Environmental Consulting & Technology, Inc.

July 14, 2016

Mr. Shaun Lehman
MDEQ-OOGM Lansing District Office
Constitution Hall 2 South
525 West Allegan Street
Lansing, MI 48913

Re: **Residential Well Sampling**
Hartland 36 Gas Plant
SE/NE/NW Section 36, T03N-R06E
Hartland Township, Livingston County, Michigan

Dear Mr. Lehman:

Per the request of Merit Energy Company (MEC), Environmental Consulting & Technology, Inc. (ECT) performed residential water supply well sampling in October 2015, June 2016, and July 2016 in Hartland Township, Michigan. A total of fifteen water supply wells were sampled by personnel from ECT. The samples were submitted for the analyses noted in the below table to an independent/third party accredited laboratory. Laboratory analytical results were reported as "ND – not detected at the Reporting Limit" for all analyses requested for all samples collected. *Laboratory analytical reports are attached. Figure 1, attached, depicts the approximate locations of all sampled residential water supply wells.* The following table indicates the addresses, dates, laboratory analyses requested, and laboratory report number for sampled wells:

Address	Sample Date(s)	Analyses Requested	Laboratory Report Number(s)
13390 Lone Tree Road (Deep)	10/5/15, 10/19/15, 6/13/16	Sulfolane[1], ethylene glycol[2], SVOCs[3], VOCs[4]	1510283, 15101248, 1606871
13390 Lone Tree Road (Shallow)	10/30/15, 6/13/16	Sulfolane, ethylene glycol, SVOCs, VOCs	15101956, 1606870
900 Erin Lane	6/7/16	Sulfolane, DIPA[5], VOCs	1606476
900 Erin Lane (Pole Bldg)	6/14/16	Sulfolane, DIPA, VOCs	1606903
13900 Cherry Blossom Lane	6/13/16	Sulfolane, DIPA, VOCs	1606887
13850 Cherry Blossom Lane	6/6/16	Sulfolane, DIPA, VOCs	1606479
13593 Sheila Lane	6/6/16	Sulfolane, DIPA, VOCs	1606481
460 Jeni Lane	6/13/16	Sulfolane, DIPA, VOCs	1606873
513 Jeni Lane[6]	6/14/16	Sulfolane, DIPA, VOCs	1606902
477 Jeni Lane	6/13/16	Sulfolane, DIPA, VOCs	1606884
495 Jeni Lane	6/6/16	Sulfolane, DIPA, VOCS	1606478
869 Pleasant Valley Road	6/13/16	Sulfolane, DIPA, VOCs	1606886
13223 Lone Tree Road	6/7/16	Sulfolane, DIPA, VOCs	1606480
13247 Lone Tree Road	6/7/16	Sulfolane, DIPA, VOCs	1606484
13955 Cherry Blossom Lane	7/7/16	Sulfolane, DIPA, VOCs	1607390

1 Sulfolane analyzed by method SW846 8270D
2 Ethylene glycol analyzed by method SW8015M
3 SVOCs: Semi-Volatile Organic Compounds analyzed by method SW846 8270D
4 VOCs: Volatile Organic Compounds analyzed by method SW8260B
5 DIPA: Diisopropanolamine analyzed by method SW846 8270D
6 Due to a transcription error, 513 Jeni Lane is recorded in laboratory report 1606902 as "731 Jeni Lane"

A copy of this letter has been sent to the Livingston County Department of Public Health and copies of each laboratory report have been sent to respective property owners.

3399 Veterans Drive
Traverse City, MI 49684

(231) 946-8200

FAX (231) 946-8208

Closing

ECT sincerely appreciates the opportunity to provide our consulting services on this important project. Should you have questions or require additional information, please do not hesitate to contact me at your convenience at 231.946.8200 or jlewandowski@ectinc.com.

Sincerely,
ENVIRONMENTAL CONSULTING & TECHNOLOGY, INC.

Jeremy S. Lewandowski
Senior Engineer

Dirk S. Mammen
Principal Scientist

CC: Matt Bolang – Livingston County Department of Public Health
Sean Craven – Merit Energy Company

Attachments: Figure 1 – Sampled Residential Well Locations
Laboratory Analytical Reports

MERIT ENERGY COMPANY

ECT Environmental Consulting & Technology, Inc.

MERIT ENERGY COMPANY HARTLAND 36 NATURAL GAS PLANT

130685 - 2000
ECT PROJECT NUMBER

- DESIGNED BY
- CHECKED BY

BJB DRAWN BY

JSL APPROVED BY

SHEET TITLE

SAMPLED RESIDENTIAL WELL LOCATIONS

SCALE: 1" = 600 @ 11x17

0 300' 600'

NORTH

FIGURE 1

08-Oct-2015

Sean Craven
Merit Energy
1510 Thomas Rd
PO Box 910
Kalkaska, MI 49646

Re: **Hartland Gas Plant** Work Order: **1510283**

Dear Sean,

ALS Environmental received 24 samples on 06-Oct-2015 08:30 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with NELAP standard requirements and QC results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 31.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

Gary Byar

Electronically approved by: Gary Byar

Gary Byar
Project Manager

Certificate No: MI: 0022

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185
ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

ALS Group USA, Corp

Date: 08-Oct-15

Client: Merit Energy
Project: Hartland Gas Plant
Work Order: **1510283**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1510283-01	F-2 (18')	Soil		10/2/2015 15:05	10/6/2015 08:30	☐
1510283-02	F-3 (18')	Soil		10/2/2015 15:40	10/6/2015 08:30	☐
1510283-03	SS-18 (0.5')	Soil		10/2/2015 17:05	10/6/2015 08:30	☐
1510283-04	SW-1 (8')	Soil		10/5/2015 15:30	10/6/2015 08:30	☐
1510283-05	SW-2 (8')	Soil		10/5/2015 15:35	10/6/2015 08:30	☐
1510283-06	SW-3 (7')	Soil		10/5/2015 15:40	10/6/2015 08:30	☐
1510283-07	SW-4 (10')	Soil		10/5/2015 15:45	10/6/2015 08:30	☐
1510283-08	F-1 (11')	Soil		10/5/2015 15:50	10/6/2015 08:30	☐
1510283-09	SS-9 (4')	Soil		10/5/2015 15:55	10/6/2015 08:30	☐
1510283-10	SS-9 (8')	Soil		10/5/2015 16:00	10/6/2015 08:30	☐
1510283-11	SS-10 (2')	Soil		10/5/2015 16:05	10/6/2015 08:30	☐
1510283-12	SS-10 (10')	Soil		10/5/2015 16:10	10/6/2015 08:30	☐
1510283-13	SS-11 (2')	Soil		10/5/2015 16:12	10/6/2015 08:30	☐
1510283-14	SS-11 (4')	Soil		10/5/2015 16:14	10/6/2015 08:30	☐
1510283-15	SS-12 (4')	Soil		10/5/2015 16:16	10/6/2015 08:30	☐
1510283-16	SS-12 (6')	Soil		10/5/2015 16:18	10/6/2015 08:30	☐
1510283-17	SS-13 (4')	Soil		10/5/2015 16:20	10/6/2015 08:30	☐
1510283-18	SS-14 (2')	Soil		10/5/2015 16:22	10/6/2015 08:30	☐
1510283-19	SS-14 (4')	Soil		10/5/2015 16:24	10/6/2015 08:30	☐
1510283-20	SS-15 (6')	Soil		10/5/2015 16:26	10/6/2015 08:30	☐
1510283-21	SS-15 (10')	Soil		10/5/2015 16:28	10/6/2015 08:30	☐
1510283-22	SS-16 (2')	Soil		10/5/2015 16:30	10/6/2015 08:30	☐
1510283-23	SS-17 (2')	Soil		10/5/2015 16:32	10/6/2015 08:30	☐
1510283-24	W-133390	Water		10/5/2015 14:25	10/6/2015 08:30	☐

ALS Group USA, Corp

Date: *08-Oct-15*

Client: Merit Energy
Project: Hartland Gas Plant
Work Order: 1510283
Sample ID: W-133390
Lab ID: 1510283-24
Collection Date: 10/5/2015 02:25 PM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW846 8270D**		Prep: SW3510 / 10/6/15	Analyst: **RM**
Sulfolane	ND		10	µg/L	1	10/6/2015 06:06 PM
Surr: 2,4,6-Tribromophenol	*78.2*		*38-115*	*%REC*	1	10/6/2015 06:06 PM
Surr: 2-Fluorobiphenyl	*70.5*		*32-100*	*%REC*	1	10/6/2015 06:06 PM
Surr: 2-Fluorophenol	*35.6*		*22-59*	*%REC*	1	10/6/2015 06:06 PM
Surr: 4-Terphenyl-d14	*80.2*		*23-112*	*%REC*	1	10/6/2015 06:06 PM
Surr: Nitrobenzene-d5	*72.0*		*31-93*	*%REC*	1	10/6/2015 06:06 PM
Surr: Phenol-d6	*22.0*		*13-36*	*%REC*	1	10/6/2015 06:06 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 08-Oct-15

Client: Merit Energy

QC BATCH REPORT

Work Order: 1510283

Project: Hartland Gas Plant

Batch ID: **77018** Instrument ID: **SVMS8** Method: **SW846 8270D**

MBLK Sample ID: **SBLKW1-77018-77018** Units: **µg/L** Analysis Date: **10/6/2015 04:07 PM**

Client ID: Run ID: **SVMS8_151006A** SeqNo: **3495142** Prep Date: **10/6/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfolane	ND	10								
Surr: 2,4,6-Tribromophenol	*39.49*	0	*50*	0	*79*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*35.54*	0	*50*	0	*71.1*	*32-100*	0			
Surr: 2-Fluorophenol	*18.97*	0	*50*	0	*37.9*	*22-59*	0			
Surr: 4-Terphenyl-d14	*43.06*	0	*50*	0	*86.1*	*23-112*	0			
Surr: Nitrobenzene-d5	*34.66*	0	*50*	0	*69.3*	*31-93*	0			
Surr: Phenol-d6	*11.92*	0	*50*	0	*23.8*	*13-36*	0			

LCS Sample ID: **SLCSW2-77018-77018** Units: **µg/L** Analysis Date: **10/6/2015 04:47 PM**

Client ID: Run ID: **SVMS8_151006A** SeqNo: **3495143** Prep Date: **10/6/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfolane	10.45	10	20	0	52.2		0			
Surr: 2,4,6-Tribromophenol	*38.13*	0	*50*	0	*76.3*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*34.88*	0	*50*	0	*69.8*	*32-100*	0			
Surr: 2-Fluorophenol	*18.82*	0	*50*	0	*37.6*	*22-59*	0			
Surr: 4-Terphenyl-d14	*41.58*	0	*50*	0	*83.2*	*23-112*	0			
Surr: Nitrobenzene-d5	*34.45*	0	*50*	0	*68.9*	*31-93*	0			
Surr: Phenol-d6	*12.37*	0	*50*	0	*24.7*	*13-36*	0			

The following samples were analyzed in this batch: 1510283-24A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1510283
Project: Hartland Gas Plant

QC BATCH REPORT

Batch ID: **77028** Instrument ID: **SVMS8** Method: **SW846 8270D**

MBLK Sample ID: **SBLKS1-77028-77028** Units: **µg/Kg** Analysis Date: **10/6/2015 06:26 PM**
Client ID: Run ID: **SVMS8_151006A** SeqNo: **3495145** Prep Date: **10/6/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfolane	ND	170								
Surr: 2,4,6-Tribromophenol	*1357*	0	*1667*	0	*81.4*	*34-140*	0			
Surr: 2-Fluorobiphenyl	*1249*	0	*1667*	0	*75*	*12-100*	0			
Surr: 2-Fluorophenol	*1204*	0	*1667*	0	*72.2*	*33-117*	0			
Surr: 4-Terphenyl-d14	*1554*	0	*1667*	0	*93.3*	*25-137*	0			
Surr: Nitrobenzene-d5	*1247*	0	*1667*	0	*74.8*	*37-107*	0			
Surr: Phenol-d6	*1167*	0	*1667*	0	*70*	*40-106*	0			

LCS Sample ID: **SLCSS1-77028-77028** Units: **µg/Kg** Analysis Date: **10/6/2015 06:45 PM**
Client ID: Run ID: **SVMS8_151006A** SeqNo: **3495146** Prep Date: **10/6/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfolane	474.3	170	666.7	0	71.1		0			
Surr: 2,4,6-Tribromophenol	*1330*	0	*1667*	0	*79.8*	*34-140*	0			
Surr: 2-Fluorobiphenyl	*1254*	0	*1667*	0	*75.2*	*12-100*	0			
Surr: 2-Fluorophenol	*1252*	0	*1667*	0	*75.1*	*33-117*	0			
Surr: 4-Terphenyl-d14	*1600*	0	*1667*	0	*96*	*25-137*	0			
Surr: Nitrobenzene-d5	*1263*	0	*1667*	0	*75.8*	*37-107*	0			
Surr: Phenol-d6	*1220*	0	*1667*	0	*73.2*	*40-106*	0			

MS Sample ID: **1510283-03A MS** Units: **µg/Kg** Analysis Date: **10/6/2015 07:05 PM**
Client ID: **SS-18 (0.5')** Run ID: **SVMS8_151006A** SeqNo: **3495147** Prep Date: **10/6/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfolane	401.5	160	656.1	0	61.2		0			
Surr: 2,4,6-Tribromophenol	*1181*	0	*1640*	0	*72*	*34-140*	0			
Surr: 2-Fluorobiphenyl	*1039*	0	*1640*	0	*63.4*	*12-100*	0			
Surr: 2-Fluorophenol	*1008*	0	*1640*	0	*61.5*	*33-117*	0			
Surr: 4-Terphenyl-d14	*1249*	0	*1640*	0	*76.1*	*25-137*	0			
Surr: Nitrobenzene-d5	*1025*	0	*1640*	0	*62.5*	*37-107*	0			
Surr: Phenol-d6	*979.8*	0	*1640*	0	*59.7*	*40-106*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1510283
Project: Hartland Gas Plant

QC BATCH REPORT

Batch ID: **77028** Instrument ID: **SVMS8** Method: **SW846 8270D**

MSD Sample ID: **1510283-03A MSD** Units: **µg/Kg** Analysis Date: **10/6/2015 07:25 PM**

Client ID: **SS-18 (0.5')** Run ID: **SVMS8_151006A** SeqNo: **3495148** Prep Date: **10/6/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfolane	422.7	170	664.1	0	63.6		401.5	5.14		
Surr: 2,4,6-Tribromophenol	*1230*	0	*1660*	0	*74.1*	*34-140*	1181	*4.06*	*40*	
Surr: 2-Fluorobiphenyl	*1129*	0	*1660*	0	*68*	*12-100*	1039	*8.28*	*40*	
Surr: 2-Fluorophenol	*1104*	0	*1660*	0	*66.5*	*33-117*	1008	*9.06*	*40*	
Surr: 4-Terphenyl-d14	*1383*	0	*1660*	0	*83.3*	*25-137*	1249	*10.2*	*40*	
Surr: Nitrobenzene-d5	*1111*	0	*1660*	0	*66.9*	*37-107*	1025	*8.04*	*40*	
Surr: Phenol-d6	*1085*	0	*1660*	0	*65.3*	*40-106*	979.8	*10.2*	*40*	

The following samples were analyzed in this batch:

1510283-01A	1510283-02A	1510283-03A
1510283-04A	1510283-05A	1510283-06A
1510283-07A	1510283-08A	1510283-09A
1510283-11A	1510283-13A	1510283-15A
1510283-17A	1510283-18A	1510283-20A
1510283-22A	1510283-23A	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1510283
Project: Hartland Gas Plant

QC BATCH REPORT

Batch ID: **R173214** Instrument ID: **MOIST** Method: **E160.3M**

MBLK Sample ID: **WBLKS-R173214** Units: **% of sample** Analysis Date: **10/6/2015 05:30 PM**
Client ID: Run ID: **MOIST_151006C** SeqNo: **3494733** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	ND	0.050								

LCS Sample ID: **LCS-R173214** Units: **% of sample** Analysis Date: **10/6/2015 05:30 PM**
Client ID: Run ID: **MOIST_151006C** SeqNo: **3494730** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	99.99	0.050	100	0	100	99.5-100.5	0			

DUP Sample ID: **1510283-06A DUP** Units: **% of sample** Analysis Date: **10/6/2015 05:30 PM**
Client ID: **SW-3 (7')** Run ID: **MOIST_151006C** SeqNo: **3494711** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	17.03	0.050	0	0	0		17.46	2.49	20	

DUP Sample ID: **1510320-01B DUP** Units: **% of sample** Analysis Date: **10/6/2015 05:30 PM**
Client ID: Run ID: **MOIST_151006C** SeqNo: **3494724** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	13.89	0.050	0	0	0		14.01	0.86	20	

The following samples were analyzed in this batch:

1510283-01A	1510283-02A	1510283-03A
1510283-04A	1510283-05A	1510283-06A
1510283-07A	1510283-08A	1510283-09A
1510283-11A	1510283-13A	1510283-15A
1510283-17A	1510283-18A	1510283-20A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1510283
Project: Hartland Gas Plant

QC BATCH REPORT

Batch ID: **R173341** Instrument ID: **MOIST** Method: **E160.3M**

MBLK Sample ID: **WBLKS-R173341** Units: **% of sample** Analysis Date: **10/7/2015 01:41 PM**
Client ID: Run ID: **MOIST_151007A** SeqNo: **3497864** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	ND	0.050								

LCS Sample ID: **LCS-R173341** Units: **% of sample** Analysis Date: **10/7/2015 01:41 PM**
Client ID: Run ID: **MOIST_151007A** SeqNo: **3497863** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	100	0.050	100	0	100	99.5-100.5	0			

DUP Sample ID: **15091436-03B DUP** Units: **% of sample** Analysis Date: **10/7/2015 01:41 PM**
Client ID: Run ID: **MOIST_151007A** SeqNo: **3497844** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	19.85	0.050	0	0	0		20.58	3.61	20	

DUP Sample ID: **1510261-04A DUP** Units: **% of sample** Analysis Date: **10/7/2015 01:41 PM**
Client ID: Run ID: **MOIST_151007A** SeqNo: **3497858** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	6.47	0.050	0	0	0		6.89	6.29	20	

The following samples were analyzed in this batch: 1510283-22A 1510283-23A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Group USA, Corp

Date: 08-Oct-15

Client: Merit Energy
Project: Hartland Gas Plant
WorkOrder: **1510283**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and PQL, sample results may exhibit background or reag contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
% of sample	Percent of Sample
µg/Kg-dry	Micrograms per Kilogram Dry Weight
µg/L	Micrograms per Liter

ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **MERITENERGY** Date/Time Received: **06-Oct-15 08:30**

Work Order: **1510283** Received by: **NML**

Checklist completed by Diane Shaw (eSignature) 06-Oct-15 (Date) Reviewed by: Gary Byar (eSignature) 06-Oct-15 (Date)

Matrices: Soil, water

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	2.0/2.0 c	SR2	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	10/6/2015 8:54:55 AM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:			

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction

Chain of Custody Form

ALS Environmental

Page 1 of 3

COC ID: 123456

☐ Cincinnati, OH +1 513 733 5336 ☒ Holland, MI +1 616 399 6070 ☐ Salt Lake City, UT +1 801 266 7700
☐ Everett, WA +1 425 356 2600 ☐ Houston, TX +1 281 530 5656 ☐ Spring City, PA +1 610 948 4903
☐ Fort Collins, CO +1 970 490 1511 ☐ Middletown, PA +1 717 944 5541 ☐ York, PA +1 717 505 5280

ALS Project Manager: | Work Order #: 1510283

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	Harland Gas Plant	A	sulfolane
Work Order		Project Number		B	
Company Name	Merit Energy Co.	Bill To Company	Merit Energy Co.	C	
Send Report To	Sean Craven	Invoice Attn.	Sean Craven	D	
Address	1510 E Thomas Rd	Address	1510 E Thomas Rd	E	
				F	
City/State/Zip	Kalkaska, MI 49646	City/State/Zip	Kalkaska, MI 49646	G	
Phone	231-258-6369	Phone	231-258-6369	H	
Fax		Fax		I	
e-Mail Address	Sean Craven	e-Mail Address	sean.craven@meritenergy.com		

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	F-2 (18')	10-2-15	1505	S	—	1	X										
2	F-3 (18')	10-2-15	1540	S	—	1	X										
3	SS-18 (0.5')	10-2-15	1705	S	—	1	X										
4	SW-1 (8')	10-5-15	1530	S	—	1	X										
5	SW-2 (8')		1535	S	—	1	X										
6	SW-3 (7')		1540	S	—	1	X										
7	SW-4 (10')		1545	S	—	1	X										
8	F-1 (11')		1550	S	—	1	X										
9	SS-9 (4')		1555	S	—	1	X										
10	SS-9 (8')		1600	S	—	1	~~X~~ HOLD										X

Sampler(s): Please Print & Sign: 616-610-0200

Shipment Method: Fedex

Required Turnaround Time: ☐ STD 10 Wk Days ☐ 5 Wk Days ☐ 2 Wk Days ☒ 24 Hour ☒ Other ~~X~~

Results Due Date: ASAP

Relinquished by:	Date:	Time:	Received by:	Notes:
	10/5/15	1830		
Relinquished by:	Date:	Time:	Received by (Laboratory):	Cooler Temp.
	10-6-15	8:30		
Logged by (Laboratory): DFS	Date: 10/6/15	Time: 0840	Checked by (Laboratory): GRB	2.0°C

QC Package: (Check Box Below)
☐ Level II: Standard QC
☐ Level III: Std QC + Raw Data
☐ Level IV: SW846 CLP-Like
☐ Other: _____

Preservative Key: 1-HCL 2-HNO3 3-H2SO4 4-NaOH 5-Na2S2O3 6-NaHSO4 7-Other 8-4 degrees C 9-5035

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.

Chain of Custody Form

ALS Environmental

Page 2 of 3

COC ID: 123456

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☐ Fort Collins, CO +1 970 490 1511 ☐ Middletown, PA +1 717 944 5541 ☐ York, PA +1 717 505 5280

ALS Project Manager: | Work Order #: 1S10283

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	Harland Gas Plant	A	sulfolane
Work Order		Project Number		B	
Company Name	Merit Energy Co.	Bill To Company	Merit Energy Co.	C	
Send Report To	Sean Craven	Invoice Attn.	Sean Craven	D	
Address	1510 E Thomas Rd	Address	1510 E Thomas Rd	E	
				F	
City/State/Zip	Kalkaska, MI 49646	City/State/Zip	Kalkaska, MI 49646	G	
Phone	231-258-6369	Phone	231-258-6369	H	
Fax		Fax		I	
e-Mail Address	Sean Craven	e-Mail Address	sean.craven@meritenergy.com		

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
11	SS-10(2')	10-5-15	1605	S	—	1	X										
12	SS-10(10')		1610				X	HOLD									Hold
13	SS-11(2')		1612				X										
14	SS-11(4')		1614				X	HOLD									Hold
15	SS-12(4')		1616				X										
16	SS-12(6')		1618				X	HOLD									Hold
17	SS-13(4')		1620				X										
18	SS-14(2')		1623				X	Hold									
19	SS-14(4')		1624				X	HOLD									Hold
20	SS-15(6')		1626				X										

Sampler(s): Please Print & Sign: [signature]

Shipment Method: Fedex

Required Turnaround Time: ☐ STD 10 Wk Days ☐ 5 Wk Days ☐ 2 Wk Days ☒ 24 Hour ☐ Other _____

Results Due Date: ASAP

Relinquished by:	Date:	Time:	Received by:	Notes:
[signature]	10/9/15	1830		
Relinquished by:	Date: 10-6-15	Time: 8:30	Received by (Laboratory): [signature]	Cooler Temp. 2.0°C
Logged by (Laboratory): DFS	Date: 10/10/15	Time: 0840	Checked by (Laboratory): GRB	

QC Package: (Check Box Below)
☐ Level II: Standard QC
☐ Level III: Std QC + Raw Data
☐ Level IV: SW846 CLP-Like
☐ Other: _____

Preservative Key: 1-HCL 2-HNO3 3-H2SO4 4-NaOH 5-Na2S2O3 6-NaHSO4 7-Other 8-4 degrees C 9-5035

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.

Chain of Custody Form

ALS Environmental

Page 3 of 3

COC ID: 123456

☐ Cincinnati, OH +1 513 733 5336 ☒ Holland, MI +1 616 399 6070 ☐ Salt Lake City, UT +1 801 266 7700
☐ Everett, WA +1 425 356 2600 ☐ Houston, TX +1 281 530 5656 ☐ Spring City, PA +1 610 948 4903
☐ Fort Collins, CO +1 970 490 1511 ☐ Middletown, PA +1 717 944 5541 ☐ York, PA +1 717 505 5280

ALS Project Manager: | Work Order #: 15 0283

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	Harland Gas Plant	A	sulfolane
Work Order		Project Number		B	
Company Name	Merit Energy Co.	Bill To Company	Merit Energy Co.	C	
Send Report To	Sean Craven	Invoice Attn.	Sean Craven	D	
Address	1510 E Thomas Rd	Address	1510 E Thomas Rd	E	
				F	
City/State/Zip	Kalkaska, MI 49646	City/State/Zip	Kalkaska, MI 49646	G	
Phone	231-258-6369	Phone	231-258-6369	H	
Fax		Fax		I	
e-Mail Address	Sean Craven	e-Mail Address	sean.craven@meritenergy.com		

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
21	SS-15 (10')	10-5-15	1628	S	~	1											X
22	SS-16 (2')	↓	1630	S	~	1	X										
23	SS-17 (2')	↓	1632	S	~	1	X										
24	W-13390	10/6/15	1425	W	N	2	X										
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s): Please Print & Sign: [signature]

Shipment Method: Fedex

Required Turnaround Time: ☐ Other ☐ STD 10 Wk Days ☐ 5 Wk Days ☐ 2 Wk Days ☒ 24 Hour

Results Due Date: ASAP

Relinquished by:	Date:	Time:	Received by:	Notes:
[signature]	10/5/15	1830		
Relinquished by:	Date:	Time:	Received by (Laboratory):	Cooler Temp.
	10/6/15	8:30	[signature]	
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):	
DES	10/6/15	0840	GRB	2.0°C

QC Package: (Check Box Below)
- ☐ Level II: Standard QC
- ☐ Level III: Std QC + Raw Data
- ☐ Level IV: SW846 CLP-Like
- ☐ Other: _____

Preservative Key: 1-HCL 2-HNO3 3-H2SO4 4-NaOH 5-Na2S2O3 6-NaHSO4 7-Other 8-4 degrees C 9-5035

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.

FedEx Express NEW Package US Airbill

FedEx Tracking Number 8081 7661 5606

Form ID No. 0200

1 From

Date 10/5/17

Sender's Name John Kennedy Phone 734 769-3004

Company Environmental Consulting & Technology, Inc.

Address 2200 Commonwealth Blvd., Suite 300

City Ann Arbor State MI ZIP 48105

Dept./Floor/Suite/Room

2 Your Internal Billing Reference 130685-2000

3 To

Recipient's Name Shipping Phone 616 399-6070

Company ALS Environmental

Address 3352 128th Ave.

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Dept./Floor/Suite/Room

Address

Use this line for the HOLD location address or for continuation of your shipping address.

City Holland State MI ZIP 49424

HOLD Weekday FedEx location address REQUIRED. NOT available for FedEx First Overnight.

HOLD Saturday FedEx location address REQUIRED. Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

4 Express Package Service * To most locations.

NOTE: Service order has changed. Please select carefully.

Packages up to 150 lbs.

For packages over 150 lbs., use the new FedEx Express Freight US Airbill.

Next Business Day

- [X] FedEx First Overnight — Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.

2 or 3 Business Days

- [ ] FedEx 2Day A.M. — Second business morning.* Saturday Delivery NOT available.
- [ ] FedEx 2Day — Second business afternoon.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

5 Packaging * Declared value limit $500.

- [ ] FedEx Envelope*
- [ ] FedEx Pak*
- [ ] FedEx Box
- [ ] FedEx Tube
- [X] Other

6 Special Handling and Delivery Signature Options

- [ ] SATURDAY Delivery — NOT available for FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Express Saver
- [ ] No Signature Required — Package may be left without obtaining a signature for delivery.
- [X] Direct Signature — Someone at recipient's address may sign for delivery. Fee applies.
- [ ] Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only. Fee applies.

Does this shipment contain dangerous goods?

One box must be checked.

- [X] No
- [ ] Yes — As per attached Shipper's Declaration.
- [ ] Yes — Shipper's Declaration not required.
- [ ] Dry Ice — Dry ice, 9, UN 1845 ____ x ____ kg
- [ ] Cargo Aircraft Only

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging or placed in a FedEx Express Drop Box.

7 Payment Bill to:

Enter FedEx Acct. No. or Credit Card No. below.

- [X] Sender — Acct No in Section 1 will be billed
- [ ] Recipient
- [ ] Third Party
- [ ] Credit Card
- [ ] Cash/Check

Obtain recip. Acct. No. [ ]

Total Packages 1 Total Weight 44 lbs.

Credit Card Auth.

*Our liability is limited to US$100 unless you declare a higher value. See the current FedEx Service Guide for details.

644

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30-Oct-2015

Sean Craven
Merit Energy
1510 Thomas Rd
PO Box 910
Kalkaska, MI 49646

Re: **Hartland Gas Plant** Work Order: **15101248**

Dear Sean,

ALS Environmental received 1 sample on 20-Oct-2015 10:00 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with NELAP standard requirements and QC results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 22.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

Gary Byar

Electronically approved by: Gary Byar

Gary Byar
Project Manager

Certificate No: MI: 0022

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185
ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

ALS Group USA, Corp

Date: 30-Oct-15

Client: Merit Energy
Project: Hartland Gas Plant
Work Order: **15101248**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
15101248-01	W-13390 Deep	Water		10/19/2015 09:30	10/20/2015 10:00	☐

ALS Group USA, Corp

Date: *30-Oct-15*

Client: Merit Energy
Project: Hartland Gas Plant
Work Order: 15101248
Sample ID: W-13390 Deep
Lab ID: 15101248-01
Collection Date: 10/19/2015 09:30 AM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ORGANIC COMPOUNDS BY GC-FID			**SW8015M**			Analyst: **KYM**
Ethylene glycol	ND		5.0	mg/L	1	10/21/2015 12:41 PM
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW846 8270D**		Prep: SW3510 / 10/23/15	Analyst: **RS**
2-Methylnaphthalene	ND		5.0	µg/L	1	10/23/2015 09:12 PM
Acenaphthene	ND		5.0	µg/L	1	10/23/2015 09:12 PM
Acenaphthylene	ND		5.0	µg/L	1	10/23/2015 09:12 PM
Anthracene	ND		5.0	µg/L	1	10/23/2015 09:12 PM
Benzo(a)anthracene	ND		5.0	µg/L	1	10/23/2015 09:12 PM
Benzo(a)pyrene	ND		5.0	µg/L	1	10/23/2015 09:12 PM
Benzo(b)fluoranthene	ND		5.0	µg/L	1	10/23/2015 09:12 PM
Benzo(g,h,i)perylene	ND		5.0	µg/L	1	10/23/2015 09:12 PM
Benzo(k)fluoranthene	ND		5.0	µg/L	1	10/23/2015 09:12 PM
Chrysene	ND		5.0	µg/L	1	10/23/2015 09:12 PM
Dibenzo(a,h)anthracene	ND		5.0	µg/L	1	10/23/2015 09:12 PM
Fluoranthene	ND		5.0	µg/L	1	10/23/2015 09:12 PM
Fluorene	ND		5.0	µg/L	1	10/23/2015 09:12 PM
Indeno(1,2,3-cd)pyrene	ND		5.0	µg/L	1	10/23/2015 09:12 PM
Naphthalene	ND		5.0	µg/L	1	10/23/2015 09:12 PM
Phenanthrene	ND		5.0	µg/L	1	10/23/2015 09:12 PM
Pyrene	ND		5.0	µg/L	1	10/23/2015 09:12 PM
Surr: 2,4,6-Tribromophenol	*75.0*		*38-115*	*%REC*	1	10/23/2015 09:12 PM
Surr: 2-Fluorobiphenyl	*62.5*		*32-100*	*%REC*	1	10/23/2015 09:12 PM
Surr: 2-Fluorophenol	*34.7*		*22-59*	*%REC*	1	10/23/2015 09:12 PM
Surr: 4-Terphenyl-d14	*90.5*		*23-112*	*%REC*	1	10/23/2015 09:12 PM
Surr: Nitrobenzene-d5	*58.9*		*31-93*	*%REC*	1	10/23/2015 09:12 PM
Surr: Phenol-d6	*22.2*		*13-36*	*%REC*	1	10/23/2015 09:12 PM
VOLATILE ORGANIC COMPOUNDS			**SW8260B**			Analyst: **AK**
1,1,1,2-Tetrachloroethane	ND		1.0	µg/L	1	10/29/2015 07:01 PM
1,1,1-Trichloroethane	ND		1.0	µg/L	1	10/29/2015 07:01 PM
1,1,2,2-Tetrachloroethane	ND		1.0	µg/L	1	10/29/2015 07:01 PM
1,1,2-Trichloroethane	ND		1.0	µg/L	1	10/29/2015 07:01 PM
1,1,2-Trichlorotrifluoroethane	ND		1.0	µg/L	1	10/29/2015 07:01 PM
1,1-Dichloroethane	ND		1.0	µg/L	1	10/29/2015 07:01 PM
1,1-Dichloroethene	ND		1.0	µg/L	1	10/29/2015 07:01 PM
1,2,3-Trichloropropane	ND		1.0	µg/L	1	10/29/2015 07:01 PM
1,2,4-Trichlorobenzene	ND		1.0	µg/L	1	10/29/2015 07:01 PM
1,2,4-Trimethylbenzene	ND		1.0	µg/L	1	10/29/2015 07:01 PM
1,2-Dibromo-3-chloropropane	ND		1.0	µg/L	1	10/29/2015 07:01 PM
1,2-Dibromoethane	ND		1.0	µg/L	1	10/29/2015 07:01 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *30-Oct-15*

Client: Merit Energy
Project: Hartland Gas Plant
Work Order: 15101248
Sample ID: W-13390 Deep
Lab ID: 15101248-01
Collection Date: 10/19/2015 09:30 AM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
1,2-Dichlorobenzene	ND		1.0	µg/L	1	10/29/2015 07:01 PM
1,2-Dichloroethane	ND		1.0	µg/L	1	10/29/2015 07:01 PM
1,2-Dichloropropane	ND		1.0	µg/L	1	10/29/2015 07:01 PM
1,3,5-Trimethylbenzene	ND		1.0	µg/L	1	10/29/2015 07:01 PM
1,3-Dichlorobenzene	ND		1.0	µg/L	1	10/29/2015 07:01 PM
1,4-Dichlorobenzene	ND		1.0	µg/L	1	10/29/2015 07:01 PM
2-Butanone	ND		5.0	µg/L	1	10/29/2015 07:01 PM
2-Hexanone	ND		5.0	µg/L	1	10/29/2015 07:01 PM
2-Methylnaphthalene	ND		5.0	µg/L	1	10/29/2015 07:01 PM
4-Methyl-2-pentanone	ND		1.0	µg/L	1	10/29/2015 07:01 PM
Acetone	ND		10	µg/L	1	10/29/2015 07:01 PM
Acrylonitrile	ND		1.0	µg/L	1	10/29/2015 07:01 PM
Benzene	ND		1.0	µg/L	1	10/29/2015 07:01 PM
Bromochloromethane	ND		1.0	µg/L	1	10/29/2015 07:01 PM
Bromodichloromethane	ND		1.0	µg/L	1	10/29/2015 07:01 PM
Bromoform	ND		1.0	µg/L	1	10/29/2015 07:01 PM
Bromomethane	ND		1.0	µg/L	1	10/29/2015 07:01 PM
Carbon disulfide	ND		1.0	µg/L	1	10/29/2015 07:01 PM
Carbon tetrachloride	ND		1.0	µg/L	1	10/29/2015 07:01 PM
Chlorobenzene	ND		1.0	µg/L	1	10/29/2015 07:01 PM
Chloroethane	ND		1.0	µg/L	1	10/29/2015 07:01 PM
Chloroform	ND		1.0	µg/L	1	10/29/2015 07:01 PM
Chloromethane	ND		1.0	µg/L	1	10/29/2015 07:01 PM
cis-1,2-Dichloroethene	ND		1.0	µg/L	1	10/29/2015 07:01 PM
cis-1,3-Dichloropropene	ND		1.0	µg/L	1	10/29/2015 07:01 PM
Dibromochloromethane	ND		1.0	µg/L	1	10/29/2015 07:01 PM
Dibromomethane	ND		1.0	µg/L	1	10/29/2015 07:01 PM
Dichlorodifluoromethane	ND		1.0	µg/L	1	10/29/2015 07:01 PM
Diethyl ether	ND		1.0	µg/L	1	10/29/2015 07:01 PM
Ethylbenzene	ND		1.0	µg/L	1	10/29/2015 07:01 PM
Hexachloroethane	ND		1.0	µg/L	1	10/29/2015 07:01 PM
Isopropylbenzene	ND		1.0	µg/L	1	10/29/2015 07:01 PM
m,p-Xylene	ND		2.0	µg/L	1	10/29/2015 07:01 PM
Methyl iodide	ND		1.0	µg/L	1	10/29/2015 07:01 PM
Methyl tert-butyl ether	ND		1.0	µg/L	1	10/29/2015 07:01 PM
Methylene chloride	ND		5.0	µg/L	1	10/29/2015 07:01 PM
Naphthalene	ND		5.0	µg/L	1	10/29/2015 07:01 PM
n-Propylbenzene	ND		1.0	µg/L	1	10/29/2015 07:01 PM
o-Xylene	ND		1.0	µg/L	1	10/29/2015 07:01 PM
Styrene	ND		1.0	µg/L	1	10/29/2015 07:01 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *30-Oct-15*

Client: Merit Energy
Project: Hartland Gas Plant
Work Order: 15101248
Sample ID: W-13390 Deep
Lab ID: 15101248-01
Collection Date: 10/19/2015 09:30 AM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Tetrachloroethene	ND		1.0	µg/L	1	10/29/2015 07:01 PM
Toluene	ND		1.0	µg/L	1	10/29/2015 07:01 PM
trans-1,2-Dichloroethene	ND		1.0	µg/L	1	10/29/2015 07:01 PM
trans-1,3-Dichloropropene	ND		1.0	µg/L	1	10/29/2015 07:01 PM
trans-1,4-Dichloro-2-butene	ND		2.0	µg/L	1	10/29/2015 07:01 PM
Trichloroethene	ND		1.0	µg/L	1	10/29/2015 07:01 PM
Trichlorofluoromethane	ND		1.0	µg/L	1	10/29/2015 07:01 PM
Vinyl acetate	ND		1.0	µg/L	1	10/29/2015 07:01 PM
Vinyl chloride	ND		1.0	µg/L	1	10/29/2015 07:01 PM
Xylenes, Total	ND		3.0	µg/L	1	10/29/2015 07:01 PM
Surr: 1,2-Dichloroethane-d4	*99.8*		*75-120*	*%REC*	1	10/29/2015 07:01 PM
Surr: 4-Bromofluorobenzene	*95.6*		*80-110*	*%REC*	1	10/29/2015 07:01 PM
Surr: Dibromofluoromethane	*98.5*		*85-115*	*%REC*	1	10/29/2015 07:01 PM
Surr: Toluene-d8	*97.4*		*85-110*	*%REC*	1	10/29/2015 07:01 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 30-Oct-15

Client: Merit Energy
Project: Hartland Gas Plant
Work Order: 15101248

Case Narrative

Batch R174943A The MS/MSD data for volatiles is not related tot his project's samples. No data requires qualification.

ALS Group USA, Corp

Date: 30-Oct-15

Client: Merit Energy

Work Order: 15101248

Project: Hartland Gas Plant

QC BATCH REPORT

Batch ID: **R174314** Instrument ID: **GC11** Method: **SW8015M**

MBLK Sample ID: **MB-R174314-R174314** Units: **mg/L** Analysis Date: **10/21/2015 11:01 A**

Client ID: Run ID: **GC11_151021A** SeqNo: **3521228** Prep Date: **10/21/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethylene glycol	ND	5.0								

LCS Sample ID: **LCS-R174314-R174314** Units: **mg/L** Analysis Date: **10/21/2015 10:07 A**

Client ID: Run ID: **GC11_151021A** SeqNo: **3521229** Prep Date: **10/21/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethylene glycol	534.2	5.0	500	0	107	50-150	0			

MS Sample ID: **15101150-01A MS** Units: **mg/L** Analysis Date: **10/21/2015 10:16 A**

Client ID: Run ID: **GC11_151021A** SeqNo: **3521237** Prep Date: **10/21/2015** DF: **2**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethylene glycol	935.3	10	1000	0	93.5	50-150	0			

MSD Sample ID: **15101150-01A MSD** Units: **mg/L** Analysis Date: **10/21/2015 10:25 A**

Client ID: Run ID: **GC11_151021A** SeqNo: **3521238** Prep Date: **10/21/2015** DF: **2**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethylene glycol	949.6	10	1000	0	95	50-150	935.3	1.51	30	

The following samples were analyzed in this batch: 15101248-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 15101248
Project: Hartland Gas Plant

QC BATCH REPORT

Batch ID: **77892** Instrument ID: **SVMS8** Method: **SW846 8270D**

MBLK Sample ID: **SBLKW1-77892-77892** Units: **µg/L** Analysis Date: **10/23/2015 03:37 P**

Client ID: Run ID: **SVMS8_151023A** SeqNo: **3529402** Prep Date: **10/23/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2-Methylnaphthalene	ND	5.0								
Acenaphthene	ND	5.0								
Acenaphthylene	ND	5.0								
Anthracene	ND	5.0								
Benzo(a)anthracene	ND	5.0								
Benzo(a)pyrene	ND	5.0								
Benzo(b)fluoranthene	ND	5.0								
Benzo(g,h,i)perylene	ND	5.0								
Benzo(k)fluoranthene	ND	5.0								
Chrysene	ND	5.0								
Dibenzo(a,h)anthracene	ND	5.0								
Fluoranthene	ND	5.0								
Fluorene	ND	5.0								
Indeno(1,2,3-cd)pyrene	ND	5.0								
Naphthalene	ND	5.0								
Phenanthrene	ND	5.0								
Pyrene	ND	5.0								
Surr: 2,4,6-Tribromophenol	*36.48*	0	*50*	0	*73*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*34.53*	0	*50*	0	*69.1*	*32-100*	0			
Surr: 2-Fluorophenol	*18.53*	0	*50*	0	*37.1*	*22-59*	0			
Surr: 4-Terphenyl-d14	*42.61*	0	*50*	0	*85.2*	*23-112*	0			
Surr: Nitrobenzene-d5	*33.2*	0	*50*	0	*66.4*	*31-93*	0			
Surr: Phenol-d6	*9.69*	0	*50*	0	*19.4*	*13-36*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 15101248
Project: Hartland Gas Plant

QC BATCH REPORT

Batch ID: **77892** Instrument ID: **SVMS8** Method: **SW846 8270D**

LCS Sample ID: **SLCSW1-77892-77892** Units: **µg/L** Analysis Date: **10/23/2015 03:57 P**

Client ID: Run ID: **SVMS8_151023A** SeqNo: **3529405** Prep Date: **10/23/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2-Methylnaphthalene	13.48	5.0	20	0	67.4	45-105	0			
Acenaphthene	13.35	5.0	20	0	66.8	45-110	0			
Acenaphthylene	14.37	5.0	20	0	71.8	50-105	0			
Anthracene	15.46	5.0	20	0	77.3	55-110	0			
Benzo(a)anthracene	16.65	5.0	20	0	83.2	55-110	0			
Benzo(a)pyrene	17.05	5.0	20	0	85.2	55-110	0			
Benzo(b)fluoranthene	16.55	5.0	20	0	82.8	45-120	0			
Benzo(g,h,i)perylene	18.28	5.0	20	0	91.4	40-125	0			
Benzo(k)fluoranthene	16.56	5.0	20	0	82.8	45-125	0			
Chrysene	16.75	5.0	20	0	83.8	55-110	0			
Dibenzo(a,h)anthracene	18.31	5.0	20	0	91.6	40-125	0			
Fluoranthene	16.23	5.0	20	0	81.2	55-115	0			
Fluorene	15.84	5.0	20	0	79.2	50-110	0			
Indeno(1,2,3-cd)pyrene	18.66	5.0	20	0	93.3	45-125	0			
Naphthalene	12.23	5.0	20	0	61.2	40-100	0			
Phenanthrene	15.44	5.0	20	0	77.2	50-115	0			
Pyrene	17.17	5.0	20	0	85.8	50-130	0			
Surr: 2,4,6-Tribromophenol	*41.17*	0	*50*	0	*82.3*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*34.84*	0	*50*	0	*69.7*	*32-100*	0			
Surr: 2-Fluorophenol	*20.35*	0	*50*	0	*40.7*	*22-59*	0			
Surr: 4-Terphenyl-d14	*41.6*	0	*50*	0	*83.2*	*23-112*	0			
Surr: Nitrobenzene-d5	*35.06*	0	*50*	0	*70.1*	*31-93*	0			
Surr: Phenol-d6	*11.82*	0	*50*	0	*23.6*	*13-36*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 15101248
Project: Hartland Gas Plant

QC BATCH REPORT

Batch ID: **77892** Instrument ID: **SVMS8** Method: **SW846 8270D**

MS Sample ID: **15101326-06B MS** Units: **µg/L** Analysis Date: **10/23/2015 05:36 P**

Client ID: Run ID: **SVMS8_151023A** SeqNo: **3529407** Prep Date: **10/23/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2-Methylnaphthalene	15.44	5.0	20	0	77.2	45-105	0			
Acenaphthene	14.71	5.0	20	0	73.6	45-110	0			
Acenaphthylene	15.2	5.0	20	0	76	50-105	0			
Anthracene	16.3	5.0	20	0	81.5	55-110	0			
Benzo(a)anthracene	17.32	5.0	20	0	86.6	55-110	0			
Benzo(a)pyrene	17.76	5.0	20	0	88.8	55-110	0			
Benzo(b)fluoranthene	17.21	5.0	20	0	86	45-120	0			
Benzo(g,h,i)perylene	19	5.0	20	0	95	40-125	0			
Benzo(k)fluoranthene	17.02	5.0	20	0	85.1	45-125	0			
Chrysene	17.09	5.0	20	0	85.4	55-110	0			
Dibenzo(a,h)anthracene	18.88	5.0	20	0	94.4	40-125	0			
Fluoranthene	16.84	5.0	20	0	84.2	55-115	0			
Fluorene	16.5	5.0	20	0	82.5	50-110	0			
Indeno(1,2,3-cd)pyrene	19.05	5.0	20	0	95.2	45-125	0			
Naphthalene	13.98	5.0	20	0	69.9	40-100	0			
Phenanthrene	15.93	5.0	20	0	79.6	50-115	0			
Pyrene	17.29	5.0	20	0	86.4	50-130	0			
Surr: 2,4,6-Tribromophenol	*41.32*	0	*50*	0	*82.6*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*35.32*	0	*50*	0	*70.6*	*32-100*	0			
Surr: 2-Fluorophenol	*17.26*	0	*50*	0	*34.5*	*22-59*	0			
Surr: 4-Terphenyl-d14	*35.07*	0	*50*	0	*70.1*	*23-112*	0			
Surr: Nitrobenzene-d5	*36.92*	0	*50*	0	*73.8*	*31-93*	0			
Surr: Phenol-d6	*9.64*	0	*50*	0	*19.3*	*13-36*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 15101248
Project: Hartland Gas Plant

QC BATCH REPORT

Batch ID: **77892** Instrument ID: **SVMS8** Method: **SW846 8270D**

DUP Sample ID: **15101326-08B DUP** Units: **µg/L** Analysis Date: **10/23/2015 06:15 P**

Client ID: Run ID: **SVMS8_151023A** SeqNo: **3529410** Prep Date: **10/23/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2-Methylnaphthalene	ND	5.0	0	0	0	0-0	0	0	30	
Acenaphthene	ND	5.0	0	0	0	0-0	0	0	30	
Acenaphthylene	ND	5.0	0	0	0	0-0	0	0	30	
Anthracene	ND	5.0	0	0	0	0-0	0	0	30	
Benzo(a)anthracene	ND	5.0	0	0	0	0-0	0	0	30	
Benzo(a)pyrene	ND	5.0	0	0	0	0-0	0	0	30	
Benzo(b)fluoranthene	ND	5.0	0	0	0	0-0	0	0	30	
Benzo(g,h,i)perylene	ND	5.0	0	0	0	0-0	0	0	30	
Benzo(k)fluoranthene	ND	5.0	0	0	0	0-0	0	0	30	
Chrysene	ND	5.0	0	0	0	0-0	0	0	30	
Dibenzo(a,h)anthracene	ND	5.0	0	0	0	0-0	0	0	30	
Fluoranthene	ND	5.0	0	0	0	0-0	0	0	30	
Fluorene	ND	5.0	0	0	0	0-0	0	0	30	
Indeno(1,2,3-cd)pyrene	ND	5.0	0	0	0	0-0	0	0	30	
Naphthalene	ND	5.0	0	0	0	0-0	0	0	30	
Phenanthrene	ND	5.0	0	0	0	0-0	0	0	30	
Pyrene	ND	5.0	0	0	0	0-0	0	0	30	
Surr: 2,4,6-Tribromophenol	*33.1*	0	*50*	0	*66.2*	*38-115*	30.48	*8.24*	*40*	
Surr: 2-Fluorobiphenyl	*24.48*	0	*50*	0	*49*	*32-100*	24.86	*1.54*	*40*	
Surr: 2-Fluorophenol	*14.5*	0	*50*	0	*29*	*22-59*	13.86	*4.51*	*40*	
Surr: 4-Terphenyl-d14	*36.75*	0	*50*	0	*73.5*	*23-112*	34.29	*6.93*	*40*	
Surr: Nitrobenzene-d5	*24.66*	0	*50*	0	*49.3*	*31-93*	24.77	*0.445*	*40*	
Surr: Phenol-d6	*7.58*	0	*50*	0	*15.2*	*13-36*	7.38	*2.67*	*40*	

The following samples were analyzed in this batch: 15101248-01B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 15101248
Project: Hartland Gas Plant

QC BATCH REPORT

Batch ID: **R174943A** Instrument ID: **VMS8** Method: **SW8260B**

MBLK Sample ID: **VBLKW1-151029-R174943A** Units: **µg/L** Analysis Date: **10/29/2015 12:12 P**
Client ID: Run ID: **VMS8_151029A** SeqNo: **3539439** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
1,1,2-Trichlorotrifluoroethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2,3-Trichloropropane	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	1.0								
1,2-Dibromoethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,2-Dichloroethane	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
2-Butanone	ND	5.0								
2-Hexanone	ND	5.0								
2-Methylnaphthalene	ND	5.0								
4-Methyl-2-pentanone	ND	1.0								
Acetone	ND	10								
Acrylonitrile	ND	1.0								
Benzene	ND	1.0								
Bromochloromethane	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	1.0								
Carbon disulfide	ND	1.0								
Carbon tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	ND	1.0								
cis-1,2-Dichloroethene	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
Diethyl ether	ND	1.0								
Ethylbenzene	ND	1.0								

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

QC BATCH REPORT

Batch ID: **R174943A** Instrument ID: **VMS8** Method: **SW8260B**

Hexachloroethane	ND	1.0					
Isopropylbenzene	ND	1.0					
m,p-Xylene	ND	2.0					
Methyl iodide	ND	1.0					
Methyl tert-butyl ether	ND	1.0					
Methylene chloride	ND	5.0					
Naphthalene	ND	5.0					
n-Propylbenzene	ND	1.0					
o-Xylene	ND	1.0					
Styrene	ND	1.0					
Tetrachloroethene	ND	1.0					
Toluene	ND	1.0					
trans-1,2-Dichloroethene	ND	1.0					
trans-1,3-Dichloropropene	ND	1.0					
trans-1,4-Dichloro-2-butene	ND	2.0					
Trichloroethene	ND	1.0					
Trichlorofluoromethane	ND	1.0					
Vinyl acetate	ND	1.0					
Vinyl chloride	ND	1.0					
Xylenes, Total	ND	3.0					
Surr: 1,2-Dichloroethane-d4	*19.66*	0	*20*	0	*98.3*	*75-120*	0
Surr: 4-Bromofluorobenzene	*19.2*	0	*20*	0	*96*	*80-110*	0
Surr: Dibromofluoromethane	*19.51*	0	*20*	0	*97.6*	*85-115*	0
Surr: Toluene-d8	*19.41*	0	*20*	0	*97*	*85-110*	0

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 15101248
Project: Hartland Gas Plant

QC BATCH REPORT

Batch ID: **R174943A** Instrument ID: **VMS8** Method: **SW8260B**

LCS Sample ID: **VLCSW1-151029-R174943A** Units: **µg/L** Analysis Date: **10/29/2015 10:56 A**

Client ID: Run ID: **VMS8_151029A** SeqNo: **3539423** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	20.59	1.0	20	0	103	80-130	0			
1,1,1-Trichloroethane	20.41	1.0	20	0	102	75-130	0			
1,1,2,2-Tetrachloroethane	19.89	1.0	20	0	99.4	75-130	0			
1,1,2-Trichloroethane	20.98	1.0	20	0	105	75-125	0			
1,1-Dichloroethane	20.77	1.0	20	0	104	75-133	0			
1,1-Dichloroethene	22.09	1.0	20	0	110	70-145	0			
1,2,3-Trichloropropane	20.57	1.0	20	0	103	75-125	0			
1,2,4-Trichlorobenzene	24.99	1.0	20	0	125	70-135	0			
1,2,4-Trimethylbenzene	22.33	1.0	20	0	112	75-130	0			
1,2-Dibromo-3-chloropropane	17.38	1.0	20	0	86.9	60-130	0			
1,2-Dibromoethane	26.87	1.0	20	0	134	80-150	0			
1,2-Dichlorobenzene	21.88	1.0	20	0	109	70-130	0			
1,2-Dichloroethane	21.31	1.0	20	0	107	78-125	0			
1,2-Dichloropropane	20.94	1.0	20	0	105	75-125	0			
1,3,5-Trimethylbenzene	22.43	1.0	20	0	112	75-130	0			
1,3-Dichlorobenzene	23.59	1.0	20	0	118	75-130	0			
1,4-Dichlorobenzene	22.8	1.0	20	0	114	75-130	0			
2-Butanone	16.97	5.0	20	0	84.8	55-150	0			
2-Hexanone	17.29	5.0	20	0	86.4	60-135	0			
4-Methyl-2-pentanone	20.9	1.0	20	0	104	77-178	0			
Acetone	17.06	10	20	0	85.3	60-160	0			
Acrylonitrile	21.8	1.0	20	0	109	60-140	0			
Benzene	20.6	1.0	20	0	103	85-125	0			
Bromochloromethane	21.66	1.0	20	0	108	75-130	0			
Bromodichloromethane	19.62	1.0	20	0	98.1	75-125	0			
Bromoform	17.6	1.0	20	0	88	60-125	0			
Bromomethane	23.4	1.0	20	0	117	30-185	0			
Carbon disulfide	24.18	1.0	20	0	121	60-165	0			
Carbon tetrachloride	19.98	1.0	20	0	99.9	65-140	0			
Chlorobenzene	21.73	1.0	20	0	109	80-120	0			
Chloroethane	25.44	1.0	20	0	127	50-140	0			
Chloroform	20.06	1.0	20	0	100	80-130	0			
Chloromethane	20.22	1.0	20	0	101	50-130	0			
cis-1,2-Dichloroethene	20.85	1.0	20	0	104	75-134	0			
cis-1,3-Dichloropropene	19.67	1.0	20	0	98.4	70-130	0			
Dibromochloromethane	19.71	1.0	20	0	98.6	60-115	0			
Dibromomethane	21.75	1.0	20	0	109	85-125	0			
Dichlorodifluoromethane	18.86	1.0	20	0	94.3	20-120	0			
Ethylbenzene	21.16	1.0	20	0	106	85-125	0			
Hexachloroethane	19.07	1.0	20	0	95.4	50-124	0			
Isopropylbenzene	22.54	1.0	20	0	113	80-127	0			
m,p-Xylene	43.28	2.0	40	0	108	75-130	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

QC BATCH REPORT

Batch ID: **R174943A** Instrument ID: **VMS8** Method: **SW8260B**

Methyl iodide	30.61	1.0	20	0	153	60-160	0
Methyl tert-butyl ether	21.27	1.0	20	0	106	80-130	0
Methylene chloride	22.49	5.0	20	0	112	75-140	0
Naphthalene	19.98	5.0	20	0	99.9	55-160	0
n-Propylbenzene	21.75	1.0	20	0	109	78-120	0
o-Xylene	20.5	1.0	20	0	102	80-125	0
Styrene	20.37	1.0	20	0	102	85-125	0
Tetrachloroethene	23.82	1.0	20	0	119	77-138	0
Toluene	21.38	1.0	20	0	107	85-125	0
trans-1,2-Dichloroethene	20.57	1.0	20	0	103	80-140	0
trans-1,3-Dichloropropene	18.64	1.0	20	0	93.2	81-123	0
trans-1,4-Dichloro-2-butene	15.7	2.0	20	0	78.5	46-118	0
Trichloroethene	20.93	1.0	20	0	105	84-130	0
Trichlorofluoromethane	23.25	1.0	20	0	116	60-140	0
Vinyl chloride	20.83	1.0	20	0	104	50-136	0
Xylenes, Total	63.78	3.0	60	0	106	80-126	0
Surr: 1,2-Dichloroethane-d4	*19.54*	0	*20*	0	*97.7*	*75-120*	0
Surr: 4-Bromofluorobenzene	*19.23*	0	*20*	0	*96.2*	*80-110*	0
Surr: Dibromofluoromethane	*19.52*	0	*20*	0	*97.6*	*85-115*	0
Surr: Toluene-d8	*20*	0	*20*	0	*100*	*85-110*	0

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 15101248
Project: Hartland Gas Plant

QC BATCH REPORT

Batch ID: **R174943A** Instrument ID: **VMS8** Method: **SW8260B**

MS Sample ID: **15101205-24A MS** Units: **µg/L** Analysis Date: **10/29/2015 08:39 P**

Client ID: Run ID: **VMS8_151029A** SeqNo: **3539480** Prep Date: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	186.1	10	200	0	93	80-130	0			
1,1,1-Trichloroethane	195.3	10	200	0	97.6	75-130	0			
1,1,2,2-Tetrachloroethane	186.3	10	200	0	93.2	75-130	0			
1,1,2-Trichloroethane	193.4	10	200	0	96.7	75-125	0			
1,1-Dichloroethane	196.3	10	200	0	98.2	75-133	0			
1,1-Dichloroethene	214.3	10	200	0	107	70-145	0			
1,2,3-Trichloropropane	202.4	10	200	0	101	75-125	0			
1,2,4-Trichlorobenzene	180	10	200	0	90	70-135	0			
1,2,4-Trimethylbenzene	203.4	10	200	0	102	75-130	0			
1,2-Dibromo-3-chloropropane	154.9	10	200	0	77.4	60-130	0			
1,2-Dibromoethane	242.8	10	200	0	121	80-150	0			
1,2-Dichlorobenzene	188.2	10	200	0	94.1	70-130	0			
1,2-Dichloroethane	201.3	10	200	0	101	78-125	0			
1,2-Dichloropropane	201.7	10	200	0	101	75-125	0			
1,3,5-Trimethylbenzene	190.5	10	200	0	95.2	75-130	0			
1,3-Dichlorobenzene	201.2	10	200	0	101	75-130	0			
1,4-Dichlorobenzene	198.1	10	200	0	99	75-130	0			
2-Butanone	173.1	50	200	0	86.6	55-150	0			
2-Hexanone	174.8	50	200	0	87.4	60-135	0			
4-Methyl-2-pentanone	203.1	10	200	0	102	77-178	0			
Acetone	171.5	100	200	0	85.8	60-160	0			
Acrylonitrile	198.6	10	200	0	99.3	60-140	0			
Benzene	200.6	10	200	0	100	85-125	0			
Bromochloromethane	195.7	10	200	0	97.8	75-130	0			
Bromodichloromethane	178.9	10	200	0	89.4	75-125	0			
Bromoform	144.9	10	200	0	72.4	60-125	0			
Bromomethane	187.1	10	200	0	93.6	30-185	0			
Carbon disulfide	208.8	10	200	0	104	60-165	0			
Carbon tetrachloride	192.5	10	200	0	96.2	65-140	0			
Chlorobenzene	197.8	10	200	0	98.9	80-120	0			
Chloroethane	246.4	10	200	0	123	50-140	0			
Chloroform	187.5	10	200	0	93.8	80-130	0			
Chloromethane	194.9	10	200	0	97.4	50-130	0			
cis-1,2-Dichloroethene	295.7	10	200	98.8	98.4	75-134	0			
cis-1,3-Dichloropropene	176.5	10	200	0	88.2	70-130	0			
Dibromochloromethane	165.8	10	200	0	82.9	60-115	0			
Dibromomethane	206.5	10	200	0	103	85-125	0			
Dichlorodifluoromethane	159.2	10	200	0	79.6	20-120	0			
Ethylbenzene	187.6	10	200	0	93.8	85-125	0			
Hexachloroethane	150.7	10	200	0	75.4	50-124	0			
Isopropylbenzene	199	10	200	0	99.5	80-127	0			
m,p-Xylene	383.7	20	400	3.2	95.1	75-130	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

QC BATCH REPORT

Batch ID: **R174943A** Instrument ID: **VMS8** Method: **SW8260B**

Methyl iodide	270.6	10	200	0	135	60-160	0	
Methyl tert-butyl ether	199.4	10	200	0	99.7	80-130	0	
Methylene chloride	218.5	50	200	0	109	75-140	0	
Naphthalene	170.8	50	200	0	85.4	55-160	0	
n-Propylbenzene	188.8	10	200	0	94.4	78-120	0	
o-Xylene	185.4	10	200	0	92.7	80-125	0	
Styrene	183.3	10	200	0	91.6	85-125	0	
Tetrachloroethene	213.6	10	200	0	107	77-138	0	
Toluene	196.7	10	200	2.7	97	85-125	0	
trans-1,2-Dichloroethene	195.3	10	200	0	97.6	80-140	0	
trans-1,3-Dichloropropene	157.1	10	200	0	78.6	81-123	0	S
trans-1,4-Dichloro-2-butene	131.1	20	200	0	65.6	46-118	0	
Trichloroethene	196.9	10	200	0	98.4	84-130	0	
Trichlorofluoromethane	217.1	10	200	0	109	60-140	0	
Vinyl chloride	349.1	10	200	158.8	95.2	50-136	0	
Xylenes, Total	569.1	30	600	0	94.8	80-126	0	
Surr: 1,2-Dichloroethane-d4	*195.7*	0	*200*	0	*97.8*	*75-120*	0	
Surr: 4-Bromofluorobenzene	*191.3*	0	*200*	0	*95.6*	*80-110*	0	
Surr: Dibromofluoromethane	*198.9*	0	*200*	0	*99.4*	*85-115*	0	
Surr: Toluene-d8	*195.8*	0	*200*	0	*97.9*	*85-110*	0	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 15101248
Project: Hartland Gas Plant

QC BATCH REPORT

Batch ID: **R174943A** Instrument ID: **VMS8** Method: **SW8260B**

MSD Sample ID: **15101205-24A MSD** Units: **µg/L** Analysis Date: **10/29/2015 09:03 P**

Client ID: Run ID: **VMS8_151029A** SeqNo: **3539483** Prep Date: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	181.5	10	200	0	90.8	80-130	186.1	2.5	30	
1,1,1-Trichloroethane	185.8	10	200	0	92.9	75-130	195.3	4.99	30	
1,1,2,2-Tetrachloroethane	191.9	10	200	0	96	75-130	186.3	2.96	30	
1,1,2-Trichloroethane	185.1	10	200	0	92.6	75-125	193.4	4.39	30	
1,1-Dichloroethane	197.9	10	200	0	99	75-133	196.3	0.812	30	
1,1-Dichloroethene	204.7	10	200	0	102	70-145	214.3	4.58	30	
1,2,3-Trichloropropane	201.3	10	200	0	101	75-125	202.4	0.545	30	
1,2,4-Trichlorobenzene	190	10	200	0	95	70-135	180	5.41	30	
1,2,4-Trimethylbenzene	187.8	10	200	0	93.9	75-130	203.4	7.98	30	
1,2-Dibromo-3-chloropropane	150	10	200	0	75	60-130	154.9	3.21	30	
1,2-Dibromoethane	249.4	10	200	0	125	80-150	242.8	2.68	30	
1,2-Dichlorobenzene	184.5	10	200	0	92.2	70-130	188.2	1.99	30	
1,2-Dichloroethane	197.9	10	200	0	99	78-125	201.3	1.7	30	
1,2-Dichloropropane	193.2	10	200	0	96.6	75-125	201.7	4.3	30	
1,3,5-Trimethylbenzene	186.5	10	200	0	93.2	75-130	190.5	2.12	30	
1,3-Dichlorobenzene	197.1	10	200	0	98.6	75-130	201.2	2.06	30	
1,4-Dichlorobenzene	196.7	10	200	0	98.4	75-130	198.1	0.709	30	
2-Butanone	179.1	50	200	0	89.6	55-150	173.1	3.41	30	
2-Hexanone	171.6	50	200	0	85.8	60-135	174.8	1.85	30	
4-Methyl-2-pentanone	206.1	10	200	0	103	77-178	203.1	1.47	30	
Acetone	160.3	100	200	0	80.2	60-160	171.5	6.75	30	
Acrylonitrile	206.8	10	200	0	103	60-140	198.6	4.05	30	
Benzene	194.9	10	200	0	97.4	85-125	200.6	2.88	30	
Bromochloromethane	202.4	10	200	0	101	75-130	195.7	3.37	30	
Bromodichloromethane	176.1	10	200	0	88	75-125	178.9	1.58	30	
Bromoform	150.5	10	200	0	75.2	60-125	144.9	3.79	30	
Bromomethane	189	10	200	0	94.5	30-185	187.1	1.01	30	
Carbon disulfide	206.5	10	200	0	103	60-165	208.8	1.11	30	
Carbon tetrachloride	179	10	200	0	89.5	65-140	192.5	7.27	30	
Chlorobenzene	198.8	10	200	0	99.4	80-120	197.8	0.504	30	
Chloroethane	232.5	10	200	0	116	50-140	246.4	5.8	30	
Chloroform	186.7	10	200	0	93.4	80-130	187.5	0.428	30	
Chloromethane	188.1	10	200	0	94	50-130	194.9	3.55	30	
cis-1,2-Dichloroethene	292.8	10	200	98.8	97	75-134	295.7	0.986	30	
cis-1,3-Dichloropropene	175.5	10	200	0	87.8	70-130	176.5	0.568	30	
Dibromochloromethane	165.1	10	200	0	82.6	60-115	165.8	0.423	30	
Dibromomethane	203.1	10	200	0	102	85-125	206.5	1.66	30	
Dichlorodifluoromethane	130.9	10	200	0	65.4	20-120	159.2	19.5	30	
Ethylbenzene	187.5	10	200	0	93.8	85-125	187.6	0.0533	30	
Hexachloroethane	141.7	10	200	0	70.8	50-124	150.7	6.16	30	
Isopropylbenzene	196.2	10	200	0	98.1	80-127	199	1.42	30	
m,p-Xylene	375.5	20	400	3.2	93.1	75-130	383.7	2.16	30	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 15101248
Project: Hartland Gas Plant

QC BATCH REPORT

Batch ID: **R174943A** Instrument ID: **VMS8** Method: **SW8260B**

Methyl iodide	269.3	10	200	0	135	60-160	270.6	0.482	30	
Methyl tert-butyl ether	201.5	10	200	0	101	80-130	199.4	1.05	30	
Methylene chloride	216.5	50	200	0	108	75-140	218.5	0.92	30	
Naphthalene	169.9	50	200	0	85	55-160	170.8	0.528	30	
n-Propylbenzene	183.3	10	200	0	91.6	78-120	188.8	2.96	30	
o-Xylene	181.8	10	200	0	90.9	80-125	185.4	1.96	30	
Styrene	180.8	10	200	0	90.4	85-125	183.3	1.37	30	
Tetrachloroethene	206.2	10	200	0	103	77-138	213.6	3.53	30	
Toluene	194.6	10	200	2.7	96	85-125	196.7	1.07	30	
trans-1,2-Dichloroethene	191.1	10	200	0	95.6	80-140	195.3	2.17	30	
trans-1,3-Dichloropropene	158.4	10	200	0	79.2	81-123	157.1	0.824	30	S
trans-1,4-Dichloro-2-butene	129.2	20	200	0	64.6	46-118	131.1	1.46	30	
Trichloroethene	194	10	200	0	97	84-130	196.9	1.48	30	
Trichlorofluoromethane	199.5	10	200	0	99.8	60-140	217.1	8.45	30	
Vinyl chloride	329.9	10	200	158.8	85.6	50-136	349.1	5.66	30	
Xylenes, Total	557.3	30	600	0	92.9	80-126	569.1	2.1	30	
Surr: 1,2-Dichloroethane-d4	*196.5*	0	*200*	0	*98.2*	*75-120*	195.7	*0.408*	*30*	
Surr: 4-Bromofluorobenzene	*197*	0	*200*	0	*98.5*	*80-110*	191.3	*2.94*	*30*	
Surr: Dibromofluoromethane	*196.9*	0	*200*	0	*98.4*	*85-115*	198.9	*1.01*	*30*	
Surr: Toluene-d8	*194.5*	0	*200*	0	*97.2*	*85-110*	195.8	*0.666*	*30*	

The following samples were analyzed in this batch: 15101248-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Group USA, Corp

Date: 30-Oct-15

Client: Merit Energy
Project: Hartland Gas Plant
WorkOrder: **15101248**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and PQL, sample results may exhibit background or reag contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
µg/L	Micrograms per Liter
mg/L	Milligrams per Liter

ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **MERITENERGY** Date/Time Received: **20-Oct-15 10:00**

Work Order: **15101248** Received by: **DS**

Checklist completed by Diane Shaw (eSignature) 21-Oct-15 (Date) Reviewed by: Gary Byar (eSignature) 21-Oct-15 (Date)

Matrices: Water
Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	2.2/2.2 c	SR2	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	10/21/2015 8:11:49 AM		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:			

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction

Chain of Custody Form

ALS Environmental

Page 1 of 1

COC ID: 123456

☐ Cincinnati, OH +1 513 733 5336 ☒ Holland, MI +1 616 399 6070 ☐ Salt Lake City, UT +1 801 266 7700
☐ Everett, WA +1 425 356 2600 ☐ Houston, TX +1 281 530 5656 ☐ Spring City, PA +1 610 948 4903
☐ Fort Collins, CO +1 970 490 1511 ☐ Middletown, PA +1 717 944 5541 ☐ York, PA +1 717 505 5280

ALS Project Manager: | Work Order #: 1510124 8

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	Harland Gas Plant	A	~~SULFOLANE~~ VOCs
Work Order		Project Number		B	PNAs
Company Name	Merit Energy Co.	Bill To Company	Merit Energy Co.	C	ETHYLENE GLYCOL
Send Report To	Sean Craven	Invoice Attn.	Sean Craven	D	
Address	1510 E Thomas Rd	Address	1510 E Thomas Rd	E	
				F	
City/State/Zip	Kalkaska, MI 49646	City/State/Zip	Kalkaska, MI 49646	G	
Phone	231-258-6369	Phone	231-258-6369	H	
Fax		Fax		I	
e-Mail Address	Sean Craven	e-Mail Address	sean.craven@meritenergy.com		

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	W-13390 DEEP	10-19-15	0930	W	1	4	X	X	X								
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s): Please Print & Sign: BRIAN BAUMANN

Shipment Method:

Required Turnaround Time: ☒ STD 10 Wk Days ☐ 5 Wk Days ☐ 2 Wk Days ☐ 24 Hour ☐ Other _____

Results Due Date:

	Date:	Time:		
Relinquished by:	10-19-15	1320	Received by:	Notes:
Relinquished by:	10.19.15	1830	Received by (Laboratory): 10/20/15 1000	Cooler Temp. 2.2 c
Logged by (Laboratory):	Date: 10/20/15	Time: 1539	Checked by (Laboratory): GR3	

QC Package: (Check Box Below)

- X Level II: Standard QC
- Level III: Std QC + Raw Data
- Level IV: SW846 CLP-Like
- Other: _____

Preservative Key: 1-HCL 2-HNO3 3-H2SO4 4-NaOH 5-Na2S2O3 6-NaHSO4 7-Other 8-4 degrees C 9-5035

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.

1 L Am. nat

11-Nov-2015

Sean Craven
Merit Energy
1510 Thomas Rd
PO Box 910
Kalkaska, MI 49646

Re: **Hartland Gas Plant** Work Order: **15101956**

Dear Sean,

ALS Environmental received 5 samples on 31-Oct-2015 09:30 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with NELAP standard requirements and QC results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 27.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

Gary Byar

Electronically approved by: Gary Byar

Gary Byar
Project Manager

Certificate No: MI: 0022

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185
ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

ALS Group USA, Corp

Date: 11-Nov-15

Client: Merit Energy
Project: Hartland Gas Plant
Work Order: **15101956**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
15101956-01	TMW-6 (65-70')	Water		10/30/2015 12:15	10/31/2015 09:30	☐
15101956-02	TMW-6 (55-60')	Water		10/30/2015 12:25	10/31/2015 09:30	☐
15101956-03	TMW-6 (45-50')	Water		10/30/2015 12:35	10/31/2015 09:30	☐
15101956-04	TMW-6 (35-40')	Water		10/30/2015 12:45	10/31/2015 09:30	☐
15101956-05	W-13390 Shallow	Water		10/30/2015 15:20	10/31/2015 09:30	☐

ALS Group USA, Corp

Date: *11-Nov-15*

Client: Merit Energy
Project: Hartland Gas Plant
Work Order: 15101956
Sample ID: W-13390 Shallow
Lab ID: 15101956-05
Collection Date: 10/30/2015 03:20 PM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ORGANIC COMPOUNDS BY GC-FID			**SW8015M**			Analyst: **KYM**
Ethylene glycol	ND		5.0	mg/L	1	11/9/2015 09:34 AM
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW846 8270D**		Prep: SW3510 / 11/3/15	Analyst: **RM**
2-Methylnaphthalene	ND		5.0	µg/L	1	11/4/2015 09:19 PM
Acenaphthene	ND		5.0	µg/L	1	11/4/2015 09:19 PM
Acenaphthylene	ND		5.0	µg/L	1	11/4/2015 09:19 PM
Anthracene	ND		5.0	µg/L	1	11/4/2015 09:19 PM
Benzo(a)anthracene	ND		5.0	µg/L	1	11/4/2015 09:19 PM
Benzo(a)pyrene	ND		5.0	µg/L	1	11/4/2015 09:19 PM
Benzo(b)fluoranthene	ND		5.0	µg/L	1	11/4/2015 09:19 PM
Benzo(g,h,i)perylene	ND		5.0	µg/L	1	11/4/2015 09:19 PM
Benzo(k)fluoranthene	ND		5.0	µg/L	1	11/4/2015 09:19 PM
Chrysene	ND		5.0	µg/L	1	11/4/2015 09:19 PM
Dibenzo(a,h)anthracene	ND		5.0	µg/L	1	11/4/2015 09:19 PM
Fluoranthene	ND		5.0	µg/L	1	11/4/2015 09:19 PM
Fluorene	ND		5.0	µg/L	1	11/4/2015 09:19 PM
Indeno(1,2,3-cd)pyrene	ND		5.0	µg/L	1	11/4/2015 09:19 PM
Naphthalene	ND		5.0	µg/L	1	11/4/2015 09:19 PM
Phenanthrene	ND		5.0	µg/L	1	11/4/2015 09:19 PM
Pyrene	ND		5.0	µg/L	1	11/4/2015 09:19 PM
Sulfolane	ND		10	µg/L	1	11/4/2015 09:19 PM
Surr: 2,4,6-Tribromophenol	*64.0*		*38-115*	*%REC*	1	11/4/2015 09:19 PM
Surr: 2-Fluorobiphenyl	*62.4*		*32-100*	*%REC*	1	11/4/2015 09:19 PM
Surr: 2-Fluorophenol	*31.5*		*22-59*	*%REC*	1	11/4/2015 09:19 PM
Surr: 4-Terphenyl-d14	*66.4*		*23-112*	*%REC*	1	11/4/2015 09:19 PM
Surr: Nitrobenzene-d5	*53.3*		*31-93*	*%REC*	1	11/4/2015 09:19 PM
Surr: Phenol-d6	*17.8*		*13-36*	*%REC*	1	11/4/2015 09:19 PM
VOLATILE ORGANIC COMPOUNDS			**SW8260B**			Analyst: **BG**
1,1,1,2-Tetrachloroethane	ND		1.0	µg/L	1	11/10/2015 07:27 AM
1,1,1-Trichloroethane	ND		1.0	µg/L	1	11/10/2015 07:27 AM
1,1,2,2-Tetrachloroethane	ND		1.0	µg/L	1	11/10/2015 07:27 AM
1,1,2-Trichloroethane	ND		1.0	µg/L	1	11/10/2015 07:27 AM
1,1,2-Trichlorotrifluoroethane	ND		1.0	µg/L	1	11/10/2015 07:27 AM
1,1-Dichloroethane	ND		1.0	µg/L	1	11/10/2015 07:27 AM
1,1-Dichloroethene	ND		1.0	µg/L	1	11/10/2015 07:27 AM
1,2,3-Trichloropropane	ND		1.0	µg/L	1	11/10/2015 07:27 AM
1,2,4-Trichlorobenzene	ND		1.0	µg/L	1	11/10/2015 07:27 AM
1,2,4-Trimethylbenzene	ND		1.0	µg/L	1	11/10/2015 07:27 AM
1,2-Dibromo-3-chloropropane	ND		1.0	µg/L	1	11/10/2015 07:27 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *11-Nov-15*

Client: Merit Energy
Project: Hartland Gas Plant
Work Order: 15101956
Sample ID: W-13390 Shallow
Lab ID: 15101956-05
Collection Date: 10/30/2015 03:20 PM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
1,2-Dibromoethane	ND		1.0	µg/L	1	11/10/2015 07:27 AM
1,2-Dichlorobenzene	ND		1.0	µg/L	1	11/10/2015 07:27 AM
1,2-Dichloroethane	ND		1.0	µg/L	1	11/10/2015 07:27 AM
1,2-Dichloropropane	ND		1.0	µg/L	1	11/10/2015 07:27 AM
1,3,5-Trimethylbenzene	ND		1.0	µg/L	1	11/10/2015 07:27 AM
1,3-Dichlorobenzene	ND		1.0	µg/L	1	11/10/2015 07:27 AM
1,4-Dichlorobenzene	ND		1.0	µg/L	1	11/10/2015 07:27 AM
2-Butanone	ND		5.0	µg/L	1	11/10/2015 07:27 AM
2-Hexanone	ND		5.0	µg/L	1	11/10/2015 07:27 AM
2-Methylnaphthalene	ND		5.0	µg/L	1	11/10/2015 07:27 AM
4-Methyl-2-pentanone	ND		1.0	µg/L	1	11/10/2015 07:27 AM
Acetone	ND		10	µg/L	1	11/10/2015 07:27 AM
Acrylonitrile	ND		1.0	µg/L	1	11/10/2015 07:27 AM
Benzene	ND		1.0	µg/L	1	11/10/2015 07:27 AM
Bromochloromethane	ND		1.0	µg/L	1	11/10/2015 07:27 AM
Bromodichloromethane	ND		1.0	µg/L	1	11/10/2015 07:27 AM
Bromoform	ND		1.0	µg/L	1	11/10/2015 07:27 AM
Bromomethane	ND		1.0	µg/L	1	11/10/2015 07:27 AM
Carbon disulfide	ND		1.0	µg/L	1	11/10/2015 07:27 AM
Carbon tetrachloride	ND		1.0	µg/L	1	11/10/2015 07:27 AM
Chlorobenzene	ND		1.0	µg/L	1	11/10/2015 07:27 AM
Chloroethane	ND		1.0	µg/L	1	11/10/2015 07:27 AM
Chloroform	ND		1.0	µg/L	1	11/10/2015 07:27 AM
Chloromethane	ND		1.0	µg/L	1	11/10/2015 07:27 AM
cis-1,2-Dichloroethene	ND		1.0	µg/L	1	11/10/2015 07:27 AM
cis-1,3-Dichloropropene	ND		1.0	µg/L	1	11/10/2015 07:27 AM
Dibromochloromethane	ND		1.0	µg/L	1	11/10/2015 07:27 AM
Dibromomethane	ND		1.0	µg/L	1	11/10/2015 07:27 AM
Dichlorodifluoromethane	ND		1.0	µg/L	1	11/10/2015 07:27 AM
Diethyl ether	ND		1.0	µg/L	1	11/10/2015 07:27 AM
Ethylbenzene	ND		1.0	µg/L	1	11/10/2015 07:27 AM
Hexachloroethane	ND		1.0	µg/L	1	11/10/2015 07:27 AM
Isopropylbenzene	ND		1.0	µg/L	1	11/10/2015 07:27 AM
m,p-Xylene	ND		2.0	µg/L	1	11/10/2015 07:27 AM
Methyl iodide	ND		1.0	µg/L	1	11/10/2015 07:27 AM
Methyl tert-butyl ether	ND		1.0	µg/L	1	11/10/2015 07:27 AM
Methylene chloride	ND		5.0	µg/L	1	11/10/2015 07:27 AM
Naphthalene	ND		5.0	µg/L	1	11/10/2015 07:27 AM
n-Propylbenzene	ND		1.0	µg/L	1	11/10/2015 07:27 AM
o-Xylene	ND		1.0	µg/L	1	11/10/2015 07:27 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *11-Nov-15*

Client: Merit Energy
Project: Hartland Gas Plant
Work Order: 15101956
Sample ID: W-13390 Shallow
Lab ID: 15101956-05
Collection Date: 10/30/2015 03:20 PM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Styrene	ND		1.0	µg/L	1	11/10/2015 07:27 AM
Tetrachloroethene	ND		1.0	µg/L	1	11/10/2015 07:27 AM
Toluene	ND		1.0	µg/L	1	11/10/2015 07:27 AM
trans-1,2-Dichloroethene	ND		1.0	µg/L	1	11/10/2015 07:27 AM
trans-1,3-Dichloropropene	ND		1.0	µg/L	1	11/10/2015 07:27 AM
trans-1,4-Dichloro-2-butene	ND		2.0	µg/L	1	11/10/2015 07:27 AM
Trichloroethene	ND		1.0	µg/L	1	11/10/2015 07:27 AM
Trichlorofluoromethane	ND		1.0	µg/L	1	11/10/2015 07:27 AM
Vinyl acetate	ND		1.0	µg/L	1	11/10/2015 07:27 AM
Vinyl chloride	ND		1.0	µg/L	1	11/10/2015 07:27 AM
Xylenes, Total	ND		3.0	µg/L	1	11/10/2015 07:27 AM
Surr: 1,2-Dichloroethane-d4	*99.8*		*75-120*	*%REC*	1	11/10/2015 07:27 AM
Surr: 4-Bromofluorobenzene	*96.9*		*80-110*	*%REC*	1	11/10/2015 07:27 AM
Surr: Dibromofluoromethane	*98.5*		*85-115*	*%REC*	1	11/10/2015 07:27 AM
Surr: Toluene-d8	*101*		*85-110*	*%REC*	1	11/10/2015 07:27 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 11-Nov-15

Client: Merit Energy
Project: Hartland Gas Plant
Work Order: 15101956

Case Narrative

Batch R175749A The MS/MSD data for volatiles is not related to this project's samples. No data requires qualification.

