike Recovery Report

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SDG Number: 2017-1930

Sample Type: Post Spike

Client ID: CAPA-17-139154PS

Matrix: W

Lab Sample ID 1203833455

Instrument: VOA9.I

Analysis Date: 07/18/2017 19:29

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1683272

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	48.9	98	50-133
630-20-6	PS 1,1,1,2-Tetrachloroethane	50.0	0.00 U	53.6	107	71-133
95-50-1	PS 1,2-Dichlorobenzene	50.0	0.00 U	47.2	94	60-125
71-36-3	PS n-Butyl alcohol	5000	0.00 U	5520	110	60-140

Volatile  
Quality Control Summary  
Spike Recovery Report

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SDG Number: 2017-1930

Sample Type: Post Spike Duplicate

Client ID: CAPA-17-139154PSD

Matrix: W

Lab Sample ID 1203833457

Instrument: VOA9.I

Analysis Date: 07/18/2017 19:59

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1683272

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	108	108	59-132	3	0-20
75-05-8	PSD Acetonitrile	1250	0.00 U	1360	109	56-131	5	0-20
67-64-1	PSD Acetone	250	0.00 U	210	84	25-155	4	0-20
74-88-4	PSD Iodomethane	250	0.00 U	248	99	66-133	5	0-20
75-15-0	PSD Carbon disulfide	250	0.00 U	261	104	61-141	5	0-20
108-05-4	PSD Vinyl acetate	250	0.00 U	267	107	48-133	7	0-20
78-93-3	PSD 2-Butanone	250	0.00 U	243	97	25-143	3	0-20
108-10-1	PSD 4-Methyl-2-pentanone	250	0.00 U	268	107	61-127	3	0-20
591-78-6	PSD 2-Hexanone	250	0.00 U	253	101	33-138	4	0-20
75-71-8	PSD Dichlorodifluoromethane	50.0	0.00 U	57.3	115	33-164	7	0-20
74-87-3	PSD Chloromethane	50.0	0.00 U	54.9	110	53-139	7	0-20
75-01-4	PSD Vinyl chloride	50.0	0.00 U	55.4	111	58-140	7	0-20
74-83-9	PSD Bromomethane	50.0	0.00 U	57.3	115	59-146	9	0-20
75-00-3	PSD Chloroethane	50.0	0.00 U	56.4	113	65-129	10	0-20
75-69-4	PSD Trichlorofluoromethane	50.0	0.00 U	59.0	118	65-141	7	0-20
60-29-7	PSD Ethyl ether	50.0	0.00 U	55.1	110	69-127	8	0-20
75-35-4	PSD 1,1-Dichloroethylene	50.0	0.00 U	56.4	113	59-130	5	0-20
75-09-2	PSD Methylene chloride	50.0	0.00 U	48.8	98	62-123	4	0-20
1634-04-4	PSD tert-Butyl methyl ether	50.0	0.00 U	52.7	105	69-132	5	0-20
156-60-5	PSD trans-1,2-Dichloroethylene	50.0	0.00 U	56.3	113	65-127	5	0-20
75-34-3	PSD 1,1-Dichloroethane	50.0	0.00 U	54.6	109	67-127	2	0-20
156-59-2	PSD cis-1,2-Dichloroethylene	50.0	0.00 U	53.9	108	69-127	1	0-20

Volatile  
Quality Control Summary  
Spike Recovery Report

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SDG Number: 2017-1930

Sample Type: Post Spike Duplicate

Client ID: CAPA-17-139154PSD

Matrix: W

Lab Sample ID 1203833457

Instrument: VOA9.I

Analysis Date: 07/18/2017 19:59

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1683272

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	58.0	116	66-137	5	0-20
74-97-5	PSD Bromochloromethane	50.0	0.00 U	50.1	100	71-130	1	0-20
67-66-3	PSD Chloroform	50.0	0.00 U	52.2	104	71-129	1	0-20
71-55-6	PSD 1,1,1-Trichloroethane	50.0	0.00 U	56.2	112	69-139	4	0-20
563-58-6	PSD 1,1-Dichloropropene	50.0	0.00 U	52.3	105	67-130	2	0-20
56-23-5	PSD Carbon tetrachloride	50.0	0.00 U	57.2	114	66-143	4	0-20
107-06-2	PSD 1,2-Dichloroethane	50.0	0.00 U	52.4	105	69-130	1	0-20
71-43-2	PSD Benzene	50.0	0.00 U	51.2	102	66-125	3	0-20
79-01-6	PSD Trichloroethylene	50.0	0.00 U	52.3	105	65-131	3	0-20
78-87-5	PSD 1,2-Dichloropropane	50.0	0.00 U	51.8	104	67-127	2	0-20
74-95-3	PSD Dibromomethane	50.0	0.00 U	52.2	104	72-129	1	0-20
75-27-4	PSD Bromodichloromethane	50.0	0.00 U	55.7	111	70-138	1	0-20
10061-01-5	PSD cis-1,3-Dichloropropylene	50.0	0.00 U	54.5	109	70-134	5	0-20
108-88-3	PSD Toluene	50.0	0.00 U	51.7	103	60-126	2	0-20
10061-02-6	PSD trans-1,3-Dichloropropylene	50.0	0.00 U	57.5	115	69-135	0	0-20
79-00-5	PSD 1,1,2-Trichloroethane	50.0	0.00 U	53.6	107	66-125	1	0-20
142-28-9	PSD 1,3-Dichloropropane	50.0	0.00 U	51.6	103	67-124	1	0-20
127-18-4	PSD Tetrachloroethylene	50.0	0.00 U	50.2	100	60-130	3	0-20
124-48-1	PSD Dibromochloromethane	50.0	0.00 U	58.1	116	68-143	1	0-20
106-93-4	PSD 1,2-Dibromoethane	50.0	0.00 U	54.4	109	71-127	4	0-20
108-90-7	PSD Chlorobenzene	50.0	0.00 U	50.5	101	64-124	2	0-20
100-41-4	PSD Ethylbenzene	50.0	0.00 U	52.2	104	61-130	3	0-20

