SOIL VAPOR EXTRACTION SYSTEM
FIRST SEMIANNUAL REPORT 2018

KUHLMAN ELECTRIC CORPORATION
CRYSTAL SPRINGS, MISSISSIPPI

Prepared by:

ENVIRONMENTAL MANAGEMENT SERVICES, INC.

P.O. Box 15369
Hattiesburg, Mississippi 39404

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EMS Project No: KUH0-18-012

Table of Contents

List of Figures

List of Tables

List of Appendices

Executive Summary

This Soil Vapor Extraction (SVE) System Semiannual Report summarizes the performance of the SVE system installed by Environmental Management Services, Inc. (EMS) for Kuhlman Electric Company (KEC) located in Crystal Springs, Mississippi (the Site). This report includes a synopsis of the performance data for the first semiannual period of 2018.

The system initially began operations April 21, 2014 with normal operation attained on May 2, 2014. Routine monitoring has been performed according to the schedule described in the *SVE Final Design and Quality Assurance Project Plan* submitted to Mississippi Department of Environmental Quality (MDEQ) on September 13, 2013.

Historical Information Summary

The Site is located at 101 Kuhlman Drive in Crystal Springs, Mississippi, as shown in Figure 1, and has operated as an electrical transformer manufacturing plant since its construction in the 1950's. In April of 2000, Polychlorinated Biphenyl (PCB)-contaminated soil was discovered on-site during subsurface construction activities. This discovery initiated several phases of environmental assessments and remediation projects, some of which are currently ongoing. During these investigations and remediation projects it was discovered that the groundwater on and off KEC property was impacted with Volatile Organic Compounds (VOCs); principally, 1,1-dichloroethene (DCE) and the semi-volatile constituent 1,4-dioxane.

An investigation was performed to determine the source of the groundwater impacts and was documented in the April 30, 2009 *Groundwater Assessment Report, Kuhlman Electric Corporation, Crystal Springs, Mississippi* prepared by Martin & Slagle Geoenvironmental Associates, LLC (Martin & Slagle) for BorgWarner (hereafter referred to as the April 2009 *Groundwater Assessment Report*). These efforts included a soil vapor study, which detected VOCs in the soil vapors from 3 to 12 feet below the plant floor. Soil samples were also collected from beneath the building from 0 to 62 feet below ground surface (bgs) and analyzed for VOCs.

The analytical results indicated that VOCs were present in the subsurface soil under portions of the plant building. This area, near the western portion of the plant building beneath the Winding Department process area, the Break Room, and a former rail pit, was identified as the source area for the groundwater impacts. The source area was first published in the April 2009 Groundwater Assessment Report and is depicted on Figure 2 of this report.

These investigations beneath the building footprint confirmed that commingled plumes of DCE and 1,4-dioxane extend from upgradient of the source area, beneath the plant building, to the

southwest and off-site. The DCE plume extends off-site approximately 3,000 feet to the south and approximately 2,800 feet to the west from the property boundary based on the most recent groundwater sampling data collected in March of 2018.

DCE and 1,4-dioxane have been identified as the primary Constituents of Concern (COC) at this site. The presence of 1,4-dioxane is presumed to be related to its use as a stabilizer in 1,1,1-trichloroethane (TCA), a solvent used in the past at the KEC site. DCE is a breakdown product of TCA.

In connection with the environmental assessments at the site and in accordance with MDEQ requirements, groundwater monitoring has been performed on and off the KEC facility property since 2004. Groundwater monitoring is currently performed on a semiannual schedule. A total of forty-six permanent groundwater monitoring wells are used to monitor the groundwater plume.

As a result of the discovery of the groundwater contamination and subsequent investigations of soil and groundwater, BorgWarner submitted the Corrective Action Plan (CAP) dated March 2011 (Arcadis) to MDEQ. The CAP was approved by MDEQ on March 1, 2012. The CAP targeted an area beneath the building as the source area contributing to the groundwater impact by the COC as shown in Figure 2. It presented three objectives to mitigate impacts to the COC contaminant plume. The three objectives are listed below:

1. Ensure COC concentrations in soil and groundwater in the contaminant source area beneath the KEC manufacturing building are at levels protective of site workers.
2. Reduce COC concentrations in soil in the contaminant source area beneath the KEC manufacturing building to the extent that remaining concentrations no longer contribute to, or exacerbate COC concentrations in off-site groundwater.
3. Reduce COC concentrations in off-site groundwater to levels protective of downgradient groundwater receptors.

A pilot study was performed at the site May 12-13, 2012, to confirm the viability of soil vapor extraction as a remedial strategy. The *Soil Vapor Extraction Pilot Study Report* (revised May 1, 2013) detailing the outcome of the study and proposing the use of Soil Vapor Extraction (SVE) to reduce COC concentrations was approved by MDEQ July 12, 2013. The *Soil Vapor Extraction Final Design and Quality Assurance Project Plan* was approved by MDEQ October 4, 2013. The system was installed as described in the *SVE Installation Report* submitted to MDEQ September 18, 2014.

SVE Operations and Maintenance

Site visits for this semiannual period were completed on the following dates: January 2; February 23 and 26; March 26; April 9; May 3, 30, and 31; and, June 12. Activities performed during site visits included visually inspecting the operating components, adjusting various operating parameters if warranted, collecting samples, and collecting operating data. Significant maintenance activities during the semiannual period included the following. EMS and Carbon Air mobilized to the site on April 9, 2018 to conduct the removal of carbon material from both tanks as well as the replacement with new activated carbon. A new Tuthill CP Series Model 5009 was installed by Relevant Solutions under supervision of EMS personnel on May 31, 2018.

Groundwater Results

Groundwater was sampled from the entire network of monitoring wells, which includes the SVE Performance Monitoring Wells MW-10A, MW-10B, MW-10C, MW-30, MW-31, and MW-35, as shown on Figure 1, on March 19-21, 2018, for the required semiannual sampling event. Analytical results for MW-10A, MW-10B, MW-30, and MW-35 showed concentrations of constituents greater than the MDEQ groundwater target remediation goals (TRG). The constituents with exceedances were 1,4-dioxane, DCE, 1,1,2 Trichloroethane, and chloroform. The concentrations of DCE measured in MW-35, which is located within the source area, have decreased since April 2014 when monitoring of the well began. Additional data is necessary to confirm this trend and will be collected during future monitoring events. The analytical results from the March 2018 sampling event for the wells listed are presented in Table 1.

Soil Vapor Results

The observation wells, as shown on Figure 2, are monitored quarterly for relative VOC concentration in the soil vapor. Tubing is placed in the well to a depth within the screened interval, and a photoionization detection (PID) meter and a flame ionization detection (FID) meter are used to purge the wells and measure the relative VOC concentration in the soil vapor within the well. The measured relative concentrations ranged from 0 to 12 parts per million (ppm) with the PID and there were no detections observed with the FID. The observation well soil vapor results from January through June are summarized in Table 2.