ALS Group USA, Corp

Date: 11-Nov-15

Client: Merit Energy

Work Order: 15101956

Project: Hartland Gas Plant

QC BATCH REPORT

Batch ID: **R175681** Instrument ID: **GC11** Method: **SW8015M**

MBLK Sample ID: **MB-R175681-R175681** Units: **mg/L** Analysis Date: **11/9/2015 09:16 AM**

Client ID: Run ID: **GC11_151109A** SeqNo: **3554860** Prep Date: **11/6/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethylene glycol	ND	5.0								

LCS Sample ID: **LCS-R175681-R175681** Units: **mg/L** Analysis Date: **11/9/2015 08:22 AM**

Client ID: Run ID: **GC11_151109A** SeqNo: **3554861** Prep Date: **11/6/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethylene glycol	514.5	5.0	500	0	103	50-150	0			

The following samples were analyzed in this batch: 15101956-05B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 15101956
Project: Hartland Gas Plant

QC BATCH REPORT

Batch ID: **78333** Instrument ID: **SVMS8** Method: **SW846 8270D**

MBLK Sample ID: **SBLKW1-78333-78333** Units: **µg/L** Analysis Date: **11/4/2015 01:44 PM**

Client ID: Run ID: **SVMS8_151104A** SeqNo: **3550299** Prep Date: **11/3/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2-Methylnaphthalene	ND	5.0								
Acenaphthene	ND	5.0								
Acenaphthylene	ND	5.0								
Anthracene	ND	5.0								
Benzo(a)anthracene	ND	5.0								
Benzo(a)pyrene	ND	5.0								
Benzo(b)fluoranthene	ND	5.0								
Benzo(g,h,i)perylene	ND	5.0								
Benzo(k)fluoranthene	ND	5.0								
Chrysene	ND	5.0								
Dibenzo(a,h)anthracene	ND	5.0								
Fluoranthene	ND	5.0								
Fluorene	ND	5.0								
Indeno(1,2,3-cd)pyrene	ND	5.0								
Naphthalene	ND	5.0								
Phenanthrene	ND	5.0								
Pyrene	ND	5.0								
Sulfolane	ND	10								
Surr: 2,4,6-Tribromophenol	*38.34*	0	*50*	0	*76.7*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*33.61*	0	*50*	0	*67.2*	*32-100*	0			
Surr: 2-Fluorophenol	*21.44*	0	*50*	0	*42.9*	*22-59*	0			
Surr: 4-Terphenyl-d14	*45.15*	0	*50*	0	*90.3*	*23-112*	0			
Surr: Nitrobenzene-d5	*30.44*	0	*50*	0	*60.9*	*31-93*	0			
Surr: Phenol-d6	*12.72*	0	*50*	0	*25.4*	*13-36*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 15101956
Project: Hartland Gas Plant

QC BATCH REPORT

Batch ID: **78333** Instrument ID: **SVMS8** Method: **SW846 8270D**

LCS Sample ID: **SLCSW1-78333-78333** Units: **µg/L** Analysis Date: **11/4/2015 02:04 PM**

Client ID: Run ID: **SVMS8_151104A** SeqNo: **3550300** Prep Date: **11/3/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2-Methylnaphthalene	12.22	5.0	20	0	61.1	45-105	0			
Acenaphthene	13.99	5.0	20	0	70	45-110	0			
Acenaphthylene	14.65	5.0	20	0	73.2	50-105	0			
Anthracene	16.24	5.0	20	0	81.2	55-110	0			
Benzo(a)anthracene	16.03	5.0	20	0	80.2	55-110	0			
Benzo(a)pyrene	16.24	5.0	20	0	81.2	55-110	0			
Benzo(b)fluoranthene	16.53	5.0	20	0	82.6	45-120	0			
Benzo(g,h,i)perylene	17.52	5.0	20	0	87.6	40-125	0			
Benzo(k)fluoranthene	16.44	5.0	20	0	82.2	45-125	0			
Chrysene	15.87	5.0	20	0	79.4	55-110	0			
Dibenzo(a,h)anthracene	17.73	5.0	20	0	88.6	40-125	0			
Fluoranthene	16.43	5.0	20	0	82.2	55-115	0			
Fluorene	14.88	5.0	20	0	74.4	50-110	0			
Indeno(1,2,3-cd)pyrene	17.65	5.0	20	0	88.2	45-125	0			
Naphthalene	11.55	5.0	20	0	57.8	40-100	0			
Phenanthrene	15	5.0	20	0	75	50-115	0			
Pyrene	16.55	5.0	20	0	82.8	50-130	0			
Surr: 2,4,6-Tribromophenol	*42.57*	0	*50*	0	*85.1*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*35.36*	0	*50*	0	*70.7*	*32-100*	0			
Surr: 2-Fluorophenol	*21.41*	0	*50*	0	*42.8*	*22-59*	0			
Surr: 4-Terphenyl-d14	*40.43*	0	*50*	0	*80.9*	*23-112*	0			
Surr: Nitrobenzene-d5	*30.85*	0	*50*	0	*61.7*	*31-93*	0			
Surr: Phenol-d6	*13.4*	0	*50*	0	*26.8*	*13-36*	0			

LCS Sample ID: **SLCSW2-78349-78333** Units: **µg/L** Analysis Date: **11/4/2015 03:05 PM**

Client ID: Run ID: **SVMS8_151104A** SeqNo: **3550306** Prep Date: **11/3/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfolane	6.92	10	20	0	34.6		0			J
Surr: 2,4,6-Tribromophenol	*38.23*	0	*50*	0	*76.5*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*38.52*	0	*50*	0	*77*	*32-100*	0			
Surr: 2-Fluorophenol	*19.65*	0	*50*	0	*39.3*	*22-59*	0			
Surr: 4-Terphenyl-d14	*46.97*	0	*50*	0	*93.9*	*23-112*	0			
Surr: Nitrobenzene-d5	*32.12*	0	*50*	0	*64.2*	*31-93*	0			
Surr: Phenol-d6	*11.99*	0	*50*	0	*24*	*13-36*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 15101956
Project: Hartland Gas Plant

QC BATCH REPORT

Batch ID: **78333** Instrument ID: **SVMS8** Method: **SW846 8270D**

LCSD Sample ID: **SLCSDW2-78349-78333** Units: **µg/L** Analysis Date: **11/4/2015 03:26 PM**
Client ID: Run ID: **SVMS8_151104A** SeqNo: **3550307** Prep Date: **11/3/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfolane	7.49	10	20	0	37.4		6.92	0		J
Surr: 2,4,6-Tribromophenol	*40.79*	0	*50*	0	*81.6*	*38-115*	38.23	*6.48*	*0*	
Surr: 2-Fluorobiphenyl	*38.91*	0	*50*	0	*77.8*	*32-100*	38.52	*1.01*	*0*	
Surr: 2-Fluorophenol	*20.12*	0	*50*	0	*40.2*	*22-59*	19.65	*2.36*	*0*	
Surr: 4-Terphenyl-d14	*49.44*	0	*50*	0	*98.9*	*23-112*	46.97	*5.12*	*0*	
Surr: Nitrobenzene-d5	*33.06*	0	*50*	0	*66.1*	*31-93*	32.12	*2.88*	*0*	
Surr: Phenol-d6	*12.09*	0	*50*	0	*24.2*	*13-36*	11.99	*0.831*	*0*	

MS Sample ID: **15101910-02B MS** Units: **µg/L** Analysis Date: **11/4/2015 06:59 PM**
Client ID: Run ID: **SVMS8_151104A** SeqNo: **3550301** Prep Date: **11/3/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2-Methylnaphthalene	388.4	100	400	118.6	67.4	45-105	0			
Acenaphthene	412	100	400	131	70.2	45-110	0			
Acenaphthylene	288.6	100	400	0	72.2	50-105	0			
Anthracene	334	100	400	10	81	55-110	0			
Benzo(a)anthracene	328.2	100	400	0	82	55-110	0			
Benzo(a)pyrene	339.8	100	400	0	85	55-110	0			
Benzo(b)fluoranthene	325.6	100	400	0	81.4	45-120	0			
Benzo(g,h,i)perylene	305.6	100	400	0	76.4	40-125	0			
Benzo(k)fluoranthene	324	100	400	0	81	45-125	0			
Chrysene	311.2	100	400	0	77.8	55-110	0			
Dibenzo(a,h)anthracene	324.6	100	400	0	81.2	40-125	0			
Fluoranthene	336.4	100	400	7.4	82.2	55-115	0			
Fluorene	347	100	400	56.8	72.6	50-110	0			
Indeno(1,2,3-cd)pyrene	326	100	400	0	81.5	45-125	0			
Naphthalene	940.2	100	400	653.4	71.7	40-100	0			
Phenanthrene	399	100	400	88.2	77.7	50-115	0			
Pyrene	283.2	100	400	4.6	69.6	50-130	0			
Surr: 2,4,6-Tribromophenol	*832.4*	0	*1000*	0	*83.2*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*700.4*	0	*1000*	0	*70*	*32-100*	0			
Surr: 2-Fluorophenol	*434.4*	0	*1000*	0	*43.4*	*22-59*	0			
Surr: 4-Terphenyl-d14	*676.2*	0	*1000*	0	*67.6*	*23-112*	0			
Surr: Nitrobenzene-d5	*643.6*	0	*1000*	0	*64.4*	*31-93*	0			
Surr: Phenol-d6	*276.2*	0	*1000*	0	*27.6*	*13-36*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 15101956
Project: Hartland Gas Plant

QC BATCH REPORT

Batch ID: **78333** Instrument ID: **SVMS8** Method: **SW846 8270D**

MSD Sample ID: **15101910-02B MSD** Units: **µg/L** Analysis Date: **11/4/2015 07:19 PM**

Client ID: Run ID: **SVMS8_151104A** SeqNo: **3550302** Prep Date: **11/3/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2-Methylnaphthalene	377.4	100	400	118.6	64.7	45-105	388.4	2.87	30	
Acenaphthene	421.8	100	400	131	72.7	45-110	412	2.35	30	
Acenaphthylene	291	100	400	0	72.8	50-105	288.6	0.828	30	
Anthracene	336.4	100	400	10	81.6	55-110	334	0.716	30	
Benzo(a)anthracene	332.4	100	400	0	83.1	55-110	328.2	1.27	30	
Benzo(a)pyrene	337.4	100	400	0	84.4	55-110	339.8	0.709	30	
Benzo(b)fluoranthene	330.2	100	400	0	82.6	45-120	325.6	1.4	30	
Benzo(g,h,i)perylene	297.8	100	400	0	74.4	40-125	305.6	2.59	30	
Benzo(k)fluoranthene	317	100	400	0	79.2	45-125	324	2.18	30	
Chrysene	321.2	100	400	0	80.3	55-110	311.2	3.16	30	
Dibenzo(a,h)anthracene	318.2	100	400	0	79.6	40-125	324.6	1.99	30	
Fluoranthene	334.4	100	400	7.4	81.8	55-115	336.4	0.596	30	
Fluorene	351	100	400	56.8	73.6	50-110	347	1.15	30	
Indeno(1,2,3-cd)pyrene	316.8	100	400	0	79.2	45-125	326	2.86	30	
Naphthalene	935	100	400	653.4	70.4	40-100	940.2	0.555	30	
Phenanthrene	411.4	100	400	88.2	80.8	50-115	399	3.06	30	
Pyrene	284.4	100	400	4.6	70	50-130	283.2	0.423	30	
Surr: 2,4,6-Tribromophenol	*856.6*	0	*1000*	0	*85.7*	*38-115*	832.4	*2.87*	*40*	
Surr: 2-Fluorobiphenyl	*698.2*	0	*1000*	0	*69.8*	*32-100*	700.4	*0.315*	*40*	
Surr: 2-Fluorophenol	*443.6*	0	*1000*	0	*44.4*	*22-59*	434.4	*2.1*	*40*	
Surr: 4-Terphenyl-d14	*670.8*	0	*1000*	0	*67.1*	*23-112*	676.2	*0.802*	*40*	
Surr: Nitrobenzene-d5	*633*	0	*1000*	0	*63.3*	*31-93*	643.6	*1.66*	*40*	
Surr: Phenol-d6	*277*	0	*1000*	0	*27.7*	*13-36*	276.2	*0.289*	*40*	

The following samples were analyzed in this batch:

15101956-01A	15101956-02A	15101956-03A
15101956-04A	15101956-05A	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 15101956
Project: Hartland Gas Plant

QC BATCH REPORT

Batch ID: **R175749A** Instrument ID: **VMS6** Method: **SW8260B**

MBLK Sample ID: **VBLKW2-151109-R175749A** Units: **µg/L** Analysis Date: **11/9/2015 11:42 PM**

Client ID: Run ID: **VMS6_151109B** SeqNo: **3556830** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
1,1,2-Trichlorotrifluoroethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2,3-Trichloropropane	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	1.0								
1,2-Dibromoethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,2-Dichloroethane	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
2-Butanone	ND	5.0								
2-Hexanone	ND	5.0								
2-Methylnaphthalene	ND	5.0								
4-Methyl-2-pentanone	ND	1.0								
Acetone	ND	10								
Acrylonitrile	ND	1.0								
Benzene	ND	1.0								
Bromochloromethane	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	1.0								
Carbon disulfide	ND	1.0								
Carbon tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	ND	1.0								
cis-1,2-Dichloroethene	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
Diethyl ether	ND	1.0								
Ethylbenzene	ND	1.0								

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

QC BATCH REPORT

Batch ID: **R175749A** Instrument ID: **VMS6** Method: **SW8260B**

Hexachloroethane	ND	1.0						
Isopropylbenzene	ND	1.0						
m,p-Xylene	ND	2.0						
Methyl iodide	ND	1.0						
Methyl tert-butyl ether	ND	1.0						
Methylene chloride	ND	5.0						
Naphthalene	2.06	5.0						J
n-Propylbenzene	ND	1.0						
o-Xylene	ND	1.0						
Styrene	ND	1.0						
Tetrachloroethene	ND	1.0						
Toluene	ND	1.0						
trans-1,2-Dichloroethene	ND	1.0						
trans-1,3-Dichloropropene	ND	1.0						
trans-1,4-Dichloro-2-butene	ND	2.0						
Trichloroethene	ND	1.0						
Trichlorofluoromethane	ND	1.0						
Vinyl acetate	ND	1.0						
Vinyl chloride	ND	1.0						
Xylenes, Total	ND	3.0						
Surr: 1,2-Dichloroethane-d4	*19.44*	0	*20*	0	*97.2*	*75-120*	0	
Surr: 4-Bromofluorobenzene	*19.26*	0	*20*	0	*96.3*	*80-110*	0	
Surr: Dibromofluoromethane	*18.77*	0	*20*	0	*93.8*	*85-115*	0	
Surr: Toluene-d8	*21.15*	0	*20*	0	*106*	*85-110*	0	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 15101956
Project: Hartland Gas Plant

QC BATCH REPORT

Batch ID: **R175749A** Instrument ID: **VMS6** Method: **SW8260B**

LCS Sample ID: **VLCSW2-151109-R175749A** Units: **µg/L** Analysis Date: **11/9/2015 10:50 PM**
Client ID: Run ID: **VMS6_151109B** SeqNo: **3556829** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	21.05	1.0	20	0	105	80-130	0			
1,1,1-Trichloroethane	19.77	1.0	20	0	98.8	75-130	0			
1,1,2,2-Tetrachloroethane	17.66	1.0	20	0	88.3	75-130	0			
1,1,2-Trichloroethane	19.77	1.0	20	0	98.8	75-125	0			
1,1-Dichloroethane	17.33	1.0	20	0	86.6	75-133	0			
1,1-Dichloroethene	18.63	1.0	20	0	93.2	70-145	0			
1,2,3-Trichloropropane	17.67	1.0	20	0	88.4	75-125	0			
1,2,4-Trichlorobenzene	20.57	1.0	20	0	103	70-135	0			
1,2,4-Trimethylbenzene	19.96	1.0	20	0	99.8	75-130	0			
1,2-Dibromo-3-chloropropane	18.1	1.0	20	0	90.5	60-130	0			
1,2-Dibromoethane	20.62	1.0	20	0	103	80-150	0			
1,2-Dichlorobenzene	20.07	1.0	20	0	100	70-130	0			
1,2-Dichloroethane	20.05	1.0	20	0	100	78-125	0			
1,2-Dichloropropane	18.22	1.0	20	0	91.1	75-125	0			
1,3,5-Trimethylbenzene	20.63	1.0	20	0	103	75-130	0			
1,3-Dichlorobenzene	20.08	1.0	20	0	100	75-130	0			
1,4-Dichlorobenzene	19.44	1.0	20	0	97.2	75-130	0			
2-Butanone	14.19	5.0	20	0	71	55-150	0			
2-Hexanone	18.56	5.0	20	0	92.8	60-135	0			
4-Methyl-2-pentanone	21.44	1.0	20	0	107	77-178	0			
Acetone	15.13	10	20	0	75.6	60-160	0			
Acrylonitrile	16.01	1.0	20	0	80	60-140	0			
Benzene	19.92	1.0	20	0	99.6	85-125	0			
Bromochloromethane	20.83	1.0	20	0	104	75-130	0			
Bromodichloromethane	19.53	1.0	20	0	97.6	75-125	0			
Bromoform	17.85	1.0	20	0	89.2	60-125	0			
Bromomethane	20.96	1.0	20	0	105	30-185	0			
Carbon disulfide	21.06	1.0	20	0	105	60-165	0			
Carbon tetrachloride	20.12	1.0	20	0	101	65-140	0			
Chlorobenzene	19.83	1.0	20	0	99.2	80-120	0			
Chloroethane	16.44	1.0	20	0	82.2	50-140	0			
Chloroform	16.01	1.0	20	0	80	80-130	0			
Chloromethane	17.87	1.0	20	0	89.4	50-130	0			
cis-1,2-Dichloroethene	18.89	1.0	20	0	94.4	75-134	0			
cis-1,3-Dichloropropene	20.78	1.0	20	0	104	70-130	0			
Dibromochloromethane	21.07	1.0	20	0	105	60-115	0			
Dibromomethane	17.51	1.0	20	0	87.6	85-125	0			
Dichlorodifluoromethane	16.11	1.0	20	0	80.6	20-120	0			
Ethylbenzene	22.21	1.0	20	0	111	85-125	0			
Hexachloroethane	18.47	1.0	20	0	92.4	50-124	0			
Isopropylbenzene	20.27	1.0	20	0	101	80-127	0			
m,p-Xylene	45.45	2.0	40	0	114	75-130	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

QC BATCH REPORT

Batch ID: **R175749A** Instrument ID: **VMS6** Method: **SW8260B**

Methyl iodide	19.16	1.0	20	0	95.8	60-160	0
Methyl tert-butyl ether	17.49	1.0	20	0	87.4	80-130	0
Methylene chloride	19.06	5.0	20	0	95.3	75-140	0
Naphthalene	17.6	5.0	20	0	88	55-160	0
n-Propylbenzene	20.48	1.0	20	0	102	78-120	0
o-Xylene	20.77	1.0	20	0	104	80-125	0
Styrene	19.52	1.0	20	0	97.6	85-125	0
Tetrachloroethene	23.63	1.0	20	0	118	77-138	0
Toluene	21.01	1.0	20	0	105	85-125	0
trans-1,2-Dichloroethene	18.45	1.0	20	0	92.2	80-140	0
trans-1,3-Dichloropropene	22.13	1.0	20	0	111	81-123	0
trans-1,4-Dichloro-2-butene	20.39	2.0	20	0	102	46-118	0
Trichloroethene	19.91	1.0	20	0	99.6	84-130	0
Trichlorofluoromethane	17.33	1.0	20	0	86.6	60-140	0
Vinyl chloride	17.73	1.0	20	0	88.6	50-136	0
Xylenes, Total	66.22	3.0	60	0	110	80-126	0
Surr: 1,2-Dichloroethane-d4	*19.9*	0	*20*	0	*99.5*	*75-120*	0
Surr: 4-Bromofluorobenzene	*21.6*	0	*20*	0	*108*	*80-110*	0
Surr: Dibromofluoromethane	*19.98*	0	*20*	0	*99.9*	*85-115*	0
Surr: Toluene-d8	*20.77*	0	*20*	0	*104*	*85-110*	0

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 15101956
Project: Hartland Gas Plant

QC BATCH REPORT

Batch ID: **R175749A** Instrument ID: **VMS6** Method: **SW8260B**

MS Sample ID: **15101838-04A MS** Units: **µg/L** Analysis Date: **11/10/2015 08:44 A**

Client ID: Run ID: **VMS6_151109B** SeqNo: **3556842** Prep Date: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	209.5	10	200	0	105	80-130	0			
1,1,1-Trichloroethane	216.5	10	200	0	108	75-130	0			
1,1,2,2-Tetrachloroethane	173.7	10	200	0	86.8	75-130	0			
1,1,2-Trichloroethane	200.2	10	200	0	100	75-125	0			
1,1-Dichloroethane	185.3	10	200	0	92.6	75-133	0			
1,1-Dichloroethene	194.9	10	200	0	97.4	70-145	0			
1,2,3-Trichloropropane	180.1	10	200	0	90	75-125	0			
1,2,4-Trichlorobenzene	145.6	10	200	0	72.8	70-135	0			
1,2,4-Trimethylbenzene	211.7	10	200	0	106	75-130	0			
1,2-Dibromo-3-chloropropane	152.9	10	200	0	76.4	60-130	0			
1,2-Dibromoethane	207.3	10	200	0	104	80-150	0			
1,2-Dichlorobenzene	195.1	10	200	0	97.6	70-130	0			
1,2-Dichloroethane	215.4	10	200	0	108	78-125	0			
1,2-Dichloropropane	183.9	10	200	0	92	75-125	0			
1,3,5-Trimethylbenzene	214.6	10	200	0	107	75-130	0			
1,3-Dichlorobenzene	202.8	10	200	0	101	75-130	0			
1,4-Dichlorobenzene	194.4	10	200	0	97.2	75-130	0			
2-Butanone	148.1	50	200	0	74	55-150	0			
2-Hexanone	178.7	50	200	0	89.4	60-135	0			
4-Methyl-2-pentanone	220.7	10	200	0	110	77-178	0			
Acetone	162	100	200	0	81	60-160	0			
Acrylonitrile	167.6	10	200	0	83.8	60-140	0			
Benzene	214.5	10	200	0	107	85-125	0			
Bromochloromethane	206.6	10	200	0	103	75-130	0			
Bromodichloromethane	204.5	10	200	0	102	75-125	0			
Bromoform	177.9	10	200	0	89	60-125	0			
Bromomethane	67.2	10	200	0	33.6	30-185	0			
Carbon disulfide	224.1	10	200	0	112	60-165	0			
Carbon tetrachloride	206.8	10	200	0	103	65-140	0			
Chlorobenzene	210	10	200	0	105	80-120	0			
Chloroethane	293.7	10	200	0	147	50-140	0			S
Chloroform	170	10	200	0	85	80-130	0			
Chloromethane	138.2	10	200	0	69.1	50-130	0			
cis-1,2-Dichloroethene	206.4	10	200	0	103	75-134	0			
cis-1,3-Dichloropropene	220.8	10	200	0	110	70-130	0			
Dibromochloromethane	212.7	10	200	0	106	60-115	0			
Dibromomethane	180.7	10	200	0	90.4	85-125	0			
Dichlorodifluoromethane	176.6	10	200	0	88.3	20-120	0			
Ethylbenzene	223.6	10	200	0	112	85-125	0			
Hexachloroethane	172.4	10	200	0	86.2	50-124	0			
Isopropylbenzene	213.1	10	200	0	107	80-127	0			
m,p-Xylene	463.8	20	400	0	116	75-130	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

QC BATCH REPORT

Batch ID: **R175749A** Instrument ID: **VMS6** Method: **SW8260B**

Methyl iodide	220.7	10	200	0	110	60-160	0	
Methyl tert-butyl ether	183.7	10	200	0	91.8	80-130	0	
Methylene chloride	205.1	50	200	0	103	75-140	0	
Naphthalene	117.5	50	200	0	58.8	55-160	0	
n-Propylbenzene	212.8	10	200	0	106	78-120	0	
o-Xylene	217.6	10	200	0	109	80-125	0	
Styrene	211.2	10	200	0	106	85-125	0	
Tetrachloroethene	240.9	10	200	0	120	77-138	0	
Toluene	222.1	10	200	0	111	85-125	0	
trans-1,2-Dichloroethene	200.3	10	200	0	100	80-140	0	
trans-1,3-Dichloropropene	210.1	10	200	0	105	81-123	0	
trans-1,4-Dichloro-2-butene	237.5	20	200	0	119	46-118	0	S
Trichloroethene	212.6	10	200	0	106	84-130	0	
Trichlorofluoromethane	196.5	10	200	0	98.2	60-140	0	
Vinyl chloride	180.8	10	200	0	90.4	50-136	0	
Xylenes, Total	681.4	30	600	0	114	80-126	0	
Surr: 1,2-Dichloroethane-d4	*197.1*	0	*200*	0	*98.6*	*75-120*	0	
Surr: 4-Bromofluorobenzene	*206.5*	0	*200*	0	*103*	*80-110*	0	
Surr: Dibromofluoromethane	*198.5*	0	*200*	0	*99.2*	*85-115*	0	
Surr: Toluene-d8	*205.7*	0	*200*	0	*103*	*85-110*	0	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 15101956
Project: Hartland Gas Plant

QC BATCH REPORT

Batch ID: **R175749A** Instrument ID: **VMS6** Method: **SW8260B**

MSD Sample ID: **15101838-04A MSD** Units: **µg/L** Analysis Date: **11/10/2015 09:10 A**

Client ID: Run ID: **VMS6_151109B** SeqNo: **3556844** Prep Date: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	215	10	200	0	108	80-130	209.5	2.59	30	
1,1,1-Trichloroethane	216.8	10	200	0	108	75-130	216.5	0.138	30	
1,1,2,2-Tetrachloroethane	176.3	10	200	0	88.2	75-130	173.7	1.49	30	
1,1,2-Trichloroethane	201.6	10	200	0	101	75-125	200.2	0.697	30	
1,1-Dichloroethane	187.3	10	200	0	93.6	75-133	185.3	1.07	30	
1,1-Dichloroethene	196.7	10	200	0	98.4	70-145	194.9	0.919	30	
1,2,3-Trichloropropane	176.2	10	200	0	88.1	75-125	180.1	2.19	30	
1,2,4-Trichlorobenzene	178.9	10	200	0	89.4	70-135	145.6	20.5	30	
1,2,4-Trimethylbenzene	214.7	10	200	0	107	75-130	211.7	1.41	30	
1,2-Dibromo-3-chloropropane	166.8	10	200	0	83.4	60-130	152.9	8.7	30	
1,2-Dibromoethane	209.3	10	200	0	105	80-150	207.3	0.96	30	
1,2-Dichlorobenzene	206.9	10	200	0	103	70-130	195.1	5.87	30	
1,2-Dichloroethane	209.6	10	200	0	105	78-125	215.4	2.73	30	
1,2-Dichloropropane	186.5	10	200	0	93.2	75-125	183.9	1.4	30	
1,3,5-Trimethylbenzene	217.2	10	200	0	109	75-130	214.6	1.2	30	
1,3-Dichlorobenzene	212.1	10	200	0	106	75-130	202.8	4.48	30	
1,4-Dichlorobenzene	200.5	10	200	0	100	75-130	194.4	3.09	30	
2-Butanone	139.5	50	200	0	69.8	55-150	148.1	5.98	30	
2-Hexanone	177.9	50	200	0	89	60-135	178.7	0.449	30	
4-Methyl-2-pentanone	233.4	10	200	0	117	77-178	220.7	5.59	30	
Acetone	147.1	100	200	0	73.6	60-160	162	9.64	30	
Acrylonitrile	162.2	10	200	0	81.1	60-140	167.6	3.27	30	
Benzene	215.4	10	200	0	108	85-125	214.5	0.419	30	
Bromochloromethane	213.9	10	200	0	107	75-130	206.6	3.47	30	
Bromodichloromethane	207.3	10	200	0	104	75-125	204.5	1.36	30	
Bromoform	186.2	10	200	0	93.1	60-125	177.9	4.56	30	
Bromomethane	82.9	10	200	0	41.4	30-185	67.2	20.9	30	
Carbon disulfide	227	10	200	0	114	60-165	224.1	1.29	30	
Carbon tetrachloride	215.4	10	200	0	108	65-140	206.8	4.07	30	
Chlorobenzene	210.1	10	200	0	105	80-120	210	0.0476	30	
Chloroethane	240.7	10	200	0	120	50-140	293.7	19.8	30	
Chloroform	171.1	10	200	0	85.6	80-130	170	0.645	30	
Chloromethane	138.8	10	200	0	69.4	50-130	138.2	0.433	30	
cis-1,2-Dichloroethene	197.8	10	200	0	98.9	75-134	206.4	4.26	30	
cis-1,3-Dichloropropene	216.8	10	200	0	108	70-130	220.8	1.83	30	
Dibromochloromethane	212.8	10	200	0	106	60-115	212.7	0.047	30	
Dibromomethane	188.3	10	200	0	94.2	85-125	180.7	4.12	30	
Dichlorodifluoromethane	180.7	10	200	0	90.4	20-120	176.6	2.29	30	
Ethylbenzene	220.6	10	200	0	110	85-125	223.6	1.35	30	
Hexachloroethane	184.3	10	200	0	92.2	50-124	172.4	6.67	30	
Isopropylbenzene	216.9	10	200	0	108	80-127	213.1	1.77	30	
m,p-Xylene	461.9	20	400	0	115	75-130	463.8	0.411	30	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 15101956
Project: Hartland Gas Plant

QC BATCH REPORT

Batch ID: **R175749A** Instrument ID: **VMS6** Method: **SW8260B**

Methyl iodide	278.5	10	200	0	139	60-160	220.7	23.2	30
Methyl tert-butyl ether	180.4	10	200	0	90.2	80-130	183.7	1.81	30
Methylene chloride	203.4	50	200	0	102	75-140	205.1	0.832	30
Naphthalene	142.6	50	200	0	71.3	55-160	117.5	19.3	30
n-Propylbenzene	218.1	10	200	0	109	78-120	212.8	2.46	30
o-Xylene	219.6	10	200	0	110	80-125	217.6	0.915	30
Styrene	211.7	10	200	0	106	85-125	211.2	0.236	30
Tetrachloroethene	241.2	10	200	0	121	77-138	240.9	0.124	30
Toluene	224.6	10	200	0	112	85-125	222.1	1.12	30
trans-1,2-Dichloroethene	199	10	200	0	99.5	80-140	200.3	0.651	30
trans-1,3-Dichloropropene	218	10	200	0	109	81-123	210.1	3.69	30
trans-1,4-Dichloro-2-butene	232.7	20	200	0	116	46-118	237.5	2.04	30
Trichloroethene	211.4	10	200	0	106	84-130	212.6	0.566	30
Trichlorofluoromethane	192.9	10	200	0	96.4	60-140	196.5	1.85	30
Vinyl chloride	175.8	10	200	0	87.9	50-136	180.8	2.8	30
Xylenes, Total	681.5	30	600	0	114	80-126	681.4	0.0147	30
Surr: 1,2-Dichloroethane-d4	*200.2*	0	*200*	0	*100*	*75-120*	197.1	*1.56*	*30*
Surr: 4-Bromofluorobenzene	*203.9*	0	*200*	0	*102*	*80-110*	206.5	*1.27*	*30*
Surr: Dibromofluoromethane	*189.5*	0	*200*	0	*94.8*	*85-115*	198.5	*4.64*	*30*
Surr: Toluene-d8	*203.8*	0	*200*	0	*102*	*85-110*	205.7	*0.928*	*30*

The following samples were analyzed in this batch: 15101956-05B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Group USA, Corp

Date: 11-Nov-15

Client: Merit Energy
Project: Hartland Gas Plant
WorkOrder: **15101956**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and PQL, sample results may exhibit background or reag contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
µg/L	Micrograms per Liter
mg/L	Milligrams per Liter

ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **MERITENERGY** Date/Time Received: **31-Oct-15 09:30**

Work Order: **15101956** Received by: **KRW**

Checklist completed by Keith Wierenga 31-Oct-15 Reviewed by: Gary Byar 02-Nov-15
eSignature Date eSignature Date

Matrices: Water
Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	4.8/4.8 C	SR2	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	10/31/2015 11:11:41 AM		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:			

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction

Chain of Custody Form

ALS Environmental

Page 1 of 1

COC ID: 123456

☐ Cincinnati, OH +1 513 733 5336 ☒ Holland, MI +1 616 399 6070 ☐ Salt Lake City, UT +1 801 266 7700
☐ Everett, WA +1 425 356 2600 ☐ Houston, TX +1 281 530 5656 ☐ Spring City, PA +1 610 948 4903
☐ Fort Collins, CO +1 970 490 1511 ☐ Middletown, PA +1 717 944 5541 ☐ York, PA +1 717 505 5280

ALS Project Manager: | Work Order #: 1510195G

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	Harland Gas Plant	A	Sulfolane
Work Order		Project Number		B	VOCs
Company Name	Merit Energy Co.	Bill To Company	Merit Energy Co.	C	PNAs
Send Report To	Sean Craven	Invoice Attn.	Sean Craven	D	Ethylene Glycol
Address	1510 E Thomas Rd	Address	1510 E Thomas Rd	E	
				F	
City/State/Zip	Kalkaska, MI 49646	City/State/Zip	Kalkaska, MI 49646	G	
Phone	231-258-6369	Phone	231-258-6369	H	
Fax		Fax		I	
e-Mail Address	Sean Craven	e-Mail Address	sean.craven@meritenergy.com; bbaumann@gmail.com		

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	TMW-6 (65-70')	10-30-15	1215	GW	8	1	X										
2	TMW-6 (55-60')		1225	GW	8	1	X										
3	TMW-6 (45-50')		1235	GW	8	1	X										
4	TMW-6 (35-40')		1245	GW	8	1	X										
5	MW-13390 SHALLOW		1520	W	1,8	4	X	X	X	X							
6																	
7																	
8																	
9																	
10																	

Sampler(s): Please Print & Sign: B. Baumann

Shipment Method: Fedex

Required Turnaround Time: ☒ STD 10 Wk Days ☐ 5 Wk Days ☐ 2 Wk Days ☐ 24 Hour ☐ Other _____

Results Due Date:

Relinquished by:	Date:	Time:	Received by:
Brian Baumann	10-30-15	1630	FEDEx
FEDEx	10/31/15	0930	
Logged by (Laboratory): KL	Date: 10/31/15	Time: 1105	Checked by (Laboratory): GRB

Notes:

Cooler Temp: 4.8°C

QC Package: (Check Box Below)
- ☐ Level II: Standard QC
- ☒ Level III: Std QC + Raw Data
- ☐ Level IV: SW846 CLP-Like
- ☐ Other: _____

Preservative Key: 1-HCL 2-HNO3 3-H2SO4 4-NaOH 5-Na2S2O3 6-NaHSO4 7-Other 8-4 degrees C 9-5035

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.

ALS Environmental
3352 128th Avenue
Holland, Michigan 49424
Tel. +1 616 399 6070
Fax. +1 616 399 6185

CUSTODY SEAL

Date: 10-30-15 Time: 1630
Name: Bryan Baumann
Company: ECT

Seal Broken By:

Date:

5644 ENVCONCTH1

FedEx Express

ORIGIN ID:DEOA (616) 610-0200
BRIAN BAUMANN
ECT, INC
2200 COMMONWEALTH BOLVD.
STE 300
ANN ARBOR, MI 48105
UNITED STATES US

SHIP DATE: 30OCT15
ACTWGT: 41.90 LB
CAD: 006993987/SSFE1621
DIMS: 20x15x13 IN

BILL THIRD PARTY

TO

3352 128TH AVE.

HOLLAND MI 49424

(616) 610-0200 REF:

INV:
PO: DEPT:

FedEx Express

E

7816 2200 1868

SATURDAY 12:00P
PRIORITY OVERNIGHT
AHS
49424
MI-US GRR

XO HLMA

23-Jun-2016

Sean Craven
Merit Energy
1510 Thomas Rd
PO Box 910
Kalkaska, MI 49646

Re: **ECT (13390 Lone Tree Rd - Deep)** Work Order: **1606871**

Dear Sean,

ALS Environmental received 1 sample on 15-Jun-2016 09:30 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with NELAP standard requirements and QC results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 9.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

Gary Byar

Electronically approved by: Gary Byar

Gary Byar
Project Manager

Certificate No: MI: 0022

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185
ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

ALS Group USA, Corp

Date: 23-Jun-16

Client: Merit Energy
Project: ECT (13390 Lone Tree Rd - Deep)
Work Order: **1606871**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1606871-01	13390 Lone Tree Rd - Deep	Water		6/13/2016 13:41	6/15/2016 09:30	☐

ALS Group USA, Corp

Date: *23-Jun-16*

Client: Merit Energy
Project: ECT (13390 Lone Tree Rd - Deep)
Work Order: 1606871
Sample ID: 13390 Lone Tree Rd - Deep
Lab ID: 1606871-01
Collection Date: 6/13/2016 01:41 PM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW846 8270D**		Prep: SW3510 / 6/16/16	Analyst: **RM**
Sulfolane	ND		10	µg/L	1	6/16/2016 11:05 PM
Surr: 2,4,6-Tribromophenol	*55.2*		*38-115*	*%REC*	1	6/16/2016 11:05 PM
Surr: 2-Fluorobiphenyl	*58.1*		*32-100*	*%REC*	1	6/16/2016 11:05 PM
Surr: 2-Fluorophenol	*37.6*		*22-59*	*%REC*	1	6/16/2016 11:05 PM
Surr: 4-Terphenyl-d14	*85.2*		*23-112*	*%REC*	1	6/16/2016 11:05 PM
Surr: Nitrobenzene-d5	*65.6*		*31-93*	*%REC*	1	6/16/2016 11:05 PM
Surr: Phenol-d6	*22.4*		*13-36*	*%REC*	1	6/16/2016 11:05 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 23-Jun-16

Client: Merit Energy

Work Order: 1606871

Project: ECT (13390 Lone Tree Rd - Deep)

QC BATCH REPORT

Batch ID: **87384** Instrument ID **SVMS8** Method: **SW846 8270D**

MBLK Sample ID: **SBLKW1-87384-87384** Units: **µg/L** Analysis Date: **6/16/2016 07:57 PM**

Client ID: Run ID: **SVMS8_160616A** SeqNo: **3888548** Prep Date: **6/16/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfolane	ND	10								
Surr: 2,4,6-Tribromophenol	*34.42*	0	*50*	0	*68.8*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*34.19*	0	*50*	0	*68.4*	*32-100*	0			
Surr: 2-Fluorophenol	*22.38*	0	*50*	0	*44.8*	*22-59*	0			
Surr: 4-Terphenyl-d14	*46.53*	0	*50*	0	*93.1*	*23-112*	0			
Surr: Nitrobenzene-d5	*39.51*	0	*50*	0	*79*	*31-93*	0			
Surr: Phenol-d6	*13.42*	0	*50*	0	*26.8*	*13-36*	0			

LCS Sample ID: **SLCSW1-87384-87384** Units: **µg/L** Analysis Date: **6/16/2016 08:17 PM**

Client ID: Run ID: **SVMS8_160616A** SeqNo: **3888549** Prep Date: **6/16/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfolane	53.27	10	100	0	53.3	30-100	0			
Surr: 2,4,6-Tribromophenol	*35.21*	0	*50*	0	*70.4*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*35.78*	0	*50*	0	*71.6*	*32-100*	0			
Surr: 2-Fluorophenol	*21.28*	0	*50*	0	*42.6*	*22-59*	0			
Surr: 4-Terphenyl-d14	*49.06*	0	*50*	0	*98.1*	*23-112*	0			
Surr: Nitrobenzene-d5	*40.25*	0	*50*	0	*80.5*	*31-93*	0			
Surr: Phenol-d6	*12.62*	0	*50*	0	*25.2*	*13-36*	0			

MS Sample ID: **1606870-01A MS** Units: **µg/L** Analysis Date: **6/16/2016 10:05 PM**

Client ID: Run ID: **SVMS8_160616A** SeqNo: **3888550** Prep Date: **6/16/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfolane	59.25	10	100	0	59.2	30-100	0			
Surr: 2,4,6-Tribromophenol	*33.01*	0	*50*	0	*66*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*34.57*	0	*50*	0	*69.1*	*32-100*	0			
Surr: 2-Fluorophenol	*20.06*	0	*50*	0	*40.1*	*22-59*	0			
Surr: 4-Terphenyl-d14	*46.56*	0	*50*	0	*93.1*	*23-112*	0			
Surr: Nitrobenzene-d5	*39.7*	0	*50*	0	*79.4*	*31-93*	0			
Surr: Phenol-d6	*11.64*	0	*50*	0	*23.3*	*13-36*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606871
Project: ECT (13390 Lone Tree Rd - Deep)

QC BATCH REPORT

Batch ID: **87384** Instrument ID **SVMS8** Method: **SW846 8270D**

DUP Sample ID: **1606871-01A DUP** Units: **µg/L** Analysis Date: **6/16/2016 10:45 PM**
Client ID: **13390 Lone Tree Rd - Deep** Run ID: **SVMS8_160616A** SeqNo: **3888552** Prep Date: **6/16/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfolane	ND	11	0	0	0		0	0	30	
Surr: 2,4,6-Tribromophenol	*28.89*	0	*52.63*	0	*54.9*	*38-115*	27.6	*4.58*	*40*	
Surr: 2-Fluorobiphenyl	*29.71*	0	*52.63*	0	*56.4*	*32-100*	29.06	*2.2*	*40*	
Surr: 2-Fluorophenol	*19.71*	0	*52.63*	0	*37.4*	*22-59*	18.78	*4.81*	*40*	
Surr: 4-Terphenyl-d14	*45.01*	0	*52.63*	0	*85.5*	*23-112*	42.59	*5.53*	*40*	
Surr: Nitrobenzene-d5	*32.43*	0	*52.63*	0	*61.6*	*31-93*	32.8	*1.13*	*40*	
Surr: Phenol-d6	*11.48*	0	*52.63*	0	*21.8*	*13-36*	11.2	*2.51*	*40*	

The following samples were analyzed in this batch: 1606871-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Group USA, Corp

Date: 23-Jun-16

Client: Merit Energy
Project: ECT (13390 Lone Tree Rd - Deep)
WorkOrder: **1606871**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
µg/L	Micrograms per Liter

ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **MERITENERGY** Date/Time Received: **15-Jun-16 09:30**

Work Order: **1606871** Received by: **KRW**

Checklist completed by Keith Wierenga (eSignature) 15-Jun-16 (Date) Reviewed by: Gary Byar (eSignature) 15-Jun-16 (Date)

Matrices: Water

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	2.2/2.2 C	SR2	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	6/15/2016 2:22:34 PM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

☑ RETURN SAMPLES TO:
ALS Environmental
781 Industrial Cir, Ste 3
Traverse City, Michigan 49686
(Tel) 231.421.3204
(Cell) 231.944.3459

Chain of Custody Form

Page 1 of 1

☒ ALS Environmental
3352 128th Avenue
Holland, Michigan 49424
(Tel) 616.399.6070
(Fax) 616.399.6185

ALS Project Manager:	Gary Byar	ALS Work Order #:	1606871

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	Hartland 36 Gas Plant	A	Sulfolane
Work Order		Project Number		B	
Company Name	ECT, Inc.	Bill To Company	MEC	C	
Send Report To	Jeremy Lewandowski	Invoice Attn.	Sean Craven	D	
Address	3399 Veterans Dr.	Address	1510 Thomas Rd	E	
				F	
City/State/Zip	Traverse City, MI 49684	City/State/Zip	Kalkaska, Mi	G	
Phone	231-946-8200	Phone	231-258-6369	H	
Fax	231-946-8208	Fax		I	
e-Mail Address	jlewandowski@ectinc.com			J	

No.	Sample Description	Date	Time	Matrix	Pres. Key Numbers	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
	13390 Lone Tree Rd - Deep	6/13/16	13:41	GW	8	2	X										

Sampler(s): Please Print & Sign: Jeremy Lewandowski

Shipment Method:

Required Turnaround Time: (Check Box) ☐ 10 Wk Days ☒ 5-7 Wk Days ☐ 3 Wk Days ☐ 2 Wk Days ☐ 24 Hour ☐ Other

Results Due Date:

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
ECT Sample Storage	6/13/16	9:30p	ECT Sample Storage	6/13/16	9:30p
	6/14/16	11:15a		6/14/16	11:15a
Relinquished by:	Date:	Time:	Received by (Laboratory):	Date:	Time:
	6/14/16	11:30a		6/14/16	11:30
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):		
KR	6/14/16	1645		6/15/16 0930	
KR	6/15/16	1420	GRB		

Notes:
ALS Project: MERITENERGY - Misc

ALS Cooler ID	Cooler Temp	QC Package: (Check Box Below)	
	2.2°C	☑ Level II: Standard QC	☐ Level III: Raw Data
		☐ TRRP LRC	☐ TRRP Level IV
		☐ Level IV: SW846 Methods/CLP like	
		☐ Other:	

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS.

ORIGIN ID:TVCA (231) 421-3204
GARY BYAR
ALS ENVIRONMENTAL
761 INDUSTRIAL CIRCLE
UNIT #3
TRAVERSE CITY, MI 49686
UNITED STATES US

SHIP DATE: 14JUN16
ACTWGT: 24.00 LB
CAD: 2264846/INET3730
DIMS: 13x18x16 IN

BILL SENDER

TO SAMPLE RECEIVING
ALS LABORATORY GROUP
3352 128TH AVENUE

HOLLAND MI 49424
(616) 399-6070 REF: ALS - TC
INV:
PO: DEPT:

540J2/30B0/727F

FedEx. Express

E

WED - 15 JUN 3:00P
STANDARD OVERNIGHT

1 of 3
TRK# 7765 2027 0950
0204
MASTER

68 HLMA

49424
MI-US GRR

FedEx Ship Manager - Print Your Label(s)

ALS Environmental
3352 128th Avenue
Holland, Michigan 49424
Tel. +1 616 399 6070
Fax. +1 616 399 6185

CUSTODY SEAL

Date: 6/14/16 Time: 1620
Name: J. BYAR
Company: ALS - TC

Seal Broken By:

Date:

2.0c

23-Jun-2016

Sean Craven
Merit Energy
1510 Thomas Rd
PO Box 910
Kalkaska, MI 49646

Re: **ECT (13390 Lone Tree Rd - Shallow)** Work Order: **1606870**

Dear Sean,

ALS Environmental received 1 sample on 15-Jun-2016 09:30 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with NELAP standard requirements and QC results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 9.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

Gary Byar

Electronically approved by: Gary Byar

Gary Byar
Project Manager

Certificate No: MI: 0022

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185
ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

ALS Group USA, Corp

Date: 23-Jun-16

Client: Merit Energy
Project: ECT (13390 Lone Tree Rd - Shallow)
Work Order: **1606870**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1606870-01	13390 Lone Tree Rd - Shallow	Water		6/13/2016 13:21	6/15/2016 09:30	☐

ALS Group USA, Corp

Date: *23-Jun-16*

Client: Merit Energy
Project: ECT (13390 Lone Tree Rd - Shallow)
Work Order: 1606870
Sample ID: 13390 Lone Tree Rd - Shallow
Lab ID: 1606870-01
Collection Date: 6/13/2016 01:21 PM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW846 8270D**		Prep: SW3510 / 6/16/16	Analyst: **RM**
Sulfolane	ND		11	µg/L	1	6/16/2016 10:25 PM
Surr: 2,4,6-Tribromophenol	*71.3*		*38-115*	*%REC*	1	6/16/2016 10:25 PM
Surr: 2-Fluorobiphenyl	*68.7*		*32-100*	*%REC*	1	6/16/2016 10:25 PM
Surr: 2-Fluorophenol	*41.4*		*22-59*	*%REC*	1	6/16/2016 10:25 PM
Surr: 4-Terphenyl-d14	*96.6*		*23-112*	*%REC*	1	6/16/2016 10:25 PM
Surr: Nitrobenzene-d5	*81.2*		*31-93*	*%REC*	1	6/16/2016 10:25 PM
Surr: Phenol-d6	*24.1*		*13-36*	*%REC*	1	6/16/2016 10:25 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 23-Jun-16

Client: Merit Energy

Work Order: 1606870

Project: ECT (13390 Lone Tree Rd - Shallow)

QC BATCH REPORT

Batch ID: **87384** Instrument ID **SVMS8** Method: **SW846 8270D**

MBLK Sample ID: **SBLKW1-87384-87384** Units: **µg/L** Analysis Date: **6/16/2016 07:57 PM**

Client ID: Run ID: **SVMS8_160616A** SeqNo: **3888548** Prep Date: **6/16/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfolane	ND	10								
Surr: 2,4,6-Tribromophenol	*34.42*	0	*50*	0	*68.8*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*34.19*	0	*50*	0	*68.4*	*32-100*	0			
Surr: 2-Fluorophenol	*22.38*	0	*50*	0	*44.8*	*22-59*	0			
Surr: 4-Terphenyl-d14	*46.53*	0	*50*	0	*93.1*	*23-112*	0			
Surr: Nitrobenzene-d5	*39.51*	0	*50*	0	*79*	*31-93*	0			
Surr: Phenol-d6	*13.42*	0	*50*	0	*26.8*	*13-36*	0			

LCS Sample ID: **SLCSW1-87384-87384** Units: **µg/L** Analysis Date: **6/16/2016 08:17 PM**

Client ID: Run ID: **SVMS8_160616A** SeqNo: **3888549** Prep Date: **6/16/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfolane	53.27	10	100	0	53.3	30-100	0			
Surr: 2,4,6-Tribromophenol	*35.21*	0	*50*	0	*70.4*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*35.78*	0	*50*	0	*71.6*	*32-100*	0			
Surr: 2-Fluorophenol	*21.28*	0	*50*	0	*42.6*	*22-59*	0			
Surr: 4-Terphenyl-d14	*49.06*	0	*50*	0	*98.1*	*23-112*	0			
Surr: Nitrobenzene-d5	*40.25*	0	*50*	0	*80.5*	*31-93*	0			
Surr: Phenol-d6	*12.62*	0	*50*	0	*25.2*	*13-36*	0			

MS Sample ID: **1606870-01A MS** Units: **µg/L** Analysis Date: **6/16/2016 10:05 PM**

Client ID: **13390 Lone Tree Rd - Shallow** Run ID: **SVMS8_160616A** SeqNo: **3888550** Prep Date: **6/16/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfolane	59.25	10	100	0	59.2	30-100	0			
Surr: 2,4,6-Tribromophenol	*33.01*	0	*50*	0	*66*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*34.57*	0	*50*	0	*69.1*	*32-100*	0			
Surr: 2-Fluorophenol	*20.06*	0	*50*	0	*40.1*	*22-59*	0			
Surr: 4-Terphenyl-d14	*46.56*	0	*50*	0	*93.1*	*23-112*	0			
Surr: Nitrobenzene-d5	*39.7*	0	*50*	0	*79.4*	*31-93*	0			
Surr: Phenol-d6	*11.64*	0	*50*	0	*23.3*	*13-36*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606870
Project: ECT (13390 Lone Tree Rd - Shallow)

QC BATCH REPORT

Batch ID: **87384** Instrument ID **SVMS8** Method: **SW846 8270D**

DUP Sample ID: **1606871-01A DUP** Units: **µg/L** Analysis Date: **6/16/2016 10:45 PM**
Client ID: Run ID: **SVMS8_160616A** SeqNo: **3888552** Prep Date: **6/16/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfolane	ND	11	0	0	0		0	0	30	
Surr: 2,4,6-Tribromophenol	*28.89*	0	*52.63*	0	*54.9*	*38-115*	27.6	*4.58*	*40*	
Surr: 2-Fluorobiphenyl	*29.71*	0	*52.63*	0	*56.4*	*32-100*	29.06	*2.2*	*40*	
Surr: 2-Fluorophenol	*19.71*	0	*52.63*	0	*37.4*	*22-59*	18.78	*4.81*	*40*	
Surr: 4-Terphenyl-d14	*45.01*	0	*52.63*	0	*85.5*	*23-112*	42.59	*5.53*	*40*	
Surr: Nitrobenzene-d5	*32.43*	0	*52.63*	0	*61.6*	*31-93*	32.8	*1.13*	*40*	
Surr: Phenol-d6	*11.48*	0	*52.63*	0	*21.8*	*13-36*	11.2	*2.51*	*40*	

The following samples were analyzed in this batch: 1606870-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Group USA, Corp

Date: 23-Jun-16

Client: Merit Energy
Project: ECT (13390 Lone Tree Rd - Shallow)
WorkOrder: **1606870**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
µg/L	Micrograms per Liter

ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **MERITENERGY** Date/Time Received: **15-Jun-16 09:30**

Work Order: **1606870** Received by: **KRW**

Checklist completed by Keith Wierenga (eSignature) 15-Jun-16 (Date) Reviewed by: Gary Byar (eSignature) 15-Jun-16 (Date)

Matrices: Water

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	2.2/2.2 C	SR2	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	6/15/2016 2:20:41 PM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

☑ **RETURN SAMPLES TO:**
ALS Environmental
781 Industrial Cir, Ste 3
Traverse City, Michigan 49686
(Tel) 231.421.3204
(Cell) 231.944.3459

Chain of Custody Form

Page 1 of 1

ALS Environmental
3352 128th Avenue
Holland, Michigan 49424
(Tel) 616.399.6070
(Fax) 616.399.6185

ALS Project Manager: Gary Byar | **ALS Work Order #:** 1606870

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	Hartland 36 Gas Plant	A	Sulfolane
Work Order		Project Number		B	
Company Name	ECT, Inc.	Bill To Company	MEC	C	
Send Report To	Jeremy Lewandowski	Invoice Attn.	Sean Craven	D	
Address	3399 Veterans Dr.	Address	1510 Thomas Rd	E	
				F	
City/State/Zip	Traverse City, MI 49684	City/State/Zip	Kalkaska, Mi	G	
Phone	231-946-8200	Phone	231-258-6369	H	
Fax	231-946-8208	Fax		I	
e-Mail Address	jlewandowski@ectinc.com			J	

No.	Sample Description	Date	Time	Matrix	Pres. Key Numbers	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
	13390 Lone Tree Rd - Shallow	6/13/16	13:21	GW	8	2	X										

Sampler(s): Please Print & Sign: Jeremy Lewandowski

Shipment Method:

Required Turnaround Time: (Check Box) ☐ 10 Wk Days ☒ 5-7 Wk Days ☐ 3 Wk Days ☐ 2 Wk Days ☐ 24 Hour ☐ Other

Results Due Date:

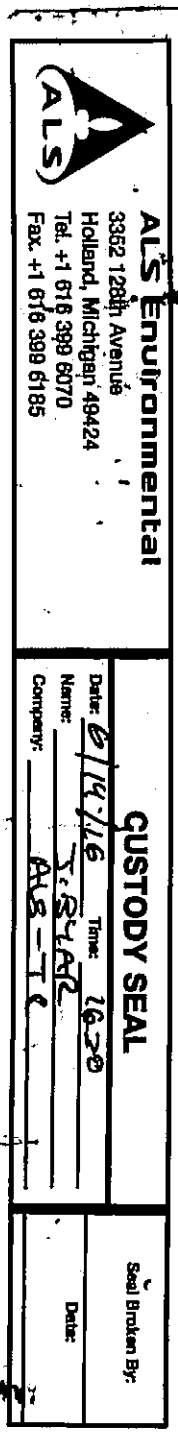
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
ECT Sample Storage	6/13/16	9:30p	ECT Sample Storage	6/13/16	9:30p
	6/14/16	11:15a		6/14/16	11:15a
Relinquished by:	Date: 6/14/16	Time: 11:30a	Received by (Laboratory):	Date: 6/14/16	Time: 11:20
Logged by (Laboratory):	Date: 6/14/16	Time: 16:45	Checked by (Laboratory):	6/15/16 0930	
	6/15/16	1420			

Notes: ALS Project: MERITENERGY - Misc

ALS Cooler ID	Cooler Temp	QC Package: (Check Box Below)	
	2.2°C	☑ Level II: Standard QC	☐ Level III: Raw Data
		☐ TRRP LRC	☐ TRRP Level IV
		☐ Level IV: SW846 Methods/CLP like	
		☐ Other:	

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS.



ALS Environmental
3352 128th Avenue
Holland, Michigan 49424
Tel. +1 616 399 6070
Fax. +1 616 399 6185

CUSTODY SEAL
Date: 6/14/16 Time: 1620
Name: [illegible]
Company: ALS-TC

Seal Broken By:
Date:

FedEx Ship Manager - Print Your Label(s)

ORIGIN ID:TVCA (231) 421-3204
GARY BYAR
ALS ENVIRONMENTAL
781 INDUSTRIAL CIRCLE
UNIT #3
TRAVERSE CITY, MI 49686
UNITED STATES US

SHIP DATE: 14JUN16
ACTWGT: 24.00 LB
CAD: 2264848/INET3730
DIMS: 13x16x16 IN

BILL SENDER

TO SAMPLE RECEIVING
ALS LABORATORY GROUP
3352 128TH AVENUE

HOLLAND MI 49424
(616) 399-6070 REF: ALS - TC
INV:
PO: DEPT:

540J/3060/72TF

FedEx Express

1 of 3

TRK# 0201 7765 2027 0950

WED - 15 JUN 3:00P
STANDARD OVERNIGHT

MASTER

68 HLMA

49424
MI-US GRR

10-Jun-2016

Sean Craven
Merit Energy
1510 Thomas Rd
PO Box 910
Kalkaska, MI 49646

Re: **ECT (Hartland - 900 Erin Lane)** Work Order: **1606476**

Dear Sean,

ALS Environmental received 1 sample on 08-Jun-2016 09:30 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with NELAP standard requirements and QC results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 19.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

Gary Byar

Electronically approved by: Gary Byar

Gary Byar
Project Manager

Certificate No: MI: 0022

Report of Laboratory Analysis

ALS Group USA, Corp

Date: 10-Jun-16

Client: Merit Energy
Project: ECT (Hartland - 900 Erin Lane)
Work Order: **1606476**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1606476-01	900 Erin Lane	Water		6/7/2016 08:36	6/8/2016 09:30	☐

ALS Group USA, Corp

Date: *10-Jun-16*

Client: Merit Energy
Project: ECT (Hartland - 900 Erin Lane) **Work Order:** 1606476
Sample ID: 900 Erin Lane **Lab ID:** 1606476-01
Collection Date: 6/7/2016 08:36 AM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW846 8270D**		Prep: SW3510 / 6/9/16	Analyst: **RM**
Diisopropanolamine	ND		59	µg/L	1	6/9/2016 06:56 PM
Sulfolane	ND		12	µg/L	1	6/9/2016 06:56 PM
Surr: 2,4,6-Tribromophenol	*61.2*		*38-115*	*%REC*	1	6/9/2016 06:56 PM
Surr: 2-Fluorobiphenyl	*52.6*		*32-100*	*%REC*	1	6/9/2016 06:56 PM
Surr: 2-Fluorophenol	*36.5*		*22-59*	*%REC*	1	6/9/2016 06:56 PM
Surr: 4-Terphenyl-d14	*70.9*		*23-112*	*%REC*	1	6/9/2016 06:56 PM
Surr: Nitrobenzene-d5	*65.3*		*31-93*	*%REC*	1	6/9/2016 06:56 PM
Surr: Phenol-d6	*19.0*		*13-36*	*%REC*	1	6/9/2016 06:56 PM
VOLATILE ORGANIC COMPOUNDS			**SW8260B**			Analyst: **BG**
1,1,1,2-Tetrachloroethane	ND		1.0	µg/L	1	6/9/2016 05:25 AM
1,1,1-Trichloroethane	ND		1.0	µg/L	1	6/9/2016 05:25 AM
1,1,2,2-Tetrachloroethane	ND		1.0	µg/L	1	6/9/2016 05:25 AM
1,1,2-Trichloroethane	ND		1.0	µg/L	1	6/9/2016 05:25 AM
1,1,2-Trichlorotrifluoroethane	ND		1.0	µg/L	1	6/9/2016 05:25 AM
1,1-Dichloroethane	ND		1.0	µg/L	1	6/9/2016 05:25 AM
1,1-Dichloroethene	ND		1.0	µg/L	1	6/9/2016 05:25 AM
1,2,3-Trichloropropane	ND		1.0	µg/L	1	6/9/2016 05:25 AM
1,2,4-Trichlorobenzene	ND		1.0	µg/L	1	6/9/2016 05:25 AM
1,2,4-Trimethylbenzene	ND		1.0	µg/L	1	6/9/2016 05:25 AM
1,2-Dibromo-3-chloropropane	ND		1.0	µg/L	1	6/9/2016 05:25 AM
1,2-Dibromoethane	ND		1.0	µg/L	1	6/9/2016 05:25 AM
1,2-Dichlorobenzene	ND		1.0	µg/L	1	6/9/2016 05:25 AM
1,2-Dichloroethane	ND		1.0	µg/L	1	6/9/2016 05:25 AM
1,2-Dichloropropane	ND		1.0	µg/L	1	6/9/2016 05:25 AM
1,3,5-Trimethylbenzene	ND		1.0	µg/L	1	6/9/2016 05:25 AM
1,3-Dichlorobenzene	ND		1.0	µg/L	1	6/9/2016 05:25 AM
1,4-Dichlorobenzene	ND		1.0	µg/L	1	6/9/2016 05:25 AM
2-Butanone	ND		5.0	µg/L	1	6/9/2016 05:25 AM
2-Hexanone	ND		5.0	µg/L	1	6/9/2016 05:25 AM
2-Methylnaphthalene	ND		5.0	µg/L	1	6/9/2016 05:25 AM
4-Methyl-2-pentanone	ND		1.0	µg/L	1	6/9/2016 05:25 AM
Acetone	ND		10	µg/L	1	6/9/2016 05:25 AM
Acrylonitrile	ND		1.0	µg/L	1	6/9/2016 05:25 AM
Benzene	ND		1.0	µg/L	1	6/9/2016 05:25 AM
Bromochloromethane	ND		1.0	µg/L	1	6/9/2016 05:25 AM
Bromodichloromethane	ND		1.0	µg/L	1	6/9/2016 05:25 AM
Bromoform	ND		1.0	µg/L	1	6/9/2016 05:25 AM
Bromomethane	ND		1.0	µg/L	1	6/9/2016 05:25 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *10-Jun-16*

Client: Merit Energy
Project: ECT (Hartland - 900 Erin Lane)
Work Order: 1606476
Sample ID: 900 Erin Lane
Lab ID: 1606476-01
Collection Date: 6/7/2016 08:36 AM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Carbon disulfide	ND		1.0	µg/L	1	6/9/2016 05:25 AM
Carbon tetrachloride	ND		1.0	µg/L	1	6/9/2016 05:25 AM
Chlorobenzene	ND		1.0	µg/L	1	6/9/2016 05:25 AM
Chloroethane	ND		1.0	µg/L	1	6/9/2016 05:25 AM
Chloroform	ND		1.0	µg/L	1	6/9/2016 05:25 AM
Chloromethane	ND		1.0	µg/L	1	6/9/2016 05:25 AM
cis-1,2-Dichloroethene	ND		1.0	µg/L	1	6/9/2016 05:25 AM
cis-1,3-Dichloropropene	ND		1.0	µg/L	1	6/9/2016 05:25 AM
Dibromochloromethane	ND		1.0	µg/L	1	6/9/2016 05:25 AM
Dibromomethane	ND		1.0	µg/L	1	6/9/2016 05:25 AM
Dichlorodifluoromethane	ND		1.0	µg/L	1	6/9/2016 05:25 AM
Diethyl ether	ND		1.0	µg/L	1	6/9/2016 05:25 AM
Ethylbenzene	ND		1.0	µg/L	1	6/9/2016 05:25 AM
Hexachloroethane	ND		1.0	µg/L	1	6/9/2016 05:25 AM
Isopropylbenzene	ND		1.0	µg/L	1	6/9/2016 05:25 AM
m,p-Xylene	ND		2.0	µg/L	1	6/9/2016 05:25 AM
Methyl iodide	ND		1.0	µg/L	1	6/9/2016 05:25 AM
Methyl tert-butyl ether	ND		1.0	µg/L	1	6/9/2016 05:25 AM
Methylene chloride	ND		5.0	µg/L	1	6/9/2016 05:25 AM
Naphthalene	ND		5.0	µg/L	1	6/9/2016 05:25 AM
n-Propylbenzene	ND		1.0	µg/L	1	6/9/2016 05:25 AM
o-Xylene	ND		1.0	µg/L	1	6/9/2016 05:25 AM
Styrene	ND		1.0	µg/L	1	6/9/2016 05:25 AM
Tetrachloroethene	ND		1.0	µg/L	1	6/9/2016 05:25 AM
Toluene	ND		1.0	µg/L	1	6/9/2016 05:25 AM
trans-1,2-Dichloroethene	ND		1.0	µg/L	1	6/9/2016 05:25 AM
trans-1,3-Dichloropropene	ND		1.0	µg/L	1	6/9/2016 05:25 AM
trans-1,4-Dichloro-2-butene	ND		2.0	µg/L	1	6/9/2016 05:25 AM
Trichloroethene	ND		1.0	µg/L	1	6/9/2016 05:25 AM
Trichlorofluoromethane	ND		1.0	µg/L	1	6/9/2016 05:25 AM
Vinyl acetate	ND		1.0	µg/L	1	6/9/2016 05:25 AM
Vinyl chloride	ND		1.0	µg/L	1	6/9/2016 05:25 AM
Xylenes, Total	ND		3.0	µg/L	1	6/9/2016 05:25 AM
Surr: 1,2-Dichloroethane-d4	*93.0*		*75-120*	*%REC*	1	6/9/2016 05:25 AM
Surr: 4-Bromofluorobenzene	*95.2*		*80-110*	*%REC*	1	6/9/2016 05:25 AM
Surr: Dibromofluoromethane	*94.4*		*85-115*	*%REC*	1	6/9/2016 05:25 AM
Surr: Toluene-d8	*94.4*		*85-110*	*%REC*	1	6/9/2016 05:25 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 10-Jun-16

Client: Merit Energy
Project: ECT (Hartland - 900 Erin Lane)
Work Order: 1606476

Case Narrative

Batch R189191a The MS/MSD data for Volatiles is not related to this project's sample. No data requires qualification.

ALS Group USA, Corp

Date: 10-Jun-16

Client: Merit Energy

Work Order: 1606476

Project: ECT (Hartland - 900 Erin Lane)

QC BATCH REPORT

Batch ID: **87107** Instrument ID **SVMS8** Method: **SW846 8270D**

MBLK Sample ID: **SBLKW1-87107-87107** Units: **µg/L** Analysis Date: **6/9/2016 03:25 PM**

Client ID: Run ID: **SVMS8_160609A** SeqNo: **3870197** Prep Date: **6/9/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Diisopropanolamine	ND	50								
Sulfolane	ND	10								
Surr: 2,4,6-Tribromophenol	*21.75*	0	*50*	0	*43.5*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*21.56*	0	*50*	0	*43.1*	*32-100*	0			
Surr: 2-Fluorophenol	*16.37*	0	*50*	0	*32.7*	*22-59*	0			
Surr: 4-Terphenyl-d14	*35.69*	0	*50*	0	*71.4*	*23-112*	0			
Surr: Nitrobenzene-d5	*28.03*	0	*50*	0	*56.1*	*31-93*	0			
Surr: Phenol-d6	*7.63*	0	*50*	0	*15.3*	*13-36*	0			

LCS Sample ID: **SLCSW1-87107-87107** Units: **µg/L** Analysis Date: **6/9/2016 03:45 PM**

Client ID: Run ID: **SVMS8_160609A** SeqNo: **3870198** Prep Date: **6/9/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Diisopropanolamine	5.75	50	100	0	5.75	5-40	0			
Sulfolane	54.53	10	100	0	54.5	30-100	0			
Surr: 2,4,6-Tribromophenol	*27.91*	0	*50*	0	*55.8*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*28.51*	0	*50*	0	*57*	*32-100*	0			
Surr: 2-Fluorophenol	*19.32*	0	*50*	0	*38.6*	*22-59*	0			
Surr: 4-Terphenyl-d14	*37.7*	0	*50*	0	*75.4*	*23-112*	0			
Surr: Nitrobenzene-d5	*35.21*	0	*50*	0	*70.4*	*31-93*	0			
Surr: Phenol-d6	*10.02*	0	*50*	0	*20*	*13-36*	0			

MS Sample ID: **1606476-01B MS** Units: **µg/L** Analysis Date: **6/9/2016 06:36 PM**

Client ID: **900 Erin Lane** Run ID: **SVMS8_160609A** SeqNo: **3870199** Prep Date: **6/9/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Diisopropanolamine	14.01	53	106.4	0	13.2	5-40	0			
Sulfolane	65.27	11	106.4	0	61.4	30-100	0			
Surr: 2,4,6-Tribromophenol	*36.05*	0	*53.19*	0	*67.8*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*31.76*	0	*53.19*	0	*59.7*	*32-100*	0			
Surr: 2-Fluorophenol	*20.45*	0	*53.19*	0	*38.4*	*22-59*	0			
Surr: 4-Terphenyl-d14	*38.93*	0	*53.19*	0	*73.2*	*23-112*	0			
Surr: Nitrobenzene-d5	*38.12*	0	*53.19*	0	*71.7*	*31-93*	0			
Surr: Phenol-d6	*10.87*	0	*53.19*	0	*20.4*	*13-36*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606476
Project: ECT (Hartland - 900 Erin Lane)

QC BATCH REPORT

Batch ID: **87107** Instrument ID **SVMS8** Method: **SW846 8270D**

DUP Sample ID: **1606478-01B DUP** Units: **µg/L** Analysis Date: **6/9/2016 07:16 PM**
Client ID: Run ID: **SVMS8_160609A** SeqNo: **3870201** Prep Date: **6/9/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Diisopropanolamine	ND	53	0	0	0		0	0	30	
Sulfolane	ND	11	0	0	0		0	0	30	
Surr: 2,4,6-Tribromophenol	*32.53*	0	*53.02*	0	*61.4*	*38-115*	31.66	*2.72*	*40*	
Surr: 2-Fluorobiphenyl	*29.9*	0	*53.02*	0	*56.4*	*32-100*	27.39	*8.78*	*40*	
Surr: 2-Fluorophenol	*18.87*	0	*53.02*	0	*35.6*	*22-59*	16.97	*10.6*	*40*	
Surr: 4-Terphenyl-d14	*35.97*	0	*53.02*	0	*67.8*	*23-112*	37.85	*5.09*	*40*	
Surr: Nitrobenzene-d5	*35.12*	0	*53.02*	0	*66.2*	*31-93*	32.88	*6.59*	*40*	
Surr: Phenol-d6	*9.3*	0	*53.02*	0	*17.5*	*13-36*	8.71	*6.55*	*40*	

The following samples were analyzed in this batch: 1606476-01B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606476
Project: ECT (Hartland - 900 Erin Lane)

QC BATCH REPORT

Batch ID: **R189191a** Instrument ID **VMS6** Method: **SW8260B**

MBLK Sample ID: **VBLKW2-160608-R189191a** Units: **µg/L** Analysis Date: **6/9/2016 02:02 AM**
Client ID: Run ID: **VMS6_160608B** SeqNo: **3868131** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
1,1,2-Trichlorotrifluoroethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2,3-Trichloropropane	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	1.0								
1,2-Dibromoethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,2-Dichloroethane	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
2-Butanone	ND	5.0								
2-Hexanone	ND	5.0								
2-Methylnaphthalene	ND	5.0								
4-Methyl-2-pentanone	ND	1.0								
Acetone	ND	10								
Acrylonitrile	ND	1.0								
Benzene	ND	1.0								
Bromochloromethane	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	1.0								
Carbon disulfide	ND	1.0								
Carbon tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	ND	1.0								
cis-1,2-Dichloroethene	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
Diethyl ether	ND	1.0								
Ethylbenzene	ND	1.0								

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Batch ID: **R189191a** Instrument ID **VMS6** Method: **SW8260B**

Hexachloroethane	ND	1.0					
Isopropylbenzene	ND	1.0					
m,p-Xylene	ND	2.0					
Methyl iodide	ND	1.0					
Methyl tert-butyl ether	ND	1.0					
Methylene chloride	ND	5.0					
Naphthalene	ND	5.0					
n-Propylbenzene	ND	1.0					
o-Xylene	ND	1.0					
Styrene	ND	1.0					
Tetrachloroethene	ND	1.0					
Toluene	ND	1.0					
trans-1,2-Dichloroethene	ND	1.0					
trans-1,3-Dichloropropene	ND	1.0					
trans-1,4-Dichloro-2-butene	ND	2.0					
Trichloroethene	ND	1.0					
Trichlorofluoromethane	ND	1.0					
Vinyl acetate	ND	1.0					
Vinyl chloride	ND	1.0					
Xylenes, Total	ND	3.0					
Surr: 1,2-Dichloroethane-d4	*18.19*	0	*20*	0	*91*	*75-120*	0
Surr: 4-Bromofluorobenzene	*19.42*	0	*20*	0	*97.1*	*80-110*	0
Surr: Dibromofluoromethane	*19.84*	0	*20*	0	*99.2*	*85-115*	0
Surr: Toluene-d8	*19.06*	0	*20*	0	*95.3*	*85-110*	0

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606476
Project: ECT (Hartland - 900 Erin Lane)

QC BATCH REPORT

Batch ID: **R189191a** Instrument ID **VMS6** Method: **SW8260B**

LCS	Sample ID: **VLCSW2-160608-R189191a**				Units: **µg/L**			Analysis Date: **6/9/2016 01:12 AM**		
Client ID:		Run ID: **VMS6_160608B**			SeqNo: **3868128**		Prep Date:		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	20.57	1.0	20	0	103	80-130	0			
1,1,1-Trichloroethane	20.5	1.0	20	0	102	75-130	0			
1,1,2,2-Tetrachloroethane	21.66	1.0	20	0	108	75-130	0			
1,1,2-Trichloroethane	19.85	1.0	20	0	99.2	75-125	0			
1,1-Dichloroethane	19.12	1.0	20	0	95.6	75-133	0			
1,1-Dichloroethene	19.91	1.0	20	0	99.6	70-145	0			
1,2,3-Trichloropropane	20.71	1.0	20	0	104	75-125	0			
1,2,4-Trichlorobenzene	20.09	1.0	20	0	100	70-135	0			
1,2,4-Trimethylbenzene	20.32	1.0	20	0	102	75-130	0			
1,2-Dibromo-3-chloropropane	18.85	1.0	20	0	94.2	60-130	0			
1,2-Dibromoethane	21.31	1.0	20	0	107	80-150	0			
1,2-Dichlorobenzene	20.37	1.0	20	0	102	70-130	0			
1,2-Dichloroethane	18.84	1.0	20	0	94.2	78-125	0			
1,2-Dichloropropane	20.05	1.0	20	0	100	75-125	0			
1,3,5-Trimethylbenzene	20.7	1.0	20	0	104	75-130	0			
1,3-Dichlorobenzene	20.13	1.0	20	0	101	75-130	0			
1,4-Dichlorobenzene	18.8	1.0	20	0	94	75-130	0			
2-Butanone	18.19	5.0	20	0	91	55-150	0			
2-Hexanone	17.68	5.0	20	0	88.4	60-135	0			
4-Methyl-2-pentanone	24.96	1.0	20	0	125	77-178	0			
Acetone	19.47	10	20	0	97.4	60-160	0			
Acrylonitrile	18.61	1.0	20	0	93	60-140	0			
Benzene	20.49	1.0	20	0	102	85-125	0			
Bromochloromethane	18.44	1.0	20	0	92.2	75-130	0			
Bromodichloromethane	20.01	1.0	20	0	100	75-125	0			
Bromoform	19.96	1.0	20	0	99.8	60-125	0			
Bromomethane	18.62	1.0	20	0	93.1	30-185	0			
Carbon disulfide	20.24	1.0	20	0	101	60-165	0			
Carbon tetrachloride	19.79	1.0	20	0	99	65-140	0			
Chlorobenzene	19.3	1.0	20	0	96.5	80-120	0			
Chloroethane	23.37	1.0	20	0	117	50-140	0			
Chloroform	18.19	1.0	20	0	91	80-130	0			
Chloromethane	15.16	1.0	20	0	75.8	50-130	0			
cis-1,2-Dichloroethene	17.74	1.0	20	0	88.7	75-134	0			
cis-1,3-Dichloropropene	20.29	1.0	20	0	101	70-130	0			
Dibromochloromethane	19.02	1.0	20	0	95.1	60-115	0			
Dibromomethane	20.48	1.0	20	0	102	85-125	0			
Dichlorodifluoromethane	19.67	1.0	20	0	98.4	20-120	0			
Ethylbenzene	19.65	1.0	20	0	98.2	85-125	0			
Hexachloroethane	15.39	1.0	20	0	77	50-124	0			
Isopropylbenzene	20.62	1.0	20	0	103	80-127	0			
m,p-Xylene	40.98	2.0	40	0	102	75-130	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Batch ID: **R189191a** Instrument ID **VMS6** Method: **SW8260B**

Methyl iodide	12.7	1.0	20	0	63.5	60-160	0
Methyl tert-butyl ether	18	1.0	20	0	90	80-130	0
Methylene chloride	17.88	5.0	20	0	89.4	75-140	0
Naphthalene	21.87	5.0	20	0	109	55-160	0
n-Propylbenzene	20.14	1.0	20	0	101	78-120	0
o-Xylene	19.28	1.0	20	0	96.4	80-125	0
Styrene	21.03	1.0	20	0	105	85-125	0
Tetrachloroethene	20.34	1.0	20	0	102	77-138	0
Toluene	19.4	1.0	20	0	97	85-125	0
trans-1,2-Dichloroethene	18.95	1.0	20	0	94.8	80-140	0
trans-1,3-Dichloropropene	16.82	1.0	20	0	84.1	81-123	0
trans-1,4-Dichloro-2-butene	12.14	2.0	20	0	60.7	46-118	0
Trichloroethene	20.81	1.0	20	0	104	84-130	0
Trichlorofluoromethane	19.62	1.0	20	0	98.1	60-140	0
Vinyl chloride	19.82	1.0	20	0	99.1	50-136	0
Xylenes, Total	60.26	3.0	60	0	100	80-126	0
Surr: 1,2-Dichloroethane-d4	*17.86*	0	*20*	0	*89.3*	*75-120*	0
Surr: 4-Bromofluorobenzene	*20.13*	0	*20*	0	*101*	*80-110*	0
Surr: Dibromofluoromethane	*19.75*	0	*20*	0	*98.8*	*85-115*	0
Surr: Toluene-d8	*18.98*	0	*20*	0	*94.9*	*85-110*	0

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606476
Project: ECT (Hartland - 900 Erin Lane)

QC BATCH REPORT

Batch ID: **R189191a** Instrument ID **VMS6** Method: **SW8260B**

MS Sample ID: **1606401-15A MS** Units: **µg/L** Analysis Date: **6/9/2016 10:53 AM**

