GEL Laboratories LLC
a member of The GEL Group INC

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gel.com

June 27, 2016

Mr. Scot Fitzgerald
CH2MHill Plateau Remediation Company
MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352

Re: CHPRC SAF I16-017
Work Order: 393102
SDG: GEL393102

Dear Mr. Fitzgerald:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on March 12, 2016 and March 15, 2016. This revised data report has been prepared and reviewed in accordance with GEL's standard operating procedures. Per change order, this package was revised to correct the Appedix IX Volatiles reporting list.

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. 4505.

Sincerely,

Heather Shaffer

Heather Shaffer
Project Manager

Purchase Order: 300071JDBA
Chain of Custody: I16-017-021, I16-017-022, I16-017-024, I16-017-026 and I16-017-027
Enclosures

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SAMPLE ISSUE RESOLUTION

SIR NUM	SIR16-476
REV NUM	0
DATE INITIATED	7/7/2016

SAMPLE EVENT INFORMATION

SAF NUM(S)	I16-017
OPERABLE UNIT(S)	200-ZP-1
PROJECT(S)	CERC16
SAMPLE EVENT TITLE(S)	CERC16
LABORATORY	GEL Laboratories, LLC

SAMPLING INFORMATION

NUMBER OF SAMPLES	5
SAMPLE NUMBERS	B34CD5, B34CD6, B34CF0, B34CF4, B34CF5
SAMPLE MATRIX	WATER
COLLECTION DATE	3/11/2016 - 3/11/2016
SDG NUM	GEL393102

ISSUE BACKGROUND

CLASS	Sample Management Issues
TYPE	Analyte Correction
DESCRIPTION	SMR discovered the 8260_VOA_GCMS_IX: COMMON service list for GEL inadvertetnly omitted several compounds. Omitted compounds were: Bromodichloromethane (75-27-4), bromomethane (74-83-9), ethyl cyanide (107-12-0), Methyl methacrylate (80-62-6), trichlorofluoromethane (75-69-4), cis-1,2-dichloroethene (156-59-2) and 1,4-dichlorobenzene (106-46-7).

DISPOSITION

DESCRIPTION	Please add the omitted compounds.
JUSTIFICATION	Final Disposition: Add the compounds and re-issue the report. SUBMITTED BY: Doris Ayres DATE: 07/07/2016 ACCEPTED BY: Heather Shaffer DATE: 07/07/2016

Case Narrative

Per change order, this package was revised to correct the Appedix IX Volatiles reporting list.

General Narrative
for
CH2MHill Plateau Remediation Company
CHPRC SAF I16-017
SDG: GEL393102

June 27, 2016

Laboratory Identification:

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

Summary

Sample receipt

The sample(s) arrived at GEL Laboratories, LLC, Charleston, South Carolina on March 12, 2016 and March 15, 2016, for analysis. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

Items of Note All efforts were made by the lab to meet any short hold times. Samples that were analyzed outside of the initial hold time but still within 2X hold time will be noted in the lab case narrative and DER.

Sample Identification
The laboratory received the following samples:

Laboratory Identification	Sample Description
393102001	B34CD5
393102002	B34CD6
393102003	B34CF0
393102004	B34CF4
393102005	B34CF5

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: General Narrative, Chain of Custody and Supporting Documentation, and data from the following fractions: GC/MS Volatile.

We certify that this package is in compliance with the SOW, both technically and for completeness, including a full description of, explanation of, and corrective actions for, any and all deviations, from either the analyses requested or the case narrative requested. Release of the data contained in this hard copy data package has been authorized by the Laboratory Analytical Manager (or designee) and the laboratory's client services representative as verified by their signatures on this report.

Heather Shaffer

Heather Shaffer
Project Manager

GC/MS Volatile
Technical Case Narrative
CH2MHill Plateau Remediation Company (CPRC)
SDG #: GEL393102
Work Order #: 393102

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

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Calibration Information

Continuing Calibration Verification Requirements
The calibration verification standard analyzed on March 15 at 07:08 met the percent difference (%D) requirements for all analytes except 1,1,1-Trichloroethane. The %D/drift for 1,1,1-Trichloroethane was slightly above the criteria at 20.6%. There were no positive results for this analyte in client samples; therefore the data were reported.

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.

Chain of Custody and Supporting Documentation

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 393102	C.O.C. # I16-017-024 Page 1 of 1

Collector	K.C. Patterson/CHPRC	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No.	I16-017	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071
Project Title	200-ZP-1, MARCH 2016	Logbook No.	HNF-N-506 82151	Ice Chest No.	GWS-456
Shipped To (Lab)	GEL Laboratories, LLC	Method of Shipment	Commercial Carrier	Bill of Lading/Air Bill No.	7758577157 98
Protocol	CERCLA	Priority:	30 Days PRIORITY	Offsite Property No.	6428

POSSIBLE SAMPLE HAZARDS/REMARKS

** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B34CF0	N	W	MAR 11 2016	0945	4x40-mL aGs*	8260_VOA_GCMS_IX: COMMON	14 Days	HCl or H2SO4 to pH <2/Cool <=6C

Relinquished By	Print / Sign	Date/Time	Received By	Print / Sign	Date/Time
K.C. Patterson/CHPRC		MAR 11 2016 1100	L.D. Wall CHPRC	L.D. Wall	MAR 11 2016 1100
L.D. Wall CHPRC	L.D. Wall	MAR 11 2016 1400			
			FEDEX		
	FEDEX		M Kinslow	M Kinslow	3-12-16 1000

Matrix *

S	= Soil		DS	= Drum Solids	
SE	= Sediment		DL	= Drum Liquids	
SO	= Solid		T	= Tissue	
SL	= Sludge		WI	= Wipe	
W	= Water		L	= Liquid	
O	= Oil		V	= Vegetation	
A	= Air		X	= Other	

FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process) Disposed By Date/Time

PRINTED ON 1/21/2016 FSR ID = FSR4272 A-6004-842 (REV 2)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 393102	C.O.C. # I16-017-022 Page 1 of 1

Collector	K.C. Patterson/CHPRC	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No.	I16-017	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071
Project Title	200-ZP-1, MARCH 2016	Logbook No.	HNF-N-506 82151	Ice Chest No.	GWS-456
Shipped To (Lab)	GEL Laboratories, LLC	Method of Shipment	Commercial Carrier	Bill of Lading/Air Bill No.	7758 5771 5798
Protocol	CERCLA	Priority:	30 Days PRIORITY	Offsite Property No.	6428

POSSIBLE SAMPLE HAZARDS/REMARKS

** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B34CD6	N	W	MAR 11 2016	1035	4x40-mL aGs*	8260_VOA_GCMS_IX: COMMON	14 Days	HCl or H2SO4 to pH <2/Cool <=6C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
K.C. Patterson/CHPRC			MAR 11 2016 1100	L.D. Wall CHPRC			MAR 11 2016 1100
L.D. Wall CHPRC			MAR 11 2016 1400	FEDEX			
				M Kinslow			3-12-16 1000

Matrix *

S	= Soil	DS	= Drum Solids		
SE	= Sediment	DL	= Drum Liquids		
SO	= Solid	T	= Tissue		
SL	= Sludge	WI	= Wipe		
W	= Water	L	= Liquid		
O	= Oil	V	= Vegetation		
A	= Air	X	= Other		

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time

PRINTED ON 1/21/2016 FSR ID = FSR21917 A-6004-842 (REV 2)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 393102	C.O.C. # I16-017-021 Page 1 of 1

Collector	K.C. Patterson/CHPRC	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No.	I16-017	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071
Project Title	200-ZP-1, MARCH 2016	Logbook No.	HNF-N-506 82151	Ice Chest No.	GWS-456
Shipped To (Lab)	GEL Laboratories, LLC	Method of Shipment	Commercial Carrier	Bill of Lading/Air Bill No.	7758 5771 5798
Protocol	CERCLA	Priority: 30 Days	PRIORITY	Offsite Property No.	6428

POSSIBLE SAMPLE HAZARDS/REMARKS

** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B34CD5	N	W	MAR 11 2016	0715	4x40-mL aGs*	8260_VOA_GCMS_IX: COMMON	14 Days	HCl or H2SO4 to pH <2/Cool <=6C

Relinquished By	Print / Sign	Date/Time	Received By	Print / Sign	Date/Time
K.C. Patterson/CHPRC		MAR 11 2016 1100	L.D. Wall CHPRC		MAR 11 2016 1100
L.D. Wall CHPRC		MAR 11 2016 1400		FEDEX	
	FEDEX		M Kinslow		3-12-16 1000

Matrix *

S = Soil		DS = Drum Solids	
SE = Sediment		DL = Drum Liquids	
SO = Solid		T = Tissue	
SL = Sludge		WI = Wipe	
W = Water		L = Liquid	
O = Oil		V = Vegetation	
A = Air		X = Other	

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time

PRINTED ON 1/21/2016 FSR ID = FSR3344 A-6004-842 (REV 2)

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: OPRC	**SDG/AR/COC/Work Order:** 393102
Received By: MK	**Date Received:** 3-12-16