Volatile  
Quality Control Summary  
Spike Recovery Report

Page 7 of 8

SDG Number: 2017-1930

Sample Type: Post Spike Duplicate

Client ID: CAPA-17-139154PSD

Matrix: W

Lab Sample ID 1203833457

Instrument: VOA9.I

Analysis Date: 07/18/2017 19:59

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1683272

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	53.6	107	62-131	2	0-20
100-42-5	PSD Styrene	50.0	0.00 U	54.0	108	59-135	2	0-20
75-25-2	PSD Bromoform	50.0	0.00 U	50.1	100	64-138	2	0-20
98-82-8	PSD Isopropylbenzene	50.0	0.00 U	54.0	108	55-133	4	0-20
79-34-5	PSD 1,1,2,2-Tetrachloroethane	50.0	0.00 U	54.2	108	62-129	3	0-20
96-18-4	PSD 1,2,3-Trichloropropane	50.0	0.00 U	54.9	110	70-124	5	0-20
108-86-1	PSD Bromobenzene	50.0	0.00 U	48.1	96	62-124	2	0-20
103-65-1	PSD n-Propylbenzene	50.0	0.00 U	52.3	105	50-133	4	0-20
108-67-8	PSD 1,3,5-Trimethylbenzene	50.0	0.00 U	54.2	108	53-135	3	0-20
95-49-8	PSD 2-Chlorotoluene	50.0	0.00 U	51.5	103	56-128	4	0-20
106-43-4	PSD 4-Chlorotoluene	50.0	0.00 U	51.6	103	53-130	3	0-20
98-06-6	PSD tert-Butylbenzene	50.0	0.00 U	55.0	110	55-135	4	0-20
95-63-6	PSD 1,2,4-Trimethylbenzene	50.0	0.00 U	52.9	106	53-132	3	0-20
135-98-8	PSD sec-Butylbenzene	50.0	0.00 U	54.3	109	50-138	3	0-20
99-87-6	PSD 4-Isopropyltoluene	50.0	0.00 U	54.3	109	49-138	2	0-20
541-73-1	PSD 1,3-Dichlorobenzene	50.0	0.00 U	47.7	95	56-126	2	0-20
106-46-7	PSD 1,4-Dichlorobenzene	50.0	0.00 U	52.6	105	55-125	2	0-20
104-51-8	PSD n-Butylbenzene	50.0	0.00 U	52.7	105	43-142	2	0-20
96-12-8	PSD 1,2-Dibromo-3-chloropropane	50.0	0.00 U	49.6	99	62-141	3	0-20
87-68-3	PSD Hexachlorobutadiene	50.0	0.00 U	51.6	103	40-147	2	0-20
91-20-3	PSD Naphthalene	50.0	0.00 U	51.3	103	62-134	3	0-20
87-61-6	PSD 1,2,3-Trichlorobenzene	50.0	0.00 U	49.1	98	52-135	2	0-20

Volatile  
Quality Control Summary  
Spike Recovery Report

Page 8 of 8

SDG Number: 2017-1930

Sample Type: Post Spike Duplicate

Client ID: CAPA-17-139154PSD

Matrix: W

Lab Sample ID 1203833457

Instrument: VOA9.I

Analysis Date: 07/18/2017 19:59

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1683272

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	49.1	98	50-133	1	0-20
630-20-6	PSD 1,1,1,2-Tetrachloroethane	50.0	0.00 U	54.6	109	71-133	2	0-20
95-50-1	PSD 1,2-Dichlorobenzene	50.0	0.00 U	47.7	95	60-125	1	0-20
71-36-3	PSD n-Butyl alcohol	5000	0.00 U	5770	115	60-140	4	0-20

Volatile  
Quality Control Summary  
Spike Recovery Report

Page 1 of 2

SDG Number: 2017-1930

Sample Type: Post Spike

Client ID: CAPA-17-139154PS

Matrix: W

Lab Sample ID 1203833456

Instrument: VOA9.I

Analysis Date: 07/19/2017 20:24

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1683272

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	295	118	49-141
76-13-1	PS Trichlorotrifluoroethane	250	0.00 U	252	101	57-149
107-05-1	PS Allyl chloride	250	0.00 U	240	96	54-128
107-13-1	PS Acrylonitrile	250	0.00 U	264	106	59-129
107-12-0	PS Propionitrile	250	0.00 U	259	104	58-131
126-98-7	PS Methacrylonitrile	250	0.00 U	263	105	59-134
80-62-6	PS Methyl methacrylate	250	0.00 U	246	98	62-135
97-63-2	PS Ethyl methacrylate	250	0.00 U	245	98	60-136
78-83-1	PS Isobutyl alcohol	2500	0.00 U	2590	104	60-143
126-99-8	PS 2-Chloro-1,3-butadiene	50.0	0.00 U	44.3	89	63-146

Volatile  
Quality Control Summary  
Spike Recovery Report

Page 2 of 2

SDG Number: 2017-1930

Sample Type: Post Spike Duplicate

Client ID: CAPA-17-139154PSD

Matrix: W

Lab Sample ID 1203833458

Instrument: VOA9.I

Analysis Date: 07/19/2017 20:53

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1683272

CAS No	Parmname	Amount Added ug/L	Sample Conc. ug/L	U	Spike Conc. ug/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
107-02-8	PSD Acrolein	250	0.00	U	337	135	49-141	13	0-20
76-13-1	PSD Trichlorotrifluoroethane	250	0.00	U	288	115	57-149	13	0-20
107-05-1	PSD Allyl chloride	250	0.00	U	273	109	54-128	13	0-20
107-13-1	PSD Acrylonitrile	250	0.00	U	303	121	59-129	14	0-20
107-12-0	PSD Propionitrile	250	0.00	U	300	120	58-131	15	0-20
126-98-7	PSD Methacrylonitrile	250	0.00	U	295	118	59-134	11	0-20
80-62-6	PSD Methyl methacrylate	250	0.00	U	276	110	62-135	11	0-20
97-63-2	PSD Ethyl methacrylate	250	0.00	U	269	108	60-136	9	0-20
78-83-1	PSD Isobutyl alcohol	2500	0.00	U	2930	117	60-143	12	0-20
126-99-8	PSD 2-Chloro-1,3-butadiene	50.0	0.00	U	50.3	101	63-146	13	0-20

Volatile  
Quality Control Summary  
Spike Recovery Report

Page 1 of 1

SDG Number: 2017-1930

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1683272

Matrix: WATER

Lab Sample ID 1203834057

Instrument: VOA9.I

Analysis Date: 07/19/2017 11:50

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1683272

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	316	127	60-140
76-13-1	LCS Trichlorotrifluoroethane	250	0.0	278	111	61-148
107-05-1	LCS Allyl chloride	250	0.0	262	105	59-125
107-13-1	LCS Acrylonitrile	250	0.0	254	102	65-122
107-12-0	LCS Propionitrile	250	0.0	245	98	64-124
126-98-7	LCS Methacrylonitrile	250	0.0	253	101	64-126
80-62-6	LCS Methyl methacrylate	250	0.0	244	97	69-127
97-63-2	LCS Ethyl methacrylate	250	0.0	247	99	66-130
78-83-1	LCS Isobutyl alcohol	2500	0.0	2450	98	65-135
126-99-8	LCS 2-Chloro-1,3-butadiene	50.0	0.0	49.7	99	66-147



## Method Blank Summary

Page 1 of 1

SDG Number:	2017-1930	Client:	ARSL004	Matrix:	WATER
Client ID:	MB for batch 1683272	Instrument ID:	VOA9.I	Data File:	071817V9\9B210B.D
Lab Sample ID:	1203833452	Prep Date:	07/18/2017 13:13	Analyzed:	07/18/17 13:13
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 1683272	1203833453	071817V9\9B204L.D	07/18/17	1019
02 LCS for batch 1683272	1203833454	071817V9\9B208L.D	07/18/17	1215
03 CAPA-17-139155	427599004	071817V9\9B211.D	07/18/17	1342
04 CAPA-17-139162	427599006	071817V9\9B212.D	07/18/17	1411
05 CAPA-17-139142	427599001	071817V9\9B214.D	07/18/17	1509
06 CAPA-17-139152	427599002	071817V9\9B215.D	07/18/17	1539
07 CAPA-17-139154	427599003	071817V9\9B216.D	07/18/17	1608
08 CAPA-17-139149	427599005	071817V9\9B217.D	07/18/17	1637
09 CAPA-17-139154PS	1203833455	071817V9\9B223.D	07/18/17	1929
10 CAPA-17-139154PSD	1203833457	071817V9\9B224.D	07/18/17	1959