Client ID: Run ID: **VMS6_160608B** SeqNo: **3868146** Prep Date: DF: **100**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	2027	100	2000	0	101	80-130	0			
1,1,1-Trichloroethane	2176	100	2000	0	109	75-130	0			
1,1,2,2-Tetrachloroethane	2098	100	2000	0	105	75-130	0			
1,1,2-Trichloroethane	1988	100	2000	0	99.4	75-125	0			
1,1-Dichloroethane	2072	100	2000	0	104	75-133	0			
1,1-Dichloroethene	2225	100	2000	0	111	70-145	0			
1,2,3-Trichloropropane	1968	100	2000	0	98.4	75-125	0			
1,2,4-Trichlorobenzene	1814	100	2000	0	90.7	70-135	0			
1,2,4-Trimethylbenzene	3856	100	2000	1781	104	75-130	0			
1,2-Dibromo-3-chloropropane	1598	100	2000	0	79.9	60-130	0			
1,2-Dibromoethane	2029	100	2000	0	101	80-150	0			
1,2-Dichlorobenzene	1913	100	2000	0	95.6	70-130	0			
1,2-Dichloroethane	1936	100	2000	0	96.8	78-125	0			
1,2-Dichloropropane	2024	100	2000	0	101	75-125	0			
1,3,5-Trimethylbenzene	2485	100	2000	440	102	75-130	0			
1,3-Dichlorobenzene	1859	100	2000	0	93	75-130	0			
1,4-Dichlorobenzene	1771	100	2000	0	88.6	75-130	0			
2-Butanone	1554	500	2000	0	77.7	55-150	0			
2-Hexanone	1680	500	2000	0	84	60-135	0			
4-Methyl-2-pentanone	2333	100	2000	0	117	77-178	0			
Acetone	2157	1,000	2000	0	108	60-160	0			
Acrylonitrile	1610	100	2000	0	80.5	60-140	0			
Benzene	10510	100	2000	7878	132	85-125	0			SE
Bromochloromethane	1882	100	2000	0	94.1	75-130	0			
Bromodichloromethane	1999	100	2000	0	100	75-125	0			
Bromoform	1801	100	2000	0	90	60-125	0			
Bromomethane	787	100	2000	0	39.4	30-185	0			
Carbon disulfide	2005	100	2000	0	100	60-165	0			
Carbon tetrachloride	2057	100	2000	0	103	65-140	0			
Chlorobenzene	1989	100	2000	0	99.4	80-120	0			
Chloroethane	3158	100	2000	0	158	50-140	0			S
Chloroform	1881	100	2000	0	94	80-130	0			
Chloromethane	1440	100	2000	0	72	50-130	0			
cis-1,2-Dichloroethene	1836	100	2000	0	91.8	75-134	0			
cis-1,3-Dichloropropene	1983	100	2000	0	99.2	70-130	0			
Dibromochloromethane	1793	100	2000	0	89.6	60-115	0			
Dibromomethane	2070	100	2000	0	104	85-125	0			
Dichlorodifluoromethane	2065	100	2000	0	103	20-120	0			
Ethylbenzene	4240	100	2000	2217	101	85-125	0			
Hexachloroethane	1383	100	2000	0	69.2	50-124	0			
Isopropylbenzene	2155	100	2000	90	103	80-127	0			
m,p-Xylene	12120	200	4000	8137	99.5	75-130	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606476
Project: ECT (Hartland - 900 Erin Lane)

QC BATCH REPORT

Batch ID: **R189191a** Instrument ID **VMS6** Method: **SW8260B**

Methyl iodide	713	100	2000	0	35.6	60-160	0	S
Methyl tert-butyl ether	1823	100	2000	0	91.2	80-130	0	
Methylene chloride	1906	500	2000	0	95.3	75-140	0	
Naphthalene	2300	500	2000	372	96.4	55-160	0	
n-Propylbenzene	2251	100	2000	243	100	78-120	0	
o-Xylene	5588	100	2000	3675	95.6	80-125	0	
Styrene	2200	100	2000	0	110	85-125	0	
Tetrachloroethene	2063	100	2000	0	103	77-138	0	
Toluene	11670	100	2000	9459	111	85-125	0	EO
trans-1,2-Dichloroethene	2035	100	2000	0	102	80-140	0	
trans-1,3-Dichloropropene	1580	100	2000	0	79	81-123	0	S
trans-1,4-Dichloro-2-butene	1084	200	2000	0	54.2	46-118	0	
Trichloroethene	2218	100	2000	0	111	84-130	0	
Trichlorofluoromethane	2239	100	2000	0	112	60-140	0	
Vinyl chloride	2122	100	2000	0	106	50-136	0	
Xylenes, Total	17710	300	6000	11810	98.2	80-126	0	
Surr: 1,2-Dichloroethane-d4	*1818*	0	*2000*	0	*90.9*	*75-120*	0	
Surr: 4-Bromofluorobenzene	*2011*	0	*2000*	0	*101*	*80-110*	0	
Surr: Dibromofluoromethane	*1940*	0	*2000*	0	*97*	*85-115*	0	
Surr: Toluene-d8	*1912*	0	*2000*	0	*95.6*	*85-110*	0	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606476
Project: ECT (Hartland - 900 Erin Lane)

QC BATCH REPORT

Batch ID: **R189191a** Instrument ID **VMS6** Method: **SW8260B**

MSD Sample ID: **1606401-15A MSD** Units: **µg/L** Analysis Date: **6/9/2016 11:18 AM**
Client ID: Run ID: **VMS6_160608B** SeqNo: **3868147** Prep Date: DF: **100**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	2000	100	2000	0	100	80-130	2027	1.34	30	
1,1,1-Trichloroethane	2094	100	2000	0	105	75-130	2176	3.84	30	
1,1,2,2-Tetrachloroethane	2028	100	2000	0	101	75-130	2098	3.39	30	
1,1,2-Trichloroethane	1862	100	2000	0	93.1	75-125	1988	6.55	30	
1,1-Dichloroethane	1943	100	2000	0	97.2	75-133	2072	6.43	30	
1,1-Dichloroethene	2156	100	2000	0	108	70-145	2225	3.15	30	
1,2,3-Trichloropropane	1869	100	2000	0	93.4	75-125	1968	5.16	30	
1,2,4-Trichlorobenzene	1877	100	2000	0	93.8	70-135	1814	3.41	30	
1,2,4-Trimethylbenzene	5502	100	2000	1781	186	75-130	3856	35.2	30	SR
1,2-Dibromo-3-chloropropane	1518	100	2000	0	75.9	60-130	1598	5.13	30	
1,2-Dibromoethane	1960	100	2000	0	98	80-150	2029	3.46	30	
1,2-Dichlorobenzene	1939	100	2000	0	97	70-130	1913	1.35	30	
1,2-Dichloroethane	1818	100	2000	0	90.9	78-125	1936	6.29	30	
1,2-Dichloropropane	1959	100	2000	0	98	75-125	2024	3.26	30	
1,3,5-Trimethylbenzene	2975	100	2000	440	127	75-130	2485	17.9	30	
1,3-Dichlorobenzene	1918	100	2000	0	95.9	75-130	1859	3.12	30	
1,4-Dichlorobenzene	1834	100	2000	0	91.7	75-130	1771	3.5	30	
2-Butanone	1610	500	2000	0	80.5	55-150	1554	3.54	30	
2-Hexanone	1607	500	2000	0	80.4	60-135	1680	4.44	30	
4-Methyl-2-pentanone	2230	100	2000	0	112	77-178	2333	4.51	30	
Acetone	2208	1,000	2000	0	110	60-160	2157	2.34	30	
Acrylonitrile	1516	100	2000	0	75.8	60-140	1610	6.01	30	
Benzene	17750	100	2000	7878	494	85-125	10510	51.3	30	SRE
Bromochloromethane	1800	100	2000	0	90	75-130	1882	4.45	30	
Bromodichloromethane	1910	100	2000	0	95.5	75-125	1999	4.55	30	
Bromoform	1729	100	2000	0	86.4	60-125	1801	4.08	30	
Bromomethane	1460	100	2000	0	73	30-185	787	59.9	30	R
Carbon disulfide	2013	100	2000	0	101	60-165	2005	0.398	30	
Carbon tetrachloride	2089	100	2000	0	104	65-140	2057	1.54	30	
Chlorobenzene	1936	100	2000	0	96.8	80-120	1989	2.7	30	
Chloroethane	2892	100	2000	0	145	50-140	3158	8.79	30	S
Chloroform	1862	100	2000	0	93.1	80-130	1881	1.02	30	
Chloromethane	1275	100	2000	0	63.8	50-130	1440	12.2	30	
cis-1,2-Dichloroethene	1769	100	2000	0	88.4	75-134	1836	3.72	30	
cis-1,3-Dichloropropene	1916	100	2000	0	95.8	70-130	1983	3.44	30	
Dibromochloromethane	1762	100	2000	0	88.1	60-115	1793	1.74	30	
Dibromomethane	1897	100	2000	0	94.8	85-125	2070	8.72	30	
Dichlorodifluoromethane	2034	100	2000	0	102	20-120	2065	1.51	30	
Ethylbenzene	6328	100	2000	2217	206	85-125	4240	39.5	30	SR
Hexachloroethane	1523	100	2000	0	76.2	50-124	1383	9.64	30	
Isopropylbenzene	2275	100	2000	90	109	80-127	2155	5.42	30	
m,p-Xylene	19180	200	4000	8137	276	75-130	12120	45.1	30	SR

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606476
Project: ECT (Hartland - 900 Erin Lane)

QC BATCH REPORT

Batch ID: **R189191a** Instrument ID **VMS6** Method: **SW8260B**

Methyl iodide	980	100	2000	0	49	60-160	713	31.5	30	SR
Methyl tert-butyl ether	1779	100	2000	0	89	80-130	1823	2.44	30	
Methylene chloride	1788	500	2000	0	89.4	75-140	1906	6.39	30	
Naphthalene	2618	500	2000	372	112	55-160	2300	12.9	30	
n-Propylbenzene	2511	100	2000	243	113	78-120	2251	10.9	30	
o-Xylene	8902	100	2000	3675	261	80-125	5588	45.7	30	SR
Styrene	2316	100	2000	0	116	85-125	2200	5.14	30	
Tetrachloroethene	2104	100	2000	0	105	77-138	2063	1.97	30	
Toluene	19910	100	2000	9459	522	85-125	11670	52.1	30	SREO
trans-1,2-Dichloroethene	1963	100	2000	0	98.2	80-140	2035	3.6	30	
trans-1,3-Dichloropropene	1519	100	2000	0	76	81-123	1580	3.94	30	S
trans-1,4-Dichloro-2-butene	1020	200	2000	0	51	46-118	1084	6.08	30	
Trichloroethene	2147	100	2000	0	107	84-130	2218	3.25	30	
Trichlorofluoromethane	2213	100	2000	0	111	60-140	2239	1.17	30	
Vinyl chloride	1987	100	2000	0	99.4	50-136	2122	6.57	30	
Xylenes, Total	28080	300	6000	11810	271	80-126	17710	45.3	30	SR
Surr: 1,2-Dichloroethane-d4	*1793*	0	*2000*	0	*89.6*	*75-120*	1818	*1.38*	*30*	
Surr: 4-Bromofluorobenzene	*2011*	0	*2000*	0	*101*	*80-110*	2011	*0*	*30*	
Surr: Dibromofluoromethane	*1965*	0	*2000*	0	*98.2*	*85-115*	1940	*1.28*	*30*	
Surr: Toluene-d8	*1896*	0	*2000*	0	*94.8*	*85-110*	1912	*0.84*	*30*	

The following samples were analyzed in this batch: 1606476-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Group USA, Corp

Date: 10-Jun-16

Client: Merit Energy
Project: ECT (Hartland - 900 Erin Lane)
WorkOrder: **1606476**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and PQL, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
µg/L	Micrograms per Liter

ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **MERITENERGY** Date/Time Received: **08-Jun-16 09:30**

Work Order: **1606476** Received by: **KRW**

Checklist completed by Keith Wierenga (eSignature) 08-Jun-16 (Date) Reviewed by: Gary Byar (eSignature) 08-Jun-16 (Date)

Matrices: Water

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	3.6/3.6 C	SR2	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	6/8/2016 2:32:23 PM		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:	_		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

ALS Environmental

Cincinnati, OH +1 513 733 5336
Everett, WA +1 425 356 2600
Fort Collins, CO +1 970 490 1511
Holland, MI +1 616 399 6070
Houston, TX +1 281 530 5656
Middletown, PA +1 717 944 5541
Spring City, PA +1 610 948 4903
Salt Lake City, UT +1 801 266 7700
South Charleston, WV +1 304 356 3168
York, PA +1 717 505 5280

Chain of Custody Form

Page 1 of 1

COC ID: 16623

ALS Project Manager: G. BYAR | ALS Work Order #: 1606476

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	Hartland 36 Gas Plant	A	Sulfolane
Work Order		Project Number	13-0685-2000	B	DIPA
Company Name	ECT, Inc.	Bill To Company	MEC	C	Full VOCs
Send Report To	Jeremy Lewandowski	Invoice Attn	Sean Craven	D	
Address	3399 Veterans Dr.	Address	1510 Thomas Rd.	E	
				F	
City/State/Zip	Tc, MI 49684	City/State/Zip	Kalkaska, MI	G	
Phone	231-946-8200	Phone	231-258-6369	H	
Fax	—	Fax	—	I	
e-Mail Address	jlewandowski@ectinc.com	e-Mail Address	sean.craven@mertenergy.com	J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	9:00 Erin Lane	6/7/16	8:36	GW	—	4	8	8	1,8								
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9						ALS PROJ: MERITENERGY MISC												
10																	

Sampler(s) Please Print & Sign: Jeremy Lewandowski

Shipment Method:

Required Turnaround Time: (Check Box) ☐ STD 10 Wk Days ☒ 5 Wk Days ☐ 2 Wk Days ☐ 24 Hour ☐ Other

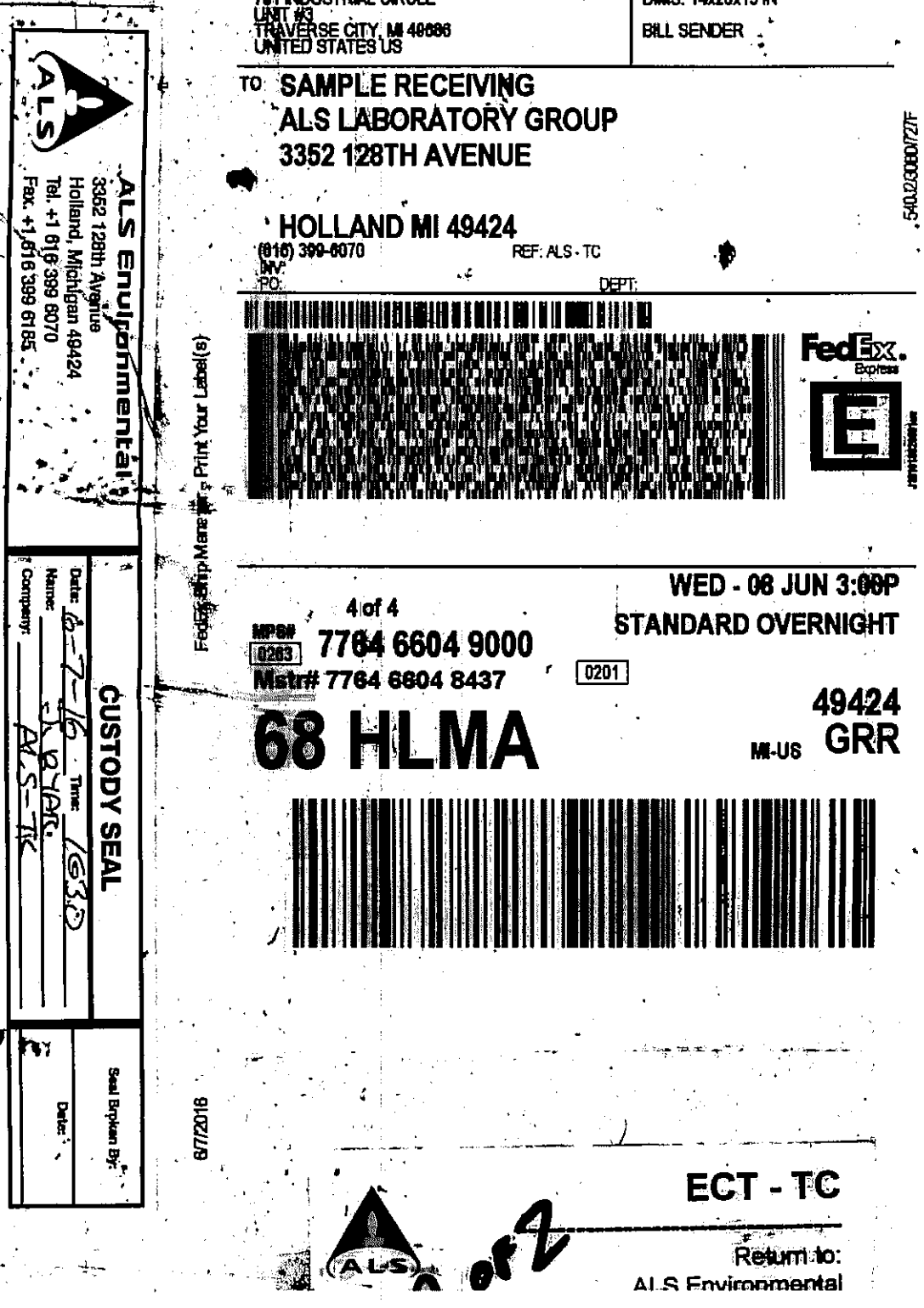
Results Due Date: 6/17/16 @ 2:00 Rec'd

Relinquished by: ECT, INC	Date: 6/7/16	Time: 2:00 PM	Received by:	6/7/16 2:00	Notes:
Relinquished by:	Date: 6/7/16	Time: 1630	Received by (Laboratory):	6/8/16 0930	
Logged by (Laboratory): KW	Date: 6/8/16	Time: 1430	Checked by (Laboratory): GRB		

Cooler ID	Cooler Temp	QC Package: (Check One Box Below)
	3.6°C	☒ Level II Std QC ☐ TRRP Checklist ☐ Level III Std QC/Raw Data ☐ TRRP Level IV ☐ Level IV SW846/CLP ☐ Other

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.



ORIGIN ID:TVCA (231) 421-3204
GARY BYAR
ALS ENVIRONMENTAL
761 INDUSTRIAL CIRCLE
UNIT #3
TRAVERSE CITY, MI 49686
UNITED STATES US

SHIP DATE: 07JUN16
ACTWGT: 45.00 LB
CAD: 2284849/NET3730
DIMS: 14x26x15 IN

BILL SENDER

TO SAMPLE RECEIVING
ALS LABORATORY GROUP
3352 128TH AVENUE

HOLLAND MI 49424
(616) 399-6070 REF: ALS - TC
INV:
PO: DEPT:

540J230BD/72/F

FedEx Express

WED - 08 JUN 3:00P
STANDARD OVERNIGHT

4 of 4
MPS#
0263 7764 6604 9000
Mstr# 7764 6604 8437

0201

68 HLMA

49424
MI-US GRR

ALS Environmental
3352 128th Avenue
Holland, Michigan 49424
Tel. +1 616 399 6070
Fax. +1 616 399 6185

CUSTODY SEAL
Date: 6-7-16 Time: 1630
Name: BYAR
Company: ALS-TC

Date:
Seal Broken By:

FedEx Ship Manager - Print Your Label(s)

8/7/2018

ECT - TC

Return to:
ALS Environmental

ALS

of 2

23-Jun-2016

Sean Craven
Merit Energy
1510 Thomas Rd
PO Box 910
Kalkaska, MI 49646

Re: **ECT (900 Erin Lane Pole Building)** Work Order: **1606903**

Dear Sean,

ALS Environmental received 1 sample on 15-Jun-2016 10:00 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with NELAP standard requirements and QC results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 18.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

Gary Byar

Electronically approved by: Gary Byar

Gary Byar
Project Manager

Certificate No: MI: 0022

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185
ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

ALS Group USA, Corp

Date: 23-Jun-16

Client: Merit Energy
Project: ECT (900 Erin Lane Pole Building)
Work Order: **1606903**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1606903-01	900 Erin Lane Pole Building	Water		6/14/2016 08:25	6/15/2016 10:00	☐

ALS Group USA, Corp

Date: *23-Jun-16*

Client: Merit Energy
Project: ECT (900 Erin Lane Pole Building)
Work Order: 1606903
Sample ID: 900 Erin Lane Pole Building
Lab ID: 1606903-01
Collection Date: 6/14/2016 08:25 AM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW846 8270D**		Prep: SW3510 / 6/16/16	Analyst: **RM**
Diisopropanolamine	ND		59	µg/L	1	6/17/2016 03:28 AM
Sulfolane	ND		12	µg/L	1	6/17/2016 03:28 AM
Surr: 2,4,6-Tribromophenol	*58.7*		*38-115*	*%REC*	1	6/17/2016 03:28 AM
Surr: 2-Fluorobiphenyl	*56.9*		*32-100*	*%REC*	1	6/17/2016 03:28 AM
Surr: 2-Fluorophenol	*41.0*		*22-59*	*%REC*	1	6/17/2016 03:28 AM
Surr: 4-Terphenyl-d14	*87.8*		*23-112*	*%REC*	1	6/17/2016 03:28 AM
Surr: Nitrobenzene-d5	*63.4*		*31-93*	*%REC*	1	6/17/2016 03:28 AM
Surr: Phenol-d6	*25.0*		*13-36*	*%REC*	1	6/17/2016 03:28 AM
VOLATILE ORGANIC COMPOUNDS			**SW8260B**			Analyst: **AK**
1,1,1,2-Tetrachloroethane	ND		1.0	µg/L	1	6/21/2016 06:42 PM
1,1,1-Trichloroethane	ND		1.0	µg/L	1	6/21/2016 06:42 PM
1,1,2,2-Tetrachloroethane	ND		1.0	µg/L	1	6/21/2016 06:42 PM
1,1,2-Trichloroethane	ND		1.0	µg/L	1	6/21/2016 06:42 PM
1,1,2-Trichlorotrifluoroethane	ND		1.0	µg/L	1	6/21/2016 06:42 PM
1,1-Dichloroethane	ND		1.0	µg/L	1	6/21/2016 06:42 PM
1,1-Dichloroethene	ND		1.0	µg/L	1	6/21/2016 06:42 PM
1,2,3-Trichloropropane	ND		1.0	µg/L	1	6/21/2016 06:42 PM
1,2,4-Trichlorobenzene	ND		1.0	µg/L	1	6/21/2016 06:42 PM
1,2,4-Trimethylbenzene	ND		1.0	µg/L	1	6/21/2016 06:42 PM
1,2-Dibromo-3-chloropropane	ND		1.0	µg/L	1	6/21/2016 06:42 PM
1,2-Dibromoethane	ND		1.0	µg/L	1	6/21/2016 06:42 PM
1,2-Dichlorobenzene	ND		1.0	µg/L	1	6/21/2016 06:42 PM
1,2-Dichloroethane	ND		1.0	µg/L	1	6/21/2016 06:42 PM
1,2-Dichloropropane	ND		1.0	µg/L	1	6/21/2016 06:42 PM
1,3,5-Trimethylbenzene	ND		1.0	µg/L	1	6/21/2016 06:42 PM
1,3-Dichlorobenzene	ND		1.0	µg/L	1	6/21/2016 06:42 PM
1,4-Dichlorobenzene	ND		1.0	µg/L	1	6/21/2016 06:42 PM
2-Butanone	ND		5.0	µg/L	1	6/21/2016 06:42 PM
2-Hexanone	ND		5.0	µg/L	1	6/21/2016 06:42 PM
2-Methylnaphthalene	ND		5.0	µg/L	1	6/21/2016 06:42 PM
4-Methyl-2-pentanone	ND		1.0	µg/L	1	6/21/2016 06:42 PM
Acetone	ND		10	µg/L	1	6/21/2016 06:42 PM
Acrylonitrile	ND		1.0	µg/L	1	6/21/2016 06:42 PM
Benzene	ND		1.0	µg/L	1	6/21/2016 06:42 PM
Bromochloromethane	ND		1.0	µg/L	1	6/21/2016 06:42 PM
Bromodichloromethane	ND		1.0	µg/L	1	6/21/2016 06:42 PM
Bromoform	ND		1.0	µg/L	1	6/21/2016 06:42 PM
Bromomethane	ND		1.0	µg/L	1	6/21/2016 06:42 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *23-Jun-16*

Client: Merit Energy
Project: ECT (900 Erin Lane Pole Building)
Work Order: 1606903
Sample ID: 900 Erin Lane Pole Building
Lab ID: 1606903-01
Collection Date: 6/14/2016 08:25 AM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Carbon disulfide	ND		1.0	µg/L	1	6/21/2016 06:42 PM
Carbon tetrachloride	ND		1.0	µg/L	1	6/21/2016 06:42 PM
Chlorobenzene	ND		1.0	µg/L	1	6/21/2016 06:42 PM
Chloroethane	ND		1.0	µg/L	1	6/21/2016 06:42 PM
Chloroform	ND		1.0	µg/L	1	6/21/2016 06:42 PM
Chloromethane	ND		1.0	µg/L	1	6/21/2016 06:42 PM
cis-1,2-Dichloroethene	ND		1.0	µg/L	1	6/21/2016 06:42 PM
cis-1,3-Dichloropropene	ND		1.0	µg/L	1	6/21/2016 06:42 PM
Dibromochloromethane	ND		1.0	µg/L	1	6/21/2016 06:42 PM
Dibromomethane	ND		1.0	µg/L	1	6/21/2016 06:42 PM
Dichlorodifluoromethane	ND		1.0	µg/L	1	6/21/2016 06:42 PM
Diethyl ether	ND		1.0	µg/L	1	6/21/2016 06:42 PM
Ethylbenzene	ND		1.0	µg/L	1	6/21/2016 06:42 PM
Hexachloroethane	ND		1.0	µg/L	1	6/21/2016 06:42 PM
Isopropylbenzene	ND		1.0	µg/L	1	6/21/2016 06:42 PM
m,p-Xylene	ND		2.0	µg/L	1	6/21/2016 06:42 PM
Methyl iodide	ND		1.0	µg/L	1	6/21/2016 06:42 PM
Methyl tert-butyl ether	ND		1.0	µg/L	1	6/21/2016 06:42 PM
Methylene chloride	ND		5.0	µg/L	1	6/21/2016 06:42 PM
Naphthalene	ND		5.0	µg/L	1	6/21/2016 06:42 PM
n-Propylbenzene	ND		1.0	µg/L	1	6/21/2016 06:42 PM
o-Xylene	ND		1.0	µg/L	1	6/21/2016 06:42 PM
Styrene	ND		1.0	µg/L	1	6/21/2016 06:42 PM
Tetrachloroethene	ND		1.0	µg/L	1	6/21/2016 06:42 PM
Toluene	ND		1.0	µg/L	1	6/21/2016 06:42 PM
trans-1,2-Dichloroethene	ND		1.0	µg/L	1	6/21/2016 06:42 PM
trans-1,3-Dichloropropene	ND		1.0	µg/L	1	6/21/2016 06:42 PM
trans-1,4-Dichloro-2-butene	ND		2.0	µg/L	1	6/21/2016 06:42 PM
Trichloroethene	ND		1.0	µg/L	1	6/21/2016 06:42 PM
Trichlorofluoromethane	ND		1.0	µg/L	1	6/21/2016 06:42 PM
Vinyl acetate	ND		1.0	µg/L	1	6/21/2016 06:42 PM
Vinyl chloride	ND		1.0	µg/L	1	6/21/2016 06:42 PM
Xylenes, Total	ND		3.0	µg/L	1	6/21/2016 06:42 PM
Surr: 1,2-Dichloroethane-d4	*111*		*75-120*	*%REC*	1	6/21/2016 06:42 PM
Surr: 4-Bromofluorobenzene	*89.0*		*80-110*	*%REC*	1	6/21/2016 06:42 PM
Surr: Dibromofluoromethane	*108*		*85-115*	*%REC*	1	6/21/2016 06:42 PM
Surr: Toluene-d8	*93.0*		*85-110*	*%REC*	1	6/21/2016 06:42 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 23-Jun-16

Client: Merit Energy
Project: ECT (900 Erin Lane Pole Building)
Work Order: 1606903

Case Narrative

Batch R189964A Sample VLCSW2-160621 The LCS recovery for Volatile compound Methyl Iodide was above the upper control limit. All the sample results in the batch were non-detect. No qualification is necessary for this analyte.

Batch R189964A The MS/MSD data for Volatiles is not related to this projects sample. No data requires qualification.

ALS Group USA, Corp

Date: 23-Jun-16

Client: Merit Energy

Work Order: 1606903

Project: ECT (900 Erin Lane Pole Building)

QC BATCH REPORT

Batch ID: **87384** Instrument ID **SVMS8** Method: **SW846 8270D**

MBLK Sample ID: **SBLKW1-87384-87384** Units: **µg/L** Analysis Date: **6/16/2016 07:57 PM**

Client ID: Run ID: **SVMS8_160616A** SeqNo: **3888548** Prep Date: **6/16/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Diisopropanolamine	ND	50								
Sulfolane	ND	10								
Surr: 2,4,6-Tribromophenol	*34.42*	0	*50*	0	*68.8*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*34.19*	0	*50*	0	*68.4*	*32-100*	0			
Surr: 2-Fluorophenol	*22.38*	0	*50*	0	*44.8*	*22-59*	0			
Surr: 4-Terphenyl-d14	*46.53*	0	*50*	0	*93.1*	*23-112*	0			
Surr: Nitrobenzene-d5	*39.51*	0	*50*	0	*79*	*31-93*	0			
Surr: Phenol-d6	*13.42*	0	*50*	0	*26.8*	*13-36*	0			

LCS Sample ID: **SLCSW1-87384-87384** Units: **µg/L** Analysis Date: **6/16/2016 08:17 PM**

Client ID: Run ID: **SVMS8_160616A** SeqNo: **3888549** Prep Date: **6/16/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Diisopropanolamine	10.77	50	100	0	10.8	10-50	0			
Sulfolane	53.27	10	100	0	53.3	30-100	0			
Surr: 2,4,6-Tribromophenol	*35.21*	0	*50*	0	*70.4*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*35.78*	0	*50*	0	*71.6*	*32-100*	0			
Surr: 2-Fluorophenol	*21.28*	0	*50*	0	*42.6*	*22-59*	0			
Surr: 4-Terphenyl-d14	*49.06*	0	*50*	0	*98.1*	*23-112*	0			
Surr: Nitrobenzene-d5	*40.25*	0	*50*	0	*80.5*	*31-93*	0			
Surr: Phenol-d6	*12.62*	0	*50*	0	*25.2*	*13-36*	0			

MS Sample ID: **1606870-01A MS** Units: **µg/L** Analysis Date: **6/16/2016 10:05 PM**

Client ID: Run ID: **SVMS8_160616A** SeqNo: **3888550** Prep Date: **6/16/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Diisopropanolamine	18.58	50	100	0	18.6	10-50	0			
Sulfolane	59.25	10	100	0	59.2	30-100	0			
Surr: 2,4,6-Tribromophenol	*33.01*	0	*50*	0	*66*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*34.57*	0	*50*	0	*69.1*	*32-100*	0			
Surr: 2-Fluorophenol	*20.06*	0	*50*	0	*40.1*	*22-59*	0			
Surr: 4-Terphenyl-d14	*46.56*	0	*50*	0	*93.1*	*23-112*	0			
Surr: Nitrobenzene-d5	*39.7*	0	*50*	0	*79.4*	*31-93*	0			
Surr: Phenol-d6	*11.64*	0	*50*	0	*23.3*	*13-36*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606903
Project: ECT (900 Erin Lane Pole Building)

QC BATCH REPORT

Batch ID: **87384** Instrument ID **SVMS8** Method: **SW846 8270D**

DUP Sample ID: **1606871-01A DUP** Units: **µg/L** Analysis Date: **6/16/2016 10:45 PM**

Client ID: Run ID: **SVMS8_160616A** SeqNo: **3888552** Prep Date: **6/16/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Diisopropanolamine	ND	53	0	0	0		0	0	30	
Sulfolane	ND	11	0	0	0		0	0	30	
Surr: 2,4,6-Tribromophenol	*28.89*	0	*52.63*	0	*54.9*	*38-115*	27.6	*4.58*	*40*	
Surr: 2-Fluorobiphenyl	*29.71*	0	*52.63*	0	*56.4*	*32-100*	29.06	*2.2*	*40*	
Surr: 2-Fluorophenol	*19.71*	0	*52.63*	0	*37.4*	*22-59*	18.78	*4.81*	*40*	
Surr: 4-Terphenyl-d14	*45.01*	0	*52.63*	0	*85.5*	*23-112*	42.59	*5.53*	*40*	
Surr: Nitrobenzene-d5	*32.43*	0	*52.63*	0	*61.6*	*31-93*	32.8	*1.13*	*40*	
Surr: Phenol-d6	*11.48*	0	*52.63*	0	*21.8*	*13-36*	11.2	*2.51*	*40*	

The following samples were analyzed in this batch: 1606903-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606903
Project: ECT (900 Erin Lane Pole Building)

QC BATCH REPORT

Batch ID: **R189964A** Instrument ID **VMS10** Method: **SW8260B**

MBLK Sample ID: **VBLKW1-160621-R189964A** Units: **µg/L** Analysis Date: **6/21/2016 02:16 PM**
Client ID: Run ID: **VMS10_160621A** SeqNo: **3886170** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
1,1,2-Trichlorotrifluoroethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2,3-Trichloropropane	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	1.0								
1,2-Dibromoethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,2-Dichloroethane	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
2-Butanone	ND	5.0								
2-Hexanone	ND	5.0								
2-Methylnaphthalene	ND	5.0								
4-Methyl-2-pentanone	ND	1.0								
Acetone	ND	10								
Acrylonitrile	ND	1.0								
Benzene	ND	1.0								
Bromochloromethane	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	1.0								
Carbon disulfide	ND	1.0								
Carbon tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	ND	1.0								
cis-1,2-Dichloroethene	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
Diethyl ether	ND	1.0								
Ethylbenzene	ND	1.0								

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Batch ID: **R189964A** Instrument ID **VMS10** Method: **SW8260B**

Hexachloroethane	ND	1.0					
Isopropylbenzene	ND	1.0					
m,p-Xylene	ND	2.0					
Methyl iodide	ND	1.0					
Methyl tert-butyl ether	ND	1.0					
Methylene chloride	ND	5.0					
Naphthalene	ND	5.0					
n-Propylbenzene	ND	1.0					
o-Xylene	ND	1.0					
Styrene	ND	1.0					
Tetrachloroethene	ND	1.0					
Toluene	ND	1.0					
trans-1,2-Dichloroethene	ND	1.0					
trans-1,3-Dichloropropene	ND	1.0					
trans-1,4-Dichloro-2-butene	ND	2.0					
Trichloroethene	ND	1.0					
Trichlorofluoromethane	ND	1.0					
Vinyl acetate	ND	1.0					
Vinyl chloride	ND	1.0					
Xylenes, Total	ND	3.0					
Surr: 1,2-Dichloroethane-d4	*21.46*	0	*20*	0	*107*	*75-120*	0
Surr: 4-Bromofluorobenzene	*17.99*	0	*20*	0	*90*	*80-110*	0
Surr: Dibromofluoromethane	*20.43*	0	*20*	0	*102*	*85-115*	0
Surr: Toluene-d8	*18.84*	0	*20*	0	*94.2*	*85-110*	0

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606903
Project: ECT (900 Erin Lane Pole Building)

QC BATCH REPORT

Batch ID: **R189964A** Instrument ID **VMS10** Method: **SW8260B**

LCS Sample ID: **VLCSW2-160621-R189964A** Units: **µg/L** Analysis Date: **6/21/2016 01:03 PM**
Client ID: Run ID: **VMS10_160621A** SeqNo: **3886169** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	19.57	1.0	20	0	97.8	80-130	0			
1,1,1-Trichloroethane	22.55	1.0	20	0	113	75-130	0			
1,1,2,2-Tetrachloroethane	18.67	1.0	20	0	93.4	75-130	0			
1,1,2-Trichloroethane	19.87	1.0	20	0	99.4	75-125	0			
1,1-Dichloroethane	21.59	1.0	20	0	108	75-133	0			
1,1-Dichloroethene	24.6	1.0	20	0	123	70-145	0			
1,2,3-Trichloropropane	18.99	1.0	20	0	95	75-125	0			
1,2,4-Trichlorobenzene	20.01	1.0	20	0	100	70-135	0			
1,2,4-Trimethylbenzene	20.83	1.0	20	0	104	75-130	0			
1,2-Dibromo-3-chloropropane	14.85	1.0	20	0	74.2	60-130	0			
1,2-Dibromoethane	21.69	1.0	20	0	108	80-150	0			
1,2-Dichlorobenzene	20.68	1.0	20	0	103	70-130	0			
1,2-Dichloroethane	20.77	1.0	20	0	104	78-125	0			
1,2-Dichloropropane	19.91	1.0	20	0	99.6	75-125	0			
1,3,5-Trimethylbenzene	21.2	1.0	20	0	106	75-130	0			
1,3-Dichlorobenzene	21.55	1.0	20	0	108	75-130	0			
1,4-Dichlorobenzene	20.77	1.0	20	0	104	75-130	0			
2-Butanone	13.56	5.0	20	0	67.8	55-150	0			
2-Hexanone	13.16	5.0	20	0	65.8	60-135	0			
4-Methyl-2-pentanone	17.41	1.0	20	0	87	77-178	0			
Acetone	15.96	10	20	0	79.8	60-160	0			
Acrylonitrile	15.7	1.0	20	0	78.5	60-140	0			
Benzene	20.6	1.0	20	0	103	85-125	0			
Bromochloromethane	18.78	1.0	20	0	93.9	75-130	0			
Bromodichloromethane	20.47	1.0	20	0	102	75-125	0			
Bromoform	16.14	1.0	20	0	80.7	60-125	0			
Bromomethane	27.29	1.0	20	0	136	30-185	0			
Carbon disulfide	22.57	1.0	20	0	113	60-165	0			
Carbon tetrachloride	21.01	1.0	20	0	105	65-140	0			
Chlorobenzene	20.84	1.0	20	0	104	80-120	0			
Chloroethane	23.14	1.0	20	0	116	50-140	0			
Chloroform	19.86	1.0	20	0	99.3	80-130	0			
Chloromethane	14.87	1.0	20	0	74.4	50-130	0			
cis-1,2-Dichloroethene	19.63	1.0	20	0	98.2	75-134	0			
cis-1,3-Dichloropropene	17.96	1.0	20	0	89.8	70-130	0			
Dibromochloromethane	16.62	1.0	20	0	83.1	60-115	0			
Dibromomethane	20.68	1.0	20	0	103	85-125	0			
Dichlorodifluoromethane	18.35	1.0	20	0	91.8	20-120	0			
Ethylbenzene	21.52	1.0	20	0	108	85-125	0			
Hexachloroethane	14.16	1.0	20	0	70.8	50-124	0			
Isopropylbenzene	20.7	1.0	20	0	104	80-127	0			
m,p-Xylene	44.74	2.0	40	0	112	75-130	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Batch ID: **R189964A** Instrument ID **VMS10** Method: **SW8260B**

Methyl iodide	40.55	1.0	20	0	203	60-160	0	S
Methyl tert-butyl ether	17.94	1.0	20	0	89.7	80-130	0	
Methylene chloride	23.38	5.0	20	0	117	75-140	0	
Naphthalene	16.24	5.0	20	0	81.2	55-160	0	
n-Propylbenzene	22.03	1.0	20	0	110	78-120	0	
o-Xylene	21.56	1.0	20	0	108	80-125	0	
Styrene	20.41	1.0	20	0	102	85-125	0	
Tetrachloroethene	22.69	1.0	20	0	113	77-138	0	
Toluene	20.43	1.0	20	0	102	85-125	0	
trans-1,2-Dichloroethene	22.8	1.0	20	0	114	80-140	0	
trans-1,3-Dichloropropene	16.34	1.0	20	0	81.7	81-123	0	
trans-1,4-Dichloro-2-butene	12.84	2.0	20	0	64.2	46-118	0	
Trichloroethene	21.85	1.0	20	0	109	84-130	0	
Trichlorofluoromethane	22.88	1.0	20	0	114	60-140	0	
Vinyl chloride	20.66	1.0	20	0	103	50-136	0	
Xylenes, Total	66.3	3.0	60	0	110	80-126	0	
Surr: 1,2-Dichloroethane-d4	*20.04*	0	*20*	0	*100*	*75-120*	0	
Surr: 4-Bromofluorobenzene	*20.04*	0	*20*	0	*100*	*80-110*	0	
Surr: Dibromofluoromethane	*20.8*	0	*20*	0	*104*	*85-115*	0	
Surr: Toluene-d8	*19.65*	0	*20*	0	*98.2*	*85-110*	0	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606903
Project: ECT (900 Erin Lane Pole Building)

QC BATCH REPORT

Batch ID: **R189964A** Instrument ID **VMS10** Method: **SW8260B**

MS Sample ID: **1606757-21A MS** Units: **µg/L** Analysis Date: **6/21/2016 08:44 PM**
Client ID: Run ID: **VMS10_160621A** SeqNo: **3886188** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	20.08	1.0	20	0	100	80-130	0			
1,1,1-Trichloroethane	24.12	1.0	20	0	121	75-130	0			
1,1,2,2-Tetrachloroethane	19.35	1.0	20	0	96.8	75-130	0			
1,1,2-Trichloroethane	20.4	1.0	20	0	102	75-125	0			
1,1-Dichloroethane	20.94	1.0	20	0	105	75-133	0			
1,1-Dichloroethene	25.13	1.0	20	0	126	70-145	0			
1,2,3-Trichloropropane	20.1	1.0	20	0	100	75-125	0			
1,2,4-Trichlorobenzene	19.27	1.0	20	0	96.4	70-135	0			
1,2,4-Trimethylbenzene	20.24	1.0	20	0	101	75-130	0			
1,2-Dibromo-3-chloropropane	15.52	1.0	20	0	77.6	60-130	0			
1,2-Dibromoethane	22.21	1.0	20	0	111	80-150	0			
1,2-Dichlorobenzene	20.36	1.0	20	0	102	70-130	0			
1,2-Dichloroethane	21.03	1.0	20	0	105	78-125	0			
1,2-Dichloropropane	20.59	1.0	20	0	103	75-125	0			
1,3,5-Trimethylbenzene	20.68	1.0	20	0	103	75-130	0			
1,3-Dichlorobenzene	20.95	1.0	20	0	105	75-130	0			
1,4-Dichlorobenzene	20.01	1.0	20	0	100	75-130	0			
2-Butanone	13.96	5.0	20	0	69.8	55-150	0			
2-Hexanone	14.02	5.0	20	0	70.1	60-135	0			
4-Methyl-2-pentanone	18.6	1.0	20	0	93	77-178	0			
Acetone	20.81	10	20	0	104	60-160	0			
Acrylonitrile	18.32	1.0	20	0	91.6	60-140	0			
Benzene	65.38	1.0	20	45.14	101	85-125	0			
Bromochloromethane	18.68	1.0	20	0	93.4	75-130	0			
Bromodichloromethane	21.04	1.0	20	0	105	75-125	0			
Bromoform	16.63	1.0	20	0	83.2	60-125	0			
Bromomethane	14.06	1.0	20	0	70.3	30-185	0			
Carbon disulfide	22.31	1.0	20	0	112	60-165	0			
Carbon tetrachloride	22.91	1.0	20	0	115	65-140	0			
Chlorobenzene	20.68	1.0	20	0	103	80-120	0			
Chloroethane	23.54	1.0	20	0	118	50-140	0			
Chloroform	20.04	1.0	20	0	100	80-130	0			
Chloromethane	21.19	1.0	20	1.5	98.4	50-130	0			
cis-1,2-Dichloroethene	19.3	1.0	20	0	96.5	75-134	0			
cis-1,3-Dichloropropene	17.49	1.0	20	0	87.4	70-130	0			
Dibromochloromethane	16.89	1.0	20	0	84.4	60-115	0			
Dibromomethane	21.31	1.0	20	0	107	85-125	0			
Dichlorodifluoromethane	19.06	1.0	20	0	95.3	20-120	0			
Ethylbenzene	21.13	1.0	20	0	106	85-125	0			
Hexachloroethane	14.2	1.0	20	0	71	50-124	0			
Isopropylbenzene	20.54	1.0	20	0	103	80-127	0			
m,p-Xylene	44.6	2.0	40	0	112	75-130	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

QC BATCH REPORT

Batch ID: **R189964A** Instrument ID **VMS10** Method: **SW8260B**

Methyl iodide	19.62	1.0	20	0	98.1	60-160	0	
Methyl tert-butyl ether	18.02	1.0	20	0	90.1	80-130	0	
Methylene chloride	22.17	5.0	20	0	111	75-140	0	
Naphthalene	18.34	5.0	20	1.74	83	55-160	0	
n-Propylbenzene	21.51	1.0	20	0	108	78-120	0	
o-Xylene	21.08	1.0	20	0	105	80-125	0	
Styrene	14.03	1.0	20	0	70.2	85-125	0	S
Tetrachloroethene	21.58	1.0	20	0	108	77-138	0	
Toluene	20.49	1.0	20	0	102	85-125	0	
trans-1,2-Dichloroethene	22.23	1.0	20	0	111	80-140	0	
trans-1,3-Dichloropropene	16.08	1.0	20	0	80.4	81-123	0	S
trans-1,4-Dichloro-2-butene	13.07	2.0	20	0	65.4	46-118	0	
Trichloroethene	21.75	1.0	20	0	109	84-130	0	
Trichlorofluoromethane	24.38	1.0	20	0	122	60-140	0	
Vinyl chloride	21.25	1.0	20	0	106	50-136	0	
Xylenes, Total	65.68	3.0	60	0	109	80-126	0	
Surr: 1,2-Dichloroethane-d4	*20.55*	0	*20*	0	*103*	*75-120*	0	
Surr: 4-Bromofluorobenzene	*20.61*	0	*20*	0	*103*	*80-110*	0	
Surr: Dibromofluoromethane	*21.2*	0	*20*	0	*106*	*85-115*	0	
Surr: Toluene-d8	*19.69*	0	*20*	0	*98.4*	*85-110*	0	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606903
Project: ECT (900 Erin Lane Pole Building)

QC BATCH REPORT

Batch ID: **R189964A** Instrument ID **VMS10** Method: **SW8260B**

MSD Sample ID: **1606757-21A MSD** Units: **µg/L** Analysis Date: **6/21/2016 09:08 PM**
Client ID: Run ID: **VMS10_160621A** SeqNo: **3886189** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	19.66	1.0	20	0	98.3	80-130	20.08	2.11	30	
1,1,1-Trichloroethane	23.81	1.0	20	0	119	75-130	24.12	1.29	30	
1,1,2,2-Tetrachloroethane	19.08	1.0	20	0	95.4	75-130	19.35	1.41	30	
1,1,2-Trichloroethane	19.61	1.0	20	0	98	75-125	20.4	3.95	30	
1,1-Dichloroethane	21.05	1.0	20	0	105	75-133	20.94	0.524	30	
1,1-Dichloroethene	25.19	1.0	20	0	126	70-145	25.13	0.238	30	
1,2,3-Trichloropropane	19.29	1.0	20	0	96.4	75-125	20.1	4.11	30	
1,2,4-Trichlorobenzene	18.79	1.0	20	0	94	70-135	19.27	2.52	30	
1,2,4-Trimethylbenzene	19.71	1.0	20	0	98.6	75-130	20.24	2.65	30	
1,2-Dibromo-3-chloropropane	15.21	1.0	20	0	76	60-130	15.52	2.02	30	
1,2-Dibromoethane	21.21	1.0	20	0	106	80-150	22.21	4.61	30	
1,2-Dichlorobenzene	19.89	1.0	20	0	99.4	70-130	20.36	2.34	30	
1,2-Dichloroethane	21.09	1.0	20	0	105	78-125	21.03	0.285	30	
1,2-Dichloropropane	20.26	1.0	20	0	101	75-125	20.59	1.62	30	
1,3,5-Trimethylbenzene	20.21	1.0	20	0	101	75-130	20.68	2.3	30	
1,3-Dichlorobenzene	20.53	1.0	20	0	103	75-130	20.95	2.03	30	
1,4-Dichlorobenzene	19.81	1.0	20	0	99	75-130	20.01	1	30	
2-Butanone	13.91	5.0	20	0	69.6	55-150	13.96	0.359	30	
2-Hexanone	13.95	5.0	20	0	69.8	60-135	14.02	0.501	30	
4-Methyl-2-pentanone	17.36	1.0	20	0	86.8	77-178	18.6	6.9	30	
Acetone	22.34	10	20	0	112	60-160	20.81	7.09	30	
Acrylonitrile	15.86	1.0	20	0	79.3	60-140	18.32	14.4	30	
Benzene	64.83	1.0	20	45.14	98.4	85-125	65.38	0.845	30	
Bromochloromethane	18.04	1.0	20	0	90.2	75-130	18.68	3.49	30	
Bromodichloromethane	21.13	1.0	20	0	106	75-125	21.04	0.427	30	
Bromoform	16.78	1.0	20	0	83.9	60-125	16.63	0.898	30	
Bromomethane	15.82	1.0	20	0	79.1	30-185	14.06	11.8	30	
Carbon disulfide	22.62	1.0	20	0	113	60-165	22.31	1.38	30	
Carbon tetrachloride	22.97	1.0	20	0	115	65-140	22.91	0.262	30	
Chlorobenzene	20.33	1.0	20	0	102	80-120	20.68	1.71	30	
Chloroethane	23.05	1.0	20	0	115	50-140	23.54	2.1	30	
Chloroform	19.83	1.0	20	0	99.2	80-130	20.04	1.05	30	
Chloromethane	19.88	1.0	20	1.5	91.9	50-130	21.19	6.38	30	
cis-1,2-Dichloroethene	19.14	1.0	20	0	95.7	75-134	19.3	0.832	30	
cis-1,3-Dichloropropene	17.82	1.0	20	0	89.1	70-130	17.49	1.87	30	
Dibromochloromethane	16.93	1.0	20	0	84.6	60-115	16.89	0.237	30	
Dibromomethane	21.07	1.0	20	0	105	85-125	21.31	1.13	30	
Dichlorodifluoromethane	18.73	1.0	20	0	93.6	20-120	19.06	1.75	30	
Ethylbenzene	20.69	1.0	20	0	103	85-125	21.13	2.1	30	
Hexachloroethane	14.63	1.0	20	0	73.2	50-124	14.2	2.98	30	
Isopropylbenzene	20.21	1.0	20	0	101	80-127	20.54	1.62	30	
m,p-Xylene	43.56	2.0	40	0	109	75-130	44.6	2.36	30	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606903
Project: ECT (900 Erin Lane Pole Building)

QC BATCH REPORT

Batch ID: **R189964A** Instrument ID **VMS10** Method: **SW8260B**

Methyl iodide	11.22	1.0	20	0	56.1	60-160	19.62	54.5	30	SR
Methyl tert-butyl ether	17.21	1.0	20	0	86	80-130	18.02	4.6	30	
Methylene chloride	20.8	5.0	20	0	104	75-140	22.17	6.38	30	
Naphthalene	17.29	5.0	20	1.74	77.8	55-160	18.34	5.89	30	
n-Propylbenzene	21.02	1.0	20	0	105	78-120	21.51	2.3	30	
o-Xylene	20.71	1.0	20	0	104	80-125	21.08	1.77	30	
Styrene	13.72	1.0	20	0	68.6	85-125	14.03	2.23	30	S
Tetrachloroethene	21	1.0	20	0	105	77-138	21.58	2.72	30	
Toluene	20.34	1.0	20	0	102	85-125	20.49	0.735	30	
trans-1,2-Dichloroethene	21.22	1.0	20	0	106	80-140	22.23	4.65	30	
trans-1,3-Dichloropropene	15.7	1.0	20	0	78.5	81-123	16.08	2.39	30	S
trans-1,4-Dichloro-2-butene	12.81	2.0	20	0	64	46-118	13.07	2.01	30	
Trichloroethene	21.54	1.0	20	0	108	84-130	21.75	0.97	30	
Trichlorofluoromethane	23.82	1.0	20	0	119	60-140	24.38	2.32	30	
Vinyl chloride	20.97	1.0	20	0	105	50-136	21.25	1.33	30	
Xylenes, Total	64.27	3.0	60	0	107	80-126	65.68	2.17	30	
Surr: 1,2-Dichloroethane-d4	*20.59*	0	*20*	0	*103*	*75-120*	20.55	*0.194*	*30*	
Surr: 4-Bromofluorobenzene	*20.65*	0	*20*	0	*103*	*80-110*	20.61	*0.194*	*30*	
Surr: Dibromofluoromethane	*21.09*	0	*20*	0	*105*	*85-115*	21.2	*0.52*	*30*	
Surr: Toluene-d8	*19.75*	0	*20*	0	*98.8*	*85-110*	19.69	*0.304*	*30*	

The following samples were analyzed in this batch: 1606903-01B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Group USA, Corp

Date: 23-Jun-16

Client: Merit Energy
Project: ECT (900 Erin Lane Pole Building)
WorkOrder: **1606903**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
µg/L	Micrograms per Liter

ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **MERITENERGY** Date/Time Received: **15-Jun-16 10:00**

Work Order: **1606903** Received by: **MEB**

Checklist completed by Meghan Broadbent 15-Jun-16 Reviewed by: Gary Byar 16-Jun-16

eSignature / Date / eSignature / Date

Matrices: water

Carrier name: UPS

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	6.0/6.0	SR2	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	6/15/2016 4:35:37 PM		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

☑ **RETURN SAMPLES TO:**
ALS Environmental
781 Industrial Cir, Ste 3
Traverse City, Michigan 49686
(Tel) 231.421.3204
(Cell) 231.944.3459

Chain of Custody Form

Page 1 of 1

☐ ALS Environmental
3352 128th Avenue
Holland, Michigan 49424
(Tel) 616.399.6070
(Fax) 616.399.6185

ALS Project Manager:	Gary Byar	ALS Work Order #:	1606903

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	Hartland 36 Gas Plant	A	Sulfolane
Work Order		Project Number	130685-2000	B	DIPA
Company Name	ECT, Inc.	Bill To Company	MEC	C	Vocs
Send Report To	Jeremy Lewandowski	Invoice Attn.	Sean Craven	D	
Address	3399 Veterans Dr.	Address	1510 Thomas Rd	E	
				F	
City/State/Zip	Traverse City, MI 49684	City/State/Zip	Kalkaska, MI	G	
Phone	231-946-8200	Phone	231-258-6369	H	
Fax	231-946-8208	Fax		I	
e-Mail Address	jlewandowski@ectinc.com			J	

No.	Sample Description	Date	Time	Matrix	Pres. Key Numbers	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
	900 ERN LANE POLE BUILDING	6/14/16	0825	W		4	X	X	X								

Sampler(s): Please Print & Sign: Craig Simon

Shipment Method: UPS

Required Turnaround Time: (Check Box) ☒ 10 Wk Days ☐ 5-7 Wk Days ☐ 3 Wk Days ☐ 2 Wk Days ☐ 24 Hour ☐ Other

Results Due Date:

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	**Date:** 6/15/16	**Time:** 1000	**Received by (Laboratory):**	**Date:**	**Time:**
Logged by (Laboratory): MB	**Date:** 6/15/16	**Time:** 1633	**Checked by (Laboratory):** GRB		

Notes: ALS Project: MERITENERGY - Misc

ALS Cooler ID	Cooler Temp	QC Package: (Check Box Below)	
	6.0	☑ Level II: Standard QC	☐ Level III: Raw Data
		☐ TRRP LRC	☐ TRRP Level IV
		☐ Level IV: SW846 Methods/CLP like	
		☐ Other:	

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS.

23-Jun-2016

Sean Craven
Merit Energy
1510 Thomas Rd
PO Box 910
Kalkaska, MI 49646

Re: **ECT (13900 Cherry Blossom)** Work Order: **1606887**

Dear Sean,

ALS Environmental received 1 sample on 15-Jun-2016 09:30 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with NELAP standard requirements and QC results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 19.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

Gary Byar

Electronically approved by: Gary Byar

Gary Byar
Project Manager

Certificate No: MI: 0022

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185
ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

ALS Group USA, Corp

Date: 23-Jun-16

Client: Merit Energy
Project: ECT (13900 Cherry Blossom)
Work Order: **1606887**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1606887-01	13900 Cherry Blossom	Water		6/13/2016 17:39	6/15/2016 09:30	☐

ALS Group USA, Corp

Date: *23-Jun-16*

Client: Merit Energy
Project: ECT (13900 Cherry Blossom)
Work Order: 1606887
Sample ID: 13900 Cherry Blossom
Lab ID: 1606887-01
Collection Date: 6/13/2016 05:39 PM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW846 8270D**		Prep: SW3510 / 6/16/16	Analyst: **RM**
Diisopropanolamine	ND		53	µg/L	1	6/17/2016 02:47 AM
Sulfolane	ND		11	µg/L	1	6/17/2016 02:47 AM
Surr: 2,4,6-Tribromophenol	*56.7*		*38-115*	*%REC*	1	6/17/2016 02:47 AM
Surr: 2-Fluorobiphenyl	*53.3*		*32-100*	*%REC*	1	6/17/2016 02:47 AM
Surr: 2-Fluorophenol	*36.9*		*22-59*	*%REC*	1	6/17/2016 02:47 AM
Surr: 4-Terphenyl-d14	*84.1*		*23-112*	*%REC*	1	6/17/2016 02:47 AM
Surr: Nitrobenzene-d5	*60.4*		*31-93*	*%REC*	1	6/17/2016 02:47 AM
Surr: Phenol-d6	*22.4*		*13-36*	*%REC*	1	6/17/2016 02:47 AM
VOLATILE ORGANIC COMPOUNDS			**SW8260B**			Analyst: **AK**
1,1,1,2-Tetrachloroethane	ND		1.0	µg/L	1	6/21/2016 05:54 PM
1,1,1-Trichloroethane	ND		1.0	µg/L	1	6/21/2016 05:54 PM
1,1,2,2-Tetrachloroethane	ND		1.0	µg/L	1	6/21/2016 05:54 PM
1,1,2-Trichloroethane	ND		1.0	µg/L	1	6/21/2016 05:54 PM
1,1,2-Trichlorotrifluoroethane	ND		1.0	µg/L	1	6/21/2016 05:54 PM
1,1-Dichloroethane	ND		1.0	µg/L	1	6/21/2016 05:54 PM
1,1-Dichloroethene	ND		1.0	µg/L	1	6/21/2016 05:54 PM
1,2,3-Trichloropropane	ND		1.0	µg/L	1	6/21/2016 05:54 PM
1,2,4-Trichlorobenzene	ND		1.0	µg/L	1	6/21/2016 05:54 PM
1,2,4-Trimethylbenzene	ND		1.0	µg/L	1	6/21/2016 05:54 PM
1,2-Dibromo-3-chloropropane	ND		1.0	µg/L	1	6/21/2016 05:54 PM
1,2-Dibromoethane	ND		1.0	µg/L	1	6/21/2016 05:54 PM
1,2-Dichlorobenzene	ND		1.0	µg/L	1	6/21/2016 05:54 PM
1,2-Dichloroethane	ND		1.0	µg/L	1	6/21/2016 05:54 PM
1,2-Dichloropropane	ND		1.0	µg/L	1	6/21/2016 05:54 PM
1,3,5-Trimethylbenzene	ND		1.0	µg/L	1	6/21/2016 05:54 PM
1,3-Dichlorobenzene	ND		1.0	µg/L	1	6/21/2016 05:54 PM
1,4-Dichlorobenzene	ND		1.0	µg/L	1	6/21/2016 05:54 PM
2-Butanone	ND		5.0	µg/L	1	6/21/2016 05:54 PM
2-Hexanone	ND		5.0	µg/L	1	6/21/2016 05:54 PM
2-Methylnaphthalene	ND		5.0	µg/L	1	6/21/2016 05:54 PM
4-Methyl-2-pentanone	ND		1.0	µg/L	1	6/21/2016 05:54 PM
Acetone	ND		10	µg/L	1	6/21/2016 05:54 PM
Acrylonitrile	ND		1.0	µg/L	1	6/21/2016 05:54 PM
Benzene	ND		1.0	µg/L	1	6/21/2016 05:54 PM
Bromochloromethane	ND		1.0	µg/L	1	6/21/2016 05:54 PM
Bromodichloromethane	ND		1.0	µg/L	1	6/21/2016 05:54 PM
Bromoform	ND		1.0	µg/L	1	6/21/2016 05:54 PM
Bromomethane	ND		1.0	µg/L	1	6/21/2016 05:54 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *23-Jun-16*

Client: Merit Energy
Project: ECT (13900 Cherry Blossom)
Work Order: 1606887
Sample ID: 13900 Cherry Blossom
Lab ID: 1606887-01
Collection Date: 6/13/2016 05:39 PM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Carbon disulfide	ND		1.0	µg/L	1	6/21/2016 05:54 PM
Carbon tetrachloride	ND		1.0	µg/L	1	6/21/2016 05:54 PM
Chlorobenzene	ND		1.0	µg/L	1	6/21/2016 05:54 PM
Chloroethane	ND		1.0	µg/L	1	6/21/2016 05:54 PM
Chloroform	ND		1.0	µg/L	1	6/21/2016 05:54 PM
Chloromethane	ND		1.0	µg/L	1	6/21/2016 05:54 PM
cis-1,2-Dichloroethene	ND		1.0	µg/L	1	6/21/2016 05:54 PM
cis-1,3-Dichloropropene	ND		1.0	µg/L	1	6/21/2016 05:54 PM
Dibromochloromethane	ND		1.0	µg/L	1	6/21/2016 05:54 PM
Dibromomethane	ND		1.0	µg/L	1	6/21/2016 05:54 PM
Dichlorodifluoromethane	ND		1.0	µg/L	1	6/21/2016 05:54 PM
Diethyl ether	ND		1.0	µg/L	1	6/21/2016 05:54 PM
Ethylbenzene	ND		1.0	µg/L	1	6/21/2016 05:54 PM
Hexachloroethane	ND		1.0	µg/L	1	6/21/2016 05:54 PM
Isopropylbenzene	ND		1.0	µg/L	1	6/21/2016 05:54 PM
m,p-Xylene	ND		2.0	µg/L	1	6/21/2016 05:54 PM
Methyl iodide	ND		1.0	µg/L	1	6/21/2016 05:54 PM
Methyl tert-butyl ether	ND		1.0	µg/L	1	6/21/2016 05:54 PM
Methylene chloride	ND		5.0	µg/L	1	6/21/2016 05:54 PM
Naphthalene	ND		5.0	µg/L	1	6/21/2016 05:54 PM
n-Propylbenzene	ND		1.0	µg/L	1	6/21/2016 05:54 PM
o-Xylene	ND		1.0	µg/L	1	6/21/2016 05:54 PM
Styrene	ND		1.0	µg/L	1	6/21/2016 05:54 PM
Tetrachloroethene	ND		1.0	µg/L	1	6/21/2016 05:54 PM
Toluene	ND		1.0	µg/L	1	6/21/2016 05:54 PM
trans-1,2-Dichloroethene	ND		1.0	µg/L	1	6/21/2016 05:54 PM
trans-1,3-Dichloropropene	ND		1.0	µg/L	1	6/21/2016 05:54 PM
trans-1,4-Dichloro-2-butene	ND		2.0	µg/L	1	6/21/2016 05:54 PM
Trichloroethene	ND		1.0	µg/L	1	6/21/2016 05:54 PM
Trichlorofluoromethane	ND		1.0	µg/L	1	6/21/2016 05:54 PM
Vinyl acetate	ND		1.0	µg/L	1	6/21/2016 05:54 PM
Vinyl chloride	ND		1.0	µg/L	1	6/21/2016 05:54 PM
Xylenes, Total	ND		3.0	µg/L	1	6/21/2016 05:54 PM
Surr: 1,2-Dichloroethane-d4	*111*		*75-120*	*%REC*	1	6/21/2016 05:54 PM
Surr: 4-Bromofluorobenzene	*90.1*		*80-110*	*%REC*	1	6/21/2016 05:54 PM
Surr: Dibromofluoromethane	*106*		*85-115*	*%REC*	1	6/21/2016 05:54 PM
Surr: Toluene-d8	*94.2*		*85-110*	*%REC*	1	6/21/2016 05:54 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 23-Jun-16

Client: Merit Energy
Project: ECT (13900 Cherry Blossom)
Work Order: 1606887

Case Narrative

Batch R189964A Sample VLCSW2-160621 The LCS recovery for Volatile compound Methyl Iodide was above the upper control limit. All the sample results in the batch were non-detect. No qualification is necessary for this analyte.

Batch R189964A The MS/MSD data for Volatiles is not related to this projects sample. No data requires qualification.

ALS Group USA, Corp

Date: 23-Jun-16

Client: Merit Energy

Work Order: 1606887

Project: ECT (13900 Cherry Blossom)

QC BATCH REPORT

Batch ID: **87384** Instrument ID **SVMS8** Method: **SW846 8270D**

MBLK Sample ID: **SBLKW1-87384-87384** Units: **µg/L** Analysis Date: **6/16/2016 07:57 PM**

Client ID: Run ID: **SVMS8_160616A** SeqNo: **3888548** Prep Date: **6/16/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Diisopropanolamine	ND	50								
Sulfolane	ND	10								
Surr: 2,4,6-Tribromophenol	*34.42*	0	*50*	0	*68.8*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*34.19*	0	*50*	0	*68.4*	*32-100*	0			
Surr: 2-Fluorophenol	*22.38*	0	*50*	0	*44.8*	*22-59*	0			
Surr: 4-Terphenyl-d14	*46.53*	0	*50*	0	*93.1*	*23-112*	0			
Surr: Nitrobenzene-d5	*39.51*	0	*50*	0	*79*	*31-93*	0			
Surr: Phenol-d6	*13.42*	0	*50*	0	*26.8*	*13-36*	0			

LCS Sample ID: **SLCSW1-87384-87384** Units: **µg/L** Analysis Date: **6/16/2016 08:17 PM**

Client ID: Run ID: **SVMS8_160616A** SeqNo: **3888549** Prep Date: **6/16/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Diisopropanolamine	10.77	50	100	0	10.8	10-50	0			
Sulfolane	53.27	10	100	0	53.3	30-100	0			
Surr: 2,4,6-Tribromophenol	*35.21*	0	*50*	0	*70.4*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*35.78*	0	*50*	0	*71.6*	*32-100*	0			
Surr: 2-Fluorophenol	*21.28*	0	*50*	0	*42.6*	*22-59*	0			
Surr: 4-Terphenyl-d14	*49.06*	0	*50*	0	*98.1*	*23-112*	0			
Surr: Nitrobenzene-d5	*40.25*	0	*50*	0	*80.5*	*31-93*	0			
Surr: Phenol-d6	*12.62*	0	*50*	0	*25.2*	*13-36*	0			

MS Sample ID: **1606870-01A MS** Units: **µg/L** Analysis Date: **6/16/2016 10:05 PM**

Client ID: Run ID: **SVMS8_160616A** SeqNo: **3888550** Prep Date: **6/16/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Diisopropanolamine	18.58	50	100	0	18.6	10-50	0			
Sulfolane	59.25	10	100	0	59.2	30-100	0			
Surr: 2,4,6-Tribromophenol	*33.01*	0	*50*	0	*66*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*34.57*	0	*50*	0	*69.1*	*32-100*	0			
Surr: 2-Fluorophenol	*20.06*	0	*50*	0	*40.1*	*22-59*	0			
Surr: 4-Terphenyl-d14	*46.56*	0	*50*	0	*93.1*	*23-112*	0			
Surr: Nitrobenzene-d5	*39.7*	0	*50*	0	*79.4*	*31-93*	0			
Surr: Phenol-d6	*11.64*	0	*50*	0	*23.3*	*13-36*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606887
Project: ECT (13900 Cherry Blossom)

QC BATCH REPORT

Batch ID: **87384** Instrument ID **SVMS8** Method: **SW846 8270D**

DUP Sample ID: **1606871-01A DUP** Units: **µg/L** Analysis Date: **6/16/2016 10:45 PM**

Client ID: Run ID: **SVMS8_160616A** SeqNo: **3888552** Prep Date: **6/16/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Diisopropanolamine	ND	53	0	0	0		0	0	30	
Sulfolane	ND	11	0	0	0		0	0	30	
Surr: 2,4,6-Tribromophenol	*28.89*	0	*52.63*	0	*54.9*	*38-115*	27.6	*4.58*	*40*	
Surr: 2-Fluorobiphenyl	*29.71*	0	*52.63*	0	*56.4*	*32-100*	29.06	*2.2*	*40*	
Surr: 2-Fluorophenol	*19.71*	0	*52.63*	0	*37.4*	*22-59*	18.78	*4.81*	*40*	
Surr: 4-Terphenyl-d14	*45.01*	0	*52.63*	0	*85.5*	*23-112*	42.59	*5.53*	*40*	
Surr: Nitrobenzene-d5	*32.43*	0	*52.63*	0	*61.6*	*31-93*	32.8	*1.13*	*40*	
Surr: Phenol-d6	*11.48*	0	*52.63*	0	*21.8*	*13-36*	11.2	*2.51*	*40*	

The following samples were analyzed in this batch: 1606887-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606887
Project: ECT (13900 Cherry Blossom)

QC BATCH REPORT

Batch ID: **R189964A** Instrument ID **VMS10** Method: **SW8260B**

MBLK Sample ID: **VBLKW1-160621-R189964A** Units: **µg/L** Analysis Date: **6/21/2016 02:16 PM**
Client ID: Run ID: **VMS10_160621A** SeqNo: **3886170** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
1,1,2-Trichlorotrifluoroethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2,3-Trichloropropane	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	1.0								
1,2-Dibromoethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,2-Dichloroethane	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
2-Butanone	ND	5.0								
2-Hexanone	ND	5.0								
2-Methylnaphthalene	ND	5.0								
4-Methyl-2-pentanone	ND	1.0								
Acetone	ND	10								
Acrylonitrile	ND	1.0								
Benzene	ND	1.0								
Bromochloromethane	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	1.0								
Carbon disulfide	ND	1.0								
Carbon tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	ND	1.0								
cis-1,2-Dichloroethene	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
Diethyl ether	ND	1.0								
Ethylbenzene	ND	1.0								

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

QC BATCH REPORT

Batch ID: **R189964A** Instrument ID **VMS10** Method: **SW8260B**

Hexachloroethane	ND	1.0					
Isopropylbenzene	ND	1.0					
m,p-Xylene	ND	2.0					
Methyl iodide	ND	1.0					
Methyl tert-butyl ether	ND	1.0					
Methylene chloride	ND	5.0					
Naphthalene	ND	5.0					
n-Propylbenzene	ND	1.0					
o-Xylene	ND	1.0					
Styrene	ND	1.0					
Tetrachloroethene	ND	1.0					
Toluene	ND	1.0					
trans-1,2-Dichloroethene	ND	1.0					
trans-1,3-Dichloropropene	ND	1.0					
trans-1,4-Dichloro-2-butene	ND	2.0					
Trichloroethene	ND	1.0					
Trichlorofluoromethane	ND	1.0					
Vinyl acetate	ND	1.0					
Vinyl chloride	ND	1.0					
Xylenes, Total	ND	3.0					
Surr: 1,2-Dichloroethane-d4	*21.46*	0	*20*	0	*107*	*75-120*	0
Surr: 4-Bromofluorobenzene	*17.99*	0	*20*	0	*90*	*80-110*	0
Surr: Dibromofluoromethane	*20.43*	0	*20*	0	*102*	*85-115*	0
Surr: Toluene-d8	*18.84*	0	*20*	0	*94.2*	*85-110*	0

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606887
Project: ECT (13900 Cherry Blossom)

QC BATCH REPORT

Batch ID: **R189964A** Instrument ID **VMS10** Method: **SW8260B**

LCS	Sample ID: **VLCSW2-160621-R189964A**				Units: **µg/L**			Analysis Date: **6/21/2016 01:03 PM**		
Client ID:		Run ID: **VMS10_160621A**			SeqNo: **3886169**		Prep Date:		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	19.57	1.0	20	0	97.8	80-130	0			
1,1,1-Trichloroethane	22.55	1.0	20	0	113	75-130	0			
1,1,2,2-Tetrachloroethane	18.67	1.0	20	0	93.4	75-130	0			
1,1,2-Trichloroethane	19.87	1.0	20	0	99.4	75-125	0			
1,1-Dichloroethane	21.59	1.0	20	0	108	75-133	0			
1,1-Dichloroethene	24.6	1.0	20	0	123	70-145	0			
1,2,3-Trichloropropane	18.99	1.0	20	0	95	75-125	0			
1,2,4-Trichlorobenzene	20.01	1.0	20	0	100	70-135	0			
1,2,4-Trimethylbenzene	20.83	1.0	20	0	104	75-130	0			
1,2-Dibromo-3-chloropropane	14.85	1.0	20	0	74.2	60-130	0			
1,2-Dibromoethane	21.69	1.0	20	0	108	80-150	0			
1,2-Dichlorobenzene	20.68	1.0	20	0	103	70-130	0			
1,2-Dichloroethane	20.77	1.0	20	0	104	78-125	0			
1,2-Dichloropropane	19.91	1.0	20	0	99.6	75-125	0			
1,3,5-Trimethylbenzene	21.2	1.0	20	0	106	75-130	0			
1,3-Dichlorobenzene	21.55	1.0	20	0	108	75-130	0			
1,4-Dichlorobenzene	20.77	1.0	20	0	104	75-130	0			
2-Butanone	13.56	5.0	20	0	67.8	55-150	0			
2-Hexanone	13.16	5.0	20	0	65.8	60-135	0			
4-Methyl-2-pentanone	17.41	1.0	20	0	87	77-178	0			
Acetone	15.96	10	20	0	79.8	60-160	0			
Acrylonitrile	15.7	1.0	20	0	78.5	60-140	0			
Benzene	20.6	1.0	20	0	103	85-125	0			
Bromochloromethane	18.78	1.0	20	0	93.9	75-130	0			
Bromodichloromethane	20.47	1.0	20	0	102	75-125	0			
Bromoform	16.14	1.0	20	0	80.7	60-125	0			
Bromomethane	27.29	1.0	20	0	136	30-185	0			
Carbon disulfide	22.57	1.0	20	0	113	60-165	0			
Carbon tetrachloride	21.01	1.0	20	0	105	65-140	0			
Chlorobenzene	20.84	1.0	20	0	104	80-120	0			
Chloroethane	23.14	1.0	20	0	116	50-140	0			
Chloroform	19.86	1.0	20	0	99.3	80-130	0			
Chloromethane	14.87	1.0	20	0	74.4	50-130	0			
cis-1,2-Dichloroethene	19.63	1.0	20	0	98.2	75-134	0			
cis-1,3-Dichloropropene	17.96	1.0	20	0	89.8	70-130	0			
Dibromochloromethane	16.62	1.0	20	0	83.1	60-115	0			
Dibromomethane	20.68	1.0	20	0	103	85-125	0			
Dichlorodifluoromethane	18.35	1.0	20	0	91.8	20-120	0			
Ethylbenzene	21.52	1.0	20	0	108	85-125	0			
Hexachloroethane	14.16	1.0	20	0	70.8	50-124	0			
Isopropylbenzene	20.7	1.0	20	0	104	80-127	0			
m,p-Xylene	44.74	2.0	40	0	112	75-130	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

QC BATCH REPORT

Batch ID: **R189964A** Instrument ID **VMS10** Method: **SW8260B**

Methyl iodide	40.55	1.0	20	0	203	60-160	0	S
Methyl tert-butyl ether	17.94	1.0	20	0	89.7	80-130	0	
Methylene chloride	23.38	5.0	20	0	117	75-140	0	
Naphthalene	16.24	5.0	20	0	81.2	55-160	0	
n-Propylbenzene	22.03	1.0	20	0	110	78-120	0	
o-Xylene	21.56	1.0	20	0	108	80-125	0	
Styrene	20.41	1.0	20	0	102	85-125	0	
Tetrachloroethene	22.69	1.0	20	0	113	77-138	0	
Toluene	20.43	1.0	20	0	102	85-125	0	
trans-1,2-Dichloroethene	22.8	1.0	20	0	114	80-140	0	
trans-1,3-Dichloropropene	16.34	1.0	20	0	81.7	81-123	0	
trans-1,4-Dichloro-2-butene	12.84	2.0	20	0	64.2	46-118	0	
Trichloroethene	21.85	1.0	20	0	109	84-130	0	
Trichlorofluoromethane	22.88	1.0	20	0	114	60-140	0	
Vinyl chloride	20.66	1.0	20	0	103	50-136	0	
Xylenes, Total	66.3	3.0	60	0	110	80-126	0	
Surr: 1,2-Dichloroethane-d4	*20.04*	0	*20*	0	*100*	*75-120*	0	
Surr: 4-Bromofluorobenzene	*20.04*	0	*20*	0	*100*	*80-110*	0	
Surr: Dibromofluoromethane	*20.8*	0	*20*	0	*104*	*85-115*	0	
Surr: Toluene-d8	*19.65*	0	*20*	0	*98.2*	*85-110*	0	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606887
Project: ECT (13900 Cherry Blossom)

QC BATCH REPORT

Batch ID: **R189964A** Instrument ID **VMS10** Method: **SW8260B**

MS Sample ID: **1606757-21A MS** Units: **µg/L** Analysis Date: **6/21/2016 08:44 PM**
Client ID: Run ID: **VMS10_160621A** SeqNo: **3886188** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	20.08	1.0	20	0	100	80-130	0			
1,1,1-Trichloroethane	24.12	1.0	20	0	121	75-130	0			
1,1,2,2-Tetrachloroethane	19.35	1.0	20	0	96.8	75-130	0			
1,1,2-Trichloroethane	20.4	1.0	20	0	102	75-125	0			
1,1-Dichloroethane	20.94	1.0	20	0	105	75-133	0			
1,1-Dichloroethene	25.13	1.0	20	0	126	70-145	0			
1,2,3-Trichloropropane	20.1	1.0	20	0	100	75-125	0			
1,2,4-Trichlorobenzene	19.27	1.0	20	0	96.4	70-135	0			
1,2,4-Trimethylbenzene	20.24	1.0	20	0	101	75-130	0			
1,2-Dibromo-3-chloropropane	15.52	1.0	20	0	77.6	60-130	0			
1,2-Dibromoethane	22.21	1.0	20	0	111	80-150	0			
1,2-Dichlorobenzene	20.36	1.0	20	0	102	70-130	0			
1,2-Dichloroethane	21.03	1.0	20	0	105	78-125	0			
1,2-Dichloropropane	20.59	1.0	20	0	103	75-125	0			
1,3,5-Trimethylbenzene	20.68	1.0	20	0	103	75-130	0			
1,3-Dichlorobenzene	20.95	1.0	20	0	105	75-130	0			
1,4-Dichlorobenzene	20.01	1.0	20	0	100	75-130	0			
2-Butanone	13.96	5.0	20	0	69.8	55-150	0			
2-Hexanone	14.02	5.0	20	0	70.1	60-135	0			
4-Methyl-2-pentanone	18.6	1.0	20	0	93	77-178	0			
Acetone	20.81	10	20	0	104	60-160	0			
Acrylonitrile	18.32	1.0	20	0	91.6	60-140	0			
Benzene	65.38	1.0	20	45.14	101	85-125	0			
Bromochloromethane	18.68	1.0	20	0	93.4	75-130	0			
Bromodichloromethane	21.04	1.0	20	0	105	75-125	0			
Bromoform	16.63	1.0	20	0	83.2	60-125	0			
Bromomethane	14.06	1.0	20	0	70.3	30-185	0			
Carbon disulfide	22.31	1.0	20	0	112	60-165	0			
Carbon tetrachloride	22.91	1.0	20	0	115	65-140	0			
Chlorobenzene	20.68	1.0	20	0	103	80-120	0			
Chloroethane	23.54	1.0	20	0	118	50-140	0			
Chloroform	20.04	1.0	20	0	100	80-130	0			
Chloromethane	21.19	1.0	20	1.5	98.4	50-130	0			
cis-1,2-Dichloroethene	19.3	1.0	20	0	96.5	75-134	0			
cis-1,3-Dichloropropene	17.49	1.0	20	0	87.4	70-130	0			
Dibromochloromethane	16.89	1.0	20	0	84.4	60-115	0			
Dibromomethane	21.31	1.0	20	0	107	85-125	0			
Dichlorodifluoromethane	19.06	1.0	20	0	95.3	20-120	0			
Ethylbenzene	21.13	1.0	20	0	106	85-125	0			
Hexachloroethane	14.2	1.0	20	0	71	50-124	0			
Isopropylbenzene	20.54	1.0	20	0	103	80-127	0			
m,p-Xylene	44.6	2.0	40	0	112	75-130	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

QC BATCH REPORT

Batch ID: **R189964A** Instrument ID **VMS10** Method: **SW8260B**

Methyl iodide	19.62	1.0	20	0	98.1	60-160	0	
Methyl tert-butyl ether	18.02	1.0	20	0	90.1	80-130	0	
Methylene chloride	22.17	5.0	20	0	111	75-140	0	
Naphthalene	18.34	5.0	20	1.74	83	55-160	0	
n-Propylbenzene	21.51	1.0	20	0	108	78-120	0	
o-Xylene	21.08	1.0	20	0	105	80-125	0	
Styrene	14.03	1.0	20	0	70.2	85-125	0	S
Tetrachloroethene	21.58	1.0	20	0	108	77-138	0	
Toluene	20.49	1.0	20	0	102	85-125	0	
trans-1,2-Dichloroethene	22.23	1.0	20	0	111	80-140	0	
trans-1,3-Dichloropropene	16.08	1.0	20	0	80.4	81-123	0	S
trans-1,4-Dichloro-2-butene	13.07	2.0	20	0	65.4	46-118	0	
Trichloroethene	21.75	1.0	20	0	109	84-130	0	
Trichlorofluoromethane	24.38	1.0	20	0	122	60-140	0	
Vinyl chloride	21.25	1.0	20	0	106	50-136	0	
Xylenes, Total	65.68	3.0	60	0	109	80-126	0	
Surr: 1,2-Dichloroethane-d4	*20.55*	0	*20*	0	*103*	*75-120*	0	
Surr: 4-Bromofluorobenzene	*20.61*	0	*20*	0	*103*	*80-110*	0	
Surr: Dibromofluoromethane	*21.2*	0	*20*	0	*106*	*85-115*	0	
Surr: Toluene-d8	*19.69*	0	*20*	0	*98.4*	*85-110*	0	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606887
Project: ECT (13900 Cherry Blossom)

QC BATCH REPORT

Batch ID: **R189964A** Instrument ID **VMS10** Method: **SW8260B**

MSD Sample ID: **1606757-21A MSD** Units: **µg/L** Analysis Date: **6/21/2016 09:08 PM**

Client ID: Run ID: **VMS10_160621A** SeqNo: **3886189** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	19.66	1.0	20	0	98.3	80-130	20.08	2.11	30	
1,1,1-Trichloroethane	23.81	1.0	20	0	119	75-130	24.12	1.29	30	
1,1,2,2-Tetrachloroethane	19.08	1.0	20	0	95.4	75-130	19.35	1.41	30	
1,1,2-Trichloroethane	19.61	1.0	20	0	98	75-125	20.4	3.95	30	
1,1-Dichloroethane	21.05	1.0	20	0	105	75-133	20.94	0.524	30	
1,1-Dichloroethene	25.19	1.0	20	0	126	70-145	25.13	0.238	30	
1,2,3-Trichloropropane	19.29	1.0	20	0	96.4	75-125	20.1	4.11	30	
1,2,4-Trichlorobenzene	18.79	1.0	20	0	94	70-135	19.27	2.52	30	
1,2,4-Trimethylbenzene	19.71	1.0	20	0	98.6	75-130	20.24	2.65	30	
1,2-Dibromo-3-chloropropane	15.21	1.0	20	0	76	60-130	15.52	2.02	30	
1,2-Dibromoethane	21.21	1.0	20	0	106	80-150	22.21	4.61	30	
1,2-Dichlorobenzene	19.89	1.0	20	0	99.4	70-130	20.36	2.34	30	
1,2-Dichloroethane	21.09	1.0	20	0	105	78-125	21.03	0.285	30	
1,2-Dichloropropane	20.26	1.0	20	0	101	75-125	20.59	1.62	30	
1,3,5-Trimethylbenzene	20.21	1.0	20	0	101	75-130	20.68	2.3	30	
1,3-Dichlorobenzene	20.53	1.0	20	0	103	75-130	20.95	2.03	30	
1,4-Dichlorobenzene	19.81	1.0	20	0	99	75-130	20.01	1	30	
2-Butanone	13.91	5.0	20	0	69.6	55-150	13.96	0.359	30	
2-Hexanone	13.95	5.0	20	0	69.8	60-135	14.02	0.501	30	
4-Methyl-2-pentanone	17.36	1.0	20	0	86.8	77-178	18.6	6.9	30	
Acetone	22.34	10	20	0	112	60-160	20.81	7.09	30	
Acrylonitrile	15.86	1.0	20	0	79.3	60-140	18.32	14.4	30	
Benzene	64.83	1.0	20	45.14	98.4	85-125	65.38	0.845	30	
Bromochloromethane	18.04	1.0	20	0	90.2	75-130	18.68	3.49	30	
Bromodichloromethane	21.13	1.0	20	0	106	75-125	21.04	0.427	30	
Bromoform	16.78	1.0	20	0	83.9	60-125	16.63	0.898	30	
Bromomethane	15.82	1.0	20	0	79.1	30-185	14.06	11.8	30	
Carbon disulfide	22.62	1.0	20	0	113	60-165	22.31	1.38	30	
Carbon tetrachloride	22.97	1.0	20	0	115	65-140	22.91	0.262	30	
Chlorobenzene	20.33	1.0	20	0	102	80-120	20.68	1.71	30	
Chloroethane	23.05	1.0	20	0	115	50-140	23.54	2.1	30	
Chloroform	19.83	1.0	20	0	99.2	80-130	20.04	1.05	30	
Chloromethane	19.88	1.0	20	1.5	91.9	50-130	21.19	6.38	30	
cis-1,2-Dichloroethene	19.14	1.0	20	0	95.7	75-134	19.3	0.832	30	
cis-1,3-Dichloropropene	17.82	1.0	20	0	89.1	70-130	17.49	1.87	30	
Dibromochloromethane	16.93	1.0	20	0	84.6	60-115	16.89	0.237	30	
Dibromomethane	21.07	1.0	20	0	105	85-125	21.31	1.13	30	
Dichlorodifluoromethane	18.73	1.0	20	0	93.6	20-120	19.06	1.75	30	
Ethylbenzene	20.69	1.0	20	0	103	85-125	21.13	2.1	30	
Hexachloroethane	14.63	1.0	20	0	73.2	50-124	14.2	2.98	30	
Isopropylbenzene	20.21	1.0	20	0	101	80-127	20.54	1.62	30	
m,p-Xylene	43.56	2.0	40	0	109	75-130	44.6	2.36	30	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606887
Project: ECT (13900 Cherry Blossom)

QC BATCH REPORT

Batch ID: **R189964A** Instrument ID **VMS10** Method: **SW8260B**

Methyl iodide	11.22	1.0	20	0	56.1	60-160	19.62	54.5	30	SR
Methyl tert-butyl ether	17.21	1.0	20	0	86	80-130	18.02	4.6	30	
Methylene chloride	20.8	5.0	20	0	104	75-140	22.17	6.38	30	
Naphthalene	17.29	5.0	20	1.74	77.8	55-160	18.34	5.89	30	
n-Propylbenzene	21.02	1.0	20	0	105	78-120	21.51	2.3	30	
o-Xylene	20.71	1.0	20	0	104	80-125	21.08	1.77	30	
Styrene	13.72	1.0	20	0	68.6	85-125	14.03	2.23	30	S
Tetrachloroethene	21	1.0	20	0	105	77-138	21.58	2.72	30	
Toluene	20.34	1.0	20	0	102	85-125	20.49	0.735	30	
trans-1,2-Dichloroethene	21.22	1.0	20	0	106	80-140	22.23	4.65	30	
trans-1,3-Dichloropropene	15.7	1.0	20	0	78.5	81-123	16.08	2.39	30	S
trans-1,4-Dichloro-2-butene	12.81	2.0	20	0	64	46-118	13.07	2.01	30	
Trichloroethene	21.54	1.0	20	0	108	84-130	21.75	0.97	30	
Trichlorofluoromethane	23.82	1.0	20	0	119	60-140	24.38	2.32	30	
Vinyl chloride	20.97	1.0	20	0	105	50-136	21.25	1.33	30	
Xylenes, Total	64.27	3.0	60	0	107	80-126	65.68	2.17	30	
Surr: 1,2-Dichloroethane-d4	*20.59*	0	*20*	0	*103*	*75-120*	20.55	*0.194*	*30*	
Surr: 4-Bromofluorobenzene	*20.65*	0	*20*	0	*103*	*80-110*	20.61	*0.194*	*30*	
Surr: Dibromofluoromethane	*21.09*	0	*20*	0	*105*	*85-115*	21.2	*0.52*	*30*	
Surr: Toluene-d8	*19.75*	0	*20*	0	*98.8*	*85-110*	19.69	*0.304*	*30*	

The following samples were analyzed in this batch: 1606887-01B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Group USA, Corp

Date: 23-Jun-16

Client: Merit Energy
Project: ECT (13900 Cherry Blossom)
WorkOrder: **1606887**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
µg/L	Micrograms per Liter

ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **MERITENERGY** Date/Time Received: **15-Jun-16 09:30**

Work Order: **1606887** Received by: **KRW**

Checklist completed by Keith Wierenga (eSignature) 15-Jun-16 (Date) Reviewed by: Gary Byar (eSignature) 15-Jun-16 (Date)

Matrices: Water

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	2.2/2.2 C	SR2	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	6/15/2016 3:20:37 PM		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

Chain of Custody Form

Page 1 of 1

☑ RETURN SAMPLES TO:
ALS Environmental
781 Industrial Cir, Ste 3
Traverse City, Michigan 49686
(Tel) 231.421.3204
(Cell) 231.944.3459

ALS Environmental
3352 128th Avenue
Holland, Michigan 49424
(Tel) 616.399.6070
(Fax) 616.399.6185

ALS Project Manager: Gary Byar | ALS Work Order #: 1606887

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	Hartland 36 Gas Plant	A	Sulfolane
Work Order		Project Number		B	DIPA
Company Name	ECT, Inc.	Bill To Company	MEC	C	Full VOCs
Send Report To	Jeremy Lewandowski	Invoice Attn.	Sean Craven	D	
Address	3399 Veterans Dr.	Address	1510 Thomas Rd	E	
				F	
City/State/Zip	Traverse City, MI 49684	City/State/Zip	Kalkaska, MI	G	
Phone	231-946-8200	Phone	231-258-6369	H	
Fax	231-946-8208	Fax		I	
e-Mail Address	jlewandowski@ectinc.com			J	

No.	Sample Description	Date	Time	Matrix	Pres. Key Numbers	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	13900 Cherry Blossom	6/13/16	17:39	GW	1, 8	4	X	X	X								

Sampler(s): Please Print & Sign: Jeremy Lewandowski

Shipment Method:

Required Turnaround Time: (Check Box) ☐ 10 Wk Days ☒ 5-7 Wk Days ☐ 3 Wk Days ☐ 2 Wk Days ☐ 24 Hour ☐ Other

Results Due Date:

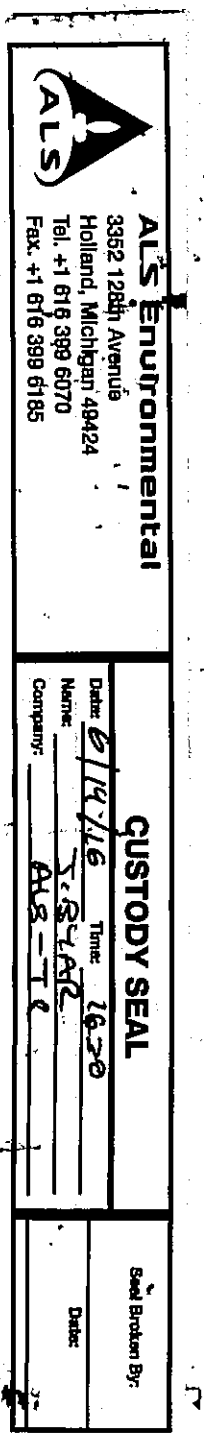
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
ECT Sample Storage	6/13/16	9:30p	ECT Sample Storage	6/13/16	9:30p
	6/14/16	11:15a		6/14/16	11:15a
Relinquished by:	Date: 6/14/16	Time: 11:30a	Received by (Laboratory):	Date: 6/14/16	Time: 11:30
Logged by Laboratory:	Date: 6/14/16	Time: 16:45	Checked by (Laboratory):	6/15/16	0930
	6/15/16	1520			

Notes: ALS Project: MERITENERGY - Misc

ALS Cooler ID	Cooler Temp	QC Package: (Check Box Below)	
	2.2°C	☑ Level II: Standard QC	☐ Level III: Raw Data
		☐ TRRP LRC	☐ TRRP Level IV
		☐ Level IV: SW846 Methods/CLP like	
		☐ Other:	

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS.



