

OCTOBER 1, 2014



a member of **The GEL Group** INC



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October 01, 2014

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

Re: CHPRC SAF X14-003
Work Order: 356010
SDG: GEL356010

Dear Mr. Fitzgerald:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on September 04, 2014. 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. 4505.

Sincerely,

A handwritten signature in cursive script that reads "Heather Shaffer".

Heather Shaffer
Project Manager

Purchase Order: 303064ES20
Chain of Custody: X14-003-192
Enclosures



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Case Narrative

**General Narrative
for
Hanford MSA (51204)
CHPRC SAF X14-003
SDG: GEL356010**

October 01, 2014

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 September 04, 2014, for analysis. The sample was 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 sample:

Laboratory Identification	Sample Description
356010001	B2XPT7

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. This package, to the best of my knowledge, is in compliance with technical and administrative requirements.

Heather Shaffer

Heather Shaffer
Project Manager

Chain of Custody and Supporting Documentation

CH2MHill Plateau Remediation
Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C.#

X14-003-192

Page 1 of 1

Collector	CHRIS FULTON CHPRC	Contact/Requester	WATERS-HUSTED, K	Telephone No.	376-4650
SAF No.	X14-003	Sampling Origin	HANFORD SITE	Purchase Order/Charge Code	300071ES20
Project Title	GW Sitewide Surv, FY14	Logbook No.	HNF-N-506 <u>6912</u>	Ice Chest No.	<u>6005-307</u>
Shipped To (Lab)	GEL Laboratories, LLC	Method of Shipment	Commercial Carrier	Bill of Lading/Air Bill No.	<u>77103444 4630</u>
Protocol	SURV	Priority:	30 Days	Offsite Property No.	<u>5056</u>

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
 Batch with A, I, S, and W SAFs.

Hold Time: _____ Total Activity Exemption: Yes No

Sample No.	Filter	* Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B2XPT7	N	W SEP 03 2014	0837	4x40-mL aGs*	8260_VOA_GCMS: COMMON	14 Days	HCl or H2SO4 to pH <2/Cool~4C

Relinquished By CHRIS FULTON CHPRC	Print 	Sign	Received By F.M. Hall CHPRC	Print 	Sign	Date/Time SEP 03 2014 0900
Relinquished By F.M. Hall CHPRC	Print 	Sign	Received By FEDEX	Print FEDEX	Sign	Date/Time SEP 03 2014 0900
Relinquished By FeDx	Print FeDx	Sign	Received By P. Dent Patricia Dent	Print Patricia Dent	Sign	Date/Time 9/4/14 09:05
Relinquished By	Print	Sign	Received By	Print	Sign	Date/Time

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

Disposal Method (e.g., Return to customer, per lab procedure, used in process)

Disposed By: _____ Date/Time: _____

PRINTED ON 9/2/2014

A-6004-842 (REV 2)



SAMPLE RECEIPT & REVIEW FORM

Client: HMSA		SDG/AR/COC/Work Order: 356010
Received By: P. Went		Date Received: 9/5/14
Suspected Hazard Information	Yes No	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
COC/Samples marked as radioactive?	<input checked="" type="checkbox"/> <input type="checkbox"/>	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): 0/cpm
Classified Radioactive II or III by RSO?	<input type="checkbox"/> <input checked="" type="checkbox"/>	If yes, Were swipes taken of sample containers < action levels?
COC/Samples marked containing PCBs?	<input type="checkbox"/> <input checked="" type="checkbox"/>	
Package, COC, and/or Samples marked as beryllium or asbestos containing?	<input type="checkbox"/> <input checked="" type="checkbox"/>	If yes, samples are to be segregated as Safety Controlled Samples, and opened by the GEL Safety Group.
Shipped as a DOT Hazardous?	<input type="checkbox"/> <input checked="" type="checkbox"/>	Hazard Class Shipped: UN#:
Samples identified as Foreign Soil?	<input type="checkbox"/> <input checked="" type="checkbox"/>	

Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1 Shipping containers received intact and sealed?	<input checked="" type="checkbox"/>			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2 Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	<input checked="" type="checkbox"/>			Preservation Method: Ice bags Blue ice Dry ice None Other (describe) ac *all temperatures are recorded in Celsius
2a Daily check performed and passed on IR temperature gun?	<input checked="" type="checkbox"/>			Temperature Device Serial #: Secondary Temperature Device Serial # (If Applicable): 130462966
3 Chain of custody documents included with shipment?	<input checked="" type="checkbox"/>			Chain Rec'd 9/4/14 Samples rec'd 9/5/14
4 Sample containers intact and sealed?	<input checked="" type="checkbox"/>			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
5 Samples requiring chemical preservation at proper pH?	<input checked="" type="checkbox"/>			Sample ID's, containers affected and observed pH: If Preservation added, Lot#:
6 VOA vials free of headspace (defined as < 6mm bubble)?	<input checked="" type="checkbox"/>			Sample ID's and containers affected:
7 Are Encore containers present?			<input checked="" type="checkbox"/>	(If yes, immediately deliver to Volatiles laboratory)
8 Samples received within holding time?	<input checked="" type="checkbox"/>			ID's and tests affected:
9 Sample ID's on COC match ID's on bottles?	<input checked="" type="checkbox"/>			Sample ID's and containers affected:
10 Date & time on COC match date & time on bottles?	<input checked="" type="checkbox"/>			Sample ID's affected:
11 Number of containers received match number indicated on COC?	<input checked="" type="checkbox"/>			Sample ID's affected: MISSING COOLERS RECEIVED. All Samples accounted for.
12 Are sample containers identifiable as GEL provided?			<input checked="" type="checkbox"/>	
13 COC form is properly signed in relinquished/received sections?	<input checked="" type="checkbox"/>			
14 Carrier and tracking number.	<input checked="" type="checkbox"/>			Circle Applicable: <u>FedEx Air</u> FedEx Ground UPS Field Services Courier Other 7710 3444 4630 } ac 11 11 4033 }

Comments (Use Continuation Form if needed):

Laboratory Certifications

List of current GEL Certifications as of 01 October 2014

State	Certification
Alaska	UST-110
Arkansas	88-0651
CLIA	42D0904046
California NELAP	01151CA
Colorado	SC00012
Connecticut	PH-0169
Delaware	SC000122013-10
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-12-00283, P330-12-00284
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC000122013-10
Idaho Chemistry	SC00012
Idaho Radiochemistry	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky	90129
Louisiana NELAP	03046 (AI33904)
Louisiana SDWA	LA130005
Maryland	270
Massachusetts	M-SC012
Michigan	9976
Mississippi	SC000122013-10
Nebraska	NE-OS-26-13
Nevada	SC000122014-1
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
Oklahoma	9904
Pennsylvania NELAP	68-00485
Plant Material Permit	PDEP-12-00260
South Carolina Chemistry	10120001
South Carolina GVL	23611001
South Carolina Radiochemi	10120002
Tennessee	TN 02934
Texas NELAP	T104704235-14-9
Utah NELAP	SC000122014-14
Vermont	VT87156
Virginia NELAP	460202
Washington	C780-12
Wisconsin	999887790

Volatile Analysis

Case Narrative

**ChemStation Case Narrative
Hanford MSA (HMSA)
SDG GEL356010**

Method/Analysis Information

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

Analytical Method: SW846 8260C

Analytical Batch Number: 1416794

Sample Analysis

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

Sample ID	Client ID
356010001	B2XPT7
1203161478	Method Blank (MB)
1203161479	Laboratory Control Sample (LCS)
1203161480	355853001(B2TXT0) Post Spike (PS)
1203161481	355853001(B2TXT0) Post Spike Duplicate (PSD)
1203164353	Method Blank (MB)
1203164354	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# 21.