Method Blank Summary

SDG Number:	2017-1930	Client:	ARSL004	Matrix:	WATER
Client ID:	MB for batch 1683272	Instrument ID:	VOA9.I	Data File:	071917V9\9B309B1.D
Lab Sample ID:	1203834056	Prep Date:	07/19/2017 12:46	Analyzed:	07/19/17 12:46
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
12 LCS for batch 1683272	1203834057	071917V9\9B307L1.D	07/19/17	1150
13 CAPA-17-139154PS	1203833456	071917V9\9B325.D	07/19/17	2024
14 CAPA-17-139154PSD	1203833458	071917V9\9B326.D	07/19/17	2053

# Quality Control Data

**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

<b>SDG Number:</b> 2017-1930	<b>Matrix:</b> WATER	
<b>Lab Sample ID:</b> 1203833452		
<b>Client Sample:</b> QC for batch 1683272	<b>Client:</b> ARSL004	<b>Project:</b> QC
<b>Client ID:</b> MB for batch 1683272	<b>Method:</b> SW-846:8260B	<b>SOP Ref:</b> GL-OA-E-038
<b>Batch ID:</b> 1683272	<b>Inst:</b> VOA9.I	<b>Dilution:</b> 1
<b>Run Date:</b> 07/18/2017 13:13	<b>Analyst:</b> RXY1	<b>Purge Vol:</b> 5 mL
<b>Prep Date:</b> 07/18/2017 13:13		
<b>Data File:</b> 071817V9\9B210B.D	<b>Column:</b> 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: 2017-1930

Matrix: WATER

Lab Sample ID: 1203833452

Client Sample: QC for batch 1683272

Client: ARSL004

Project: QC

Client ID: MB for batch 1683272

Method: SW-846:8260B

SOP Ref: GL-OA-E-038

Batch ID: 1683272

Inst: VOA9.I

Dilution: 1

Run Date: 07/18/2017 13:13

Analyst: RXY1

Purge Vol: 5 mL

Prep Date: 07/18/2017 13:13

Data File: 071817V9\9B210B.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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<b>SDG Number:</b> 2017-1930	<b>Matrix:</b> WATER
<b>Lab Sample ID:</b> 1203833452	
<b>Client Sample:</b> QC for batch 1683272	<b>Client:</b> ARSL004
<b>Client ID:</b> MB for batch 1683272	<b>Method:</b> SW-846:8260B
<b>Batch ID:</b> 1683272	<b>Project:</b> QC
<b>Run Date:</b> 07/18/2017 13:13	<b>SOP Ref:</b> GL-OA-E-038
<b>Prep Date:</b> 07/18/2017 13:13	<b>Dilution:</b> 1
<b>Data File:</b> 071817V9\9B210B.D	<b>Purge Vol:</b> 5 mL
	<b>Column:</b> 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	53.4	50.0	ug/L 107	(71%-134%)
Bromofluorobenzene	52.2	50.0	ug/L 104	(70%-131%)
Toluene-d8	51.0	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**

SDG Number: 2017-1930

Lab Sample ID: 1203833453

Client Sample: QC for batch 1683272

Client ID: LCS for batch 1683272

Batch ID: 1683272

Run Date: 07/18/2017 10:19

Prep Date: 07/18/2017 10:19

Data File: 071817V9\9B204L.D

Matrix: WATER

Project: QC

SOP Ref: GL-OA-E-038

Dilution: 1

Purge Vol: 5 mL

Client: ARSL004

Method: SW-846:8260B

Inst: VOA9.I

Analyst: RXY1

Column: DB-624

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
630-20-6	1,1,1,2-Tetrachloroethane		54.4	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane		53.5	ug/L	0.300	1.00
79-34-5	1,1,2,2-Tetrachloroethane		52.3	ug/L	0.300	1.00
79-00-5	1,1,2-Trichloroethane		53.3	ug/L	0.300	1.00
75-34-3	1,1-Dichloroethane		52.9	ug/L	0.300	1.00
75-35-4	1,1-Dichloroethylene		54.7	ug/L	0.300	1.00
563-58-6	1,1-Dichloropropene		51.8	ug/L	0.300	1.00
87-61-6	1,2,3-Trichlorobenzene		51.6	ug/L	0.300	1.00
96-18-4	1,2,3-Trichloropropane		51.5	ug/L	0.300	1.00
120-82-1	1,2,4-Trichlorobenzene		52.6	ug/L	0.300	1.00
95-63-6	1,2,4-Trimethylbenzene		52.4	ug/L	0.300	1.00
96-12-8	1,2-Dibromo-3-chloropropane		48.6	ug/L	0.500	1.00
106-93-4	1,2-Dibromoethane		53.7	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene		48.2	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane		50.8	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane		50.8	ug/L	0.300	1.00
108-67-8	1,3,5-Trimethylbenzene		53.7	ug/L	0.300	1.00
541-73-1	1,3-Dichlorobenzene		48.0	ug/L	0.300	1.00
142-28-9	1,3-Dichloropropane		49.5	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene		52.8	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane		57.1	ug/L	0.300	1.00
78-93-3	2-Butanone		294	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		51.4	ug/L	0.300	1.00
591-78-6	2-Hexanone		301	ug/L	1.50	5.00
106-43-4	4-Chlorotoluene		51.4	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene		54.1	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone		268	ug/L	1.50	5.00
67-64-1	Acetone		281	ug/L	1.50	10.0
75-05-8	Acetonitrile		1240	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		50.5	ug/L	0.300	1.00
108-86-1	Bromobenzene		47.9	ug/L	0.300	1.00
74-97-5	Bromochloromethane		48.9	ug/L	0.300	1.00
75-27-4	Bromodichloromethane		55.1	ug/L	0.300	1.00
75-25-2	Bromoform		50.0	ug/L	0.300	1.00

**Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: 2017-1930

Lab Sample ID: 1203833453

Client Sample: QC for batch 1683272

Client ID: LCS for batch 1683272

Batch ID: 1683272

Run Date: 07/18/2017 10:19

Prep Date: 07/18/2017 10:19

Data File: 071817V9\9B204L.D

Matrix: WATER

Project: QC

SOP Ref: GL-OA-E-038

Dilution: 1

Purge Vol: 5 mL

Client: ARSL004

Method: SW-846:8260B

Inst: VOA9.I

Analyst: RXY1

Column: DB-624

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
74-83-9	Bromomethane		53.0	ug/L	0.300	1.00
75-15-0	Carbon disulfide		247	ug/L	1.50	5.00
56-23-5	Carbon tetrachloride		54.6	ug/L	0.300	1.00
108-90-7	Chlorobenzene		50.5	ug/L	0.300	1.00
75-00-3	Chloroethane		55.5	ug/L	0.300	1.00
67-66-3	Chloroform		50.7	ug/L	0.300	1.00
74-87-3	Chloromethane		57.1	ug/L	0.300	1.00
124-48-1	Dibromochloromethane		57.3	ug/L	0.300	1.00
74-95-3	Dibromomethane		51.0	ug/L	0.300	1.00
75-71-8	Dichlorodifluoromethane		49.3	ug/L	0.300	1.00
60-29-7	Ethyl ether		56.1	ug/L	0.300	1.00
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.50	5.00
100-41-4	Ethylbenzene		51.6	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene		53.0	ug/L	0.300	1.00
74-88-4	Iodomethane		238	ug/L	1.50	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	15.0	50.0
98-82-8	Isopropylbenzene		54.1	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		46.8	ug/L	1.00	10.0
91-20-3	Naphthalene		52.4	ug/L	0.300	1.00
107-12-0	Propionitrile	U	5.00	ug/L	1.50	5.00
100-42-5	Styrene		53.2	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene		50.1	ug/L	0.300	1.00
108-88-3	Toluene		51.5	ug/L	0.300	1.00
79-01-6	Trichloroethylene		52.0	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane		57.8	ug/L	0.300	1.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	2.00	5.00
108-05-4	Vinyl acetate		273	ug/L	1.50	5.00
75-01-4	Vinyl chloride		56.2	ug/L	0.300	1.00
156-59-2	cis-1,2-Dichloroethylene		53.0	ug/L	0.300	1.00
10061-01-5	cis-1,3-Dichloropropylene		55.0	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes		107	ug/L	0.300	2.00
71-36-3	n-Butyl alcohol		5210	ug/L	15.0	50.0
104-51-8	n-Butylbenzene		52.6	ug/L	0.300	1.00
103-65-1	n-Propylbenzene		51.3	ug/L	0.300	1.00
95-47-6	o-Xylene		53.1	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene		54.1	ug/L	0.300	1.00



**Volatile  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b>	2017-1930	<b>Matrix:</b>	WATER
<b>Lab Sample ID:</b>	1203833453		
<b>Client Sample:</b>	QC for batch 1683272	<b>Client:</b>	ARSL004
<b>Client ID:</b>	LCS for batch 1683272	<b>Method:</b>	SW-846:8260B
<b>Batch ID:</b>	1683272	<b>Inst:</b>	VOA9.I
<b>Run Date:</b>	07/18/2017 10:19	<b>Analyst:</b>	RXY1
<b>Prep Date:</b>	07/18/2017 10:19		
<b>Data File:</b>	071817V9\9B204L.D	<b>Column:</b>	DB-624

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
1634-04-4	tert-Butyl methyl ether		51.6	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene		55.9	ug/L	0.300	1.00
156-60-5	trans-1,2-Dichloroethylene		54.3	ug/L	0.300	1.00
10061-02-6	trans-1,3-Dichloropropylene		58.7	ug/L	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	50.8	50.0	ug/L 102	(71%-134%)
Bromofluorobenzene	50.8	50.0	ug/L 102	(70%-131%)
Toluene-d8	51.4	50.0	ug/L 103	(74%-124%)

**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

SDG Number: 2017-1930

Matrix: WATER

Lab Sample ID: 1203833454

Client Sample: QC for batch 1683272

Client: ARSL004

Project: QC

Client ID: LCS for batch 1683272

Method: SW-846:8260B

SOP Ref: GL-OA-E-038

Batch ID: 1683272

Inst: VOA9.I

Dilution: 1

Run Date: 07/18/2017 12:15

Analyst: RXY1

Purge Vol: 5 mL

Prep Date: 07/18/2017 12:15

Data File: 071817V9\9B208L.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		45.6	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		225	ug/L	1.50	5.00
107-13-1	Acrylonitrile		237	ug/L	1.50	5.00
107-05-1	Allyl chloride		234	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**

<b>SDG Number:</b> 2017-1930		<b>Matrix:</b> WATER
<b>Lab Sample ID:</b> 1203833454		
<b>Client Sample:</b> QC for batch 1683272	<b>Client:</b> ARSL004	<b>Project:</b> QC
<b>Client ID:</b> LCS for batch 1683272	<b>Method:</b> SW-846:8260B	<b>SOP Ref:</b> GL-OA-E-038
<b>Batch ID:</b> 1683272	<b>Inst:</b> VOA9.I	<b>Dilution:</b> 1
<b>Run Date:</b> 07/18/2017 12:15	<b>Analyst:</b> RXY1	<b>Purge Vol:</b> 5 mL
<b>Prep Date:</b> 07/18/2017 12:15		
<b>Data File:</b> 071817V9\9B208L.D	<b>Column:</b> 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		233	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		2290	ug/L	15.0	50.0
98-82-8	Isopropylbenzene	U	1.00	ug/L	0.300	1.00
126-98-7	Methacrylonitrile		236	ug/L	1.50	5.00
80-62-6	Methyl methacrylate		230	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		231	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		244	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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<b>SDG Number:</b>	2017-1930	<b>Matrix:</b>	WATER
<b>Lab Sample ID:</b>	1203833454		
<b>Client Sample:</b>	QC for batch 1683272	<b>Client:</b>	ARSL004
<b>Client ID:</b>	LCS for batch 1683272	<b>Method:</b>	SW-846:8260B
<b>Batch ID:</b>	1683272	<b>Inst:</b>	VOA9.I
<b>Run Date:</b>	07/18/2017 12:15	<b>Analyst:</b>	RXY1
<b>Prep Date:</b>	07/18/2017 12:15		
<b>Data File:</b>	071817V9\9B208L.D	<b>Column:</b>	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	51.3	50.0	ug/L 103	(71%-134%)
Bromofluorobenzene	51.0	50.0	ug/L 102	(70%-131%)
Toluene-d8	50.6	50.0	ug/L 101	(74%-124%)