ALS Environmental
3352 128th Avenue
Holland, Michigan 49424
Tel. +1 616 399 6070
Fax. +1 616 399 6185

CUSTODY SEAL

Date: 6/14/16 Time: 1620
Name:
Company: ALS-TL

Seal Broken By:
Date:

FedEx Ship Manager - Print Your Label(s)

ORIGIN ID:TVCA (231) 421-3204
GARY BYAR
ALS ENVIRONMENTAL
781 INDUSTRIAL CIRCLE
UNIT #3
TRAVERSE CITY, MI 49686
UNITED STATES US

SHIP DATE: 14JUN16
ACTWGT: 24.00 LB
CAD: 2264840/NET3730
DIMS: 13x16x16 IN

BILL SENDER

TO SAMPLE RECEIVING
ALS LABORATORY GROUP
3352 128TH AVENUE

HOLLAND MI 49424
(616) 399-6070 REF: ALS - TC
INV:
PO: DEPT:

540J030807/27F

FedEx Express

WED - 15 JUN 3:00P
STANDARD OVERNIGHT

1 of 3
TRK# 0201 7765 2027 0950
MASTER

68 HLMA

49424
MI-US GRR

10-Jun-2016

Sean Craven
Merit Energy
1510 Thomas Rd
PO Box 910
Kalkaska, MI 49646

Re: **ECT (Hartland - 13850 Cherry Blossom)** Work Order: **1606479**

Dear Sean,

ALS Environmental received 1 sample on 08-Jun-2016 09:30 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with NELAP standard requirements and QC results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 19.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

Gary Byar

Electronically approved by: Gary Byar

Gary Byar
Project Manager

Certificate No: MI: 0022

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185
ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

ALS Group USA, Corp

Date: 10-Jun-16

Client: Merit Energy
Project: ECT (Hartland - 13850 Cherry Blossom)
Work Order: **1606479**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1606479-01	13850 Cherry Blossom	Water		6/6/2016 07:26	6/8/2016 09:30	☐

ALS Group USA, Corp

Date: *10-Jun-16*

Client: Merit Energy
Project: ECT (Hartland - 13850 Cherry Blossom)
Work Order: 1606479
Sample ID: 13850 Cherry Blossom
Lab ID: 1606479-01
Collection Date: 6/6/2016 07:26 AM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW846 8270D**		Prep: SW3510 / 6/9/16	Analyst: **RM**
Diisopropanolamine	ND		50	µg/L	1	6/9/2016 07:57 PM
Sulfolane	ND		10	µg/L	1	6/9/2016 07:57 PM
Surr: 2,4,6-Tribromophenol	*64.0*		*38-115*	*%REC*	1	6/9/2016 07:57 PM
Surr: 2-Fluorobiphenyl	*52.7*		*32-100*	*%REC*	1	6/9/2016 07:57 PM
Surr: 2-Fluorophenol	*31.7*		*22-59*	*%REC*	1	6/9/2016 07:57 PM
Surr: 4-Terphenyl-d14	*71.6*		*23-112*	*%REC*	1	6/9/2016 07:57 PM
Surr: Nitrobenzene-d5	*60.2*		*31-93*	*%REC*	1	6/9/2016 07:57 PM
Surr: Phenol-d6	*16.1*		*13-36*	*%REC*	1	6/9/2016 07:57 PM
VOLATILE ORGANIC COMPOUNDS			**SW8260B**			Analyst: **BG**
1,1,1,2-Tetrachloroethane	ND		1.0	µg/L	1	6/9/2016 06:15 AM
1,1,1-Trichloroethane	ND		1.0	µg/L	1	6/9/2016 06:15 AM
1,1,2,2-Tetrachloroethane	ND		1.0	µg/L	1	6/9/2016 06:15 AM
1,1,2-Trichloroethane	ND		1.0	µg/L	1	6/9/2016 06:15 AM
1,1,2-Trichlorotrifluoroethane	ND		1.0	µg/L	1	6/9/2016 06:15 AM
1,1-Dichloroethane	ND		1.0	µg/L	1	6/9/2016 06:15 AM
1,1-Dichloroethene	ND		1.0	µg/L	1	6/9/2016 06:15 AM
1,2,3-Trichloropropane	ND		1.0	µg/L	1	6/9/2016 06:15 AM
1,2,4-Trichlorobenzene	ND		1.0	µg/L	1	6/9/2016 06:15 AM
1,2,4-Trimethylbenzene	ND		1.0	µg/L	1	6/9/2016 06:15 AM
1,2-Dibromo-3-chloropropane	ND		1.0	µg/L	1	6/9/2016 06:15 AM
1,2-Dibromoethane	ND		1.0	µg/L	1	6/9/2016 06:15 AM
1,2-Dichlorobenzene	ND		1.0	µg/L	1	6/9/2016 06:15 AM
1,2-Dichloroethane	ND		1.0	µg/L	1	6/9/2016 06:15 AM
1,2-Dichloropropane	ND		1.0	µg/L	1	6/9/2016 06:15 AM
1,3,5-Trimethylbenzene	ND		1.0	µg/L	1	6/9/2016 06:15 AM
1,3-Dichlorobenzene	ND		1.0	µg/L	1	6/9/2016 06:15 AM
1,4-Dichlorobenzene	ND		1.0	µg/L	1	6/9/2016 06:15 AM
2-Butanone	ND		5.0	µg/L	1	6/9/2016 06:15 AM
2-Hexanone	ND		5.0	µg/L	1	6/9/2016 06:15 AM
2-Methylnaphthalene	ND		5.0	µg/L	1	6/9/2016 06:15 AM
4-Methyl-2-pentanone	ND		1.0	µg/L	1	6/9/2016 06:15 AM
Acetone	ND		10	µg/L	1	6/9/2016 06:15 AM
Acrylonitrile	ND		1.0	µg/L	1	6/9/2016 06:15 AM
Benzene	ND		1.0	µg/L	1	6/9/2016 06:15 AM
Bromochloromethane	ND		1.0	µg/L	1	6/9/2016 06:15 AM
Bromodichloromethane	ND		1.0	µg/L	1	6/9/2016 06:15 AM
Bromoform	ND		1.0	µg/L	1	6/9/2016 06:15 AM
Bromomethane	ND		1.0	µg/L	1	6/9/2016 06:15 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *10-Jun-16*

Client: Merit Energy
Project: ECT (Hartland - 13850 Cherry Blossom)
Work Order: 1606479
Sample ID: 13850 Cherry Blossom
Lab ID: 1606479-01
Collection Date: 6/6/2016 07:26 AM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Carbon disulfide	ND		1.0	µg/L	1	6/9/2016 06:15 AM
Carbon tetrachloride	ND		1.0	µg/L	1	6/9/2016 06:15 AM
Chlorobenzene	ND		1.0	µg/L	1	6/9/2016 06:15 AM
Chloroethane	ND		1.0	µg/L	1	6/9/2016 06:15 AM
Chloroform	ND		1.0	µg/L	1	6/9/2016 06:15 AM
Chloromethane	ND		1.0	µg/L	1	6/9/2016 06:15 AM
cis-1,2-Dichloroethene	ND		1.0	µg/L	1	6/9/2016 06:15 AM
cis-1,3-Dichloropropene	ND		1.0	µg/L	1	6/9/2016 06:15 AM
Dibromochloromethane	ND		1.0	µg/L	1	6/9/2016 06:15 AM
Dibromomethane	ND		1.0	µg/L	1	6/9/2016 06:15 AM
Dichlorodifluoromethane	ND		1.0	µg/L	1	6/9/2016 06:15 AM
Diethyl ether	ND		1.0	µg/L	1	6/9/2016 06:15 AM
Ethylbenzene	ND		1.0	µg/L	1	6/9/2016 06:15 AM
Hexachloroethane	ND		1.0	µg/L	1	6/9/2016 06:15 AM
Isopropylbenzene	ND		1.0	µg/L	1	6/9/2016 06:15 AM
m,p-Xylene	ND		2.0	µg/L	1	6/9/2016 06:15 AM
Methyl iodide	ND		1.0	µg/L	1	6/9/2016 06:15 AM
Methyl tert-butyl ether	ND		1.0	µg/L	1	6/9/2016 06:15 AM
Methylene chloride	ND		5.0	µg/L	1	6/9/2016 06:15 AM
Naphthalene	ND		5.0	µg/L	1	6/9/2016 06:15 AM
n-Propylbenzene	ND		1.0	µg/L	1	6/9/2016 06:15 AM
o-Xylene	ND		1.0	µg/L	1	6/9/2016 06:15 AM
Styrene	ND		1.0	µg/L	1	6/9/2016 06:15 AM
Tetrachloroethene	ND		1.0	µg/L	1	6/9/2016 06:15 AM
Toluene	ND		1.0	µg/L	1	6/9/2016 06:15 AM
trans-1,2-Dichloroethene	ND		1.0	µg/L	1	6/9/2016 06:15 AM
trans-1,3-Dichloropropene	ND		1.0	µg/L	1	6/9/2016 06:15 AM
trans-1,4-Dichloro-2-butene	ND		2.0	µg/L	1	6/9/2016 06:15 AM
Trichloroethene	ND		1.0	µg/L	1	6/9/2016 06:15 AM
Trichlorofluoromethane	ND		1.0	µg/L	1	6/9/2016 06:15 AM
Vinyl acetate	ND		1.0	µg/L	1	6/9/2016 06:15 AM
Vinyl chloride	ND		1.0	µg/L	1	6/9/2016 06:15 AM
Xylenes, Total	ND		3.0	µg/L	1	6/9/2016 06:15 AM
Surr: 1,2-Dichloroethane-d4	*92.6*		*75-120*	*%REC*	1	6/9/2016 06:15 AM
Surr: 4-Bromofluorobenzene	*93.8*		*80-110*	*%REC*	1	6/9/2016 06:15 AM
Surr: Dibromofluoromethane	*95.6*		*85-115*	*%REC*	1	6/9/2016 06:15 AM
Surr: Toluene-d8	*95.4*		*85-110*	*%REC*	1	6/9/2016 06:15 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 10-Jun-16

Client: Merit Energy
Project: ECT (Hartland - 13850 Cherry Blossom)
Work Order: 1606479

Case Narrative

Batch R189191a The MS/MSD data for Volatiles is not related to this project's sample. No data requires qualification.

ALS Group USA, Corp

Date: 10-Jun-16

Client: Merit Energy

Work Order: 1606479

Project: ECT (Hartland - 13850 Cherry Blossom)

QC BATCH REPORT

Batch ID: **87107** Instrument ID **SVMS8** Method: **SW846 8270D**

MBLK Sample ID: **SBLKW1-87107-87107** Units: **µg/L** Analysis Date: **6/9/2016 03:25 PM**

Client ID: Run ID: **SVMS8_160609A** SeqNo: **3870197** Prep Date: **6/9/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Diisopropanolamine	ND	50								
Sulfolane	ND	10								
Surr: 2,4,6-Tribromophenol	*21.75*	0	*50*	0	*43.5*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*21.56*	0	*50*	0	*43.1*	*32-100*	0			
Surr: 2-Fluorophenol	*16.37*	0	*50*	0	*32.7*	*22-59*	0			
Surr: 4-Terphenyl-d14	*35.69*	0	*50*	0	*71.4*	*23-112*	0			
Surr: Nitrobenzene-d5	*28.03*	0	*50*	0	*56.1*	*31-93*	0			
Surr: Phenol-d6	*7.63*	0	*50*	0	*15.3*	*13-36*	0			

LCS Sample ID: **SLCSW1-87107-87107** Units: **µg/L** Analysis Date: **6/9/2016 03:45 PM**

Client ID: Run ID: **SVMS8_160609A** SeqNo: **3870198** Prep Date: **6/9/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Diisopropanolamine	5.75	50	100	0	5.75	5-40	0			
Sulfolane	54.53	10	100	0	54.5	30-100	0			
Surr: 2,4,6-Tribromophenol	*27.91*	0	*50*	0	*55.8*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*28.51*	0	*50*	0	*57*	*32-100*	0			
Surr: 2-Fluorophenol	*19.32*	0	*50*	0	*38.6*	*22-59*	0			
Surr: 4-Terphenyl-d14	*37.7*	0	*50*	0	*75.4*	*23-112*	0			
Surr: Nitrobenzene-d5	*35.21*	0	*50*	0	*70.4*	*31-93*	0			
Surr: Phenol-d6	*10.02*	0	*50*	0	*20*	*13-36*	0			

MS Sample ID: **1606476-01B MS** Units: **µg/L** Analysis Date: **6/9/2016 06:36 PM**

Client ID: Run ID: **SVMS8_160609A** SeqNo: **3870199** Prep Date: **6/9/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Diisopropanolamine	14.01	53	106.4	0	13.2	5-40	0			
Sulfolane	65.27	11	106.4	0	61.4	30-100	0			
Surr: 2,4,6-Tribromophenol	*36.05*	0	*53.19*	0	*67.8*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*31.76*	0	*53.19*	0	*59.7*	*32-100*	0			
Surr: 2-Fluorophenol	*20.45*	0	*53.19*	0	*38.4*	*22-59*	0			
Surr: 4-Terphenyl-d14	*38.93*	0	*53.19*	0	*73.2*	*23-112*	0			
Surr: Nitrobenzene-d5	*38.12*	0	*53.19*	0	*71.7*	*31-93*	0			
Surr: Phenol-d6	*10.87*	0	*53.19*	0	*20.4*	*13-36*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606479
Project: ECT (Hartland - 13850 Cherry Blossom)

QC BATCH REPORT

Batch ID: **87107** Instrument ID **SVMS8** Method: **SW846 8270D**

DUP Sample ID: **1606478-01B DUP** Units: **µg/L** Analysis Date: **6/9/2016 07:16 PM**
Client ID: Run ID: **SVMS8_160609A** SeqNo: **3870201** Prep Date: **6/9/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Diisopropanolamine	ND	53	0	0	0		0	0	30	
Sulfolane	ND	11	0	0	0		0	0	30	
Surr: 2,4,6-Tribromophenol	*32.53*	0	*53.02*	0	*61.4*	*38-115*	31.66	*2.72*	*40*	
Surr: 2-Fluorobiphenyl	*29.9*	0	*53.02*	0	*56.4*	*32-100*	27.39	*8.78*	*40*	
Surr: 2-Fluorophenol	*18.87*	0	*53.02*	0	*35.6*	*22-59*	16.97	*10.6*	*40*	
Surr: 4-Terphenyl-d14	*35.97*	0	*53.02*	0	*67.8*	*23-112*	37.85	*5.09*	*40*	
Surr: Nitrobenzene-d5	*35.12*	0	*53.02*	0	*66.2*	*31-93*	32.88	*6.59*	*40*	
Surr: Phenol-d6	*9.3*	0	*53.02*	0	*17.5*	*13-36*	8.71	*6.55*	*40*	

The following samples were analyzed in this batch: 1606479-01B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606479
Project: ECT (Hartland - 13850 Cherry Blossom)

QC BATCH REPORT

Batch ID: **R189191a** Instrument ID **VMS6** Method: **SW8260B**

MBLK Sample ID: **VBLKW2-160608-R189191a** Units: **µg/L** Analysis Date: **6/9/2016 02:02 AM**
Client ID: Run ID: **VMS6_160608B** SeqNo: **3868131** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
1,1,2-Trichlorotrifluoroethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2,3-Trichloropropane	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	1.0								
1,2-Dibromoethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,2-Dichloroethane	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
2-Butanone	ND	5.0								
2-Hexanone	ND	5.0								
2-Methylnaphthalene	ND	5.0								
4-Methyl-2-pentanone	ND	1.0								
Acetone	ND	10								
Acrylonitrile	ND	1.0								
Benzene	ND	1.0								
Bromochloromethane	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	1.0								
Carbon disulfide	ND	1.0								
Carbon tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	ND	1.0								
cis-1,2-Dichloroethene	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
Diethyl ether	ND	1.0								
Ethylbenzene	ND	1.0								

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Batch ID: **R189191a** Instrument ID **VMS6** Method: **SW8260B**

Hexachloroethane	ND	1.0					
Isopropylbenzene	ND	1.0					
m,p-Xylene	ND	2.0					
Methyl iodide	ND	1.0					
Methyl tert-butyl ether	ND	1.0					
Methylene chloride	ND	5.0					
Naphthalene	ND	5.0					
n-Propylbenzene	ND	1.0					
o-Xylene	ND	1.0					
Styrene	ND	1.0					
Tetrachloroethene	ND	1.0					
Toluene	ND	1.0					
trans-1,2-Dichloroethene	ND	1.0					
trans-1,3-Dichloropropene	ND	1.0					
trans-1,4-Dichloro-2-butene	ND	2.0					
Trichloroethene	ND	1.0					
Trichlorofluoromethane	ND	1.0					
Vinyl acetate	ND	1.0					
Vinyl chloride	ND	1.0					
Xylenes, Total	ND	3.0					
Surr: 1,2-Dichloroethane-d4	*18.19*	0	*20*	0	*91*	*75-120*	0
Surr: 4-Bromofluorobenzene	*19.42*	0	*20*	0	*97.1*	*80-110*	0
Surr: Dibromofluoromethane	*19.84*	0	*20*	0	*99.2*	*85-115*	0
Surr: Toluene-d8	*19.06*	0	*20*	0	*95.3*	*85-110*	0

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606479
Project: ECT (Hartland - 13850 Cherry Blossom)

QC BATCH REPORT

Batch ID: **R189191a** Instrument ID **VMS6** Method: **SW8260B**

LCS Sample ID: **VLCSW2-160608-R189191a** Units: **µg/L** Analysis Date: **6/9/2016 01:12 AM**

Client ID: Run ID: **VMS6_160608B** SeqNo: **3868128** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	20.57	1.0	20	0	103	80-130	0			
1,1,1-Trichloroethane	20.5	1.0	20	0	102	75-130	0			
1,1,2,2-Tetrachloroethane	21.66	1.0	20	0	108	75-130	0			
1,1,2-Trichloroethane	19.85	1.0	20	0	99.2	75-125	0			
1,1-Dichloroethane	19.12	1.0	20	0	95.6	75-133	0			
1,1-Dichloroethene	19.91	1.0	20	0	99.6	70-145	0			
1,2,3-Trichloropropane	20.71	1.0	20	0	104	75-125	0			
1,2,4-Trichlorobenzene	20.09	1.0	20	0	100	70-135	0			
1,2,4-Trimethylbenzene	20.32	1.0	20	0	102	75-130	0			
1,2-Dibromo-3-chloropropane	18.85	1.0	20	0	94.2	60-130	0			
1,2-Dibromoethane	21.31	1.0	20	0	107	80-150	0			
1,2-Dichlorobenzene	20.37	1.0	20	0	102	70-130	0			
1,2-Dichloroethane	18.84	1.0	20	0	94.2	78-125	0			
1,2-Dichloropropane	20.05	1.0	20	0	100	75-125	0			
1,3,5-Trimethylbenzene	20.7	1.0	20	0	104	75-130	0			
1,3-Dichlorobenzene	20.13	1.0	20	0	101	75-130	0			
1,4-Dichlorobenzene	18.8	1.0	20	0	94	75-130	0			
2-Butanone	18.19	5.0	20	0	91	55-150	0			
2-Hexanone	17.68	5.0	20	0	88.4	60-135	0			
4-Methyl-2-pentanone	24.96	1.0	20	0	125	77-178	0			
Acetone	19.47	10	20	0	97.4	60-160	0			
Acrylonitrile	18.61	1.0	20	0	93	60-140	0			
Benzene	20.49	1.0	20	0	102	85-125	0			
Bromochloromethane	18.44	1.0	20	0	92.2	75-130	0			
Bromodichloromethane	20.01	1.0	20	0	100	75-125	0			
Bromoform	19.96	1.0	20	0	99.8	60-125	0			
Bromomethane	18.62	1.0	20	0	93.1	30-185	0			
Carbon disulfide	20.24	1.0	20	0	101	60-165	0			
Carbon tetrachloride	19.79	1.0	20	0	99	65-140	0			
Chlorobenzene	19.3	1.0	20	0	96.5	80-120	0			
Chloroethane	23.37	1.0	20	0	117	50-140	0			
Chloroform	18.19	1.0	20	0	91	80-130	0			
Chloromethane	15.16	1.0	20	0	75.8	50-130	0			
cis-1,2-Dichloroethene	17.74	1.0	20	0	88.7	75-134	0			
cis-1,3-Dichloropropene	20.29	1.0	20	0	101	70-130	0			
Dibromochloromethane	19.02	1.0	20	0	95.1	60-115	0			
Dibromomethane	20.48	1.0	20	0	102	85-125	0			
Dichlorodifluoromethane	19.67	1.0	20	0	98.4	20-120	0			
Ethylbenzene	19.65	1.0	20	0	98.2	85-125	0			
Hexachloroethane	15.39	1.0	20	0	77	50-124	0			
Isopropylbenzene	20.62	1.0	20	0	103	80-127	0			
m,p-Xylene	40.98	2.0	40	0	102	75-130	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

QC BATCH REPORT

Batch ID: **R189191a** Instrument ID **VMS6** Method: **SW8260B**

Methyl iodide	12.7	1.0	20	0	63.5	60-160	0
Methyl tert-butyl ether	18	1.0	20	0	90	80-130	0
Methylene chloride	17.88	5.0	20	0	89.4	75-140	0
Naphthalene	21.87	5.0	20	0	109	55-160	0
n-Propylbenzene	20.14	1.0	20	0	101	78-120	0
o-Xylene	19.28	1.0	20	0	96.4	80-125	0
Styrene	21.03	1.0	20	0	105	85-125	0
Tetrachloroethene	20.34	1.0	20	0	102	77-138	0
Toluene	19.4	1.0	20	0	97	85-125	0
trans-1,2-Dichloroethene	18.95	1.0	20	0	94.8	80-140	0
trans-1,3-Dichloropropene	16.82	1.0	20	0	84.1	81-123	0
trans-1,4-Dichloro-2-butene	12.14	2.0	20	0	60.7	46-118	0
Trichloroethene	20.81	1.0	20	0	104	84-130	0
Trichlorofluoromethane	19.62	1.0	20	0	98.1	60-140	0
Vinyl chloride	19.82	1.0	20	0	99.1	50-136	0
Xylenes, Total	60.26	3.0	60	0	100	80-126	0
Surr: 1,2-Dichloroethane-d4	*17.86*	0	*20*	0	*89.3*	*75-120*	0
Surr: 4-Bromofluorobenzene	*20.13*	0	*20*	0	*101*	*80-110*	0
Surr: Dibromofluoromethane	*19.75*	0	*20*	0	*98.8*	*85-115*	0
Surr: Toluene-d8	*18.98*	0	*20*	0	*94.9*	*85-110*	0

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606479
Project: ECT (Hartland - 13850 Cherry Blossom)

QC BATCH REPORT

Batch ID: **R189191a** Instrument ID **VMS6** Method: **SW8260B**

MS Sample ID: **1606401-15A MS** Units: **µg/L** Analysis Date: **6/9/2016 10:53 AM**
Client ID: Run ID: **VMS6_160608B** SeqNo: **3868146** Prep Date: DF: **100**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	2027	100	2000	0	101	80-130	0			
1,1,1-Trichloroethane	2176	100	2000	0	109	75-130	0			
1,1,2,2-Tetrachloroethane	2098	100	2000	0	105	75-130	0			
1,1,2-Trichloroethane	1988	100	2000	0	99.4	75-125	0			
1,1-Dichloroethane	2072	100	2000	0	104	75-133	0			
1,1-Dichloroethene	2225	100	2000	0	111	70-145	0			
1,2,3-Trichloropropane	1968	100	2000	0	98.4	75-125	0			
1,2,4-Trichlorobenzene	1814	100	2000	0	90.7	70-135	0			
1,2,4-Trimethylbenzene	3856	100	2000	1781	104	75-130	0			
1,2-Dibromo-3-chloropropane	1598	100	2000	0	79.9	60-130	0			
1,2-Dibromoethane	2029	100	2000	0	101	80-150	0			
1,2-Dichlorobenzene	1913	100	2000	0	95.6	70-130	0			
1,2-Dichloroethane	1936	100	2000	0	96.8	78-125	0			
1,2-Dichloropropane	2024	100	2000	0	101	75-125	0			
1,3,5-Trimethylbenzene	2485	100	2000	440	102	75-130	0			
1,3-Dichlorobenzene	1859	100	2000	0	93	75-130	0			
1,4-Dichlorobenzene	1771	100	2000	0	88.6	75-130	0			
2-Butanone	1554	500	2000	0	77.7	55-150	0			
2-Hexanone	1680	500	2000	0	84	60-135	0			
4-Methyl-2-pentanone	2333	100	2000	0	117	77-178	0			
Acetone	2157	1,000	2000	0	108	60-160	0			
Acrylonitrile	1610	100	2000	0	80.5	60-140	0			
Benzene	10510	100	2000	7878	132	85-125	0			SE
Bromochloromethane	1882	100	2000	0	94.1	75-130	0			
Bromodichloromethane	1999	100	2000	0	100	75-125	0			
Bromoform	1801	100	2000	0	90	60-125	0			
Bromomethane	787	100	2000	0	39.4	30-185	0			
Carbon disulfide	2005	100	2000	0	100	60-165	0			
Carbon tetrachloride	2057	100	2000	0	103	65-140	0			
Chlorobenzene	1989	100	2000	0	99.4	80-120	0			
Chloroethane	3158	100	2000	0	158	50-140	0			S
Chloroform	1881	100	2000	0	94	80-130	0			
Chloromethane	1440	100	2000	0	72	50-130	0			
cis-1,2-Dichloroethene	1836	100	2000	0	91.8	75-134	0			
cis-1,3-Dichloropropene	1983	100	2000	0	99.2	70-130	0			
Dibromochloromethane	1793	100	2000	0	89.6	60-115	0			
Dibromomethane	2070	100	2000	0	104	85-125	0			
Dichlorodifluoromethane	2065	100	2000	0	103	20-120	0			
Ethylbenzene	4240	100	2000	2217	101	85-125	0			
Hexachloroethane	1383	100	2000	0	69.2	50-124	0			
Isopropylbenzene	2155	100	2000	90	103	80-127	0			
m,p-Xylene	12120	200	4000	8137	99.5	75-130	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606479
Project: ECT (Hartland - 13850 Cherry Blossom)

QC BATCH REPORT

Batch ID: **R189191a** Instrument ID **VMS6** Method: **SW8260B**

Methyl iodide	713	100	2000	0	35.6	60-160	0	S
Methyl tert-butyl ether	1823	100	2000	0	91.2	80-130	0	
Methylene chloride	1906	500	2000	0	95.3	75-140	0	
Naphthalene	2300	500	2000	372	96.4	55-160	0	
n-Propylbenzene	2251	100	2000	243	100	78-120	0	
o-Xylene	5588	100	2000	3675	95.6	80-125	0	
Styrene	2200	100	2000	0	110	85-125	0	
Tetrachloroethene	2063	100	2000	0	103	77-138	0	
Toluene	11670	100	2000	9459	111	85-125	0	EO
trans-1,2-Dichloroethene	2035	100	2000	0	102	80-140	0	
trans-1,3-Dichloropropene	1580	100	2000	0	79	81-123	0	S
trans-1,4-Dichloro-2-butene	1084	200	2000	0	54.2	46-118	0	
Trichloroethene	2218	100	2000	0	111	84-130	0	
Trichlorofluoromethane	2239	100	2000	0	112	60-140	0	
Vinyl chloride	2122	100	2000	0	106	50-136	0	
Xylenes, Total	17710	300	6000	11810	98.2	80-126	0	
Surr: 1,2-Dichloroethane-d4	*1818*	0	*2000*	0	*90.9*	*75-120*	0	
Surr: 4-Bromofluorobenzene	*2011*	0	*2000*	0	*101*	*80-110*	0	
Surr: Dibromofluoromethane	*1940*	0	*2000*	0	*97*	*85-115*	0	
Surr: Toluene-d8	*1912*	0	*2000*	0	*95.6*	*85-110*	0	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606479
Project: ECT (Hartland - 13850 Cherry Blossom)

QC BATCH REPORT

Batch ID: **R189191a** Instrument ID **VMS6** Method: **SW8260B**

MSD Sample ID: **1606401-15A MSD** Units: **µg/L** Analysis Date: **6/9/2016 11:18 AM**
Client ID: Run ID: **VMS6_160608B** SeqNo: **3868147** Prep Date: DF: **100**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	2000	100	2000	0	100	80-130	2027	1.34	30	
1,1,1-Trichloroethane	2094	100	2000	0	105	75-130	2176	3.84	30	
1,1,2,2-Tetrachloroethane	2028	100	2000	0	101	75-130	2098	3.39	30	
1,1,2-Trichloroethane	1862	100	2000	0	93.1	75-125	1988	6.55	30	
1,1-Dichloroethane	1943	100	2000	0	97.2	75-133	2072	6.43	30	
1,1-Dichloroethene	2156	100	2000	0	108	70-145	2225	3.15	30	
1,2,3-Trichloropropane	1869	100	2000	0	93.4	75-125	1968	5.16	30	
1,2,4-Trichlorobenzene	1877	100	2000	0	93.8	70-135	1814	3.41	30	
1,2,4-Trimethylbenzene	5502	100	2000	1781	186	75-130	3856	35.2	30	SR
1,2-Dibromo-3-chloropropane	1518	100	2000	0	75.9	60-130	1598	5.13	30	
1,2-Dibromoethane	1960	100	2000	0	98	80-150	2029	3.46	30	
1,2-Dichlorobenzene	1939	100	2000	0	97	70-130	1913	1.35	30	
1,2-Dichloroethane	1818	100	2000	0	90.9	78-125	1936	6.29	30	
1,2-Dichloropropane	1959	100	2000	0	98	75-125	2024	3.26	30	
1,3,5-Trimethylbenzene	2975	100	2000	440	127	75-130	2485	17.9	30	
1,3-Dichlorobenzene	1918	100	2000	0	95.9	75-130	1859	3.12	30	
1,4-Dichlorobenzene	1834	100	2000	0	91.7	75-130	1771	3.5	30	
2-Butanone	1610	500	2000	0	80.5	55-150	1554	3.54	30	
2-Hexanone	1607	500	2000	0	80.4	60-135	1680	4.44	30	
4-Methyl-2-pentanone	2230	100	2000	0	112	77-178	2333	4.51	30	
Acetone	2208	1,000	2000	0	110	60-160	2157	2.34	30	
Acrylonitrile	1516	100	2000	0	75.8	60-140	1610	6.01	30	
Benzene	17750	100	2000	7878	494	85-125	10510	51.3	30	SRE
Bromochloromethane	1800	100	2000	0	90	75-130	1882	4.45	30	
Bromodichloromethane	1910	100	2000	0	95.5	75-125	1999	4.55	30	
Bromoform	1729	100	2000	0	86.4	60-125	1801	4.08	30	
Bromomethane	1460	100	2000	0	73	30-185	787	59.9	30	R
Carbon disulfide	2013	100	2000	0	101	60-165	2005	0.398	30	
Carbon tetrachloride	2089	100	2000	0	104	65-140	2057	1.54	30	
Chlorobenzene	1936	100	2000	0	96.8	80-120	1989	2.7	30	
Chloroethane	2892	100	2000	0	145	50-140	3158	8.79	30	S
Chloroform	1862	100	2000	0	93.1	80-130	1881	1.02	30	
Chloromethane	1275	100	2000	0	63.8	50-130	1440	12.2	30	
cis-1,2-Dichloroethene	1769	100	2000	0	88.4	75-134	1836	3.72	30	
cis-1,3-Dichloropropene	1916	100	2000	0	95.8	70-130	1983	3.44	30	
Dibromochloromethane	1762	100	2000	0	88.1	60-115	1793	1.74	30	
Dibromomethane	1897	100	2000	0	94.8	85-125	2070	8.72	30	
Dichlorodifluoromethane	2034	100	2000	0	102	20-120	2065	1.51	30	
Ethylbenzene	6328	100	2000	2217	206	85-125	4240	39.5	30	SR
Hexachloroethane	1523	100	2000	0	76.2	50-124	1383	9.64	30	
Isopropylbenzene	2275	100	2000	90	109	80-127	2155	5.42	30	
m,p-Xylene	19180	200	4000	8137	276	75-130	12120	45.1	30	SR

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606479
Project: ECT (Hartland - 13850 Cherry Blossom)

QC BATCH REPORT

Batch ID: **R189191a** Instrument ID **VMS6** Method: **SW8260B**

Methyl iodide	980	100	2000	0	49	60-160	713	31.5	30	SR
Methyl tert-butyl ether	1779	100	2000	0	89	80-130	1823	2.44	30	
Methylene chloride	1788	500	2000	0	89.4	75-140	1906	6.39	30	
Naphthalene	2618	500	2000	372	112	55-160	2300	12.9	30	
n-Propylbenzene	2511	100	2000	243	113	78-120	2251	10.9	30	
o-Xylene	8902	100	2000	3675	261	80-125	5588	45.7	30	SR
Styrene	2316	100	2000	0	116	85-125	2200	5.14	30	
Tetrachloroethene	2104	100	2000	0	105	77-138	2063	1.97	30	
Toluene	19910	100	2000	9459	522	85-125	11670	52.1	30	SREO
trans-1,2-Dichloroethene	1963	100	2000	0	98.2	80-140	2035	3.6	30	
trans-1,3-Dichloropropene	1519	100	2000	0	76	81-123	1580	3.94	30	S
trans-1,4-Dichloro-2-butene	1020	200	2000	0	51	46-118	1084	6.08	30	
Trichloroethene	2147	100	2000	0	107	84-130	2218	3.25	30	
Trichlorofluoromethane	2213	100	2000	0	111	60-140	2239	1.17	30	
Vinyl chloride	1987	100	2000	0	99.4	50-136	2122	6.57	30	
Xylenes, Total	28080	300	6000	11810	271	80-126	17710	45.3	30	SR
Surr: 1,2-Dichloroethane-d4	*1793*	0	*2000*	0	*89.6*	*75-120*	1818	*1.38*	*30*	
Surr: 4-Bromofluorobenzene	*2011*	0	*2000*	0	*101*	*80-110*	2011	*0*	*30*	
Surr: Dibromofluoromethane	*1965*	0	*2000*	0	*98.2*	*85-115*	1940	*1.28*	*30*	
Surr: Toluene-d8	*1896*	0	*2000*	0	*94.8*	*85-110*	1912	*0.84*	*30*	

The following samples were analyzed in this batch: 1606479-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Group USA, Corp

Date: 10-Jun-16

Client: Merit Energy
Project: ECT (Hartland - 13850 Cherry Blossom)
WorkOrder: **1606479**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and PQL, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
µg/L	Micrograms per Liter

ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **MERITENERGY** Date/Time Received: **08-Jun-16 09:30**

Work Order: **1606479** Received by: **KRW**

Checklist completed by Keith Wierenga (eSignature) 08-Jun-16 (Date) Reviewed by: Gary Byar (eSignature) 08-Jun-16 (Date)

Matrices: Water

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	3.6/3.6 C	SR2	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	6/8/2016 2:37:40 PM		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:	_		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

ALS Environmental

Cincinnati, OH +1 513 733 5336
Everett, WA +1 425 356 2600
Fort Collins, CO +1 970 490 1511
Holland, MI +1 616 399 6070
Houston, TX +1 281 530 5656
Middletown, PA +1 717 944 5541
Spring City, PA +1 610 948 4903
Salt Lake City, UT +1 801 266 7700
South Charleston, WV +1 304 356 3168
York, PA +1 717 505 5280

Chain of Custody Form

Page 1 of 1

COC ID: 16622

ALS Project Manager: G. Burke | ALS Work Order #: 1606479

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	Hartland 36 Gas Plant	A	Sulfolane
Work Order		Project Number	13-0685-2000	B	DLPT
Company Name	ECT, Inc.	Bill To Company	MEC	C	Full VOCs
Send Report To	Jeremy Lewandowski	Invoice Attn	Sean Craven	D	
Address	3399 Veterans Dr.	Address	1510 Thomas Rd	E	
City/State/Zip	TC, MI 49684	City/State/Zip	Kalkaska, MI	F	
Phone	231-946-8200	Phone	231-258-6369	G	
Fax	—	Fax	—	H	
e-Mail Address	jlewandowski@ectinc.com	e-Mail Address	sean.craven@meritenergy.com	I	
				J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	13850 Cherry Blossom	6/6/16	7:26	GW	—	4	8	8	1,8								
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9						ALS PROJ: MERITENERGY-MISC												
10	REL BY: Jeremy Lewandowski 6/7/16 1030																

Sampler(s) Please Print & Sign: Jeremy Lewandowski

Shipment Method:

Required Turnaround Time: (Check Box) ☐ STD 10 Wk Days ☒ 5 Wk Days ☐ 2 Wk Days ☐ 24 Hour ☐ Other

Results Due Date:

Relinquished by: Date: 6/6/15 Time: 8:15p Received by: ECT Sample Storage Rec

Relinquished by: ECT Sample Storage Date: 6/7/15 Time: 6:30a Received by (Laboratory):

Logged by (Laboratory): KR Date: 6/8/16 Time: 1435 Checked by (Laboratory): GRB

Notes: 6/7/16 @ 2:00p

Cooler ID	Cooler Temp
	3.4°C

QC Package: (Check One Box Below)
☒ Level II Std QC ☐ TRRP Checklist
☐ Level III Std QC/Raw Data ☐ TRRP Level IV
☐ Level IV SW846/CLP
☐ Other

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

6/8/16 0930

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

ORIGIN ID:TVCA (231) 421-3204
GARY BYAR
ALS ENVIRONMENTAL
781 INDUSTRIAL CIRCLE
UNIT #3
TRAVERSE CITY, MI 49686
UNITED STATES US

SHIP DATE: 07JUN16
ACTWGT: 45.00 LB
CAD: 2264840/INET3730
DIMS: 14x26x15 IN
BILL SENDER

TO SAMPLE RECEIVING
ALS LABORATORY GROUP
3352 128TH AVENUE

HOLLAND MI 49424
(616) 399-6070 REF: ALS - TC
INV:
PO: DEPT:

540J2/3080/727F

FedEx Express

E

WED - 08 JUN 3:00P
STANDARD OVERNIGHT

4 of 4
MPS# 7764 6604 9000
0263
Mstr# 7764 6604 8437
0201

49424
MI-US GRR

68 HLMA

FedEx Ship Manager - Print Your Label(s)

6/7/2016

ALS Environmental
3352 128th Avenue
Holland, Michigan 49424
Tel. +1 616 399 6070
Fax. +1 616 399 6185

CUSTODY SEAL
Date: 6-7-16 Time: 1630
Name: J. Byar
Company: ALS-TC

Seal Broken By:
Date:

ECT - TC

ALS

of 2

Return to:
ALS Environmental

10-Jun-2016

Sean Craven
Merit Energy
1510 Thomas Rd
PO Box 910
Kalkaska, MI 49646

Re: **ECT (Hartland - 13593 Sheila Lane)** Work Order: **1606481**

Dear Sean,

ALS Environmental received 1 sample on 08-Jun-2016 09:30 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with NELAP standard requirements and QC results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 19.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

Gary Byar

Electronically approved by: Gary Byar

Gary Byar
Project Manager

Certificate No: MI: 0022

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185
ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

ALS Group USA, Corp

Date: 10-Jun-16

Client: Merit Energy
Project: ECT (Hartland - 13593 Sheila Lane)
Work Order: **1606481**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1606481-01	13593 Sheila Lane	Water		6/6/2016 17:56	6/8/2016 09:30	☐

ALS Group USA, Corp

Date: *10-Jun-16*

Client: Merit Energy
Project: ECT (Hartland - 13593 Sheila Lane)
Work Order: 1606481
Sample ID: 13593 Sheila Lane
Lab ID: 1606481-01
Collection Date: 6/6/2016 05:56 PM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW846 8270D**		Prep: SW3510 / 6/9/16	Analyst: **RM**
Diisopropanolamine	ND		50	µg/L	1	6/9/2016 08:38 PM
Sulfolane	ND		10	µg/L	1	6/9/2016 08:38 PM
Surr: 2,4,6-Tribromophenol	*59.9*		*38-115*	*%REC*	1	6/9/2016 08:38 PM
Surr: 2-Fluorobiphenyl	*53.8*		*32-100*	*%REC*	1	6/9/2016 08:38 PM
Surr: 2-Fluorophenol	*33.2*		*22-59*	*%REC*	1	6/9/2016 08:38 PM
Surr: 4-Terphenyl-d14	*73.1*		*23-112*	*%REC*	1	6/9/2016 08:38 PM
Surr: Nitrobenzene-d5	*61.9*		*31-93*	*%REC*	1	6/9/2016 08:38 PM
Surr: Phenol-d6	*17.2*		*13-36*	*%REC*	1	6/9/2016 08:38 PM
VOLATILE ORGANIC COMPOUNDS			**SW8260B**			Analyst: **AK**
1,1,1,2-Tetrachloroethane	ND		1.0	µg/L	1	6/9/2016 02:51 PM
1,1,1-Trichloroethane	ND		1.0	µg/L	1	6/9/2016 02:51 PM
1,1,2,2-Tetrachloroethane	ND		1.0	µg/L	1	6/9/2016 02:51 PM
1,1,2-Trichloroethane	ND		1.0	µg/L	1	6/9/2016 02:51 PM
1,1,2-Trichlorotrifluoroethane	ND		1.0	µg/L	1	6/9/2016 02:51 PM
1,1-Dichloroethane	ND		1.0	µg/L	1	6/9/2016 02:51 PM
1,1-Dichloroethene	ND		1.0	µg/L	1	6/9/2016 02:51 PM
1,2,3-Trichloropropane	ND		1.0	µg/L	1	6/9/2016 02:51 PM
1,2,4-Trichlorobenzene	ND		1.0	µg/L	1	6/9/2016 02:51 PM
1,2,4-Trimethylbenzene	ND		1.0	µg/L	1	6/9/2016 02:51 PM
1,2-Dibromo-3-chloropropane	ND		1.0	µg/L	1	6/9/2016 02:51 PM
1,2-Dibromoethane	ND		1.0	µg/L	1	6/9/2016 02:51 PM
1,2-Dichlorobenzene	ND		1.0	µg/L	1	6/9/2016 02:51 PM
1,2-Dichloroethane	ND		1.0	µg/L	1	6/9/2016 02:51 PM
1,2-Dichloropropane	ND		1.0	µg/L	1	6/9/2016 02:51 PM
1,3,5-Trimethylbenzene	ND		1.0	µg/L	1	6/9/2016 02:51 PM
1,3-Dichlorobenzene	ND		1.0	µg/L	1	6/9/2016 02:51 PM
1,4-Dichlorobenzene	ND		1.0	µg/L	1	6/9/2016 02:51 PM
2-Butanone	ND		5.0	µg/L	1	6/9/2016 02:51 PM
2-Hexanone	ND		5.0	µg/L	1	6/9/2016 02:51 PM
2-Methylnaphthalene	ND		5.0	µg/L	1	6/9/2016 02:51 PM
4-Methyl-2-pentanone	ND		1.0	µg/L	1	6/9/2016 02:51 PM
Acetone	ND		10	µg/L	1	6/9/2016 02:51 PM
Acrylonitrile	ND		1.0	µg/L	1	6/9/2016 02:51 PM
Benzene	ND		1.0	µg/L	1	6/9/2016 02:51 PM
Bromochloromethane	ND		1.0	µg/L	1	6/9/2016 02:51 PM
Bromodichloromethane	ND		1.0	µg/L	1	6/9/2016 02:51 PM
Bromoform	ND		1.0	µg/L	1	6/9/2016 02:51 PM
Bromomethane	ND		1.0	µg/L	1	6/9/2016 02:51 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *10-Jun-16*

Client: Merit Energy
Project: ECT (Hartland - 13593 Sheila Lane)
Work Order: 1606481
Sample ID: 13593 Sheila Lane
Lab ID: 1606481-01
Collection Date: 6/6/2016 05:56 PM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Carbon disulfide	ND		1.0	µg/L	1	6/9/2016 02:51 PM
Carbon tetrachloride	ND		1.0	µg/L	1	6/9/2016 02:51 PM
Chlorobenzene	ND		1.0	µg/L	1	6/9/2016 02:51 PM
Chloroethane	ND		1.0	µg/L	1	6/9/2016 02:51 PM
Chloroform	ND		1.0	µg/L	1	6/9/2016 02:51 PM
Chloromethane	ND		1.0	µg/L	1	6/9/2016 02:51 PM
cis-1,2-Dichloroethene	ND		1.0	µg/L	1	6/9/2016 02:51 PM
cis-1,3-Dichloropropene	ND		1.0	µg/L	1	6/9/2016 02:51 PM
Dibromochloromethane	ND		1.0	µg/L	1	6/9/2016 02:51 PM
Dibromomethane	ND		1.0	µg/L	1	6/9/2016 02:51 PM
Dichlorodifluoromethane	ND		1.0	µg/L	1	6/9/2016 02:51 PM
Diethyl ether	ND		1.0	µg/L	1	6/9/2016 02:51 PM
Ethylbenzene	ND		1.0	µg/L	1	6/9/2016 02:51 PM
Hexachloroethane	ND		1.0	µg/L	1	6/9/2016 02:51 PM
Isopropylbenzene	ND		1.0	µg/L	1	6/9/2016 02:51 PM
m,p-Xylene	ND		2.0	µg/L	1	6/9/2016 02:51 PM
Methyl iodide	ND		1.0	µg/L	1	6/9/2016 02:51 PM
Methyl tert-butyl ether	ND		1.0	µg/L	1	6/9/2016 02:51 PM
Methylene chloride	ND		5.0	µg/L	1	6/9/2016 02:51 PM
Naphthalene	ND		5.0	µg/L	1	6/9/2016 02:51 PM
n-Propylbenzene	ND		1.0	µg/L	1	6/9/2016 02:51 PM
o-Xylene	ND		1.0	µg/L	1	6/9/2016 02:51 PM
Styrene	ND		1.0	µg/L	1	6/9/2016 02:51 PM
Tetrachloroethene	ND		1.0	µg/L	1	6/9/2016 02:51 PM
Toluene	ND		1.0	µg/L	1	6/9/2016 02:51 PM
trans-1,2-Dichloroethene	ND		1.0	µg/L	1	6/9/2016 02:51 PM
trans-1,3-Dichloropropene	ND		1.0	µg/L	1	6/9/2016 02:51 PM
trans-1,4-Dichloro-2-butene	ND		2.0	µg/L	1	6/9/2016 02:51 PM
Trichloroethene	ND		1.0	µg/L	1	6/9/2016 02:51 PM
Trichlorofluoromethane	ND		1.0	µg/L	1	6/9/2016 02:51 PM
Vinyl acetate	ND		1.0	µg/L	1	6/9/2016 02:51 PM
Vinyl chloride	ND		1.0	µg/L	1	6/9/2016 02:51 PM
Xylenes, Total	ND		3.0	µg/L	1	6/9/2016 02:51 PM
Surr: 1,2-Dichloroethane-d4	*106*		*75-120*	*%REC*	1	6/9/2016 02:51 PM
Surr: 4-Bromofluorobenzene	*91.2*		*80-110*	*%REC*	1	6/9/2016 02:51 PM
Surr: Dibromofluoromethane	*101*		*85-115*	*%REC*	1	6/9/2016 02:51 PM
Surr: Toluene-d8	*97.0*		*85-110*	*%REC*	1	6/9/2016 02:51 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 10-Jun-16

Client: Merit Energy
Project: ECT (Hartland - 13593 Sheila Lane)
Work Order: 1606481

Case Narrative

Batch R189219 Sample VLCSW1-160609 The LCS recovery for volatile compound Methyl Iodide was above the upper control limit. All the sample results in the batch were non-detect. No qualification is necessary for this analyte.

Batch R189219 The MS/MSD data for Volatiles is not related to this project's sample. No data requires qualification.

ALS Group USA, Corp

Date: 10-Jun-16

Client: Merit Energy

Work Order: 1606481

Project: ECT (Hartland - 13593 Sheila Lane)

QC BATCH REPORT

Batch ID: **87107** Instrument ID **SVMS8** Method: **SW846 8270D**

MBLK Sample ID: **SBLKW1-87107-87107** Units: **µg/L** Analysis Date: **6/9/2016 03:25 PM**

Client ID: Run ID: **SVMS8_160609A** SeqNo: **3870197** Prep Date: **6/9/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Diisopropanolamine	ND	50								
Sulfolane	ND	10								
Surr: 2,4,6-Tribromophenol	*21.75*	0	*50*	0	*43.5*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*21.56*	0	*50*	0	*43.1*	*32-100*	0			
Surr: 2-Fluorophenol	*16.37*	0	*50*	0	*32.7*	*22-59*	0			
Surr: 4-Terphenyl-d14	*35.69*	0	*50*	0	*71.4*	*23-112*	0			
Surr: Nitrobenzene-d5	*28.03*	0	*50*	0	*56.1*	*31-93*	0			
Surr: Phenol-d6	*7.63*	0	*50*	0	*15.3*	*13-36*	0			

LCS Sample ID: **SLCSW1-87107-87107** Units: **µg/L** Analysis Date: **6/9/2016 03:45 PM**

Client ID: Run ID: **SVMS8_160609A** SeqNo: **3870198** Prep Date: **6/9/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Diisopropanolamine	5.75	50	100	0	5.75	5-40	0			
Sulfolane	54.53	10	100	0	54.5	30-100	0			
Surr: 2,4,6-Tribromophenol	*27.91*	0	*50*	0	*55.8*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*28.51*	0	*50*	0	*57*	*32-100*	0			
Surr: 2-Fluorophenol	*19.32*	0	*50*	0	*38.6*	*22-59*	0			
Surr: 4-Terphenyl-d14	*37.7*	0	*50*	0	*75.4*	*23-112*	0			
Surr: Nitrobenzene-d5	*35.21*	0	*50*	0	*70.4*	*31-93*	0			
Surr: Phenol-d6	*10.02*	0	*50*	0	*20*	*13-36*	0			

MS Sample ID: **1606476-01B MS** Units: **µg/L** Analysis Date: **6/9/2016 06:36 PM**

Client ID: Run ID: **SVMS8_160609A** SeqNo: **3870199** Prep Date: **6/9/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Diisopropanolamine	14.01	53	106.4	0	13.2	5-40	0			
Sulfolane	65.27	11	106.4	0	61.4	30-100	0			
Surr: 2,4,6-Tribromophenol	*36.05*	0	*53.19*	0	*67.8*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*31.76*	0	*53.19*	0	*59.7*	*32-100*	0			
Surr: 2-Fluorophenol	*20.45*	0	*53.19*	0	*38.4*	*22-59*	0			
Surr: 4-Terphenyl-d14	*38.93*	0	*53.19*	0	*73.2*	*23-112*	0			
Surr: Nitrobenzene-d5	*38.12*	0	*53.19*	0	*71.7*	*31-93*	0			
Surr: Phenol-d6	*10.87*	0	*53.19*	0	*20.4*	*13-36*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606481
Project: ECT (Hartland - 13593 Sheila Lane)

QC BATCH REPORT

Batch ID: **87107** Instrument ID **SVMS8** Method: **SW846 8270D**

DUP Sample ID: **1606478-01B DUP** Units: **µg/L** Analysis Date: **6/9/2016 07:16 PM**
Client ID: Run ID: **SVMS8_160609A** SeqNo: **3870201** Prep Date: **6/9/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Diisopropanolamine	ND	53	0	0	0		0	0	30	
Sulfolane	ND	11	0	0	0		0	0	30	
Surr: 2,4,6-Tribromophenol	*32.53*	0	*53.02*	0	*61.4*	*38-115*	31.66	*2.72*	*40*	
Surr: 2-Fluorobiphenyl	*29.9*	0	*53.02*	0	*56.4*	*32-100*	27.39	*8.78*	*40*	
Surr: 2-Fluorophenol	*18.87*	0	*53.02*	0	*35.6*	*22-59*	16.97	*10.6*	*40*	
Surr: 4-Terphenyl-d14	*35.97*	0	*53.02*	0	*67.8*	*23-112*	37.85	*5.09*	*40*	
Surr: Nitrobenzene-d5	*35.12*	0	*53.02*	0	*66.2*	*31-93*	32.88	*6.59*	*40*	
Surr: Phenol-d6	*9.3*	0	*53.02*	0	*17.5*	*13-36*	8.71	*6.55*	*40*	

The following samples were analyzed in this batch: 1606481-01B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606481
Project: ECT (Hartland - 13593 Sheila Lane)

QC BATCH REPORT

Batch ID: **R189219** Instrument ID **VMS10** Method: **SW8260B**

MBLK Sample ID: **VBLKW1-160609-R189219** Units: **µg/L** Analysis Date: **6/9/2016 01:38 PM**
Client ID: Run ID: **VMS10_160609A** SeqNo: **3868762** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
1,1,2-Trichlorotrifluoroethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2,3-Trichloropropane	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	1.0								
1,2-Dibromoethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,2-Dichloroethane	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
2-Butanone	ND	5.0								
2-Hexanone	ND	5.0								
2-Methylnaphthalene	ND	5.0								
4-Methyl-2-pentanone	ND	1.0								
Acetone	ND	10								
Acrylonitrile	ND	1.0								
Benzene	ND	1.0								
Bromochloromethane	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	1.0								
Carbon disulfide	ND	1.0								
Carbon tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	ND	1.0								
cis-1,2-Dichloroethene	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
Diethyl ether	ND	1.0								
Ethylbenzene	ND	1.0								

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Batch ID: **R189219** Instrument ID **VMS10** Method: **SW8260B**

Hexachloroethane	ND	1.0					
Isopropylbenzene	ND	1.0					
m,p-Xylene	ND	2.0					
Methyl iodide	ND	1.0					
Methyl tert-butyl ether	ND	1.0					
Methylene chloride	ND	5.0					
Naphthalene	ND	5.0					
n-Propylbenzene	ND	1.0					
o-Xylene	ND	1.0					
Styrene	ND	1.0					
Tetrachloroethene	ND	1.0					
Toluene	ND	1.0					
trans-1,2-Dichloroethene	ND	1.0					
trans-1,3-Dichloropropene	ND	1.0					
trans-1,4-Dichloro-2-butene	ND	2.0					
Trichloroethene	ND	1.0					
Trichlorofluoromethane	ND	1.0					
Vinyl acetate	ND	1.0					
Vinyl chloride	ND	1.0					
Xylenes, Total	ND	3.0					
Surr: 1,2-Dichloroethane-d4	*20.49*	0	*20*	0	*102*	*75-120*	0
Surr: 4-Bromofluorobenzene	*18.47*	0	*20*	0	*92.4*	*80-110*	0
Surr: Dibromofluoromethane	*20*	0	*20*	0	*100*	*85-115*	0
Surr: Toluene-d8	*19.62*	0	*20*	0	*98.1*	*85-110*	0

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606481
Project: ECT (Hartland - 13593 Sheila Lane)

QC BATCH REPORT

Batch ID: **R189219** Instrument ID **VMS10** Method: **SW8260B**

LCS Sample ID: **VLCSW1-160609-R189219** Units: **µg/L** Analysis Date: **6/9/2016 10:58 AM**
Client ID: Run ID: **VMS10_160609A** SeqNo: **3868761** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	20.21	1.0	20	0	101	80-130	0			
1,1,1-Trichloroethane	21.58	1.0	20	0	108	75-130	0			
1,1,2,2-Tetrachloroethane	19.6	1.0	20	0	98	75-130	0			
1,1,2-Trichloroethane	20.68	1.0	20	0	103	75-125	0			
1,1-Dichloroethane	20.39	1.0	20	0	102	75-133	0			
1,1-Dichloroethene	21.68	1.0	20	0	108	70-145	0			
1,2,3-Trichloropropane	19.27	1.0	20	0	96.4	75-125	0			
1,2,4-Trichlorobenzene	21.03	1.0	20	0	105	70-135	0			
1,2,4-Trimethylbenzene	21.28	1.0	20	0	106	75-130	0			
1,2-Dibromo-3-chloropropane	15.02	1.0	20	0	75.1	60-130	0			
1,2-Dibromoethane	22.66	1.0	20	0	113	80-150	0			
1,2-Dichlorobenzene	20.98	1.0	20	0	105	70-130	0			
1,2-Dichloroethane	19.47	1.0	20	0	97.4	78-125	0			
1,2-Dichloropropane	20.58	1.0	20	0	103	75-125	0			
1,3,5-Trimethylbenzene	21.96	1.0	20	0	110	75-130	0			
1,3-Dichlorobenzene	21.37	1.0	20	0	107	75-130	0			
1,4-Dichlorobenzene	21.12	1.0	20	0	106	75-130	0			
2-Butanone	16.22	5.0	20	0	81.1	55-150	0			
2-Hexanone	16.77	5.0	20	0	83.8	60-135	0			
4-Methyl-2-pentanone	22.16	1.0	20	0	111	77-178	0			
Acetone	14.1	10	20	0	70.5	60-160	0			
Acrylonitrile	15.91	1.0	20	0	79.6	60-140	0			
Benzene	20.51	1.0	20	0	103	85-125	0			
Bromochloromethane	20.81	1.0	20	0	104	75-130	0			
Bromodichloromethane	20.49	1.0	20	0	102	75-125	0			
Bromoform	16.04	1.0	20	0	80.2	60-125	0			
Bromomethane	23.77	1.0	20	0	119	30-185	0			
Carbon disulfide	20.48	1.0	20	0	102	60-165	0			
Carbon tetrachloride	19.28	1.0	20	0	96.4	65-140	0			
Chlorobenzene	21.38	1.0	20	0	107	80-120	0			
Chloroethane	17.38	1.0	20	0	86.9	50-140	0			
Chloroform	19.58	1.0	20	0	97.9	80-130	0			
Chloromethane	19.42	1.0	20	0	97.1	50-130	0			
cis-1,2-Dichloroethene	20.11	1.0	20	0	101	75-134	0			
cis-1,3-Dichloropropene	18.96	1.0	20	0	94.8	70-130	0			
Dibromochloromethane	16.82	1.0	20	0	84.1	60-115	0			
Dibromomethane	20.77	1.0	20	0	104	85-125	0			
Dichlorodifluoromethane	18.28	1.0	20	0	91.4	20-120	0			
Ethylbenzene	22.59	1.0	20	0	113	85-125	0			
Hexachloroethane	15.37	1.0	20	0	76.8	50-124	0			
Isopropylbenzene	21.69	1.0	20	0	108	80-127	0			
m,p-Xylene	46.1	2.0	40	0	115	75-130	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

QC BATCH REPORT

Batch ID: **R189219** Instrument ID **VMS10** Method: **SW8260B**

Methyl iodide	34.03	1.0	20	0	170	60-160	0	S
Methyl tert-butyl ether	16.14	1.0	20	0	80.7	80-130	0	
Methylene chloride	22.58	5.0	20	0	113	75-140	0	
Naphthalene	18.11	5.0	20	0	90.6	55-160	0	
n-Propylbenzene	23.04	1.0	20	0	115	78-120	0	
o-Xylene	22.43	1.0	20	0	112	80-125	0	
Styrene	21.5	1.0	20	0	108	85-125	0	
Tetrachloroethene	21.91	1.0	20	0	110	77-138	0	
Toluene	21.48	1.0	20	0	107	85-125	0	
trans-1,2-Dichloroethene	19.45	1.0	20	0	97.2	80-140	0	
trans-1,3-Dichloropropene	17.2	1.0	20	0	86	81-123	0	
trans-1,4-Dichloro-2-butene	14.3	2.0	20	0	71.5	46-118	0	
Trichloroethene	20.6	1.0	20	0	103	84-130	0	
Trichlorofluoromethane	18.89	1.0	20	0	94.4	60-140	0	
Vinyl chloride	21.52	1.0	20	0	108	50-136	0	
Xylenes, Total	68.53	3.0	60	0	114	80-126	0	
Surr: 1,2-Dichloroethane-d4	*19.12*	0	*20*	0	*95.6*	*75-120*	0	
Surr: 4-Bromofluorobenzene	*20.33*	0	*20*	0	*102*	*80-110*	0	
Surr: Dibromofluoromethane	*19.89*	0	*20*	0	*99.4*	*85-115*	0	
Surr: Toluene-d8	*20.23*	0	*20*	0	*101*	*85-110*	0	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606481
Project: ECT (Hartland - 13593 Sheila Lane)

QC BATCH REPORT

Batch ID: **R189219** Instrument ID **VMS10** Method: **SW8260B**

MS Sample ID: **1606558-02A MS** Units: **µg/L** Analysis Date: **6/9/2016 08:55 PM**

Client ID: Run ID: **VMS10_160609A** SeqNo: **3868779** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	19.91	1.0	20	0	99.6	80-130	0			
1,1,1-Trichloroethane	22.74	1.0	20	0	114	75-130	0			
1,1,2,2-Tetrachloroethane	20.1	1.0	20	0	100	75-130	0			
1,1,2-Trichloroethane	20.39	1.0	20	0	102	75-125	0			
1,1-Dichloroethane	20.78	1.0	20	0	104	75-133	0			
1,1-Dichloroethene	22.55	1.0	20	0	113	70-145	0			
1,2,3-Trichloropropane	19.76	1.0	20	0	98.8	75-125	0			
1,2,4-Trichlorobenzene	17.66	1.0	20	0	88.3	70-135	0			
1,2,4-Trimethylbenzene	20.34	1.0	20	0	102	75-130	0			
1,2-Dibromo-3-chloropropane	15.54	1.0	20	0	77.7	60-130	0			
1,2-Dibromoethane	21.99	1.0	20	0	110	80-150	0			
1,2-Dichlorobenzene	19.41	1.0	20	0	97	70-130	0			
1,2-Dichloroethane	19.69	1.0	20	0	98.4	78-125	0			
1,2-Dichloropropane	20.47	1.0	20	0	102	75-125	0			
1,3,5-Trimethylbenzene	20.95	1.0	20	0	105	75-130	0			
1,3-Dichlorobenzene	19.66	1.0	20	0	98.3	75-130	0			
1,4-Dichlorobenzene	19.42	1.0	20	0	97.1	75-130	0			
2-Butanone	17.13	5.0	20	0	85.6	55-150	0			
2-Hexanone	17.53	5.0	20	0	87.6	60-135	0			
4-Methyl-2-pentanone	23.94	1.0	20	0	120	77-178	0			
Acetone	15.73	10	20	0	78.6	60-160	0			
Acrylonitrile	16.08	1.0	20	0	80.4	60-140	0			
Benzene	20.5	1.0	20	0	102	85-125	0			
Bromochloromethane	20.06	1.0	20	0	100	75-130	0			
Bromodichloromethane	20.33	1.0	20	0	102	75-125	0			
Bromoform	16.08	1.0	20	0	80.4	60-125	0			
Bromomethane	13.06	1.0	20	0	65.3	30-185	0			
Carbon disulfide	19.45	1.0	20	0	97.2	60-165	0			
Carbon tetrachloride	20.6	1.0	20	0	103	65-140	0			
Chlorobenzene	20.58	1.0	20	0	103	80-120	0			
Chloroethane	17.32	1.0	20	0	86.6	50-140	0			
Chloroform	19.49	1.0	20	0	97.4	80-130	0			
Chloromethane	15.54	1.0	20	0	77.7	50-130	0			
cis-1,2-Dichloroethene	19.51	1.0	20	0	97.6	75-134	0			
cis-1,3-Dichloropropene	17.65	1.0	20	0	88.2	70-130	0			
Dibromochloromethane	16.56	1.0	20	0	82.8	60-115	0			
Dibromomethane	21.4	1.0	20	0	107	85-125	0			
Dichlorodifluoromethane	20.04	1.0	20	0	100	20-120	0			
Ethylbenzene	21.47	1.0	20	0	107	85-125	0			
Hexachloroethane	14.27	1.0	20	0	71.4	50-124	0			
Isopropylbenzene	20.87	1.0	20	0	104	80-127	0			
m,p-Xylene	44.4	2.0	40	0	111	75-130	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

QC BATCH REPORT

Batch ID: **R189219** Instrument ID **VMS10** Method: **SW8260B**

Methyl iodide	23.54	1.0	20	0	118	60-160	0	
Methyl tert-butyl ether	14.86	1.0	20	0	74.3	80-130	0	S
Methylene chloride	21.31	5.0	20	0	107	75-140	0	
Naphthalene	16.44	5.0	20	0	82.2	55-160	0	
n-Propylbenzene	22.06	1.0	20	0	110	78-120	0	
o-Xylene	21.17	1.0	20	0	106	80-125	0	
Styrene	20.41	1.0	20	0	102	85-125	0	
Tetrachloroethene	21.47	1.0	20	0	107	77-138	0	
Toluene	20.64	1.0	20	0	103	85-125	0	
trans-1,2-Dichloroethene	18.86	1.0	20	0	94.3	80-140	0	
trans-1,3-Dichloropropene	15.89	1.0	20	0	79.4	81-123	0	S
trans-1,4-Dichloro-2-butene	13.66	2.0	20	0	68.3	46-118	0	
Trichloroethene	20.83	1.0	20	0	104	84-130	0	
Trichlorofluoromethane	21.01	1.0	20	0	105	60-140	0	
Vinyl chloride	20.56	1.0	20	0	103	50-136	0	
Xylenes, Total	65.57	3.0	60	0	109	80-126	0	
Surr: 1,2-Dichloroethane-d4	*19.77*	0	*20*	0	*98.8*	*75-120*	0	
Surr: 4-Bromofluorobenzene	*20.44*	0	*20*	0	*102*	*80-110*	0	
Surr: Dibromofluoromethane	*20.89*	0	*20*	0	*104*	*85-115*	0	
Surr: Toluene-d8	*20.2*	0	*20*	0	*101*	*85-110*	0	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606481
Project: ECT (Hartland - 13593 Sheila Lane)

QC BATCH REPORT

Batch ID: **R189219** Instrument ID **VMS10** Method: **SW8260B**

MSD Sample ID: **1606558-02A MSD** Units: **µg/L** Analysis Date: **6/9/2016 09:20 PM**

Client ID: Run ID: **VMS10_160609A** SeqNo: **3868780** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	20.11	1.0	20	0	101	80-130	19.91	1	30	
1,1,1-Trichloroethane	22.9	1.0	20	0	114	75-130	22.74	0.701	30	
1,1,2,2-Tetrachloroethane	20.56	1.0	20	0	103	75-130	20.1	2.26	30	
1,1,2-Trichloroethane	20.55	1.0	20	0	103	75-125	20.39	0.782	30	
1,1-Dichloroethane	20.95	1.0	20	0	105	75-133	20.78	0.815	30	
1,1-Dichloroethene	22.67	1.0	20	0	113	70-145	22.55	0.531	30	
1,2,3-Trichloropropane	20.16	1.0	20	0	101	75-125	19.76	2	30	
1,2,4-Trichlorobenzene	18.68	1.0	20	0	93.4	70-135	17.66	5.61	30	
1,2,4-Trimethylbenzene	20.5	1.0	20	0	102	75-130	20.34	0.784	30	
1,2-Dibromo-3-chloropropane	15.86	1.0	20	0	79.3	60-130	15.54	2.04	30	
1,2-Dibromoethane	22.75	1.0	20	0	114	80-150	21.99	3.4	30	
1,2-Dichlorobenzene	19.86	1.0	20	0	99.3	70-130	19.41	2.29	30	
1,2-Dichloroethane	19.98	1.0	20	0	99.9	78-125	19.69	1.46	30	
1,2-Dichloropropane	21.02	1.0	20	0	105	75-125	20.47	2.65	30	
1,3,5-Trimethylbenzene	21.29	1.0	20	0	106	75-130	20.95	1.61	30	
1,3-Dichlorobenzene	20.35	1.0	20	0	102	75-130	19.66	3.45	30	
1,4-Dichlorobenzene	20.02	1.0	20	0	100	75-130	19.42	3.04	30	
2-Butanone	17.28	5.0	20	0	86.4	55-150	17.13	0.872	30	
2-Hexanone	18.94	5.0	20	0	94.7	60-135	17.53	7.73	30	
4-Methyl-2-pentanone	24.55	1.0	20	0	123	77-178	23.94	2.52	30	
Acetone	18.66	10	20	0	93.3	60-160	15.73	17	30	
Acrylonitrile	17.19	1.0	20	0	86	60-140	16.08	6.67	30	
Benzene	20.99	1.0	20	0	105	85-125	20.5	2.36	30	
Bromochloromethane	20.41	1.0	20	0	102	75-130	20.06	1.73	30	
Bromodichloromethane	20.96	1.0	20	0	105	75-125	20.33	3.05	30	
Bromoform	16.62	1.0	20	0	83.1	60-125	16.08	3.3	30	
Bromomethane	13.9	1.0	20	0	69.5	30-185	13.06	6.23	30	
Carbon disulfide	19.92	1.0	20	0	99.6	60-165	19.45	2.39	30	
Carbon tetrachloride	21.29	1.0	20	0	106	65-140	20.6	3.29	30	
Chlorobenzene	20.77	1.0	20	0	104	80-120	20.58	0.919	30	
Chloroethane	17.91	1.0	20	0	89.6	50-140	17.32	3.35	30	
Chloroform	19.79	1.0	20	0	99	80-130	19.49	1.53	30	
Chloromethane	16.15	1.0	20	0	80.8	50-130	15.54	3.85	30	
cis-1,2-Dichloroethene	19.48	1.0	20	0	97.4	75-134	19.51	0.154	30	
cis-1,3-Dichloropropene	18.32	1.0	20	0	91.6	70-130	17.65	3.73	30	
Dibromochloromethane	16.55	1.0	20	0	82.8	60-115	16.56	0.0604	30	
Dibromomethane	21.06	1.0	20	0	105	85-125	21.4	1.6	30	
Dichlorodifluoromethane	20.32	1.0	20	0	102	20-120	20.04	1.39	30	
Ethylbenzene	22.03	1.0	20	0	110	85-125	21.47	2.57	30	
Hexachloroethane	14.86	1.0	20	0	74.3	50-124	14.27	4.05	30	
Isopropylbenzene	21.45	1.0	20	0	107	80-127	20.87	2.74	30	
m,p-Xylene	45.43	2.0	40	0	114	75-130	44.4	2.29	30	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606481
Project: ECT (Hartland - 13593 Sheila Lane)

QC BATCH REPORT

Batch ID: **R189219** Instrument ID **VMS10** Method: **SW8260B**

Methyl iodide	26.31	1.0	20	0	132	60-160	23.54	11.1	30	
Methyl tert-butyl ether	15.3	1.0	20	0	76.5	80-130	14.86	2.92	30	S
Methylene chloride	21.12	5.0	20	0	106	75-140	21.31	0.896	30	
Naphthalene	17.63	5.0	20	0	88.2	55-160	16.44	6.99	30	
n-Propylbenzene	22.37	1.0	20	0	112	78-120	22.06	1.4	30	
o-Xylene	21.75	1.0	20	0	109	80-125	21.17	2.7	30	
Styrene	20.92	1.0	20	0	105	85-125	20.41	2.47	30	
Tetrachloroethene	22.11	1.0	20	0	111	77-138	21.47	2.94	30	
Toluene	21.01	1.0	20	0	105	85-125	20.64	1.78	30	
trans-1,2-Dichloroethene	19.3	1.0	20	0	96.5	80-140	18.86	2.31	30	
trans-1,3-Dichloropropene	16.14	1.0	20	0	80.7	81-123	15.89	1.56	30	S
trans-1,4-Dichloro-2-butene	14.04	2.0	20	0	70.2	46-118	13.66	2.74	30	
Trichloroethene	21.45	1.0	20	0	107	84-130	20.83	2.93	30	
Trichlorofluoromethane	20.7	1.0	20	0	104	60-140	21.01	1.49	30	
Vinyl chloride	21.1	1.0	20	0	106	50-136	20.56	2.59	30	
Xylenes, Total	67.18	3.0	60	0	112	80-126	65.57	2.43	30	
Surr: 1,2-Dichloroethane-d4	*20.03*	0	*20*	0	*100*	*75-120*	19.77	*1.31*	*30*	
Surr: 4-Bromofluorobenzene	*20.25*	0	*20*	0	*101*	*80-110*	20.44	*0.934*	*30*	
Surr: Dibromofluoromethane	*20.68*	0	*20*	0	*103*	*85-115*	20.89	*1.01*	*30*	
Surr: Toluene-d8	*20.09*	0	*20*	0	*100*	*85-110*	20.2	*0.546*	*30*	

The following samples were analyzed in this batch: 1606481-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Group USA, Corp

Date: 10-Jun-16

Client: Merit Energy
Project: ECT (Hartland - 13593 Sheila Lane)
WorkOrder: **1606481**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and PQL, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
µg/L	Micrograms per Liter

ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **MERITENERGY** Date/Time Received: **08-Jun-16 09:30**

Work Order: **1606481** Received by: **KRW**

Checklist completed by Keith Wierenga (eSignature) 08-Jun-16 (Date) Reviewed by: Gary Byar (eSignature) 08-Jun-16 (Date)

Matrices: Water

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	2.4/2.4 C	SR2	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	6/8/2016 2:48:37 PM		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:	_		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

ALS Environmental

Cincinnati, OH +1 513 733 5336
Everett, WA +1 425 356 2600
Fort Collins, CO +1 970 490 1511
Holland, MI +1 616 399 6070
Houston, TX +1 281 530 5656
Middletown, PA +1 717 944 5541
Spring City, PA +1 610 948 4903
Salt Lake City, UT +1 801 266 7700
South Charleston, WV +1 304 356 3168
York, PA +1 717 505 5280

Chain of Custody Form

Page 1 of 1

COC ID: 16621

ALS Project Manager: C. BYAR | ALS Work Order #: 1606481

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	Hartford 36 Gas Plant	A	Sulfolane
Work Order		Project Number	13-0685-2002	B	DIPA
Company Name	ECT, Inc.	Bill To Company	MEC	C	Full VOCs
Send Report To	Jeremy Lewandowski	Invoice Attn	Sean Craven	D	
Address	3399 Veterans Dr.	Address	1510 Thomas Rd.	E	
				F	
City/State/Zip	TC, MI 49684	City/State/Zip	Kalkaska, MI	G	
Phone	231-946-8200	Phone	231-258-6369	H	
Fax	—	Fax	—	I	
e-Mail Address	jlewandowski@ectinc.com	e-Mail Address	sean.craven@entergy.com	J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	13593 Sheila Lane	6/6/16	5:56p	GW	—	4	8	8	1,8								
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9					ALS PROJ: MEERITENERGY-MISC												
10	REL BY: Jeremy Lewandowski 6/7/16 1630																

Sampler(s) Please Print & Sign: Jeremy Lewandowski

Shipment Method:

Required Turnaround Time: (Check Box) ☐ STD 10 Wk Days ☒ 5 Wk Days ☐ 2 Wk Day ☐ 24 Hour ☐ Other

Results Due Date:

Relinquished by: Date: 6/6/16 Time: 8:15p

Received by: ECT Sample Storage

Relinquished by: ECT Sample Storage Date: 6/7/16 Time: 6:30a

Received by (Laboratory):

Logged by (Laboratory): Date: 6/8/16 Time: 1445

Checked by (Laboratory): GRS

Notes: 2:00pm 6/7/16

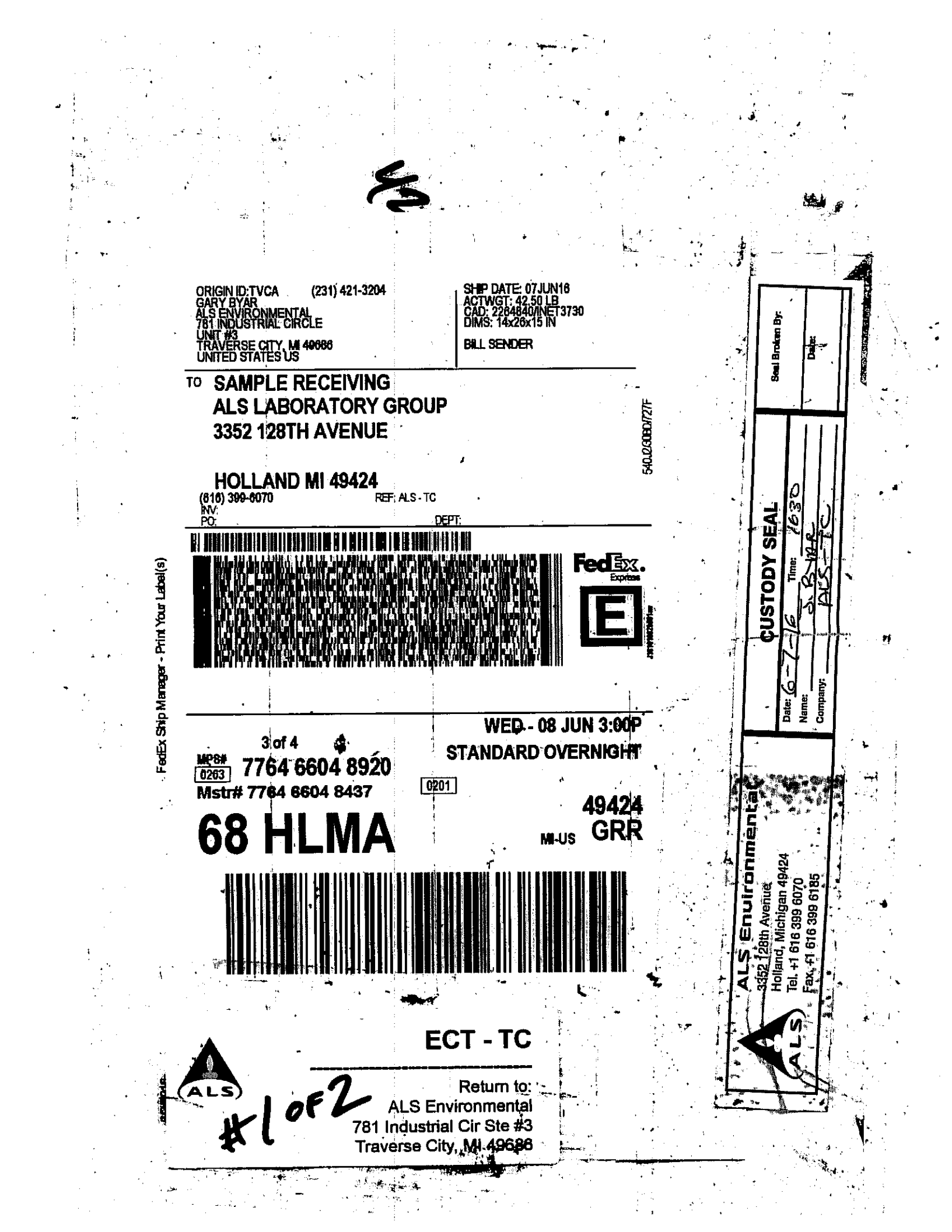
Cooler ID | Cooler Temp: 2.4°C

QC Package: (Check One Box Below)
☒ Level II Std QC
☐ Level III Std QC/Raw Data
☐ Level IV SW846/CLP
☐ Other
☐ TRRP Checklist
☐ TRRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

6/8/16 0930

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.