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

The calibration verification standard requirements were not all met. Please see the Data Exception Report in the miscellaneous section of the deliverable. The percent drifts for a few compounds were outside the acceptance limits with high bias in the continuing calibration verification sample analyzed 09/05. The compounds were not detected in the associated samples.

Quality Control (QC) Information

Blank (MB) Statement

The blanks analyzed with this SDG met the acceptance criteria.

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 355853001 (B2TXT0) was designated for spike analysis.

Matrix Spike (PS) Recovery Statement

The spike 1203161480 (B2TXT0) recoveries were not all within the acceptance limits. See the Data Exception Report in the miscellaneous section of the data package.

Matrix Spike Duplicate (PSD) Recovery Statement

The spike duplicate 1203161481 (B2TXT0) recoveries were not all within the acceptance limits. See the Data Exception Report in the miscellaneous section of the data package.

Relative Percent Difference (RPD) Statement

The RPDs between the matrix spike pair met the acceptance limits.

Internal Standard (ISTD) Acceptance

The internal standard responses in all client and quality control samples met the required acceptance criteria.

Technical Information

Holding Time Specifications

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

Sample Preservation and Integrity

The following samples were pH3 at the time of analysis: 356010001 (B2XPT7).

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.

Holding Times

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.

Miscellaneous Information**Electronic Packaging Comment**

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

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

Data Exception (DER) Documentation

The following DER was generated for this SDG: 1333811.

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) were not required for this SDG.

Additional Comments

Additional comments were not required for this SDG.

Residual Chlorine

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

System Configuration

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

Instrument ID	Instrument	System Configuration	Column ID	Column Description	P & T Trap
VOA2.I	Agilent 7890/5975 GC/MS w/ OI Eclipse/Archon Autosampler	HP7890N/HP5975C	DB-624	J&W, 60m x 0.25mm x 1.4um	Trap 10

Certification Statement

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

GEL LABORATORIES LLC

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**Qualifier Definition Report
for**

HMSA001 Hanford MSA (51204)

Client SDG: GEL356010 GEL Work Order: 356010

The Qualifiers in this report are defined as follows:

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.

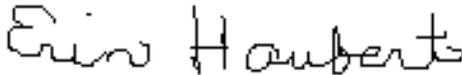
RA Indicates that sample is re-analyzed without re-extraction.

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: 

Name: Erin Haubert

Date: 30 SEP 2014

Title: Data Validator

Sample Data Summary

GEL LABORATORIES LLC

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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
 Address : MISN R3-50 CHPRC
 PO Box 1600
 Richland, Washington 99352
 Contact: Mr. Scot Fitzgerald
 Project: **CHPRC SAF X14-003**

Report Date: September 23, 2014

Client Sample ID: B2XPT7
 Lab Sample ID: 356010001
 Matrix: WATER
 Collect Date: 03-SEP-14 08:37
 Receive Date: 04-SEP-14
 Collector: Client