The observation well soil vapor was also sampled and analyzed for VOCs and 1,4-dioxane during the March and June sampling events using 1-liter SUMMA canisters. The vapor samples were collected by placing tubing within the middle of the screened interval depth and the well opening was covered. A PID meter and FID meter were then used to purge and measure the relative VOC concentration in the soil vapor. After obtaining the PID and FID measurements, the SUMMA canister was connected to the tubing to collect the soil vapors within the screened interval. The observation well soil vapor analytical results are summarized in Table 3, and the laboratory results are included in Appendix A.

The SVE system exhaust and the vapor exiting each stage of carbon treatment were monitored quarterly utilizing both PID and FID meters to evaluate relative VOC concentrations. The relative VOC concentrations measured by the PID meter and the FID meter in the discharge from the SVE system prior to carbon treatment are included in Table 4.

The SVE unit exhaust and the vapor exiting each stage of carbon treatment were also sampled and analyzed for VOCs and 1,4-dioxane. Samples were collected during February and May. The results are summarized in Table 5. The concentrations of TCA, DCE, and 1,4-dioxane are used to calculate the cumulative mass removed. Since startup of the SVE unit, approximately 3.77 pounds of TCA, 15.47 pounds of DCE, and 236.03 pounds of 1,4-dioxane have been removed through the SVE system. Figures 3-5 show the cumulative mass removal of each constituent. Laboratory results along with the cumulative mass removal calculations are included in Appendix B.

The flow rates from each individual well are also calculated and recorded during routine visits to the SVE system. The calculated flow rates from each well for the period from January to June are contained in Table 6.

Ambient Air Results

Ambient air sampling was performed quarterly utilizing 1-liter SUMMA canisters equipped with 8-hour flow valves. The air sampling locations are shown on Figure 2. The canisters are placed in the sampling location to collect samples to be analyzed for VOCs and 1,4-dioxane. Concentrations of all analytes detected were well below any published regulatory limit. The analytical results of the ambient air monitoring for the semiannual period are shown in Table 7. The analytical laboratory reports for the ambient air monitoring are contained in Appendix C.

Vacuum Measurements

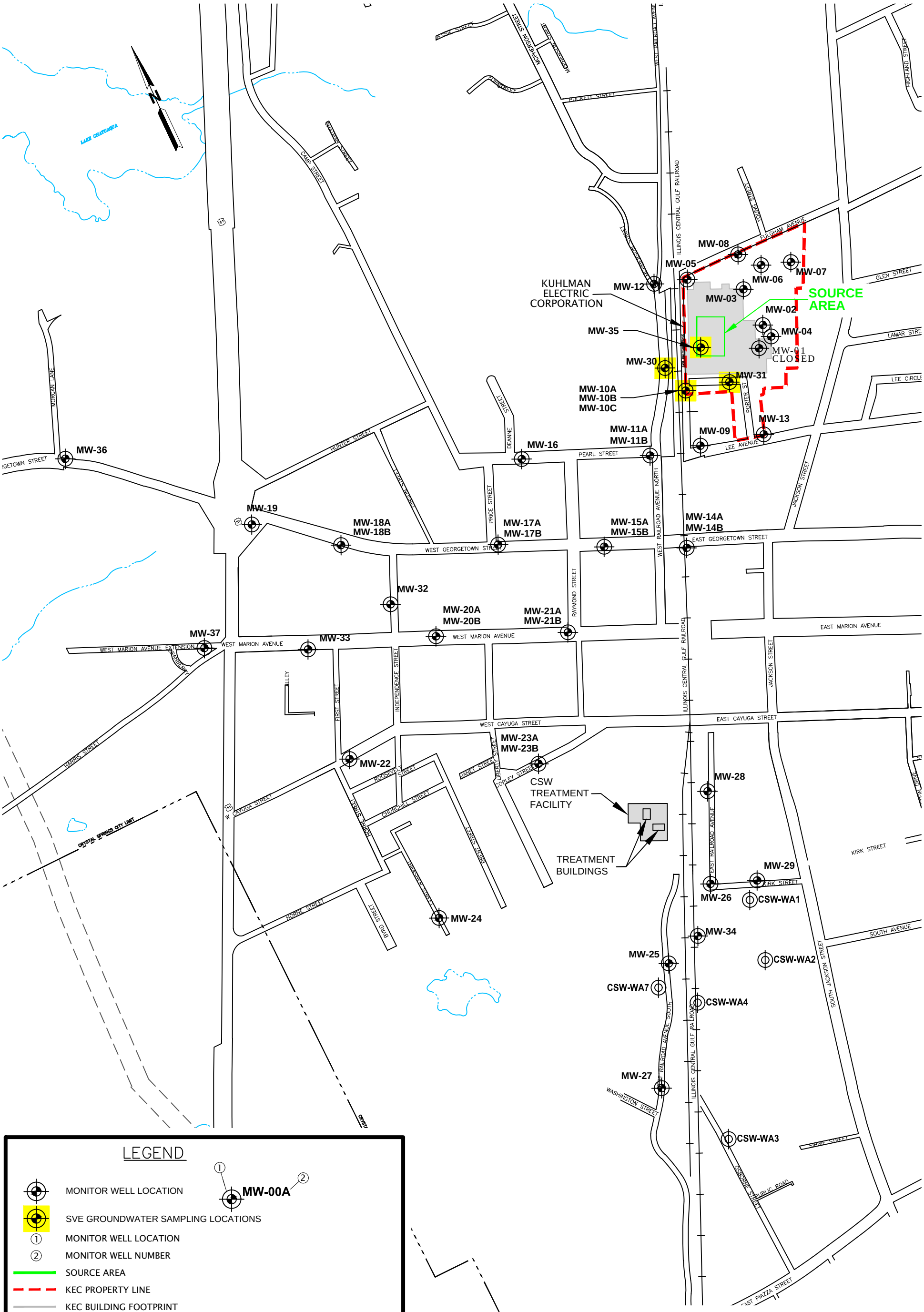
The vacuum response at each observation well is measured quarterly. At 80 feet from the nearest extraction well, the vacuum response averaged 2.8 inches of water. The vacuum response measurements for the first semiannual period in 2018 are shown in Table 8.

In addition, vacuum gauges were placed in the interstitial space on each dual-walled HDPE piping run near the extraction wells. The vacuum gauges are used to measure the vacuum or pressure of the interstitial space between the inner carrier pipe and the outer containment pipe during monthly site visits for leak detection. The gauges have shown no measureable vacuum or pressure within the interstitial space indicating no leaks within the carrier pipe.

Conclusion

The results from this monitoring period indicate that contaminants are being removed from the soil beneath the facility. The remediation activities will continue to remove contaminant mass from the soil through vapor extraction in order to remediate the defined source area. Monitoring as described in this report will continue, and monitoring events will be documented and reported semiannually.