ORIGIN ID:TVCA (231) 421-3204
GARY BYAR
ALS ENVIRONMENTAL
781 INDUSTRIAL CIRCLE
UNIT #3
TRAVERSE CITY, MI 49686
UNITED STATES US

SHIP DATE: 07JUN16
ACTWGT: 42.50 LB
CAD: 2264840/INET3730
DIMS: 14x26x15 IN

BILL SENDER

TO SAMPLE RECEIVING
ALS LABORATORY GROUP
3352 128TH AVENUE

HOLLAND MI 49424
(616) 399-6070 REF: ALS - TC
INV:
PO: DEPT:

540J030807271F

FedEx Ship Manager - Print Your Label(s)

FedEx Express

3 of 4

MPS# 7764 6604 8920
0263
Mstr# 7764 6604 8437

WED - 08 JUN 3:00P
STANDARD OVERNIGHT

0201

49424
MI-US GRR

68 HLMA

ECT - TC

Return to:
ALS Environmental
781 Industrial Cir Ste #3
Traverse City, MI 49686

#1 of 2

CUSTODY SEAL
Date: 6-7-16 Time: 1630
Name: J. Byar
Company: ALS-TC

Seal Broken By:
Date:

ALS Environmental
3352 128th Avenue
Holland, Michigan 49424
Tel. +1 616 399 6070
Fax. +1 616 399 6185

23-Jun-2016

Sean Craven
Merit Energy
1510 Thomas Rd
PO Box 910
Kalkaska, MI 49646

Re: **ECT (460 Jeni Lane)** Work Order: **1606873**

Dear Sean,

ALS Environmental received 1 sample on 15-Jun-2016 09:30 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with NELAP standard requirements and QC results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 19.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

Gary Byar

Electronically approved by: Gary Byar

Gary Byar
Project Manager

Certificate No: MI: 0022

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185
ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

ALS Group USA, Corp

Date: 23-Jun-16

Client: Merit Energy
Project: ECT (460 Jeni Lane)
Work Order: **1606873**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1606873-01	460 Jeni Lane	Water		6/13/2016 15:31	6/15/2016 09:30	☐

ALS Group USA, Corp

Date: *23-Jun-16*

Client: Merit Energy
Project: ECT (460 Jeni Lane)
Sample ID: 460 Jeni Lane
Collection Date: 6/13/2016 03:31 PM

Work Order: 1606873
Lab ID: 1606873-01
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW846 8270D**		Prep: SW3510 / 6/16/16	Analyst: **RM**
Diisopropanolamine	ND		50	µg/L	1	6/17/2016 01:47 AM
Sulfolane	ND		10	µg/L	1	6/17/2016 01:47 AM
Surr: 2,4,6-Tribromophenol	*65.1*		*38-115*	*%REC*	1	6/17/2016 01:47 AM
Surr: 2-Fluorobiphenyl	*63.2*		*32-100*	*%REC*	1	6/17/2016 01:47 AM
Surr: 2-Fluorophenol	*44.2*		*22-59*	*%REC*	1	6/17/2016 01:47 AM
Surr: 4-Terphenyl-d14	*91.9*		*23-112*	*%REC*	1	6/17/2016 01:47 AM
Surr: Nitrobenzene-d5	*73.5*		*31-93*	*%REC*	1	6/17/2016 01:47 AM
Surr: Phenol-d6	*26.4*		*13-36*	*%REC*	1	6/17/2016 01:47 AM
VOLATILE ORGANIC COMPOUNDS			**SW8260B**			Analyst: **AK**
1,1,1,2-Tetrachloroethane	ND		1.0	µg/L	1	6/21/2016 04:41 PM
1,1,1-Trichloroethane	ND		1.0	µg/L	1	6/21/2016 04:41 PM
1,1,2,2-Tetrachloroethane	ND		1.0	µg/L	1	6/21/2016 04:41 PM
1,1,2-Trichloroethane	ND		1.0	µg/L	1	6/21/2016 04:41 PM
1,1,2-Trichlorotrifluoroethane	ND		1.0	µg/L	1	6/21/2016 04:41 PM
1,1-Dichloroethane	ND		1.0	µg/L	1	6/21/2016 04:41 PM
1,1-Dichloroethene	ND		1.0	µg/L	1	6/21/2016 04:41 PM
1,2,3-Trichloropropane	ND		1.0	µg/L	1	6/21/2016 04:41 PM
1,2,4-Trichlorobenzene	ND		1.0	µg/L	1	6/21/2016 04:41 PM
1,2,4-Trimethylbenzene	ND		1.0	µg/L	1	6/21/2016 04:41 PM
1,2-Dibromo-3-chloropropane	ND		1.0	µg/L	1	6/21/2016 04:41 PM
1,2-Dibromoethane	ND		1.0	µg/L	1	6/21/2016 04:41 PM
1,2-Dichlorobenzene	ND		1.0	µg/L	1	6/21/2016 04:41 PM
1,2-Dichloroethane	ND		1.0	µg/L	1	6/21/2016 04:41 PM
1,2-Dichloropropane	ND		1.0	µg/L	1	6/21/2016 04:41 PM
1,3,5-Trimethylbenzene	ND		1.0	µg/L	1	6/21/2016 04:41 PM
1,3-Dichlorobenzene	ND		1.0	µg/L	1	6/21/2016 04:41 PM
1,4-Dichlorobenzene	ND		1.0	µg/L	1	6/21/2016 04:41 PM
2-Butanone	ND		5.0	µg/L	1	6/21/2016 04:41 PM
2-Hexanone	ND		5.0	µg/L	1	6/21/2016 04:41 PM
2-Methylnaphthalene	ND		5.0	µg/L	1	6/21/2016 04:41 PM
4-Methyl-2-pentanone	ND		1.0	µg/L	1	6/21/2016 04:41 PM
Acetone	ND		10	µg/L	1	6/21/2016 04:41 PM
Acrylonitrile	ND		1.0	µg/L	1	6/21/2016 04:41 PM
Benzene	ND		1.0	µg/L	1	6/21/2016 04:41 PM
Bromochloromethane	ND		1.0	µg/L	1	6/21/2016 04:41 PM
Bromodichloromethane	ND		1.0	µg/L	1	6/21/2016 04:41 PM
Bromoform	ND		1.0	µg/L	1	6/21/2016 04:41 PM
Bromomethane	ND		1.0	µg/L	1	6/21/2016 04:41 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *23-Jun-16*

Client: Merit Energy
Project: ECT (460 Jeni Lane)
Work Order: 1606873
Sample ID: 460 Jeni Lane
Lab ID: 1606873-01
Collection Date: 6/13/2016 03:31 PM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Carbon disulfide	ND		1.0	µg/L	1	6/21/2016 04:41 PM
Carbon tetrachloride	ND		1.0	µg/L	1	6/21/2016 04:41 PM
Chlorobenzene	ND		1.0	µg/L	1	6/21/2016 04:41 PM
Chloroethane	ND		1.0	µg/L	1	6/21/2016 04:41 PM
Chloroform	ND		1.0	µg/L	1	6/21/2016 04:41 PM
Chloromethane	ND		1.0	µg/L	1	6/21/2016 04:41 PM
cis-1,2-Dichloroethene	ND		1.0	µg/L	1	6/21/2016 04:41 PM
cis-1,3-Dichloropropene	ND		1.0	µg/L	1	6/21/2016 04:41 PM
Dibromochloromethane	ND		1.0	µg/L	1	6/21/2016 04:41 PM
Dibromomethane	ND		1.0	µg/L	1	6/21/2016 04:41 PM
Dichlorodifluoromethane	ND		1.0	µg/L	1	6/21/2016 04:41 PM
Diethyl ether	ND		1.0	µg/L	1	6/21/2016 04:41 PM
Ethylbenzene	ND		1.0	µg/L	1	6/21/2016 04:41 PM
Hexachloroethane	ND		1.0	µg/L	1	6/21/2016 04:41 PM
Isopropylbenzene	ND		1.0	µg/L	1	6/21/2016 04:41 PM
m,p-Xylene	ND		2.0	µg/L	1	6/21/2016 04:41 PM
Methyl iodide	ND		1.0	µg/L	1	6/21/2016 04:41 PM
Methyl tert-butyl ether	ND		1.0	µg/L	1	6/21/2016 04:41 PM
Methylene chloride	ND		5.0	µg/L	1	6/21/2016 04:41 PM
Naphthalene	ND		5.0	µg/L	1	6/21/2016 04:41 PM
n-Propylbenzene	ND		1.0	µg/L	1	6/21/2016 04:41 PM
o-Xylene	ND		1.0	µg/L	1	6/21/2016 04:41 PM
Styrene	ND		1.0	µg/L	1	6/21/2016 04:41 PM
Tetrachloroethene	ND		1.0	µg/L	1	6/21/2016 04:41 PM
Toluene	ND		1.0	µg/L	1	6/21/2016 04:41 PM
trans-1,2-Dichloroethene	ND		1.0	µg/L	1	6/21/2016 04:41 PM
trans-1,3-Dichloropropene	ND		1.0	µg/L	1	6/21/2016 04:41 PM
trans-1,4-Dichloro-2-butene	ND		2.0	µg/L	1	6/21/2016 04:41 PM
Trichloroethene	ND		1.0	µg/L	1	6/21/2016 04:41 PM
Trichlorofluoromethane	ND		1.0	µg/L	1	6/21/2016 04:41 PM
Vinyl acetate	ND		1.0	µg/L	1	6/21/2016 04:41 PM
Vinyl chloride	ND		1.0	µg/L	1	6/21/2016 04:41 PM
Xylenes, Total	ND		3.0	µg/L	1	6/21/2016 04:41 PM
Surr: 1,2-Dichloroethane-d4	*109*		*75-120*	*%REC*	1	6/21/2016 04:41 PM
Surr: 4-Bromofluorobenzene	*90.2*		*80-110*	*%REC*	1	6/21/2016 04:41 PM
Surr: Dibromofluoromethane	*106*		*85-115*	*%REC*	1	6/21/2016 04:41 PM
Surr: Toluene-d8	*93.8*		*85-110*	*%REC*	1	6/21/2016 04:41 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 23-Jun-16

Client: Merit Energy
Project: ECT (460 Jeni Lane)
Work Order: 1606873

Case Narrative

Batch R189964A Sample VLCSW2-160621 The LCS recovery for Volatile compound Methyl Iodide was above the upper control limit. All the sample results in the batch were non-detect. No qualification is necessary for this analyte.

Batch R189964A The MS/MSD data for Volatiles is not related to this projects sample. No data requires qualification.

ALS Group USA, Corp

Date: 23-Jun-16

Client: Merit Energy

Work Order: 1606873

Project: ECT (460 Jeni Lane)

QC BATCH REPORT

Batch ID: **87384** Instrument ID **SVMS8** Method: **SW846 8270D**

MBLK Sample ID: **SBLKW1-87384-87384** Units: **µg/L** Analysis Date: **6/16/2016 07:57 PM**

Client ID: Run ID: **SVMS8_160616A** SeqNo: **3888548** Prep Date: **6/16/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Diisopropanolamine	ND	50								
Sulfolane	ND	10								
Surr: 2,4,6-Tribromophenol	*34.42*	0	*50*	0	*68.8*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*34.19*	0	*50*	0	*68.4*	*32-100*	0			
Surr: 2-Fluorophenol	*22.38*	0	*50*	0	*44.8*	*22-59*	0			
Surr: 4-Terphenyl-d14	*46.53*	0	*50*	0	*93.1*	*23-112*	0			
Surr: Nitrobenzene-d5	*39.51*	0	*50*	0	*79*	*31-93*	0			
Surr: Phenol-d6	*13.42*	0	*50*	0	*26.8*	*13-36*	0			

LCS Sample ID: **SLCSW1-87384-87384** Units: **µg/L** Analysis Date: **6/16/2016 08:17 PM**

Client ID: Run ID: **SVMS8_160616A** SeqNo: **3888549** Prep Date: **6/16/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Diisopropanolamine	10.77	50	100	0	10.8	10-50	0			
Sulfolane	53.27	10	100	0	53.3	30-100	0			
Surr: 2,4,6-Tribromophenol	*35.21*	0	*50*	0	*70.4*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*35.78*	0	*50*	0	*71.6*	*32-100*	0			
Surr: 2-Fluorophenol	*21.28*	0	*50*	0	*42.6*	*22-59*	0			
Surr: 4-Terphenyl-d14	*49.06*	0	*50*	0	*98.1*	*23-112*	0			
Surr: Nitrobenzene-d5	*40.25*	0	*50*	0	*80.5*	*31-93*	0			
Surr: Phenol-d6	*12.62*	0	*50*	0	*25.2*	*13-36*	0			

MS Sample ID: **1606870-01A MS** Units: **µg/L** Analysis Date: **6/16/2016 10:05 PM**

Client ID: Run ID: **SVMS8_160616A** SeqNo: **3888550** Prep Date: **6/16/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Diisopropanolamine	18.58	50	100	0	18.6	10-50	0			
Sulfolane	59.25	10	100	0	59.2	30-100	0			
Surr: 2,4,6-Tribromophenol	*33.01*	0	*50*	0	*66*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*34.57*	0	*50*	0	*69.1*	*32-100*	0			
Surr: 2-Fluorophenol	*20.06*	0	*50*	0	*40.1*	*22-59*	0			
Surr: 4-Terphenyl-d14	*46.56*	0	*50*	0	*93.1*	*23-112*	0			
Surr: Nitrobenzene-d5	*39.7*	0	*50*	0	*79.4*	*31-93*	0			
Surr: Phenol-d6	*11.64*	0	*50*	0	*23.3*	*13-36*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606873
Project: ECT (460 Jeni Lane)

QC BATCH REPORT

Batch ID: **87384** Instrument ID **SVMS8** Method: **SW846 8270D**

DUP Sample ID: **1606871-01A DUP** Units: **µg/L** Analysis Date: **6/16/2016 10:45 PM**

Client ID: Run ID: **SVMS8_160616A** SeqNo: **3888552** Prep Date: **6/16/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Diisopropanolamine	ND	53	0	0	0		0	0	30	
Sulfolane	ND	11	0	0	0		0	0	30	
Surr: 2,4,6-Tribromophenol	*28.89*	0	*52.63*	0	*54.9*	*38-115*	27.6	*4.58*	*40*	
Surr: 2-Fluorobiphenyl	*29.71*	0	*52.63*	0	*56.4*	*32-100*	29.06	*2.2*	*40*	
Surr: 2-Fluorophenol	*19.71*	0	*52.63*	0	*37.4*	*22-59*	18.78	*4.81*	*40*	
Surr: 4-Terphenyl-d14	*45.01*	0	*52.63*	0	*85.5*	*23-112*	42.59	*5.53*	*40*	
Surr: Nitrobenzene-d5	*32.43*	0	*52.63*	0	*61.6*	*31-93*	32.8	*1.13*	*40*	
Surr: Phenol-d6	*11.48*	0	*52.63*	0	*21.8*	*13-36*	11.2	*2.51*	*40*	

The following samples were analyzed in this batch: 1606873-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606873
Project: ECT (460 Jeni Lane)

QC BATCH REPORT

Batch ID: **R189964A** Instrument ID **VMS10** Method: **SW8260B**

MBLK	Sample ID: **VBLKW1-160621-R189964A**			Units: **µg/L**		Analysis Date: **6/21/2016 02:16 PM**				
Client ID:		Run ID: **VMS10_160621A**		SeqNo: **3886170**		Prep Date:		DF: **1**		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
1,1,2-Trichlorotrifluoroethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2,3-Trichloropropane	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	1.0								
1,2-Dibromoethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,2-Dichloroethane	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
2-Butanone	ND	5.0								
2-Hexanone	ND	5.0								
2-Methylnaphthalene	ND	5.0								
4-Methyl-2-pentanone	ND	1.0								
Acetone	ND	10								
Acrylonitrile	ND	1.0								
Benzene	ND	1.0								
Bromochloromethane	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	1.0								
Carbon disulfide	ND	1.0								
Carbon tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	ND	1.0								
cis-1,2-Dichloroethene	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
Diethyl ether	ND	1.0								
Ethylbenzene	ND	1.0								

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Batch ID: **R189964A** Instrument ID **VMS10** Method: **SW8260B**

Hexachloroethane	ND	1.0					
Isopropylbenzene	ND	1.0					
m,p-Xylene	ND	2.0					
Methyl iodide	ND	1.0					
Methyl tert-butyl ether	ND	1.0					
Methylene chloride	ND	5.0					
Naphthalene	ND	5.0					
n-Propylbenzene	ND	1.0					
o-Xylene	ND	1.0					
Styrene	ND	1.0					
Tetrachloroethene	ND	1.0					
Toluene	ND	1.0					
trans-1,2-Dichloroethene	ND	1.0					
trans-1,3-Dichloropropene	ND	1.0					
trans-1,4-Dichloro-2-butene	ND	2.0					
Trichloroethene	ND	1.0					
Trichlorofluoromethane	ND	1.0					
Vinyl acetate	ND	1.0					
Vinyl chloride	ND	1.0					
Xylenes, Total	ND	3.0					
Surr: 1,2-Dichloroethane-d4	*21.46*	0	*20*	0	*107*	*75-120*	0
Surr: 4-Bromofluorobenzene	*17.99*	0	*20*	0	*90*	*80-110*	0
Surr: Dibromofluoromethane	*20.43*	0	*20*	0	*102*	*85-115*	0
Surr: Toluene-d8	*18.84*	0	*20*	0	*94.2*	*85-110*	0

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606873
Project: ECT (460 Jeni Lane)

QC BATCH REPORT

Batch ID: **R189964A** Instrument ID **VMS10** Method: **SW8260B**

LCS	Sample ID: **VLCSW2-160621-R189964A**				Units: **µg/L**			Analysis Date: **6/21/2016 01:03 PM**		
Client ID:		Run ID: **VMS10_160621A**			SeqNo: **3886169**		Prep Date:		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	19.57	1.0	20	0	97.8	80-130	0			
1,1,1-Trichloroethane	22.55	1.0	20	0	113	75-130	0			
1,1,2,2-Tetrachloroethane	18.67	1.0	20	0	93.4	75-130	0			
1,1,2-Trichloroethane	19.87	1.0	20	0	99.4	75-125	0			
1,1-Dichloroethane	21.59	1.0	20	0	108	75-133	0			
1,1-Dichloroethene	24.6	1.0	20	0	123	70-145	0			
1,2,3-Trichloropropane	18.99	1.0	20	0	95	75-125	0			
1,2,4-Trichlorobenzene	20.01	1.0	20	0	100	70-135	0			
1,2,4-Trimethylbenzene	20.83	1.0	20	0	104	75-130	0			
1,2-Dibromo-3-chloropropane	14.85	1.0	20	0	74.2	60-130	0			
1,2-Dibromoethane	21.69	1.0	20	0	108	80-150	0			
1,2-Dichlorobenzene	20.68	1.0	20	0	103	70-130	0			
1,2-Dichloroethane	20.77	1.0	20	0	104	78-125	0			
1,2-Dichloropropane	19.91	1.0	20	0	99.6	75-125	0			
1,3,5-Trimethylbenzene	21.2	1.0	20	0	106	75-130	0			
1,3-Dichlorobenzene	21.55	1.0	20	0	108	75-130	0			
1,4-Dichlorobenzene	20.77	1.0	20	0	104	75-130	0			
2-Butanone	13.56	5.0	20	0	67.8	55-150	0			
2-Hexanone	13.16	5.0	20	0	65.8	60-135	0			
4-Methyl-2-pentanone	17.41	1.0	20	0	87	77-178	0			
Acetone	15.96	10	20	0	79.8	60-160	0			
Acrylonitrile	15.7	1.0	20	0	78.5	60-140	0			
Benzene	20.6	1.0	20	0	103	85-125	0			
Bromochloromethane	18.78	1.0	20	0	93.9	75-130	0			
Bromodichloromethane	20.47	1.0	20	0	102	75-125	0			
Bromoform	16.14	1.0	20	0	80.7	60-125	0			
Bromomethane	27.29	1.0	20	0	136	30-185	0			
Carbon disulfide	22.57	1.0	20	0	113	60-165	0			
Carbon tetrachloride	21.01	1.0	20	0	105	65-140	0			
Chlorobenzene	20.84	1.0	20	0	104	80-120	0			
Chloroethane	23.14	1.0	20	0	116	50-140	0			
Chloroform	19.86	1.0	20	0	99.3	80-130	0			
Chloromethane	14.87	1.0	20	0	74.4	50-130	0			
cis-1,2-Dichloroethene	19.63	1.0	20	0	98.2	75-134	0			
cis-1,3-Dichloropropene	17.96	1.0	20	0	89.8	70-130	0			
Dibromochloromethane	16.62	1.0	20	0	83.1	60-115	0			
Dibromomethane	20.68	1.0	20	0	103	85-125	0			
Dichlorodifluoromethane	18.35	1.0	20	0	91.8	20-120	0			
Ethylbenzene	21.52	1.0	20	0	108	85-125	0			
Hexachloroethane	14.16	1.0	20	0	70.8	50-124	0			
Isopropylbenzene	20.7	1.0	20	0	104	80-127	0			
m,p-Xylene	44.74	2.0	40	0	112	75-130	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

QC BATCH REPORT

Batch ID: **R189964A** Instrument ID **VMS10** Method: **SW8260B**

Methyl iodide	40.55	1.0	20	0	203	60-160	0	S
Methyl tert-butyl ether	17.94	1.0	20	0	89.7	80-130	0	
Methylene chloride	23.38	5.0	20	0	117	75-140	0	
Naphthalene	16.24	5.0	20	0	81.2	55-160	0	
n-Propylbenzene	22.03	1.0	20	0	110	78-120	0	
o-Xylene	21.56	1.0	20	0	108	80-125	0	
Styrene	20.41	1.0	20	0	102	85-125	0	
Tetrachloroethene	22.69	1.0	20	0	113	77-138	0	
Toluene	20.43	1.0	20	0	102	85-125	0	
trans-1,2-Dichloroethene	22.8	1.0	20	0	114	80-140	0	
trans-1,3-Dichloropropene	16.34	1.0	20	0	81.7	81-123	0	
trans-1,4-Dichloro-2-butene	12.84	2.0	20	0	64.2	46-118	0	
Trichloroethene	21.85	1.0	20	0	109	84-130	0	
Trichlorofluoromethane	22.88	1.0	20	0	114	60-140	0	
Vinyl chloride	20.66	1.0	20	0	103	50-136	0	
Xylenes, Total	66.3	3.0	60	0	110	80-126	0	
Surr: 1,2-Dichloroethane-d4	*20.04*	0	*20*	0	*100*	*75-120*	0	
Surr: 4-Bromofluorobenzene	*20.04*	0	*20*	0	*100*	*80-110*	0	
Surr: Dibromofluoromethane	*20.8*	0	*20*	0	*104*	*85-115*	0	
Surr: Toluene-d8	*19.65*	0	*20*	0	*98.2*	*85-110*	0	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606873
Project: ECT (460 Jeni Lane)

QC BATCH REPORT

Batch ID: **R189964A** Instrument ID **VMS10** Method: **SW8260B**

MS Sample ID: **1606757-21A MS** Units: **µg/L** Analysis Date: **6/21/2016 08:44 PM**

Client ID: Run ID: **VMS10_160621A** SeqNo: **3886188** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	20.08	1.0	20	0	100	80-130	0			
1,1,1-Trichloroethane	24.12	1.0	20	0	121	75-130	0			
1,1,2,2-Tetrachloroethane	19.35	1.0	20	0	96.8	75-130	0			
1,1,2-Trichloroethane	20.4	1.0	20	0	102	75-125	0			
1,1-Dichloroethane	20.94	1.0	20	0	105	75-133	0			
1,1-Dichloroethene	25.13	1.0	20	0	126	70-145	0			
1,2,3-Trichloropropane	20.1	1.0	20	0	100	75-125	0			
1,2,4-Trichlorobenzene	19.27	1.0	20	0	96.4	70-135	0			
1,2,4-Trimethylbenzene	20.24	1.0	20	0	101	75-130	0			
1,2-Dibromo-3-chloropropane	15.52	1.0	20	0	77.6	60-130	0			
1,2-Dibromoethane	22.21	1.0	20	0	111	80-150	0			
1,2-Dichlorobenzene	20.36	1.0	20	0	102	70-130	0			
1,2-Dichloroethane	21.03	1.0	20	0	105	78-125	0			
1,2-Dichloropropane	20.59	1.0	20	0	103	75-125	0			
1,3,5-Trimethylbenzene	20.68	1.0	20	0	103	75-130	0			
1,3-Dichlorobenzene	20.95	1.0	20	0	105	75-130	0			
1,4-Dichlorobenzene	20.01	1.0	20	0	100	75-130	0			
2-Butanone	13.96	5.0	20	0	69.8	55-150	0			
2-Hexanone	14.02	5.0	20	0	70.1	60-135	0			
4-Methyl-2-pentanone	18.6	1.0	20	0	93	77-178	0			
Acetone	20.81	10	20	0	104	60-160	0			
Acrylonitrile	18.32	1.0	20	0	91.6	60-140	0			
Benzene	65.38	1.0	20	45.14	101	85-125	0			
Bromochloromethane	18.68	1.0	20	0	93.4	75-130	0			
Bromodichloromethane	21.04	1.0	20	0	105	75-125	0			
Bromoform	16.63	1.0	20	0	83.2	60-125	0			
Bromomethane	14.06	1.0	20	0	70.3	30-185	0			
Carbon disulfide	22.31	1.0	20	0	112	60-165	0			
Carbon tetrachloride	22.91	1.0	20	0	115	65-140	0			
Chlorobenzene	20.68	1.0	20	0	103	80-120	0			
Chloroethane	23.54	1.0	20	0	118	50-140	0			
Chloroform	20.04	1.0	20	0	100	80-130	0			
Chloromethane	21.19	1.0	20	1.5	98.4	50-130	0			
cis-1,2-Dichloroethene	19.3	1.0	20	0	96.5	75-134	0			
cis-1,3-Dichloropropene	17.49	1.0	20	0	87.4	70-130	0			
Dibromochloromethane	16.89	1.0	20	0	84.4	60-115	0			
Dibromomethane	21.31	1.0	20	0	107	85-125	0			
Dichlorodifluoromethane	19.06	1.0	20	0	95.3	20-120	0			
Ethylbenzene	21.13	1.0	20	0	106	85-125	0			
Hexachloroethane	14.2	1.0	20	0	71	50-124	0			
Isopropylbenzene	20.54	1.0	20	0	103	80-127	0			
m,p-Xylene	44.6	2.0	40	0	112	75-130	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

QC BATCH REPORT

Batch ID: **R189964A** Instrument ID **VMS10** Method: **SW8260B**

Methyl iodide	19.62	1.0	20	0	98.1	60-160	0	
Methyl tert-butyl ether	18.02	1.0	20	0	90.1	80-130	0	
Methylene chloride	22.17	5.0	20	0	111	75-140	0	
Naphthalene	18.34	5.0	20	1.74	83	55-160	0	
n-Propylbenzene	21.51	1.0	20	0	108	78-120	0	
o-Xylene	21.08	1.0	20	0	105	80-125	0	
Styrene	14.03	1.0	20	0	70.2	85-125	0	S
Tetrachloroethene	21.58	1.0	20	0	108	77-138	0	
Toluene	20.49	1.0	20	0	102	85-125	0	
trans-1,2-Dichloroethene	22.23	1.0	20	0	111	80-140	0	
trans-1,3-Dichloropropene	16.08	1.0	20	0	80.4	81-123	0	S
trans-1,4-Dichloro-2-butene	13.07	2.0	20	0	65.4	46-118	0	
Trichloroethene	21.75	1.0	20	0	109	84-130	0	
Trichlorofluoromethane	24.38	1.0	20	0	122	60-140	0	
Vinyl chloride	21.25	1.0	20	0	106	50-136	0	
Xylenes, Total	65.68	3.0	60	0	109	80-126	0	
Surr: 1,2-Dichloroethane-d4	*20.55*	0	*20*	0	*103*	*75-120*	0	
Surr: 4-Bromofluorobenzene	*20.61*	0	*20*	0	*103*	*80-110*	0	
Surr: Dibromofluoromethane	*21.2*	0	*20*	0	*106*	*85-115*	0	
Surr: Toluene-d8	*19.69*	0	*20*	0	*98.4*	*85-110*	0	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606873
Project: ECT (460 Jeni Lane)

QC BATCH REPORT

Batch ID: **R189964A** Instrument ID **VMS10** Method: **SW8260B**

MSD Sample ID: **1606757-21A MSD** Units: **µg/L** Analysis Date: **6/21/2016 09:08 PM**
Client ID: Run ID: **VMS10_160621A** SeqNo: **3886189** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	19.66	1.0	20	0	98.3	80-130	20.08	2.11	30	
1,1,1-Trichloroethane	23.81	1.0	20	0	119	75-130	24.12	1.29	30	
1,1,2,2-Tetrachloroethane	19.08	1.0	20	0	95.4	75-130	19.35	1.41	30	
1,1,2-Trichloroethane	19.61	1.0	20	0	98	75-125	20.4	3.95	30	
1,1-Dichloroethane	21.05	1.0	20	0	105	75-133	20.94	0.524	30	
1,1-Dichloroethene	25.19	1.0	20	0	126	70-145	25.13	0.238	30	
1,2,3-Trichloropropane	19.29	1.0	20	0	96.4	75-125	20.1	4.11	30	
1,2,4-Trichlorobenzene	18.79	1.0	20	0	94	70-135	19.27	2.52	30	
1,2,4-Trimethylbenzene	19.71	1.0	20	0	98.6	75-130	20.24	2.65	30	
1,2-Dibromo-3-chloropropane	15.21	1.0	20	0	76	60-130	15.52	2.02	30	
1,2-Dibromoethane	21.21	1.0	20	0	106	80-150	22.21	4.61	30	
1,2-Dichlorobenzene	19.89	1.0	20	0	99.4	70-130	20.36	2.34	30	
1,2-Dichloroethane	21.09	1.0	20	0	105	78-125	21.03	0.285	30	
1,2-Dichloropropane	20.26	1.0	20	0	101	75-125	20.59	1.62	30	
1,3,5-Trimethylbenzene	20.21	1.0	20	0	101	75-130	20.68	2.3	30	
1,3-Dichlorobenzene	20.53	1.0	20	0	103	75-130	20.95	2.03	30	
1,4-Dichlorobenzene	19.81	1.0	20	0	99	75-130	20.01	1	30	
2-Butanone	13.91	5.0	20	0	69.6	55-150	13.96	0.359	30	
2-Hexanone	13.95	5.0	20	0	69.8	60-135	14.02	0.501	30	
4-Methyl-2-pentanone	17.36	1.0	20	0	86.8	77-178	18.6	6.9	30	
Acetone	22.34	10	20	0	112	60-160	20.81	7.09	30	
Acrylonitrile	15.86	1.0	20	0	79.3	60-140	18.32	14.4	30	
Benzene	64.83	1.0	20	45.14	98.4	85-125	65.38	0.845	30	
Bromochloromethane	18.04	1.0	20	0	90.2	75-130	18.68	3.49	30	
Bromodichloromethane	21.13	1.0	20	0	106	75-125	21.04	0.427	30	
Bromoform	16.78	1.0	20	0	83.9	60-125	16.63	0.898	30	
Bromomethane	15.82	1.0	20	0	79.1	30-185	14.06	11.8	30	
Carbon disulfide	22.62	1.0	20	0	113	60-165	22.31	1.38	30	
Carbon tetrachloride	22.97	1.0	20	0	115	65-140	22.91	0.262	30	
Chlorobenzene	20.33	1.0	20	0	102	80-120	20.68	1.71	30	
Chloroethane	23.05	1.0	20	0	115	50-140	23.54	2.1	30	
Chloroform	19.83	1.0	20	0	99.2	80-130	20.04	1.05	30	
Chloromethane	19.88	1.0	20	1.5	91.9	50-130	21.19	6.38	30	
cis-1,2-Dichloroethene	19.14	1.0	20	0	95.7	75-134	19.3	0.832	30	
cis-1,3-Dichloropropene	17.82	1.0	20	0	89.1	70-130	17.49	1.87	30	
Dibromochloromethane	16.93	1.0	20	0	84.6	60-115	16.89	0.237	30	
Dibromomethane	21.07	1.0	20	0	105	85-125	21.31	1.13	30	
Dichlorodifluoromethane	18.73	1.0	20	0	93.6	20-120	19.06	1.75	30	
Ethylbenzene	20.69	1.0	20	0	103	85-125	21.13	2.1	30	
Hexachloroethane	14.63	1.0	20	0	73.2	50-124	14.2	2.98	30	
Isopropylbenzene	20.21	1.0	20	0	101	80-127	20.54	1.62	30	
m,p-Xylene	43.56	2.0	40	0	109	75-130	44.6	2.36	30	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606873
Project: ECT (460 Jeni Lane)

QC BATCH REPORT

Batch ID: **R189964A** Instrument ID **VMS10** Method: **SW8260B**

Methyl iodide	11.22	1.0	20	0	56.1	60-160	19.62	54.5	30	SR
Methyl tert-butyl ether	17.21	1.0	20	0	86	80-130	18.02	4.6	30	
Methylene chloride	20.8	5.0	20	0	104	75-140	22.17	6.38	30	
Naphthalene	17.29	5.0	20	1.74	77.8	55-160	18.34	5.89	30	
n-Propylbenzene	21.02	1.0	20	0	105	78-120	21.51	2.3	30	
o-Xylene	20.71	1.0	20	0	104	80-125	21.08	1.77	30	
Styrene	13.72	1.0	20	0	68.6	85-125	14.03	2.23	30	S
Tetrachloroethene	21	1.0	20	0	105	77-138	21.58	2.72	30	
Toluene	20.34	1.0	20	0	102	85-125	20.49	0.735	30	
trans-1,2-Dichloroethene	21.22	1.0	20	0	106	80-140	22.23	4.65	30	
trans-1,3-Dichloropropene	15.7	1.0	20	0	78.5	81-123	16.08	2.39	30	S
trans-1,4-Dichloro-2-butene	12.81	2.0	20	0	64	46-118	13.07	2.01	30	
Trichloroethene	21.54	1.0	20	0	108	84-130	21.75	0.97	30	
Trichlorofluoromethane	23.82	1.0	20	0	119	60-140	24.38	2.32	30	
Vinyl chloride	20.97	1.0	20	0	105	50-136	21.25	1.33	30	
Xylenes, Total	64.27	3.0	60	0	107	80-126	65.68	2.17	30	
Surr: 1,2-Dichloroethane-d4	*20.59*	0	*20*	0	*103*	*75-120*	20.55	*0.194*	*30*	
Surr: 4-Bromofluorobenzene	*20.65*	0	*20*	0	*103*	*80-110*	20.61	*0.194*	*30*	
Surr: Dibromofluoromethane	*21.09*	0	*20*	0	*105*	*85-115*	21.2	*0.52*	*30*	
Surr: Toluene-d8	*19.75*	0	*20*	0	*98.8*	*85-110*	19.69	*0.304*	*30*	

The following samples were analyzed in this batch: 1606873-01B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Group USA, Corp

Date: 23-Jun-16

Client: Merit Energy
Project: ECT (460 Jeni Lane)
WorkOrder: **1606873**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
µg/L	Micrograms per Liter

ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **MERITENERGY** Date/Time Received: **15-Jun-16 09:30**

Work Order: **1606873** Received by: **KRW**

Checklist completed by Keith Wierenga (eSignature) 15-Jun-16 (Date) Reviewed by: Gary Byar (eSignature) 15-Jun-16 (Date)

Matrices: Water

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	2.2/2.2 C	SR2	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	6/15/2016 2:24:54 PM		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

ALS

☑ **RETURN SAMPLES TO:**
ALS Environmental
781 Industrial Cir, Ste 3
Traverse City, Michigan 49686
(Tel) 231.421.3204
(Cell) 231.944.3459

Chain of Custody Form

Page 1 of 1

ALS Environmental
3352 128th Avenue
Holland, Michigan 49424
(Tel) 616.399.6070
(Fax) 616.399.6185

ALS Project Manager:	Gary Byar	ALS Work Order #:	1606973

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	Hartland 36 Gas Plant	A	Sulfolane
Work Order		Project Number		B	DIPA
Company Name	ECT, Inc.	Bill To Company	MEC	C	Full VOCs
Send Report To	Jeremy Lewandowski	Invoice Attn.	Sean Craven	D	
Address	3399 Veterans Dr.	Address	1510 Thomas Rd	E	
				F	
City/State/Zip	Traverse City, MI 49684	City/State/Zip	Kalkaska, Mi	G	
Phone	231-946-8200	Phone	231-258-6369	H	
Fax	231-946-8208	Fax		I	
e-Mail Address	jlewandowski@ectinc.com			J	

No.	Sample Description	Date	Time	Matrix	Pres. Key Numbers	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
	460 Jeni Lane	6/13/16	15:31	GW	1, 8	4	X	X	X								

Sampler(s): Please Print & Sign: Jeremy Lewandowski

Shipment Method:

Required Turnaround Time: (Check Box) ☐ 10 Wk Days ☒ 5-7 Wk Days ☐ 3 Wk Days ☐ 2 Wk Days ☐ 24 Hour ☐ Other

Results Due Date:

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
ECT Sample Storage	6/13/16	9:30p	ECT Sample Storage	6/13/16	9:30p
	6/14/16	11:15a		6/14/16	11:15a
Relinquished by:	Date:	Time:	Received by (Laboratory):	Date:	Time:
	6/14/16	11:30a		6/14/16	14:40
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):		
	6/14/16	16:45		6/15/16 0930	
	6/15/16	1425		GRB	

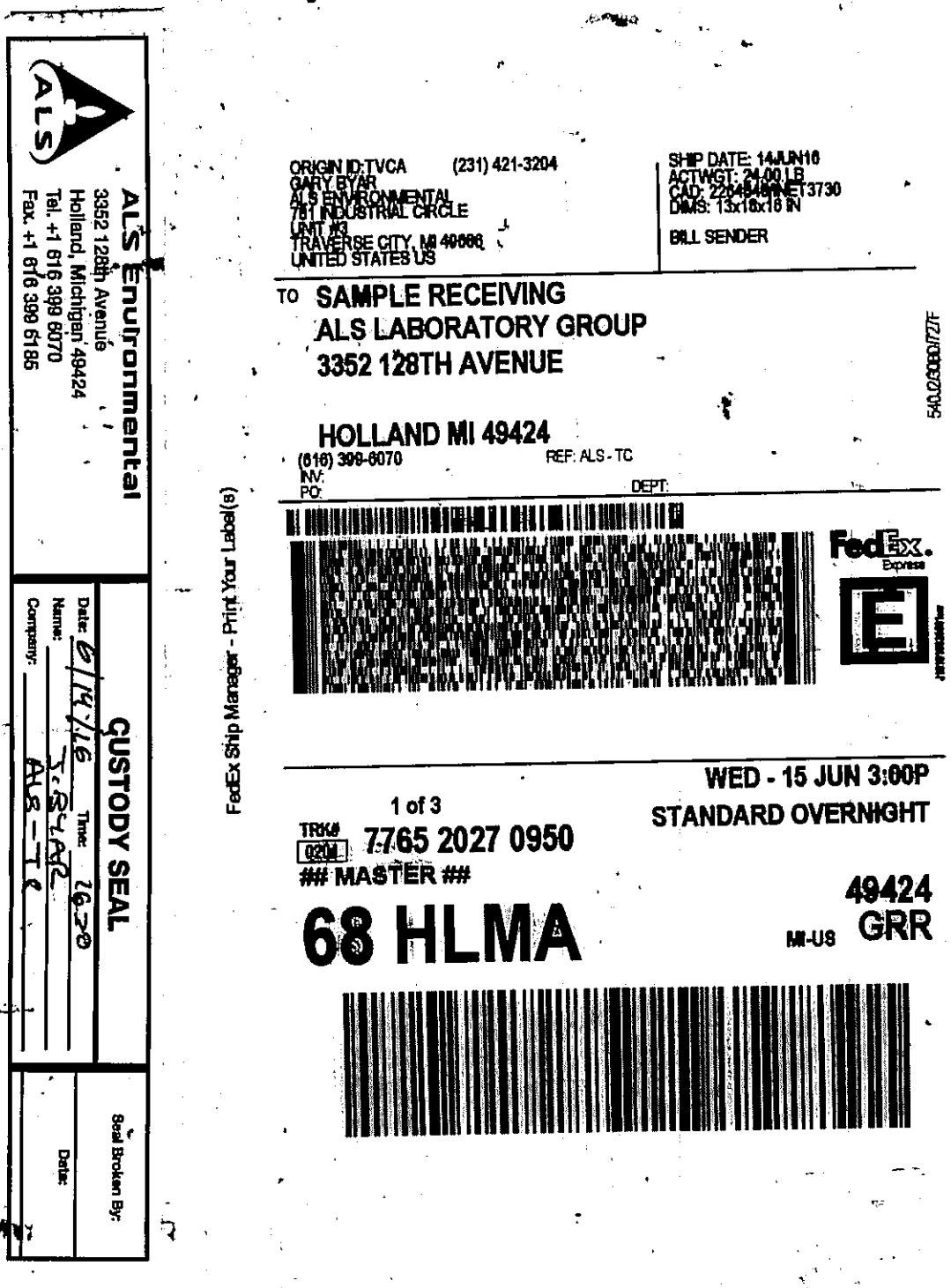
Notes:
ALS Project: MERITENERGY - Misc.

ALS Cooler ID	Cooler Temp
	7.2°C

QC Package: (Check Box Below)
☑ Level II: Standard QC ☐ Level III: Raw Data
☐ TRRP LRC ☐ TRRP Level IV
☐ Level IV: SW846 Methods/CLP like
☐ Other:

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS.



ALS Environmental
3352 128th Avenue
Holland, Michigan 49424
Tel. +1 616 399 6070
Fax. +1 616 399 6185

CUSTODY SEAL
Date: 6/14/16 Time: 1620
Name: J. Stark
Company: ALS-TC

Seal Broken By:
Date:

FedEx Ship Manager - Print Your Label(s)

ORIGIN ID:TVCA (231) 421-3204
GARY BYAR
ALS ENVIRONMENTAL
781 INDUSTRIAL CIRCLE
UNIT #3
TRAVERSE CITY, MI 49686
UNITED STATES US

SHIP DATE: 14JUN16
ACTWGT: 24.00 LB
CAD: 2264548/NET3730
DIMS: 13x16x16 IN
BILL SENDER

TO SAMPLE RECEIVING
ALS LABORATORY GROUP
3352 128TH AVENUE

HOLLAND MI 49424
(616) 399-6070 REF: ALS - TC
INV:
PO: DEPT:

FedEx Express

1 of 3
TRK# 0201 7765 2027 0950
MASTER

WED - 15 JUN 3:00P
STANDARD OVERNIGHT

68 HLMA

49424
MI-US GRR

540J/3000/72/F

23-Jun-2016

Sean Craven
Merit Energy
1510 Thomas Rd
PO Box 910
Kalkaska, MI 49646

Re: **ECT (731 Jeni Lane)** Work Order: **1606902**

Dear Sean,

ALS Environmental received 1 sample on 15-Jun-2016 10:00 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with NELAP standard requirements and QC results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 19.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

Gary Byar

Electronically approved by: Gary Byar

Gary Byar
Project Manager

Certificate No: MI: 0022

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185
ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

ALS Group USA, Corp

Date: 23-Jun-16

Client: Merit Energy
Project: ECT (731 Jeni Lane)
Work Order: **1606902**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1606902-01	731 Jenni Lane	Water		6/14/2016 07:35	6/15/2016 10:00	☐

ALS Group USA, Corp

Date: *23-Jun-16*

Client: Merit Energy
Project: ECT (731 Jeni Lane)
Work Order: 1606902
Sample ID: 731 Jenni Lane
Lab ID: 1606902-01
Collection Date: 6/14/2016 07:35 AM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW846 8270D**		Prep: SW3510 / 6/16/16	Analyst: **RM**
Diisopropanolamine	ND		50	µg/L	1	6/17/2016 03:07 AM
Sulfolane	ND		10	µg/L	1	6/17/2016 03:07 AM
Surr: 2,4,6-Tribromophenol	*56.1*		*38-115*	*%REC*	1	6/17/2016 03:07 AM
Surr: 2-Fluorobiphenyl	*55.3*		*32-100*	*%REC*	1	6/17/2016 03:07 AM
Surr: 2-Fluorophenol	*35.7*		*22-59*	*%REC*	1	6/17/2016 03:07 AM
Surr: 4-Terphenyl-d14	*85.6*		*23-112*	*%REC*	1	6/17/2016 03:07 AM
Surr: Nitrobenzene-d5	*61.9*		*31-93*	*%REC*	1	6/17/2016 03:07 AM
Surr: Phenol-d6	*21.4*		*13-36*	*%REC*	1	6/17/2016 03:07 AM
VOLATILE ORGANIC COMPOUNDS			**SW8260B**			Analyst: **AK**
1,1,1,2-Tetrachloroethane	ND		1.0	µg/L	1	6/21/2016 06:18 PM
1,1,1-Trichloroethane	ND		1.0	µg/L	1	6/21/2016 06:18 PM
1,1,2,2-Tetrachloroethane	ND		1.0	µg/L	1	6/21/2016 06:18 PM
1,1,2-Trichloroethane	ND		1.0	µg/L	1	6/21/2016 06:18 PM
1,1,2-Trichlorotrifluoroethane	ND		1.0	µg/L	1	6/21/2016 06:18 PM
1,1-Dichloroethane	ND		1.0	µg/L	1	6/21/2016 06:18 PM
1,1-Dichloroethene	ND		1.0	µg/L	1	6/21/2016 06:18 PM
1,2,3-Trichloropropane	ND		1.0	µg/L	1	6/21/2016 06:18 PM
1,2,4-Trichlorobenzene	ND		1.0	µg/L	1	6/21/2016 06:18 PM
1,2,4-Trimethylbenzene	ND		1.0	µg/L	1	6/21/2016 06:18 PM
1,2-Dibromo-3-chloropropane	ND		1.0	µg/L	1	6/21/2016 06:18 PM
1,2-Dibromoethane	ND		1.0	µg/L	1	6/21/2016 06:18 PM
1,2-Dichlorobenzene	ND		1.0	µg/L	1	6/21/2016 06:18 PM
1,2-Dichloroethane	ND		1.0	µg/L	1	6/21/2016 06:18 PM
1,2-Dichloropropane	ND		1.0	µg/L	1	6/21/2016 06:18 PM
1,3,5-Trimethylbenzene	ND		1.0	µg/L	1	6/21/2016 06:18 PM
1,3-Dichlorobenzene	ND		1.0	µg/L	1	6/21/2016 06:18 PM
1,4-Dichlorobenzene	ND		1.0	µg/L	1	6/21/2016 06:18 PM
2-Butanone	ND		5.0	µg/L	1	6/21/2016 06:18 PM
2-Hexanone	ND		5.0	µg/L	1	6/21/2016 06:18 PM
2-Methylnaphthalene	ND		5.0	µg/L	1	6/21/2016 06:18 PM
4-Methyl-2-pentanone	ND		1.0	µg/L	1	6/21/2016 06:18 PM
Acetone	ND		10	µg/L	1	6/21/2016 06:18 PM
Acrylonitrile	ND		1.0	µg/L	1	6/21/2016 06:18 PM
Benzene	ND		1.0	µg/L	1	6/21/2016 06:18 PM
Bromochloromethane	ND		1.0	µg/L	1	6/21/2016 06:18 PM
Bromodichloromethane	ND		1.0	µg/L	1	6/21/2016 06:18 PM
Bromoform	ND		1.0	µg/L	1	6/21/2016 06:18 PM
Bromomethane	ND		1.0	µg/L	1	6/21/2016 06:18 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *23-Jun-16*

Client: Merit Energy
Project: ECT (731 Jeni Lane)
Work Order: 1606902
Sample ID: 731 Jenni Lane
Lab ID: 1606902-01
Collection Date: 6/14/2016 07:35 AM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Carbon disulfide	ND		1.0	µg/L	1	6/21/2016 06:18 PM
Carbon tetrachloride	ND		1.0	µg/L	1	6/21/2016 06:18 PM
Chlorobenzene	ND		1.0	µg/L	1	6/21/2016 06:18 PM
Chloroethane	ND		1.0	µg/L	1	6/21/2016 06:18 PM
Chloroform	ND		1.0	µg/L	1	6/21/2016 06:18 PM
Chloromethane	ND		1.0	µg/L	1	6/21/2016 06:18 PM
cis-1,2-Dichloroethene	ND		1.0	µg/L	1	6/21/2016 06:18 PM
cis-1,3-Dichloropropene	ND		1.0	µg/L	1	6/21/2016 06:18 PM
Dibromochloromethane	ND		1.0	µg/L	1	6/21/2016 06:18 PM
Dibromomethane	ND		1.0	µg/L	1	6/21/2016 06:18 PM
Dichlorodifluoromethane	ND		1.0	µg/L	1	6/21/2016 06:18 PM
Diethyl ether	ND		1.0	µg/L	1	6/21/2016 06:18 PM
Ethylbenzene	ND		1.0	µg/L	1	6/21/2016 06:18 PM
Hexachloroethane	ND		1.0	µg/L	1	6/21/2016 06:18 PM
Isopropylbenzene	ND		1.0	µg/L	1	6/21/2016 06:18 PM
m,p-Xylene	ND		2.0	µg/L	1	6/21/2016 06:18 PM
Methyl iodide	ND		1.0	µg/L	1	6/21/2016 06:18 PM
Methyl tert-butyl ether	ND		1.0	µg/L	1	6/21/2016 06:18 PM
Methylene chloride	ND		5.0	µg/L	1	6/21/2016 06:18 PM
Naphthalene	ND		5.0	µg/L	1	6/21/2016 06:18 PM
n-Propylbenzene	ND		1.0	µg/L	1	6/21/2016 06:18 PM
o-Xylene	ND		1.0	µg/L	1	6/21/2016 06:18 PM
Styrene	ND		1.0	µg/L	1	6/21/2016 06:18 PM
Tetrachloroethene	ND		1.0	µg/L	1	6/21/2016 06:18 PM
Toluene	ND		1.0	µg/L	1	6/21/2016 06:18 PM
trans-1,2-Dichloroethene	ND		1.0	µg/L	1	6/21/2016 06:18 PM
trans-1,3-Dichloropropene	ND		1.0	µg/L	1	6/21/2016 06:18 PM
trans-1,4-Dichloro-2-butene	ND		2.0	µg/L	1	6/21/2016 06:18 PM
Trichloroethene	ND		1.0	µg/L	1	6/21/2016 06:18 PM
Trichlorofluoromethane	ND		1.0	µg/L	1	6/21/2016 06:18 PM
Vinyl acetate	ND		1.0	µg/L	1	6/21/2016 06:18 PM
Vinyl chloride	ND		1.0	µg/L	1	6/21/2016 06:18 PM
Xylenes, Total	ND		3.0	µg/L	1	6/21/2016 06:18 PM
Surr: 1,2-Dichloroethane-d4	*112*		*75-120*	*%REC*	1	6/21/2016 06:18 PM
Surr: 4-Bromofluorobenzene	*88.9*		*80-110*	*%REC*	1	6/21/2016 06:18 PM
Surr: Dibromofluoromethane	*107*		*85-115*	*%REC*	1	6/21/2016 06:18 PM
Surr: Toluene-d8	*94.0*		*85-110*	*%REC*	1	6/21/2016 06:18 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 23-Jun-16

Client: Merit Energy
Project: ECT (731 Jeni Lane)
Work Order: 1606902

Case Narrative

Batch R189964A Sample VLCSW2-160621 The LCS recovery for Volatile compound Methyl Iodide was above the upper control limit. All the sample results in the batch were non-detect. No qualification is necessary for this analyte.

Batch R189964A The MS/MSD data for Volatiles is not related to this projects sample. No data requires qualification.

ALS Group USA, Corp

Date: 23-Jun-16

Client: Merit Energy

Work Order: 1606902

Project: ECT (731 Jeni Lane)

QC BATCH REPORT

Batch ID: **87384** Instrument ID **SVMS8** Method: **SW846 8270D**

MBLK Sample ID: **SBLKW1-87384-87384** Units: **µg/L** Analysis Date: **6/16/2016 07:57 PM**

Client ID: Run ID: **SVMS8_160616A** SeqNo: **3888548** Prep Date: **6/16/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Diisopropanolamine	ND	50								
Sulfolane	ND	10								
Surr: 2,4,6-Tribromophenol	*34.42*	0	*50*	0	*68.8*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*34.19*	0	*50*	0	*68.4*	*32-100*	0			
Surr: 2-Fluorophenol	*22.38*	0	*50*	0	*44.8*	*22-59*	0			
Surr: 4-Terphenyl-d14	*46.53*	0	*50*	0	*93.1*	*23-112*	0			
Surr: Nitrobenzene-d5	*39.51*	0	*50*	0	*79*	*31-93*	0			
Surr: Phenol-d6	*13.42*	0	*50*	0	*26.8*	*13-36*	0			

LCS Sample ID: **SLCSW1-87384-87384** Units: **µg/L** Analysis Date: **6/16/2016 08:17 PM**

Client ID: Run ID: **SVMS8_160616A** SeqNo: **3888549** Prep Date: **6/16/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Diisopropanolamine	10.77	50	100	0	10.8	10-50	0			
Sulfolane	53.27	10	100	0	53.3	30-100	0			
Surr: 2,4,6-Tribromophenol	*35.21*	0	*50*	0	*70.4*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*35.78*	0	*50*	0	*71.6*	*32-100*	0			
Surr: 2-Fluorophenol	*21.28*	0	*50*	0	*42.6*	*22-59*	0			
Surr: 4-Terphenyl-d14	*49.06*	0	*50*	0	*98.1*	*23-112*	0			
Surr: Nitrobenzene-d5	*40.25*	0	*50*	0	*80.5*	*31-93*	0			
Surr: Phenol-d6	*12.62*	0	*50*	0	*25.2*	*13-36*	0			

MS Sample ID: **1606870-01A MS** Units: **µg/L** Analysis Date: **6/16/2016 10:05 PM**

Client ID: Run ID: **SVMS8_160616A** SeqNo: **3888550** Prep Date: **6/16/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Diisopropanolamine	18.58	50	100	0	18.6	10-50	0			
Sulfolane	59.25	10	100	0	59.2	30-100	0			
Surr: 2,4,6-Tribromophenol	*33.01*	0	*50*	0	*66*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*34.57*	0	*50*	0	*69.1*	*32-100*	0			
Surr: 2-Fluorophenol	*20.06*	0	*50*	0	*40.1*	*22-59*	0			
Surr: 4-Terphenyl-d14	*46.56*	0	*50*	0	*93.1*	*23-112*	0			
Surr: Nitrobenzene-d5	*39.7*	0	*50*	0	*79.4*	*31-93*	0			
Surr: Phenol-d6	*11.64*	0	*50*	0	*23.3*	*13-36*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606902
Project: ECT (731 Jeni Lane)

QC BATCH REPORT

Batch ID: **87384** Instrument ID **SVMS8** Method: **SW846 8270D**

DUP Sample ID: **1606871-01A DUP** Units: **µg/L** Analysis Date: **6/16/2016 10:45 PM**

Client ID: Run ID: **SVMS8_160616A** SeqNo: **3888552** Prep Date: **6/16/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Diisopropanolamine	ND	53	0	0	0		0	0	30	
Sulfolane	ND	11	0	0	0		0	0	30	
Surr: 2,4,6-Tribromophenol	*28.89*	0	*52.63*	0	*54.9*	*38-115*	27.6	*4.58*	*40*	
Surr: 2-Fluorobiphenyl	*29.71*	0	*52.63*	0	*56.4*	*32-100*	29.06	*2.2*	*40*	
Surr: 2-Fluorophenol	*19.71*	0	*52.63*	0	*37.4*	*22-59*	18.78	*4.81*	*40*	
Surr: 4-Terphenyl-d14	*45.01*	0	*52.63*	0	*85.5*	*23-112*	42.59	*5.53*	*40*	
Surr: Nitrobenzene-d5	*32.43*	0	*52.63*	0	*61.6*	*31-93*	32.8	*1.13*	*40*	
Surr: Phenol-d6	*11.48*	0	*52.63*	0	*21.8*	*13-36*	11.2	*2.51*	*40*	

The following samples were analyzed in this batch: 1606902-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606902
Project: ECT (731 Jeni Lane)

QC BATCH REPORT

Batch ID: **R189964A** Instrument ID **VMS10** Method: **SW8260B**

MBLK Sample ID: **VBLKW1-160621-R189964A** Units: **µg/L** Analysis Date: **6/21/2016 02:16 PM**
Client ID: Run ID: **VMS10_160621A** SeqNo: **3886170** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
1,1,2-Trichlorotrifluoroethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2,3-Trichloropropane	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	1.0								
1,2-Dibromoethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,2-Dichloroethane	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
2-Butanone	ND	5.0								
2-Hexanone	ND	5.0								
2-Methylnaphthalene	ND	5.0								
4-Methyl-2-pentanone	ND	1.0								
Acetone	ND	10								
Acrylonitrile	ND	1.0								
Benzene	ND	1.0								
Bromochloromethane	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	1.0								
Carbon disulfide	ND	1.0								
Carbon tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	ND	1.0								
cis-1,2-Dichloroethene	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
Diethyl ether	ND	1.0								
Ethylbenzene	ND	1.0								

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Batch ID: **R189964A** Instrument ID **VMS10** Method: **SW8260B**

Hexachloroethane	ND	1.0					
Isopropylbenzene	ND	1.0					
m,p-Xylene	ND	2.0					
Methyl iodide	ND	1.0					
Methyl tert-butyl ether	ND	1.0					
Methylene chloride	ND	5.0					
Naphthalene	ND	5.0					
n-Propylbenzene	ND	1.0					
o-Xylene	ND	1.0					
Styrene	ND	1.0					
Tetrachloroethene	ND	1.0					
Toluene	ND	1.0					
trans-1,2-Dichloroethene	ND	1.0					
trans-1,3-Dichloropropene	ND	1.0					
trans-1,4-Dichloro-2-butene	ND	2.0					
Trichloroethene	ND	1.0					
Trichlorofluoromethane	ND	1.0					
Vinyl acetate	ND	1.0					
Vinyl chloride	ND	1.0					
Xylenes, Total	ND	3.0					
Surr: 1,2-Dichloroethane-d4	*21.46*	0	*20*	0	*107*	*75-120*	0
Surr: 4-Bromofluorobenzene	*17.99*	0	*20*	0	*90*	*80-110*	0
Surr: Dibromofluoromethane	*20.43*	0	*20*	0	*102*	*85-115*	0
Surr: Toluene-d8	*18.84*	0	*20*	0	*94.2*	*85-110*	0

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606902
Project: ECT (731 Jeni Lane)

QC BATCH REPORT

Batch ID: **R189964A** Instrument ID **VMS10** Method: **SW8260B**

LCS Sample ID: **VLCSW2-160621-R189964A** Units: **µg/L** Analysis Date: **6/21/2016 01:03 PM**
Client ID: Run ID: **VMS10_160621A** SeqNo: **3886169** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	19.57	1.0	20	0	97.8	80-130	0			
1,1,1-Trichloroethane	22.55	1.0	20	0	113	75-130	0			
1,1,2,2-Tetrachloroethane	18.67	1.0	20	0	93.4	75-130	0			
1,1,2-Trichloroethane	19.87	1.0	20	0	99.4	75-125	0			
1,1-Dichloroethane	21.59	1.0	20	0	108	75-133	0			
1,1-Dichloroethene	24.6	1.0	20	0	123	70-145	0			
1,2,3-Trichloropropane	18.99	1.0	20	0	95	75-125	0			
1,2,4-Trichlorobenzene	20.01	1.0	20	0	100	70-135	0			
1,2,4-Trimethylbenzene	20.83	1.0	20	0	104	75-130	0			
1,2-Dibromo-3-chloropropane	14.85	1.0	20	0	74.2	60-130	0			
1,2-Dibromoethane	21.69	1.0	20	0	108	80-150	0			
1,2-Dichlorobenzene	20.68	1.0	20	0	103	70-130	0			
1,2-Dichloroethane	20.77	1.0	20	0	104	78-125	0			
1,2-Dichloropropane	19.91	1.0	20	0	99.6	75-125	0			
1,3,5-Trimethylbenzene	21.2	1.0	20	0	106	75-130	0			
1,3-Dichlorobenzene	21.55	1.0	20	0	108	75-130	0			
1,4-Dichlorobenzene	20.77	1.0	20	0	104	75-130	0			
2-Butanone	13.56	5.0	20	0	67.8	55-150	0			
2-Hexanone	13.16	5.0	20	0	65.8	60-135	0			
4-Methyl-2-pentanone	17.41	1.0	20	0	87	77-178	0			
Acetone	15.96	10	20	0	79.8	60-160	0			
Acrylonitrile	15.7	1.0	20	0	78.5	60-140	0			
Benzene	20.6	1.0	20	0	103	85-125	0			
Bromochloromethane	18.78	1.0	20	0	93.9	75-130	0			
Bromodichloromethane	20.47	1.0	20	0	102	75-125	0			
Bromoform	16.14	1.0	20	0	80.7	60-125	0			
Bromomethane	27.29	1.0	20	0	136	30-185	0			
Carbon disulfide	22.57	1.0	20	0	113	60-165	0			
Carbon tetrachloride	21.01	1.0	20	0	105	65-140	0			
Chlorobenzene	20.84	1.0	20	0	104	80-120	0			
Chloroethane	23.14	1.0	20	0	116	50-140	0			
Chloroform	19.86	1.0	20	0	99.3	80-130	0			
Chloromethane	14.87	1.0	20	0	74.4	50-130	0			
cis-1,2-Dichloroethene	19.63	1.0	20	0	98.2	75-134	0			
cis-1,3-Dichloropropene	17.96	1.0	20	0	89.8	70-130	0			
Dibromochloromethane	16.62	1.0	20	0	83.1	60-115	0			
Dibromomethane	20.68	1.0	20	0	103	85-125	0			
Dichlorodifluoromethane	18.35	1.0	20	0	91.8	20-120	0			
Ethylbenzene	21.52	1.0	20	0	108	85-125	0			
Hexachloroethane	14.16	1.0	20	0	70.8	50-124	0			
Isopropylbenzene	20.7	1.0	20	0	104	80-127	0			
m,p-Xylene	44.74	2.0	40	0	112	75-130	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

QC BATCH REPORT

Batch ID: **R189964A** Instrument ID **VMS10** Method: **SW8260B**

Methyl iodide	40.55	1.0	20	0	203	60-160	0	S
Methyl tert-butyl ether	17.94	1.0	20	0	89.7	80-130	0	
Methylene chloride	23.38	5.0	20	0	117	75-140	0	
Naphthalene	16.24	5.0	20	0	81.2	55-160	0	
n-Propylbenzene	22.03	1.0	20	0	110	78-120	0	
o-Xylene	21.56	1.0	20	0	108	80-125	0	
Styrene	20.41	1.0	20	0	102	85-125	0	
Tetrachloroethene	22.69	1.0	20	0	113	77-138	0	
Toluene	20.43	1.0	20	0	102	85-125	0	
trans-1,2-Dichloroethene	22.8	1.0	20	0	114	80-140	0	
trans-1,3-Dichloropropene	16.34	1.0	20	0	81.7	81-123	0	
trans-1,4-Dichloro-2-butene	12.84	2.0	20	0	64.2	46-118	0	
Trichloroethene	21.85	1.0	20	0	109	84-130	0	
Trichlorofluoromethane	22.88	1.0	20	0	114	60-140	0	
Vinyl chloride	20.66	1.0	20	0	103	50-136	0	
Xylenes, Total	66.3	3.0	60	0	110	80-126	0	
Surr: 1,2-Dichloroethane-d4	*20.04*	0	*20*	0	*100*	*75-120*	0	
Surr: 4-Bromofluorobenzene	*20.04*	0	*20*	0	*100*	*80-110*	0	
Surr: Dibromofluoromethane	*20.8*	0	*20*	0	*104*	*85-115*	0	
Surr: Toluene-d8	*19.65*	0	*20*	0	*98.2*	*85-110*	0	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606902
Project: ECT (731 Jeni Lane)

QC BATCH REPORT

Batch ID: **R189964A** Instrument ID **VMS10** Method: **SW8260B**

MS Sample ID: **1606757-21A MS** Units: **µg/L** Analysis Date: **6/21/2016 08:44 PM**

Client ID: Run ID: **VMS10_160621A** SeqNo: **3886188** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	20.08	1.0	20	0	100	80-130	0			
1,1,1-Trichloroethane	24.12	1.0	20	0	121	75-130	0			
1,1,2,2-Tetrachloroethane	19.35	1.0	20	0	96.8	75-130	0			
1,1,2-Trichloroethane	20.4	1.0	20	0	102	75-125	0			
1,1-Dichloroethane	20.94	1.0	20	0	105	75-133	0			
1,1-Dichloroethene	25.13	1.0	20	0	126	70-145	0			
1,2,3-Trichloropropane	20.1	1.0	20	0	100	75-125	0			
1,2,4-Trichlorobenzene	19.27	1.0	20	0	96.4	70-135	0			
1,2,4-Trimethylbenzene	20.24	1.0	20	0	101	75-130	0			
1,2-Dibromo-3-chloropropane	15.52	1.0	20	0	77.6	60-130	0			
1,2-Dibromoethane	22.21	1.0	20	0	111	80-150	0			
1,2-Dichlorobenzene	20.36	1.0	20	0	102	70-130	0			
1,2-Dichloroethane	21.03	1.0	20	0	105	78-125	0			
1,2-Dichloropropane	20.59	1.0	20	0	103	75-125	0			
1,3,5-Trimethylbenzene	20.68	1.0	20	0	103	75-130	0			
1,3-Dichlorobenzene	20.95	1.0	20	0	105	75-130	0			
1,4-Dichlorobenzene	20.01	1.0	20	0	100	75-130	0			
2-Butanone	13.96	5.0	20	0	69.8	55-150	0			
2-Hexanone	14.02	5.0	20	0	70.1	60-135	0			
4-Methyl-2-pentanone	18.6	1.0	20	0	93	77-178	0			
Acetone	20.81	10	20	0	104	60-160	0			
Acrylonitrile	18.32	1.0	20	0	91.6	60-140	0			
Benzene	65.38	1.0	20	45.14	101	85-125	0			
Bromochloromethane	18.68	1.0	20	0	93.4	75-130	0			
Bromodichloromethane	21.04	1.0	20	0	105	75-125	0			
Bromoform	16.63	1.0	20	0	83.2	60-125	0			
Bromomethane	14.06	1.0	20	0	70.3	30-185	0			
Carbon disulfide	22.31	1.0	20	0	112	60-165	0			
Carbon tetrachloride	22.91	1.0	20	0	115	65-140	0			
Chlorobenzene	20.68	1.0	20	0	103	80-120	0			
Chloroethane	23.54	1.0	20	0	118	50-140	0			
Chloroform	20.04	1.0	20	0	100	80-130	0			
Chloromethane	21.19	1.0	20	1.5	98.4	50-130	0			
cis-1,2-Dichloroethene	19.3	1.0	20	0	96.5	75-134	0			
cis-1,3-Dichloropropene	17.49	1.0	20	0	87.4	70-130	0			
Dibromochloromethane	16.89	1.0	20	0	84.4	60-115	0			
Dibromomethane	21.31	1.0	20	0	107	85-125	0			
Dichlorodifluoromethane	19.06	1.0	20	0	95.3	20-120	0			
Ethylbenzene	21.13	1.0	20	0	106	85-125	0			
Hexachloroethane	14.2	1.0	20	0	71	50-124	0			
Isopropylbenzene	20.54	1.0	20	0	103	80-127	0			
m,p-Xylene	44.6	2.0	40	0	112	75-130	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Batch ID: **R189964A** Instrument ID **VMS10** Method: **SW8260B**

Methyl iodide	19.62	1.0	20	0	98.1	60-160	0	
Methyl tert-butyl ether	18.02	1.0	20	0	90.1	80-130	0	
Methylene chloride	22.17	5.0	20	0	111	75-140	0	
Naphthalene	18.34	5.0	20	1.74	83	55-160	0	
n-Propylbenzene	21.51	1.0	20	0	108	78-120	0	
o-Xylene	21.08	1.0	20	0	105	80-125	0	
Styrene	14.03	1.0	20	0	70.2	85-125	0	S
Tetrachloroethene	21.58	1.0	20	0	108	77-138	0	
Toluene	20.49	1.0	20	0	102	85-125	0	
trans-1,2-Dichloroethene	22.23	1.0	20	0	111	80-140	0	
trans-1,3-Dichloropropene	16.08	1.0	20	0	80.4	81-123	0	S
trans-1,4-Dichloro-2-butene	13.07	2.0	20	0	65.4	46-118	0	
Trichloroethene	21.75	1.0	20	0	109	84-130	0	
Trichlorofluoromethane	24.38	1.0	20	0	122	60-140	0	
Vinyl chloride	21.25	1.0	20	0	106	50-136	0	
Xylenes, Total	65.68	3.0	60	0	109	80-126	0	
Surr: 1,2-Dichloroethane-d4	*20.55*	0	*20*	0	*103*	*75-120*	0	
Surr: 4-Bromofluorobenzene	*20.61*	0	*20*	0	*103*	*80-110*	0	
Surr: Dibromofluoromethane	*21.2*	0	*20*	0	*106*	*85-115*	0	
Surr: Toluene-d8	*19.69*	0	*20*	0	*98.4*	*85-110*	0	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606902
Project: ECT (731 Jeni Lane)

QC BATCH REPORT

Batch ID: **R189964A** Instrument ID **VMS10** Method: **SW8260B**

MSD Sample ID: **1606757-21A MSD** Units: **µg/L** Analysis Date: **6/21/2016 09:08 PM**
Client ID: Run ID: **VMS10_160621A** SeqNo: **3886189** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	19.66	1.0	20	0	98.3	80-130	20.08	2.11	30	
1,1,1-Trichloroethane	23.81	1.0	20	0	119	75-130	24.12	1.29	30	
1,1,2,2-Tetrachloroethane	19.08	1.0	20	0	95.4	75-130	19.35	1.41	30	
1,1,2-Trichloroethane	19.61	1.0	20	0	98	75-125	20.4	3.95	30	
1,1-Dichloroethane	21.05	1.0	20	0	105	75-133	20.94	0.524	30	
1,1-Dichloroethene	25.19	1.0	20	0	126	70-145	25.13	0.238	30	
1,2,3-Trichloropropane	19.29	1.0	20	0	96.4	75-125	20.1	4.11	30	
1,2,4-Trichlorobenzene	18.79	1.0	20	0	94	70-135	19.27	2.52	30	
1,2,4-Trimethylbenzene	19.71	1.0	20	0	98.6	75-130	20.24	2.65	30	
1,2-Dibromo-3-chloropropane	15.21	1.0	20	0	76	60-130	15.52	2.02	30	
1,2-Dibromoethane	21.21	1.0	20	0	106	80-150	22.21	4.61	30	
1,2-Dichlorobenzene	19.89	1.0	20	0	99.4	70-130	20.36	2.34	30	
1,2-Dichloroethane	21.09	1.0	20	0	105	78-125	21.03	0.285	30	
1,2-Dichloropropane	20.26	1.0	20	0	101	75-125	20.59	1.62	30	
1,3,5-Trimethylbenzene	20.21	1.0	20	0	101	75-130	20.68	2.3	30	
1,3-Dichlorobenzene	20.53	1.0	20	0	103	75-130	20.95	2.03	30	
1,4-Dichlorobenzene	19.81	1.0	20	0	99	75-130	20.01	1	30	
2-Butanone	13.91	5.0	20	0	69.6	55-150	13.96	0.359	30	
2-Hexanone	13.95	5.0	20	0	69.8	60-135	14.02	0.501	30	
4-Methyl-2-pentanone	17.36	1.0	20	0	86.8	77-178	18.6	6.9	30	
Acetone	22.34	10	20	0	112	60-160	20.81	7.09	30	
Acrylonitrile	15.86	1.0	20	0	79.3	60-140	18.32	14.4	30	
Benzene	64.83	1.0	20	45.14	98.4	85-125	65.38	0.845	30	
Bromochloromethane	18.04	1.0	20	0	90.2	75-130	18.68	3.49	30	
Bromodichloromethane	21.13	1.0	20	0	106	75-125	21.04	0.427	30	
Bromoform	16.78	1.0	20	0	83.9	60-125	16.63	0.898	30	
Bromomethane	15.82	1.0	20	0	79.1	30-185	14.06	11.8	30	
Carbon disulfide	22.62	1.0	20	0	113	60-165	22.31	1.38	30	
Carbon tetrachloride	22.97	1.0	20	0	115	65-140	22.91	0.262	30	
Chlorobenzene	20.33	1.0	20	0	102	80-120	20.68	1.71	30	
Chloroethane	23.05	1.0	20	0	115	50-140	23.54	2.1	30	
Chloroform	19.83	1.0	20	0	99.2	80-130	20.04	1.05	30	
Chloromethane	19.88	1.0	20	1.5	91.9	50-130	21.19	6.38	30	
cis-1,2-Dichloroethene	19.14	1.0	20	0	95.7	75-134	19.3	0.832	30	
cis-1,3-Dichloropropene	17.82	1.0	20	0	89.1	70-130	17.49	1.87	30	
Dibromochloromethane	16.93	1.0	20	0	84.6	60-115	16.89	0.237	30	
Dibromomethane	21.07	1.0	20	0	105	85-125	21.31	1.13	30	
Dichlorodifluoromethane	18.73	1.0	20	0	93.6	20-120	19.06	1.75	30	
Ethylbenzene	20.69	1.0	20	0	103	85-125	21.13	2.1	30	
Hexachloroethane	14.63	1.0	20	0	73.2	50-124	14.2	2.98	30	
Isopropylbenzene	20.21	1.0	20	0	101	80-127	20.54	1.62	30	
m,p-Xylene	43.56	2.0	40	0	109	75-130	44.6	2.36	30	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606902
Project: ECT (731 Jeni Lane)

QC BATCH REPORT

Batch ID: **R189964A** Instrument ID **VMS10** Method: **SW8260B**

Methyl iodide	11.22	1.0	20	0	56.1	60-160	19.62	54.5	30	SR
Methyl tert-butyl ether	17.21	1.0	20	0	86	80-130	18.02	4.6	30	
Methylene chloride	20.8	5.0	20	0	104	75-140	22.17	6.38	30	
Naphthalene	17.29	5.0	20	1.74	77.8	55-160	18.34	5.89	30	
n-Propylbenzene	21.02	1.0	20	0	105	78-120	21.51	2.3	30	
o-Xylene	20.71	1.0	20	0	104	80-125	21.08	1.77	30	
Styrene	13.72	1.0	20	0	68.6	85-125	14.03	2.23	30	S
Tetrachloroethene	21	1.0	20	0	105	77-138	21.58	2.72	30	
Toluene	20.34	1.0	20	0	102	85-125	20.49	0.735	30	
trans-1,2-Dichloroethene	21.22	1.0	20	0	106	80-140	22.23	4.65	30	
trans-1,3-Dichloropropene	15.7	1.0	20	0	78.5	81-123	16.08	2.39	30	S
trans-1,4-Dichloro-2-butene	12.81	2.0	20	0	64	46-118	13.07	2.01	30	
Trichloroethene	21.54	1.0	20	0	108	84-130	21.75	0.97	30	
Trichlorofluoromethane	23.82	1.0	20	0	119	60-140	24.38	2.32	30	
Vinyl chloride	20.97	1.0	20	0	105	50-136	21.25	1.33	30	
Xylenes, Total	64.27	3.0	60	0	107	80-126	65.68	2.17	30	
Surr: 1,2-Dichloroethane-d4	*20.59*	0	*20*	0	*103*	*75-120*	20.55	*0.194*	*30*	
Surr: 4-Bromofluorobenzene	*20.65*	0	*20*	0	*103*	*80-110*	20.61	*0.194*	*30*	
Surr: Dibromofluoromethane	*21.09*	0	*20*	0	*105*	*85-115*	21.2	*0.52*	*30*	
Surr: Toluene-d8	*19.75*	0	*20*	0	*98.8*	*85-110*	19.69	*0.304*	*30*	

The following samples were analyzed in this batch: 1606902-01B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Group USA, Corp

Date: 23-Jun-16

Client: Merit Energy
Project: ECT (731 Jeni Lane)
WorkOrder: **1606902**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
µg/L	Micrograms per Liter

ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **MERITENERGY** Date/Time Received: **15-Jun-16 10:00**

Work Order: **1606902** Received by: **MEB**

Checklist completed by Meghan Broadbent 15-Jun-16 Reviewed by: Gary Byar 16-Jun-16

eSignature / Date / eSignature / Date

Matrices: water

Carrier name: UPS

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	6.0/6.0	SR2	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	6/15/2016 4:33:22 PM		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

☑ RETURN SAMPLES TO:
ALS Environmental
781 Industrial Cir, Ste 3
Traverse City, Michigan 49686
(Tel) 231.421.3204
(Cell) 231.944.3459

Chain of Custody Form

Page 1 of 1

☐ ALS Environmental
3352 128th Avenue
Holland, Michigan 49424
(Tel) 616.399.6070
(Fax) 616.399.6185

ALS Project Manager: Gary Byar | ALS Work Order #: 1602902

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	Hartland 36 Gas Plant	A	SULFOLANE
Work Order		Project Number	130685-2000	B	DIPA
Company Name	ECT, Inc.	Bill To Company	MEC	C	VOCs
Send Report To	Jeremy Lewandowski	Invoice Attn.	Sean Craven	D	
Address	3399 Veterans Dr.	Address	1510 Thomas Rd	E	
				F	
City/State/Zip	Traverse City, MI 49684	City/State/Zip	Kalkaska, MI	G	
Phone	231-946-8200	Phone	231-258-6369	H	
Fax	231-946-8208	Fax		I	
e-Mail Address	jlewandowski@ectinc.com			J	

No.	Sample Description	Date	Time	Matrix	Pres. Key Numbers	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	731 JENNI LANE	6/14/16	0735	W		4	X	X	X								

Sampler(s): Please Print & Sign: CHAD J SIMON

Shipment Method: UPS

Required Turnaround Time: (Check Box) ☒ 10 Wk Days ☐ 5-7 Wk Days ☐ 3 Wk Days ☐ 2 Wk Days ☐ 24 Hour ☐ Other

Results Due Date:

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date: 6/15/16	Time: 1000	Received by (Laboratory):	Date:	Time:
Logged by (Laboratory): MB	Date: 6/15/16	Time: 1626	Checked by (Laboratory): GRB		

Notes: ALS Project: MERITENERGY - Misc

ALS Cooler ID	Cooler Temp
	6.0°C

QC Package: (Check Box Below)
☑ Level II: Standard QC ☐ Level III: Raw Data
☐ TRRP LRC ☐ TRRP Level IV
☐ Level IV: SW846 Methods/CLP like
☐ Other:

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS.