Project: HMSA00122
 Client ID: HMSA001
 Client SDG: GEL356010

Parameter	Qualifier	Result	MDL	RL	CRDL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics												
<i>Volatiles by SW846 8260C (GCMS:COMMON) "As Received"</i>												
1,1,1-Trichloroethane	U	0.300	0.300	2.00	5.00	ug/L	1	CDS1	09/09/14	16:12	1416794	1
1,1,2-Trichloroethane	U	0.300	0.300	2.00	5.00	ug/L	1					
1,1-Dichloroethane	U	0.300	0.300	2.00	10.0	ug/L	1					
1,1-Dichloroethylene	U	0.300	0.300	2.00	10.0	ug/L	1					
1,2-Dichloroethane	U	0.300	0.300	2.00	5.00	ug/L	1					
2-Butanone	TU	3.00	3.00	10.0	10.0	ug/L	1					
4-Methyl-2-pentanone	U	3.00	3.00	10.0	10.0	ug/L	1					
Acetone	TU	3.00	3.00	10.0	20.0	ug/L	1					
Benzene	U	0.300	0.300	2.00	5.00	ug/L	1					
Carbon disulfide	U	1.60	1.60	10.0	5.00	ug/L	1					
Carbon tetrachloride	U	0.300	0.300	2.00	5.00	ug/L	1					
Chlorobenzene	U	0.300	0.300	2.00	5.00	ug/L	1					
Chloroform	U	0.300	0.300	2.00	5.00	ug/L	1					
Ethylbenzene	U	0.300	0.300	2.00	5.00	ug/L	1					
Methylene chloride		28.5	1.60	5.00	5.00	ug/L	1					
Tetrachloroethylene	U	0.300	0.300	2.00	5.00	ug/L	1					
Toluene	U	0.300	0.300	2.00	5.00	ug/L	1					
Trichloroethene	U	0.300	0.300	2.00	5.00	ug/L	1					
Vinyl chloride	U	0.300	0.300	2.00	10.0	ug/L	1					
Xylenes (total)	U	0.300	0.300	6.00	10.0	ug/L	1					

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260C	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	Volatiles by SW846 8260C (GCMS:COMMON) "As Received"	48.8 ug/L	50.0	97.6	(78%-124%)
Bromofluorobenzene	Volatiles by SW846 8260C (GCMS:COMMON) "As Received"	50.8 ug/L	50.0	102	(80%-120%)
Toluene-d8	Volatiles by SW846 8260C (GCMS:COMMON) "As Received"	49.9 ug/L	50.0	99.8	(80%-120%)

Quality Control Summary

GEL LABORATORIES LLC

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QC Summary

Report Date: September 23, 2014

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CH2MHill Plateau Remediation Company

MISN R3-50 CHPRC

PO Box 1600

Richland, Washington

Contact: Mr. Scot Fitzgerald

Workorder: 356010

Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Volatile-GC/MS										
Batch	1416794									
QC1203161479	LCS									
1,1,1-Trichloroethane	50.0		49.3	ug/L		98.6	(70%-130%)	CDS1	09/05/14	07:38
1,1,2-Trichloroethane	50.0		45.7	ug/L		91.4	(70%-130%)			
1,1-Dichloroethane	50.0		49.2	ug/L		98.3	(70%-130%)			
1,1-Dichloroethylene	50.0		47.4	ug/L		94.8	(70%-130%)			
1,2-Dichloroethane	50.0		46.8	ug/L		93.6	(70%-130%)			
2-Butanone	250		265	ug/L		106	(70%-130%)			
4-Methyl-2-pentanone	250		233	ug/L		93.2	(70%-130%)			
Acetone	250		302	ug/L		121	(70%-130%)			
Benzene	50.0		47.9	ug/L		95.7	(70%-130%)			
Carbon disulfide	250		245	ug/L		98.1	(70%-130%)			
Carbon tetrachloride	50.0		49.0	ug/L		97.9	(70%-130%)			
Chlorobenzene	50.0		46.0	ug/L		92	(70%-130%)			
Chloroform	50.0		48.2	ug/L		96.3	(70%-130%)			
Ethylbenzene	50.0		46.9	ug/L		93.8	(70%-130%)			
Methylene chloride	50.0		47.0	ug/L		94	(70%-130%)			
Tetrachloroethylene	50.0		44.2	ug/L		88.5	(70%-130%)			
Toluene	50.0		46.1	ug/L		92.2	(70%-130%)			
Trichloroethene	50.0		47.1	ug/L		94.1	(70%-130%)			
Vinyl chloride	50.0		55.1	ug/L		110	(70%-130%)			
Xylenes (total)	150		142	ug/L		94.6	(70%-130%)			