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

	Sample Receipt Criteria	**Yes**	**NA**	**No**	**Comments/Qualifiers (Required for Non-Conforming Items)**
1	Shipping containers received intact and sealed?	✓	✓		Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	✓	✓		Preservation Method: Ice bags Blue ice Dry ice None Other (describe) *all temperatures are recorded in Celsius 1c
2a	Daily check performed and passed on IR temperature gun?	✓	✓		Temperature Device Serial #: 130462661 Secondary Temperature Device Serial # (If Applicable):
3	Chain of custody documents included with shipment?	✓		✓	
4	Sample containers intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
5	Samples requiring chemical preservation at proper pH?		✓		Sample ID's, containers affected and observed pH: If Preservation added, Lot#:
6	Do Low Level Perchlorate samples have headspace as required?		✓		Sample ID's and containers affected:
7	VOA vials contain acid preservation?	✓	✓		(If unknown, select No)
8	VOA vials free of headspace (defined as < 6mm bubble)?	✓	✓		Sample ID's and containers affected:
9	Are Encore containers present?			✓	(If yes, immediately deliver to Volatiles laboratory)
10	Samples received within holding time?	✓			ID's and tests affected:
11	Sample ID's on COC match ID's on bottles?	✓			Sample ID's and containers affected:
12	Date & time on COC match date & time on bottles?	✓	✓		Sample ID's affected:
13	Number of containers received match number indicated on COC?	✓			Sample ID's affected:
14	Are sample containers identifiable as GEL provided?			✓	
15	COC form is properly signed in relinquished/received sections?	✓			
16	Carrier and tracking number.	✓			Circle Applicable: FedEx Air FedEx Ground UPS Field Services Courier Other 7758 5771 5798 1c 5905 1c

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials DS Date 3/14/16 Page 1 of 1 GL-CHL-SR-001 Rev 2

393102

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # I16-017-026

Page 1 of 1

Collector	K.C. Patterson/CHPRC	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No.	I16-017	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071
Project Title	200-ZP-1, MARCH 2016	Logbook No.	HNF-N-506 82/51	Ice Chest No.	GWS-493
Shipped To (Lab)	GEL Laboratories, LLC	Method of Shipment	Commercial Carrier	Bill of Lading/Air Bill No.	7758577155 81
Protocol	CERCLA	Priority:	30 Days PRIORITY	Offsite Property No.	6428

POSSIBLE SAMPLE HAZARDS/REMARKS

** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B34CF4	N	W	MAR 1 1 2016	0851	4x40-mL aGs*	8260_VOA_GCMS_IX: COMMON	14 Days	HCl or H2SO4 to pH <2/Cool <=6C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
K.C. Patterson/CHPRC			MAR 1 1 2016 1100	L.D. Wall CHPRC			MAR 1 1 2016 1100
L.D. Wall CHPRC			MAR 1 1 2016 1400	FEDEX			
FED EX				Patricia Dent		P. Dent	3/15/16 09:10 PD

Matrix *

S	= Soil	DS	= Drum Solids		
SE	= Sediment	DL	= Drum Liquids		
SO	= Solid	T	= Tissue		
SL	= Sludge	WI	= Wipe		
W	= Water	L	= Liquid		
O	= Oil	V	= Vegetation		
A	= Air	X	= Other		

FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process) Disposed By Date/Time

PRINTED ON 1/21/2016 FSR ID = FSR4254 A-6004-842 (REV 2)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 393102	C.O.C. # I16-017-027 Page 1 of 1

Collector	K.C. Patterson/CHPRC	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No.	I16-017	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071
Project Title	200-ZP-1, MARCH 2016	Logbook No.	HNF-N-506 82151	Ice Chest No.	GWS-493
Shipped To (Lab)	GEL Laboratories, LLC	Method of Shipment	Commercial Carrier	Bill of Lading/Air Bill No.	7758 5771 5581
Protocol	CERCLA	Priority:	30 Days PRIORITY	Offsite Property No.	6428

POSSIBLE SAMPLE HAZARDS/REMARKS

** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B34CF5	N	W	MAR 1 1 2016	0851	4x40-mL aGs*	8260_VOA_GCMS_IX: COMMON	14 Days	HCl or H2SO4 to pH <2/Cool <=6C

Relinquished By	Print / Sign	Date/Time	Received By	Print / Sign	Date/Time
K.C. Patterson/CHPRC		MAR 1 1 2016 1100	L.D. Wall CHPRC		MAR 1 1 2016 1100
L.D. Wall CHPRC		MAR 1 1 2016 1400	FEDEX		
FED EX			Patricia Dent P. Wlent		3/14/16 09:15 09:10
			PD		03/17/16

Matrix *

S	= Soil	DS	= Drum Solids
SE	= Sediment	DL	= Drum Liquids
SO	= Solid	T	= Tissue
SL	= Sludge	WI	= Wipe
W	= Water	L	= Liquid
O	= Oil	V	= Vegetation
A	= Air	X	= Other

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time

PRINTED ON 1/21/2016 FSR ID = FSR4254 A-6004-842 (REV 2)

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: CPRC	SDG/AR/COC/Work Order: 393102
Received By: P. Nent	Date Received: 3/14/16

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

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	X			Circle Applicable: Seals broken Damaged container Leaking container Other (describe) MENTED
2	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	X			Preservation Method: Ice bags Blue ice Dry ice None Other (describe) *all temperatures are recorded in Celsius 3c
2a	Daily check performed and passed on IR temperature gun?	X			Temperature Device Serial #: Secondary Temperature Device Serial # (If Applicable): 201404337
3	Chain of custody documents included with shipment?	X			
4	Sample containers intact and sealed?	X			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
5	Samples requiring chemical preservation at proper pH?	PU X	3/14/16		Sample ID's, containers affected and observed pH: If Preservation added, Lot#:
6	Do Low Level Perchlorate samples have headspace as required?		X		Sample ID's and containers affected:
7	VOA vials contain acid preservation?	X			(If unknown, select No)
8	VOA vials free of headspace (defined as < 6mm bubble)?	X			Sample ID's and containers affected:
9	Are Encore containers present?			X	(If yes, immediately deliver to Volatiles laboratory)
10	Samples received within holding time?	X			ID's and tests affected:
11	Sample ID's on COC match ID's on bottles?	X			Sample ID's and containers affected:
12	Date & time on COC match date & time on bottles?	X			Sample ID's affected:
13	Number of containers received match number indicated on COC?	X			Sample ID's affected:
14	Are sample containers identifiable as GEL provided?			X	
15	COC form is properly signed in relinquished/received sections?	X			
16	Carrier and tracking number.				Circle Applicable: FedEx Air FedEx Ground UPS Field Services Courier Other 7758 5771 5581-3c

Comments (Use Continuation Form if needed): Missing Cooler from 3/12/16

PM (or PMA) review: Initials DS Date 3/16/16 Page 1 of 1 GL-CHL-SR-001 Rev 2

Data Review Qualifier Definitions

GEL LABORATORIES LLC
2040 Savage Road Charleston, SC 29407 (843) 556−8171

Report Date: 27−JUN−16

Project Specific Qualifier Definitions for GEL Client Code: CPRC

Qualifier	Qualifier Definition	Department	Fraction
U	Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.		
J	The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).Value is estimated	Organics	
P	Aroclor target analyte with greater than 25% difference between column analyses.	Organics	
C	Analyte has been confirmed by GC/MS analysis	Organics	Pesticide
B	The analyte was detected in both the associated QC blank and in the sample.	Organics	
E	Concentration exceeds the calibration range of the instrument	Organics	
A	The TIC is a suspected aldol−condensation product	Organics	Semi−Volatile
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier		
N	Spike Sample recovery is outside control limits.		
*	Duplicate analysis not within control limits	Inorganics	
>	Result greater than quantifiable range or greater than upper limit of the analysis range	General Chemistry	
Z	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier		
B	The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).	Inorganics	Metals
D	Results are reported from a diluted aliquot of sample.		
E	Reported value is estimated due to interferences. See comment in narrative.	Inorganics	Metals
M	Duplicate precision not met.	Inorganics	Metals
o	Analyte failed to recover within LCS limits (0rganics only)	Organics	
S	Reported value determined by the Method of Standard Additions (MSA)	Inorganics	
T	Spike and/or spike duplicate sample recovery is outside control limits.	Organics	
W	Post−digestion spike recovery for GFAA out of control limit. Sample absorbency < 50% of spike absorbency.	Inorganics	
B	The associated QC sample blank has a result >= 2X the MDA and, after corrections, result is >= MDA for this sample	Radiological	
Y	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier		
+	Correlation coefficient for Method of Standard Additions (MSA) is < 0.995	Inorganics	
B	The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).	General Chemistry	
C	Target analyte was detected in the sample and the associated blank. The associated blank concentration is >= EQL or is > 5% of the measured concentration and/or decision level for associated samples.	Inorganics	Metals
C	Target analyte was detected in the sample and the associated blank. The associated blank concentration is >= EQL or is > 5% of the measured concentration and/or decision level for associated samples.	General Chemistry	
<	Sample is below the EPA guidance level for Reactive Releasable Cyanide and/or Reactive Releasable Sulfide	General Chemistry	
UX	Gamma Spectroscopy−−Uncertain identification	Radiological	