FROM:
LISA ZUBER
(517) 272-9200
ECT, INC.
3125 SOVEREIGN DRIVE
LANSING MI 48911-4240

35 LBS **1 OF 1**

SHIP TO:
SAMPLE RECEIVING
(616) 399-6070
ALS ENVIRONMENTAL
3352 128TH AVENUE
HOLLAND MI 49424-9263

MI 495 9-04

UPS NEXT DAY AIR **1**
TRACKING #: 1Z V54 9W4 01 5040 0566

REF 1:130685, 2000

BILLING: P/P

WS 19.0.24 Xerox WorkCen 75.0A 04/2016

Fold here and place in label pouch

23-Jun-2016

Sean Craven
Merit Energy
1510 Thomas Rd
PO Box 910
Kalkaska, MI 49646

Re: **ECT (477 Jeni Lane)** Work Order: **1606884**

Dear Sean,

ALS Environmental received 1 sample on 15-Jun-2016 09:30 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with NELAP standard requirements and QC results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 19.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

Gary Byar

Electronically approved by: Gary Byar

Gary Byar
Project Manager

Certificate No: MI: 0022

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185
ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

ALS Group USA, Corp

Date: 23-Jun-16

Client: Merit Energy
Project: ECT (477 Jeni Lane)
Work Order: **1606884**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1606884-01	477 Jeni Lane	Water		6/13/2016 16:01	6/15/2016 09:30	☐

ALS Group USA, Corp

Date: *23-Jun-16*

Client: Merit Energy
Project: ECT (477 Jeni Lane)
Work Order: 1606884
Sample ID: 477 Jeni Lane
Lab ID: 1606884-01
Collection Date: 6/13/2016 04:01 PM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW846 8270D**		Prep: SW3510 / 6/16/16	Analyst: **RM**
Diisopropanolamine	ND		50	µg/L	1	6/17/2016 02:07 AM
Sulfolane	ND		10	µg/L	1	6/17/2016 02:07 AM
Surr: 2,4,6-Tribromophenol	*58.0*		*38-115*	*%REC*	1	6/17/2016 02:07 AM
Surr: 2-Fluorobiphenyl	*52.3*		*32-100*	*%REC*	1	6/17/2016 02:07 AM
Surr: 2-Fluorophenol	*37.1*		*22-59*	*%REC*	1	6/17/2016 02:07 AM
Surr: 4-Terphenyl-d14	*85.7*		*23-112*	*%REC*	1	6/17/2016 02:07 AM
Surr: Nitrobenzene-d5	*60.1*		*31-93*	*%REC*	1	6/17/2016 02:07 AM
Surr: Phenol-d6	*22.3*		*13-36*	*%REC*	1	6/17/2016 02:07 AM
VOLATILE ORGANIC COMPOUNDS			**SW8260B**			Analyst: **AK**
1,1,1,2-Tetrachloroethane	ND		1.0	µg/L	1	6/21/2016 05:05 PM
1,1,1-Trichloroethane	ND		1.0	µg/L	1	6/21/2016 05:05 PM
1,1,2,2-Tetrachloroethane	ND		1.0	µg/L	1	6/21/2016 05:05 PM
1,1,2-Trichloroethane	ND		1.0	µg/L	1	6/21/2016 05:05 PM
1,1,2-Trichlorotrifluoroethane	ND		1.0	µg/L	1	6/21/2016 05:05 PM
1,1-Dichloroethane	ND		1.0	µg/L	1	6/21/2016 05:05 PM
1,1-Dichloroethene	ND		1.0	µg/L	1	6/21/2016 05:05 PM
1,2,3-Trichloropropane	ND		1.0	µg/L	1	6/21/2016 05:05 PM
1,2,4-Trichlorobenzene	ND		1.0	µg/L	1	6/21/2016 05:05 PM
1,2,4-Trimethylbenzene	ND		1.0	µg/L	1	6/21/2016 05:05 PM
1,2-Dibromo-3-chloropropane	ND		1.0	µg/L	1	6/21/2016 05:05 PM
1,2-Dibromoethane	ND		1.0	µg/L	1	6/21/2016 05:05 PM
1,2-Dichlorobenzene	ND		1.0	µg/L	1	6/21/2016 05:05 PM
1,2-Dichloroethane	ND		1.0	µg/L	1	6/21/2016 05:05 PM
1,2-Dichloropropane	ND		1.0	µg/L	1	6/21/2016 05:05 PM
1,3,5-Trimethylbenzene	ND		1.0	µg/L	1	6/21/2016 05:05 PM
1,3-Dichlorobenzene	ND		1.0	µg/L	1	6/21/2016 05:05 PM
1,4-Dichlorobenzene	ND		1.0	µg/L	1	6/21/2016 05:05 PM
2-Butanone	ND		5.0	µg/L	1	6/21/2016 05:05 PM
2-Hexanone	ND		5.0	µg/L	1	6/21/2016 05:05 PM
2-Methylnaphthalene	ND		5.0	µg/L	1	6/21/2016 05:05 PM
4-Methyl-2-pentanone	ND		1.0	µg/L	1	6/21/2016 05:05 PM
Acetone	ND		10	µg/L	1	6/21/2016 05:05 PM
Acrylonitrile	ND		1.0	µg/L	1	6/21/2016 05:05 PM
Benzene	ND		1.0	µg/L	1	6/21/2016 05:05 PM
Bromochloromethane	ND		1.0	µg/L	1	6/21/2016 05:05 PM
Bromodichloromethane	ND		1.0	µg/L	1	6/21/2016 05:05 PM
Bromoform	ND		1.0	µg/L	1	6/21/2016 05:05 PM
Bromomethane	ND		1.0	µg/L	1	6/21/2016 05:05 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *23-Jun-16*

Client: Merit Energy
Project: ECT (477 Jeni Lane)
Work Order: 1606884
Sample ID: 477 Jeni Lane
Lab ID: 1606884-01
Collection Date: 6/13/2016 04:01 PM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Carbon disulfide	ND		1.0	µg/L	1	6/21/2016 05:05 PM
Carbon tetrachloride	ND		1.0	µg/L	1	6/21/2016 05:05 PM
Chlorobenzene	ND		1.0	µg/L	1	6/21/2016 05:05 PM
Chloroethane	ND		1.0	µg/L	1	6/21/2016 05:05 PM
Chloroform	ND		1.0	µg/L	1	6/21/2016 05:05 PM
Chloromethane	ND		1.0	µg/L	1	6/21/2016 05:05 PM
cis-1,2-Dichloroethene	ND		1.0	µg/L	1	6/21/2016 05:05 PM
cis-1,3-Dichloropropene	ND		1.0	µg/L	1	6/21/2016 05:05 PM
Dibromochloromethane	ND		1.0	µg/L	1	6/21/2016 05:05 PM
Dibromomethane	ND		1.0	µg/L	1	6/21/2016 05:05 PM
Dichlorodifluoromethane	ND		1.0	µg/L	1	6/21/2016 05:05 PM
Diethyl ether	ND		1.0	µg/L	1	6/21/2016 05:05 PM
Ethylbenzene	ND		1.0	µg/L	1	6/21/2016 05:05 PM
Hexachloroethane	ND		1.0	µg/L	1	6/21/2016 05:05 PM
Isopropylbenzene	ND		1.0	µg/L	1	6/21/2016 05:05 PM
m,p-Xylene	ND		2.0	µg/L	1	6/21/2016 05:05 PM
Methyl iodide	ND		1.0	µg/L	1	6/21/2016 05:05 PM
Methyl tert-butyl ether	ND		1.0	µg/L	1	6/21/2016 05:05 PM
Methylene chloride	ND		5.0	µg/L	1	6/21/2016 05:05 PM
Naphthalene	ND		5.0	µg/L	1	6/21/2016 05:05 PM
n-Propylbenzene	ND		1.0	µg/L	1	6/21/2016 05:05 PM
o-Xylene	ND		1.0	µg/L	1	6/21/2016 05:05 PM
Styrene	ND		1.0	µg/L	1	6/21/2016 05:05 PM
Tetrachloroethene	ND		1.0	µg/L	1	6/21/2016 05:05 PM
Toluene	ND		1.0	µg/L	1	6/21/2016 05:05 PM
trans-1,2-Dichloroethene	ND		1.0	µg/L	1	6/21/2016 05:05 PM
trans-1,3-Dichloropropene	ND		1.0	µg/L	1	6/21/2016 05:05 PM
trans-1,4-Dichloro-2-butene	ND		2.0	µg/L	1	6/21/2016 05:05 PM
Trichloroethene	ND		1.0	µg/L	1	6/21/2016 05:05 PM
Trichlorofluoromethane	ND		1.0	µg/L	1	6/21/2016 05:05 PM
Vinyl acetate	ND		1.0	µg/L	1	6/21/2016 05:05 PM
Vinyl chloride	ND		1.0	µg/L	1	6/21/2016 05:05 PM
Xylenes, Total	ND		3.0	µg/L	1	6/21/2016 05:05 PM
Surr: 1,2-Dichloroethane-d4	*110*		*75-120*	*%REC*	1	6/21/2016 05:05 PM
Surr: 4-Bromofluorobenzene	*91.6*		*80-110*	*%REC*	1	6/21/2016 05:05 PM
Surr: Dibromofluoromethane	*108*		*85-115*	*%REC*	1	6/21/2016 05:05 PM
Surr: Toluene-d8	*95.3*		*85-110*	*%REC*	1	6/21/2016 05:05 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 23-Jun-16

Client: Merit Energy
Project: ECT (477 Jeni Lane)
Work Order: 1606884

Case Narrative

Batch R189964A Sample VLCSW2-160621 The LCS recovery for Volatile compound Methyl Iodide was above the upper control limit. All the sample results in the batch were non-detect. No qualification is necessary for this analyte.

Batch R189964A The MS/MSD data for Volatiles is not related to this projects sample. No data requires qualification.

ALS Group USA, Corp

Date: 23-Jun-16

Client: Merit Energy

Work Order: 1606884

Project: ECT (477 Jeni Lane)

QC BATCH REPORT

Batch ID: **87384** Instrument ID **SVMS8** Method: **SW846 8270D**

MBLK Sample ID: **SBLKW1-87384-87384** Units: **µg/L** Analysis Date: **6/16/2016 07:57 PM**

Client ID: Run ID: **SVMS8_160616A** SeqNo: **3888548** Prep Date: **6/16/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Diisopropanolamine	ND	50								
Sulfolane	ND	10								
Surr: 2,4,6-Tribromophenol	*34.42*	0	*50*	0	*68.8*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*34.19*	0	*50*	0	*68.4*	*32-100*	0			
Surr: 2-Fluorophenol	*22.38*	0	*50*	0	*44.8*	*22-59*	0			
Surr: 4-Terphenyl-d14	*46.53*	0	*50*	0	*93.1*	*23-112*	0			
Surr: Nitrobenzene-d5	*39.51*	0	*50*	0	*79*	*31-93*	0			
Surr: Phenol-d6	*13.42*	0	*50*	0	*26.8*	*13-36*	0			

LCS Sample ID: **SLCSW1-87384-87384** Units: **µg/L** Analysis Date: **6/16/2016 08:17 PM**

Client ID: Run ID: **SVMS8_160616A** SeqNo: **3888549** Prep Date: **6/16/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Diisopropanolamine	10.77	50	100	0	10.8	10-50	0			
Sulfolane	53.27	10	100	0	53.3	30-100	0			
Surr: 2,4,6-Tribromophenol	*35.21*	0	*50*	0	*70.4*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*35.78*	0	*50*	0	*71.6*	*32-100*	0			
Surr: 2-Fluorophenol	*21.28*	0	*50*	0	*42.6*	*22-59*	0			
Surr: 4-Terphenyl-d14	*49.06*	0	*50*	0	*98.1*	*23-112*	0			
Surr: Nitrobenzene-d5	*40.25*	0	*50*	0	*80.5*	*31-93*	0			
Surr: Phenol-d6	*12.62*	0	*50*	0	*25.2*	*13-36*	0			

MS Sample ID: **1606870-01A MS** Units: **µg/L** Analysis Date: **6/16/2016 10:05 PM**

Client ID: Run ID: **SVMS8_160616A** SeqNo: **3888550** Prep Date: **6/16/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Diisopropanolamine	18.58	50	100	0	18.6	10-50	0			
Sulfolane	59.25	10	100	0	59.2	30-100	0			
Surr: 2,4,6-Tribromophenol	*33.01*	0	*50*	0	*66*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*34.57*	0	*50*	0	*69.1*	*32-100*	0			
Surr: 2-Fluorophenol	*20.06*	0	*50*	0	*40.1*	*22-59*	0			
Surr: 4-Terphenyl-d14	*46.56*	0	*50*	0	*93.1*	*23-112*	0			
Surr: Nitrobenzene-d5	*39.7*	0	*50*	0	*79.4*	*31-93*	0			
Surr: Phenol-d6	*11.64*	0	*50*	0	*23.3*	*13-36*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606884
Project: ECT (477 Jeni Lane)

QC BATCH REPORT

Batch ID: **87384** Instrument ID **SVMS8** Method: **SW846 8270D**

DUP Sample ID: **1606871-01A DUP** Units: **µg/L** Analysis Date: **6/16/2016 10:45 PM**

Client ID: Run ID: **SVMS8_160616A** SeqNo: **3888552** Prep Date: **6/16/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Diisopropanolamine	ND	53	0	0	0		0	0	30	
Sulfolane	ND	11	0	0	0		0	0	30	
Surr: 2,4,6-Tribromophenol	*28.89*	0	*52.63*	0	*54.9*	*38-115*	27.6	*4.58*	*40*	
Surr: 2-Fluorobiphenyl	*29.71*	0	*52.63*	0	*56.4*	*32-100*	29.06	*2.2*	*40*	
Surr: 2-Fluorophenol	*19.71*	0	*52.63*	0	*37.4*	*22-59*	18.78	*4.81*	*40*	
Surr: 4-Terphenyl-d14	*45.01*	0	*52.63*	0	*85.5*	*23-112*	42.59	*5.53*	*40*	
Surr: Nitrobenzene-d5	*32.43*	0	*52.63*	0	*61.6*	*31-93*	32.8	*1.13*	*40*	
Surr: Phenol-d6	*11.48*	0	*52.63*	0	*21.8*	*13-36*	11.2	*2.51*	*40*	

The following samples were analyzed in this batch: 1606884-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606884
Project: ECT (477 Jeni Lane)

QC BATCH REPORT

Batch ID: **R189964A** Instrument ID **VMS10** Method: **SW8260B**

MBLK	Sample ID: **VBLKW1-160621-R189964A**				Units: **µg/L**			Analysis Date: **6/21/2016 02:16 PM**		
Client ID:		Run ID: **VMS10_160621A**			SeqNo: **3886170**		Prep Date:		DF: **1**	

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
1,1,2-Trichlorotrifluoroethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2,3-Trichloropropane	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	1.0								
1,2-Dibromoethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,2-Dichloroethane	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
2-Butanone	ND	5.0								
2-Hexanone	ND	5.0								
2-Methylnaphthalene	ND	5.0								
4-Methyl-2-pentanone	ND	1.0								
Acetone	ND	10								
Acrylonitrile	ND	1.0								
Benzene	ND	1.0								
Bromochloromethane	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	1.0								
Carbon disulfide	ND	1.0								
Carbon tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	ND	1.0								
cis-1,2-Dichloroethene	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
Diethyl ether	ND	1.0								
Ethylbenzene	ND	1.0								

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Batch ID: **R189964A** Instrument ID **VMS10** Method: **SW8260B**

Hexachloroethane	ND	1.0					
Isopropylbenzene	ND	1.0					
m,p-Xylene	ND	2.0					
Methyl iodide	ND	1.0					
Methyl tert-butyl ether	ND	1.0					
Methylene chloride	ND	5.0					
Naphthalene	ND	5.0					
n-Propylbenzene	ND	1.0					
o-Xylene	ND	1.0					
Styrene	ND	1.0					
Tetrachloroethene	ND	1.0					
Toluene	ND	1.0					
trans-1,2-Dichloroethene	ND	1.0					
trans-1,3-Dichloropropene	ND	1.0					
trans-1,4-Dichloro-2-butene	ND	2.0					
Trichloroethene	ND	1.0					
Trichlorofluoromethane	ND	1.0					
Vinyl acetate	ND	1.0					
Vinyl chloride	ND	1.0					
Xylenes, Total	ND	3.0					
Surr: 1,2-Dichloroethane-d4	*21.46*	0	*20*	0	*107*	*75-120*	0
Surr: 4-Bromofluorobenzene	*17.99*	0	*20*	0	*90*	*80-110*	0
Surr: Dibromofluoromethane	*20.43*	0	*20*	0	*102*	*85-115*	0
Surr: Toluene-d8	*18.84*	0	*20*	0	*94.2*	*85-110*	0

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606884
Project: ECT (477 Jeni Lane)

QC BATCH REPORT

Batch ID: **R189964A** Instrument ID **VMS10** Method: **SW8260B**

LCS	Sample ID: **VLCSW2-160621-R189964A**				Units: **µg/L**			Analysis Date: **6/21/2016 01:03 PM**		
Client ID:		Run ID: **VMS10_160621A**			SeqNo: **3886169**		Prep Date:		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	19.57	1.0	20	0	97.8	80-130	0			
1,1,1-Trichloroethane	22.55	1.0	20	0	113	75-130	0			
1,1,2,2-Tetrachloroethane	18.67	1.0	20	0	93.4	75-130	0			
1,1,2-Trichloroethane	19.87	1.0	20	0	99.4	75-125	0			
1,1-Dichloroethane	21.59	1.0	20	0	108	75-133	0			
1,1-Dichloroethene	24.6	1.0	20	0	123	70-145	0			
1,2,3-Trichloropropane	18.99	1.0	20	0	95	75-125	0			
1,2,4-Trichlorobenzene	20.01	1.0	20	0	100	70-135	0			
1,2,4-Trimethylbenzene	20.83	1.0	20	0	104	75-130	0			
1,2-Dibromo-3-chloropropane	14.85	1.0	20	0	74.2	60-130	0			
1,2-Dibromoethane	21.69	1.0	20	0	108	80-150	0			
1,2-Dichlorobenzene	20.68	1.0	20	0	103	70-130	0			
1,2-Dichloroethane	20.77	1.0	20	0	104	78-125	0			
1,2-Dichloropropane	19.91	1.0	20	0	99.6	75-125	0			
1,3,5-Trimethylbenzene	21.2	1.0	20	0	106	75-130	0			
1,3-Dichlorobenzene	21.55	1.0	20	0	108	75-130	0			
1,4-Dichlorobenzene	20.77	1.0	20	0	104	75-130	0			
2-Butanone	13.56	5.0	20	0	67.8	55-150	0			
2-Hexanone	13.16	5.0	20	0	65.8	60-135	0			
4-Methyl-2-pentanone	17.41	1.0	20	0	87	77-178	0			
Acetone	15.96	10	20	0	79.8	60-160	0			
Acrylonitrile	15.7	1.0	20	0	78.5	60-140	0			
Benzene	20.6	1.0	20	0	103	85-125	0			
Bromochloromethane	18.78	1.0	20	0	93.9	75-130	0			
Bromodichloromethane	20.47	1.0	20	0	102	75-125	0			
Bromoform	16.14	1.0	20	0	80.7	60-125	0			
Bromomethane	27.29	1.0	20	0	136	30-185	0			
Carbon disulfide	22.57	1.0	20	0	113	60-165	0			
Carbon tetrachloride	21.01	1.0	20	0	105	65-140	0			
Chlorobenzene	20.84	1.0	20	0	104	80-120	0			
Chloroethane	23.14	1.0	20	0	116	50-140	0			
Chloroform	19.86	1.0	20	0	99.3	80-130	0			
Chloromethane	14.87	1.0	20	0	74.4	50-130	0			
cis-1,2-Dichloroethene	19.63	1.0	20	0	98.2	75-134	0			
cis-1,3-Dichloropropene	17.96	1.0	20	0	89.8	70-130	0			
Dibromochloromethane	16.62	1.0	20	0	83.1	60-115	0			
Dibromomethane	20.68	1.0	20	0	103	85-125	0			
Dichlorodifluoromethane	18.35	1.0	20	0	91.8	20-120	0			
Ethylbenzene	21.52	1.0	20	0	108	85-125	0			
Hexachloroethane	14.16	1.0	20	0	70.8	50-124	0			
Isopropylbenzene	20.7	1.0	20	0	104	80-127	0			
m,p-Xylene	44.74	2.0	40	0	112	75-130	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

QC BATCH REPORT

Batch ID: **R189964A** Instrument ID **VMS10** Method: **SW8260B**

Methyl iodide	40.55	1.0	20	0	203	60-160	0	S
Methyl tert-butyl ether	17.94	1.0	20	0	89.7	80-130	0	
Methylene chloride	23.38	5.0	20	0	117	75-140	0	
Naphthalene	16.24	5.0	20	0	81.2	55-160	0	
n-Propylbenzene	22.03	1.0	20	0	110	78-120	0	
o-Xylene	21.56	1.0	20	0	108	80-125	0	
Styrene	20.41	1.0	20	0	102	85-125	0	
Tetrachloroethene	22.69	1.0	20	0	113	77-138	0	
Toluene	20.43	1.0	20	0	102	85-125	0	
trans-1,2-Dichloroethene	22.8	1.0	20	0	114	80-140	0	
trans-1,3-Dichloropropene	16.34	1.0	20	0	81.7	81-123	0	
trans-1,4-Dichloro-2-butene	12.84	2.0	20	0	64.2	46-118	0	
Trichloroethene	21.85	1.0	20	0	109	84-130	0	
Trichlorofluoromethane	22.88	1.0	20	0	114	60-140	0	
Vinyl chloride	20.66	1.0	20	0	103	50-136	0	
Xylenes, Total	66.3	3.0	60	0	110	80-126	0	
Surr: 1,2-Dichloroethane-d4	*20.04*	0	*20*	0	*100*	*75-120*	0	
Surr: 4-Bromofluorobenzene	*20.04*	0	*20*	0	*100*	*80-110*	0	
Surr: Dibromofluoromethane	*20.8*	0	*20*	0	*104*	*85-115*	0	
Surr: Toluene-d8	*19.65*	0	*20*	0	*98.2*	*85-110*	0	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606884
Project: ECT (477 Jeni Lane)

QC BATCH REPORT

Batch ID: **R189964A** Instrument ID **VMS10** Method: **SW8260B**

MS Sample ID: **1606757-21A MS** Units: **µg/L** Analysis Date: **6/21/2016 08:44 PM**

Client ID: Run ID: **VMS10_160621A** SeqNo: **3886188** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	20.08	1.0	20	0	100	80-130	0			
1,1,1-Trichloroethane	24.12	1.0	20	0	121	75-130	0			
1,1,2,2-Tetrachloroethane	19.35	1.0	20	0	96.8	75-130	0			
1,1,2-Trichloroethane	20.4	1.0	20	0	102	75-125	0			
1,1-Dichloroethane	20.94	1.0	20	0	105	75-133	0			
1,1-Dichloroethene	25.13	1.0	20	0	126	70-145	0			
1,2,3-Trichloropropane	20.1	1.0	20	0	100	75-125	0			
1,2,4-Trichlorobenzene	19.27	1.0	20	0	96.4	70-135	0			
1,2,4-Trimethylbenzene	20.24	1.0	20	0	101	75-130	0			
1,2-Dibromo-3-chloropropane	15.52	1.0	20	0	77.6	60-130	0			
1,2-Dibromoethane	22.21	1.0	20	0	111	80-150	0			
1,2-Dichlorobenzene	20.36	1.0	20	0	102	70-130	0			
1,2-Dichloroethane	21.03	1.0	20	0	105	78-125	0			
1,2-Dichloropropane	20.59	1.0	20	0	103	75-125	0			
1,3,5-Trimethylbenzene	20.68	1.0	20	0	103	75-130	0			
1,3-Dichlorobenzene	20.95	1.0	20	0	105	75-130	0			
1,4-Dichlorobenzene	20.01	1.0	20	0	100	75-130	0			
2-Butanone	13.96	5.0	20	0	69.8	55-150	0			
2-Hexanone	14.02	5.0	20	0	70.1	60-135	0			
4-Methyl-2-pentanone	18.6	1.0	20	0	93	77-178	0			
Acetone	20.81	10	20	0	104	60-160	0			
Acrylonitrile	18.32	1.0	20	0	91.6	60-140	0			
Benzene	65.38	1.0	20	45.14	101	85-125	0			
Bromochloromethane	18.68	1.0	20	0	93.4	75-130	0			
Bromodichloromethane	21.04	1.0	20	0	105	75-125	0			
Bromoform	16.63	1.0	20	0	83.2	60-125	0			
Bromomethane	14.06	1.0	20	0	70.3	30-185	0			
Carbon disulfide	22.31	1.0	20	0	112	60-165	0			
Carbon tetrachloride	22.91	1.0	20	0	115	65-140	0			
Chlorobenzene	20.68	1.0	20	0	103	80-120	0			
Chloroethane	23.54	1.0	20	0	118	50-140	0			
Chloroform	20.04	1.0	20	0	100	80-130	0			
Chloromethane	21.19	1.0	20	1.5	98.4	50-130	0			
cis-1,2-Dichloroethene	19.3	1.0	20	0	96.5	75-134	0			
cis-1,3-Dichloropropene	17.49	1.0	20	0	87.4	70-130	0			
Dibromochloromethane	16.89	1.0	20	0	84.4	60-115	0			
Dibromomethane	21.31	1.0	20	0	107	85-125	0			
Dichlorodifluoromethane	19.06	1.0	20	0	95.3	20-120	0			
Ethylbenzene	21.13	1.0	20	0	106	85-125	0			
Hexachloroethane	14.2	1.0	20	0	71	50-124	0			
Isopropylbenzene	20.54	1.0	20	0	103	80-127	0			
m,p-Xylene	44.6	2.0	40	0	112	75-130	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606884
Project: ECT (477 Jeni Lane)

QC BATCH REPORT

Batch ID: **R189964A** Instrument ID **VMS10** Method: **SW8260B**

Methyl iodide	19.62	1.0	20	0	98.1	60-160	0	
Methyl tert-butyl ether	18.02	1.0	20	0	90.1	80-130	0	
Methylene chloride	22.17	5.0	20	0	111	75-140	0	
Naphthalene	18.34	5.0	20	1.74	83	55-160	0	
n-Propylbenzene	21.51	1.0	20	0	108	78-120	0	
o-Xylene	21.08	1.0	20	0	105	80-125	0	
Styrene	14.03	1.0	20	0	70.2	85-125	0	S
Tetrachloroethene	21.58	1.0	20	0	108	77-138	0	
Toluene	20.49	1.0	20	0	102	85-125	0	
trans-1,2-Dichloroethene	22.23	1.0	20	0	111	80-140	0	
trans-1,3-Dichloropropene	16.08	1.0	20	0	80.4	81-123	0	S
trans-1,4-Dichloro-2-butene	13.07	2.0	20	0	65.4	46-118	0	
Trichloroethene	21.75	1.0	20	0	109	84-130	0	
Trichlorofluoromethane	24.38	1.0	20	0	122	60-140	0	
Vinyl chloride	21.25	1.0	20	0	106	50-136	0	
Xylenes, Total	65.68	3.0	60	0	109	80-126	0	
Surr: 1,2-Dichloroethane-d4	*20.55*	0	*20*	0	*103*	*75-120*	0	
Surr: 4-Bromofluorobenzene	*20.61*	0	*20*	0	*103*	*80-110*	0	
Surr: Dibromofluoromethane	*21.2*	0	*20*	0	*106*	*85-115*	0	
Surr: Toluene-d8	*19.69*	0	*20*	0	*98.4*	*85-110*	0	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606884
Project: ECT (477 Jeni Lane)

QC BATCH REPORT

Batch ID: **R189964A** Instrument ID **VMS10** Method: **SW8260B**

MSD Sample ID: **1606757-21A MSD** Units: **µg/L** Analysis Date: **6/21/2016 09:08 PM**

Client ID: Run ID: **VMS10_160621A** SeqNo: **3886189** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	19.66	1.0	20	0	98.3	80-130	20.08	2.11	30	
1,1,1-Trichloroethane	23.81	1.0	20	0	119	75-130	24.12	1.29	30	
1,1,2,2-Tetrachloroethane	19.08	1.0	20	0	95.4	75-130	19.35	1.41	30	
1,1,2-Trichloroethane	19.61	1.0	20	0	98	75-125	20.4	3.95	30	
1,1-Dichloroethane	21.05	1.0	20	0	105	75-133	20.94	0.524	30	
1,1-Dichloroethene	25.19	1.0	20	0	126	70-145	25.13	0.238	30	
1,2,3-Trichloropropane	19.29	1.0	20	0	96.4	75-125	20.1	4.11	30	
1,2,4-Trichlorobenzene	18.79	1.0	20	0	94	70-135	19.27	2.52	30	
1,2,4-Trimethylbenzene	19.71	1.0	20	0	98.6	75-130	20.24	2.65	30	
1,2-Dibromo-3-chloropropane	15.21	1.0	20	0	76	60-130	15.52	2.02	30	
1,2-Dibromoethane	21.21	1.0	20	0	106	80-150	22.21	4.61	30	
1,2-Dichlorobenzene	19.89	1.0	20	0	99.4	70-130	20.36	2.34	30	
1,2-Dichloroethane	21.09	1.0	20	0	105	78-125	21.03	0.285	30	
1,2-Dichloropropane	20.26	1.0	20	0	101	75-125	20.59	1.62	30	
1,3,5-Trimethylbenzene	20.21	1.0	20	0	101	75-130	20.68	2.3	30	
1,3-Dichlorobenzene	20.53	1.0	20	0	103	75-130	20.95	2.03	30	
1,4-Dichlorobenzene	19.81	1.0	20	0	99	75-130	20.01	1	30	
2-Butanone	13.91	5.0	20	0	69.6	55-150	13.96	0.359	30	
2-Hexanone	13.95	5.0	20	0	69.8	60-135	14.02	0.501	30	
4-Methyl-2-pentanone	17.36	1.0	20	0	86.8	77-178	18.6	6.9	30	
Acetone	22.34	10	20	0	112	60-160	20.81	7.09	30	
Acrylonitrile	15.86	1.0	20	0	79.3	60-140	18.32	14.4	30	
Benzene	64.83	1.0	20	45.14	98.4	85-125	65.38	0.845	30	
Bromochloromethane	18.04	1.0	20	0	90.2	75-130	18.68	3.49	30	
Bromodichloromethane	21.13	1.0	20	0	106	75-125	21.04	0.427	30	
Bromoform	16.78	1.0	20	0	83.9	60-125	16.63	0.898	30	
Bromomethane	15.82	1.0	20	0	79.1	30-185	14.06	11.8	30	
Carbon disulfide	22.62	1.0	20	0	113	60-165	22.31	1.38	30	
Carbon tetrachloride	22.97	1.0	20	0	115	65-140	22.91	0.262	30	
Chlorobenzene	20.33	1.0	20	0	102	80-120	20.68	1.71	30	
Chloroethane	23.05	1.0	20	0	115	50-140	23.54	2.1	30	
Chloroform	19.83	1.0	20	0	99.2	80-130	20.04	1.05	30	
Chloromethane	19.88	1.0	20	1.5	91.9	50-130	21.19	6.38	30	
cis-1,2-Dichloroethene	19.14	1.0	20	0	95.7	75-134	19.3	0.832	30	
cis-1,3-Dichloropropene	17.82	1.0	20	0	89.1	70-130	17.49	1.87	30	
Dibromochloromethane	16.93	1.0	20	0	84.6	60-115	16.89	0.237	30	
Dibromomethane	21.07	1.0	20	0	105	85-125	21.31	1.13	30	
Dichlorodifluoromethane	18.73	1.0	20	0	93.6	20-120	19.06	1.75	30	
Ethylbenzene	20.69	1.0	20	0	103	85-125	21.13	2.1	30	
Hexachloroethane	14.63	1.0	20	0	73.2	50-124	14.2	2.98	30	
Isopropylbenzene	20.21	1.0	20	0	101	80-127	20.54	1.62	30	
m,p-Xylene	43.56	2.0	40	0	109	75-130	44.6	2.36	30	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606884
Project: ECT (477 Jeni Lane)

QC BATCH REPORT

Batch ID: **R189964A** Instrument ID **VMS10** Method: **SW8260B**

Methyl iodide	11.22	1.0	20	0	56.1	60-160	19.62	54.5	30	SR
Methyl tert-butyl ether	17.21	1.0	20	0	86	80-130	18.02	4.6	30	
Methylene chloride	20.8	5.0	20	0	104	75-140	22.17	6.38	30	
Naphthalene	17.29	5.0	20	1.74	77.8	55-160	18.34	5.89	30	
n-Propylbenzene	21.02	1.0	20	0	105	78-120	21.51	2.3	30	
o-Xylene	20.71	1.0	20	0	104	80-125	21.08	1.77	30	
Styrene	13.72	1.0	20	0	68.6	85-125	14.03	2.23	30	S
Tetrachloroethene	21	1.0	20	0	105	77-138	21.58	2.72	30	
Toluene	20.34	1.0	20	0	102	85-125	20.49	0.735	30	
trans-1,2-Dichloroethene	21.22	1.0	20	0	106	80-140	22.23	4.65	30	
trans-1,3-Dichloropropene	15.7	1.0	20	0	78.5	81-123	16.08	2.39	30	S
trans-1,4-Dichloro-2-butene	12.81	2.0	20	0	64	46-118	13.07	2.01	30	
Trichloroethene	21.54	1.0	20	0	108	84-130	21.75	0.97	30	
Trichlorofluoromethane	23.82	1.0	20	0	119	60-140	24.38	2.32	30	
Vinyl chloride	20.97	1.0	20	0	105	50-136	21.25	1.33	30	
Xylenes, Total	64.27	3.0	60	0	107	80-126	65.68	2.17	30	
Surr: 1,2-Dichloroethane-d4	*20.59*	0	*20*	0	*103*	*75-120*	20.55	*0.194*	*30*	
Surr: 4-Bromofluorobenzene	*20.65*	0	*20*	0	*103*	*80-110*	20.61	*0.194*	*30*	
Surr: Dibromofluoromethane	*21.09*	0	*20*	0	*105*	*85-115*	21.2	*0.52*	*30*	
Surr: Toluene-d8	*19.75*	0	*20*	0	*98.8*	*85-110*	19.69	*0.304*	*30*	

The following samples were analyzed in this batch: 1606884-01B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Group USA, Corp

Date: 23-Jun-16

Client: Merit Energy
Project: ECT (477 Jeni Lane)
WorkOrder: **1606884**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
µg/L	Micrograms per Liter

ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **MERITENERGY** Date/Time Received: **15-Jun-16 09:30**

Work Order: **1606884** Received by: **KRW**

Checklist completed by Keith Wierenga (eSignature) 15-Jun-16 (Date) Reviewed by: Gary Byar (eSignature) 15-Jun-16 (Date)

Matrices: Water

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	2.2/2.2 C	SR2	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	6/15/2016 3:15:30 PM		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

☑ **RETURN SAMPLES TO:**
ALS Environmental
781 Industrial Cir, Ste 3
Traverse City, Michigan 49686
(Tel) 231.421.3204
(Cell) 231.944.3459

Chain of Custody Form

Page 1 of 1

ALS Environmental
3352 128th Avenue
Holland, Michigan 49424
(Tel) 616.399.6070
(Fax) 616.399.6185

ALS Project Manager: Gary Byar | **ALS Work Order #:** 1606884

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	Hartland 36 Gas Plant	A	Sulfolane
Work Order		Project Number		B	DIPA
Company Name	ECT, Inc.	Bill To Company	MEC	C	Full VOCs
Send Report To	Jeremy Lewandowski	Invoice Attn	Sean Craven	D	
Address	3399 Veterans Dr.	Address	1510 Thomas Rd	E	
				F	
City/State/Zip	Traverse City, MI 49684	City/State/Zip	Kalkaska, MI	G	
Phone	231-946-8200	Phone	231-258-6369	H	
Fax	231-946-8208	Fax		I	
e-Mail Address	jlewandowski@ectinc.com			J	

No.	Sample Description	Date	Time	Matrix	Pres. Key Numbers	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
	477 Jeni Lane	6/13/16	16:01	GW	1, 8	4	X	X	X								

Sampler(s): Please Print & Sign: Jeremy Lewandowski

Shipment Method:

Required Turnaround Time: (Check Box) ☐ 10 Wk Days ☒ 5-7 Wk Days ☐ 3 Wk Days ☐ 2 Wk Days ☐ 24 Hour ☐ Other

Results Due Date:

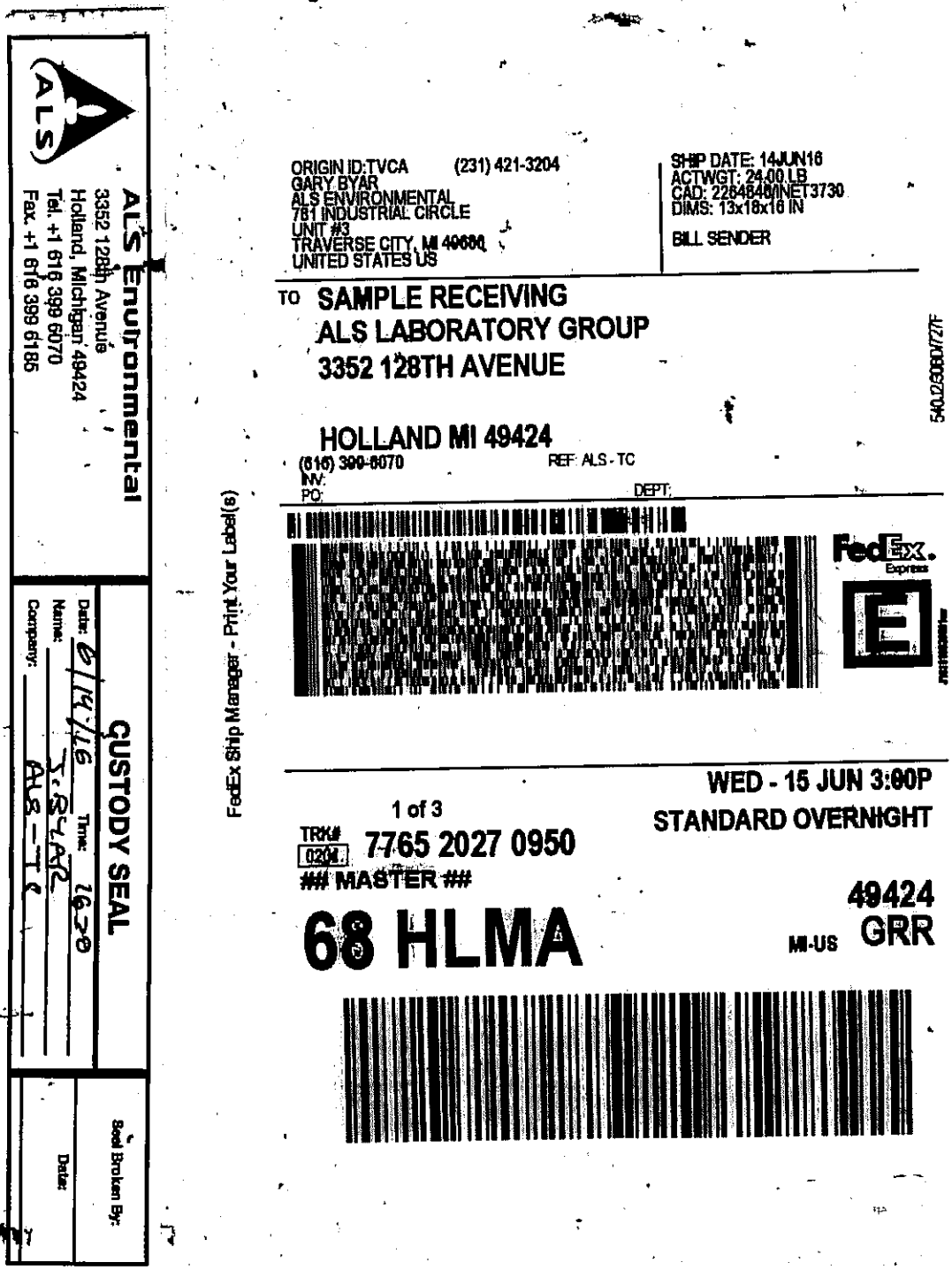
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
ECT Sample Storage	6/13/16 6/14/16	7:30p 11:15a	ECT Sample Storage	6/13/16 6/14/16	7:30p 11:15a
Relinquished by:	Date: 6/14/16	Time: 11:30am	Received by (Laboratory):	Date: 6/14/16	Time: 11:70
Received by (Laboratory):	Date: 6/14/16	Time: 16:45	Checked by (Laboratory):	6/15/16 0930	
Ker	6/15/16	1515			

Notes: ALS Project: MERITENERGY - Misc

ALS Cooler ID	Cooler Temp	QC Package: (Check Box Below)	
	2.2°C	☑ Level II: Standard QC	☐ Level III: Raw Data
		☐ TRRP LRC	☐ TRRP Level IV
		☐ Level IV: SW846 Methods/CLP like	
		☐ Other:	

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS.



ALS Environmental
3352 128th Avenue
Holland, Michigan 49424
Tel. +1 616 399 6070
Fax. +1 616 399 6185

CUSTODY SEAL

Date: 6/14/16 Time: 1620
Name: Jessica
Company: ALS-TC

Seal Broken By:
Date:

FedEx Ship Manager - Print Your Label(s)

ORIGIN ID:TVCA (231) 421-3204
GARY BYAR
ALS ENVIRONMENTAL
781 INDUSTRIAL CIRCLE
UNIT #3
TRAVERSE CITY, MI 49686
UNITED STATES US

SHIP DATE: 14JUN16
ACTWGT: 24.00 LB
CAD: 2264640/INET3730
DIMS: 13x18x16 IN

BILL SENDER

TO SAMPLE RECEIVING
ALS LABORATORY GROUP
3352 128TH AVENUE

HOLLAND MI 49424
(616) 399-6070 REF: ALS - TC
INV:
PO: DEPT:

540J/E5B0/72TF

FedEx Express

1 of 3

WED - 15 JUN 3:00P
STANDARD OVERNIGHT

TRK# 0201 7765 2027 0950
MASTER

68 HLMA

49424
MI-US GRR

10-Jun-2016

Sean Craven
Merit Energy
1510 Thomas Rd
PO Box 910
Kalkaska, MI 49646

Re: **ECT (Hartland - 495 Jeni Lane)** Work Order: **1606478**

Dear Sean,

ALS Environmental received 1 sample on 08-Jun-2016 09:30 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with NELAP standard requirements and QC results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 19.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

Gary Byar

Electronically approved by: Gary Byar

Gary Byar
Project Manager

Certificate No: MI: 0022

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185
ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

ALS Group USA, Corp

Date: 10-Jun-16

Client: Merit Energy
Project: ECT (Hartland - 495 Jeni Lane)
Work Order: **1606478**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1606478-01	495 Jeni Lane	Water		6/6/2016 18:36	6/8/2016 09:30	☐

ALS Group USA, Corp

Date: *10-Jun-16*

Client: Merit Energy
Project: ECT (Hartland - 495 Jeni Lane)
Work Order: 1606478
Sample ID: 495 Jeni Lane
Lab ID: 1606478-01
Collection Date: 6/6/2016 06:36 PM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW846 8270D**		Prep: SW3510 / 6/9/16	Analyst: **RM**
Diisopropanolamine	ND		50	µg/L	1	6/9/2016 07:37 PM
Sulfolane	ND		10	µg/L	1	6/9/2016 07:37 PM
Surr: 2,4,6-Tribromophenol	*63.3*		*38-115*	*%REC*	1	6/9/2016 07:37 PM
Surr: 2-Fluorobiphenyl	*54.8*		*32-100*	*%REC*	1	6/9/2016 07:37 PM
Surr: 2-Fluorophenol	*33.9*		*22-59*	*%REC*	1	6/9/2016 07:37 PM
Surr: 4-Terphenyl-d14	*75.7*		*23-112*	*%REC*	1	6/9/2016 07:37 PM
Surr: Nitrobenzene-d5	*65.8*		*31-93*	*%REC*	1	6/9/2016 07:37 PM
Surr: Phenol-d6	*17.4*		*13-36*	*%REC*	1	6/9/2016 07:37 PM
VOLATILE ORGANIC COMPOUNDS			**SW8260B**			Analyst: **BG**
1,1,1,2-Tetrachloroethane	ND		1.0	µg/L	1	6/9/2016 05:50 AM
1,1,1-Trichloroethane	ND		1.0	µg/L	1	6/9/2016 05:50 AM
1,1,2,2-Tetrachloroethane	ND		1.0	µg/L	1	6/9/2016 05:50 AM
1,1,2-Trichloroethane	ND		1.0	µg/L	1	6/9/2016 05:50 AM
1,1,2-Trichlorotrifluoroethane	ND		1.0	µg/L	1	6/9/2016 05:50 AM
1,1-Dichloroethane	ND		1.0	µg/L	1	6/9/2016 05:50 AM
1,1-Dichloroethene	ND		1.0	µg/L	1	6/9/2016 05:50 AM
1,2,3-Trichloropropane	ND		1.0	µg/L	1	6/9/2016 05:50 AM
1,2,4-Trichlorobenzene	ND		1.0	µg/L	1	6/9/2016 05:50 AM
1,2,4-Trimethylbenzene	ND		1.0	µg/L	1	6/9/2016 05:50 AM
1,2-Dibromo-3-chloropropane	ND		1.0	µg/L	1	6/9/2016 05:50 AM
1,2-Dibromoethane	ND		1.0	µg/L	1	6/9/2016 05:50 AM
1,2-Dichlorobenzene	ND		1.0	µg/L	1	6/9/2016 05:50 AM
1,2-Dichloroethane	ND		1.0	µg/L	1	6/9/2016 05:50 AM
1,2-Dichloropropane	ND		1.0	µg/L	1	6/9/2016 05:50 AM
1,3,5-Trimethylbenzene	ND		1.0	µg/L	1	6/9/2016 05:50 AM
1,3-Dichlorobenzene	ND		1.0	µg/L	1	6/9/2016 05:50 AM
1,4-Dichlorobenzene	ND		1.0	µg/L	1	6/9/2016 05:50 AM
2-Butanone	ND		5.0	µg/L	1	6/9/2016 05:50 AM
2-Hexanone	ND		5.0	µg/L	1	6/9/2016 05:50 AM
2-Methylnaphthalene	ND		5.0	µg/L	1	6/9/2016 05:50 AM
4-Methyl-2-pentanone	ND		1.0	µg/L	1	6/9/2016 05:50 AM
Acetone	ND		10	µg/L	1	6/9/2016 05:50 AM
Acrylonitrile	ND		1.0	µg/L	1	6/9/2016 05:50 AM
Benzene	ND		1.0	µg/L	1	6/9/2016 05:50 AM
Bromochloromethane	ND		1.0	µg/L	1	6/9/2016 05:50 AM
Bromodichloromethane	ND		1.0	µg/L	1	6/9/2016 05:50 AM
Bromoform	ND		1.0	µg/L	1	6/9/2016 05:50 AM
Bromomethane	ND		1.0	µg/L	1	6/9/2016 05:50 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *10-Jun-16*

Client: Merit Energy
Project: ECT (Hartland - 495 Jeni Lane)
Work Order: 1606478
Sample ID: 495 Jeni Lane
Lab ID: 1606478-01
Collection Date: 6/6/2016 06:36 PM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Carbon disulfide	ND		1.0	µg/L	1	6/9/2016 05:50 AM
Carbon tetrachloride	ND		1.0	µg/L	1	6/9/2016 05:50 AM
Chlorobenzene	ND		1.0	µg/L	1	6/9/2016 05:50 AM
Chloroethane	ND		1.0	µg/L	1	6/9/2016 05:50 AM
Chloroform	ND		1.0	µg/L	1	6/9/2016 05:50 AM
Chloromethane	ND		1.0	µg/L	1	6/9/2016 05:50 AM
cis-1,2-Dichloroethene	ND		1.0	µg/L	1	6/9/2016 05:50 AM
cis-1,3-Dichloropropene	ND		1.0	µg/L	1	6/9/2016 05:50 AM
Dibromochloromethane	ND		1.0	µg/L	1	6/9/2016 05:50 AM
Dibromomethane	ND		1.0	µg/L	1	6/9/2016 05:50 AM
Dichlorodifluoromethane	ND		1.0	µg/L	1	6/9/2016 05:50 AM
Diethyl ether	ND		1.0	µg/L	1	6/9/2016 05:50 AM
Ethylbenzene	ND		1.0	µg/L	1	6/9/2016 05:50 AM
Hexachloroethane	ND		1.0	µg/L	1	6/9/2016 05:50 AM
Isopropylbenzene	ND		1.0	µg/L	1	6/9/2016 05:50 AM
m,p-Xylene	ND		2.0	µg/L	1	6/9/2016 05:50 AM
Methyl iodide	ND		1.0	µg/L	1	6/9/2016 05:50 AM
Methyl tert-butyl ether	ND		1.0	µg/L	1	6/9/2016 05:50 AM
Methylene chloride	ND		5.0	µg/L	1	6/9/2016 05:50 AM
Naphthalene	ND		5.0	µg/L	1	6/9/2016 05:50 AM
n-Propylbenzene	ND		1.0	µg/L	1	6/9/2016 05:50 AM
o-Xylene	ND		1.0	µg/L	1	6/9/2016 05:50 AM
Styrene	ND		1.0	µg/L	1	6/9/2016 05:50 AM
Tetrachloroethene	ND		1.0	µg/L	1	6/9/2016 05:50 AM
Toluene	ND		1.0	µg/L	1	6/9/2016 05:50 AM
trans-1,2-Dichloroethene	ND		1.0	µg/L	1	6/9/2016 05:50 AM
trans-1,3-Dichloropropene	ND		1.0	µg/L	1	6/9/2016 05:50 AM
trans-1,4-Dichloro-2-butene	ND		2.0	µg/L	1	6/9/2016 05:50 AM
Trichloroethene	ND		1.0	µg/L	1	6/9/2016 05:50 AM
Trichlorofluoromethane	ND		1.0	µg/L	1	6/9/2016 05:50 AM
Vinyl acetate	ND		1.0	µg/L	1	6/9/2016 05:50 AM
Vinyl chloride	ND		1.0	µg/L	1	6/9/2016 05:50 AM
Xylenes, Total	ND		3.0	µg/L	1	6/9/2016 05:50 AM
Surr: 1,2-Dichloroethane-d4	*92.2*		*75-120*	*%REC*	1	6/9/2016 05:50 AM
Surr: 4-Bromofluorobenzene	*94.8*		*80-110*	*%REC*	1	6/9/2016 05:50 AM
Surr: Dibromofluoromethane	*96.6*		*85-115*	*%REC*	1	6/9/2016 05:50 AM
Surr: Toluene-d8	*94.0*		*85-110*	*%REC*	1	6/9/2016 05:50 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 10-Jun-16

Client: Merit Energy
Project: ECT (Hartland - 495 Jeni Lane)
Work Order: 1606478

Case Narrative

Batch R189191a The MS/MSD data for Volatiles is not related to this project's sample. No data requires qualification.

ALS Group USA, Corp

Date: 10-Jun-16

Client: Merit Energy

Work Order: 1606478

Project: ECT (Hartland - 495 Jeni Lane)

QC BATCH REPORT

Batch ID: **87107** Instrument ID **SVMS8** Method: **SW846 8270D**

MBLK Sample ID: **SBLKW1-87107-87107** Units: **µg/L** Analysis Date: **6/9/2016 03:25 PM**

Client ID: Run ID: **SVMS8_160609A** SeqNo: **3870197** Prep Date: **6/9/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Diisopropanolamine	ND	50								
Sulfolane	ND	10								
Surr: 2,4,6-Tribromophenol	*21.75*	0	*50*	0	*43.5*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*21.56*	0	*50*	0	*43.1*	*32-100*	0			
Surr: 2-Fluorophenol	*16.37*	0	*50*	0	*32.7*	*22-59*	0			
Surr: 4-Terphenyl-d14	*35.69*	0	*50*	0	*71.4*	*23-112*	0			
Surr: Nitrobenzene-d5	*28.03*	0	*50*	0	*56.1*	*31-93*	0			
Surr: Phenol-d6	*7.63*	0	*50*	0	*15.3*	*13-36*	0			

LCS Sample ID: **SLCSW1-87107-87107** Units: **µg/L** Analysis Date: **6/9/2016 03:45 PM**

Client ID: Run ID: **SVMS8_160609A** SeqNo: **3870198** Prep Date: **6/9/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Diisopropanolamine	5.75	50	100	0	5.75	5-40	0			
Sulfolane	54.53	10	100	0	54.5	30-100	0			
Surr: 2,4,6-Tribromophenol	*27.91*	0	*50*	0	*55.8*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*28.51*	0	*50*	0	*57*	*32-100*	0			
Surr: 2-Fluorophenol	*19.32*	0	*50*	0	*38.6*	*22-59*	0			
Surr: 4-Terphenyl-d14	*37.7*	0	*50*	0	*75.4*	*23-112*	0			
Surr: Nitrobenzene-d5	*35.21*	0	*50*	0	*70.4*	*31-93*	0			
Surr: Phenol-d6	*10.02*	0	*50*	0	*20*	*13-36*	0			

MS Sample ID: **1606476-01B MS** Units: **µg/L** Analysis Date: **6/9/2016 06:36 PM**

Client ID: Run ID: **SVMS8_160609A** SeqNo: **3870199** Prep Date: **6/9/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Diisopropanolamine	14.01	53	106.4	0	13.2	5-40	0			
Sulfolane	65.27	11	106.4	0	61.4	30-100	0			
Surr: 2,4,6-Tribromophenol	*36.05*	0	*53.19*	0	*67.8*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*31.76*	0	*53.19*	0	*59.7*	*32-100*	0			
Surr: 2-Fluorophenol	*20.45*	0	*53.19*	0	*38.4*	*22-59*	0			
Surr: 4-Terphenyl-d14	*38.93*	0	*53.19*	0	*73.2*	*23-112*	0			
Surr: Nitrobenzene-d5	*38.12*	0	*53.19*	0	*71.7*	*31-93*	0			
Surr: Phenol-d6	*10.87*	0	*53.19*	0	*20.4*	*13-36*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606478
Project: ECT (Hartland - 495 Jeni Lane)

QC BATCH REPORT

Batch ID: **87107** Instrument ID **SVMS8** Method: **SW846 8270D**

DUP Sample ID: **1606478-01B DUP** Units: **µg/L** Analysis Date: **6/9/2016 07:16 PM**

Client ID: **495 Jeni Lane** Run ID: **SVMS8_160609A** SeqNo: **3870201** Prep Date: **6/9/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Diisopropanolamine	ND	53	0	0	0		0	0	30	
Sulfolane	ND	11	0	0	0		0	0	30	
Surr: 2,4,6-Tribromophenol	*32.53*	0	*53.02*	0	*61.4*	*38-115*	31.66	*2.72*	*40*	
Surr: 2-Fluorobiphenyl	*29.9*	0	*53.02*	0	*56.4*	*32-100*	27.39	*8.78*	*40*	
Surr: 2-Fluorophenol	*18.87*	0	*53.02*	0	*35.6*	*22-59*	16.97	*10.6*	*40*	
Surr: 4-Terphenyl-d14	*35.97*	0	*53.02*	0	*67.8*	*23-112*	37.85	*5.09*	*40*	
Surr: Nitrobenzene-d5	*35.12*	0	*53.02*	0	*66.2*	*31-93*	32.88	*6.59*	*40*	
Surr: Phenol-d6	*9.3*	0	*53.02*	0	*17.5*	*13-36*	8.71	*6.55*	*40*	

The following samples were analyzed in this batch: 1606478-01B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606478
Project: ECT (Hartland - 495 Jeni Lane)

QC BATCH REPORT

Batch ID: **R189191a** Instrument ID **VMS6** Method: **SW8260B**

MBLK Sample ID: **VBLKW2-160608-R189191a** Units: **µg/L** Analysis Date: **6/9/2016 02:02 AM**
Client ID: Run ID: **VMS6_160608B** SeqNo: **3868131** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
1,1,2-Trichlorotrifluoroethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2,3-Trichloropropane	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	1.0								
1,2-Dibromoethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,2-Dichloroethane	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
2-Butanone	ND	5.0								
2-Hexanone	ND	5.0								
2-Methylnaphthalene	ND	5.0								
4-Methyl-2-pentanone	ND	1.0								
Acetone	ND	10								
Acrylonitrile	ND	1.0								
Benzene	ND	1.0								
Bromochloromethane	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	1.0								
Carbon disulfide	ND	1.0								
Carbon tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	ND	1.0								
cis-1,2-Dichloroethene	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
Diethyl ether	ND	1.0								
Ethylbenzene	ND	1.0								

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Batch ID: **R189191a** Instrument ID **VMS6** Method: **SW8260B**

Hexachloroethane	ND	1.0					
Isopropylbenzene	ND	1.0					
m,p-Xylene	ND	2.0					
Methyl iodide	ND	1.0					
Methyl tert-butyl ether	ND	1.0					
Methylene chloride	ND	5.0					
Naphthalene	ND	5.0					
n-Propylbenzene	ND	1.0					
o-Xylene	ND	1.0					
Styrene	ND	1.0					
Tetrachloroethene	ND	1.0					
Toluene	ND	1.0					
trans-1,2-Dichloroethene	ND	1.0					
trans-1,3-Dichloropropene	ND	1.0					
trans-1,4-Dichloro-2-butene	ND	2.0					
Trichloroethene	ND	1.0					
Trichlorofluoromethane	ND	1.0					
Vinyl acetate	ND	1.0					
Vinyl chloride	ND	1.0					
Xylenes, Total	ND	3.0					
Surr: 1,2-Dichloroethane-d4	*18.19*	0	*20*	0	*91*	*75-120*	0
Surr: 4-Bromofluorobenzene	*19.42*	0	*20*	0	*97.1*	*80-110*	0
Surr: Dibromofluoromethane	*19.84*	0	*20*	0	*99.2*	*85-115*	0
Surr: Toluene-d8	*19.06*	0	*20*	0	*95.3*	*85-110*	0

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606478
Project: ECT (Hartland - 495 Jeni Lane)

QC BATCH REPORT

Batch ID: **R189191a** Instrument ID **VMS6** Method: **SW8260B**

LCS Sample ID: **VLCSW2-160608-R189191a** Units: **µg/L** Analysis Date: **6/9/2016 01:12 AM**
Client ID: Run ID: **VMS6_160608B** SeqNo: **3868128** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	20.57	1.0	20	0	103	80-130	0			
1,1,1-Trichloroethane	20.5	1.0	20	0	102	75-130	0			
1,1,2,2-Tetrachloroethane	21.66	1.0	20	0	108	75-130	0			
1,1,2-Trichloroethane	19.85	1.0	20	0	99.2	75-125	0			
1,1-Dichloroethane	19.12	1.0	20	0	95.6	75-133	0			
1,1-Dichloroethene	19.91	1.0	20	0	99.6	70-145	0			
1,2,3-Trichloropropane	20.71	1.0	20	0	104	75-125	0			
1,2,4-Trichlorobenzene	20.09	1.0	20	0	100	70-135	0			
1,2,4-Trimethylbenzene	20.32	1.0	20	0	102	75-130	0			
1,2-Dibromo-3-chloropropane	18.85	1.0	20	0	94.2	60-130	0			
1,2-Dibromoethane	21.31	1.0	20	0	107	80-150	0			
1,2-Dichlorobenzene	20.37	1.0	20	0	102	70-130	0			
1,2-Dichloroethane	18.84	1.0	20	0	94.2	78-125	0			
1,2-Dichloropropane	20.05	1.0	20	0	100	75-125	0			
1,3,5-Trimethylbenzene	20.7	1.0	20	0	104	75-130	0			
1,3-Dichlorobenzene	20.13	1.0	20	0	101	75-130	0			
1,4-Dichlorobenzene	18.8	1.0	20	0	94	75-130	0			
2-Butanone	18.19	5.0	20	0	91	55-150	0			
2-Hexanone	17.68	5.0	20	0	88.4	60-135	0			
4-Methyl-2-pentanone	24.96	1.0	20	0	125	77-178	0			
Acetone	19.47	10	20	0	97.4	60-160	0			
Acrylonitrile	18.61	1.0	20	0	93	60-140	0			
Benzene	20.49	1.0	20	0	102	85-125	0			
Bromochloromethane	18.44	1.0	20	0	92.2	75-130	0			
Bromodichloromethane	20.01	1.0	20	0	100	75-125	0			
Bromoform	19.96	1.0	20	0	99.8	60-125	0			
Bromomethane	18.62	1.0	20	0	93.1	30-185	0			
Carbon disulfide	20.24	1.0	20	0	101	60-165	0			
Carbon tetrachloride	19.79	1.0	20	0	99	65-140	0			
Chlorobenzene	19.3	1.0	20	0	96.5	80-120	0			
Chloroethane	23.37	1.0	20	0	117	50-140	0			
Chloroform	18.19	1.0	20	0	91	80-130	0			
Chloromethane	15.16	1.0	20	0	75.8	50-130	0			
cis-1,2-Dichloroethene	17.74	1.0	20	0	88.7	75-134	0			
cis-1,3-Dichloropropene	20.29	1.0	20	0	101	70-130	0			
Dibromochloromethane	19.02	1.0	20	0	95.1	60-115	0			
Dibromomethane	20.48	1.0	20	0	102	85-125	0			
Dichlorodifluoromethane	19.67	1.0	20	0	98.4	20-120	0			
Ethylbenzene	19.65	1.0	20	0	98.2	85-125	0			
Hexachloroethane	15.39	1.0	20	0	77	50-124	0			
Isopropylbenzene	20.62	1.0	20	0	103	80-127	0			
m,p-Xylene	40.98	2.0	40	0	102	75-130	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

QC BATCH REPORT

Batch ID: **R189191a** Instrument ID **VMS6** Method: **SW8260B**

Methyl iodide	12.7	1.0	20	0	63.5	60-160	0
Methyl tert-butyl ether	18	1.0	20	0	90	80-130	0
Methylene chloride	17.88	5.0	20	0	89.4	75-140	0
Naphthalene	21.87	5.0	20	0	109	55-160	0
n-Propylbenzene	20.14	1.0	20	0	101	78-120	0
o-Xylene	19.28	1.0	20	0	96.4	80-125	0
Styrene	21.03	1.0	20	0	105	85-125	0
Tetrachloroethene	20.34	1.0	20	0	102	77-138	0
Toluene	19.4	1.0	20	0	97	85-125	0
trans-1,2-Dichloroethene	18.95	1.0	20	0	94.8	80-140	0
trans-1,3-Dichloropropene	16.82	1.0	20	0	84.1	81-123	0
trans-1,4-Dichloro-2-butene	12.14	2.0	20	0	60.7	46-118	0
Trichloroethene	20.81	1.0	20	0	104	84-130	0
Trichlorofluoromethane	19.62	1.0	20	0	98.1	60-140	0
Vinyl chloride	19.82	1.0	20	0	99.1	50-136	0
Xylenes, Total	60.26	3.0	60	0	100	80-126	0
Surr: 1,2-Dichloroethane-d4	*17.86*	0	*20*	0	*89.3*	*75-120*	0
Surr: 4-Bromofluorobenzene	*20.13*	0	*20*	0	*101*	*80-110*	0
Surr: Dibromofluoromethane	*19.75*	0	*20*	0	*98.8*	*85-115*	0
Surr: Toluene-d8	*18.98*	0	*20*	0	*94.9*	*85-110*	0

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606478
Project: ECT (Hartland - 495 Jeni Lane)

QC BATCH REPORT

Batch ID: **R189191a** Instrument ID **VMS6** Method: **SW8260B**

MS Sample ID: **1606401-15A MS** Units: **µg/L** Analysis Date: **6/9/2016 10:53 AM**
Client ID: Run ID: **VMS6_160608B** SeqNo: **3868146** Prep Date: DF: **100**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	2027	100	2000	0	101	80-130	0			
1,1,1-Trichloroethane	2176	100	2000	0	109	75-130	0			
1,1,2,2-Tetrachloroethane	2098	100	2000	0	105	75-130	0			
1,1,2-Trichloroethane	1988	100	2000	0	99.4	75-125	0			
1,1-Dichloroethane	2072	100	2000	0	104	75-133	0			
1,1-Dichloroethene	2225	100	2000	0	111	70-145	0			
1,2,3-Trichloropropane	1968	100	2000	0	98.4	75-125	0			
1,2,4-Trichlorobenzene	1814	100	2000	0	90.7	70-135	0			
1,2,4-Trimethylbenzene	3856	100	2000	1781	104	75-130	0			
1,2-Dibromo-3-chloropropane	1598	100	2000	0	79.9	60-130	0			
1,2-Dibromoethane	2029	100	2000	0	101	80-150	0			
1,2-Dichlorobenzene	1913	100	2000	0	95.6	70-130	0			
1,2-Dichloroethane	1936	100	2000	0	96.8	78-125	0			
1,2-Dichloropropane	2024	100	2000	0	101	75-125	0			
1,3,5-Trimethylbenzene	2485	100	2000	440	102	75-130	0			
1,3-Dichlorobenzene	1859	100	2000	0	93	75-130	0			
1,4-Dichlorobenzene	1771	100	2000	0	88.6	75-130	0			
2-Butanone	1554	500	2000	0	77.7	55-150	0			
2-Hexanone	1680	500	2000	0	84	60-135	0			
4-Methyl-2-pentanone	2333	100	2000	0	117	77-178	0			
Acetone	2157	1,000	2000	0	108	60-160	0			
Acrylonitrile	1610	100	2000	0	80.5	60-140	0			
Benzene	10510	100	2000	7878	132	85-125	0			SE
Bromochloromethane	1882	100	2000	0	94.1	75-130	0			
Bromodichloromethane	1999	100	2000	0	100	75-125	0			
Bromoform	1801	100	2000	0	90	60-125	0			
Bromomethane	787	100	2000	0	39.4	30-185	0			
Carbon disulfide	2005	100	2000	0	100	60-165	0			
Carbon tetrachloride	2057	100	2000	0	103	65-140	0			
Chlorobenzene	1989	100	2000	0	99.4	80-120	0			
Chloroethane	3158	100	2000	0	158	50-140	0			S
Chloroform	1881	100	2000	0	94	80-130	0			
Chloromethane	1440	100	2000	0	72	50-130	0			
cis-1,2-Dichloroethene	1836	100	2000	0	91.8	75-134	0			
cis-1,3-Dichloropropene	1983	100	2000	0	99.2	70-130	0			
Dibromochloromethane	1793	100	2000	0	89.6	60-115	0			
Dibromomethane	2070	100	2000	0	104	85-125	0			
Dichlorodifluoromethane	2065	100	2000	0	103	20-120	0			
Ethylbenzene	4240	100	2000	2217	101	85-125	0			
Hexachloroethane	1383	100	2000	0	69.2	50-124	0			
Isopropylbenzene	2155	100	2000	90	103	80-127	0			
m,p-Xylene	12120	200	4000	8137	99.5	75-130	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606478
Project: ECT (Hartland - 495 Jeni Lane)

QC BATCH REPORT

Batch ID: **R189191a** Instrument ID **VMS6** Method: **SW8260B**

Methyl iodide	713	100	2000	0	35.6	60-160	0	S
Methyl tert-butyl ether	1823	100	2000	0	91.2	80-130	0	
Methylene chloride	1906	500	2000	0	95.3	75-140	0	
Naphthalene	2300	500	2000	372	96.4	55-160	0	
n-Propylbenzene	2251	100	2000	243	100	78-120	0	
o-Xylene	5588	100	2000	3675	95.6	80-125	0	
Styrene	2200	100	2000	0	110	85-125	0	
Tetrachloroethene	2063	100	2000	0	103	77-138	0	
Toluene	11670	100	2000	9459	111	85-125	0	EO
trans-1,2-Dichloroethene	2035	100	2000	0	102	80-140	0	
trans-1,3-Dichloropropene	1580	100	2000	0	79	81-123	0	S
trans-1,4-Dichloro-2-butene	1084	200	2000	0	54.2	46-118	0	
Trichloroethene	2218	100	2000	0	111	84-130	0	
Trichlorofluoromethane	2239	100	2000	0	112	60-140	0	
Vinyl chloride	2122	100	2000	0	106	50-136	0	
Xylenes, Total	17710	300	6000	11810	98.2	80-126	0	
Surr: 1,2-Dichloroethane-d4	*1818*	0	*2000*	0	*90.9*	*75-120*	0	
Surr: 4-Bromofluorobenzene	*2011*	0	*2000*	0	*101*	*80-110*	0	
Surr: Dibromofluoromethane	*1940*	0	*2000*	0	*97*	*85-115*	0	
Surr: Toluene-d8	*1912*	0	*2000*	0	*95.6*	*85-110*	0	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606478
Project: ECT (Hartland - 495 Jeni Lane)

QC BATCH REPORT

Batch ID: **R189191a** Instrument ID **VMS6** Method: **SW8260B**

MSD Sample ID: **1606401-15A MSD** Units: **µg/L** Analysis Date: **6/9/2016 11:18 AM**

Client ID: Run ID: **VMS6_160608B** SeqNo: **3868147** Prep Date: DF: **100**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	2000	100	2000	0	100	80-130	2027	1.34	30	
1,1,1-Trichloroethane	2094	100	2000	0	105	75-130	2176	3.84	30	
1,1,2,2-Tetrachloroethane	2028	100	2000	0	101	75-130	2098	3.39	30	
1,1,2-Trichloroethane	1862	100	2000	0	93.1	75-125	1988	6.55	30	
1,1-Dichloroethane	1943	100	2000	0	97.2	75-133	2072	6.43	30	
1,1-Dichloroethene	2156	100	2000	0	108	70-145	2225	3.15	30	
1,2,3-Trichloropropane	1869	100	2000	0	93.4	75-125	1968	5.16	30	
1,2,4-Trichlorobenzene	1877	100	2000	0	93.8	70-135	1814	3.41	30	
1,2,4-Trimethylbenzene	5502	100	2000	1781	186	75-130	3856	35.2	30	SR
1,2-Dibromo-3-chloropropane	1518	100	2000	0	75.9	60-130	1598	5.13	30	
1,2-Dibromoethane	1960	100	2000	0	98	80-150	2029	3.46	30	
1,2-Dichlorobenzene	1939	100	2000	0	97	70-130	1913	1.35	30	
1,2-Dichloroethane	1818	100	2000	0	90.9	78-125	1936	6.29	30	
1,2-Dichloropropane	1959	100	2000	0	98	75-125	2024	3.26	30	
1,3,5-Trimethylbenzene	2975	100	2000	440	127	75-130	2485	17.9	30	
1,3-Dichlorobenzene	1918	100	2000	0	95.9	75-130	1859	3.12	30	
1,4-Dichlorobenzene	1834	100	2000	0	91.7	75-130	1771	3.5	30	
2-Butanone	1610	500	2000	0	80.5	55-150	1554	3.54	30	
2-Hexanone	1607	500	2000	0	80.4	60-135	1680	4.44	30	
4-Methyl-2-pentanone	2230	100	2000	0	112	77-178	2333	4.51	30	
Acetone	2208	1,000	2000	0	110	60-160	2157	2.34	30	
Acrylonitrile	1516	100	2000	0	75.8	60-140	1610	6.01	30	
Benzene	17750	100	2000	7878	494	85-125	10510	51.3	30	SRE
Bromochloromethane	1800	100	2000	0	90	75-130	1882	4.45	30	
Bromodichloromethane	1910	100	2000	0	95.5	75-125	1999	4.55	30	
Bromoform	1729	100	2000	0	86.4	60-125	1801	4.08	30	
Bromomethane	1460	100	2000	0	73	30-185	787	59.9	30	R
Carbon disulfide	2013	100	2000	0	101	60-165	2005	0.398	30	
Carbon tetrachloride	2089	100	2000	0	104	65-140	2057	1.54	30	
Chlorobenzene	1936	100	2000	0	96.8	80-120	1989	2.7	30	
Chloroethane	2892	100	2000	0	145	50-140	3158	8.79	30	S
Chloroform	1862	100	2000	0	93.1	80-130	1881	1.02	30	
Chloromethane	1275	100	2000	0	63.8	50-130	1440	12.2	30	
cis-1,2-Dichloroethene	1769	100	2000	0	88.4	75-134	1836	3.72	30	
cis-1,3-Dichloropropene	1916	100	2000	0	95.8	70-130	1983	3.44	30	
Dibromochloromethane	1762	100	2000	0	88.1	60-115	1793	1.74	30	
Dibromomethane	1897	100	2000	0	94.8	85-125	2070	8.72	30	
Dichlorodifluoromethane	2034	100	2000	0	102	20-120	2065	1.51	30	
Ethylbenzene	6328	100	2000	2217	206	85-125	4240	39.5	30	SR
Hexachloroethane	1523	100	2000	0	76.2	50-124	1383	9.64	30	
Isopropylbenzene	2275	100	2000	90	109	80-127	2155	5.42	30	
m,p-Xylene	19180	200	4000	8137	276	75-130	12120	45.1	30	SR

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606478
Project: ECT (Hartland - 495 Jeni Lane)

QC BATCH REPORT

Batch ID: **R189191a** Instrument ID **VMS6** Method: **SW8260B**

Methyl iodide	980	100	2000	0	49	60-160	713	31.5	30	SR
Methyl tert-butyl ether	1779	100	2000	0	89	80-130	1823	2.44	30	
Methylene chloride	1788	500	2000	0	89.4	75-140	1906	6.39	30	
Naphthalene	2618	500	2000	372	112	55-160	2300	12.9	30	
n-Propylbenzene	2511	100	2000	243	113	78-120	2251	10.9	30	
o-Xylene	8902	100	2000	3675	261	80-125	5588	45.7	30	SR
Styrene	2316	100	2000	0	116	85-125	2200	5.14	30	
Tetrachloroethene	2104	100	2000	0	105	77-138	2063	1.97	30	
Toluene	19910	100	2000	9459	522	85-125	11670	52.1	30	SREO
trans-1,2-Dichloroethene	1963	100	2000	0	98.2	80-140	2035	3.6	30	
trans-1,3-Dichloropropene	1519	100	2000	0	76	81-123	1580	3.94	30	S
trans-1,4-Dichloro-2-butene	1020	200	2000	0	51	46-118	1084	6.08	30	
Trichloroethene	2147	100	2000	0	107	84-130	2218	3.25	30	
Trichlorofluoromethane	2213	100	2000	0	111	60-140	2239	1.17	30	
Vinyl chloride	1987	100	2000	0	99.4	50-136	2122	6.57	30	
Xylenes, Total	28080	300	6000	11810	271	80-126	17710	45.3	30	SR
Surr: 1,2-Dichloroethane-d4	*1793*	0	*2000*	0	*89.6*	*75-120*	1818	*1.38*	*30*	
Surr: 4-Bromofluorobenzene	*2011*	0	*2000*	0	*101*	*80-110*	2011	*0*	*30*	
Surr: Dibromofluoromethane	*1965*	0	*2000*	0	*98.2*	*85-115*	1940	*1.28*	*30*	
Surr: Toluene-d8	*1896*	0	*2000*	0	*94.8*	*85-110*	1912	*0.84*	*30*	

The following samples were analyzed in this batch: 1606478-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Group USA, Corp

Date: 10-Jun-16

Client: Merit Energy
Project: ECT (Hartland - 495 Jeni Lane)
WorkOrder: **1606478**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and PQL, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
µg/L	Micrograms per Liter

ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **MERITENERGY** Date/Time Received: **08-Jun-16 09:30**

Work Order: **1606478** Received by: **KRW**

Checklist completed by Keith Wierenga 08-Jun-16 Reviewed by: Gary Byar 08-Jun-16

eSignature Date eSignature Date

Matrices: Water

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	3.6/3.6 C	SR2	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	6/8/2016 2:34:43 PM		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:	_		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

Cincinnati, OH +1 513 733 5336
Everett, WA +1 425 356 2600
Fort Collins, CO +1 970 490 1511
Holland, MI +1 616 399 6070
Houston, TX +1 281 530 5656
Middletown, PA +1 717 944 5541
Spring City, PA +1 610 948 4903
Salt Lake City, UT +1 801 266 7700
South Charleston, WV +1 304 356 3168
York, PA +1 717 505 5280

ALS Environmental

Chain of Custody Form

Page 1 of 1

COC ID: 16620

ALS Project Manager: G. BLAIR | ALS Work Order #: 1606478

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	Hartland 36 Gas Plant	A	Sulfolane
Work Order		Project Number	13-0685-2000	B	DIPA
Company Name	ECT, Inc.	Bill To Company	MEC	C	Full VOCs
Send Report To	Jeremy Lewandowski	Invoice Attn	Sean Craven	D	
Address	3399 Veterans Dr.	Address	1510 Thomas Rd	E	
				F	
City/State/Zip	TC, MI, 49684	City/State/Zip	Kalkaska, MI	G	
Phone	231-946-8210	Phone	231-258-6369	H	
Fax	—	Fax		I	
e-Mail Address	jlewandowski@ectinc.com	e-Mail Address	sean.craven@meritenergy.com	J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	495 Jeni Lane	6/6/16	6:36p	GW	—	4	8	8	1,8								
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9	REL BY: Jeremy Byron 6/7/16 - 1630																
10																	

HGS PROJ: MERIT ENERGY - MISC

Sampler(s) Please Print & Sign: Jeremy Lewandowski

Shipment Method:

Required Turnaround Time: (Check Box) ☐ Other ☐ STD 10 Wk Days ☒ 5 Wk Days ☐ 2 Wk Days ☐ 24 Hour

Results Due Date:

Relinquished by: Date: 6/6/16 Time: 8:15p Received by: ECT Sample Storage

Relinquished by: ECT Sample Storage Date: 6/7/16 Time: 6:30a Received by (Laboratory):

Logged by (Laboratory): Date: 6/8/16 Time: 1430 Checked by (Laboratory): GRB

Notes: 6/7/16 @ 2:00p RECD

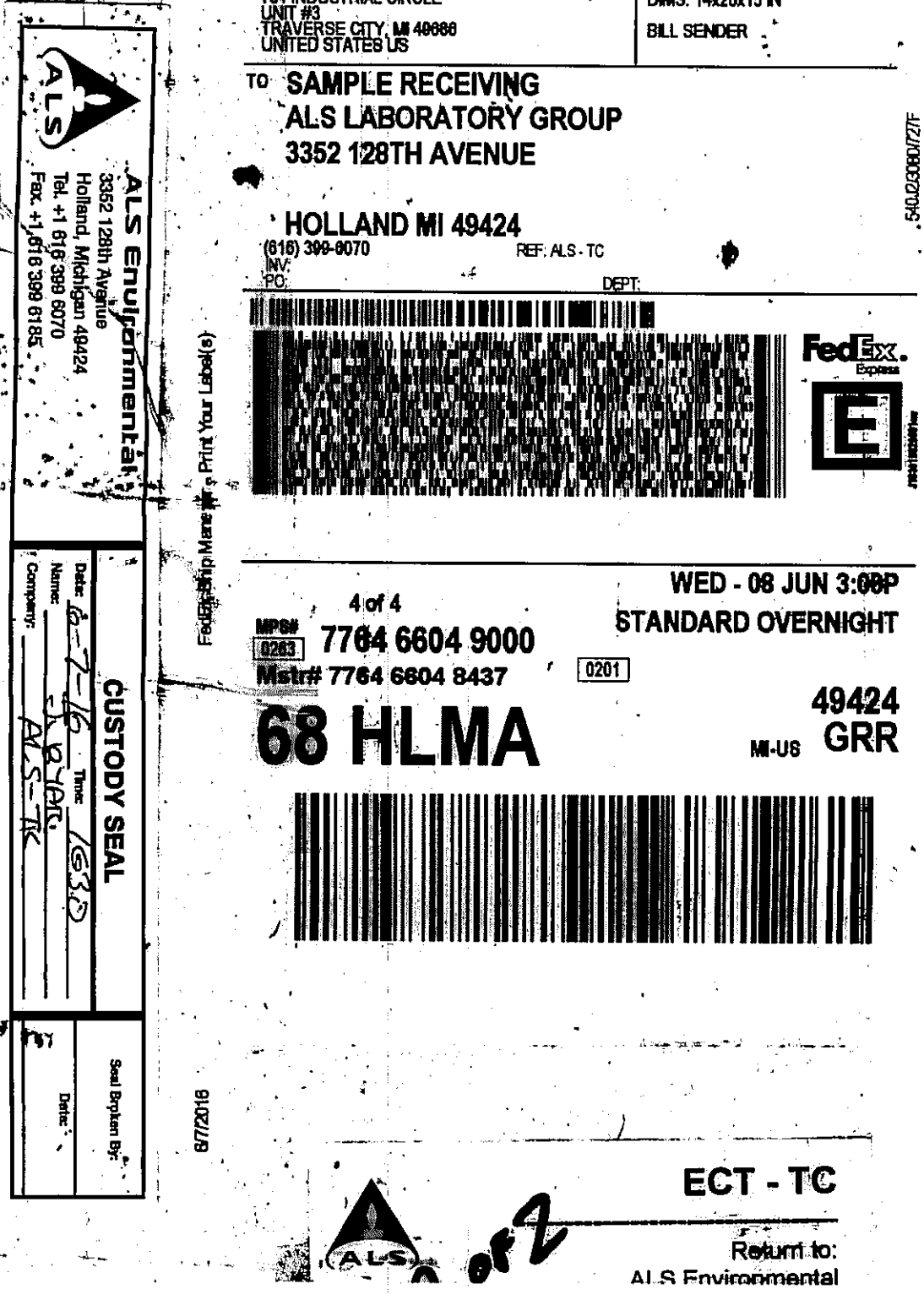
Cooler ID | Cooler Temp: 3.6°C

QC Package: (Check One Box Below)
☒ Level II Std QC
☐ Level III Std QC/Raw Data
☐ Level IV SW846/CLP
☐ Other
☐ TRRP Checklist
☐ TRRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

6/8/16 0930

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.