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QC Summary

Workorder: 356010

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Volatile-GC/MS											
Batch	1416794										
**1,2-Dichloroethane-d4	50.0			50.8	ug/L		102	(78%-124%)	CDS1	09/05/14	07:38
**Bromofluorobenzene	50.0			47.2	ug/L		94.4	(80%-120%)			
**Toluene-d8	50.0			48.6	ug/L		97.1	(80%-120%)			
QC1203164354 LCS											
1,1,1-Trichloroethane	50.0			50.5	ug/L		101	(70%-130%)		09/09/14	08:42
1,1,2-Trichloroethane	50.0			50.4	ug/L		101	(70%-130%)			
1,1-Dichloroethane	50.0			51.1	ug/L		102	(70%-130%)			
1,1-Dichloroethylene	50.0			49.9	ug/L		99.9	(70%-130%)			
1,2-Dichloroethane	50.0			50.5	ug/L		101	(70%-130%)			
2-Butanone	250			284	ug/L		114	(70%-130%)			
4-Methyl-2-pentanone	250			267	ug/L		107	(70%-130%)			
Acetone	250			310	ug/L		124	(70%-130%)			
Benzene	50.0			50.3	ug/L		101	(70%-130%)			
Carbon disulfide	250			261	ug/L		104	(70%-130%)			
Carbon tetrachloride	50.0			50.7	ug/L		101	(70%-130%)			
Chlorobenzene	50.0			48.2	ug/L		96.4	(70%-130%)			
Chloroform	50.0			50.7	ug/L		101	(70%-130%)			
Ethylbenzene	50.0			49.9	ug/L		99.8	(70%-130%)			
Methylene chloride	50.0			48.8	ug/L		97.5	(70%-130%)			
Tetrachloroethylene	50.0			46.8	ug/L		93.6	(70%-130%)			
Toluene	50.0			50.5	ug/L		101	(70%-130%)			
Trichloroethene	50.0			50.8	ug/L		102	(70%-130%)			

GEL LABORATORIES LLC

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

QC Summary

Workorder: 356010

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Volatile-GC/MS											
Batch	1416794										
Vinyl chloride	50.0			57.0	ug/L		114	(70%-130%)	CDS1	09/09/14	08:42
Xylenes (total)	150			149	ug/L		99.5	(70%-130%)			
**1,2-Dichloroethane-d4	50.0			50.5	ug/L		101	(78%-124%)			
**Bromofluorobenzene	50.0			49.2	ug/L		98.5	(80%-120%)			
**Toluene-d8	50.0			51.3	ug/L		103	(80%-120%)			
QC1203161478	MB										
1,1,1-Trichloroethane			U	0.300	ug/L					09/05/14	09:54
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-Dichloroethane			U	0.300	ug/L						
2-Butanone			U	3.00	ug/L						
4-Methyl-2-pentanone			U	3.00	ug/L						
Acetone			U	3.00	ug/L						
Benzene			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						
Chloroform			U	0.300	ug/L						
Ethylbenzene			U	0.300	ug/L						
Methylene chloride			U	1.60	ug/L						
Tetrachloroethylene			U	0.300	ug/L						

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QC Summary

Workorder: 356010

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Volatile-GC/MS											
Batch	1416794										
Toluene			U	0.300	ug/L				CDS1	09/05/14	09:54
Trichloroethene			U	0.300	ug/L						
Vinyl chloride			U	0.300	ug/L						
Xylenes (total)			U	0.300	ug/L						
**1,2-Dichloroethane-d4	50.0			50.8	ug/L		102	(78%-124%)			
**Bromofluorobenzene	50.0			49.9	ug/L		99.8	(80%-120%)			
**Toluene-d8	50.0			49.3	ug/L		98.6	(80%-120%)			
QC1203164353	MB										
1,1,1-Trichloroethane			U	0.300	ug/L					09/09/14	09:42
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-Dichloroethane			U	0.300	ug/L						
2-Butanone			U	3.00	ug/L						
4-Methyl-2-pentanone			U	3.00	ug/L						
Acetone			U	3.00	ug/L						
Benzene			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						
Chloroform			U	0.300	ug/L						
Ethylbenzene			U	0.300	ug/L						