Figures



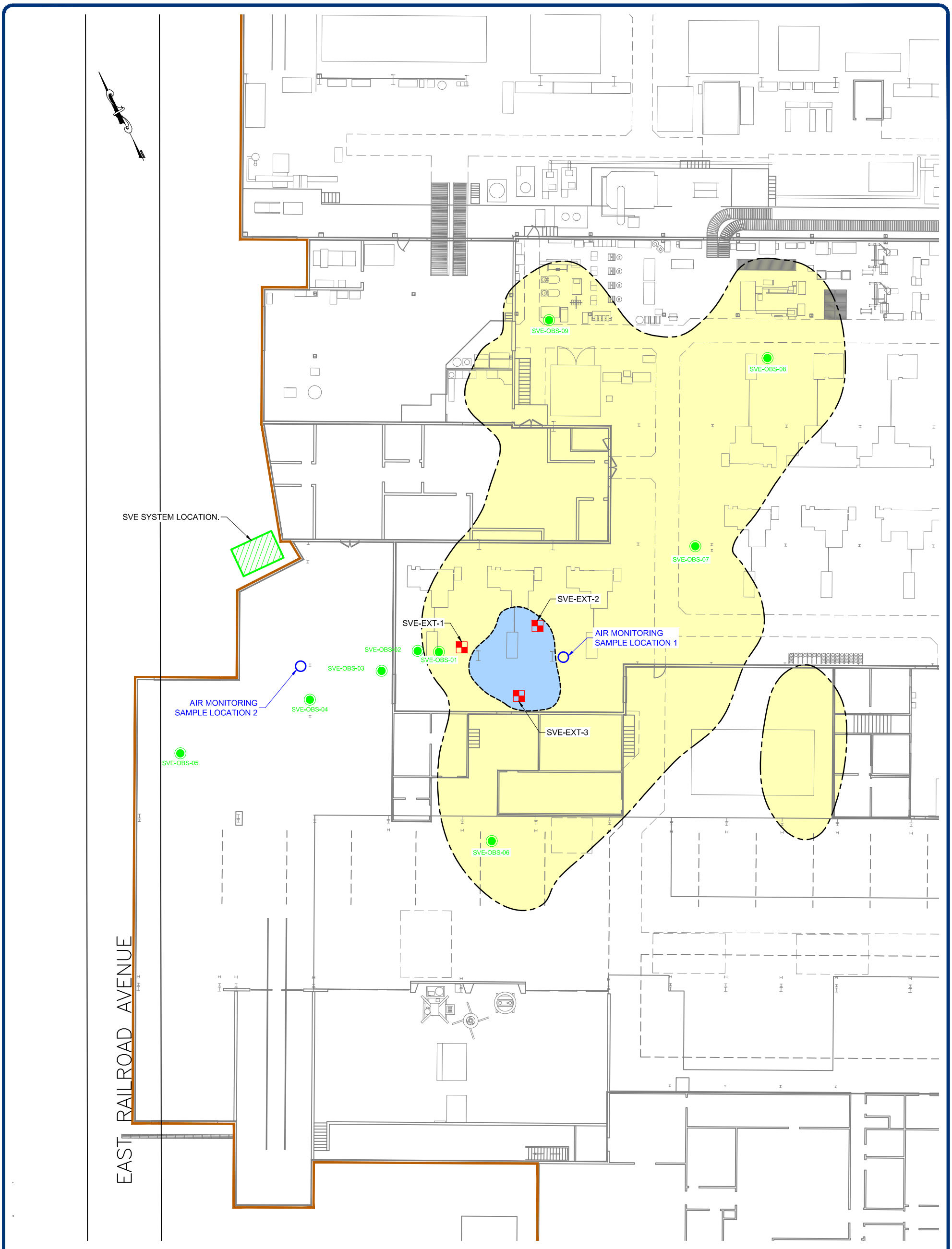
MONITOR WELL LOCATIONS
WELL LAYOUT

KUHLMAN ELECTRIC
KEC FACILITY
CRYSTAL SPRINGS, MS

DATE:	APPROVED:	DRAWN BY:
07/06/2018	BY: _____ DATE: _____	PDM
SCALE: AS SHOWN		PROJECT NO. KUH0-18-012

ENVIRONMENTAL MANAGEMENT SERVICES, INC.

FIGURE 1



LEGEND

- KEC BUILDING FOOTPRINT
- SVE OBSERVATION WELLS
- SVE EXTRACTION WELLS
- AMBIENT AIR SAMPLE LOCATIONS
- 1,1-DICHLOROETHENE IN SOIL EXCEEDING UNRESTRICTED TIER 1 TRG (0.0772 mg/kg)
- 1,4-DIOXANE IN SOIL EXCEEDING UNRESTRICTED TIER 1 TRG (58.1 mg/kg)

SCALE 1 INCH = 25 FEET

5 10 25

0 5 10 15 20 25 50

NOTES:

1) SOIL CONCENTRATIONS ARE BASED ON EXTENT AS DEFINED IN CORRECTIVE ACTION PLAN, ARCADIS, MARCH 2010.

SVE SYSTEM LAYOUT

KUHLMAN ELECTRIC
KEC FACILITY
CRYSTAL SPRINGS, MS

DATE: 07/06/2018	APPROVED: BY: _____ DATE: _____	DRAWN BY: PDM
SCALE: AS SHOWN		CAD NO. KUH0-18-012

ENVIRONMENTAL MANAGEMENT SERVICES, INC.