Laboratory Certifications

List of current GEL Certifications as of 27 June 2016

State	Certification
Alaska	UST−0110
Arkansas	88−0651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH−0169
Delaware	SC00012
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330−15−00283, P330−15−00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho Chemistry	SC00012
Idaho Radiochemistry	SC00012
Illinois NELAP	200029
Indiana	C−SC−01
Kansas NELAP	E−10332
Kentucky SDWA	90129
Kentucky Wastewater	90129
Louisiana NELAP	03046 (AI33904)
Louisiana SDWA	LA160006
Maryland	270
Massachusetts	M−SC012
Michigan	9976
Mississippi	SC00012
Nebraska	NE−OS−26−13
Nevada	SC000122016−1
New Hampshire NELAP	205415
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R−158
Oklahoma	9904
Pennsylvania NELAP	68−00485
S.Carolina Radchem	10120002
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235−16−11
Utah NELAP	SC000122016−20
Vermont	VT87156
Virginia NELAP	460202
Washington	C780
West Virginia	997404

Volatile Analysis

Case Narrative

GC/MS Volatile
Technical Case Narrative
CH2MHill Plateau Remediation Company (CPRC)
SDG #: GEL393102
Work Order #: 393102

Product: **Volatile Organic Compounds (VOC) by Gas Chromatograph/Mass Spectrometer**
Analytical Method: SW846 8260C
Analytical Procedure: GL-OA-E-038 REV# 22
Analytical Batch: 1552195

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
393102001	B34CD5
393102002	B34CD6
393102003	B34CF0
393102004	B34CF4
393102005	B34CF5
1203508126	Method Blank (MB)
1203508127	Laboratory Control Sample (LCS)
1203508128	393102001(B34CD5) Post Spike (PS)
1203508129	393102001(B34CD5) Post Spike Duplicate (PSD)

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

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Calibration Information

Continuing Calibration Verification Requirements
The calibration verification standard analyzed on March 15 at 07:08 met the percent difference (%D) requirements for all analytes except 1,1,1-Trichloroethane. The %D/drift for 1,1,1-Trichloroethane was slightly above the criteria at 20.6%. There were no positive results for this analyte in client samples; therefore the data were reported.

Quality Control (QC) Information

Matrix Spike/Matrix Spike Duplicate Recovery Statement
The spike and/or spike duplicate (See Below) recoveries were not all within the acceptance limits. The recoveries were similar. It is believed possible matrix interference has been demonstrated.

Sample	Analyte	Value
1203508128 (B34CD5PS)	Acetone	61* (70%-130%)
1203508129 (B34CD5PSD)	Acetone	60* (70%-130%)

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

CPRC001 CH2MHill Plateau Remediation Company

Client SDG: GEL393102 GEL Work Order: 393102

The Qualifiers in this report are defined as follows:

J The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).Value is estimated

T Spike and/or spike duplicate sample recovery is outside control limits.

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.

DL Indicates that sample is diluted.

RA Indicates that sample is re-analyzed without re-extraction.

RE Indicates that sample is re-extracted.

Review/Validation

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

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

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

Date: 08 APR 2016 **Title: Data Validator**

Sample Data Summary

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**GEL393102**	**Date Collected:**	**03/11/2016 07:15**	**Matrix:**	**WATER**
Lab Sample ID:	**393102001**	**Date Received:**	**03/12/2016 10:00**		
		Client:	**CPRC001**	**Project:**	**CPRC0I16017**
Client ID:	**B34CD5**	**Method:**	**SW846 8260C**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1552195**	**Inst:**	**VOA3.I**	**Dilution:**	**1**
Run Date:	**03/15/2016 09:10**	**Analyst:**	**CDS1**	**Purge Vol:**	**5 mL**
Prep Date:	**03/15/2016 09:10**				
Data File:	**031516V3\3A206.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
630-20-6	1,1,1,2-Tetrachloroethane	U	0.300	ug/L	0.300	2.00
71-55-6	1,1,1-Trichloroethane	U	0.300	ug/L	0.300	2.00
79-34-5	1,1,2,2-Tetrachloroethane	U	0.300	ug/L	0.300	2.00
79-00-5	1,1,2-Trichloroethane	U	0.300	ug/L	0.300	2.00
75-34-3	1,1-Dichloroethane	U	0.300	ug/L	0.300	2.00
75-35-4	1,1-Dichloroethylene	U	0.300	ug/L	0.300	2.00
96-18-4	1,2,3-Trichloropropane	U	0.300	ug/L	0.300	2.00
96-12-8	1,2-Dibromo-3-chloropropane	U	0.500	ug/L	0.500	2.00
106-93-4	1,2-Dibromoethane	U	0.300	ug/L	0.300	2.00
107-06-2	1,2-Dichloroethane	U	0.300	ug/L	0.300	2.00
78-87-5	1,2-Dichloropropane	U	0.300	ug/L	0.300	2.00
106-46-7	1,4-Dichlorobenzene	U	0.300	ug/L	0.300	2.00
78-93-3	2-Butanone	U	3.00	ug/L	3.00	10.0
126-99-8	2-Chloro-1,3-butadiene	U	0.300	ug/L	0.300	2.00
591-78-6	2-Hexanone	U	3.00	ug/L	3.00	10.0
108-10-1	4-Methyl-2-pentanone	U	3.00	ug/L	3.00	10.0
67-64-1	Acetone	TU	3.00	ug/L	3.00	10.0
75-05-8	Acetonitrile	U	16.7	ug/L	16.7	50.0
107-02-8	Acrolein	U	3.00	ug/L	3.00	10.0
107-13-1	Acrylonitrile	U	3.00	ug/L	3.00	10.0
107-05-1	Allyl chloride	U	3.00	ug/L	3.00	10.0
71-43-2	Benzene	U	0.300	ug/L	0.300	2.00
75-27-4	Bromodichloromethane	U	0.300	ug/L	0.300	2.00
75-25-2	Bromoform	U	0.300	ug/L	0.300	2.00
74-83-9	Bromomethane	U	0.300	ug/L	0.300	2.00
75-15-0	Carbon disulfide	U	1.60	ug/L	1.60	10.0
56-23-5	Carbon tetrachloride	U	0.300	ug/L	0.300	2.00
108-90-7	Chlorobenzene	U	0.300	ug/L	0.300	2.00
75-00-3	Chloroethane	U	0.300	ug/L	0.300	2.00
67-66-3	Chloroform	U	0.300	ug/L	0.300	2.00
74-87-3	Chloromethane	U	0.300	ug/L	0.300	2.00
124-48-1	Dibromochloromethane	U	0.300	ug/L	0.300	2.00
74-95-3	Dibromomethane	U	0.300	ug/L	0.300	2.00
75-71-8	Dichlorodifluoromethane	U	0.300	ug/L	0.300	2.00
97-63-2	Ethyl methacrylate	U	3.00	ug/L	3.00	10.0
100-41-4	Ethylbenzene	U	0.300	ug/L	0.300	2.00
74-88-4	Iodomethane	U	3.00	ug/L	3.00	10.0
78-83-1	Isobutyl alcohol	U	33.0	ug/L	33.0	100

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**GEL393102**	**Date Collected:**	**03/11/2016 07:15**	**Matrix:**	**WATER**
Lab Sample ID:	**393102001**	**Date Received:**	**03/12/2016 10:00**		
		Client:	**CPRC001**	**Project:**	**CPRC0I16017**
Client ID:	**B34CD5**	**Method:**	**SW846 8260C**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1552195**	**Inst:**	**VOA3.I**	**Dilution:**	**1**
Run Date:	**03/15/2016 09:10**	**Analyst:**	**CDS1**	**Purge Vol:**	**5 mL**
Prep Date:	**03/15/2016 09:10**				
Data File:	**031516V3\3A206.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
126-98-7	Methacrylonitrile	U	3.00	ug/L	3.00	10.0
80-62-6	Methyl methacrylate	U	3.00	ug/L	3.00	10.0
75-09-2	Methylene chloride	U	1.60	ug/L	1.60	5.00
107-12-0	Propionitrile	U	3.00	ug/L	3.00	10.0
100-42-5	Styrene	U	0.300	ug/L	0.300	2.00
127-18-4	Tetrachloroethylene	U	0.300	ug/L	0.300	2.00
108-88-3	Toluene	U	0.300	ug/L	0.300	2.00
79-01-6	Trichloroethylene	U	0.300	ug/L	0.300	2.00
75-69-4	Trichlorofluoromethane	U	0.300	ug/L	0.300	2.00
108-05-4	Vinyl acetate	U	1.60	ug/L	1.60	5.00
75-01-4	Vinyl chloride	U	0.300	ug/L	0.300	2.00
1330-20-7	Xylenes (total)	U	0.300	ug/L	0.300	6.00
156-59-2	cis-1,2-Dichloroethylene	U	0.300	ug/L	0.300	2.00
10061-01-5	cis-1,3-Dichloropropylene	U	0.300	ug/L	0.300	2.00
156-60-5	trans-1,2-Dichloroethylene	U	0.300	ug/L	0.300	2.00
10061-02-6	trans-1,3-Dichloropropylene	U	0.300	ug/L	0.300	2.00
110-57-6	trans-1,4-Dichloro-2-butene	U	1.50	ug/L	1.50	10.0