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QC Summary

Workorder: 356010

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Volatile-GC/MS											
Batch	1416794										
Methylene chloride			U	1.60	ug/L				CDS1	09/09/14	09:42
Tetrachloroethylene			U	0.300	ug/L						
Toluene			U	0.300	ug/L						
Trichloroethene			U	0.300	ug/L						
Vinyl chloride			U	0.300	ug/L						
Xylenes (total)			U	0.300	ug/L						
**1,2-Dichloroethane-d4	50.0			49.8	ug/L		99.6	(78%-124%)			
**Bromofluorobenzene	50.0			49.6	ug/L		99.1	(80%-120%)			
**Toluene-d8	50.0			49.9	ug/L		99.8	(80%-120%)			
QC1203161480 355853001 PS											
1,1,1-Trichloroethane	50.0	U	0.00	46.4	ug/L		92.7	(70%-130%)		09/05/14	15:48
1,1,2-Trichloroethane	50.0	U	0.00	48.1	ug/L		96.1	(70%-130%)			
1,1-Dichloroethane	50.0	U	0.00	48.0	ug/L		95.9	(70%-130%)			
1,1-Dichloroethylene	50.0	U	0.00	46.1	ug/L		92.3	(70%-130%)			
1,2-Dichloroethane	50.0	U	0.00	47.3	ug/L		94.6	(70%-130%)			
2-Butanone	250	TU	0.00 T	170	ug/L		67.9 *	(70%-130%)			
4-Methyl-2-pentanone	250	U	0.00	241	ug/L		96.2	(70%-130%)			
Acetone	250	TU	0.00 T	140	ug/L		56.1 *	(70%-130%)			
Benzene	50.0	U	0.00	47.5	ug/L		95.1	(70%-130%)			
Carbon disulfide	250	U	0.00	244	ug/L		97.6	(70%-130%)			
Carbon tetrachloride	50.0	U	0.00	46.5	ug/L		93	(70%-130%)			
Chlorobenzene	50.0	U	0.00	46.3	ug/L		92.6	(70%-130%)			

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QC Summary

Workorder: 356010

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Volatile-GC/MS											
Batch	1416794										
Chloroform	50.0	U	0.00	47.5	ug/L		95	(70%-130%)	CDS1	09/05/14	15:48
Ethylbenzene	50.0	U	0.00	47.3	ug/L		94.6	(70%-130%)			
Methylene chloride	50.0	U	1.27	46.6	ug/L		90.7	(70%-130%)			
Tetrachloroethylene	50.0	U	0.00	43.2	ug/L		86.3	(70%-130%)			
Toluene	50.0	U	0.00	47.2	ug/L		94.4	(70%-130%)			
Trichloroethene	50.0	U	0.00	47.3	ug/L		94.5	(70%-130%)			
Vinyl chloride	50.0	U	0.00	61.5	ug/L		123	(70%-130%)			
Xylenes (total)	150	U	0.00	142	ug/L		94.5	(70%-130%)			
**1,2-Dichloroethane-d4	50.0		49.2	50.4	ug/L		101	(78%-124%)			
**Bromofluorobenzene	50.0		51.2	48.8	ug/L		97.6	(80%-120%)			
**Toluene-d8	50.0		49.4	49.8	ug/L		99.5	(80%-120%)			
QC1203161481 355853001 PSD											
1,1,1-Trichloroethane	50.0	U	0.00	45.3	ug/L	2.20	90.7	(0%-20%)		09/05/14	16:18
1,1,2-Trichloroethane	50.0	U	0.00	45.9	ug/L	4.60	91.8	(0%-20%)			
1,1-Dichloroethane	50.0	U	0.00	47.4	ug/L	1.28	94.7	(0%-20%)			
1,1-Dichloroethylene	50.0	U	0.00	45.3	ug/L	1.84	90.6	(0%-20%)			
1,2-Dichloroethane	50.0	U	0.00	46.1	ug/L	2.64	92.1	(0%-20%)			
2-Butanone	250	TU	0.00	T	157	ug/L	7.78	62.8*	(0%-20%)		
4-Methyl-2-pentanone	250	U	0.00		222	ug/L	8.25	88.6	(0%-20%)		
Acetone	250	TU	0.00	T	134	ug/L	4.88	53.4*	(0%-20%)		
Benzene	50.0	U	0.00	46.2	ug/L	2.75	92.5	(0%-20%)			
Carbon disulfide	250	U	0.00	237	ug/L	2.73	95	(0%-20%)			