FIGURE 2

Figure 3
1,1,1-Trichloroethane Cumulative Mass Removal Through June 2018

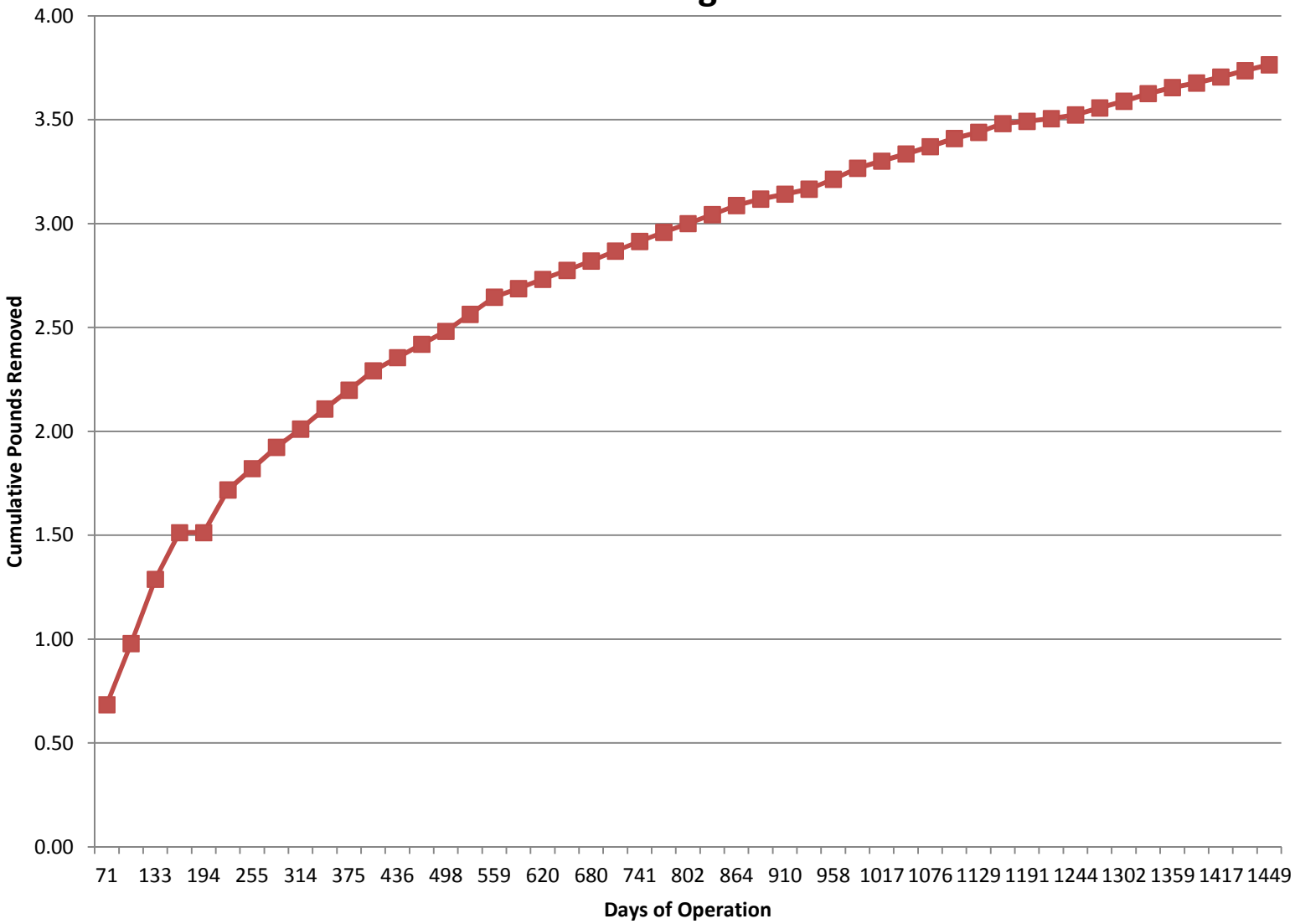


Figure 4
1,1-Dichloroethene Cumulative Mass Removal
Through June 2018

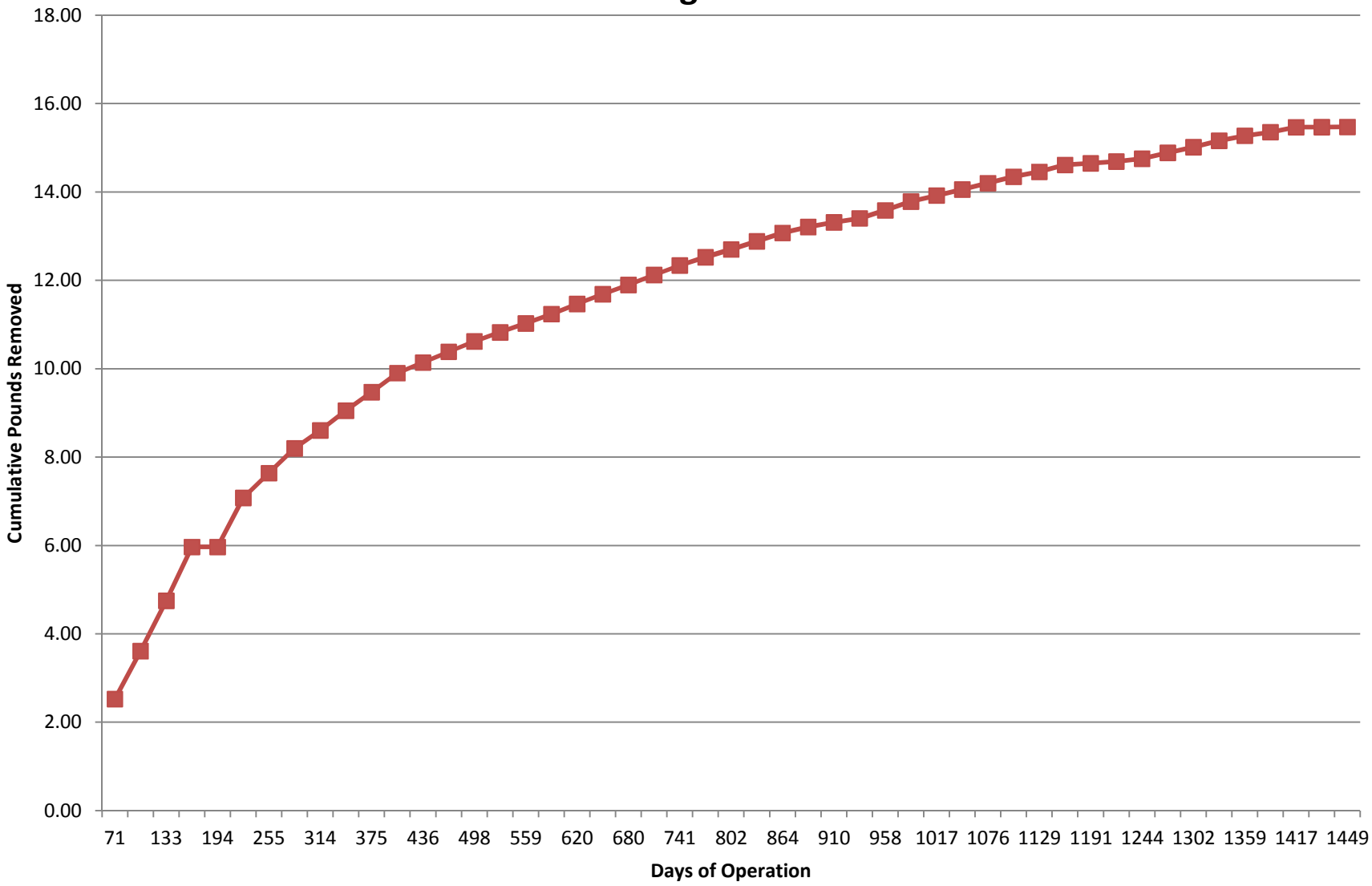
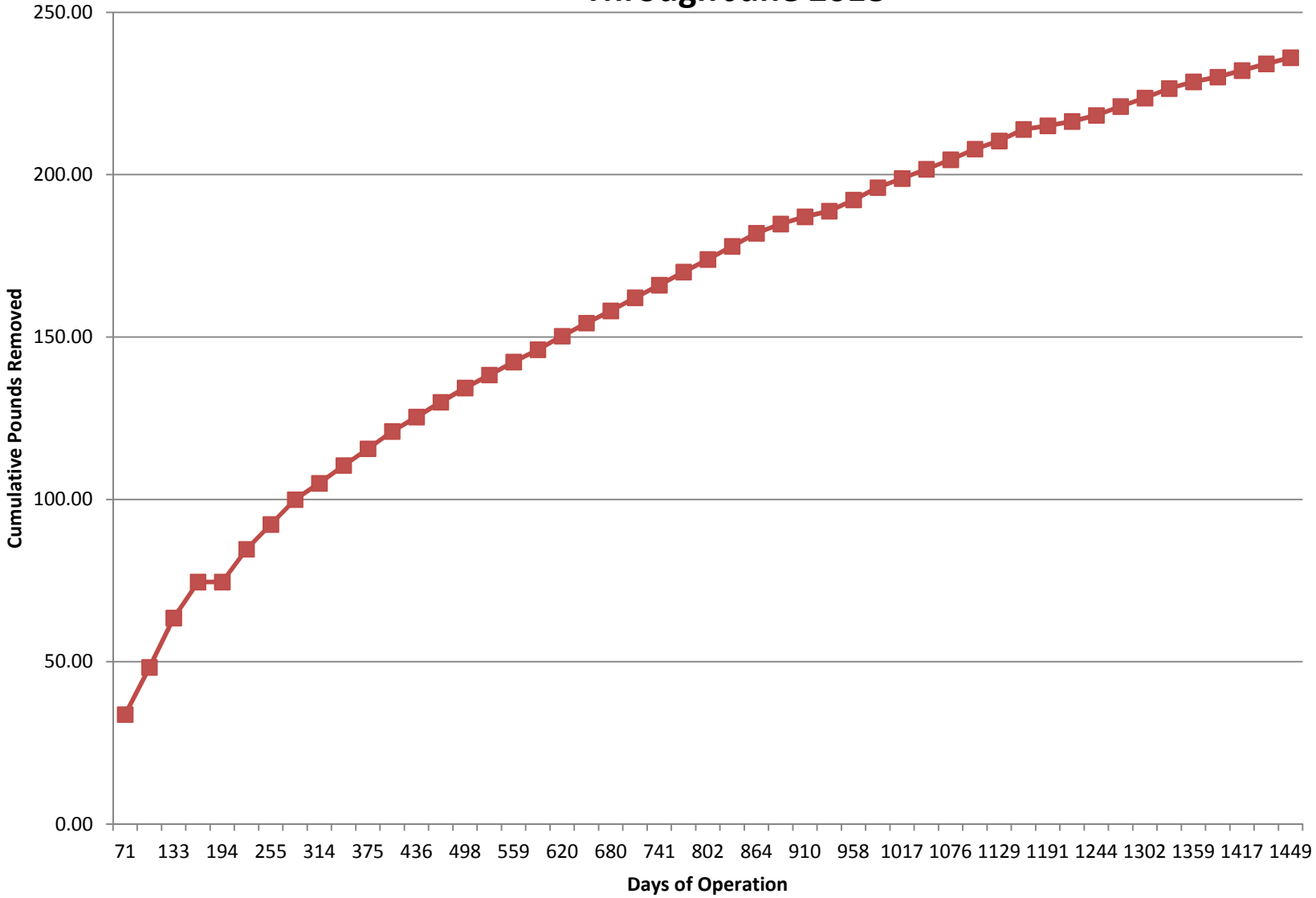