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**GEL393102**	**Date Collected:**	**03/11/2016 10:35**	**Matrix:**	**WATER**
Lab Sample ID:	**393102002**	**Date Received:**	**03/12/2016 10:00**		
		Client:	**CPRC001**	**Project:**	**CPRC0I16017**
Client ID:	**B34CD6**	**Method:**	**SW846 8260C**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1552195**	**Inst:**	**VOA3.I**	**Dilution:**	**1**
Run Date:	**03/15/2016 09:40**	**Analyst:**	**CDS1**	**Purge Vol:**	**5 mL**
Prep Date:	**03/15/2016 09:40**				
Data File:	**031516V3\3A207.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
630-20-6	1,1,1,2-Tetrachloroethane	U	0.300	ug/L	0.300	2.00
71-55-6	1,1,1-Trichloroethane	U	0.300	ug/L	0.300	2.00
79-34-5	1,1,2,2-Tetrachloroethane	U	0.300	ug/L	0.300	2.00
79-00-5	1,1,2-Trichloroethane	U	0.300	ug/L	0.300	2.00
75-34-3	1,1-Dichloroethane	U	0.300	ug/L	0.300	2.00
75-35-4	1,1-Dichloroethylene	U	0.300	ug/L	0.300	2.00
96-18-4	1,2,3-Trichloropropane	U	0.300	ug/L	0.300	2.00
96-12-8	1,2-Dibromo-3-chloropropane	U	0.500	ug/L	0.500	2.00
106-93-4	1,2-Dibromoethane	U	0.300	ug/L	0.300	2.00
107-06-2	1,2-Dichloroethane	U	0.300	ug/L	0.300	2.00
78-87-5	1,2-Dichloropropane	U	0.300	ug/L	0.300	2.00
106-46-7	1,4-Dichlorobenzene	U	0.300	ug/L	0.300	2.00
78-93-3	2-Butanone	U	3.00	ug/L	3.00	10.0
126-99-8	2-Chloro-1,3-butadiene	U	0.300	ug/L	0.300	2.00
591-78-6	2-Hexanone	U	3.00	ug/L	3.00	10.0
108-10-1	4-Methyl-2-pentanone	U	3.00	ug/L	3.00	10.0
67-64-1	Acetone	T	18.5	ug/L	3.00	10.0
75-05-8	Acetonitrile	U	16.7	ug/L	16.7	50.0
107-02-8	Acrolein	U	3.00	ug/L	3.00	10.0
107-13-1	Acrylonitrile	U	3.00	ug/L	3.00	10.0
107-05-1	Allyl chloride	U	3.00	ug/L	3.00	10.0
71-43-2	Benzene	U	0.300	ug/L	0.300	2.00
75-27-4	Bromodichloromethane	U	0.300	ug/L	0.300	2.00
75-25-2	Bromoform	U	0.300	ug/L	0.300	2.00
74-83-9	Bromomethane	U	0.300	ug/L	0.300	2.00
75-15-0	Carbon disulfide	U	1.60	ug/L	1.60	10.0
56-23-5	Carbon tetrachloride	J	1.24	ug/L	0.300	2.00
108-90-7	Chlorobenzene	U	0.300	ug/L	0.300	2.00
75-00-3	Chloroethane	U	0.300	ug/L	0.300	2.00
67-66-3	Chloroform	J	1.34	ug/L	0.300	2.00
74-87-3	Chloromethane	U	0.300	ug/L	0.300	2.00
124-48-1	Dibromochloromethane	U	0.300	ug/L	0.300	2.00
74-95-3	Dibromomethane	U	0.300	ug/L	0.300	2.00
75-71-8	Dichlorodifluoromethane	U	0.300	ug/L	0.300	2.00
97-63-2	Ethyl methacrylate	U	3.00	ug/L	3.00	10.0
100-41-4	Ethylbenzene	U	0.300	ug/L	0.300	2.00
74-88-4	Iodomethane	U	3.00	ug/L	3.00	10.0
78-83-1	Isobutyl alcohol	U	33.0	ug/L	33.0	100

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**GEL393102**	**Date Collected:**	**03/11/2016 10:35**	**Matrix:**	**WATER**
Lab Sample ID:	**393102002**	**Date Received:**	**03/12/2016 10:00**		
		Client:	**CPRC001**	**Project:**	**CPRC0I16017**
Client ID:	**B34CD6**	**Method:**	**SW846 8260C**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1552195**	**Inst:**	**VOA3.I**	**Dilution:**	**1**
Run Date:	**03/15/2016 09:40**	**Analyst:**	**CDS1**	**Purge Vol:**	**5 mL**
Prep Date:	**03/15/2016 09:40**				
Data File:	**031516V3\3A207.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
126-98-7	Methacrylonitrile	U	3.00	ug/L	3.00	10.0
80-62-6	Methyl methacrylate	U	3.00	ug/L	3.00	10.0
75-09-2	Methylene chloride	U	1.60	ug/L	1.60	5.00
107-12-0	Propionitrile	U	3.00	ug/L	3.00	10.0
100-42-5	Styrene	U	0.300	ug/L	0.300	2.00
127-18-4	Tetrachloroethylene	U	0.300	ug/L	0.300	2.00
108-88-3	Toluene	U	0.300	ug/L	0.300	2.00
79-01-6	Trichloroethylene	J	0.350	ug/L	0.300	2.00
75-69-4	Trichlorofluoromethane	U	0.300	ug/L	0.300	2.00
108-05-4	Vinyl acetate	U	1.60	ug/L	1.60	5.00
75-01-4	Vinyl chloride	U	0.300	ug/L	0.300	2.00
1330-20-7	Xylenes (total)	U	0.300	ug/L	0.300	6.00
156-59-2	cis-1,2-Dichloroethylene	U	0.300	ug/L	0.300	2.00
10061-01-5	cis-1,3-Dichloropropylene	U	0.300	ug/L	0.300	2.00
156-60-5	trans-1,2-Dichloroethylene	U	0.300	ug/L	0.300	2.00
10061-02-6	trans-1,3-Dichloropropylene	U	0.300	ug/L	0.300	2.00
110-57-6	trans-1,4-Dichloro-2-butene	U	1.50	ug/L	1.50	10.0

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**GEL393102**	**Date Collected:**	**03/11/2016 09:45**	**Matrix:**	**WATER**
Lab Sample ID:	**393102003**	**Date Received:**	**03/12/2016 10:00**		
		Client:	**CPRC001**	**Project:**	**CPRC0I16017**
Client ID:	**B34CF0**	**Method:**	**SW846 8260C**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1552195**	**Inst:**	**VOA3.I**	**Dilution:**	**1**
Run Date:	**03/15/2016 10:11**	**Analyst:**	**CDS1**	**Purge Vol:**	**5 mL**
Prep Date:	**03/15/2016 10:11**				
Data File:	**031516V3\3A208.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
630-20-6	1,1,1,2-Tetrachloroethane	U	0.300	ug/L	0.300	2.00
71-55-6	1,1,1-Trichloroethane	U	0.300	ug/L	0.300	2.00
79-34-5	1,1,2,2-Tetrachloroethane	U	0.300	ug/L	0.300	2.00
79-00-5	1,1,2-Trichloroethane	U	0.300	ug/L	0.300	2.00
75-34-3	1,1-Dichloroethane	U	0.300	ug/L	0.300	2.00
75-35-4	1,1-Dichloroethylene	U	0.300	ug/L	0.300	2.00
96-18-4	1,2,3-Trichloropropane	U	0.300	ug/L	0.300	2.00
96-12-8	1,2-Dibromo-3-chloropropane	U	0.500	ug/L	0.500	2.00
106-93-4	1,2-Dibromoethane	U	0.300	ug/L	0.300	2.00
107-06-2	1,2-Dichloroethane	U	0.300	ug/L	0.300	2.00
78-87-5	1,2-Dichloropropane	U	0.300	ug/L	0.300	2.00
106-46-7	1,4-Dichlorobenzene	U	0.300	ug/L	0.300	2.00
78-93-3	2-Butanone	U	3.00	ug/L	3.00	10.0
126-99-8	2-Chloro-1,3-butadiene	U	0.300	ug/L	0.300	2.00
591-78-6	2-Hexanone	U	3.00	ug/L	3.00	10.0
108-10-1	4-Methyl-2-pentanone	U	3.00	ug/L	3.00	10.0
67-64-1	Acetone	JT	6.52	ug/L	3.00	10.0
75-05-8	Acetonitrile	U	16.7	ug/L	16.7	50.0
107-02-8	Acrolein	U	3.00	ug/L	3.00	10.0
107-13-1	Acrylonitrile	U	3.00	ug/L	3.00	10.0
107-05-1	Allyl chloride	U	3.00	ug/L	3.00	10.0
71-43-2	Benzene	U	0.300	ug/L	0.300	2.00
75-27-4	Bromodichloromethane	U	0.300	ug/L	0.300	2.00
75-25-2	Bromoform	U	0.300	ug/L	0.300	2.00
74-83-9	Bromomethane	U	0.300	ug/L	0.300	2.00
75-15-0	Carbon disulfide	U	1.60	ug/L	1.60	10.0
56-23-5	Carbon tetrachloride		4.06	ug/L	0.300	2.00
108-90-7	Chlorobenzene	U	0.300	ug/L	0.300	2.00
75-00-3	Chloroethane	U	0.300	ug/L	0.300	2.00
67-66-3	Chloroform	J	0.930	ug/L	0.300	2.00
74-87-3	Chloromethane	U	0.300	ug/L	0.300	2.00
124-48-1	Dibromochloromethane	U	0.300	ug/L	0.300	2.00
74-95-3	Dibromomethane	U	0.300	ug/L	0.300	2.00
75-71-8	Dichlorodifluoromethane	U	0.300	ug/L	0.300	2.00
97-63-2	Ethyl methacrylate	U	3.00	ug/L	3.00	10.0
100-41-4	Ethylbenzene	U	0.300	ug/L	0.300	2.00
74-88-4	Iodomethane	U	3.00	ug/L	3.00	10.0
78-83-1	Isobutyl alcohol	U	33.0	ug/L	33.0	100