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QC Summary

Workorder: 356010

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Volatile-GC/MS											
Batch	1416794										
Carbon tetrachloride	50.0	U	0.00	45.6	ug/L	1.98	91.2	(0%-20%)	CDS1	09/05/14	16:18
Chlorobenzene	50.0	U	0.00	44.9	ug/L	3.07	89.8	(0%-20%)			
Chloroform	50.0	U	0.00	46.5	ug/L	2.15	92.9	(0%-20%)			
Ethylbenzene	50.0	U	0.00	45.5	ug/L	3.79	91.1	(0%-20%)			
Methylene chloride	50.0	U	1.27	46.2	ug/L	1.03	89.8	(0%-20%)			
Tetrachloroethylene	50.0	U	0.00	41.3	ug/L	4.36	82.7	(0%-20%)			
Toluene	50.0	U	0.00	45.0	ug/L	4.75	90	(0%-20%)			
Trichloroethene	50.0	U	0.00	45.6	ug/L	3.66	91.1	(0%-20%)			
Vinyl chloride	50.0	U	0.00	63.5	ug/L	3.18	127	(0%-20%)			
Xylenes (total)	150	U	0.00	136	ug/L	3.80	91	(0%-20%)			
**1,2-Dichloroethane-d4	50.0		49.2	50.7	ug/L		101	(78%-124%)			
**Bromofluorobenzene	50.0		51.2	50.4	ug/L		101	(80%-120%)			
**Toluene-d8	50.0		49.4	49.7	ug/L		99.4	(80%-120%)			

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.

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QC Summary

Workorder: 356010

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
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 (Organics only)										

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.

Miscellaneous

DATA EXCEPTION REPORT			
Mo.Day Yr. 15-SEP-14	Division: Federal	Quality Criteria: Specifications	Type: Process
Instrument Type: VOA GC/MS	Test / Method: 8260C	Matrix Type: Liquid	Client Code: HMSA001
Batch ID: 1416794	Sample Numbers: See Below		
<p>Potentially affected work order(s)(SDG): 355615(GEL355615),355627(GEL355627),355853(GEL355853),355854(GEL355854),356010(GEL356010),356016(GEL356016)</p> <p>Application Issues:</p> <p>Failed Recovery for MS/PS</p> <p>Other</p> <p>Failed Recovery for MSD/PSD</p>			
Specification and Requirements Exception Description:		DER Disposition:	
<p>1. The percent drifts for a few compounds were outside the acceptance limits with high bias in the continuing calibration verification sample analyzed 09/05. The compounds were not detected in the associated samples. The effected SDG's are GEL355615, GEL355627, GEL355853, GEL355854.</p> <p>2. he percent drifts for a few compounds were outside the acceptance limits with high bias in the continuing calibration verification sample analyzed 09/09. The compounds were not detected in the associated samples. The effected SDG's are GEL356010, GEL356016.</p> <p>3. The recoveries for Acetone and 2-Butanone were outside of acetpance limits in the MS and in the MSD performed on sample 355853001. The calculated relative percent differences for all requested compounds between the MS and MSD were within acetpance limits.</p>		<p>1-3. Narrate and report data.</p>	

Originator's Name:
Crystal Stacey 15-SEP-14

Data Validator/Group Leader:
Kelle Bellamy 23-SEP-14