**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

<b>SDG Number:</b> 2017-1930	<b>Date Collected:</b> 07/10/2017 10:56	<b>Matrix:</b> W
<b>Lab Sample ID:</b> 1203833455	<b>Date Received:</b> 07/12/2017 09:15	
<b>Client Sample:</b> QC for batch 1683272	<b>Client:</b> ARSL004	<b>Project:</b> QC
<b>Client ID:</b> CAPA-17-139154PS	<b>Method:</b> SW-846:8260B	<b>SOP Ref:</b> GL-OA-E-038
<b>Batch ID:</b> 1683272	<b>Inst:</b> VOA9.I	<b>Dilution:</b> 1
<b>Run Date:</b> 07/18/2017 19:29	<b>Analyst:</b> RXY1	<b>Purge Vol:</b> 5 mL
<b>Prep Date:</b> 07/18/2017 19:29		
<b>Data File:</b> 071817V9\9B223.D	<b>Column:</b> DB-624	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
630-20-6	1,1,1,2-Tetrachloroethane		53.6	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane		53.8	ug/L	0.300	1.00
79-34-5	1,1,2,2-Tetrachloroethane		52.9	ug/L	0.300	1.00
79-00-5	1,1,2-Trichloroethane		53.2	ug/L	0.300	1.00
75-34-3	1,1-Dichloroethane		53.3	ug/L	0.300	1.00
75-35-4	1,1-Dichloroethylene		53.6	ug/L	0.300	1.00
563-58-6	1,1-Dichloropropene		51.2	ug/L	0.300	1.00
87-61-6	1,2,3-Trichlorobenzene		48.1	ug/L	0.300	1.00
96-18-4	1,2,3-Trichloropropane		52.4	ug/L	0.300	1.00
120-82-1	1,2,4-Trichlorobenzene		48.9	ug/L	0.300	1.00
95-63-6	1,2,4-Trimethylbenzene		51.4	ug/L	0.300	1.00
96-12-8	1,2-Dibromo-3-chloropropane		48.1	ug/L	0.500	1.00
106-93-4	1,2-Dibromoethane		52.4	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene		47.2	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane		52.2	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane		50.8	ug/L	0.300	1.00
108-67-8	1,3,5-Trimethylbenzene		52.5	ug/L	0.300	1.00
541-73-1	1,3-Dichlorobenzene		46.6	ug/L	0.300	1.00
142-28-9	1,3-Dichloropropane		50.9	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene		51.3	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane		55.4	ug/L	0.300	1.00
78-93-3	2-Butanone		236	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		49.7	ug/L	0.300	1.00
591-78-6	2-Hexanone		243	ug/L	1.50	5.00
106-43-4	4-Chlorotoluene		50.0	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene		53.0	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone		260	ug/L	1.50	5.00
67-64-1	Acetone		202	ug/L	1.50	10.0
75-05-8	Acetonitrile		1290	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		50.0	ug/L	0.300	1.00
108-86-1	Bromobenzene		47.0	ug/L	0.300	1.00
74-97-5	Bromochloromethane		49.5	ug/L	0.300	1.00
75-27-4	Bromodichloromethane		55.2	ug/L	0.300	1.00
75-25-2	Bromoform		48.9	ug/L	0.300	1.00

**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

<b>SDG Number:</b> 2017-1930	<b>Date Collected:</b> 07/10/2017 10:56	<b>Matrix:</b> W
<b>Lab Sample ID:</b> 1203833455	<b>Date Received:</b> 07/12/2017 09:15	
<b>Client Sample:</b> QC for batch 1683272	<b>Client:</b> ARSL004	<b>Project:</b> QC
<b>Client ID:</b> CAPA-17-139154PS	<b>Method:</b> SW-846:8260B	<b>SOP Ref:</b> GL-OA-E-038
<b>Batch ID:</b> 1683272	<b>Inst:</b> VOA9.I	<b>Dilution:</b> 1
<b>Run Date:</b> 07/18/2017 19:29	<b>Analyst:</b> RXY1	<b>Purge Vol:</b> 5 mL
<b>Prep Date:</b> 07/18/2017 19:29		
<b>Data File:</b> 071817V9\9B223.D	<b>Column:</b> DB-624	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
74-83-9	Bromomethane		52.5	ug/L	0.300	1.00
75-15-0	Carbon disulfide		249	ug/L	1.50	5.00
56-23-5	Carbon tetrachloride		55.1	ug/L	0.300	1.00
108-90-7	Chlorobenzene		49.3	ug/L	0.300	1.00
75-00-3	Chloroethane		51.1	ug/L	0.300	1.00
67-66-3	Chloroform		51.6	ug/L	0.300	1.00
74-87-3	Chloromethane		51.1	ug/L	0.300	1.00
124-48-1	Dibromochloromethane		57.3	ug/L	0.300	1.00
74-95-3	Dibromomethane		51.5	ug/L	0.300	1.00
75-71-8	Dichlorodifluoromethane		53.3	ug/L	0.300	1.00
60-29-7	Ethyl ether		51.0	ug/L	0.300	1.00
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.50	5.00
100-41-4	Ethylbenzene		50.9	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene		50.5	ug/L	0.300	1.00
74-88-4	Iodomethane		235	ug/L	1.50	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	15.0	50.0
98-82-8	Isopropylbenzene		52.1	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		46.7	ug/L	1.00	10.0
91-20-3	Naphthalene		49.5	ug/L	0.300	1.00
107-12-0	Propionitrile	U	5.00	ug/L	1.50	5.00
100-42-5	Styrene		52.8	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene		48.7	ug/L	0.300	1.00
108-88-3	Toluene		50.7	ug/L	0.300	1.00
79-01-6	Trichloroethylene		51.0	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane		54.9	ug/L	0.300	1.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	2.00	5.00
108-05-4	Vinyl acetate		248	ug/L	1.50	5.00
75-01-4	Vinyl chloride		51.5	ug/L	0.300	1.00
156-59-2	cis-1,2-Dichloroethylene		53.2	ug/L	0.300	1.00
10061-01-5	cis-1,3-Dichloropropylene		52.1	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes		105	ug/L	0.300	2.00
71-36-3	n-Butyl alcohol		5520	ug/L	15.0	50.0
104-51-8	n-Butylbenzene		51.9	ug/L	0.300	1.00
103-65-1	n-Propylbenzene		50.4	ug/L	0.300	1.00
95-47-6	o-Xylene		52.4	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene		52.6	ug/L	0.300	1.00

**Volatile  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b>	<b>2017-1930</b>	<b>Date Collected:</b>	<b>07/10/2017 10:56</b>	<b>Matrix:</b>	<b>W</b>
<b>Lab Sample ID:</b>	<b>1203833455</b>	<b>Date Received:</b>	<b>07/12/2017 09:15</b>		
<b>Client Sample:</b>	<b>QC for batch 1683272</b>	<b>Client:</b>	<b>ARSL004</b>	<b>Project:</b>	<b>QC</b>
<b>Client ID:</b>	<b>CAPA-17-139154PS</b>	<b>Method:</b>	<b>SW-846:8260B</b>	<b>SOP Ref:</b>	<b>GL-OA-E-038</b>
<b>Batch ID:</b>	<b>1683272</b>	<b>Inst:</b>	<b>VOA9.I</b>	<b>Dilution:</b>	<b>1</b>
<b>Run Date:</b>	<b>07/18/2017 19:29</b>	<b>Analyst:</b>	<b>RXY1</b>	<b>Purge Vol:</b>	<b>5 mL</b>
<b>Prep Date:</b>	<b>07/18/2017 19:29</b>				
<b>Data File:</b>	<b>071817V9\9B223.D</b>	<b>Column:</b>	<b>DB-624</b>		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
1634-04-4	tert-Butyl methyl ether		50.3	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene		53.1	ug/L	0.300	1.00
156-60-5	trans-1,2-Dichloroethylene		53.7	ug/L	0.300	1.00
10061-02-6	trans-1,3-Dichloropropylene		57.2	ug/L	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	52.8	50.0	106	(71%-134%)
Bromofluorobenzene	50.6	50.0	101	(70%-131%)
Toluene-d8	50.8	50.0	102	(74%-124%)