ORIGIN ID:TVCA (231) 421-3204
GARY BYAR
ALS ENVIRONMENTAL
781 INDUSTRIAL CIRCLE
UNIT #3
TRAVERSE CITY, MI 49686
UNITED STATES US

SHIP DATE: 07JUN16
ACTWGT: 45.00 LB
CAD: 2264840/NET3730
DIMS: 14x26x15 IN

BILL SENDER

TO SAMPLE RECEIVING
ALS LABORATORY GROUP
3352 128TH AVENUE

HOLLAND MI 49424
(616) 399-6070 REF: ALS - TC
INV:
PO: DEPT:

FedEx Express

WED - 08 JUN 3:00P
STANDARD OVERNIGHT

4 of 4
MPS# 0263 7764 6604 9000
Mstr# 7764 6604 8437
0201

68 HLMA

49424
MI-US GRR

FedEx Ship Manager - Print Your Label(s)

8/7/2016

ALS Environmental
3352 128th Avenue
Holland, Michigan 49424
Tel. +1 616 399 6070
Fax. +1 616 399 6185

CUSTODY SEAL

Date: 6-7-16 Time: 1630
Name: GARY BYAR
Company: ALS-TC

Seal Broken By:
Date:

ECT - TC

Return to:
ALS Environmental

1 of 2

23-Jun-2016

Sean Craven
Merit Energy
1510 Thomas Rd
PO Box 910
Kalkaska, MI 49646

Re: **ECT (869 N. Pleasant Valley)** Work Order: **1606886**

Dear Sean,

ALS Environmental received 1 sample on 15-Jun-2016 09:30 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with NELAP standard requirements and QC results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 19.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

Gary Byar

Electronically approved by: Gary Byar

Gary Byar
Project Manager

Certificate No: MI: 0022

Report of Laboratory Analysis

ALS Group USA, Corp

Date: 23-Jun-16

Client: Merit Energy
Project: ECT (869 N. Pleasant Valley)
Work Order: **1606886**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1606886-01	869 N. Pleasant Valley	Water		6/13/2016 16:54	6/15/2016 09:30	☐

ALS Group USA, Corp

Date: *23-Jun-16*

Client: Merit Energy
Project: ECT (869 N. Pleasant Valley)
Work Order: 1606886
Sample ID: 869 N. Pleasant Valley
Lab ID: 1606886-01
Collection Date: 6/13/2016 04:54 PM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW846 8270D**		Prep: SW3510 / 6/16/16	Analyst: **RM**
Diisopropanolamine	ND		54	µg/L	1	6/17/2016 02:27 AM
Sulfolane	ND		11	µg/L	1	6/17/2016 02:27 AM
Surr: 2,4,6-Tribromophenol	*46.4*		*38-115*	*%REC*	1	6/17/2016 02:27 AM
Surr: 2-Fluorobiphenyl	*45.7*		*32-100*	*%REC*	1	6/17/2016 02:27 AM
Surr: 2-Fluorophenol	*30.1*		*22-59*	*%REC*	1	6/17/2016 02:27 AM
Surr: 4-Terphenyl-d14	*82.8*		*23-112*	*%REC*	1	6/17/2016 02:27 AM
Surr: Nitrobenzene-d5	*51.0*		*31-93*	*%REC*	1	6/17/2016 02:27 AM
Surr: Phenol-d6	*18.0*		*13-36*	*%REC*	1	6/17/2016 02:27 AM
VOLATILE ORGANIC COMPOUNDS			**SW8260B**			Analyst: **AK**
1,1,1,2-Tetrachloroethane	ND		1.0	µg/L	1	6/21/2016 05:29 PM
1,1,1-Trichloroethane	ND		1.0	µg/L	1	6/21/2016 05:29 PM
1,1,2,2-Tetrachloroethane	ND		1.0	µg/L	1	6/21/2016 05:29 PM
1,1,2-Trichloroethane	ND		1.0	µg/L	1	6/21/2016 05:29 PM
1,1,2-Trichlorotrifluoroethane	ND		1.0	µg/L	1	6/21/2016 05:29 PM
1,1-Dichloroethane	ND		1.0	µg/L	1	6/21/2016 05:29 PM
1,1-Dichloroethene	ND		1.0	µg/L	1	6/21/2016 05:29 PM
1,2,3-Trichloropropane	ND		1.0	µg/L	1	6/21/2016 05:29 PM
1,2,4-Trichlorobenzene	ND		1.0	µg/L	1	6/21/2016 05:29 PM
1,2,4-Trimethylbenzene	ND		1.0	µg/L	1	6/21/2016 05:29 PM
1,2-Dibromo-3-chloropropane	ND		1.0	µg/L	1	6/21/2016 05:29 PM
1,2-Dibromoethane	ND		1.0	µg/L	1	6/21/2016 05:29 PM
1,2-Dichlorobenzene	ND		1.0	µg/L	1	6/21/2016 05:29 PM
1,2-Dichloroethane	ND		1.0	µg/L	1	6/21/2016 05:29 PM
1,2-Dichloropropane	ND		1.0	µg/L	1	6/21/2016 05:29 PM
1,3,5-Trimethylbenzene	ND		1.0	µg/L	1	6/21/2016 05:29 PM
1,3-Dichlorobenzene	ND		1.0	µg/L	1	6/21/2016 05:29 PM
1,4-Dichlorobenzene	ND		1.0	µg/L	1	6/21/2016 05:29 PM
2-Butanone	ND		5.0	µg/L	1	6/21/2016 05:29 PM
2-Hexanone	ND		5.0	µg/L	1	6/21/2016 05:29 PM
2-Methylnaphthalene	ND		5.0	µg/L	1	6/21/2016 05:29 PM
4-Methyl-2-pentanone	ND		1.0	µg/L	1	6/21/2016 05:29 PM
Acetone	ND		10	µg/L	1	6/21/2016 05:29 PM
Acrylonitrile	ND		1.0	µg/L	1	6/21/2016 05:29 PM
Benzene	ND		1.0	µg/L	1	6/21/2016 05:29 PM
Bromochloromethane	ND		1.0	µg/L	1	6/21/2016 05:29 PM
Bromodichloromethane	ND		1.0	µg/L	1	6/21/2016 05:29 PM
Bromoform	ND		1.0	µg/L	1	6/21/2016 05:29 PM
Bromomethane	ND		1.0	µg/L	1	6/21/2016 05:29 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *23-Jun-16*

Client: Merit Energy
Project: ECT (869 N. Pleasant Valley)
Work Order: 1606886
Sample ID: 869 N. Pleasant Valley
Lab ID: 1606886-01
Collection Date: 6/13/2016 04:54 PM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Carbon disulfide	ND		1.0	µg/L	1	6/21/2016 05:29 PM
Carbon tetrachloride	ND		1.0	µg/L	1	6/21/2016 05:29 PM
Chlorobenzene	ND		1.0	µg/L	1	6/21/2016 05:29 PM
Chloroethane	ND		1.0	µg/L	1	6/21/2016 05:29 PM
Chloroform	ND		1.0	µg/L	1	6/21/2016 05:29 PM
Chloromethane	ND		1.0	µg/L	1	6/21/2016 05:29 PM
cis-1,2-Dichloroethene	ND		1.0	µg/L	1	6/21/2016 05:29 PM
cis-1,3-Dichloropropene	ND		1.0	µg/L	1	6/21/2016 05:29 PM
Dibromochloromethane	ND		1.0	µg/L	1	6/21/2016 05:29 PM
Dibromomethane	ND		1.0	µg/L	1	6/21/2016 05:29 PM
Dichlorodifluoromethane	ND		1.0	µg/L	1	6/21/2016 05:29 PM
Diethyl ether	ND		1.0	µg/L	1	6/21/2016 05:29 PM
Ethylbenzene	ND		1.0	µg/L	1	6/21/2016 05:29 PM
Hexachloroethane	ND		1.0	µg/L	1	6/21/2016 05:29 PM
Isopropylbenzene	ND		1.0	µg/L	1	6/21/2016 05:29 PM
m,p-Xylene	ND		2.0	µg/L	1	6/21/2016 05:29 PM
Methyl iodide	ND		1.0	µg/L	1	6/21/2016 05:29 PM
Methyl tert-butyl ether	ND		1.0	µg/L	1	6/21/2016 05:29 PM
Methylene chloride	ND		5.0	µg/L	1	6/21/2016 05:29 PM
Naphthalene	ND		5.0	µg/L	1	6/21/2016 05:29 PM
n-Propylbenzene	ND		1.0	µg/L	1	6/21/2016 05:29 PM
o-Xylene	ND		1.0	µg/L	1	6/21/2016 05:29 PM
Styrene	ND		1.0	µg/L	1	6/21/2016 05:29 PM
Tetrachloroethene	ND		1.0	µg/L	1	6/21/2016 05:29 PM
Toluene	ND		1.0	µg/L	1	6/21/2016 05:29 PM
trans-1,2-Dichloroethene	ND		1.0	µg/L	1	6/21/2016 05:29 PM
trans-1,3-Dichloropropene	ND		1.0	µg/L	1	6/21/2016 05:29 PM
trans-1,4-Dichloro-2-butene	ND		2.0	µg/L	1	6/21/2016 05:29 PM
Trichloroethene	ND		1.0	µg/L	1	6/21/2016 05:29 PM
Trichlorofluoromethane	ND		1.0	µg/L	1	6/21/2016 05:29 PM
Vinyl acetate	ND		1.0	µg/L	1	6/21/2016 05:29 PM
Vinyl chloride	ND		1.0	µg/L	1	6/21/2016 05:29 PM
Xylenes, Total	ND		3.0	µg/L	1	6/21/2016 05:29 PM
Surr: 1,2-Dichloroethane-d4	*108*		*75-120*	*%REC*	1	6/21/2016 05:29 PM
Surr: 4-Bromofluorobenzene	*91.6*		*80-110*	*%REC*	1	6/21/2016 05:29 PM
Surr: Dibromofluoromethane	*104*		*85-115*	*%REC*	1	6/21/2016 05:29 PM
Surr: Toluene-d8	*94.6*		*85-110*	*%REC*	1	6/21/2016 05:29 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 23-Jun-16

Client: Merit Energy
Project: ECT (869 N. Pleasant Valley)
Work Order: 1606886

Case Narrative

Batch R189964A Sample VLCSW2-160621 The LCS recovery for Volatile compound Methyl Iodide was above the upper control limit. All the sample results in the batch were non-detect. No qualification is necessary for this analyte.

Batch R189964A The MS/MSD data for Volatiles is not related to this projects sample. No data requires qualification.

ALS Group USA, Corp

Date: 23-Jun-16

Client: Merit Energy

Work Order: 1606886

Project: ECT (869 N. Pleasant Valley)

QC BATCH REPORT

Batch ID: **87384** Instrument ID **SVMS8** Method: **SW846 8270D**

MBLK Sample ID: **SBLKW1-87384-87384** Units: **µg/L** Analysis Date: **6/16/2016 07:57 PM**

Client ID: Run ID: **SVMS8_160616A** SeqNo: **3888548** Prep Date: **6/16/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Diisopropanolamine	ND	50								
Sulfolane	ND	10								
Surr: 2,4,6-Tribromophenol	*34.42*	0	*50*	0	*68.8*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*34.19*	0	*50*	0	*68.4*	*32-100*	0			
Surr: 2-Fluorophenol	*22.38*	0	*50*	0	*44.8*	*22-59*	0			
Surr: 4-Terphenyl-d14	*46.53*	0	*50*	0	*93.1*	*23-112*	0			
Surr: Nitrobenzene-d5	*39.51*	0	*50*	0	*79*	*31-93*	0			
Surr: Phenol-d6	*13.42*	0	*50*	0	*26.8*	*13-36*	0			

LCS Sample ID: **SLCSW1-87384-87384** Units: **µg/L** Analysis Date: **6/16/2016 08:17 PM**

Client ID: Run ID: **SVMS8_160616A** SeqNo: **3888549** Prep Date: **6/16/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Diisopropanolamine	10.77	50	100	0	10.8	10-50	0			
Sulfolane	53.27	10	100	0	53.3	30-100	0			
Surr: 2,4,6-Tribromophenol	*35.21*	0	*50*	0	*70.4*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*35.78*	0	*50*	0	*71.6*	*32-100*	0			
Surr: 2-Fluorophenol	*21.28*	0	*50*	0	*42.6*	*22-59*	0			
Surr: 4-Terphenyl-d14	*49.06*	0	*50*	0	*98.1*	*23-112*	0			
Surr: Nitrobenzene-d5	*40.25*	0	*50*	0	*80.5*	*31-93*	0			
Surr: Phenol-d6	*12.62*	0	*50*	0	*25.2*	*13-36*	0			

MS Sample ID: **1606870-01A MS** Units: **µg/L** Analysis Date: **6/16/2016 10:05 PM**

Client ID: Run ID: **SVMS8_160616A** SeqNo: **3888550** Prep Date: **6/16/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Diisopropanolamine	18.58	50	100	0	18.6	10-50	0			
Sulfolane	59.25	10	100	0	59.2	30-100	0			
Surr: 2,4,6-Tribromophenol	*33.01*	0	*50*	0	*66*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*34.57*	0	*50*	0	*69.1*	*32-100*	0			
Surr: 2-Fluorophenol	*20.06*	0	*50*	0	*40.1*	*22-59*	0			
Surr: 4-Terphenyl-d14	*46.56*	0	*50*	0	*93.1*	*23-112*	0			
Surr: Nitrobenzene-d5	*39.7*	0	*50*	0	*79.4*	*31-93*	0			
Surr: Phenol-d6	*11.64*	0	*50*	0	*23.3*	*13-36*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606886
Project: ECT (869 N. Pleasant Valley)

QC BATCH REPORT

Batch ID: **87384** Instrument ID **SVMS8** Method: **SW846 8270D**

DUP Sample ID: **1606871-01A DUP** Units: **µg/L** Analysis Date: **6/16/2016 10:45 PM**

Client ID: Run ID: **SVMS8_160616A** SeqNo: **3888552** Prep Date: **6/16/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Diisopropanolamine	ND	53	0	0	0		0	0	30	
Sulfolane	ND	11	0	0	0		0	0	30	
Surr: 2,4,6-Tribromophenol	*28.89*	0	*52.63*	0	*54.9*	*38-115*	27.6	*4.58*	*40*	
Surr: 2-Fluorobiphenyl	*29.71*	0	*52.63*	0	*56.4*	*32-100*	29.06	*2.2*	*40*	
Surr: 2-Fluorophenol	*19.71*	0	*52.63*	0	*37.4*	*22-59*	18.78	*4.81*	*40*	
Surr: 4-Terphenyl-d14	*45.01*	0	*52.63*	0	*85.5*	*23-112*	42.59	*5.53*	*40*	
Surr: Nitrobenzene-d5	*32.43*	0	*52.63*	0	*61.6*	*31-93*	32.8	*1.13*	*40*	
Surr: Phenol-d6	*11.48*	0	*52.63*	0	*21.8*	*13-36*	11.2	*2.51*	*40*	

The following samples were analyzed in this batch: 1606886-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606886
Project: ECT (869 N. Pleasant Valley)

QC BATCH REPORT

Batch ID: **R189964A** Instrument ID **VMS10** Method: **SW8260B**

MBLK Sample ID: **VBLKW1-160621-R189964A** Units: **µg/L** Analysis Date: **6/21/2016 02:16 PM**
Client ID: Run ID: **VMS10_160621A** SeqNo: **3886170** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
1,1,2-Trichlorotrifluoroethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2,3-Trichloropropane	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	1.0								
1,2-Dibromoethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,2-Dichloroethane	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
2-Butanone	ND	5.0								
2-Hexanone	ND	5.0								
2-Methylnaphthalene	ND	5.0								
4-Methyl-2-pentanone	ND	1.0								
Acetone	ND	10								
Acrylonitrile	ND	1.0								
Benzene	ND	1.0								
Bromochloromethane	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	1.0								
Carbon disulfide	ND	1.0								
Carbon tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	ND	1.0								
cis-1,2-Dichloroethene	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
Diethyl ether	ND	1.0								
Ethylbenzene	ND	1.0								

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Batch ID: **R189964A** Instrument ID **VMS10** Method: **SW8260B**

Hexachloroethane	ND	1.0					
Isopropylbenzene	ND	1.0					
m,p-Xylene	ND	2.0					
Methyl iodide	ND	1.0					
Methyl tert-butyl ether	ND	1.0					
Methylene chloride	ND	5.0					
Naphthalene	ND	5.0					
n-Propylbenzene	ND	1.0					
o-Xylene	ND	1.0					
Styrene	ND	1.0					
Tetrachloroethene	ND	1.0					
Toluene	ND	1.0					
trans-1,2-Dichloroethene	ND	1.0					
trans-1,3-Dichloropropene	ND	1.0					
trans-1,4-Dichloro-2-butene	ND	2.0					
Trichloroethene	ND	1.0					
Trichlorofluoromethane	ND	1.0					
Vinyl acetate	ND	1.0					
Vinyl chloride	ND	1.0					
Xylenes, Total	ND	3.0					
Surr: 1,2-Dichloroethane-d4	*21.46*	0	*20*	0	*107*	*75-120*	0
Surr: 4-Bromofluorobenzene	*17.99*	0	*20*	0	*90*	*80-110*	0
Surr: Dibromofluoromethane	*20.43*	0	*20*	0	*102*	*85-115*	0
Surr: Toluene-d8	*18.84*	0	*20*	0	*94.2*	*85-110*	0

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606886
Project: ECT (869 N. Pleasant Valley)

QC BATCH REPORT

Batch ID: **R189964A** Instrument ID **VMS10** Method: **SW8260B**

LCS Sample ID: **VLCSW2-160621-R189964A** Units: **µg/L** Analysis Date: **6/21/2016 01:03 PM**
Client ID: Run ID: **VMS10_160621A** SeqNo: **3886169** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	19.57	1.0	20	0	97.8	80-130	0			
1,1,1-Trichloroethane	22.55	1.0	20	0	113	75-130	0			
1,1,2,2-Tetrachloroethane	18.67	1.0	20	0	93.4	75-130	0			
1,1,2-Trichloroethane	19.87	1.0	20	0	99.4	75-125	0			
1,1-Dichloroethane	21.59	1.0	20	0	108	75-133	0			
1,1-Dichloroethene	24.6	1.0	20	0	123	70-145	0			
1,2,3-Trichloropropane	18.99	1.0	20	0	95	75-125	0			
1,2,4-Trichlorobenzene	20.01	1.0	20	0	100	70-135	0			
1,2,4-Trimethylbenzene	20.83	1.0	20	0	104	75-130	0			
1,2-Dibromo-3-chloropropane	14.85	1.0	20	0	74.2	60-130	0			
1,2-Dibromoethane	21.69	1.0	20	0	108	80-150	0			
1,2-Dichlorobenzene	20.68	1.0	20	0	103	70-130	0			
1,2-Dichloroethane	20.77	1.0	20	0	104	78-125	0			
1,2-Dichloropropane	19.91	1.0	20	0	99.6	75-125	0			
1,3,5-Trimethylbenzene	21.2	1.0	20	0	106	75-130	0			
1,3-Dichlorobenzene	21.55	1.0	20	0	108	75-130	0			
1,4-Dichlorobenzene	20.77	1.0	20	0	104	75-130	0			
2-Butanone	13.56	5.0	20	0	67.8	55-150	0			
2-Hexanone	13.16	5.0	20	0	65.8	60-135	0			
4-Methyl-2-pentanone	17.41	1.0	20	0	87	77-178	0			
Acetone	15.96	10	20	0	79.8	60-160	0			
Acrylonitrile	15.7	1.0	20	0	78.5	60-140	0			
Benzene	20.6	1.0	20	0	103	85-125	0			
Bromochloromethane	18.78	1.0	20	0	93.9	75-130	0			
Bromodichloromethane	20.47	1.0	20	0	102	75-125	0			
Bromoform	16.14	1.0	20	0	80.7	60-125	0			
Bromomethane	27.29	1.0	20	0	136	30-185	0			
Carbon disulfide	22.57	1.0	20	0	113	60-165	0			
Carbon tetrachloride	21.01	1.0	20	0	105	65-140	0			
Chlorobenzene	20.84	1.0	20	0	104	80-120	0			
Chloroethane	23.14	1.0	20	0	116	50-140	0			
Chloroform	19.86	1.0	20	0	99.3	80-130	0			
Chloromethane	14.87	1.0	20	0	74.4	50-130	0			
cis-1,2-Dichloroethene	19.63	1.0	20	0	98.2	75-134	0			
cis-1,3-Dichloropropene	17.96	1.0	20	0	89.8	70-130	0			
Dibromochloromethane	16.62	1.0	20	0	83.1	60-115	0			
Dibromomethane	20.68	1.0	20	0	103	85-125	0			
Dichlorodifluoromethane	18.35	1.0	20	0	91.8	20-120	0			
Ethylbenzene	21.52	1.0	20	0	108	85-125	0			
Hexachloroethane	14.16	1.0	20	0	70.8	50-124	0			
Isopropylbenzene	20.7	1.0	20	0	104	80-127	0			
m,p-Xylene	44.74	2.0	40	0	112	75-130	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Batch ID: **R189964A** Instrument ID **VMS10** Method: **SW8260B**

Methyl iodide	40.55	1.0	20	0	203	60-160	0	S
Methyl tert-butyl ether	17.94	1.0	20	0	89.7	80-130	0	
Methylene chloride	23.38	5.0	20	0	117	75-140	0	
Naphthalene	16.24	5.0	20	0	81.2	55-160	0	
n-Propylbenzene	22.03	1.0	20	0	110	78-120	0	
o-Xylene	21.56	1.0	20	0	108	80-125	0	
Styrene	20.41	1.0	20	0	102	85-125	0	
Tetrachloroethene	22.69	1.0	20	0	113	77-138	0	
Toluene	20.43	1.0	20	0	102	85-125	0	
trans-1,2-Dichloroethene	22.8	1.0	20	0	114	80-140	0	
trans-1,3-Dichloropropene	16.34	1.0	20	0	81.7	81-123	0	
trans-1,4-Dichloro-2-butene	12.84	2.0	20	0	64.2	46-118	0	
Trichloroethene	21.85	1.0	20	0	109	84-130	0	
Trichlorofluoromethane	22.88	1.0	20	0	114	60-140	0	
Vinyl chloride	20.66	1.0	20	0	103	50-136	0	
Xylenes, Total	66.3	3.0	60	0	110	80-126	0	
Surr: 1,2-Dichloroethane-d4	*20.04*	0	*20*	0	*100*	*75-120*	0	
Surr: 4-Bromofluorobenzene	*20.04*	0	*20*	0	*100*	*80-110*	0	
Surr: Dibromofluoromethane	*20.8*	0	*20*	0	*104*	*85-115*	0	
Surr: Toluene-d8	*19.65*	0	*20*	0	*98.2*	*85-110*	0	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606886
Project: ECT (869 N. Pleasant Valley)

QC BATCH REPORT

Batch ID: **R189964A** Instrument ID **VMS10** Method: **SW8260B**

MS Sample ID: **1606757-21A MS** Units: **µg/L** Analysis Date: **6/21/2016 08:44 PM**
Client ID: Run ID: **VMS10_160621A** SeqNo: **3886188** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	20.08	1.0	20	0	100	80-130	0			
1,1,1-Trichloroethane	24.12	1.0	20	0	121	75-130	0			
1,1,2,2-Tetrachloroethane	19.35	1.0	20	0	96.8	75-130	0			
1,1,2-Trichloroethane	20.4	1.0	20	0	102	75-125	0			
1,1-Dichloroethane	20.94	1.0	20	0	105	75-133	0			
1,1-Dichloroethene	25.13	1.0	20	0	126	70-145	0			
1,2,3-Trichloropropane	20.1	1.0	20	0	100	75-125	0			
1,2,4-Trichlorobenzene	19.27	1.0	20	0	96.4	70-135	0			
1,2,4-Trimethylbenzene	20.24	1.0	20	0	101	75-130	0			
1,2-Dibromo-3-chloropropane	15.52	1.0	20	0	77.6	60-130	0			
1,2-Dibromoethane	22.21	1.0	20	0	111	80-150	0			
1,2-Dichlorobenzene	20.36	1.0	20	0	102	70-130	0			
1,2-Dichloroethane	21.03	1.0	20	0	105	78-125	0			
1,2-Dichloropropane	20.59	1.0	20	0	103	75-125	0			
1,3,5-Trimethylbenzene	20.68	1.0	20	0	103	75-130	0			
1,3-Dichlorobenzene	20.95	1.0	20	0	105	75-130	0			
1,4-Dichlorobenzene	20.01	1.0	20	0	100	75-130	0			
2-Butanone	13.96	5.0	20	0	69.8	55-150	0			
2-Hexanone	14.02	5.0	20	0	70.1	60-135	0			
4-Methyl-2-pentanone	18.6	1.0	20	0	93	77-178	0			
Acetone	20.81	10	20	0	104	60-160	0			
Acrylonitrile	18.32	1.0	20	0	91.6	60-140	0			
Benzene	65.38	1.0	20	45.14	101	85-125	0			
Bromochloromethane	18.68	1.0	20	0	93.4	75-130	0			
Bromodichloromethane	21.04	1.0	20	0	105	75-125	0			
Bromoform	16.63	1.0	20	0	83.2	60-125	0			
Bromomethane	14.06	1.0	20	0	70.3	30-185	0			
Carbon disulfide	22.31	1.0	20	0	112	60-165	0			
Carbon tetrachloride	22.91	1.0	20	0	115	65-140	0			
Chlorobenzene	20.68	1.0	20	0	103	80-120	0			
Chloroethane	23.54	1.0	20	0	118	50-140	0			
Chloroform	20.04	1.0	20	0	100	80-130	0			
Chloromethane	21.19	1.0	20	1.5	98.4	50-130	0			
cis-1,2-Dichloroethene	19.3	1.0	20	0	96.5	75-134	0			
cis-1,3-Dichloropropene	17.49	1.0	20	0	87.4	70-130	0			
Dibromochloromethane	16.89	1.0	20	0	84.4	60-115	0			
Dibromomethane	21.31	1.0	20	0	107	85-125	0			
Dichlorodifluoromethane	19.06	1.0	20	0	95.3	20-120	0			
Ethylbenzene	21.13	1.0	20	0	106	85-125	0			
Hexachloroethane	14.2	1.0	20	0	71	50-124	0			
Isopropylbenzene	20.54	1.0	20	0	103	80-127	0			
m,p-Xylene	44.6	2.0	40	0	112	75-130	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

QC BATCH REPORT

Batch ID: **R189964A** Instrument ID **VMS10** Method: **SW8260B**

Methyl iodide	19.62	1.0	20	0	98.1	60-160	0	
Methyl tert-butyl ether	18.02	1.0	20	0	90.1	80-130	0	
Methylene chloride	22.17	5.0	20	0	111	75-140	0	
Naphthalene	18.34	5.0	20	1.74	83	55-160	0	
n-Propylbenzene	21.51	1.0	20	0	108	78-120	0	
o-Xylene	21.08	1.0	20	0	105	80-125	0	
Styrene	14.03	1.0	20	0	70.2	85-125	0	S
Tetrachloroethene	21.58	1.0	20	0	108	77-138	0	
Toluene	20.49	1.0	20	0	102	85-125	0	
trans-1,2-Dichloroethene	22.23	1.0	20	0	111	80-140	0	
trans-1,3-Dichloropropene	16.08	1.0	20	0	80.4	81-123	0	S
trans-1,4-Dichloro-2-butene	13.07	2.0	20	0	65.4	46-118	0	
Trichloroethene	21.75	1.0	20	0	109	84-130	0	
Trichlorofluoromethane	24.38	1.0	20	0	122	60-140	0	
Vinyl chloride	21.25	1.0	20	0	106	50-136	0	
Xylenes, Total	65.68	3.0	60	0	109	80-126	0	
Surr: 1,2-Dichloroethane-d4	*20.55*	0	*20*	0	*103*	*75-120*	0	
Surr: 4-Bromofluorobenzene	*20.61*	0	*20*	0	*103*	*80-110*	0	
Surr: Dibromofluoromethane	*21.2*	0	*20*	0	*106*	*85-115*	0	
Surr: Toluene-d8	*19.69*	0	*20*	0	*98.4*	*85-110*	0	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606886
Project: ECT (869 N. Pleasant Valley)

QC BATCH REPORT

Batch ID: **R189964A** Instrument ID **VMS10** Method: **SW8260B**

MSD Sample ID: **1606757-21A MSD** Units: **µg/L** Analysis Date: **6/21/2016 09:08 PM**
Client ID: Run ID: **VMS10_160621A** SeqNo: **3886189** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	19.66	1.0	20	0	98.3	80-130	20.08	2.11	30	
1,1,1-Trichloroethane	23.81	1.0	20	0	119	75-130	24.12	1.29	30	
1,1,2,2-Tetrachloroethane	19.08	1.0	20	0	95.4	75-130	19.35	1.41	30	
1,1,2-Trichloroethane	19.61	1.0	20	0	98	75-125	20.4	3.95	30	
1,1-Dichloroethane	21.05	1.0	20	0	105	75-133	20.94	0.524	30	
1,1-Dichloroethene	25.19	1.0	20	0	126	70-145	25.13	0.238	30	
1,2,3-Trichloropropane	19.29	1.0	20	0	96.4	75-125	20.1	4.11	30	
1,2,4-Trichlorobenzene	18.79	1.0	20	0	94	70-135	19.27	2.52	30	
1,2,4-Trimethylbenzene	19.71	1.0	20	0	98.6	75-130	20.24	2.65	30	
1,2-Dibromo-3-chloropropane	15.21	1.0	20	0	76	60-130	15.52	2.02	30	
1,2-Dibromoethane	21.21	1.0	20	0	106	80-150	22.21	4.61	30	
1,2-Dichlorobenzene	19.89	1.0	20	0	99.4	70-130	20.36	2.34	30	
1,2-Dichloroethane	21.09	1.0	20	0	105	78-125	21.03	0.285	30	
1,2-Dichloropropane	20.26	1.0	20	0	101	75-125	20.59	1.62	30	
1,3,5-Trimethylbenzene	20.21	1.0	20	0	101	75-130	20.68	2.3	30	
1,3-Dichlorobenzene	20.53	1.0	20	0	103	75-130	20.95	2.03	30	
1,4-Dichlorobenzene	19.81	1.0	20	0	99	75-130	20.01	1	30	
2-Butanone	13.91	5.0	20	0	69.6	55-150	13.96	0.359	30	
2-Hexanone	13.95	5.0	20	0	69.8	60-135	14.02	0.501	30	
4-Methyl-2-pentanone	17.36	1.0	20	0	86.8	77-178	18.6	6.9	30	
Acetone	22.34	10	20	0	112	60-160	20.81	7.09	30	
Acrylonitrile	15.86	1.0	20	0	79.3	60-140	18.32	14.4	30	
Benzene	64.83	1.0	20	45.14	98.4	85-125	65.38	0.845	30	
Bromochloromethane	18.04	1.0	20	0	90.2	75-130	18.68	3.49	30	
Bromodichloromethane	21.13	1.0	20	0	106	75-125	21.04	0.427	30	
Bromoform	16.78	1.0	20	0	83.9	60-125	16.63	0.898	30	
Bromomethane	15.82	1.0	20	0	79.1	30-185	14.06	11.8	30	
Carbon disulfide	22.62	1.0	20	0	113	60-165	22.31	1.38	30	
Carbon tetrachloride	22.97	1.0	20	0	115	65-140	22.91	0.262	30	
Chlorobenzene	20.33	1.0	20	0	102	80-120	20.68	1.71	30	
Chloroethane	23.05	1.0	20	0	115	50-140	23.54	2.1	30	
Chloroform	19.83	1.0	20	0	99.2	80-130	20.04	1.05	30	
Chloromethane	19.88	1.0	20	1.5	91.9	50-130	21.19	6.38	30	
cis-1,2-Dichloroethene	19.14	1.0	20	0	95.7	75-134	19.3	0.832	30	
cis-1,3-Dichloropropene	17.82	1.0	20	0	89.1	70-130	17.49	1.87	30	
Dibromochloromethane	16.93	1.0	20	0	84.6	60-115	16.89	0.237	30	
Dibromomethane	21.07	1.0	20	0	105	85-125	21.31	1.13	30	
Dichlorodifluoromethane	18.73	1.0	20	0	93.6	20-120	19.06	1.75	30	
Ethylbenzene	20.69	1.0	20	0	103	85-125	21.13	2.1	30	
Hexachloroethane	14.63	1.0	20	0	73.2	50-124	14.2	2.98	30	
Isopropylbenzene	20.21	1.0	20	0	101	80-127	20.54	1.62	30	
m,p-Xylene	43.56	2.0	40	0	109	75-130	44.6	2.36	30	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606886
Project: ECT (869 N. Pleasant Valley)

QC BATCH REPORT

Batch ID: **R189964A** Instrument ID **VMS10** Method: **SW8260B**

Methyl iodide	11.22	1.0	20	0	56.1	60-160	19.62	54.5	30	SR
Methyl tert-butyl ether	17.21	1.0	20	0	86	80-130	18.02	4.6	30	
Methylene chloride	20.8	5.0	20	0	104	75-140	22.17	6.38	30	
Naphthalene	17.29	5.0	20	1.74	77.8	55-160	18.34	5.89	30	
n-Propylbenzene	21.02	1.0	20	0	105	78-120	21.51	2.3	30	
o-Xylene	20.71	1.0	20	0	104	80-125	21.08	1.77	30	
Styrene	13.72	1.0	20	0	68.6	85-125	14.03	2.23	30	S
Tetrachloroethene	21	1.0	20	0	105	77-138	21.58	2.72	30	
Toluene	20.34	1.0	20	0	102	85-125	20.49	0.735	30	
trans-1,2-Dichloroethene	21.22	1.0	20	0	106	80-140	22.23	4.65	30	
trans-1,3-Dichloropropene	15.7	1.0	20	0	78.5	81-123	16.08	2.39	30	S
trans-1,4-Dichloro-2-butene	12.81	2.0	20	0	64	46-118	13.07	2.01	30	
Trichloroethene	21.54	1.0	20	0	108	84-130	21.75	0.97	30	
Trichlorofluoromethane	23.82	1.0	20	0	119	60-140	24.38	2.32	30	
Vinyl chloride	20.97	1.0	20	0	105	50-136	21.25	1.33	30	
Xylenes, Total	64.27	3.0	60	0	107	80-126	65.68	2.17	30	
Surr: 1,2-Dichloroethane-d4	*20.59*	0	*20*	0	*103*	*75-120*	20.55	*0.194*	*30*	
Surr: 4-Bromofluorobenzene	*20.65*	0	*20*	0	*103*	*80-110*	20.61	*0.194*	*30*	
Surr: Dibromofluoromethane	*21.09*	0	*20*	0	*105*	*85-115*	21.2	*0.52*	*30*	
Surr: Toluene-d8	*19.75*	0	*20*	0	*98.8*	*85-110*	19.69	*0.304*	*30*	

The following samples were analyzed in this batch: 1606886-01B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Group USA, Corp

Date: 23-Jun-16

Client: Merit Energy
Project: ECT (869 N. Pleasant Valley)
WorkOrder: **1606886**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
µg/L	Micrograms per Liter

ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **MERITENERGY** Date/Time Received: **15-Jun-16 09:30**

Work Order: **1606886** Received by: **KRW**

Checklist completed by Keith Wierenga (eSignature) 15-Jun-16 (Date) Reviewed by: Gary Byar (eSignature) 15-Jun-16 (Date)

Matrices: Water

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	2.2/2.2 C	SR2	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	6/15/2016 3:17:42 PM		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:	_		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

☑ **RETURN SAMPLES TO:**
ALS Environmental
781 Industrial Cir, Ste 3
Traverse City, Michigan 49686
(Tel) 231.421.3204
(Cell) 231.944.3459

Chain of Custody Form

Page 1 of 1

ALS Environmental
3352 128th Avenue
Holland, Michigan 49424
(Tel) 616.399.6070
(Fax) 616.399.6185

ALS Project Manager:	Gary Byar	ALS Work Order #:	1606886

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	Hartland 36 Gas Plant	A	Sulfolane
Work Order		Project Number		B	DIPA
Company Name	ECT, Inc.	Bill To Company	MEC	C	Full VOCs
Send Report To	Jeremy Lewandowski	Invoice Attn.	Sean Craven	D	
Address	3399 Veterans Dr.	Address	1510 Thomas Rd	E	
				F	
City/State/Zip	Traverse City, MI 49684	City/State/Zip	Kalkaska, Mi	G	
Phone	231-946-8200	Phone	231-258-6369	H	
Fax	231-946-8208	Fax		I	
e-Mail Address	jlewandowski@ectinc.com			J	

No.	Sample Description	Date	Time	Matrix	Pres. Key Numbers	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
	869 N. Pleasant Valley	6/13/16	16:54	GW	1, 8	4	X	X	X								

Sampler(s): Please Print & Sign: Jeremy Lewandowski

Shipment Method:

Required Turnaround Time: (Check Box) ☐ 10 Wk Days ☑ 5-7 Wk Days ☐ 3 Wk Days ☐ 2 Wk Days ☐ 24 Hour ☐ Other

Results Due Date:

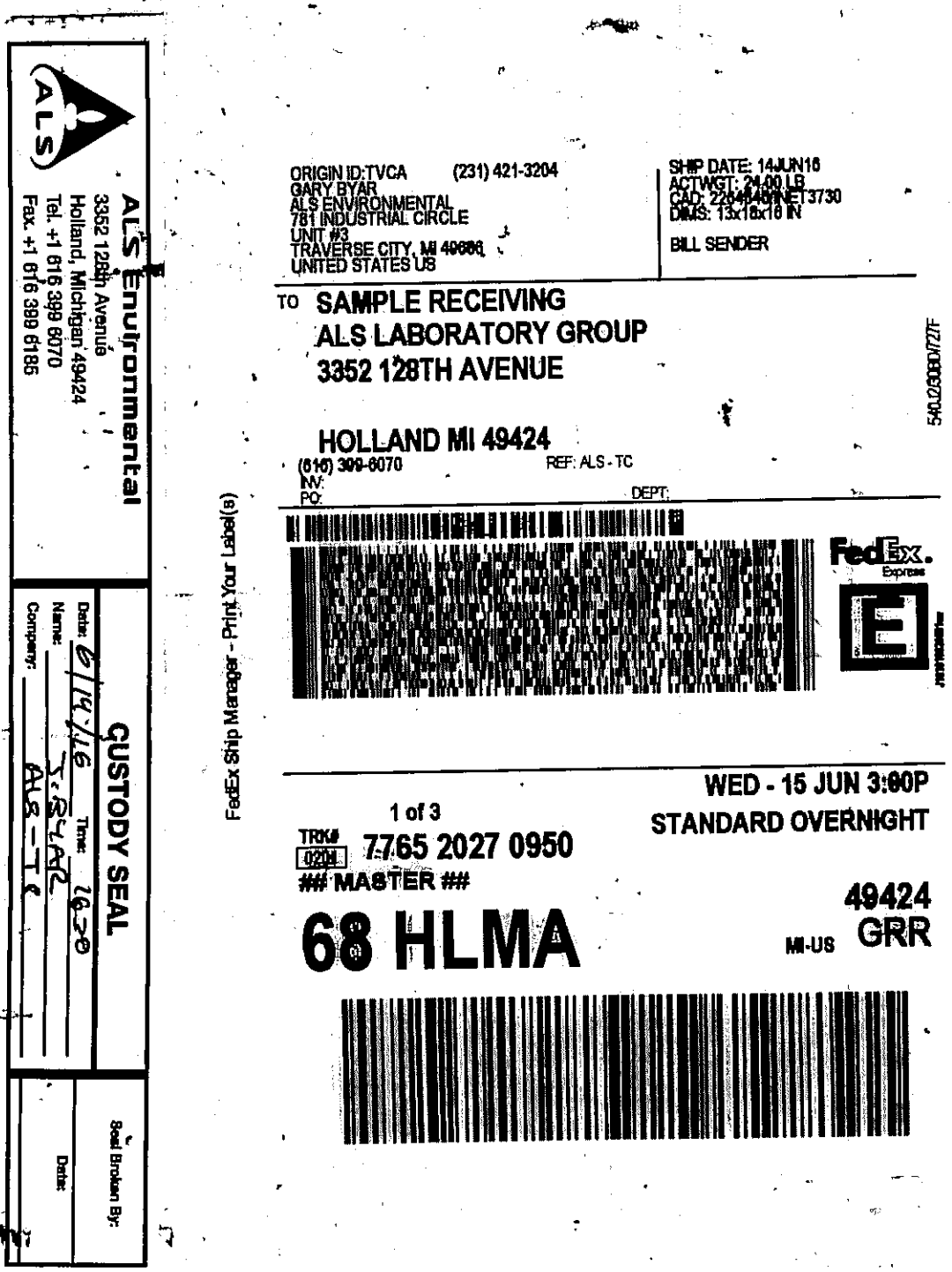
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
ECT Sample Storage	6/13/16	9:30p	ECT Sample Storage	6/13/16	9:30p
	6/14/16	11:15a		6/14/16	11:15a
	6/14/16	11:30a		6/14/16	11:40
Logged by (Laboratory):	6/14/16	16:45	Checked by (Laboratory):	6/15/16	0930
	6/15/16	1515			

Notes:
ALS Project: MERITENERGY - Misc

ALS Cooler ID	Cooler Temp	QC Package: (Check Box Below)	
	2.2°C	☑ Level II: Standard QC	☐ Level III: Raw Data
		☐ TRRP LRC	☐ TRRP Level IV
		☐ Level IV: SW846 Methods/CLP like	
		☐ Other:	

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS.



ALS Environmental
3352 128th Avenue
Holland, Michigan 49424
Tel. +1 616 399 6070
Fax. +1 616 399 6185

CUSTODY SEAL
Date: 6/14/16 Time: 1630
Name: JESSAGE
Company: ALS-TC

Date:
Seal Broken By:

FedEx Ship Manager - Print Your Label(s)

ORIGIN ID:TVCA (231) 421-3204
GARY BYAR
ALS ENVIRONMENTAL
781 INDUSTRIAL CIRCLE
UNIT #3
TRAVERSE CITY, MI 49686
UNITED STATES US

SHIP DATE: 14JUN16
ACTWGT: 24.00 LB
CAD: 2264460/NET3730
DIMS: 13x18x10 IN

BILL SENDER

TO SAMPLE RECEIVING
ALS LABORATORY GROUP
3352 128TH AVENUE

HOLLAND MI 49424
(616) 399-6070 REF: ALS - TC
INV:
PO: DEPT:

540J/3B0D/72TF

FedEx Express

1 of 3

WED - 15 JUN 3:00P
STANDARD OVERNIGHT

TRK# 0201 7765 2027 0950
MASTER

68 HLMA

49424
MI-US GRR

10-Jun-2016

Sean Craven
Merit Energy
1510 Thomas Rd
PO Box 910
Kalkaska, MI 49646

Re: **ECT (Hartland - 13223 Lone Tree Rd)** Work Order: **1606480**

Dear Sean,

ALS Environmental received 1 sample on 08-Jun-2016 09:30 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with NELAP standard requirements and QC results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 19.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

Gary Byar

Electronically approved by: Gary Byar

Gary Byar
Project Manager

Certificate No: MI: 0022

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185
ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

ALS Group USA, Corp

Date: 10-Jun-16

Client: Merit Energy
Project: ECT (Hartland - 13223 Lone Tree Rd)
Work Order: **1606480**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1606480-01	13223 Lone Tree Rd	Water		6/7/2016 07:16	6/8/2016 09:30	☐

ALS Group USA, Corp

Date: *10-Jun-16*

Client: Merit Energy
Project: ECT (Hartland - 13223 Lone Tree Rd) **Work Order:** 1606480
Sample ID: 13223 Lone Tree Rd **Lab ID:** 1606480-01
Collection Date: 6/7/2016 07:16 AM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW846 8270D**		Prep: SW3510 / 6/9/16	Analyst: **RM**
Diisopropanolamine	ND		58	µg/L	1	6/9/2016 08:17 PM
Sulfolane	ND		12	µg/L	1	6/9/2016 08:17 PM
Surr: 2,4,6-Tribromophenol	*62.8*		*38-115*	*%REC*	1	6/9/2016 08:17 PM
Surr: 2-Fluorobiphenyl	*56.5*		*32-100*	*%REC*	1	6/9/2016 08:17 PM
Surr: 2-Fluorophenol	*37.6*		*22-59*	*%REC*	1	6/9/2016 08:17 PM
Surr: 4-Terphenyl-d14	*69.9*		*23-112*	*%REC*	1	6/9/2016 08:17 PM
Surr: Nitrobenzene-d5	*66.5*		*31-93*	*%REC*	1	6/9/2016 08:17 PM
Surr: Phenol-d6	*19.6*		*13-36*	*%REC*	1	6/9/2016 08:17 PM
VOLATILE ORGANIC COMPOUNDS			**SW8260B**			Analyst: **AK**
1,1,1,2-Tetrachloroethane	ND		1.0	µg/L	1	6/9/2016 02:26 PM
1,1,1-Trichloroethane	ND		1.0	µg/L	1	6/9/2016 02:26 PM
1,1,2,2-Tetrachloroethane	ND		1.0	µg/L	1	6/9/2016 02:26 PM
1,1,2-Trichloroethane	ND		1.0	µg/L	1	6/9/2016 02:26 PM
1,1,2-Trichlorotrifluoroethane	ND		1.0	µg/L	1	6/9/2016 02:26 PM
1,1-Dichloroethane	ND		1.0	µg/L	1	6/9/2016 02:26 PM
1,1-Dichloroethene	ND		1.0	µg/L	1	6/9/2016 02:26 PM
1,2,3-Trichloropropane	ND		1.0	µg/L	1	6/9/2016 02:26 PM
1,2,4-Trichlorobenzene	ND		1.0	µg/L	1	6/9/2016 02:26 PM
1,2,4-Trimethylbenzene	ND		1.0	µg/L	1	6/9/2016 02:26 PM
1,2-Dibromo-3-chloropropane	ND		1.0	µg/L	1	6/9/2016 02:26 PM
1,2-Dibromoethane	ND		1.0	µg/L	1	6/9/2016 02:26 PM
1,2-Dichlorobenzene	ND		1.0	µg/L	1	6/9/2016 02:26 PM
1,2-Dichloroethane	ND		1.0	µg/L	1	6/9/2016 02:26 PM
1,2-Dichloropropane	ND		1.0	µg/L	1	6/9/2016 02:26 PM
1,3,5-Trimethylbenzene	ND		1.0	µg/L	1	6/9/2016 02:26 PM
1,3-Dichlorobenzene	ND		1.0	µg/L	1	6/9/2016 02:26 PM
1,4-Dichlorobenzene	ND		1.0	µg/L	1	6/9/2016 02:26 PM
2-Butanone	ND		5.0	µg/L	1	6/9/2016 02:26 PM
2-Hexanone	ND		5.0	µg/L	1	6/9/2016 02:26 PM
2-Methylnaphthalene	ND		5.0	µg/L	1	6/9/2016 02:26 PM
4-Methyl-2-pentanone	ND		1.0	µg/L	1	6/9/2016 02:26 PM
Acetone	ND		10	µg/L	1	6/9/2016 02:26 PM
Acrylonitrile	ND		1.0	µg/L	1	6/9/2016 02:26 PM
Benzene	ND		1.0	µg/L	1	6/9/2016 02:26 PM
Bromochloromethane	ND		1.0	µg/L	1	6/9/2016 02:26 PM
Bromodichloromethane	ND		1.0	µg/L	1	6/9/2016 02:26 PM
Bromoform	ND		1.0	µg/L	1	6/9/2016 02:26 PM
Bromomethane	ND		1.0	µg/L	1	6/9/2016 02:26 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *10-Jun-16*

Client: Merit Energy
Project: ECT (Hartland - 13223 Lone Tree Rd) **Work Order:** 1606480
Sample ID: 13223 Lone Tree Rd **Lab ID:** 1606480-01
Collection Date: 6/7/2016 07:16 AM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Carbon disulfide	ND		1.0	µg/L	1	6/9/2016 02:26 PM
Carbon tetrachloride	ND		1.0	µg/L	1	6/9/2016 02:26 PM
Chlorobenzene	ND		1.0	µg/L	1	6/9/2016 02:26 PM
Chloroethane	ND		1.0	µg/L	1	6/9/2016 02:26 PM
Chloroform	ND		1.0	µg/L	1	6/9/2016 02:26 PM
Chloromethane	ND		1.0	µg/L	1	6/9/2016 02:26 PM
cis-1,2-Dichloroethene	ND		1.0	µg/L	1	6/9/2016 02:26 PM
cis-1,3-Dichloropropene	ND		1.0	µg/L	1	6/9/2016 02:26 PM
Dibromochloromethane	ND		1.0	µg/L	1	6/9/2016 02:26 PM
Dibromomethane	ND		1.0	µg/L	1	6/9/2016 02:26 PM
Dichlorodifluoromethane	ND		1.0	µg/L	1	6/9/2016 02:26 PM
Diethyl ether	ND		1.0	µg/L	1	6/9/2016 02:26 PM
Ethylbenzene	ND		1.0	µg/L	1	6/9/2016 02:26 PM
Hexachloroethane	ND		1.0	µg/L	1	6/9/2016 02:26 PM
Isopropylbenzene	ND		1.0	µg/L	1	6/9/2016 02:26 PM
m,p-Xylene	ND		2.0	µg/L	1	6/9/2016 02:26 PM
Methyl iodide	ND		1.0	µg/L	1	6/9/2016 02:26 PM
Methyl tert-butyl ether	ND		1.0	µg/L	1	6/9/2016 02:26 PM
Methylene chloride	ND		5.0	µg/L	1	6/9/2016 02:26 PM
Naphthalene	ND		5.0	µg/L	1	6/9/2016 02:26 PM
n-Propylbenzene	ND		1.0	µg/L	1	6/9/2016 02:26 PM
o-Xylene	ND		1.0	µg/L	1	6/9/2016 02:26 PM
Styrene	ND		1.0	µg/L	1	6/9/2016 02:26 PM
Tetrachloroethene	ND		1.0	µg/L	1	6/9/2016 02:26 PM
Toluene	ND		1.0	µg/L	1	6/9/2016 02:26 PM
trans-1,2-Dichloroethene	ND		1.0	µg/L	1	6/9/2016 02:26 PM
trans-1,3-Dichloropropene	ND		1.0	µg/L	1	6/9/2016 02:26 PM
trans-1,4-Dichloro-2-butene	ND		2.0	µg/L	1	6/9/2016 02:26 PM
Trichloroethene	ND		1.0	µg/L	1	6/9/2016 02:26 PM
Trichlorofluoromethane	ND		1.0	µg/L	1	6/9/2016 02:26 PM
Vinyl acetate	ND		1.0	µg/L	1	6/9/2016 02:26 PM
Vinyl chloride	ND		1.0	µg/L	1	6/9/2016 02:26 PM
Xylenes, Total	ND		3.0	µg/L	1	6/9/2016 02:26 PM
Surr: 1,2-Dichloroethane-d4	*104*		*75-120*	*%REC*	1	6/9/2016 02:26 PM
Surr: 4-Bromofluorobenzene	*90.6*		*80-110*	*%REC*	1	6/9/2016 02:26 PM
Surr: Dibromofluoromethane	*98.4*		*85-115*	*%REC*	1	6/9/2016 02:26 PM
Surr: Toluene-d8	*97.5*		*85-110*	*%REC*	1	6/9/2016 02:26 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 10-Jun-16

Client: Merit Energy
Project: ECT (Hartland - 13223 Lone Tree Rd)
Work Order: 1606480

Case Narrative

Batch R189219 Sample VLCSW1-160609 The LCS recovery for volatile compound Methyl Iodide was above the upper control limit. All the sample results in the batch were non-detect. No qualification is necessary for this analyte.

Batch R189219 The MS/MSD data for Volatiles is not related to this project's sample. No data requires qualification.

ALS Group USA, Corp

Date: 10-Jun-16

Client: Merit Energy

Work Order: 1606480

Project: ECT (Hartland - 13223 Lone Tree Rd)

QC BATCH REPORT

Batch ID: **87107** Instrument ID: **SVMS8** Method: **SW846 8270D**

MBLK Sample ID: **SBLKW1-87107-87107** Units: **µg/L** Analysis Date: **6/9/2016 03:25 PM**

Client ID: Run ID: **SVMS8_160609A** SeqNo: **3870197** Prep Date: **6/9/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Diisopropanolamine	ND	50								
Sulfolane	ND	10								
Surr: 2,4,6-Tribromophenol	*21.75*	0	*50*	0	*43.5*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*21.56*	0	*50*	0	*43.1*	*32-100*	0			
Surr: 2-Fluorophenol	*16.37*	0	*50*	0	*32.7*	*22-59*	0			
Surr: 4-Terphenyl-d14	*35.69*	0	*50*	0	*71.4*	*23-112*	0			
Surr: Nitrobenzene-d5	*28.03*	0	*50*	0	*56.1*	*31-93*	0			
Surr: Phenol-d6	*7.63*	0	*50*	0	*15.3*	*13-36*	0			

LCS Sample ID: **SLCSW1-87107-87107** Units: **µg/L** Analysis Date: **6/9/2016 03:45 PM**

Client ID: Run ID: **SVMS8_160609A** SeqNo: **3870198** Prep Date: **6/9/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Diisopropanolamine	5.75	50	100	0	5.75	5-40	0			
Sulfolane	54.53	10	100	0	54.5	30-100	0			
Surr: 2,4,6-Tribromophenol	*27.91*	0	*50*	0	*55.8*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*28.51*	0	*50*	0	*57*	*32-100*	0			
Surr: 2-Fluorophenol	*19.32*	0	*50*	0	*38.6*	*22-59*	0			
Surr: 4-Terphenyl-d14	*37.7*	0	*50*	0	*75.4*	*23-112*	0			
Surr: Nitrobenzene-d5	*35.21*	0	*50*	0	*70.4*	*31-93*	0			
Surr: Phenol-d6	*10.02*	0	*50*	0	*20*	*13-36*	0			

MS Sample ID: **1606476-01B MS** Units: **µg/L** Analysis Date: **6/9/2016 06:36 PM**

Client ID: Run ID: **SVMS8_160609A** SeqNo: **3870199** Prep Date: **6/9/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Diisopropanolamine	14.01	53	106.4	0	13.2	5-40	0			
Sulfolane	65.27	11	106.4	0	61.4	30-100	0			
Surr: 2,4,6-Tribromophenol	*36.05*	0	*53.19*	0	*67.8*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*31.76*	0	*53.19*	0	*59.7*	*32-100*	0			
Surr: 2-Fluorophenol	*20.45*	0	*53.19*	0	*38.4*	*22-59*	0			
Surr: 4-Terphenyl-d14	*38.93*	0	*53.19*	0	*73.2*	*23-112*	0			
Surr: Nitrobenzene-d5	*38.12*	0	*53.19*	0	*71.7*	*31-93*	0			
Surr: Phenol-d6	*10.87*	0	*53.19*	0	*20.4*	*13-36*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606480
Project: ECT (Hartland - 13223 Lone Tree Rd)

QC BATCH REPORT

Batch ID: **87107** Instrument ID: **SVMS8** Method: **SW846 8270D**

DUP Sample ID: **1606478-01B DUP** Units: **µg/L** Analysis Date: **6/9/2016 07:16 PM**

Client ID: Run ID: **SVMS8_160609A** SeqNo: **3870201** Prep Date: **6/9/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Diisopropanolamine	ND	53	0	0	0		0	0	30	
Sulfolane	ND	11	0	0	0		0	0	30	
Surr: 2,4,6-Tribromophenol	*32.53*	0	*53.02*	0	*61.4*	*38-115*	31.66	*2.72*	*40*	
Surr: 2-Fluorobiphenyl	*29.9*	0	*53.02*	0	*56.4*	*32-100*	27.39	*8.78*	*40*	
Surr: 2-Fluorophenol	*18.87*	0	*53.02*	0	*35.6*	*22-59*	16.97	*10.6*	*40*	
Surr: 4-Terphenyl-d14	*35.97*	0	*53.02*	0	*67.8*	*23-112*	37.85	*5.09*	*40*	
Surr: Nitrobenzene-d5	*35.12*	0	*53.02*	0	*66.2*	*31-93*	32.88	*6.59*	*40*	
Surr: Phenol-d6	*9.3*	0	*53.02*	0	*17.5*	*13-36*	8.71	*6.55*	*40*	

The following samples were analyzed in this batch: 1606480-01B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606480
Project: ECT (Hartland - 13223 Lone Tree Rd)

QC BATCH REPORT

Batch ID: **R189219** Instrument ID: **VMS10** Method: **SW8260B**

MBLK Sample ID: **VBLKW1-160609-R189219** Units: **µg/L** Analysis Date: **6/9/2016 01:38 PM**
Client ID: Run ID: **VMS10_160609A** SeqNo: **3868762** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
1,1,2-Trichlorotrifluoroethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2,3-Trichloropropane	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	1.0								
1,2-Dibromoethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,2-Dichloroethane	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
2-Butanone	ND	5.0								
2-Hexanone	ND	5.0								
2-Methylnaphthalene	ND	5.0								
4-Methyl-2-pentanone	ND	1.0								
Acetone	ND	10								
Acrylonitrile	ND	1.0								
Benzene	ND	1.0								
Bromochloromethane	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	1.0								
Carbon disulfide	ND	1.0								
Carbon tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	ND	1.0								
cis-1,2-Dichloroethene	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
Diethyl ether	ND	1.0								
Ethylbenzene	ND	1.0								

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

QC BATCH REPORT

Batch ID: **R189219** Instrument ID: **VMS10** Method: **SW8260B**

Hexachloroethane	ND	1.0					
Isopropylbenzene	ND	1.0					
m,p-Xylene	ND	2.0					
Methyl iodide	ND	1.0					
Methyl tert-butyl ether	ND	1.0					
Methylene chloride	ND	5.0					
Naphthalene	ND	5.0					
n-Propylbenzene	ND	1.0					
o-Xylene	ND	1.0					
Styrene	ND	1.0					
Tetrachloroethene	ND	1.0					
Toluene	ND	1.0					
trans-1,2-Dichloroethene	ND	1.0					
trans-1,3-Dichloropropene	ND	1.0					
trans-1,4-Dichloro-2-butene	ND	2.0					
Trichloroethene	ND	1.0					
Trichlorofluoromethane	ND	1.0					
Vinyl acetate	ND	1.0					
Vinyl chloride	ND	1.0					
Xylenes, Total	ND	3.0					
Surr: 1,2-Dichloroethane-d4	*20.49*	0	*20*	0	*102*	*75-120*	0
Surr: 4-Bromofluorobenzene	*18.47*	0	*20*	0	*92.4*	*80-110*	0
Surr: Dibromofluoromethane	*20*	0	*20*	0	*100*	*85-115*	0
Surr: Toluene-d8	*19.62*	0	*20*	0	*98.1*	*85-110*	0

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606480
Project: ECT (Hartland - 13223 Lone Tree Rd)

QC BATCH REPORT

Batch ID: **R189219** Instrument ID: **VMS10** Method: **SW8260B**

LCS Sample ID: **VLCSW1-160609-R189219** Units: **µg/L** Analysis Date: **6/9/2016 10:58 AM**
Client ID: Run ID: **VMS10_160609A** SeqNo: **3868761** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	20.21	1.0	20	0	101	80-130	0			
1,1,1-Trichloroethane	21.58	1.0	20	0	108	75-130	0			
1,1,2,2-Tetrachloroethane	19.6	1.0	20	0	98	75-130	0			
1,1,2-Trichloroethane	20.68	1.0	20	0	103	75-125	0			
1,1-Dichloroethane	20.39	1.0	20	0	102	75-133	0			
1,1-Dichloroethene	21.68	1.0	20	0	108	70-145	0			
1,2,3-Trichloropropane	19.27	1.0	20	0	96.4	75-125	0			
1,2,4-Trichlorobenzene	21.03	1.0	20	0	105	70-135	0			
1,2,4-Trimethylbenzene	21.28	1.0	20	0	106	75-130	0			
1,2-Dibromo-3-chloropropane	15.02	1.0	20	0	75.1	60-130	0			
1,2-Dibromoethane	22.66	1.0	20	0	113	80-150	0			
1,2-Dichlorobenzene	20.98	1.0	20	0	105	70-130	0			
1,2-Dichloroethane	19.47	1.0	20	0	97.4	78-125	0			
1,2-Dichloropropane	20.58	1.0	20	0	103	75-125	0			
1,3,5-Trimethylbenzene	21.96	1.0	20	0	110	75-130	0			
1,3-Dichlorobenzene	21.37	1.0	20	0	107	75-130	0			
1,4-Dichlorobenzene	21.12	1.0	20	0	106	75-130	0			
2-Butanone	16.22	5.0	20	0	81.1	55-150	0			
2-Hexanone	16.77	5.0	20	0	83.8	60-135	0			
4-Methyl-2-pentanone	22.16	1.0	20	0	111	77-178	0			
Acetone	14.1	10	20	0	70.5	60-160	0			
Acrylonitrile	15.91	1.0	20	0	79.6	60-140	0			
Benzene	20.51	1.0	20	0	103	85-125	0			
Bromochloromethane	20.81	1.0	20	0	104	75-130	0			
Bromodichloromethane	20.49	1.0	20	0	102	75-125	0			
Bromoform	16.04	1.0	20	0	80.2	60-125	0			
Bromomethane	23.77	1.0	20	0	119	30-185	0			
Carbon disulfide	20.48	1.0	20	0	102	60-165	0			
Carbon tetrachloride	19.28	1.0	20	0	96.4	65-140	0			
Chlorobenzene	21.38	1.0	20	0	107	80-120	0			
Chloroethane	17.38	1.0	20	0	86.9	50-140	0			
Chloroform	19.58	1.0	20	0	97.9	80-130	0			
Chloromethane	19.42	1.0	20	0	97.1	50-130	0			
cis-1,2-Dichloroethene	20.11	1.0	20	0	101	75-134	0			
cis-1,3-Dichloropropene	18.96	1.0	20	0	94.8	70-130	0			
Dibromochloromethane	16.82	1.0	20	0	84.1	60-115	0			
Dibromomethane	20.77	1.0	20	0	104	85-125	0			
Dichlorodifluoromethane	18.28	1.0	20	0	91.4	20-120	0			
Ethylbenzene	22.59	1.0	20	0	113	85-125	0			
Hexachloroethane	15.37	1.0	20	0	76.8	50-124	0			
Isopropylbenzene	21.69	1.0	20	0	108	80-127	0			
m,p-Xylene	46.1	2.0	40	0	115	75-130	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

QC BATCH REPORT

Batch ID: **R189219** Instrument ID: **VMS10** Method: **SW8260B**

Methyl iodide	34.03	1.0	20	0	170	60-160	0	S
Methyl tert-butyl ether	16.14	1.0	20	0	80.7	80-130	0	
Methylene chloride	22.58	5.0	20	0	113	75-140	0	
Naphthalene	18.11	5.0	20	0	90.6	55-160	0	
n-Propylbenzene	23.04	1.0	20	0	115	78-120	0	
o-Xylene	22.43	1.0	20	0	112	80-125	0	
Styrene	21.5	1.0	20	0	108	85-125	0	
Tetrachloroethene	21.91	1.0	20	0	110	77-138	0	
Toluene	21.48	1.0	20	0	107	85-125	0	
trans-1,2-Dichloroethene	19.45	1.0	20	0	97.2	80-140	0	
trans-1,3-Dichloropropene	17.2	1.0	20	0	86	81-123	0	
trans-1,4-Dichloro-2-butene	14.3	2.0	20	0	71.5	46-118	0	
Trichloroethene	20.6	1.0	20	0	103	84-130	0	
Trichlorofluoromethane	18.89	1.0	20	0	94.4	60-140	0	
Vinyl chloride	21.52	1.0	20	0	108	50-136	0	
Xylenes, Total	68.53	3.0	60	0	114	80-126	0	
Surr: 1,2-Dichloroethane-d4	*19.12*	0	*20*	0	*95.6*	*75-120*	0	
Surr: 4-Bromofluorobenzene	*20.33*	0	*20*	0	*102*	*80-110*	0	
Surr: Dibromofluoromethane	*19.89*	0	*20*	0	*99.4*	*85-115*	0	
Surr: Toluene-d8	*20.23*	0	*20*	0	*101*	*85-110*	0	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606480
Project: ECT (Hartland - 13223 Lone Tree Rd)

QC BATCH REPORT

Batch ID: **R189219** Instrument ID: **VMS10** Method: **SW8260B**

MS Sample ID: **1606558-02A MS** Units: **µg/L** Analysis Date: **6/9/2016 08:55 PM**

Client ID: Run ID: **VMS10_160609A** SeqNo: **3868779** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	19.91	1.0	20	0	99.6	80-130	0			
1,1,1-Trichloroethane	22.74	1.0	20	0	114	75-130	0			
1,1,2,2-Tetrachloroethane	20.1	1.0	20	0	100	75-130	0			
1,1,2-Trichloroethane	20.39	1.0	20	0	102	75-125	0			
1,1-Dichloroethane	20.78	1.0	20	0	104	75-133	0			
1,1-Dichloroethene	22.55	1.0	20	0	113	70-145	0			
1,2,3-Trichloropropane	19.76	1.0	20	0	98.8	75-125	0			
1,2,4-Trichlorobenzene	17.66	1.0	20	0	88.3	70-135	0			
1,2,4-Trimethylbenzene	20.34	1.0	20	0	102	75-130	0			
1,2-Dibromo-3-chloropropane	15.54	1.0	20	0	77.7	60-130	0			
1,2-Dibromoethane	21.99	1.0	20	0	110	80-150	0			
1,2-Dichlorobenzene	19.41	1.0	20	0	97	70-130	0			
1,2-Dichloroethane	19.69	1.0	20	0	98.4	78-125	0			
1,2-Dichloropropane	20.47	1.0	20	0	102	75-125	0			
1,3,5-Trimethylbenzene	20.95	1.0	20	0	105	75-130	0			
1,3-Dichlorobenzene	19.66	1.0	20	0	98.3	75-130	0			
1,4-Dichlorobenzene	19.42	1.0	20	0	97.1	75-130	0			
2-Butanone	17.13	5.0	20	0	85.6	55-150	0			
2-Hexanone	17.53	5.0	20	0	87.6	60-135	0			
4-Methyl-2-pentanone	23.94	1.0	20	0	120	77-178	0			
Acetone	15.73	10	20	0	78.6	60-160	0			
Acrylonitrile	16.08	1.0	20	0	80.4	60-140	0			
Benzene	20.5	1.0	20	0	102	85-125	0			
Bromochloromethane	20.06	1.0	20	0	100	75-130	0			
Bromodichloromethane	20.33	1.0	20	0	102	75-125	0			
Bromoform	16.08	1.0	20	0	80.4	60-125	0			
Bromomethane	13.06	1.0	20	0	65.3	30-185	0			
Carbon disulfide	19.45	1.0	20	0	97.2	60-165	0			
Carbon tetrachloride	20.6	1.0	20	0	103	65-140	0			
Chlorobenzene	20.58	1.0	20	0	103	80-120	0			
Chloroethane	17.32	1.0	20	0	86.6	50-140	0			
Chloroform	19.49	1.0	20	0	97.4	80-130	0			
Chloromethane	15.54	1.0	20	0	77.7	50-130	0			
cis-1,2-Dichloroethene	19.51	1.0	20	0	97.6	75-134	0			
cis-1,3-Dichloropropene	17.65	1.0	20	0	88.2	70-130	0			
Dibromochloromethane	16.56	1.0	20	0	82.8	60-115	0			
Dibromomethane	21.4	1.0	20	0	107	85-125	0			
Dichlorodifluoromethane	20.04	1.0	20	0	100	20-120	0			
Ethylbenzene	21.47	1.0	20	0	107	85-125	0			
Hexachloroethane	14.27	1.0	20	0	71.4	50-124	0			
Isopropylbenzene	20.87	1.0	20	0	104	80-127	0			
m,p-Xylene	44.4	2.0	40	0	111	75-130	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

QC BATCH REPORT

Batch ID: **R189219** Instrument ID: **VMS10** Method: **SW8260B**

Methyl iodide	23.54	1.0	20	0	118	60-160	0	
Methyl tert-butyl ether	14.86	1.0	20	0	74.3	80-130	0	S
Methylene chloride	21.31	5.0	20	0	107	75-140	0	
Naphthalene	16.44	5.0	20	0	82.2	55-160	0	
n-Propylbenzene	22.06	1.0	20	0	110	78-120	0	
o-Xylene	21.17	1.0	20	0	106	80-125	0	
Styrene	20.41	1.0	20	0	102	85-125	0	
Tetrachloroethene	21.47	1.0	20	0	107	77-138	0	
Toluene	20.64	1.0	20	0	103	85-125	0	
trans-1,2-Dichloroethene	18.86	1.0	20	0	94.3	80-140	0	
trans-1,3-Dichloropropene	15.89	1.0	20	0	79.4	81-123	0	S
trans-1,4-Dichloro-2-butene	13.66	2.0	20	0	68.3	46-118	0	
Trichloroethene	20.83	1.0	20	0	104	84-130	0	
Trichlorofluoromethane	21.01	1.0	20	0	105	60-140	0	
Vinyl chloride	20.56	1.0	20	0	103	50-136	0	
Xylenes, Total	65.57	3.0	60	0	109	80-126	0	
Surr: 1,2-Dichloroethane-d4	*19.77*	0	*20*	0	*98.8*	*75-120*	0	
Surr: 4-Bromofluorobenzene	*20.44*	0	*20*	0	*102*	*80-110*	0	
Surr: Dibromofluoromethane	*20.89*	0	*20*	0	*104*	*85-115*	0	
Surr: Toluene-d8	*20.2*	0	*20*	0	*101*	*85-110*	0	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606480
Project: ECT (Hartland - 13223 Lone Tree Rd)

QC BATCH REPORT

Batch ID: **R189219** Instrument ID: **VMS10** Method: **SW8260B**

MSD Sample ID: **1606558-02A MSD** Units: **µg/L** Analysis Date: **6/9/2016 09:20 PM**

Client ID: Run ID: **VMS10_160609A** SeqNo: **3868780** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	20.11	1.0	20	0	101	80-130	19.91	1	30	
1,1,1-Trichloroethane	22.9	1.0	20	0	114	75-130	22.74	0.701	30	
1,1,2,2-Tetrachloroethane	20.56	1.0	20	0	103	75-130	20.1	2.26	30	
1,1,2-Trichloroethane	20.55	1.0	20	0	103	75-125	20.39	0.782	30	
1,1-Dichloroethane	20.95	1.0	20	0	105	75-133	20.78	0.815	30	
1,1-Dichloroethene	22.67	1.0	20	0	113	70-145	22.55	0.531	30	
1,2,3-Trichloropropane	20.16	1.0	20	0	101	75-125	19.76	2	30	
1,2,4-Trichlorobenzene	18.68	1.0	20	0	93.4	70-135	17.66	5.61	30	
1,2,4-Trimethylbenzene	20.5	1.0	20	0	102	75-130	20.34	0.784	30	
1,2-Dibromo-3-chloropropane	15.86	1.0	20	0	79.3	60-130	15.54	2.04	30	
1,2-Dibromoethane	22.75	1.0	20	0	114	80-150	21.99	3.4	30	
1,2-Dichlorobenzene	19.86	1.0	20	0	99.3	70-130	19.41	2.29	30	
1,2-Dichloroethane	19.98	1.0	20	0	99.9	78-125	19.69	1.46	30	
1,2-Dichloropropane	21.02	1.0	20	0	105	75-125	20.47	2.65	30	
1,3,5-Trimethylbenzene	21.29	1.0	20	0	106	75-130	20.95	1.61	30	
1,3-Dichlorobenzene	20.35	1.0	20	0	102	75-130	19.66	3.45	30	
1,4-Dichlorobenzene	20.02	1.0	20	0	100	75-130	19.42	3.04	30	
2-Butanone	17.28	5.0	20	0	86.4	55-150	17.13	0.872	30	
2-Hexanone	18.94	5.0	20	0	94.7	60-135	17.53	7.73	30	
4-Methyl-2-pentanone	24.55	1.0	20	0	123	77-178	23.94	2.52	30	
Acetone	18.66	10	20	0	93.3	60-160	15.73	17	30	
Acrylonitrile	17.19	1.0	20	0	86	60-140	16.08	6.67	30	
Benzene	20.99	1.0	20	0	105	85-125	20.5	2.36	30	
Bromochloromethane	20.41	1.0	20	0	102	75-130	20.06	1.73	30	
Bromodichloromethane	20.96	1.0	20	0	105	75-125	20.33	3.05	30	
Bromoform	16.62	1.0	20	0	83.1	60-125	16.08	3.3	30	
Bromomethane	13.9	1.0	20	0	69.5	30-185	13.06	6.23	30	
Carbon disulfide	19.92	1.0	20	0	99.6	60-165	19.45	2.39	30	
Carbon tetrachloride	21.29	1.0	20	0	106	65-140	20.6	3.29	30	
Chlorobenzene	20.77	1.0	20	0	104	80-120	20.58	0.919	30	
Chloroethane	17.91	1.0	20	0	89.6	50-140	17.32	3.35	30	
Chloroform	19.79	1.0	20	0	99	80-130	19.49	1.53	30	
Chloromethane	16.15	1.0	20	0	80.8	50-130	15.54	3.85	30	
cis-1,2-Dichloroethene	19.48	1.0	20	0	97.4	75-134	19.51	0.154	30	
cis-1,3-Dichloropropene	18.32	1.0	20	0	91.6	70-130	17.65	3.73	30	
Dibromochloromethane	16.55	1.0	20	0	82.8	60-115	16.56	0.0604	30	
Dibromomethane	21.06	1.0	20	0	105	85-125	21.4	1.6	30	
Dichlorodifluoromethane	20.32	1.0	20	0	102	20-120	20.04	1.39	30	
Ethylbenzene	22.03	1.0	20	0	110	85-125	21.47	2.57	30	
Hexachloroethane	14.86	1.0	20	0	74.3	50-124	14.27	4.05	30	
Isopropylbenzene	21.45	1.0	20	0	107	80-127	20.87	2.74	30	
m,p-Xylene	45.43	2.0	40	0	114	75-130	44.4	2.29	30	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606480
Project: ECT (Hartland - 13223 Lone Tree Rd)

QC BATCH REPORT

Batch ID: **R189219** Instrument ID: **VMS10** Method: **SW8260B**

Methyl iodide	26.31	1.0	20	0	132	60-160	23.54	11.1	30	
Methyl tert-butyl ether	15.3	1.0	20	0	76.5	80-130	14.86	2.92	30	S
Methylene chloride	21.12	5.0	20	0	106	75-140	21.31	0.896	30	
Naphthalene	17.63	5.0	20	0	88.2	55-160	16.44	6.99	30	
n-Propylbenzene	22.37	1.0	20	0	112	78-120	22.06	1.4	30	
o-Xylene	21.75	1.0	20	0	109	80-125	21.17	2.7	30	
Styrene	20.92	1.0	20	0	105	85-125	20.41	2.47	30	
Tetrachloroethene	22.11	1.0	20	0	111	77-138	21.47	2.94	30	
Toluene	21.01	1.0	20	0	105	85-125	20.64	1.78	30	
trans-1,2-Dichloroethene	19.3	1.0	20	0	96.5	80-140	18.86	2.31	30	
trans-1,3-Dichloropropene	16.14	1.0	20	0	80.7	81-123	15.89	1.56	30	S
trans-1,4-Dichloro-2-butene	14.04	2.0	20	0	70.2	46-118	13.66	2.74	30	
Trichloroethene	21.45	1.0	20	0	107	84-130	20.83	2.93	30	
Trichlorofluoromethane	20.7	1.0	20	0	104	60-140	21.01	1.49	30	
Vinyl chloride	21.1	1.0	20	0	106	50-136	20.56	2.59	30	
Xylenes, Total	67.18	3.0	60	0	112	80-126	65.57	2.43	30	
Surr: 1,2-Dichloroethane-d4	*20.03*	0	*20*	0	*100*	*75-120*	19.77	*1.31*	*30*	
Surr: 4-Bromofluorobenzene	*20.25*	0	*20*	0	*101*	*80-110*	20.44	*0.934*	*30*	
Surr: Dibromofluoromethane	*20.68*	0	*20*	0	*103*	*85-115*	20.89	*1.01*	*30*	
Surr: Toluene-d8	*20.09*	0	*20*	0	*100*	*85-110*	20.2	*0.546*	*30*	