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**GEL393102**	**Date Collected:**	**03/11/2016 09:45**	**Matrix:**	**WATER**
Lab Sample ID:	**393102003**	**Date Received:**	**03/12/2016 10:00**		
		Client:	**CPRC001**	**Project:**	**CPRC0I16017**
Client ID:	**B34CF0**	**Method:**	**SW846 8260C**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1552195**	**Inst:**	**VOA3.I**	**Dilution:**	**1**
Run Date:	**03/15/2016 10:11**	**Analyst:**	**CDS1**	**Purge Vol:**	**5 mL**
Prep Date:	**03/15/2016 10:11**				
Data File:	**031516V3\3A208.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
126-98-7	Methacrylonitrile	U	3.00	ug/L	3.00	10.0
80-62-6	Methyl methacrylate	U	3.00	ug/L	3.00	10.0
75-09-2	Methylene chloride	U	1.60	ug/L	1.60	5.00
107-12-0	Propionitrile	U	3.00	ug/L	3.00	10.0
100-42-5	Styrene	U	0.300	ug/L	0.300	2.00
127-18-4	Tetrachloroethylene	U	0.300	ug/L	0.300	2.00
108-88-3	Toluene	U	0.300	ug/L	0.300	2.00
79-01-6	Trichloroethylene	U	0.300	ug/L	0.300	2.00
75-69-4	Trichlorofluoromethane	U	0.300	ug/L	0.300	2.00
108-05-4	Vinyl acetate	U	1.60	ug/L	1.60	5.00
75-01-4	Vinyl chloride	U	0.300	ug/L	0.300	2.00
1330-20-7	Xylenes (total)	U	0.300	ug/L	0.300	6.00
156-59-2	cis-1,2-Dichloroethylene	U	0.300	ug/L	0.300	2.00
10061-01-5	cis-1,3-Dichloropropylene	U	0.300	ug/L	0.300	2.00
156-60-5	trans-1,2-Dichloroethylene	U	0.300	ug/L	0.300	2.00
10061-02-6	trans-1,3-Dichloropropylene	U	0.300	ug/L	0.300	2.00
110-57-6	trans-1,4-Dichloro-2-butene	U	1.50	ug/L	1.50	10.0

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**GEL393102**	**Date Collected:**	**03/11/2016 08:51**	**Matrix:**	**WATER**
Lab Sample ID:	**393102004**	**Date Received:**	**03/15/2016 09:10**		
		Client:	**CPRC001**	**Project:**	**CPRC0I16017**
Client ID:	**B34CF4**	**Method:**	**SW846 8260C**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1552195**	**Inst:**	**VOA3.I**	**Dilution:**	**1**
Run Date:	**03/15/2016 15:16**	**Analyst:**	**CDS1**	**Purge Vol:**	**5 mL**
Prep Date:	**03/15/2016 15:16**				
Data File:	**031516V3\3A218.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
630-20-6	1,1,1,2-Tetrachloroethane	U	0.300	ug/L	0.300	2.00
71-55-6	1,1,1-Trichloroethane	U	0.300	ug/L	0.300	2.00
79-34-5	1,1,2,2-Tetrachloroethane	U	0.300	ug/L	0.300	2.00
79-00-5	1,1,2-Trichloroethane	U	0.300	ug/L	0.300	2.00
75-34-3	1,1-Dichloroethane	U	0.300	ug/L	0.300	2.00
75-35-4	1,1-Dichloroethylene	U	0.300	ug/L	0.300	2.00
96-18-4	1,2,3-Trichloropropane	U	0.300	ug/L	0.300	2.00
96-12-8	1,2-Dibromo-3-chloropropane	U	0.500	ug/L	0.500	2.00
106-93-4	1,2-Dibromoethane	U	0.300	ug/L	0.300	2.00
107-06-2	1,2-Dichloroethane	U	0.300	ug/L	0.300	2.00
78-87-5	1,2-Dichloropropane	U	0.300	ug/L	0.300	2.00
106-46-7	1,4-Dichlorobenzene	U	0.300	ug/L	0.300	2.00
78-93-3	2-Butanone	U	3.00	ug/L	3.00	10.0
126-99-8	2-Chloro-1,3-butadiene	U	0.300	ug/L	0.300	2.00
591-78-6	2-Hexanone	U	3.00	ug/L	3.00	10.0
108-10-1	4-Methyl-2-pentanone	U	3.00	ug/L	3.00	10.0
67-64-1	Acetone	TU	3.00	ug/L	3.00	10.0
75-05-8	Acetonitrile	U	16.7	ug/L	16.7	50.0
107-02-8	Acrolein	U	3.00	ug/L	3.00	10.0
107-13-1	Acrylonitrile	U	3.00	ug/L	3.00	10.0
107-05-1	Allyl chloride	U	3.00	ug/L	3.00	10.0
71-43-2	Benzene	U	0.300	ug/L	0.300	2.00
75-27-4	Bromodichloromethane	U	0.300	ug/L	0.300	2.00
75-25-2	Bromoform	U	0.300	ug/L	0.300	2.00
74-83-9	Bromomethane	U	0.300	ug/L	0.300	2.00
75-15-0	Carbon disulfide	U	1.60	ug/L	1.60	10.0
56-23-5	Carbon tetrachloride		2.58	ug/L	0.300	2.00
108-90-7	Chlorobenzene	U	0.300	ug/L	0.300	2.00
75-00-3	Chloroethane	U	0.300	ug/L	0.300	2.00
67-66-3	Chloroform	J	0.850	ug/L	0.300	2.00
74-87-3	Chloromethane	U	0.300	ug/L	0.300	2.00
124-48-1	Dibromochloromethane	U	0.300	ug/L	0.300	2.00
74-95-3	Dibromomethane	U	0.300	ug/L	0.300	2.00
75-71-8	Dichlorodifluoromethane	U	0.300	ug/L	0.300	2.00
97-63-2	Ethyl methacrylate	U	3.00	ug/L	3.00	10.0
100-41-4	Ethylbenzene	U	0.300	ug/L	0.300	2.00
74-88-4	Iodomethane	U	3.00	ug/L	3.00	10.0
78-83-1	Isobutyl alcohol	U	33.0	ug/L	33.0	100

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**GEL393102**	**Date Collected:**	**03/11/2016 08:51**	**Matrix:**	**WATER**
Lab Sample ID:	**393102004**	**Date Received:**	**03/15/2016 09:10**		
		Client:	**CPRC001**	**Project:**	**CPRC0I16017**
Client ID:	**B34CF4**	**Method:**	**SW846 8260C**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1552195**	**Inst:**	**VOA3.I**	**Dilution:**	**1**
Run Date:	**03/15/2016 15:16**	**Analyst:**	**CDS1**	**Purge Vol:**	**5 mL**
Prep Date:	**03/15/2016 15:16**				
Data File:	**031516V3\3A218.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
126-98-7	Methacrylonitrile	U	3.00	ug/L	3.00	10.0
80-62-6	Methyl methacrylate	U	3.00	ug/L	3.00	10.0
75-09-2	Methylene chloride	U	1.60	ug/L	1.60	5.00
107-12-0	Propionitrile	U	3.00	ug/L	3.00	10.0
100-42-5	Styrene	U	0.300	ug/L	0.300	2.00
127-18-4	Tetrachloroethylene	U	0.300	ug/L	0.300	2.00
108-88-3	Toluene	U	0.300	ug/L	0.300	2.00
79-01-6	Trichloroethylene	U	0.300	ug/L	0.300	2.00
75-69-4	Trichlorofluoromethane	U	0.300	ug/L	0.300	2.00
108-05-4	Vinyl acetate	U	1.60	ug/L	1.60	5.00
75-01-4	Vinyl chloride	U	0.300	ug/L	0.300	2.00
1330-20-7	Xylenes (total)	U	0.300	ug/L	0.300	6.00
156-59-2	cis-1,2-Dichloroethylene	U	0.300	ug/L	0.300	2.00
10061-01-5	cis-1,3-Dichloropropylene	U	0.300	ug/L	0.300	2.00
156-60-5	trans-1,2-Dichloroethylene	U	0.300	ug/L	0.300	2.00
10061-02-6	trans-1,3-Dichloropropylene	U	0.300	ug/L	0.300	2.00
110-57-6	trans-1,4-Dichloro-2-butene	U	1.50	ug/L	1.50	10.0