**Volatile  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b>	<b>2017-1930</b>	<b>Date Collected:</b>	<b>07/10/2017 10:56</b>	<b>Matrix:</b>	<b>W</b>
<b>Lab Sample ID:</b>	<b>1203833456</b>	<b>Date Received:</b>	<b>07/12/2017 09:15</b>		
<b>Client Sample:</b>	<b>QC for batch 1683272</b>	<b>Client:</b>	<b>ARSL004</b>	<b>Project:</b>	<b>QC</b>
<b>Client ID:</b>	<b>CAPA-17-139154PS</b>	<b>Method:</b>	<b>SW-846:8260B</b>	<b>SOP Ref:</b>	<b>GL-OA-E-038</b>
<b>Batch ID:</b>	<b>1683272</b>	<b>Inst:</b>	<b>VOA9.I</b>	<b>Dilution:</b>	<b>1</b>
<b>Run Date:</b>	<b>07/19/2017 20:24</b>	<b>Analyst:</b>	<b>RXY1</b>	<b>Purge Vol:</b>	<b>5 mL</b>
<b>Prep Date:</b>	<b>07/19/2017 20:24</b>				
<b>Data File:</b>	<b>071917V9\9B325.D</b>	<b>Column:</b>	<b>DB-624</b>		

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		44.3	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		295	ug/L	1.50	5.00
107-13-1	Acrylonitrile		264	ug/L	1.50	5.00
107-05-1	Allyl chloride		240	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**

<b>SDG Number:</b> 2017-1930	<b>Date Collected:</b> 07/10/2017 10:56	<b>Matrix:</b> W
<b>Lab Sample ID:</b> 1203833456	<b>Date Received:</b> 07/12/2017 09:15	
<b>Client Sample:</b> QC for batch 1683272	<b>Client:</b> ARSL004	<b>Project:</b> QC
<b>Client ID:</b> CAPA-17-139154PS	<b>Method:</b> SW-846:8260B	<b>SOP Ref:</b> GL-OA-E-038
<b>Batch ID:</b> 1683272	<b>Inst:</b> VOA9.I	<b>Dilution:</b> 1
<b>Run Date:</b> 07/19/2017 20:24	<b>Analyst:</b> RXY1	<b>Purge Vol:</b> 5 mL
<b>Prep Date:</b> 07/19/2017 20:24		
<b>Data File:</b> 071917V9\9B325.D	<b>Column:</b> 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		245	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		2590	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		246	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		259	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**

<b>SDG Number:</b> 2017-1930	<b>Date Collected:</b> 07/10/2017 10:56	<b>Matrix:</b> W
<b>Lab Sample ID:</b> 1203833456	<b>Date Received:</b> 07/12/2017 09:15	
<b>Client Sample:</b> QC for batch 1683272	<b>Client:</b> ARSL004	<b>Project:</b> QC
<b>Client ID:</b> CAPA-17-139154PS	<b>Method:</b> SW-846:8260B	<b>SOP Ref:</b> GL-OA-E-038
<b>Batch ID:</b> 1683272	<b>Inst:</b> VOA9.I	<b>Dilution:</b> 1
<b>Run Date:</b> 07/19/2017 20:24	<b>Analyst:</b> RXY1	<b>Purge Vol:</b> 5 mL
<b>Prep Date:</b> 07/19/2017 20:24		
<b>Data File:</b> 071917V9\9B325.D	<b>Column:</b> 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	52.4	50.0	ug/L 105	(71%-134%)
Bromofluorobenzene	51.6	50.0	ug/L 103	(70%-131%)
Toluene-d8	50.0	50.0	ug/L 100	(74%-124%)

**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

<b>SDG Number:</b>	<b>2017-1930</b>	<b>Date Collected:</b>	<b>07/10/2017 10:56</b>	<b>Matrix:</b>	<b>W</b>
<b>Lab Sample ID:</b>	<b>1203833457</b>	<b>Date Received:</b>	<b>07/12/2017 09:15</b>		
<b>Client Sample:</b>	<b>QC for batch 1683272</b>	<b>Client:</b>	<b>ARSL004</b>	<b>Project:</b>	<b>QC</b>
<b>Client ID:</b>	<b>CAPA-17-139154PSD</b>	<b>Method:</b>	<b>SW-846:8260B</b>	<b>SOP Ref:</b>	<b>GL-OA-E-038</b>
<b>Batch ID:</b>	<b>1683272</b>	<b>Inst:</b>	<b>VOA9.I</b>	<b>Dilution:</b>	<b>1</b>
<b>Run Date:</b>	<b>07/18/2017 19:59</b>	<b>Analyst:</b>	<b>RXY1</b>	<b>Purge Vol:</b>	<b>5 mL</b>
<b>Prep Date:</b>	<b>07/18/2017 19:59</b>				
<b>Data File:</b>	<b>071817V9\9B224.D</b>	<b>Column:</b>	<b>DB-624</b>		

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		56.2	ug/L	0.300	1.00
79-34-5	1,1,2,2-Tetrachloroethane		54.2	ug/L	0.300	1.00
79-00-5	1,1,2-Trichloroethane		53.6	ug/L	0.300	1.00
75-34-3	1,1-Dichloroethane		54.6	ug/L	0.300	1.00
75-35-4	1,1-Dichloroethylene		56.4	ug/L	0.300	1.00
563-58-6	1,1-Dichloropropene		52.3	ug/L	0.300	1.00
87-61-6	1,2,3-Trichlorobenzene		49.1	ug/L	0.300	1.00
96-18-4	1,2,3-Trichloropropane		54.9	ug/L	0.300	1.00
120-82-1	1,2,4-Trichlorobenzene		49.1	ug/L	0.300	1.00
95-63-6	1,2,4-Trimethylbenzene		52.9	ug/L	0.300	1.00
96-12-8	1,2-Dibromo-3-chloropropane		49.6	ug/L	0.500	1.00
106-93-4	1,2-Dibromoethane		54.4	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene		47.7	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane		52.4	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane		51.8	ug/L	0.300	1.00
108-67-8	1,3,5-Trimethylbenzene		54.2	ug/L	0.300	1.00
541-73-1	1,3-Dichlorobenzene		47.7	ug/L	0.300	1.00
142-28-9	1,3-Dichloropropane		51.6	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene		52.6	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane		58.0	ug/L	0.300	1.00
78-93-3	2-Butanone		243	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		51.5	ug/L	0.300	1.00
591-78-6	2-Hexanone		253	ug/L	1.50	5.00
106-43-4	4-Chlorotoluene		51.6	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene		54.3	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone		268	ug/L	1.50	5.00
67-64-1	Acetone		210	ug/L	1.50	10.0
75-05-8	Acetonitrile		1360	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		51.2	ug/L	0.300	1.00
108-86-1	Bromobenzene		48.1	ug/L	0.300	1.00
74-97-5	Bromochloromethane		50.1	ug/L	0.300	1.00
75-27-4	Bromodichloromethane		55.7	ug/L	0.300	1.00
75-25-2	Bromoform		50.1	ug/L	0.300	1.00