The following samples were analyzed in this batch: 1606480-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Group USA, Corp

Date: 10-Jun-16

Client: Merit Energy
Project: ECT (Hartland - 13223 Lone Tree Rd)
WorkOrder: **1606480**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and PQL, sample results may exhibit background or reag contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
µg/L	Micrograms per Liter

ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **MERITENERGY** Date/Time Received: **08-Jun-16 09:30**

Work Order: **1606480** Received by: **KRW**

Checklist completed by K eith W ierenga 08-Jun-16 Reviewed by: Gary Byar 08-Jun-16

eSignature / Date / eSignature / Date

Matrices: Water

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	2.4/2.4 C	SR2	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	6/8/2016 2:41:25 PM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:			

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction

ALS Environmental

Cincinnati, OH +1 513 733 5336
Everett, WA +1 425 356 2600
Fort Collins, CO +1 970 490 1511
Holland, MI +1 616 399 6070
Houston, TX +1 281 530 5656
Middletown, PA +1 717 944 5541
Spring City, PA +1 610 948 4903
Salt Lake City, UT +1 801 266 7700
South Charleston, WV +1 304 356 3168
York, PA +1 717 505 5280

Chain of Custody Form

Page 1 of 1

COC ID: 16629

ALS Project Manager: Gs Bush | ALS Work Order #: 1606480

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	Hartford 36 Gas Plant	A	Sulfolane
Work Order		Project Number	13-0685-2000	B	DIPA
Company Name	ECT, Inc.	Bill To Company	MEC	C	Full VOCs
Send Report To	Jeremy Lewandowski	Invoice Attn	Sean Craven	D	
Address	3394 Veterans Dr.	Address	1510 Thomas Rd	E	
				F	
City/State/Zip	TC, MI 49684	City/State/Zip	Kalkaska, MI	G	
Phone	231-946-8200	Phone	231-258-6369	H	
Fax	—	Fax	—	I	
e-Mail Address	jlewandowski@ectinc.com	e-Mail Address	sean.craven@contango.co	J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	13223 Lone Tree Rd	6/7/16	7:16a	GW	—	4	8	8	1,8								
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9					ALS PROJ: MCALTENRICH-MISC												
10																	

Sampler(s) Please Print & Sign: Jeremy Lewandowski

Shipment Method:

Required Turnaround Time: (Check Box) ☒ Other 3 day ☐ STD 10 Wk Days ☐ 5 Wk Days ☐ 2 Wk Days ☐ 24 Hour

Results Due Date:

Relinquished by: Date: 6/7/16 Time: 2:00p Received by:

Relinquished by: Date: 6/7/16 Time: 1630 Received by (Laboratory): 6/8/16 0930

Logged by (Laboratory): Ke Date: 6/8/16 Time: 1440 Checked by (Laboratory): GRB

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Notes:

Cooler ID	Cooler Temp
	24°C

QC Package: (Check One Box Below)
☒ Level II Std QC ☐ TRRP Checklist
☐ Level III Std QC/Raw Data ☐ TRRP Level IV
☐ Level IV SW846/CLP
☐ Other

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

ORIGIN ID:TVCA (231) 421-3204
GARY BYAR
ALS ENVIRONMENTAL
781 INDUSTRIAL CIRCLE
UNIT #3
TRAVERSE CITY, MI 49686
UNITED STATES US

SHIP DATE: 07JUN16
ACTWGT: 42.50 LB
CAD: 2284840/NET3730
DIMS: 14x26x15 IN

BILL SENDER

TO SAMPLE RECEIVING
ALS LABORATORY GROUP
3352 128TH AVENUE

HOLLAND MI 49424
(616) 399-6070 REF: ALS - TC
INV:
PO: DEPT:

540J230807Z7F

FedEx Express

FedEx Ship Manager - Print Your Label(s)

3 of 4

WED - 08 JUN 3:00P
STANDARD OVERNIGHT

MPS# 0263 7764 6604 8920
Mstr# 7764 6604 8437

0201

49424
MI-US GRR

68 HLMA

ECT - TC

Return to:
ALS Environmental
781 Industrial Cir Ste #3
Traverse City, MI 49686

#1 OF 2

CUSTODY SEAL
Seal Broken By:
Date:
Time: 1630
Date: 6-7-16
Name: S. Byar
Company: ALS-TC

ALS Environmental
3352 128th Avenue
Holland, Michigan 49424
Tel. +1 616 399 6070
Fax. +1 616 399 6185

10-Jun-2016

Sean Craven
Merit Energy
1510 Thomas Rd
PO Box 910
Kalkaska, MI 49646

Re: **ECT (Hartland - 13247 Lone Tree Rd)** Work Order: **1606484**

Dear Sean,

ALS Environmental received 1 sample on 08-Jun-2016 09:30 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with NELAP standard requirements and QC results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 19.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

Gary Byar

Electronically approved by: Gary Byar

Gary Byar
Project Manager

Certificate No: MI: 0022

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185
ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

ALS Group USA, Corp

Date: 10-Jun-16

Client: Merit Energy
Project: ECT (Hartland - 13247 Lone Tree Rd)
Work Order: **1606484**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1606484-01	13247 Lone Tree Rd	Water		6/7/2016 07:54	6/8/2016 09:30	☐

ALS Group USA, Corp

Date: *10-Jun-16*

Client: Merit Energy
Project: ECT (Hartland - 13247 Lone Tree Rd) **Work Order:** 1606484
Sample ID: 13247 Lone Tree Rd **Lab ID:** 1606484-01
Collection Date: 6/7/2016 07:54 AM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW846 8270D**		Prep: SW3510 / 6/9/16	Analyst: **RM**
Diisopropanolamine	ND		50	µg/L	1	6/9/2016 08:58 PM
Sulfolane	ND		10	µg/L	1	6/9/2016 08:58 PM
Surr: 2,4,6-Tribromophenol	*56.7*		*38-115*	*%REC*	1	6/9/2016 08:58 PM
Surr: 2-Fluorobiphenyl	*50.6*		*32-100*	*%REC*	1	6/9/2016 08:58 PM
Surr: 2-Fluorophenol	*33.5*		*22-59*	*%REC*	1	6/9/2016 08:58 PM
Surr: 4-Terphenyl-d14	*76.3*		*23-112*	*%REC*	1	6/9/2016 08:58 PM
Surr: Nitrobenzene-d5	*58.6*		*31-93*	*%REC*	1	6/9/2016 08:58 PM
Surr: Phenol-d6	*17.1*		*13-36*	*%REC*	1	6/9/2016 08:58 PM
VOLATILE ORGANIC COMPOUNDS			**SW8260B**			Analyst: **AK**
1,1,1,2-Tetrachloroethane	ND		1.0	µg/L	1	6/9/2016 03:15 PM
1,1,1-Trichloroethane	ND		1.0	µg/L	1	6/9/2016 03:15 PM
1,1,2,2-Tetrachloroethane	ND		1.0	µg/L	1	6/9/2016 03:15 PM
1,1,2-Trichloroethane	ND		1.0	µg/L	1	6/9/2016 03:15 PM
1,1,2-Trichlorotrifluoroethane	ND		1.0	µg/L	1	6/9/2016 03:15 PM
1,1-Dichloroethane	ND		1.0	µg/L	1	6/9/2016 03:15 PM
1,1-Dichloroethene	ND		1.0	µg/L	1	6/9/2016 03:15 PM
1,2,3-Trichloropropane	ND		1.0	µg/L	1	6/9/2016 03:15 PM
1,2,4-Trichlorobenzene	ND		1.0	µg/L	1	6/9/2016 03:15 PM
1,2,4-Trimethylbenzene	ND		1.0	µg/L	1	6/9/2016 03:15 PM
1,2-Dibromo-3-chloropropane	ND		1.0	µg/L	1	6/9/2016 03:15 PM
1,2-Dibromoethane	ND		1.0	µg/L	1	6/9/2016 03:15 PM
1,2-Dichlorobenzene	ND		1.0	µg/L	1	6/9/2016 03:15 PM
1,2-Dichloroethane	ND		1.0	µg/L	1	6/9/2016 03:15 PM
1,2-Dichloropropane	ND		1.0	µg/L	1	6/9/2016 03:15 PM
1,3,5-Trimethylbenzene	ND		1.0	µg/L	1	6/9/2016 03:15 PM
1,3-Dichlorobenzene	ND		1.0	µg/L	1	6/9/2016 03:15 PM
1,4-Dichlorobenzene	ND		1.0	µg/L	1	6/9/2016 03:15 PM
2-Butanone	ND		5.0	µg/L	1	6/9/2016 03:15 PM
2-Hexanone	ND		5.0	µg/L	1	6/9/2016 03:15 PM
2-Methylnaphthalene	ND		5.0	µg/L	1	6/9/2016 03:15 PM
4-Methyl-2-pentanone	ND		1.0	µg/L	1	6/9/2016 03:15 PM
Acetone	ND		10	µg/L	1	6/9/2016 03:15 PM
Acrylonitrile	ND		1.0	µg/L	1	6/9/2016 03:15 PM
Benzene	ND		1.0	µg/L	1	6/9/2016 03:15 PM
Bromochloromethane	ND		1.0	µg/L	1	6/9/2016 03:15 PM
Bromodichloromethane	ND		1.0	µg/L	1	6/9/2016 03:15 PM
Bromoform	ND		1.0	µg/L	1	6/9/2016 03:15 PM
Bromomethane	ND		1.0	µg/L	1	6/9/2016 03:15 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *10-Jun-16*

Client: Merit Energy
Project: ECT (Hartland - 13247 Lone Tree Rd) **Work Order:** 1606484
Sample ID: 13247 Lone Tree Rd **Lab ID:** 1606484-01
Collection Date: 6/7/2016 07:54 AM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Carbon disulfide	ND		1.0	µg/L	1	6/9/2016 03:15 PM
Carbon tetrachloride	ND		1.0	µg/L	1	6/9/2016 03:15 PM
Chlorobenzene	ND		1.0	µg/L	1	6/9/2016 03:15 PM
Chloroethane	ND		1.0	µg/L	1	6/9/2016 03:15 PM
Chloroform	ND		1.0	µg/L	1	6/9/2016 03:15 PM
Chloromethane	ND		1.0	µg/L	1	6/9/2016 03:15 PM
cis-1,2-Dichloroethene	ND		1.0	µg/L	1	6/9/2016 03:15 PM
cis-1,3-Dichloropropene	ND		1.0	µg/L	1	6/9/2016 03:15 PM
Dibromochloromethane	ND		1.0	µg/L	1	6/9/2016 03:15 PM
Dibromomethane	ND		1.0	µg/L	1	6/9/2016 03:15 PM
Dichlorodifluoromethane	ND		1.0	µg/L	1	6/9/2016 03:15 PM
Diethyl ether	ND		1.0	µg/L	1	6/9/2016 03:15 PM
Ethylbenzene	ND		1.0	µg/L	1	6/9/2016 03:15 PM
Hexachloroethane	ND		1.0	µg/L	1	6/9/2016 03:15 PM
Isopropylbenzene	ND		1.0	µg/L	1	6/9/2016 03:15 PM
m,p-Xylene	ND		2.0	µg/L	1	6/9/2016 03:15 PM
Methyl iodide	ND		1.0	µg/L	1	6/9/2016 03:15 PM
Methyl tert-butyl ether	ND		1.0	µg/L	1	6/9/2016 03:15 PM
Methylene chloride	ND		5.0	µg/L	1	6/9/2016 03:15 PM
Naphthalene	ND		5.0	µg/L	1	6/9/2016 03:15 PM
n-Propylbenzene	ND		1.0	µg/L	1	6/9/2016 03:15 PM
o-Xylene	ND		1.0	µg/L	1	6/9/2016 03:15 PM
Styrene	ND		1.0	µg/L	1	6/9/2016 03:15 PM
Tetrachloroethene	ND		1.0	µg/L	1	6/9/2016 03:15 PM
Toluene	ND		1.0	µg/L	1	6/9/2016 03:15 PM
trans-1,2-Dichloroethene	ND		1.0	µg/L	1	6/9/2016 03:15 PM
trans-1,3-Dichloropropene	ND		1.0	µg/L	1	6/9/2016 03:15 PM
trans-1,4-Dichloro-2-butene	ND		2.0	µg/L	1	6/9/2016 03:15 PM
Trichloroethene	ND		1.0	µg/L	1	6/9/2016 03:15 PM
Trichlorofluoromethane	ND		1.0	µg/L	1	6/9/2016 03:15 PM
Vinyl acetate	ND		1.0	µg/L	1	6/9/2016 03:15 PM
Vinyl chloride	ND		1.0	µg/L	1	6/9/2016 03:15 PM
Xylenes, Total	ND		3.0	µg/L	1	6/9/2016 03:15 PM
Surr: 1,2-Dichloroethane-d4	*103*		*75-120*	*%REC*	1	6/9/2016 03:15 PM
Surr: 4-Bromofluorobenzene	*90.5*		*80-110*	*%REC*	1	6/9/2016 03:15 PM
Surr: Dibromofluoromethane	*100*		*85-115*	*%REC*	1	6/9/2016 03:15 PM
Surr: Toluene-d8	*97.6*		*85-110*	*%REC*	1	6/9/2016 03:15 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 10-Jun-16

Client: Merit Energy
Project: ECT (Hartland - 13247 Lone Tree Rd)
Work Order: 1606484

Case Narrative

Batch R189219 Sample VLCSW1-160609 The LCS recovery for volatile compound Methyl Iodide was above the upper control limit. All the sample results in the batch were non-detect. No qualification is necessary for this analyte.

Batch R189219 The MS/MSD data for Volatiles is not related to this project's sample. No data requires qualification.

ALS Group USA, Corp

Date: 10-Jun-16

Client: Merit Energy

Work Order: 1606484

Project: ECT (Hartland - 13247 Lone Tree Rd)

QC BATCH REPORT

Batch ID: **87107** Instrument ID: **SVMS8** Method: **SW846 8270D**

MBLK Sample ID: **SBLKW1-87107-87107** Units: **µg/L** Analysis Date: **6/9/2016 03:25 PM**

Client ID: Run ID: **SVMS8_160609A** SeqNo: **3870197** Prep Date: **6/9/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Diisopropanolamine	ND	50								
Sulfolane	ND	10								
Surr: 2,4,6-Tribromophenol	*21.75*	0	*50*	0	*43.5*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*21.56*	0	*50*	0	*43.1*	*32-100*	0			
Surr: 2-Fluorophenol	*16.37*	0	*50*	0	*32.7*	*22-59*	0			
Surr: 4-Terphenyl-d14	*35.69*	0	*50*	0	*71.4*	*23-112*	0			
Surr: Nitrobenzene-d5	*28.03*	0	*50*	0	*56.1*	*31-93*	0			
Surr: Phenol-d6	*7.63*	0	*50*	0	*15.3*	*13-36*	0			

LCS Sample ID: **SLCSW1-87107-87107** Units: **µg/L** Analysis Date: **6/9/2016 03:45 PM**

Client ID: Run ID: **SVMS8_160609A** SeqNo: **3870198** Prep Date: **6/9/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Diisopropanolamine	5.75	50	100	0	5.75	5-40	0			
Sulfolane	54.53	10	100	0	54.5	30-100	0			
Surr: 2,4,6-Tribromophenol	*27.91*	0	*50*	0	*55.8*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*28.51*	0	*50*	0	*57*	*32-100*	0			
Surr: 2-Fluorophenol	*19.32*	0	*50*	0	*38.6*	*22-59*	0			
Surr: 4-Terphenyl-d14	*37.7*	0	*50*	0	*75.4*	*23-112*	0			
Surr: Nitrobenzene-d5	*35.21*	0	*50*	0	*70.4*	*31-93*	0			
Surr: Phenol-d6	*10.02*	0	*50*	0	*20*	*13-36*	0			

MS Sample ID: **1606476-01B MS** Units: **µg/L** Analysis Date: **6/9/2016 06:36 PM**

Client ID: Run ID: **SVMS8_160609A** SeqNo: **3870199** Prep Date: **6/9/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Diisopropanolamine	14.01	53	106.4	0	13.2	5-40	0			
Sulfolane	65.27	11	106.4	0	61.4	30-100	0			
Surr: 2,4,6-Tribromophenol	*36.05*	0	*53.19*	0	*67.8*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*31.76*	0	*53.19*	0	*59.7*	*32-100*	0			
Surr: 2-Fluorophenol	*20.45*	0	*53.19*	0	*38.4*	*22-59*	0			
Surr: 4-Terphenyl-d14	*38.93*	0	*53.19*	0	*73.2*	*23-112*	0			
Surr: Nitrobenzene-d5	*38.12*	0	*53.19*	0	*71.7*	*31-93*	0			
Surr: Phenol-d6	*10.87*	0	*53.19*	0	*20.4*	*13-36*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606484
Project: ECT (Hartland - 13247 Lone Tree Rd)

QC BATCH REPORT

Batch ID: **87107** Instrument ID: **SVMS8** Method: **SW846 8270D**

DUP Sample ID: **1606478-01B DUP** Units: **µg/L** Analysis Date: **6/9/2016 07:16 PM**

Client ID: Run ID: **SVMS8_160609A** SeqNo: **3870201** Prep Date: **6/9/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Diisopropanolamine	ND	53	0	0	0		0	0	30	
Sulfolane	ND	11	0	0	0		0	0	30	
Surr: 2,4,6-Tribromophenol	*32.53*	0	*53.02*	0	*61.4*	*38-115*	31.66	*2.72*	*40*	
Surr: 2-Fluorobiphenyl	*29.9*	0	*53.02*	0	*56.4*	*32-100*	27.39	*8.78*	*40*	
Surr: 2-Fluorophenol	*18.87*	0	*53.02*	0	*35.6*	*22-59*	16.97	*10.6*	*40*	
Surr: 4-Terphenyl-d14	*35.97*	0	*53.02*	0	*67.8*	*23-112*	37.85	*5.09*	*40*	
Surr: Nitrobenzene-d5	*35.12*	0	*53.02*	0	*66.2*	*31-93*	32.88	*6.59*	*40*	
Surr: Phenol-d6	*9.3*	0	*53.02*	0	*17.5*	*13-36*	8.71	*6.55*	*40*	

The following samples were analyzed in this batch: 1606484-01B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606484
Project: ECT (Hartland - 13247 Lone Tree Rd)

QC BATCH REPORT

Batch ID: **R189219** Instrument ID: **VMS10** Method: **SW8260B**

MBLK Sample ID: **VBLKW1-160609-R189219** Units: **µg/L** Analysis Date: **6/9/2016 01:38 PM**
Client ID: Run ID: **VMS10_160609A** SeqNo: **3868762** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
1,1,2-Trichlorotrifluoroethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2,3-Trichloropropane	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	1.0								
1,2-Dibromoethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,2-Dichloroethane	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
2-Butanone	ND	5.0								
2-Hexanone	ND	5.0								
2-Methylnaphthalene	ND	5.0								
4-Methyl-2-pentanone	ND	1.0								
Acetone	ND	10								
Acrylonitrile	ND	1.0								
Benzene	ND	1.0								
Bromochloromethane	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	1.0								
Carbon disulfide	ND	1.0								
Carbon tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	ND	1.0								
cis-1,2-Dichloroethene	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
Diethyl ether	ND	1.0								
Ethylbenzene	ND	1.0								

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

QC BATCH REPORT

Batch ID: **R189219** Instrument ID: **VMS10** Method: **SW8260B**

Hexachloroethane	ND	1.0					
Isopropylbenzene	ND	1.0					
m,p-Xylene	ND	2.0					
Methyl iodide	ND	1.0					
Methyl tert-butyl ether	ND	1.0					
Methylene chloride	ND	5.0					
Naphthalene	ND	5.0					
n-Propylbenzene	ND	1.0					
o-Xylene	ND	1.0					
Styrene	ND	1.0					
Tetrachloroethene	ND	1.0					
Toluene	ND	1.0					
trans-1,2-Dichloroethene	ND	1.0					
trans-1,3-Dichloropropene	ND	1.0					
trans-1,4-Dichloro-2-butene	ND	2.0					
Trichloroethene	ND	1.0					
Trichlorofluoromethane	ND	1.0					
Vinyl acetate	ND	1.0					
Vinyl chloride	ND	1.0					
Xylenes, Total	ND	3.0					
Surr: 1,2-Dichloroethane-d4	*20.49*	0	*20*	0	*102*	*75-120*	0
Surr: 4-Bromofluorobenzene	*18.47*	0	*20*	0	*92.4*	*80-110*	0
Surr: Dibromofluoromethane	*20*	0	*20*	0	*100*	*85-115*	0
Surr: Toluene-d8	*19.62*	0	*20*	0	*98.1*	*85-110*	0

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606484
Project: ECT (Hartland - 13247 Lone Tree Rd)

QC BATCH REPORT

Batch ID: **R189219** Instrument ID: **VMS10** Method: **SW8260B**

LCS Sample ID: **VLCSW1-160609-R189219** Units: **µg/L** Analysis Date: **6/9/2016 10:58 AM**

Client ID: Run ID: **VMS10_160609A** SeqNo: **3868761** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	20.21	1.0	20	0	101	80-130	0			
1,1,1-Trichloroethane	21.58	1.0	20	0	108	75-130	0			
1,1,2,2-Tetrachloroethane	19.6	1.0	20	0	98	75-130	0			
1,1,2-Trichloroethane	20.68	1.0	20	0	103	75-125	0			
1,1-Dichloroethane	20.39	1.0	20	0	102	75-133	0			
1,1-Dichloroethene	21.68	1.0	20	0	108	70-145	0			
1,2,3-Trichloropropane	19.27	1.0	20	0	96.4	75-125	0			
1,2,4-Trichlorobenzene	21.03	1.0	20	0	105	70-135	0			
1,2,4-Trimethylbenzene	21.28	1.0	20	0	106	75-130	0			
1,2-Dibromo-3-chloropropane	15.02	1.0	20	0	75.1	60-130	0			
1,2-Dibromoethane	22.66	1.0	20	0	113	80-150	0			
1,2-Dichlorobenzene	20.98	1.0	20	0	105	70-130	0			
1,2-Dichloroethane	19.47	1.0	20	0	97.4	78-125	0			
1,2-Dichloropropane	20.58	1.0	20	0	103	75-125	0			
1,3,5-Trimethylbenzene	21.96	1.0	20	0	110	75-130	0			
1,3-Dichlorobenzene	21.37	1.0	20	0	107	75-130	0			
1,4-Dichlorobenzene	21.12	1.0	20	0	106	75-130	0			
2-Butanone	16.22	5.0	20	0	81.1	55-150	0			
2-Hexanone	16.77	5.0	20	0	83.8	60-135	0			
4-Methyl-2-pentanone	22.16	1.0	20	0	111	77-178	0			
Acetone	14.1	10	20	0	70.5	60-160	0			
Acrylonitrile	15.91	1.0	20	0	79.6	60-140	0			
Benzene	20.51	1.0	20	0	103	85-125	0			
Bromochloromethane	20.81	1.0	20	0	104	75-130	0			
Bromodichloromethane	20.49	1.0	20	0	102	75-125	0			
Bromoform	16.04	1.0	20	0	80.2	60-125	0			
Bromomethane	23.77	1.0	20	0	119	30-185	0			
Carbon disulfide	20.48	1.0	20	0	102	60-165	0			
Carbon tetrachloride	19.28	1.0	20	0	96.4	65-140	0			
Chlorobenzene	21.38	1.0	20	0	107	80-120	0			
Chloroethane	17.38	1.0	20	0	86.9	50-140	0			
Chloroform	19.58	1.0	20	0	97.9	80-130	0			
Chloromethane	19.42	1.0	20	0	97.1	50-130	0			
cis-1,2-Dichloroethene	20.11	1.0	20	0	101	75-134	0			
cis-1,3-Dichloropropene	18.96	1.0	20	0	94.8	70-130	0			
Dibromochloromethane	16.82	1.0	20	0	84.1	60-115	0			
Dibromomethane	20.77	1.0	20	0	104	85-125	0			
Dichlorodifluoromethane	18.28	1.0	20	0	91.4	20-120	0			
Ethylbenzene	22.59	1.0	20	0	113	85-125	0			
Hexachloroethane	15.37	1.0	20	0	76.8	50-124	0			
Isopropylbenzene	21.69	1.0	20	0	108	80-127	0			
m,p-Xylene	46.1	2.0	40	0	115	75-130	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

QC BATCH REPORT

Batch ID: **R189219** Instrument ID: **VMS10** Method: **SW8260B**

Methyl iodide	34.03	1.0	20	0	170	60-160	0	S
Methyl tert-butyl ether	16.14	1.0	20	0	80.7	80-130	0	
Methylene chloride	22.58	5.0	20	0	113	75-140	0	
Naphthalene	18.11	5.0	20	0	90.6	55-160	0	
n-Propylbenzene	23.04	1.0	20	0	115	78-120	0	
o-Xylene	22.43	1.0	20	0	112	80-125	0	
Styrene	21.5	1.0	20	0	108	85-125	0	
Tetrachloroethene	21.91	1.0	20	0	110	77-138	0	
Toluene	21.48	1.0	20	0	107	85-125	0	
trans-1,2-Dichloroethene	19.45	1.0	20	0	97.2	80-140	0	
trans-1,3-Dichloropropene	17.2	1.0	20	0	86	81-123	0	
trans-1,4-Dichloro-2-butene	14.3	2.0	20	0	71.5	46-118	0	
Trichloroethene	20.6	1.0	20	0	103	84-130	0	
Trichlorofluoromethane	18.89	1.0	20	0	94.4	60-140	0	
Vinyl chloride	21.52	1.0	20	0	108	50-136	0	
Xylenes, Total	68.53	3.0	60	0	114	80-126	0	
Surr: 1,2-Dichloroethane-d4	*19.12*	0	*20*	0	*95.6*	*75-120*	0	
Surr: 4-Bromofluorobenzene	*20.33*	0	*20*	0	*102*	*80-110*	0	
Surr: Dibromofluoromethane	*19.89*	0	*20*	0	*99.4*	*85-115*	0	
Surr: Toluene-d8	*20.23*	0	*20*	0	*101*	*85-110*	0	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606484
Project: ECT (Hartland - 13247 Lone Tree Rd)

QC BATCH REPORT

Batch ID: **R189219** Instrument ID: **VMS10** Method: **SW8260B**

MS Sample ID: **1606558-02A MS** Units: **µg/L** Analysis Date: **6/9/2016 08:55 PM**

Client ID: Run ID: **VMS10_160609A** SeqNo: **3868779** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	19.91	1.0	20	0	99.6	80-130	0			
1,1,1-Trichloroethane	22.74	1.0	20	0	114	75-130	0			
1,1,2,2-Tetrachloroethane	20.1	1.0	20	0	100	75-130	0			
1,1,2-Trichloroethane	20.39	1.0	20	0	102	75-125	0			
1,1-Dichloroethane	20.78	1.0	20	0	104	75-133	0			
1,1-Dichloroethene	22.55	1.0	20	0	113	70-145	0			
1,2,3-Trichloropropane	19.76	1.0	20	0	98.8	75-125	0			
1,2,4-Trichlorobenzene	17.66	1.0	20	0	88.3	70-135	0			
1,2,4-Trimethylbenzene	20.34	1.0	20	0	102	75-130	0			
1,2-Dibromo-3-chloropropane	15.54	1.0	20	0	77.7	60-130	0			
1,2-Dibromoethane	21.99	1.0	20	0	110	80-150	0			
1,2-Dichlorobenzene	19.41	1.0	20	0	97	70-130	0			
1,2-Dichloroethane	19.69	1.0	20	0	98.4	78-125	0			
1,2-Dichloropropane	20.47	1.0	20	0	102	75-125	0			
1,3,5-Trimethylbenzene	20.95	1.0	20	0	105	75-130	0			
1,3-Dichlorobenzene	19.66	1.0	20	0	98.3	75-130	0			
1,4-Dichlorobenzene	19.42	1.0	20	0	97.1	75-130	0			
2-Butanone	17.13	5.0	20	0	85.6	55-150	0			
2-Hexanone	17.53	5.0	20	0	87.6	60-135	0			
4-Methyl-2-pentanone	23.94	1.0	20	0	120	77-178	0			
Acetone	15.73	10	20	0	78.6	60-160	0			
Acrylonitrile	16.08	1.0	20	0	80.4	60-140	0			
Benzene	20.5	1.0	20	0	102	85-125	0			
Bromochloromethane	20.06	1.0	20	0	100	75-130	0			
Bromodichloromethane	20.33	1.0	20	0	102	75-125	0			
Bromoform	16.08	1.0	20	0	80.4	60-125	0			
Bromomethane	13.06	1.0	20	0	65.3	30-185	0			
Carbon disulfide	19.45	1.0	20	0	97.2	60-165	0			
Carbon tetrachloride	20.6	1.0	20	0	103	65-140	0			
Chlorobenzene	20.58	1.0	20	0	103	80-120	0			
Chloroethane	17.32	1.0	20	0	86.6	50-140	0			
Chloroform	19.49	1.0	20	0	97.4	80-130	0			
Chloromethane	15.54	1.0	20	0	77.7	50-130	0			
cis-1,2-Dichloroethene	19.51	1.0	20	0	97.6	75-134	0			
cis-1,3-Dichloropropene	17.65	1.0	20	0	88.2	70-130	0			
Dibromochloromethane	16.56	1.0	20	0	82.8	60-115	0			
Dibromomethane	21.4	1.0	20	0	107	85-125	0			
Dichlorodifluoromethane	20.04	1.0	20	0	100	20-120	0			
Ethylbenzene	21.47	1.0	20	0	107	85-125	0			
Hexachloroethane	14.27	1.0	20	0	71.4	50-124	0			
Isopropylbenzene	20.87	1.0	20	0	104	80-127	0			
m,p-Xylene	44.4	2.0	40	0	111	75-130	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

QC BATCH REPORT

Batch ID: **R189219** Instrument ID: **VMS10** Method: **SW8260B**

Methyl iodide	23.54	1.0	20	0	118	60-160	0	
Methyl tert-butyl ether	14.86	1.0	20	0	74.3	80-130	0	S
Methylene chloride	21.31	5.0	20	0	107	75-140	0	
Naphthalene	16.44	5.0	20	0	82.2	55-160	0	
n-Propylbenzene	22.06	1.0	20	0	110	78-120	0	
o-Xylene	21.17	1.0	20	0	106	80-125	0	
Styrene	20.41	1.0	20	0	102	85-125	0	
Tetrachloroethene	21.47	1.0	20	0	107	77-138	0	
Toluene	20.64	1.0	20	0	103	85-125	0	
trans-1,2-Dichloroethene	18.86	1.0	20	0	94.3	80-140	0	
trans-1,3-Dichloropropene	15.89	1.0	20	0	79.4	81-123	0	S
trans-1,4-Dichloro-2-butene	13.66	2.0	20	0	68.3	46-118	0	
Trichloroethene	20.83	1.0	20	0	104	84-130	0	
Trichlorofluoromethane	21.01	1.0	20	0	105	60-140	0	
Vinyl chloride	20.56	1.0	20	0	103	50-136	0	
Xylenes, Total	65.57	3.0	60	0	109	80-126	0	
Surr: 1,2-Dichloroethane-d4	*19.77*	0	*20*	0	*98.8*	*75-120*	0	
Surr: 4-Bromofluorobenzene	*20.44*	0	*20*	0	*102*	*80-110*	0	
Surr: Dibromofluoromethane	*20.89*	0	*20*	0	*104*	*85-115*	0	
Surr: Toluene-d8	*20.2*	0	*20*	0	*101*	*85-110*	0	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606484
Project: ECT (Hartland - 13247 Lone Tree Rd)

QC BATCH REPORT

Batch ID: **R189219** Instrument ID: **VMS10** Method: **SW8260B**

MSD Sample ID: **1606558-02A MSD** Units: **µg/L** Analysis Date: **6/9/2016 09:20 PM**

Client ID: Run ID: **VMS10_160609A** SeqNo: **3868780** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	20.11	1.0	20	0	101	80-130	19.91	1	30	
1,1,1-Trichloroethane	22.9	1.0	20	0	114	75-130	22.74	0.701	30	
1,1,2,2-Tetrachloroethane	20.56	1.0	20	0	103	75-130	20.1	2.26	30	
1,1,2-Trichloroethane	20.55	1.0	20	0	103	75-125	20.39	0.782	30	
1,1-Dichloroethane	20.95	1.0	20	0	105	75-133	20.78	0.815	30	
1,1-Dichloroethene	22.67	1.0	20	0	113	70-145	22.55	0.531	30	
1,2,3-Trichloropropane	20.16	1.0	20	0	101	75-125	19.76	2	30	
1,2,4-Trichlorobenzene	18.68	1.0	20	0	93.4	70-135	17.66	5.61	30	
1,2,4-Trimethylbenzene	20.5	1.0	20	0	102	75-130	20.34	0.784	30	
1,2-Dibromo-3-chloropropane	15.86	1.0	20	0	79.3	60-130	15.54	2.04	30	
1,2-Dibromoethane	22.75	1.0	20	0	114	80-150	21.99	3.4	30	
1,2-Dichlorobenzene	19.86	1.0	20	0	99.3	70-130	19.41	2.29	30	
1,2-Dichloroethane	19.98	1.0	20	0	99.9	78-125	19.69	1.46	30	
1,2-Dichloropropane	21.02	1.0	20	0	105	75-125	20.47	2.65	30	
1,3,5-Trimethylbenzene	21.29	1.0	20	0	106	75-130	20.95	1.61	30	
1,3-Dichlorobenzene	20.35	1.0	20	0	102	75-130	19.66	3.45	30	
1,4-Dichlorobenzene	20.02	1.0	20	0	100	75-130	19.42	3.04	30	
2-Butanone	17.28	5.0	20	0	86.4	55-150	17.13	0.872	30	
2-Hexanone	18.94	5.0	20	0	94.7	60-135	17.53	7.73	30	
4-Methyl-2-pentanone	24.55	1.0	20	0	123	77-178	23.94	2.52	30	
Acetone	18.66	10	20	0	93.3	60-160	15.73	17	30	
Acrylonitrile	17.19	1.0	20	0	86	60-140	16.08	6.67	30	
Benzene	20.99	1.0	20	0	105	85-125	20.5	2.36	30	
Bromochloromethane	20.41	1.0	20	0	102	75-130	20.06	1.73	30	
Bromodichloromethane	20.96	1.0	20	0	105	75-125	20.33	3.05	30	
Bromoform	16.62	1.0	20	0	83.1	60-125	16.08	3.3	30	
Bromomethane	13.9	1.0	20	0	69.5	30-185	13.06	6.23	30	
Carbon disulfide	19.92	1.0	20	0	99.6	60-165	19.45	2.39	30	
Carbon tetrachloride	21.29	1.0	20	0	106	65-140	20.6	3.29	30	
Chlorobenzene	20.77	1.0	20	0	104	80-120	20.58	0.919	30	
Chloroethane	17.91	1.0	20	0	89.6	50-140	17.32	3.35	30	
Chloroform	19.79	1.0	20	0	99	80-130	19.49	1.53	30	
Chloromethane	16.15	1.0	20	0	80.8	50-130	15.54	3.85	30	
cis-1,2-Dichloroethene	19.48	1.0	20	0	97.4	75-134	19.51	0.154	30	
cis-1,3-Dichloropropene	18.32	1.0	20	0	91.6	70-130	17.65	3.73	30	
Dibromochloromethane	16.55	1.0	20	0	82.8	60-115	16.56	0.0604	30	
Dibromomethane	21.06	1.0	20	0	105	85-125	21.4	1.6	30	
Dichlorodifluoromethane	20.32	1.0	20	0	102	20-120	20.04	1.39	30	
Ethylbenzene	22.03	1.0	20	0	110	85-125	21.47	2.57	30	
Hexachloroethane	14.86	1.0	20	0	74.3	50-124	14.27	4.05	30	
Isopropylbenzene	21.45	1.0	20	0	107	80-127	20.87	2.74	30	
m,p-Xylene	45.43	2.0	40	0	114	75-130	44.4	2.29	30	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1606484
Project: ECT (Hartland - 13247 Lone Tree Rd)

QC BATCH REPORT

Batch ID: **R189219** Instrument ID: **VMS10** Method: **SW8260B**

Methyl iodide	26.31	1.0	20	0	132	60-160	23.54	11.1	30	
Methyl tert-butyl ether	15.3	1.0	20	0	76.5	80-130	14.86	2.92	30	S
Methylene chloride	21.12	5.0	20	0	106	75-140	21.31	0.896	30	
Naphthalene	17.63	5.0	20	0	88.2	55-160	16.44	6.99	30	
n-Propylbenzene	22.37	1.0	20	0	112	78-120	22.06	1.4	30	
o-Xylene	21.75	1.0	20	0	109	80-125	21.17	2.7	30	
Styrene	20.92	1.0	20	0	105	85-125	20.41	2.47	30	
Tetrachloroethene	22.11	1.0	20	0	111	77-138	21.47	2.94	30	
Toluene	21.01	1.0	20	0	105	85-125	20.64	1.78	30	
trans-1,2-Dichloroethene	19.3	1.0	20	0	96.5	80-140	18.86	2.31	30	
trans-1,3-Dichloropropene	16.14	1.0	20	0	80.7	81-123	15.89	1.56	30	S
trans-1,4-Dichloro-2-butene	14.04	2.0	20	0	70.2	46-118	13.66	2.74	30	
Trichloroethene	21.45	1.0	20	0	107	84-130	20.83	2.93	30	
Trichlorofluoromethane	20.7	1.0	20	0	104	60-140	21.01	1.49	30	
Vinyl chloride	21.1	1.0	20	0	106	50-136	20.56	2.59	30	
Xylenes, Total	67.18	3.0	60	0	112	80-126	65.57	2.43	30	
Surr: 1,2-Dichloroethane-d4	*20.03*	0	*20*	0	*100*	*75-120*	19.77	*1.31*	*30*	
Surr: 4-Bromofluorobenzene	*20.25*	0	*20*	0	*101*	*80-110*	20.44	*0.934*	*30*	
Surr: Dibromofluoromethane	*20.68*	0	*20*	0	*103*	*85-115*	20.89	*1.01*	*30*	
Surr: Toluene-d8	*20.09*	0	*20*	0	*100*	*85-110*	20.2	*0.546*	*30*	

The following samples were analyzed in this batch: 1606484-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Group USA, Corp

Date: 10-Jun-16

Client: Merit Energy
Project: ECT (Hartland - 13247 Lone Tree Rd)
WorkOrder: **1606484**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and PQL, sample results may exhibit background or reag contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
µg/L	Micrograms per Liter

ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **MERITENERGY** Date/Time Received: **08-Jun-16 09:30**

Work Order: **1606484** Received by: **KRW**

Checklist completed by K eith W ierenga (eSignature) 08-Jun-16 (Date) Reviewed by: Gary Byar (eSignature) 08-Jun-16 (Date)

Matrices: Water
Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	2.4/2.4 C	SR2	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	6/8/2016 2:55:05 PM		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:			

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction

Cincinnati, OH +1 513 733 5336
Fort Collins, CO +1 970 490 1511
Everett, WA +1 425 356 2600
Holland, MI +1 616 399 6070
Houston, TX +1 281 530 5656
Spring City, PA +1 610 948 4903
Middletown, PA +1 717 944 5541
Salt Lake City, UT +1 801 266 7700
South Charleston, WV +1 304 356 3168
York, PA +1 717 505 5280

ALS Environmental

Chain of Custody Form

Page 1 of 1

COC ID: 16630

ALS Project Manager: C. BYAR | ALS Work Order #: 1600494

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	Hartland 36 Gas Stat	A	Sulfolane
Work Order		Project Number	13-0685-2000	B	DIPA
Company Name	ECT, Inc.	Bill To Company	MEC	C	Full VOCs
Send Report To	Jeremy Lewandowski	Invoice Attn	Sean Craven	D	
Address	3399 Veterans Dr.	Address	1510 Thomas Rd	E	
City/State/Zip	TC, MI 49684	City/State/Zip	Kalkaska, MI	F	
Phone	231-258-6369	Phone	231-258-6369	G	
Fax	—	Fax	—	H	
e-Mail Address	jlewandowski@ectinc.com	e-Mail Address	sean.craven@centuryy.com	I	
				J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	13247 Lone Tree Rd	6/7/16	7:54a	GW	—	4	8	8	1,8								
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9						ALS PROJ: MERIT ENERGY - MISC												
10																	

Sampler(s) Please Print & Sign: Jeremy Lewandowski

Shipment Method:

Required Turnaround Time: (Check Box) ☐ STD 10 Wk Days ☒ 5 Wk Days ☐ 2 Wk Days ☐ 24 Hour ☐ Other

Results Due Date:

	Date:	Time:	
Relinquished by:	6/7/16	2:10p	Received by:
Relinquished by:	6/7/16	1680	Received by (Laboratory): 6/8/16 0930
Logged by (Laboratory): KL	6/8/16	1450	Checked by (Laboratory): GRB

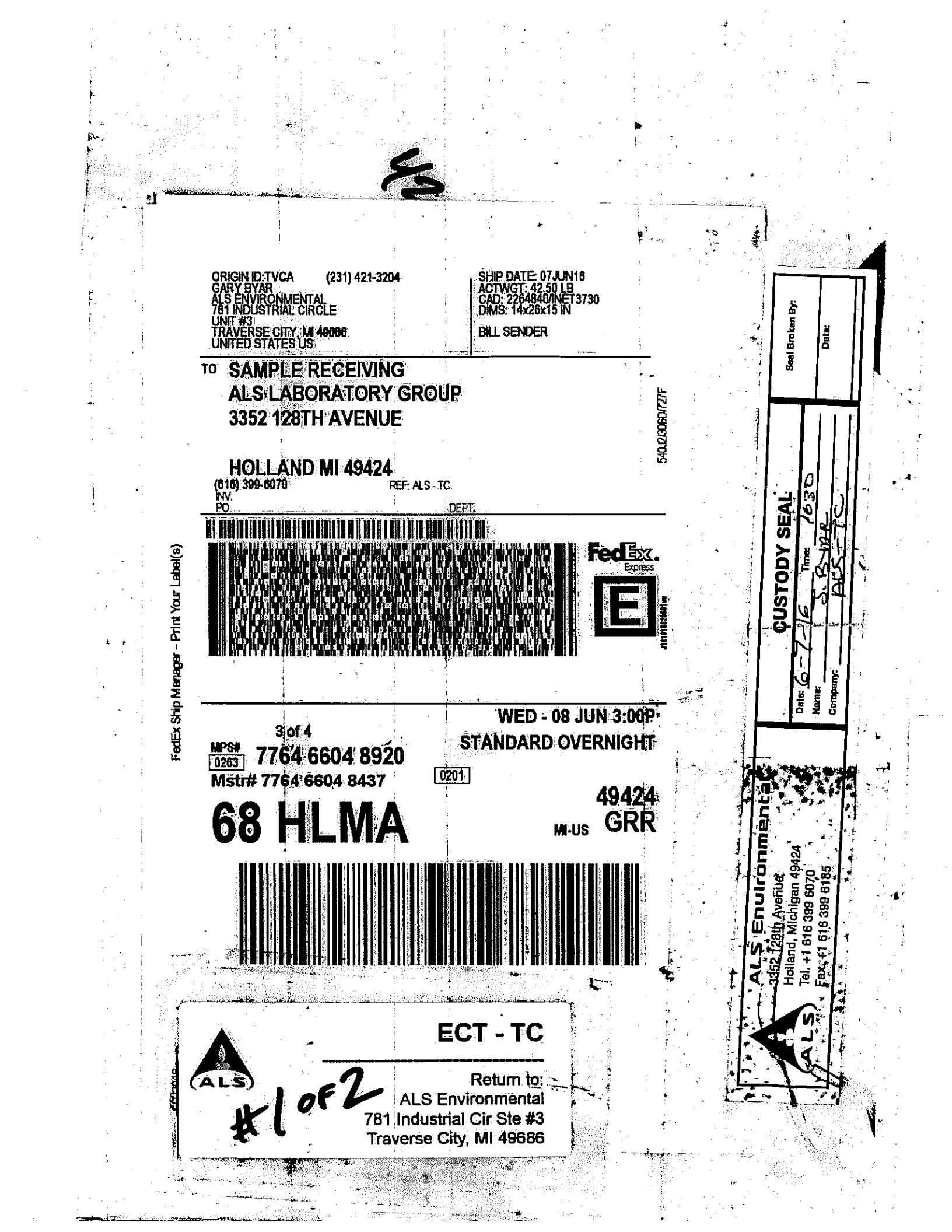
Notes:

Cooler ID	Cooler Temp
	2.4°C

QC Package: (Check One Box Below)
☒ Level II Std QC ☐ TRRP Checklist
☐ Level III Std QC/Raw Data ☐ TRRP Level IV
☐ Level IV SW846/CLP
☐ Other

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.



ORIGIN ID:TVCA (231) 421-3204
GARY BYAR
ALS ENVIRONMENTAL
781 INDUSTRIAL CIRCLE
UNIT #3
TRAVERSE CITY, MI 49686
UNITED STATES US

SHIP DATE: 07JUN16
ACTWGT: 42.50 LB
CAD: 2264840/INET3730
DIMS: 14x26x15 IN

BILL SENDER

TO SAMPLE RECEIVING
ALS LABORATORY GROUP
3352 128TH AVENUE

HOLLAND MI 49424
(616) 399-6070 REF: ALS - TC
INV:
PO: DEPT:

540J2908D/FZ7F

FedEx Express

FedEx Ship Manager - Print Your Label(s)

WED - 08 JUN 3:00P
STANDARD OVERNIGHT

3 of 4
MPS# 0263 7764 6604 8920
Mstr# 7764 6604 8437

0201

49424
MI-US GRR

68 HLMA

ECT - TC

Return to:
ALS Environmental
781 Industrial Cir Ste #3
Traverse City, MI 49686

#1 of 2

CUSTODY SEAL
Seal Broken By:
Date:
Time: 1630
Date: 6-7-16
Name: BYAR
Company: ALS-TC

ALS Environmental
3352 128th Avenue
Holland, Michigan 49424
Tel. +1 616 399 6070
Fax. +1 616 399 6185

13-Jul-2016

Sean Craven
Merit Energy
1510 Thomas Rd
PO Box 910
Kalkaska, MI 49646

Re: **Merit (13955 Cherry Blossom Ln)** Work Order: **1607390**

Dear Sean,

ALS Environmental received 1 sample on 08-Jul-2016 10:30 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with NELAP standard requirements and QC results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 18.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

Gary Byar

Electronically approved by: Gary Byar

Gary Byar
Project Manager

Certificate No: MI: 0022

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185
ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

ALS Group USA, Corp

Date: 13-Jul-16

Client: Merit Energy
Project: Merit (13955 Cherry Blossom Ln)
Work Order: **1607390**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1607390-01	13955 Cherry Blossom Ln (Water Well)	Water		7/7/2016 14:30	7/8/2016 10:30	☐

ALS Group USA, Corp

Date: *13-Jul-16*

Client: Merit Energy
Project: Merit (13955 Cherry Blossom Ln) **Work Order:** 1607390
Sample ID: 13955 Cherry Blossom Ln (Water Well) **Lab ID:** 1607390-01
Collection Date: 7/7/2016 02:30 PM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW846 8270D**		Prep: SW3510 / 7/11/16	Analyst: **RM**
Diisopropanolamine	ND		50	µg/L	1	7/12/2016 01:36 PM
Sulfolane	ND		10	µg/L	1	7/12/2016 01:36 PM
Surr: 2,4,6-Tribromophenol	*79.0*		*38-115*	*%REC*	1	7/12/2016 01:36 PM
Surr: 2-Fluorobiphenyl	*64.7*		*32-100*	*%REC*	1	7/12/2016 01:36 PM
Surr: 2-Fluorophenol	*37.1*		*22-59*	*%REC*	1	7/12/2016 01:36 PM
Surr: 4-Terphenyl-d14	*65.9*		*23-112*	*%REC*	1	7/12/2016 01:36 PM
Surr: Nitrobenzene-d5	*68.0*		*31-93*	*%REC*	1	7/12/2016 01:36 PM
Surr: Phenol-d6	*20.2*		*13-36*	*%REC*	1	7/12/2016 01:36 PM
VOLATILE ORGANIC COMPOUNDS			**SW8260B**			Analyst: **AK**
1,1,1,2-Tetrachloroethane	ND		1.0	µg/L	1	7/12/2016 05:44 PM
1,1,1-Trichloroethane	ND		1.0	µg/L	1	7/12/2016 05:44 PM
1,1,2,2-Tetrachloroethane	ND		1.0	µg/L	1	7/12/2016 05:44 PM
1,1,2-Trichloroethane	ND		1.0	µg/L	1	7/12/2016 05:44 PM
1,1,2-Trichlorotrifluoroethane	ND		1.0	µg/L	1	7/12/2016 05:44 PM
1,1-Dichloroethane	ND		1.0	µg/L	1	7/12/2016 05:44 PM
1,1-Dichloroethene	ND		1.0	µg/L	1	7/12/2016 05:44 PM
1,2,3-Trichloropropane	ND		1.0	µg/L	1	7/12/2016 05:44 PM
1,2,4-Trichlorobenzene	ND		1.0	µg/L	1	7/12/2016 05:44 PM
1,2,4-Trimethylbenzene	ND		1.0	µg/L	1	7/12/2016 05:44 PM
1,2-Dibromo-3-chloropropane	ND		1.0	µg/L	1	7/12/2016 05:44 PM
1,2-Dibromoethane	ND		1.0	µg/L	1	7/12/2016 05:44 PM
1,2-Dichlorobenzene	ND		1.0	µg/L	1	7/12/2016 05:44 PM
1,2-Dichloroethane	ND		1.0	µg/L	1	7/12/2016 05:44 PM
1,2-Dichloropropane	ND		1.0	µg/L	1	7/12/2016 05:44 PM
1,3,5-Trimethylbenzene	ND		1.0	µg/L	1	7/12/2016 05:44 PM
1,3-Dichlorobenzene	ND		1.0	µg/L	1	7/12/2016 05:44 PM
1,4-Dichlorobenzene	ND		1.0	µg/L	1	7/12/2016 05:44 PM
2-Butanone	ND		5.0	µg/L	1	7/12/2016 05:44 PM
2-Hexanone	ND		5.0	µg/L	1	7/12/2016 05:44 PM
2-Methylnaphthalene	ND		5.0	µg/L	1	7/12/2016 05:44 PM
4-Methyl-2-pentanone	ND		1.0	µg/L	1	7/12/2016 05:44 PM
Acetone	ND		10	µg/L	1	7/12/2016 05:44 PM
Acrylonitrile	ND		1.0	µg/L	1	7/12/2016 05:44 PM
Benzene	ND		1.0	µg/L	1	7/12/2016 05:44 PM
Bromochloromethane	ND		1.0	µg/L	1	7/12/2016 05:44 PM
Bromodichloromethane	ND		1.0	µg/L	1	7/12/2016 05:44 PM
Bromoform	ND		1.0	µg/L	1	7/12/2016 05:44 PM
Bromomethane	ND		1.0	µg/L	1	7/12/2016 05:44 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *13-Jul-16*

Client: Merit Energy
Project: Merit (13955 Cherry Blossom Ln) **Work Order:** 1607390
Sample ID: 13955 Cherry Blossom Ln (Water Well) **Lab ID:** 1607390-01
Collection Date: 7/7/2016 02:30 PM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Carbon disulfide	ND		1.0	µg/L	1	7/12/2016 05:44 PM
Carbon tetrachloride	ND		1.0	µg/L	1	7/12/2016 05:44 PM
Chlorobenzene	ND		1.0	µg/L	1	7/12/2016 05:44 PM
Chloroethane	ND		1.0	µg/L	1	7/12/2016 05:44 PM
Chloroform	ND		1.0	µg/L	1	7/12/2016 05:44 PM
Chloromethane	ND		1.0	µg/L	1	7/12/2016 05:44 PM
cis-1,2-Dichloroethene	ND		1.0	µg/L	1	7/12/2016 05:44 PM
cis-1,3-Dichloropropene	ND		1.0	µg/L	1	7/12/2016 05:44 PM
Dibromochloromethane	ND		1.0	µg/L	1	7/12/2016 05:44 PM
Dibromomethane	ND		1.0	µg/L	1	7/12/2016 05:44 PM
Dichlorodifluoromethane	ND		1.0	µg/L	1	7/12/2016 05:44 PM
Diethyl ether	ND		1.0	µg/L	1	7/12/2016 05:44 PM
Ethylbenzene	ND		1.0	µg/L	1	7/12/2016 05:44 PM
Hexachloroethane	ND		1.0	µg/L	1	7/12/2016 05:44 PM
Isopropylbenzene	ND		1.0	µg/L	1	7/12/2016 05:44 PM
m,p-Xylene	ND		2.0	µg/L	1	7/12/2016 05:44 PM
Methyl iodide	ND		1.0	µg/L	1	7/12/2016 05:44 PM
Methyl tert-butyl ether	ND		1.0	µg/L	1	7/12/2016 05:44 PM
Methylene chloride	ND		5.0	µg/L	1	7/12/2016 05:44 PM
Naphthalene	ND		5.0	µg/L	1	7/12/2016 05:44 PM
n-Propylbenzene	ND		1.0	µg/L	1	7/12/2016 05:44 PM
o-Xylene	ND		1.0	µg/L	1	7/12/2016 05:44 PM
Styrene	ND		1.0	µg/L	1	7/12/2016 05:44 PM
Tetrachloroethene	ND		1.0	µg/L	1	7/12/2016 05:44 PM
Toluene	ND		1.0	µg/L	1	7/12/2016 05:44 PM
trans-1,2-Dichloroethene	ND		1.0	µg/L	1	7/12/2016 05:44 PM
trans-1,3-Dichloropropene	ND		1.0	µg/L	1	7/12/2016 05:44 PM
trans-1,4-Dichloro-2-butene	ND		2.0	µg/L	1	7/12/2016 05:44 PM
Trichloroethene	ND		1.0	µg/L	1	7/12/2016 05:44 PM
Trichlorofluoromethane	ND		1.0	µg/L	1	7/12/2016 05:44 PM
Vinyl acetate	ND		1.0	µg/L	1	7/12/2016 05:44 PM
Vinyl chloride	ND		1.0	µg/L	1	7/12/2016 05:44 PM
Xylenes, Total	ND		3.0	µg/L	1	7/12/2016 05:44 PM
Surr: 1,2-Dichloroethane-d4	*107*		*75-120*	*%REC*	1	7/12/2016 05:44 PM
Surr: 4-Bromofluorobenzene	*92.4*		*80-110*	*%REC*	1	7/12/2016 05:44 PM
Surr: Dibromofluoromethane	*103*		*85-115*	*%REC*	1	7/12/2016 05:44 PM
Surr: Toluene-d8	*95.7*		*85-110*	*%REC*	1	7/12/2016 05:44 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Jul-16

Client: Merit Energy
Project: Merit (13955 Cherry Blossom Ln)
Work Order: 1607390

Case Narrative

Batch R191319 The MS/MSD data for volatiles is not related to this project's sample. No data requires qualification.

Batch R191319 The LCS recovery for volatile compounds 1,2 Dibromoethane and Methyl iodide was above the upper control limit. Sample results were non-detect for these compounds therefore no data requires qualification.

ALS Group USA, Corp

Date: 13-Jul-16

Client: Merit Energy

Work Order: 1607390

Project: Merit (13955 Cherry Blossom Ln)

QC BATCH REPORT

Batch ID: **88410** Instrument ID: **SVMS8** Method: **SW846 8270D**

MBLK Sample ID: **SBLKW1-88410-88410** Units: **µg/L** Analysis Date: **7/12/2016 12:32 PM**

Client ID: Run ID: **SVMS8_160712A** SeqNo: **3918355** Prep Date: **7/11/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Diisopropanolamine	ND	50								
Sulfolane	ND	10								
Surr: 2,4,6-Tribromophenol	*41.77*	0	*50*	0	*83.5*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*35.04*	0	*50*	0	*70.1*	*32-100*	0			
Surr: 2-Fluorophenol	*21.55*	0	*50*	0	*43.1*	*22-59*	0			
Surr: 4-Terphenyl-d14	*41.3*	0	*50*	0	*82.6*	*23-112*	0			
Surr: Nitrobenzene-d5	*35.82*	0	*50*	0	*71.6*	*31-93*	0			
Surr: Phenol-d6	*13.26*	0	*50*	0	*26.5*	*13-36*	0			

LCS Sample ID: **SLCSW1-88410-88410** Units: **µg/L** Analysis Date: **7/12/2016 12:53 PM**

Client ID: Run ID: **SVMS8_160712A** SeqNo: **3918356** Prep Date: **7/11/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Diisopropanolamine	16.54	50	100	0	16.5	10-50	0			
Sulfolane	53.44	10	100	0	53.4	30-100	0			
Surr: 2,4,6-Tribromophenol	*38.13*	0	*50*	0	*76.3*	*38-115*	0			
Surr: 2-Fluorobiphenyl	*31.66*	0	*50*	0	*63.3*	*32-100*	0			
Surr: 2-Fluorophenol	*21.2*	0	*50*	0	*42.4*	*22-59*	0			
Surr: 4-Terphenyl-d14	*37.49*	0	*50*	0	*75*	*23-112*	0			
Surr: Nitrobenzene-d5	*33.79*	0	*50*	0	*67.6*	*31-93*	0			
Surr: Phenol-d6	*13.11*	0	*50*	0	*26.2*	*13-36*	0			

LCSD Sample ID: **SLCSDW1-88410-88410** Units: **µg/L** Analysis Date: **7/12/2016 01:14 PM**

Client ID: Run ID: **SVMS8_160712A** SeqNo: **3918357** Prep Date: **7/11/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Diisopropanolamine	14.01	50	100	0	14	10-50	16.54	0	30	
Sulfolane	53.03	10	100	0	53	30-100	53.44	0.77	30	
Surr: 2,4,6-Tribromophenol	*40.35*	0	*50*	0	*80.7*	*38-115*	38.13	*5.66*	*30*	
Surr: 2-Fluorobiphenyl	*33.03*	0	*50*	0	*66.1*	*32-100*	31.66	*4.24*	*30*	
Surr: 2-Fluorophenol	*20.85*	0	*50*	0	*41.7*	*22-59*	21.2	*1.66*	*30*	
Surr: 4-Terphenyl-d14	*38.26*	0	*50*	0	*76.5*	*23-112*	37.49	*2.03*	*30*	
Surr: Nitrobenzene-d5	*34.93*	0	*50*	0	*69.9*	*31-93*	33.79	*3.32*	*30*	
Surr: Phenol-d6	*11.79*	0	*50*	0	*23.6*	*13-36*	13.11	*10.6*	*30*	

The following samples were analyzed in this batch: 1607390-01B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1607390
Project: Merit (13955 Cherry Blossom Ln)

QC BATCH REPORT

Batch ID: **R191319** Instrument ID: **VMS9** Method: **SW8260B**

MBLK Sample ID: **VBLKW1-160712-R191319** Units: **µg/L** Analysis Date: **7/12/2016 01:21 PM**
Client ID: Run ID: **VMS9_160712A** SeqNo: **3918579** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
1,1,2-Trichlorotrifluoroethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2,3-Trichloropropane	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	1.0								
1,2-Dibromoethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,2-Dichloroethane	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
2-Butanone	ND	5.0								
2-Hexanone	ND	5.0								
2-Methylnaphthalene	ND	5.0								
4-Methyl-2-pentanone	ND	1.0								
Acetone	ND	10								
Acrylonitrile	ND	1.0								
Benzene	ND	1.0								
Bromochloromethane	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	1.0								
Carbon disulfide	ND	1.0								
Carbon tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	ND	1.0								
cis-1,2-Dichloroethene	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
Diethyl ether	ND	1.0								
Ethylbenzene	ND	1.0								

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Batch ID: **R191319** Instrument ID: **VMS9** Method: **SW8260B**

Hexachloroethane	ND	1.0					
Isopropylbenzene	ND	1.0					
m,p-Xylene	ND	2.0					
Methyl iodide	ND	1.0					
Methyl tert-butyl ether	ND	1.0					
Methylene chloride	ND	5.0					
Naphthalene	ND	5.0					
n-Propylbenzene	ND	1.0					
o-Xylene	ND	1.0					
Styrene	ND	1.0					
Tetrachloroethene	ND	1.0					
Toluene	ND	1.0					
trans-1,2-Dichloroethene	ND	1.0					
trans-1,3-Dichloropropene	ND	1.0					
trans-1,4-Dichloro-2-butene	ND	2.0					
Trichloroethene	ND	1.0					
Trichlorofluoromethane	ND	1.0					
Vinyl acetate	ND	1.0					
Vinyl chloride	ND	1.0					
Xylenes, Total	ND	3.0					
Surr: 1,2-Dichloroethane-d4	*20.94*	0	*20*	0	*105*	*75-120*	0
Surr: 4-Bromofluorobenzene	*18.79*	0	*20*	0	*94*	*80-110*	0
Surr: Dibromofluoromethane	*19.85*	0	*20*	0	*99.2*	*85-115*	0
Surr: Toluene-d8	*19.61*	0	*20*	0	*98*	*85-110*	0

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1607390
Project: Merit (13955 Cherry Blossom Ln)

QC BATCH REPORT

Batch ID: **R191319** Instrument ID: **VMS9** Method: **SW8260B**

LCS Sample ID: **VLCSW1-160712-R191319** Units: **µg/L** Analysis Date: **7/12/2016 12:06 PM**

Client ID: Run ID: **VMS9_160712A** SeqNo: **3918578** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	22.13	1.0	20	0	111	80-130	0			
1,1,1-Trichloroethane	21.09	1.0	20	0	105	75-130	0			
1,1,2,2-Tetrachloroethane	20.44	1.0	20	0	102	75-130	0			
1,1,2-Trichloroethane	22.54	1.0	20	0	113	75-125	0			
1,1-Dichloroethane	17.93	1.0	20	0	89.6	75-133	0			
1,1-Dichloroethene	19.36	1.0	20	0	96.8	70-145	0			
1,2,3-Trichloropropane	22.54	1.0	20	0	113	75-125	0			
1,2,4-Trichlorobenzene	22.41	1.0	20	0	112	70-135	0			
1,2,4-Trimethylbenzene	23.47	1.0	20	0	117	75-130	0			
1,2-Dibromo-3-chloropropane	23.08	1.0	20	0	115	60-130	0			
1,2-Dibromoethane	32.84	1.0	20	0	164	80-150	0			S
1,2-Dichlorobenzene	20.77	1.0	20	0	104	70-130	0			
1,2-Dichloroethane	19.3	1.0	20	0	96.5	78-125	0			
1,2-Dichloropropane	17.92	1.0	20	0	89.6	75-125	0			
1,3,5-Trimethylbenzene	24.48	1.0	20	0	122	75-130	0			
1,3-Dichlorobenzene	21.37	1.0	20	0	107	75-130	0			
1,4-Dichlorobenzene	20.85	1.0	20	0	104	75-130	0			
2-Butanone	15.79	5.0	20	0	79	55-150	0			
2-Hexanone	17.92	5.0	20	0	89.6	60-135	0			
4-Methyl-2-pentanone	21	1.0	20	0	105	77-178	0			
Acetone	15.72	10	20	0	78.6	60-160	0			
Acrylonitrile	15.69	1.0	20	0	78.4	60-140	0			
Benzene	19.98	1.0	20	0	99.9	85-125	0			
Bromochloromethane	15.87	1.0	20	0	79.4	75-130	0			
Bromodichloromethane	20.79	1.0	20	0	104	75-125	0			
Bromoform	18.59	1.0	20	0	93	60-125	0			
Bromomethane	17	1.0	20	0	85	30-185	0			
Carbon disulfide	18.42	1.0	20	0	92.1	60-165	0			
Carbon tetrachloride	20.24	1.0	20	0	101	65-140	0			
Chlorobenzene	21.76	1.0	20	0	109	80-120	0			
Chloroethane	15.65	1.0	20	0	78.2	50-140	0			
Chloroform	16.63	1.0	20	0	83.2	80-130	0			
Chloromethane	14.03	1.0	20	0	70.2	50-130	0			
cis-1,2-Dichloroethene	17.49	1.0	20	0	87.4	75-134	0			
cis-1,3-Dichloropropene	17.31	1.0	20	0	86.6	70-130	0			
Dibromochloromethane	17.41	1.0	20	0	87	60-115	0			
Dibromomethane	22.5	1.0	20	0	112	85-125	0			
Dichlorodifluoromethane	15.55	1.0	20	0	77.8	20-120	0			
Ethylbenzene	21.07	1.0	20	0	105	85-125	0			
Hexachloroethane	14.93	1.0	20	0	74.6	50-124	0			
Isopropylbenzene	23.79	1.0	20	0	119	80-127	0			
m,p-Xylene	43.28	2.0	40	0	108	75-130	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1607390
Project: Merit (13955 Cherry Blossom Ln)

QC BATCH REPORT

Batch ID: **R191319** Instrument ID: **VMS9** Method: **SW8260B**

Methyl iodide	42.46	1.0	20	0	212	60-160	0	S
Methyl tert-butyl ether	17.56	1.0	20	0	87.8	80-130	0	
Methylene chloride	16.24	5.0	20	0	81.2	75-140	0	
Naphthalene	21.43	5.0	20	0	107	55-160	0	
n-Propylbenzene	22.81	1.0	20	0	114	78-120	0	
o-Xylene	20.78	1.0	20	0	104	80-125	0	
Styrene	23.61	1.0	20	0	118	85-125	0	
Tetrachloroethene	24.83	1.0	20	0	124	77-138	0	
Toluene	21.05	1.0	20	0	105	85-125	0	
trans-1,2-Dichloroethene	18.12	1.0	20	0	90.6	80-140	0	
trans-1,3-Dichloropropene	17.07	1.0	20	0	85.4	81-123	0	
trans-1,4-Dichloro-2-butene	16.44	2.0	20	0	82.2	46-118	0	
Trichloroethene	22.58	1.0	20	0	113	84-130	0	
Trichlorofluoromethane	17.87	1.0	20	0	89.4	60-140	0	
Vinyl chloride	15.81	1.0	20	0	79	50-136	0	
Xylenes, Total	64.06	3.0	60	0	107	80-126	0	
Surr: 1,2-Dichloroethane-d4	*20.02*	0	*20*	0	*100*	*75-120*	0	
Surr: 4-Bromofluorobenzene	*20.29*	0	*20*	0	*101*	*80-110*	0	
Surr: Dibromofluoromethane	*20.33*	0	*20*	0	*102*	*85-115*	0	
Surr: Toluene-d8	*20.27*	0	*20*	0	*101*	*85-110*	0	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1607390
Project: Merit (13955 Cherry Blossom Ln)

QC BATCH REPORT

Batch ID: **R191319** Instrument ID: **VMS9** Method: **SW8260B**

MS Sample ID: **1607054-11A MS** Units: **µg/L** Analysis Date: **7/12/2016 09:02 PM**

Client ID: Run ID: **VMS9_160712A** SeqNo: **3919521** Prep Date: DF: **500**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	10320	500	10000	0	103	80-130	0			
1,1,1-Trichloroethane	10300	500	10000	0	103	75-130	0			
1,1,2,2-Tetrachloroethane	10140	500	10000	0	101	75-130	0			
1,1,2-Trichloroethane	10460	500	10000	0	105	75-125	0			
1,1-Dichloroethane	9200	500	10000	0	92	75-133	0			
1,1-Dichloroethene	9945	500	10000	0	99.4	70-145	0			
1,2,3-Trichloropropane	10610	500	10000	0	106	75-125	0			
1,2,4-Trichlorobenzene	10140	500	10000	0	101	70-135	0			
1,2,4-Trimethylbenzene	11080	500	10000	0	111	75-130	0			
1,2-Dibromo-3-chloropropane	10100	500	10000	0	101	60-130	0			
1,2-Dibromoethane	15820	500	10000	0	158	80-150	0			S
1,2-Dichlorobenzene	10470	500	10000	0	105	70-130	0			
1,2-Dichloroethane	9820	500	10000	0	98.2	78-125	0			
1,2-Dichloropropane	9160	500	10000	0	91.6	75-125	0			
1,3,5-Trimethylbenzene	11820	500	10000	0	118	75-130	0			
1,3-Dichlorobenzene	10460	500	10000	0	105	75-130	0			
1,4-Dichlorobenzene	10030	500	10000	0	100	75-130	0			
2-Butanone	7300	2,500	10000	0	73	55-150	0			
2-Hexanone	7775	2,500	10000	0	77.8	60-135	0			
4-Methyl-2-pentanone	9470	500	10000	0	94.7	77-178	0			
Acetone	7780	5,000	10000	0	77.8	60-160	0			
Acrylonitrile	7940	500	10000	0	79.4	60-140	0			
Benzene	10380	500	10000	0	104	85-125	0			
Bromochloromethane	8315	500	10000	0	83.2	75-130	0			
Bromodichloromethane	9880	500	10000	0	98.8	75-125	0			
Bromoform	8355	500	10000	0	83.6	60-125	0			
Bromomethane	8485	500	10000	0	84.8	30-185	0			
Carbon disulfide	8650	500	10000	0	86.5	60-165	0			
Carbon tetrachloride	9630	500	10000	0	96.3	65-140	0			
Chlorobenzene	10710	500	10000	0	107	80-120	0			
Chloroethane	8010	500	10000	0	80.1	50-140	0			
Chloroform	8435	500	10000	0	84.4	80-130	0			
Chloromethane	7075	500	10000	0	70.8	50-130	0			
cis-1,2-Dichloroethene	22230	500	10000	13460	87.8	75-134	0			
cis-1,3-Dichloropropene	8370	500	10000	0	83.7	70-130	0			
Dibromochloromethane	8230	500	10000	0	82.3	60-115	0			
Dibromomethane	11120	500	10000	0	111	85-125	0			
Dichlorodifluoromethane	7470	500	10000	0	74.7	20-120	0			
Ethylbenzene	10320	500	10000	0	103	85-125	0			
Hexachloroethane	6730	500	10000	0	67.3	50-124	0			
Isopropylbenzene	11490	500	10000	0	115	80-127	0			
m,p-Xylene	21480	1,000	20000	0	107	75-130	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1607390
Project: Merit (13955 Cherry Blossom Ln)

QC BATCH REPORT

Batch ID: **R191319** Instrument ID: **VMS9** Method: **SW8260B**

Methyl iodide	22620	500	10000	0	226	60-160	0	S
Methyl tert-butyl ether	8705	500	10000	0	87	80-130	0	
Methylene chloride	8415	2,500	10000	0	84.2	75-140	0	
Naphthalene	9740	2,500	10000	0	97.4	55-160	0	
n-Propylbenzene	10820	500	10000	0	108	78-120	0	
o-Xylene	10360	500	10000	0	104	80-125	0	
Styrene	11740	500	10000	0	117	85-125	0	
Tetrachloroethene	12460	500	10000	0	125	77-138	0	
Toluene	10430	500	10000	0	104	85-125	0	
trans-1,2-Dichloroethene	9430	500	10000	0	94.3	80-140	0	
trans-1,3-Dichloropropene	7870	500	10000	0	78.7	81-123	0	S
trans-1,4-Dichloro-2-butene	7580	1,000	10000	0	75.8	46-118	0	
Trichloroethene	36130	500	10000	25400	107	84-130	0	
Trichlorofluoromethane	9400	500	10000	0	94	60-140	0	
Vinyl chloride	12020	500	10000	4210	78.1	50-136	0	
Xylenes, Total	31840	1,500	30000	0	106	80-126	0	
Surr: 1,2-Dichloroethane-d4	*10400*	0	*10000*	0	*104*	*75-120*	0	
Surr: 4-Bromofluorobenzene	*10180*	0	*10000*	0	*102*	*80-110*	0	
Surr: Dibromofluoromethane	*9955*	0	*10000*	0	*99.6*	*85-115*	0	
Surr: Toluene-d8	*9920*	0	*10000*	0	*99.2*	*85-110*	0	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1607390
Project: Merit (13955 Cherry Blossom Ln)

QC BATCH REPORT

Batch ID: **R191319** Instrument ID: **VMS9** Method: **SW8260B**

MSD Sample ID: **1607054-11A MSD** Units: **µg/L** Analysis Date: **7/12/2016 09:27 PM**

Client ID: Run ID: **VMS9_160712A** SeqNo: **3919522** Prep Date: DF: **500**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	10880	500	10000	0	109	80-130	10320	5.24	30	
1,1,1-Trichloroethane	10580	500	10000	0	106	75-130	10300	2.59	30	
1,1,2,2-Tetrachloroethane	10240	500	10000	0	102	75-130	10140	0.981	30	
1,1,2-Trichloroethane	10820	500	10000	0	108	75-125	10460	3.39	30	
1,1-Dichloroethane	9720	500	10000	0	97.2	75-133	9200	5.5	30	
1,1-Dichloroethene	10320	500	10000	0	103	70-145	9945	3.65	30	
1,2,3-Trichloropropane	10710	500	10000	0	107	75-125	10610	0.938	30	
1,2,4-Trichlorobenzene	10430	500	10000	0	104	70-135	10140	2.87	30	
1,2,4-Trimethylbenzene	11600	500	10000	0	116	75-130	11080	4.54	30	
1,2-Dibromo-3-chloropropane	10190	500	10000	0	102	60-130	10100	0.838	30	
1,2-Dibromoethane	15910	500	10000	0	159	80-150	15820	0.567	30	S
1,2-Dichlorobenzene	10470	500	10000	0	105	70-130	10470	0	30	
1,2-Dichloroethane	9975	500	10000	0	99.8	78-125	9820	1.57	30	
1,2-Dichloropropane	9340	500	10000	0	93.4	75-125	9160	1.95	30	
1,3,5-Trimethylbenzene	11890	500	10000	0	119	75-130	11820	0.548	30	
1,3-Dichlorobenzene	10870	500	10000	0	109	75-130	10460	3.8	30	
1,4-Dichlorobenzene	10320	500	10000	0	103	75-130	10030	2.9	30	
2-Butanone	7670	2,500	10000	0	76.7	55-150	7300	4.94	30	
2-Hexanone	8030	2,500	10000	0	80.3	60-135	7775	3.23	30	
4-Methyl-2-pentanone	7465	500	10000	0	74.6	77-178	9470	23.7	30	S
Acetone	8070	5,000	10000	0	80.7	60-160	7780	3.66	30	
Acrylonitrile	8005	500	10000	0	80	60-140	7940	0.815	30	
Benzene	10490	500	10000	0	105	85-125	10380	1.01	30	
Bromochloromethane	8775	500	10000	0	87.8	75-130	8315	5.38	30	
Bromodichloromethane	10660	500	10000	0	107	75-125	9880	7.64	30	
Bromoform	8570	500	10000	0	85.7	60-125	8355	2.54	30	
Bromomethane	8815	500	10000	0	88.2	30-185	8485	3.82	30	
Carbon disulfide	9435	500	10000	0	94.4	60-165	8650	8.68	30	
Carbon tetrachloride	10180	500	10000	0	102	65-140	9630	5.6	30	
Chlorobenzene	10840	500	10000	0	108	80-120	10710	1.16	30	
Chloroethane	8470	500	10000	0	84.7	50-140	8010	5.58	30	
Chloroform	8950	500	10000	0	89.5	80-130	8435	5.92	30	
Chloromethane	7135	500	10000	0	71.4	50-130	7075	0.844	30	
cis-1,2-Dichloroethene	23100	500	10000	13460	96.5	75-134	22230	3.86	30	
cis-1,3-Dichloropropene	8725	500	10000	0	87.2	70-130	8370	4.15	30	
Dibromochloromethane	8390	500	10000	0	83.9	60-115	8230	1.93	30	
Dibromomethane	11320	500	10000	0	113	85-125	11120	1.78	30	
Dichlorodifluoromethane	7435	500	10000	0	74.4	20-120	7470	0.47	30	
Ethylbenzene	10660	500	10000	0	107	85-125	10320	3.29	30	
Hexachloroethane	6565	500	10000	0	65.6	50-124	6730	2.48	30	
Isopropylbenzene	11770	500	10000	0	118	80-127	11490	2.41	30	
m,p-Xylene	21780	1,000	20000	0	109	75-130	21480	1.36	30	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Merit Energy
Work Order: 1607390
Project: Merit (13955 Cherry Blossom Ln)

QC BATCH REPORT

Batch ID: **R191319** Instrument ID: **VMS9** Method: **SW8260B**

Methyl iodide	23060	500	10000	0	231	60-160	22620	1.93	30	S
Methyl tert-butyl ether	9095	500	10000	0	91	80-130	8705	4.38	30	
Methylene chloride	8810	2,500	10000	0	88.1	75-140	8415	4.59	30	
Naphthalene	9845	2,500	10000	0	98.4	55-160	9740	1.07	30	
n-Propylbenzene	11020	500	10000	0	110	78-120	10820	1.83	30	
o-Xylene	10480	500	10000	0	105	80-125	10360	1.2	30	
Styrene	12140	500	10000	0	121	85-125	11740	3.39	30	
Tetrachloroethene	12620	500	10000	0	126	77-138	12460	1.2	30	
Toluene	10680	500	10000	0	107	85-125	10430	2.42	30	
trans-1,2-Dichloroethene	9695	500	10000	0	97	80-140	9430	2.77	30	
trans-1,3-Dichloropropene	8120	500	10000	0	81.2	81-123	7870	3.13	30	
trans-1,4-Dichloro-2-butene	7700	1,000	10000	0	77	46-118	7580	1.57	30	
Trichloroethene	36800	500	10000	25400	114	84-130	36130	1.84	30	
Trichlorofluoromethane	9570	500	10000	0	95.7	60-140	9400	1.79	30	
Vinyl chloride	12400	500	10000	4210	81.8	50-136	12020	3.07	30	
Xylenes, Total	32260	1,500	30000	0	108	80-126	31840	1.31	30	
Surr: 1,2-Dichloroethane-d4	*10200*	0	*10000*	0	*102*	*75-120*	10400	*1.94*	*30*	
Surr: 4-Bromofluorobenzene	*10090*	0	*10000*	0	*101*	*80-110*	10180	*0.937*	*30*	
Surr: Dibromofluoromethane	*9835*	0	*10000*	0	*98.4*	*85-115*	9955	*1.21*	*30*	
Surr: Toluene-d8	*9870*	0	*10000*	0	*98.7*	*85-110*	9920	*0.505*	*30*	

The following samples were analyzed in this batch: 1607390-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Group USA, Corp

Date: 13-Jul-16

Client: Merit Energy
Project: Merit (13955 Cherry Blossom Ln)
WorkOrder: **1607390**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit backgr or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
µg/L	Micrograms per Liter

ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **MERITENERGY** Date/Time Received: **08-Jul-16 10:30**

Work Order: **1607390** Received by: **DS**

Checklist completed by Diane Shaw 08-Jul-16 Reviewed by: Gary Byar 08-Jul-16
eSignature Date eSignature Date

Matrices: Water
Carrier name: UPS

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	4.6/4.6 c	SR2	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	7/8/2016 1:35:05 PM		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:			

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction

Chain of Custody Form

ALS Environmental

Page 1 of 1

COC ID: 123456

☐ Cincinnati, OH +1 513 733 5336 ☒ Holland, MI +1 616 399 6070 ☐ Salt Lake City, UT +1 801 266 7700
☐ Everett, WA +1 425 356 2600 ☐ Houston, TX +1 281 530 5656 ☐ Spring City, PA +1 610 948 4903
☐ Fort Collins, CO +1 970 490 1511 ☐ Middletown, PA +1 717 944 5541 ☐ York, PA +1 717 505 5280

ALS Project Manager: | Work Order #: 1607390

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	Merit	A	Full VOCs
Work Order		Project Number	130685.2000	B	Sulfolane
Company Name	ECT, Inc.	Bill To Company	ECT-Traverse City	C	DIPA
Send Report To	Jeremy Lewandowski	Invoice Attn.	Jeremy L.	D	
Address		Address		E	
				F	
City/State/Zip		City/State/Zip		G	
Phone		Phone		H	
Fax		Fax		I	
e-Mail Address	jlewandowski@ectinc.com	e-Mail Address		J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	13955 Cherry Blossom Ln (Water Well)	7/7/16	1430	Water	HCl	9	X	X	X								
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s): Please Print & Sign: Jason Bartholomew

Shipment Method: cooler (UPS)

Required Turnaround Time: ☒ STD 10 Wk Days ☐ 5 Wk Days ☐ 2 Wk Days ☐ 24 Hour ☐ Other _____

Results Due Date:

Relinquished by:	Date: 7/7/16	Time: 1545	Received by: UPS	Notes: Sent on ice. c.c. Jason Bartholomew/TFS
Relinquished by: UPS	Date: 7/8/16	Time: 1030	Received by (Laboratory):	Cooler Temp. 4.0°C
Logged by (Laboratory): DES	Date: 7/8/16	Time: 1330	Checked by (Laboratory) GRB	

QC Package: (Check Box Below)
☐ Level II: Standard QC
☐ Level III: Std QC + Raw Data
☐ Level IV: SW846 CLP-Like
☐ Other: _____

Preservative Key: 1-HCL 2-HNO3 3-H2SO4 4-NaOH 5-Na2S2O3 6-NaHSO4 7-Other 8-4 degrees C 9-5035

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.

FROM: 20 LBS 1 OF 1

LISA ZUBER
(517) 272-9200
ECT, INC.
3125 SOVEREIGN DRIVE
LANSING MI 48911-4240

SHIP TO:

SAMPLE RECEIVING
(616) 399-6070
ALS LABORATORY GROUP
3352 128TH AVENUE
HOLLAND MI 49424-9263

MI 495 9-04

UPS NEXT DAY AIR **1**

TRACKING #: 1Z V54 9W4 01 5065 8744

REF 1:130865, 2000

BILLING: 3RD PARTY

WS 19.0.24 Xerox WorkCen 75.0A 04/2016

Fold here and place in label pouch