Figure 5
1,4-Dioxane Cumulative Mass Removal
Through June 2018



Tables

TABLE 1
GROUNDWATER ANALYTICAL RESULTS SUMMARY

SVE First Semiannual Sampling 2018
Kuhlman Electric Corporation
Crystal Springs, MS

		MW-35	MW-10A		MW-10B	MW-10C	MW-30	MW-31
Constituent	**MDEQ Tier I TRG ***	**KEP-GW-035-012**	**KEP-GW-010A-032**	**KEP-GW-BD5-318**	**KEP-GW-010B-032**	**KEP-GW-010C-032**	**KEP-GW-030-018**	**KEP-GW-031-018**
Sample Date		**3/21/2018**	**3/20/2018**	**3/20/2018**	**3/19/2018**	**3/21/2018**	**3/20/2018**	**3/19/2018**
1,1,1-Trichloroethane (TCA)	200	<0.5	0.8	0.8	0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	5.0	<0.5	**5.6**	**5.7**	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	798	<0.5	2.1	1.9	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethene	7.0	1.9	**49.0**	**44.0**	**16.0**	<0.5	1.5	4.3
1,2-Dichloroethane (EDC)	5.0	<0.5	2.2	2.1	<0.5	<0.5	<0.5	<0.5
1,4-Dioxane	6.09	**18**	**7.3**	**7.1**	**7.2**	<0.4	<0.4	<0.4
Chloroform	0.155	<0.5	**0.7**	**0.7**	<0.5	<0.5	<0.5	**0.6**
Tetrachloroethene (PCE)	5.0	<0.5	<0.5	<0.5	<0.5	0.9	<0.5	<0.5
Trichloroethene (TCE)	5.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Notes:

All results/standards in units of: µg/l - micrograms per liter
Bold indicates an exceedance
** MDEQ Target Remediation Goals (TRG's) for Groundwater*

TABLE 2
OBSERVATION WELL RELATIVE VOC CONCENTRATIONS RESULTS SUMMARY

SVE System
Kuhlman Electric Corporation
Crystal Springs, MS

OBSERVATION WELL PID RESULTS SUMMARY

Sample Date	SVE-OBS-1	SVE-OBS-2	SVE-OBS-3	SVE-OBS-4	SVE-OBS-5	SVE-OBS-6	SVE-OBS-7	SVE-OBS-8	SVE-OBS-9
3/26/2018	0.4	0.8	0.8	0.8	12	0.8	0.8	12	1.9
6/12/2018	0.1	0.5	1.3	1.4	0.8	0	0	0	0.4

OBSERVATION WELL FID RESULTS SUMMARY

Sample Date	SVE-OBS-1	SVE-OBS-2	SVE-OBS-3	SVE-OBS-4	SVE-OBS-5	SVE-OBS-6	SVE-OBS-7	SVE-OBS-8	SVE-OBS-9
3/26/2018	0	0	0	0	0	0	0	0	0
6/12/2018	0	0	0	0	0	0	0	0	0