**Volatile  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b>	<b>2017-1930</b>	<b>Date Collected:</b>	<b>07/10/2017 10:56</b>	<b>Matrix:</b>	<b>W</b>
<b>Lab Sample ID:</b>	<b>1203833457</b>	<b>Date Received:</b>	<b>07/12/2017 09:15</b>		
<b>Client Sample:</b>	<b>QC for batch 1683272</b>	<b>Client:</b>	<b>ARSL004</b>	<b>Project:</b>	<b>QC</b>
<b>Client ID:</b>	<b>CAPA-17-139154PSD</b>	<b>Method:</b>	<b>SW-846:8260B</b>	<b>SOP Ref:</b>	<b>GL-OA-E-038</b>
<b>Batch ID:</b>	<b>1683272</b>	<b>Inst:</b>	<b>VOA9.I</b>	<b>Dilution:</b>	<b>1</b>
<b>Run Date:</b>	<b>07/18/2017 19:59</b>	<b>Analyst:</b>	<b>RXY1</b>	<b>Purge Vol:</b>	<b>5 mL</b>
<b>Prep Date:</b>	<b>07/18/2017 19:59</b>				
<b>Data File:</b>	<b>071817V9\9B224.D</b>	<b>Column:</b>	<b>DB-624</b>		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
74-83-9	Bromomethane		57.3	ug/L	0.300	1.00
75-15-0	Carbon disulfide		261	ug/L	1.50	5.00
56-23-5	Carbon tetrachloride		57.2	ug/L	0.300	1.00
108-90-7	Chlorobenzene		50.5	ug/L	0.300	1.00
75-00-3	Chloroethane		56.4	ug/L	0.300	1.00
67-66-3	Chloroform		52.2	ug/L	0.300	1.00
74-87-3	Chloromethane		54.9	ug/L	0.300	1.00
124-48-1	Dibromochloromethane		58.1	ug/L	0.300	1.00
74-95-3	Dibromomethane		52.2	ug/L	0.300	1.00
75-71-8	Dichlorodifluoromethane		57.3	ug/L	0.300	1.00
60-29-7	Ethyl ether		55.1	ug/L	0.300	1.00
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.50	5.00
100-41-4	Ethylbenzene		52.2	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene		51.6	ug/L	0.300	1.00
74-88-4	Iodomethane		248	ug/L	1.50	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	15.0	50.0
98-82-8	Isopropylbenzene		54.0	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		48.8	ug/L	1.00	10.0
91-20-3	Naphthalene		51.3	ug/L	0.300	1.00
107-12-0	Propionitrile	U	5.00	ug/L	1.50	5.00
100-42-5	Styrene		54.0	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene		50.2	ug/L	0.300	1.00
108-88-3	Toluene		51.7	ug/L	0.300	1.00
79-01-6	Trichloroethylene		52.3	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane		59.0	ug/L	0.300	1.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	2.00	5.00
108-05-4	Vinyl acetate		267	ug/L	1.50	5.00
75-01-4	Vinyl chloride		55.4	ug/L	0.300	1.00
156-59-2	cis-1,2-Dichloroethylene		53.9	ug/L	0.300	1.00
10061-01-5	cis-1,3-Dichloropropylene		54.5	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes		108	ug/L	0.300	2.00
71-36-3	n-Butyl alcohol		5770	ug/L	15.0	50.0
104-51-8	n-Butylbenzene		52.7	ug/L	0.300	1.00
103-65-1	n-Propylbenzene		52.3	ug/L	0.300	1.00
95-47-6	o-Xylene		53.6	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene		54.3	ug/L	0.300	1.00

**Volatile  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> 2017-1930	<b>Date Collected:</b> 07/10/2017 10:56	<b>Matrix:</b> W
<b>Lab Sample ID:</b> 1203833457	<b>Date Received:</b> 07/12/2017 09:15	
<b>Client Sample:</b> QC for batch 1683272	<b>Client:</b> ARSL004	<b>Project:</b> QC
<b>Client ID:</b> CAPA-17-139154PSD	<b>Method:</b> SW-846:8260B	<b>SOP Ref:</b> GL-OA-E-038
<b>Batch ID:</b> 1683272	<b>Inst:</b> VOA9.I	<b>Dilution:</b> 1
<b>Run Date:</b> 07/18/2017 19:59	<b>Analyst:</b> RXY1	<b>Purge Vol:</b> 5 mL
<b>Prep Date:</b> 07/18/2017 19:59		
<b>Data File:</b> 071817V9\9B224.D	<b>Column:</b> DB-624	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
1634-04-4	tert-Butyl methyl ether		52.7	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene		55.0	ug/L	0.300	1.00
156-60-5	trans-1,2-Dichloroethylene		56.3	ug/L	0.300	1.00
10061-02-6	trans-1,3-Dichloropropylene		57.5	ug/L	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	51.7	50.0	ug/L	103 (71%-134%)
Bromofluorobenzene	50.8	50.0	ug/L	102 (70%-131%)
Toluene-d8	50.1	50.0	ug/L	100 (74%-124%)

**Volatile  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b>	<b>2017-1930</b>	<b>Date Collected:</b>	<b>07/10/2017 10:56</b>	<b>Matrix:</b>	<b>W</b>
<b>Lab Sample ID:</b>	<b>1203833458</b>	<b>Date Received:</b>	<b>07/12/2017 09:15</b>		
<b>Client Sample:</b>	<b>QC for batch 1683272</b>	<b>Client:</b>	<b>ARSL004</b>	<b>Project:</b>	<b>QC</b>
<b>Client ID:</b>	<b>CAPA-17-139154PSD</b>	<b>Method:</b>	<b>SW-846:8260B</b>	<b>SOP Ref:</b>	<b>GL-OA-E-038</b>
<b>Batch ID:</b>	<b>1683272</b>	<b>Inst:</b>	<b>VOA9.I</b>	<b>Dilution:</b>	<b>1</b>
<b>Run Date:</b>	<b>07/19/2017 20:53</b>	<b>Analyst:</b>	<b>RXY1</b>	<b>Purge Vol:</b>	<b>5 mL</b>
<b>Prep Date:</b>	<b>07/19/2017 20:53</b>				
<b>Data File:</b>	<b>071917V9\9B326.D</b>	<b>Column:</b>	<b>DB-624</b>		

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		50.3	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	E	337	ug/L	1.50	5.00
107-13-1	Acrylonitrile		303	ug/L	1.50	5.00
107-05-1	Allyl chloride		273	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**

<b>SDG Number:</b>	<b>2017-1930</b>	<b>Date Collected:</b>	<b>07/10/2017 10:56</b>	<b>Matrix:</b>	<b>W</b>
<b>Lab Sample ID:</b>	<b>1203833458</b>	<b>Date Received:</b>	<b>07/12/2017 09:15</b>		
<b>Client Sample:</b>	<b>QC for batch 1683272</b>	<b>Client:</b>	<b>ARSL004</b>	<b>Project:</b>	<b>QC</b>
<b>Client ID:</b>	<b>CAPA-17-139154PSD</b>	<b>Method:</b>	<b>SW-846:8260B</b>	<b>SOP Ref:</b>	<b>GL-OA-E-038</b>
<b>Batch ID:</b>	<b>1683272</b>	<b>Inst:</b>	<b>VOA9.I</b>	<b>Dilution:</b>	<b>1</b>
<b>Run Date:</b>	<b>07/19/2017 20:53</b>	<b>Analyst:</b>	<b>RXY1</b>	<b>Purge Vol:</b>	<b>5 mL</b>
<b>Prep Date:</b>	<b>07/19/2017 20:53</b>				
<b>Data File:</b>	<b>071917V9\9B326.D</b>	<b>Column:</b>	<b>DB-624</b>		