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**GEL393102**	**Date Collected:**	**03/11/2016 08:51**	**Matrix:**	**WATER**
Lab Sample ID:	**393102005**	**Date Received:**	**03/15/2016 09:10**		
		Client:	**CPRC001**	**Project:**	**CPRC0I16017**
Client ID:	**B34CF5**	**Method:**	**SW846 8260C**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1552195**	**Inst:**	**VOA3.I**	**Dilution:**	**1**
Run Date:	**03/15/2016 15:47**	**Analyst:**	**CDS1**	**Purge Vol:**	**5 mL**
Prep Date:	**03/15/2016 15:47**				
Data File:	**031516V3\3A219.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
630-20-6	1,1,1,2-Tetrachloroethane	U	0.300	ug/L	0.300	2.00
71-55-6	1,1,1-Trichloroethane	U	0.300	ug/L	0.300	2.00
79-34-5	1,1,2,2-Tetrachloroethane	U	0.300	ug/L	0.300	2.00
79-00-5	1,1,2-Trichloroethane	U	0.300	ug/L	0.300	2.00
75-34-3	1,1-Dichloroethane	U	0.300	ug/L	0.300	2.00
75-35-4	1,1-Dichloroethylene	U	0.300	ug/L	0.300	2.00
96-18-4	1,2,3-Trichloropropane	U	0.300	ug/L	0.300	2.00
96-12-8	1,2-Dibromo-3-chloropropane	U	0.500	ug/L	0.500	2.00
106-93-4	1,2-Dibromoethane	U	0.300	ug/L	0.300	2.00
107-06-2	1,2-Dichloroethane	U	0.300	ug/L	0.300	2.00
78-87-5	1,2-Dichloropropane	U	0.300	ug/L	0.300	2.00
106-46-7	1,4-Dichlorobenzene	U	0.300	ug/L	0.300	2.00
78-93-3	2-Butanone	U	3.00	ug/L	3.00	10.0
126-99-8	2-Chloro-1,3-butadiene	U	0.300	ug/L	0.300	2.00
591-78-6	2-Hexanone	U	3.00	ug/L	3.00	10.0
108-10-1	4-Methyl-2-pentanone	U	3.00	ug/L	3.00	10.0
67-64-1	Acetone	TU	3.00	ug/L	3.00	10.0
75-05-8	Acetonitrile	U	16.7	ug/L	16.7	50.0
107-02-8	Acrolein	U	3.00	ug/L	3.00	10.0
107-13-1	Acrylonitrile	U	3.00	ug/L	3.00	10.0
107-05-1	Allyl chloride	U	3.00	ug/L	3.00	10.0
71-43-2	Benzene	U	0.300	ug/L	0.300	2.00
75-27-4	Bromodichloromethane	U	0.300	ug/L	0.300	2.00
75-25-2	Bromoform	U	0.300	ug/L	0.300	2.00
74-83-9	Bromomethane	U	0.300	ug/L	0.300	2.00
75-15-0	Carbon disulfide	U	1.60	ug/L	1.60	10.0
56-23-5	Carbon tetrachloride		2.69	ug/L	0.300	2.00
108-90-7	Chlorobenzene	U	0.300	ug/L	0.300	2.00
75-00-3	Chloroethane	U	0.300	ug/L	0.300	2.00
67-66-3	Chloroform	J	0.850	ug/L	0.300	2.00
74-87-3	Chloromethane	U	0.300	ug/L	0.300	2.00
124-48-1	Dibromochloromethane	U	0.300	ug/L	0.300	2.00
74-95-3	Dibromomethane	U	0.300	ug/L	0.300	2.00
75-71-8	Dichlorodifluoromethane	U	0.300	ug/L	0.300	2.00
97-63-2	Ethyl methacrylate	U	3.00	ug/L	3.00	10.0
100-41-4	Ethylbenzene	U	0.300	ug/L	0.300	2.00
74-88-4	Iodomethane	U	3.00	ug/L	3.00	10.0
78-83-1	Isobutyl alcohol	U	33.0	ug/L	33.0	100

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**GEL393102**	**Date Collected:**	**03/11/2016 08:51**	**Matrix:**	**WATER**
Lab Sample ID:	**393102005**	**Date Received:**	**03/15/2016 09:10**		
		Client:	**CPRC001**	**Project:**	**CPRC0I16017**
Client ID:	**B34CF5**	**Method:**	**SW846 8260C**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1552195**	**Inst:**	**VOA3.I**	**Dilution:**	**1**
Run Date:	**03/15/2016 15:47**	**Analyst:**	**CDS1**	**Purge Vol:**	**5 mL**
Prep Date:	**03/15/2016 15:47**				
Data File:	**031516V3\3A219.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
126-98-7	Methacrylonitrile	U	3.00	ug/L	3.00	10.0
80-62-6	Methyl methacrylate	U	3.00	ug/L	3.00	10.0
75-09-2	Methylene chloride	U	1.60	ug/L	1.60	5.00
107-12-0	Propionitrile	U	3.00	ug/L	3.00	10.0
100-42-5	Styrene	U	0.300	ug/L	0.300	2.00
127-18-4	Tetrachloroethylene	U	0.300	ug/L	0.300	2.00
108-88-3	Toluene	U	0.300	ug/L	0.300	2.00
79-01-6	Trichloroethylene	U	0.300	ug/L	0.300	2.00
75-69-4	Trichlorofluoromethane	U	0.300	ug/L	0.300	2.00
108-05-4	Vinyl acetate	U	1.60	ug/L	1.60	5.00
75-01-4	Vinyl chloride	U	0.300	ug/L	0.300	2.00
1330-20-7	Xylenes (total)	U	0.300	ug/L	0.300	6.00
156-59-2	cis-1,2-Dichloroethylene	U	0.300	ug/L	0.300	2.00
10061-01-5	cis-1,3-Dichloropropylene	U	0.300	ug/L	0.300	2.00
156-60-5	trans-1,2-Dichloroethylene	U	0.300	ug/L	0.300	2.00
10061-02-6	trans-1,3-Dichloropropylene	U	0.300	ug/L	0.300	2.00
110-57-6	trans-1,4-Dichloro-2-butene	U	1.50	ug/L	1.50	10.0

Quality Control Summary

GEL LABORATORIES LLC

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

QC Summary

Report Date: June 27, 2016

CH2MHill Plateau Remediation Company
MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington

Contact: **Mr. Scot Fitzgerald**

Workorder: **393102**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Volatile-GC/MS										
Batch 1552195										
QC1203508127 LCS										
1,1,1,2-Tetrachloroethane	50.0			52.1	ug/L		104	(70%-130%)	CDS1	03/15/16 07:38
1,1,1-Trichloroethane	50.0			60.3	ug/L		121	(70%-130%)		
1,1,2,2-Tetrachloroethane	50.0			49.5	ug/L		99	(70%-130%)		
1,1,2-Trichloroethane	50.0			50.4	ug/L		101	(70%-130%)		
1,1-Dichloroethane	50.0			57.8	ug/L		116	(70%-130%)		
1,1-Dichloroethylene	50.0			57.8	ug/L		116	(70%-130%)		
1,2,3-Trichloropropane	50.0			45.6	ug/L		91	(70%-130%)		
1,2-Dibromo-3-chloropropane	50.0			51.9	ug/L		104	(70%-130%)		
1,2-Dibromoethane	50.0			49.9	ug/L		100	(70%-130%)		
1,2-Dichloroethane	50.0			50.7	ug/L		101	(70%-130%)		
1,2-Dichloropropane	50.0			54.1	ug/L		108	(70%-130%)		
1,4-Dichlorobenzene	50.0			52.0	ug/L		104	(70%-130%)		
2-Butanone	250			265	ug/L		106	(70%-130%)		
2-Hexanone	250			250	ug/L		100	(70%-130%)		
4-Methyl-2-pentanone	250			221	ug/L		88	(70%-130%)		
Acetone	250			273	ug/L		109	(70%-130%)		
Acetonitrile	1250			1140	ug/L		91	(70%-130%)		
Benzene	50.0			54.3	ug/L		109	(70%-130%)		
Bromodichloromethane	50.0			56.5	ug/L		113	(70%-130%)		
Bromoform	50.0			54.1	ug/L		108	(70%-130%)		