All results in units of ppm - parts per million

TABLE 3
OBSERVATION WELL SOIL VAPOR ANALYTICAL RESULTS SUMMARY

SVE System
Kuhlman Electric Corporation
Crystal Springs, MS

Compound	SVE-OBS-1		SVE-OBS-2		SVE-OBS-3		SVE-OBS-4		SVE-OBS-5		SVE-OBS-6		SVE-OBS-7		SVE-OBS-8		SVE-OBS-9	
Sample Date	**3/26/2018**	**6/12/2018**	**3/26/2018**	**6/12/2018**	**3/26/2018**	**6/12/2018**	**3/26/2018**	**6/12/2018**	**3/26/2018**	**6/12/2018**	**3/26/2018**	**6/12/2018**	**3/26/2018**	**6/12/2018**	**3/26/2018**	**6/12/2018**	**3/26/2018**	**6/12/2018**
1,1,1-Trichloroethane	3.0	1.3	1.2	0.66	1.0	0.61	0.45	0.64	0.20	0.30	8.2	7.4	1.2	0.47	4.3	3.8	0.97	0.62
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.058	0.46	0.11	ND	ND	ND	ND
1,1-Dichloroethane	0.49	0.20	ND	ND	ND	ND	ND	0.15	ND	ND	0.59	0.80	1.5	0.39	4.9	3.1	ND	ND
1,1-Dichloroethene	7.2	3.5	0.80	0.47	2.0	1.2	0.22	0.30	ND	ND	8.1	1.9	83	12	63	66	4.1	1.2
1,2-Dichloroethane	ND	1.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.50	ND	ND
1,4-Dioxane	0.94	0.84	0.25	ND	1.7	0.28	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.26	0.17	ND
Carbon Tetrachloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.18	0.047	ND	ND	ND	ND

All results in units of ppb - parts per billion

TABLE 4
SVE SYSTEM RELATIVE VOC CONCENTRATION MONITORING

SVE System
Kuhlman Electric Corporation
Crystal Springs, MS

Sample Date	Pre Carbon	Carbon Unit 1	Carbon Unit 2
	PID ppm		
2/26/2018	0.5	0.8	0.2
5/30/2018	0.4	1.6	0.2
	FID ppm		
2/26/2018	0	0	0
5/30/2018	NM	NM	NM

Notes:

All results in units of ppm - parts per million
NM - Not measured

TABLE 5
SVE SYSTEM EXHAUST ANALYTICAL SUMMARY

SVE System
Kuhlman Electric Corporation
Crystal Springs, MS

Compound	Pre Carbon		Post Carbon 1		Post Carbon 2	
Sample Date	2/26/2018	5/30/2018	2/26/2018	5/30/2018	2/26/2018	5/30/2018
1,1,1-Trichloroethane	6.1	6.6	2.5	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	0.79	0.73	ND	ND	ND	ND
1,1-Dichloroethene	32	29	45	22	22	ND
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND
1,4-Dioxane	640	670	520	19	6	1.6

Results are in µg/m ^{3}

TABLE 6
SVE SYSTEM WELL FLOW RATE SUMMARY

SVE System
Kuhlman Electric Corporation
Crystal Springs, MS

	SVE-EXT-1	SVE-EXT-2	SVE-EXT-3
Date	**Flow Rate SCFM**		
1/2/2018	106.1	75.0	134.5
2/23/2018	104.2	72.3	131.5
2/26/2018	104.2	69.5	129.9
3/26/2018	106.1	75.0	131.5
4/9/2018	104.2	69.5	129.9
5/3/2018	106.1	72.3	129.9
5/30/2018	106.1	69.5	129.9
5/31/2018	102.2	69.5	126.8
6/12/2018	102.2	69.5	126.8

TABLE 7
QUARTERLY AMBIENT AIR MONITORING

SVE SYSTEM
Kuhlman Electric Corporation
Crystal Springs, MS

Contaminant	OCCUPATIONAL STANDARDS			AIR MON 01-28	AIR MON 02-28	AIR MON 01-29	AIR MON 02-29
Sample Date	OSHA	ACGIH	NIOSH	2/26/2018	2/26/2018	5/30/2018	5/30/2018
1,1,1-Trichloroethane	435,000	435,000	435,000	<0.61	<0.7	<0.27	<0.27
1,1-Dichloroethene	450,000	60,000	--	<0.61	<0.7	<0.30	<0.30
1,2,4-Trimethylbenzene	--	860,000	--	4.1	2.5	6.6	8.4
1,3,5-Trimethylbenzene	426,000	85,200	215,000	1	0.72	2.6	4.5
1,4-Dichlorobenzene	--	--	125,000	1.4	<0.57	0.37	<0.33
1,4-Dioxane	360000	72000	--	<0.58	<0.66	<0.26	<0.26
2-Hexanone	410000	--	4000	<0.58	<0.66	0.53	0.46
4-Ethyltoluene	62,900	12,600	31,000	1.1	<0.66	2.6	3.8
Acetone	2,400,000	1,187,000	590,000	200	170	120	290
Acetonitrile	67,157	67,157	33,579	<0.65	<0.74	<0.53	<0.53
Acrolein	250	--	250	<0.61	<0.7	1.9	2.0
alpha-Pinene	--	--	--	3.4	4.8	9.0	8.7
Benzene	3,200	1,600	320	<0.58	<0.66	0.71	0.51
Carbon Disulfide	1,900,000	1,900,000	1,900,000	3.3	0.88	1.1	2.9
Carbon Tetrachloride	--	Ca	19,800	<0.54	<0.62	<0.30	0.32
Chloromethane	207,000	103,000	Ca	0.9	0.87	0.79	0.77
cis-1,2-Dichloroethene	790,000	793,000	790,000	<0.58	<0.66	<0.31	<0.30
Cumene	245,000		245,000	<0.54	<0.62	0.62	0.98
Cyclohexane	--	125,000	--	<1	<1.2	0.84	<0.61
Dichlorodifluoromethane (CFC 12)	4,950,000		4,950,000	1.9	2	1.9	2.0
d-Limonene				6.9	8.2	5.4	4.9
Ethanol	1,900,000	--	1,900,000	180	70	290	72
Ethyl Acetate	1,400,000	--	1,400,000	2	<1.4	32	9.2
Ethylbenzene	--	--	--	3	3.8	8.3	16
Isopropyl Alcohol	1,050,000	344,000	1,050,000	20	<1.7	31	4.9
m,p-Xylene	750,000	75,360	375,000	16	18	36	65
Methyl Ethyl Ketone	435,000	435,000	435,000	17	10	6.7	6.2
Methyl Isobutyl Ketone	980,000	--	980,000	2.1	0.84	6.8	3.5
Methylene Chloride	86,750	--	86,750	<0.61	0.77	9.2	2.1
Naphthalene	50,000	--	50,000	1.7	<0.74	<0.53	<0.53
n-Butyl Acetate	710,000	--	710,000	31	28	12	42
n-Heptane	2,000,000	1,638,000	350,000	<0.61	<0.7	1.3	0.51
n-Hexane	180,000	--	180,000	6	2.9	1.4	0.91
n-Nonane	--	1,050,000	1,050,000	0.76	0.68	1.7	1.1
n-Octane	2,350,000	1,400,000	350,000	<0.65	<0.74	1.2	0.93
n-Propylbenzene	--	--	--	0.62	<0.66	1.9	2.7
o-Xylene	435000	435000	435000	6.1	6.1	18	21
Propylene	435,000	435,000	435,000	180	78	630	68
Styrene	590,000	590,000	590,000	<0.54	<0.62	2.8	1.8
Tetrachloroethene	678,000	169,500	Ca	<0.5	<0.57	4.8	<0.28
Tetrahydrofuran (THF)	590,000	--	590,000	<0.72	<0.82	0.33	0.34
Toluene	410,000	--	205,000	23	9.7	130	32
Trichlorofluoromethane	5,600,000	--	5,600,000	0.94	0.96	0.95	1.0
Vinyl Acetate	--	35,000	15,000	<2.3	<2.7	<4.9	5.0