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		269	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		2930	ug/L	15.0	50.0
98-82-8	Isopropylbenzene	U	1.00	ug/L	0.300	1.00
126-98-7	Methacrylonitrile		295	ug/L	1.50	5.00
80-62-6	Methyl methacrylate		276	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		300	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		288	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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<b>SDG Number:</b>	<b>2017-1930</b>	<b>Date Collected:</b>	<b>07/10/2017 10:56</b>	<b>Matrix:</b>	<b>W</b>
<b>Lab Sample ID:</b>	<b>1203833458</b>	<b>Date Received:</b>	<b>07/12/2017 09:15</b>		
<b>Client Sample:</b>	<b>QC for batch 1683272</b>	<b>Client:</b>	<b>ARSL004</b>	<b>Project:</b>	<b>QC</b>
<b>Client ID:</b>	<b>CAPA-17-139154PSD</b>	<b>Method:</b>	<b>SW-846:8260B</b>	<b>SOP Ref:</b>	<b>GL-OA-E-038</b>
<b>Batch ID:</b>	<b>1683272</b>	<b>Inst:</b>	<b>VOA9.I</b>	<b>Dilution:</b>	<b>1</b>
<b>Run Date:</b>	<b>07/19/2017 20:53</b>	<b>Analyst:</b>	<b>RXY1</b>	<b>Purge Vol:</b>	<b>5 mL</b>
<b>Prep Date:</b>	<b>07/19/2017 20:53</b>				
<b>Data File:</b>	<b>071917V9\9B326.D</b>	<b>Column:</b>	<b>DB-624</b>		

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	52.7	50.0	ug/L 105	(71%-134%)
Bromofluorobenzene	51.8	50.0	ug/L 104	(70%-131%)
Toluene-d8	49.4	50.0	ug/L 99	(74%-124%)



**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

SDG Number: 2017-1930

Lab Sample ID: 1203834056

Client Sample: QC for batch 1683272

Client ID: MB for batch 1683272

Batch ID: 1683272

Run Date: 07/19/2017 12:46

Prep Date: 07/19/2017 12:46

Data File: 071917V9\9B309B1.D

Client: ARSL004

Method: SW-846:8260B

Inst: VOA9.I

Analyst: RXY1

Column: DB-624

Matrix: 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	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**

<b>SDG Number:</b> 2017-1930		<b>Matrix:</b> WATER
<b>Lab Sample ID:</b> 1203834056		
<b>Client Sample:</b> QC for batch 1683272	<b>Client:</b> ARSL004	<b>Project:</b> QC
<b>Client ID:</b> MB for batch 1683272	<b>Method:</b> SW-846:8260B	<b>SOP Ref:</b> GL-OA-E-038
<b>Batch ID:</b> 1683272	<b>Inst:</b> VOA9.I	<b>Dilution:</b> 1
<b>Run Date:</b> 07/19/2017 12:46	<b>Analyst:</b> RXY1	<b>Purge Vol:</b> 5 mL
<b>Prep Date:</b> 07/19/2017 12:46		
<b>Data File:</b> 071917V9\9B309B1.D	<b>Column:</b> 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	J	0.320	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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<b>SDG Number:</b> 2017-1930	<b>Matrix:</b> WATER	
<b>Lab Sample ID:</b> 1203834056		
<b>Client Sample:</b> QC for batch 1683272	<b>Client:</b> ARSL004	<b>Project:</b> QC
<b>Client ID:</b> MB for batch 1683272	<b>Method:</b> SW-846:8260B	<b>SOP Ref:</b> GL-OA-E-038
<b>Batch ID:</b> 1683272	<b>Inst:</b> VOA9.I	<b>Dilution:</b> 1
<b>Run Date:</b> 07/19/2017 12:46	<b>Analyst:</b> RXY1	<b>Purge Vol:</b> 5 mL
<b>Prep Date:</b> 07/19/2017 12:46		
<b>Data File:</b> 071917V9\9B309B1.D	<b>Column:</b> 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	54.8	50.0	ug/L 110	(71%-134%)
Bromofluorobenzene	52.3	50.0	ug/L 105	(70%-131%)
Toluene-d8	51.0	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**

SDG Number: 2017-1930

Matrix: WATER

Lab Sample ID: 1203834057

Client Sample: QC for batch 1683272

Client: ARSL004

Project: QC

Client ID: LCS for batch 1683272

Method: SW-846:8260B

SOP Ref: GL-OA-E-038

Batch ID: 1683272

Inst: VOA9.I

Dilution: 1

Run Date: 07/19/2017 11:50

Analyst: RXY1

Purge Vol: 5 mL

Prep Date: 07/19/2017 11:50

Data File: 071917V9\9B307L1.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		49.7	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	E	316	ug/L	1.50	5.00
107-13-1	Acrylonitrile		254	ug/L	1.50	5.00
107-05-1	Allyl chloride		262	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: 2017-1930

Matrix: WATER

Lab Sample ID: 1203834057

Client Sample: QC for batch 1683272

Client: ARSL004

Project: QC

Client ID: LCS for batch 1683272

Method: SW-846:8260B

SOP Ref: GL-OA-E-038

Batch ID: 1683272

Inst: VOA9.I

Dilution: 1

Run Date: 07/19/2017 11:50

Analyst: RXY1

Purge Vol: 5 mL

Prep Date: 07/19/2017 11:50

Data File: 071917V9\9B307L1.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		247	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		2450	ug/L	15.0	50.0
98-82-8	Isopropylbenzene	U	1.00	ug/L	0.300	1.00
126-98-7	Methacrylonitrile		253	ug/L	1.50	5.00
80-62-6	Methyl methacrylate		244	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		245	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		278	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**

<b>SDG Number:</b>	<b>2017-1930</b>	<b>Matrix:</b>	<b>WATER</b>
<b>Lab Sample ID:</b>	<b>1203834057</b>		
<b>Client Sample:</b>	<b>QC for batch 1683272</b>	<b>Client:</b>	<b>ARSL004</b>
<b>Client ID:</b>	<b>LCS for batch 1683272</b>	<b>Method:</b>	<b>SW-846:8260B</b>
<b>Batch ID:</b>	<b>1683272</b>	<b>Inst:</b>	<b>VOA9.I</b>
<b>Run Date:</b>	<b>07/19/2017 11:50</b>	<b>Analyst:</b>	<b>RXY1</b>
<b>Prep Date:</b>	<b>07/19/2017 11:50</b>		
<b>Data File:</b>	<b>071917V9\9B307L1.D</b>	<b>Column:</b>	<b>DB-624</b>

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	52.5	50.0	105	(71%-134%)
Bromofluorobenzene	51.7	50.0	103	(70%-131%)
Toluene-d8	51.1	50.0	102	(74%-124%)