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QC Summary

Workorder: **393102**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Volatile-GC/MS										
Batch 1552195										
Bromomethane	50.0			52.1	ug/L		104	(70%-130%)	CDS1	03/15/16 07:38
Carbon disulfide	250			277	ug/L		111	(70%-130%)		
Carbon tetrachloride	50.0			58.5	ug/L		117	(70%-130%)		
Chlorobenzene	50.0			52.7	ug/L		105	(70%-130%)		
Chloroethane	50.0			56.6	ug/L		113	(70%-130%)		
Chloroform	50.0			54.9	ug/L		110	(70%-130%)		
Chloromethane	50.0			51.8	ug/L		104	(70%-130%)		
Dibromochloromethane	50.0			54.2	ug/L		108	(70%-130%)		
Dibromomethane	50.0			53.7	ug/L		107	(70%-130%)		
Dichlorodifluoromethane	50.0			55.5	ug/L		111	(70%-130%)		
Ethylbenzene	50.0			51.4	ug/L		103	(70%-130%)		
Iodomethane	250			258	ug/L		103	(70%-130%)		
Methylene chloride	50.0			51.7	ug/L		103	(70%-130%)		
Styrene	50.0			48.9	ug/L		98	(70%-130%)		
Tetrachloroethylene	50.0			52.8	ug/L		106	(70%-130%)		
Toluene	50.0			54.7	ug/L		109	(70%-130%)		
Trichloroethylene	50.0			58.5	ug/L		117	(70%-130%)		
Trichlorofluoromethane	50.0			57.1	ug/L		114	(70%-130%)		
Vinyl acetate	250			246	ug/L		98	(70%-130%)		
Vinyl chloride	50.0			53.0	ug/L		106	(70%-130%)		
Xylenes (total)	150			150	ug/L		100	(70%-130%)		

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QC Summary

Workorder: **393102**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Volatile-GC/MS											
Batch 1552195											
cis-1,2-Dichloroethylene	50.0			52.6	ug/L		105	(70%-130%)			
cis-1,3-Dichloropropylene	50.0			54.9	ug/L		110	(70%-130%)	CDS1	03/15/16	07:38
trans-1,2-Dichloroethylene	50.0			56.3	ug/L		113	(70%-130%)			
trans-1,3-Dichloropropylene	50.0			53.8	ug/L		108	(70%-130%)			
**1,2-Dichloroethane-d4	50.0			48.7	ug/L		97	(70%-130%)			
**Bromofluorobenzene	50.0			49.2	ug/L		98	(70%-130%)			
**Toluene-d8	50.0			50.3	ug/L		101	(70%-130%)			
QC1203508126 MB											
1,1,1,2-Tetrachloroethane			U	0.300	ug/L					03/15/16	08:39
1,1,1-Trichloroethane			U	0.300	ug/L						
1,1,2,2-Tetrachloroethane			U	0.300	ug/L						
1,1,2-Trichloroethane			U	0.300	ug/L						
1,1-Dichloroethane			U	0.300	ug/L						
1,1-Dichloroethylene			U	0.300	ug/L						
1,2,3-Trichloropropane			U	0.300	ug/L						
1,2-Dibromo-3-chloropropane			U	0.500	ug/L						
1,2-Dibromoethane			U	0.300	ug/L						
1,2-Dichloroethane			U	0.300	ug/L						
1,2-Dichloropropane			U	0.300	ug/L						
1,4-Dichlorobenzene			U	0.300	ug/L						
2-Butanone			U	3.00	ug/L						
2-Chloro-1,3-butadiene			U	0.300	ug/L						
2-Hexanone			U	3.00	ug/L						

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QC Summary

Workorder: **393102**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Volatile-GC/MS											
Batch 1552195											
4-Methyl-2-pentanone			U	3.00	ug/L				CDS1	03/15/16	08:39
Acetone			U	3.00	ug/L						
Acetonitrile			U	16.7	ug/L						
Acrolein			U	3.00	ug/L						
Acrylonitrile			U	3.00	ug/L						
Allyl chloride			U	3.00	ug/L						
Benzene			U	0.300	ug/L						
Bromodichloromethane			U	0.300	ug/L						
Bromoform			U	0.300	ug/L						
Bromomethane			U	0.300	ug/L						
Carbon disulfide			U	1.60	ug/L						
Carbon tetrachloride			U	0.300	ug/L						
Chlorobenzene			U	0.300	ug/L						
Chloroethane			U	0.300	ug/L						
Chloroform			U	0.300	ug/L						
Chloromethane			U	0.300	ug/L						
Dibromochloromethane			U	0.300	ug/L						
Dibromomethane			U	0.300	ug/L						
Dichlorodifluoromethane			U	0.300	ug/L						
Ethyl methacrylate			U	3.00	ug/L						
Ethylbenzene			U	0.300	ug/L						

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QC Summary

Workorder: **393102**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Volatile-GC/MS											
Batch 1552195											
Iodomethane			U	3.00	ug/L						
Isobutyl alcohol			U	33.0	ug/L				CDS1	03/15/16	08:39
Methacrylonitrile			U	3.00	ug/L						
Methyl methacrylate			U	3.00	ug/L						
Methylene chloride			U	1.60	ug/L						
Propionitrile			U	3.00	ug/L						
Styrene			U	0.300	ug/L						
Tetrachloroethylene			U	0.300	ug/L						
Toluene			U	0.300	ug/L						
Trichloroethylene			U	0.300	ug/L						
Trichlorofluoromethane			U	0.300	ug/L						
Vinyl acetate			U	1.60	ug/L						
Vinyl chloride			U	0.300	ug/L						
Xylenes (total)			U	0.300	ug/L						
cis-1,2-Dichloroethylene			U	0.300	ug/L						
cis-1,3-Dichloropropylene			U	0.300	ug/L						
trans-1,2-Dichloroethylene			U	0.300	ug/L						
trans-1,3-Dichloropropylene			U	0.300	ug/L						
trans-1,4-Dichloro-2-butene			U	1.50	ug/L						
**1,2-Dichloroethane-d4	50.0			53.0	ug/L		106	(70%-130%)			
**Bromofluorobenzene	50.0			47.4	ug/L		95	(70%-130%)			
**Toluene-d8	50.0			51.8	ug/L		104	(70%-130%)			

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QC Summary

Workorder: **393102**

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Volatile-GC/MS											
Batch 1552195											
QC1203508128 393102001 PS											
1,1,1,2-Tetrachloroethane	50.0	U	0.00		52.8	ug/L		106	(70%-130%)	CDS1	03/15/16 16:47
1,1,1-Trichloroethane	50.0	U	0.00		63.7	ug/L		127	(70%-130%)		
1,1,2,2-Tetrachloroethane	50.0	U	0.00		53.3	ug/L		107	(70%-130%)		
1,1,2-Trichloroethane	50.0	U	0.00		51.2	ug/L		102	(70%-130%)		
1,1-Dichloroethane	50.0	U	0.00		57.2	ug/L		114	(70%-130%)		
1,1-Dichloroethylene	50.0	U	0.00		58.1	ug/L		116	(70%-130%)		
1,2,3-Trichloropropane	50.0	U	0.00		49.2	ug/L		98	(70%-130%)		
1,2-Dibromo-3-chloropropane	50.0	U	0.00		52.0	ug/L		104	(70%-130%)		
1,2-Dibromoethane	50.0	U	0.00		50.4	ug/L		101	(70%-130%)		
1,2-Dichloroethane	50.0	U	0.00		54.1	ug/L		108	(70%-130%)		
1,2-Dichloropropane	50.0	U	0.00		56.5	ug/L		113	(70%-130%)		
1,4-Dichlorobenzene	50.0	U	0.00		50.0	ug/L		100	(70%-130%)		
2-Butanone	250	U	0.00		187	ug/L		75	(70%-130%)		
2-Hexanone	250	U	0.00		180	ug/L		72	(70%-130%)		
4-Methyl-2-pentanone	250	U	0.00		241	ug/L		96	(70%-130%)		
Acetone	250	TU	0.00	T	154	ug/L		61*	(70%-130%)		
Acetonitrile	1250	U	0.00		1200	ug/L		96	(70%-130%)		
Benzene	50.0	U	0.00		55.1	ug/L		110	(70%-130%)		
Bromodichloromethane	50.0	U	0.00		58.1	ug/L		116	(70%-130%)		
Bromoform	50.0	U	0.00		54.6	ug/L		109	(70%-130%)		
Bromomethane	50.0	U	0.00		55.4	ug/L		111	(70%-130%)		
Carbon disulfide	250	U	0.00		279	ug/L		111	(70%-130%)		

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QC Summary

Workorder: **393102**

Volatile-GC/MS
Batch 1552195

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Carbon tetrachloride	50.0	U	0.00		58.1	ug/L		116	(70%-130%)	CDS1	03/15/16 16:47
Chlorobenzene	50.0	U	0.00		52.9	ug/L		106	(70%-130%)		
Chloroethane	50.0	U	0.00		56.2	ug/L		112	(70%-130%)		
Chloroform	50.0	U	0.00		55.7	ug/L		111	(70%-130%)		
Chloromethane	50.0	U	0.00		51.3	ug/L		103	(70%-130%)		
Dibromochloromethane	50.0	U	0.00		55.1	ug/L		110	(70%-130%)		
Dibromomethane	50.0	U	0.00		55.2	ug/L		110	(70%-130%)		
Dichlorodifluoromethane	50.0	U	0.00		54.5	ug/L		109	(70%-130%)		
Ethylbenzene	50.0	U	0.00		52.3	ug/L		105	(70%-130%)		
Iodomethane	250	U	0.00		257	ug/L		103	(70%-130%)		
Methylene chloride	50.0	U	0.00		52.4	ug/L		105	(70%-130%)		
Styrene	50.0	U	0.00		50.7	ug/L		101	(70%-130%)		
Tetrachloroethylene	50.0	U	0.00		52.1	ug/L		104	(70%-130%)		
Toluene	50.0	U	0.00		57.4	ug/L		115	(70%-130%)		
Trichloroethylene	50.0	U	0.00		57.9	ug/L		116	(70%-130%)		
Trichlorofluoromethane	50.0	U	0.00		55.4	ug/L		111	(70%-130%)		
Vinyl acetate	250	U	0.00		256	ug/L		102	(70%-130%)		
Vinyl chloride	50.0	U	0.00		51.2	ug/L		102	(70%-130%)		
Xylenes (total)	150	U	0.00		151	ug/L		101	(70%-130%)		
cis-1,2-Dichloroethylene	50.0	U	0.00		53.1	ug/L		106	(70%-130%)		
cis-1,3-Dichloropropylene	50.0	U	0.00		59.3	ug/L		119	(70%-130%)		

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QC Summary

Workorder: **393102**

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Volatile-GC/MS											
Batch 1552195											
trans-1,2-Dichloroethylene	50.0	U	0.00		56.1	ug/L		112	(70%-130%)		
trans-1,3-Dichloropropylene	50.0	U	0.00		59.7	ug/L		119	(70%-130%)	CDS1	03/15/16 16:47
**1,2-Dichloroethane-d4	50.0		51.0		49.9	ug/L		100	(70%-130%)		
**Bromofluorobenzene	50.0		47.0		49.3	ug/L		99	(70%-130%)		
**Toluene-d8	50.0		53.2		51.6	ug/L		103	(70%-130%)		
QC1203508129 393102001 PSD											
1,1,1,2-Tetrachloroethane	50.0	U	0.00		52.6	ug/L	0	105	(0%-20%)		03/15/16 17:18
1,1,1-Trichloroethane	50.0	U	0.00		60.5	ug/L	5	121	(0%-20%)		
1,1,2,2-Tetrachloroethane	50.0	U	0.00		52.6	ug/L	1	105	(0%-20%)		
1,1,2-Trichloroethane	50.0	U	0.00		51.4	ug/L	0	103	(0%-20%)		
1,1-Dichloroethane	50.0	U	0.00		55.0	ug/L	4	110	(0%-20%)		
1,1-Dichloroethylene	50.0	U	0.00		55.6	ug/L	4	111	(0%-20%)		
1,2,3-Trichloropropane	50.0	U	0.00		50.4	ug/L	2	101	(0%-20%)		
1,2-Dibromo-3-chloropropane	50.0	U	0.00		54.3	ug/L	4	109	(0%-20%)		
1,2-Dibromoethane	50.0	U	0.00		50.8	ug/L	1	102	(0%-20%)		
1,2-Dichloroethane	50.0	U	0.00		52.8	ug/L	2	106	(0%-20%)		
1,2-Dichloropropane	50.0	U	0.00		54.0	ug/L	4	108	(0%-20%)		
1,4-Dichlorobenzene	50.0	U	0.00		49.8	ug/L	0	100	(0%-20%)		
2-Butanone	250	U	0.00		185	ug/L	1	74	(0%-20%)		
2-Hexanone	250	U	0.00		190	ug/L	6	76	(0%-20%)		
4-Methyl-2-pentanone	250	U	0.00		243	ug/L	1	97	(0%-20%)		
Acetone	250	TU	0.00	T	150	ug/L	2	60*	(0%-20%)		
Acetonitrile	1250	U	0.00		1180	ug/L	2	94	(0%-20%)		

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QC Summary

Workorder: **393102**

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Volatile-GC/MS											
Batch 1552195											
Benzene	50.0	U	0.00		52.9	ug/L	4	106	(0%-20%)	CDS1	03/15/16 17:18
Bromodichloromethane	50.0	U	0.00		56.4	ug/L	3	113	(0%-20%)		
Bromoform	50.0	U	0.00		57.0	ug/L	4	114	(0%-20%)		
Bromomethane	50.0	U	0.00		53.1	ug/L	4	106	(0%-20%)		
Carbon disulfide	250	U	0.00		265	ug/L	5	106	(0%-20%)		
Carbon tetrachloride	50.0	U	0.00		55.8	ug/L	4	112	(0%-20%)		
Chlorobenzene	50.0	U	0.00		52.9	ug/L	0	106	(0%-20%)		
Chloroethane	50.0	U	0.00		56.0	ug/L	0	112	(0%-20%)		
Chloroform	50.0	U	0.00		53.6	ug/L	4	107	(0%-20%)		
Chloromethane	50.0	U	0.00		49.3	ug/L	4	99	(0%-20%)		
Dibromochloromethane	50.0	U	0.00		55.6	ug/L	1	111	(0%-20%)		
Dibromomethane	50.0	U	0.00		54.4	ug/L	1	109	(0%-20%)		
Dichlorodifluoromethane	50.0	U	0.00		54.2	ug/L	1	108	(0%-20%)		
Ethylbenzene	50.0	U	0.00		52.1	ug/L	0	104	(0%-20%)		
Iodomethane	250	U	0.00		251	ug/L	2	100	(0%-20%)		
Methylene chloride	50.0	U	0.00		51.8	ug/L	1	104	(0%-20%)		
Styrene	50.0	U	0.00		49.0	ug/L	3	98	(0%-20%)		
Tetrachloroethylene	50.0	U	0.00		52.0	ug/L	0	104	(0%-20%)		
Toluene	50.0	U	0.00		56.9	ug/L	1	114	(0%-20%)		
Trichloroethylene	50.0	U	0.00		55.6	ug/L	4	111	(0%-20%)		
Trichlorofluoromethane	50.0	U	0.00		54.6	ug/L	2	109	(0%-20%)		

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QC Summary

Workorder: **393102**

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Volatile-GC/MS											
Batch 1552195											
Vinyl acetate	250	U	0.00		256	ug/L	0	103	(0%-20%)		
Vinyl chloride	50.0	U	0.00		47.3	ug/L	8	95	(0%-20%)	CDS1	03/15/16 17:18
Xylenes (total)	150	U	0.00		150	ug/L	1	100	(0%-20%)		
cis-1,2-Dichloroethylene	50.0	U	0.00		50.4	ug/L	5	101	(0%-20%)		
cis-1,3-Dichloropropylene	50.0	U	0.00		58.2	ug/L	2	116	(0%-20%)		
trans-1,2-Dichloroethylene	50.0	U	0.00		53.5	ug/L	5	107	(0%-20%)		
trans-1,3-Dichloropropylene	50.0	U	0.00		58.1	ug/L	3	116	(0%-20%)		
**1,2-Dichloroethane-d4	50.0		51.0		49.5	ug/L		99	(70%-130%)		
**Bromofluorobenzene	50.0		47.0		50.2	ug/L		100	(70%-130%)		
**Toluene-d8	50.0		53.2		52.0	ug/L		104	(70%-130%)		

Notes:

The Qualifiers in this report are defined as follows:

- A The TIC is a suspected aldol-condensation product
- B The analyte was detected in both the associated QC blank and in the sample.
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of sample.
- E Concentration exceeds the calibration range of the instrument
- J The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).Value is estimated
- N Spike Sample recovery is outside control limits.
- P Aroclor target analyte with greater than 25% difference between column analyses.
- T Spike and/or spike duplicate sample recovery is outside control limits.
- U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Z Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- o Analyte failed to recover within LCS limits (0rganics only)

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QC Summary

Workorder: **393102**

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

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

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

Volatile

Surrogate Recovery Report

SDG Number: GEL393102

Matrix Type: LIQUID

Sample ID	Client ID	DCED4 %REC	TOL %REC	BFB %REC
1203508127	LCS for batch 1552195	97	101	98
1203508126	MB for batch 1552195	106	104	95
393102001	B34CD5	102	106	94
393102002	B34CD6	106	104	92
393102003	B34CF0	104	104	92
393102004	B34CF4	105	103	95
393102005	B34CF5	107	107	96
1203508128	B34CD5PS	100	103	99
1203508129	B34CD5PSD	99	104	100

Surrogate		Acceptance Limits
DCED4	= 1,2-Dichloroethane-d4	(70%-130%)
TOL	= Toluene-d8	(70%-130%)
BFB	= Bromofluorobenzene	(70%-130%)

* Recovery outside Acceptance Limits
\# Column to be used to flag recovery values
D Sample Diluted