All results/standards are in $\mu g/m^3$

TABLE 8
OBSERVATION WELL VACUUM RESPONSE SUMMARY

SVE System
Kuhlman Electric Corporation
Crystal Springs, MS

Date	SVE-OBS-1	SVE-OBS-2	SVE-OBS-3	SVE-OBS-4	SVE-OBS-5	SVE-OBS-6	SVE-OBS-7	SVE-OBS-8	SVE-OBS-9
Distance* (feet)	**5**	**10**	**20**	**40**	**80**	**40**	**50**	**95**	**80**
2/26/2018	31.2	23.3	14.1	6.1	1.9	4.1	8.6	0.5	4.1
5/3/2018	27.7	19.4	11.4	4.2	2.0	2.4	7.2	0.33	3.2

** Distance to the nearest extraction well*
Vacuum readings are in inches of water.

Appendix A

Observation Well Soil Vapor Laboratory Analytical Results

2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
F: +1 805 526 7270
www.alsglobal.com

LABORATORY REPORT

April 13, 2018

Stephanie Kilgore
Environmental Management Services, Inc.
P.O. Box 15369
Hattiesburg, MS 39404

RE: SVE Performance Monitoring / KUHO-18-010

Dear Stephanie:

Enclosed are the results of the samples submitted to our laboratory on March 30, 2018. For your reference, these analyses have been assigned our service request number P1801623.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

ALS | Environmental

By Sue Anderson at 1:51 pm, Apr 13, 2018

Sue Anderson
Project Manager

2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
F: +1 805 526 7270
www.alsglobal.com

Client: Environmental Management Services, Inc. Service Request No: P1801623
Project: SVE Performance Monitoring / KUHO-18-010

CASE NARRATIVE

The samples were received intact under chain of custody on March 30, 2018 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Volatile Organic Compound Analysis

The samples were analyzed for volatile organic compounds in accordance with EPA Method TO-15 from the Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition (EPA/625/R-96/010b), January, 1999. This procedure is described in laboratory SOP VOA-TO15. The analytical system was comprised of a gas chromatograph / mass spectrometer (GC/MS) interfaced to a whole-air preconcentrator. This method is included on the laboratory's NELAP and DoD-ELAP scope of accreditation. Any analytes flagged with an X are not included on the NELAP or DoD-ELAP accreditation.

The containers were cleaned, prior to sampling, down to the method reporting limit (MRL) reported for this project. For projects requiring DoD QSM 5.1 compliance canisters were cleaned to <1/2 the MRL. Please note, projects which require reporting below the MRL could have results between the MRL and method detection limit (MDL) that are biased high.

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ALS Environmental – Simi Valley

CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
Arizona DHS	http://www.azdhs.gov/preparedness/state-laboratory/lab-licensure-certification/index.php#laboratory-licensure-home	AZ0694
Florida DOH (NELAP)	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E871020
Louisiana DEQ (NELAP)	http://www.deq.louisiana.gov/portal/DIVISIONS/PublicParticipationandPermitSupport/LouisianaLaboratoryAccreditationProgram.aspx	05071
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/labcert.htm	2016036
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	1347317
New Jersey DEP (NELAP)	http://www.nj.gov/dep/oqa/	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-005
Pennsylvania DEP	http://www.depweb.state.pa.us/labs	68-03307 (Registration)
PJLA (DoD ELAP)	http://www.pjlabs.com/search-accredited-labs	65818 (Testing)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704413-17-8
Utah DOH (NELAP)	http://health.utah.gov/lab/environmental-lab-certification/	CA016272017-8
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

ALS ENVIRONMENTAL

DETAIL SUMMARY REPORT

Client: Environmental Management Services, Inc. Service Request: P1801623

Project ID: SVE Performance Monitoring / KUHO-18-010

Date Received: 3/30/2018

Time Received: 09:30

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	Container ID	Pi1 (psig)	Pf1 (psig)	TO-15 - VOC Cans
SVE-OBS-01	P1801623-001	Air	3/26/2018	11:53	1SC00940	-0.07	5.19	X
SVE-OBS-02	P1801623-002	Air	3/26/2018	12:00	1SS00171	-0.90	5.76	X
SVE-OBS-03	P1801623-003	Air	3/26/2018	12:10	1SC00746	0.06	6.08	X
SVE-OBS-04	P1801623-004	Air	3/26/2018	12:16	1SS00257	0.23	5.87	X
SVE-OBS-05	P1801623-005	Air	3/26/2018	12:26	1SS00127	-0.21	5.22	X
SVE-OBS-06	P1801623-006	Air	3/26/2018	12:36	1SS00787	-0.18	5.94	X
SVE-OBS-07	P1801623-007	Air	3/26/2018	12:45	1SS00054	-0.21	5.56	X
SVE-OBS-08	P1801623-008	Air	3/26/2018	12:54	1SS00717	-0.15	5.43	X
SVE-OBS-09	P1801623-009	Air	3/26/2018	13:02	1SS00240	0.08	5.37	X

Air - Chain of Custody Record & Analytical Service Request

Page 1 of 1

2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone (805) 526-7161
Fax (805) 526-7270

Requested Turnaround Time in Business Days (Surcharges) please circle
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10-Day-Standard

ALS Project No. 1801623

Company Name & Address (Reporting Information)
Environmental Management Services, Inc.
P.O.Box 15369
Hattiesburg, MS 39404

Project Name: SVE Performance Monitoring
Project Number: KUHO-18-010
P.O. # / Billing Information: KUHO-18-010 Same as reporting

Project Manager: Stephanie Kilgore
Phone: 601-544 3674
Fax: 601-544-0504
Email Address for Result Reporting: SKilgore@env-mgt.com
Sampler (Print & Sign): Stephanie Kilgore Stephanie Kilgore

ALS Contact:

Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Canister ID (Bar code # - AC, SC, etc.)	Flow Controller ID (Bar code # - FC #)	Canister Start Pressure "Hg	Canister End Pressure "Hg/psig	Sample Volume	Analysis Method: TO-15		Comments e.g. Actual Preservative or specific instructions
SVE-DBS-01	1	3-26-18	11:53	ISC00940				1L	X		
SVE-DBS-02	2	3-26-18	12:00	ISS00171				1L	X		
SVE-DBS-03	3	3-26-18	12:10	ISC00746				1L	X		
SVE-DBS-04	4	3-26-18	12:16	ISS00257				1L	X		
SVE-DBS-05	5	3-26-18	12:26	ISS00127				1L	X		
SVE-DBS-06	6	3-26-18	12:36	ISS00787				1L	X		
SVE-DBS-07	7	3-26-18	12:45	ISS00054				1L	X		
SVE-DBS-08	8	3-26-18	12:54	ISS00717				1L	X		
SVE-DBS-09	9	3-26-18	13:02	ISS00240				1L	X		

Report Tier Levels - please select
Tier I - Results (Default in not specified) ____ Tier III (Results + QC & Calibration Summaries) ____
Tier II (Results + QC Summaries X ____ Tier IV (Date Validation Package) 10% Surcharge ____

EDD required YES / No
Type: ____ Units: ____

Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT

Project Requirements (MRLs, QAPP)

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Stephanie Kilgore	3-27-18	14:05	FedEx		
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
				3-30-18	0930

Cooler / Blank Temperature ____ °C

5 of 40

ALS Environmental

Sample Acceptance Check Form

Client: Environmental Management Services, Inc. Work order: P1801623

Project: SVE Performance Monitoring / KUHO-18-010

Sample(s) received on: 3/30/18 Date opened: 3/30/18 by: ADAVID

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Did **sample containers** arrive in good condition?	☒	☐	☐
3	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
4	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
5	Was **sample volume** received adequate for analysis?	☒	☐	☐
6	Are samples within specified holding times?	☒	☐	☐
7	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☐	☐	☒
8	Were **custody seals** on outside of cooler/Box/Container?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
9	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
10	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
11	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1801623-001.01	1.0 L Source Can					
P1801623-002.01	1.0 L Source Silonite Canister					
P1801623-003.01	1.0 L Source Can					
P1801623-004.01	1.0 L Source Silonite Canister					
P1801623-005.01	1.0 L Source Silonite Canister					
P1801623-006.01	1.0 L Source Silonite Canister					
P1801623-007.01	1.0 L Source Silonite Canister					
P1801623-008.01	1.0 L Source Silonite Canister					
P1801623-009.01	1.0 L Source Silonite Canister					

Explain any discrepancies: (include lab sample ID numbers): _____

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE-OBS-01** ALS Project ID: P1801623
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1801623-001

Test Code: EPA TO-15 Date Collected: 3/26/18
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/30/18
Analyst: Simon Cao Date Analyzed: 4/9/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SC00940

Initial Pressure (psig): -0.07 Final Pressure (psig): 5.19

Container Dilution Factor: 1.36

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	**92**	1.7	0.48	**54**	0.99	0.28	**B**
75-71-8	Dichlorodifluoromethane (CFC 12)	**3.9**	1.7	0.58	**0.78**	0.34	0.12	
74-87-3	Chloromethane	**0.51**	1.7	0.51	**0.25**	0.82	0.25	**J**
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	1.7	0.65	ND	0.24	0.092	
75-01-4	Vinyl Chloride	ND	1.7	0.58	ND	0.67	0.23	
106-99-0	1,3-Butadiene	ND	1.7	0.75	ND	0.77	0.34	
74-83-9	Bromomethane	ND	1.7	0.65	ND	0.44	0.17	
75-00-3	Chloroethane	ND	1.7	0.58	ND	0.64	0.22	
64-17-5	Ethanol	**79**	17	2.7	**42**	9.0	1.4	
75-05-8	Acetonitrile	**0.80**	1.7	0.61	**0.48**	1.0	0.36	**J**
107-02-8	Acrolein	**2.5**	6.8	0.58	**1.1**	3.0	0.25	**J**
67-64-1	Acetone	**44**	17	2.6	**19**	7.2	1.1	**B**
75-69-4	Trichlorofluoromethane (CFC 11)	**1.7**	1.7	0.58	**0.31**	0.30	0.10	
67-63-0	2-Propanol (Isopropyl Alcohol)	**6.7**	17	1.4	**2.7**	6.9	0.58	**J**
107-13-1	Acrylonitrile	ND	1.7	0.58	ND	0.78	0.27	
75-35-4	1,1-Dichloroethene	**28**	1.7	0.58	**7.2**	0.43	0.15	
75-09-2	Methylene Chloride	**5.3**	1.7	0.58	**1.5**	0.49	0.17	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	1.7	0.54	ND	0.54	0.17	
76-13-1	Trichlorotrifluoroethane (CFC 113)	**6.1**	1.7	0.58	**0.80**	0.22	0.075	
75-15-0	Carbon Disulfide	**6.4**	17	0.51	**2.1**	5.5	0.16	**J**
156-60-5	trans-1,2-Dichloroethene	ND	1.7	0.65	ND	0.43	0.16	
75-34-3	1,1-Dichloroethane	**2.0**	1.7	0.54	**0.49**	0.42	0.13	
1634-04-4	Methyl tert-Butyl Ether	ND	1.7	0.58	ND	0.47	0.16	
108-05-4	Vinyl Acetate	**14**	17	2.2	**4.1**	4.8	0.63	**J**
78-93-3	2-Butanone (MEK)	**5.9**	17	0.71	**2.0**	5.8	0.24	**J**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
B = Analyte detected in both the sample and associated method blank.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE-OBS-01** ALS Project ID: P1801623
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1801623-001

Test Code: EPA TO-15 Date Collected: 3/26/18
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/30/18
Analyst: Simon Cao Date Analyzed: 4/9/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SC00940

Initial Pressure (psig): -0.07 Final Pressure (psig): 5.19

Container Dilution Factor: 1.36

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	1.7	0.54	ND	0.43	0.14	
141-78-6	Ethyl Acetate	**180**	3.4	1.2	**49**	0.94	0.33	
110-54-3	n-Hexane	**1.0**	1.7	0.51	**0.29**	0.48	0.14	**J**
67-66-3	Chloroform	**0.73**	1.7	0.58	**0.15**	0.35	0.12	**J**
109-99-9	Tetrahydrofuran (THF)	ND	1.7	0.68	ND	0.58	0.23	
107-06-2	1,2-Dichloroethane	ND	1.7	0.54	ND	0.42	0.13	
71-55-6	1,1,1-Trichloroethane	**16**	1.7	0.58	**3.0**	0.31	0.11	
71-43-2	Benzene	**1.3**	1.7	0.54	**0.41**	0.53	0.17	**J**
56-23-5	Carbon Tetrachloride	ND	1.7	0.51	ND	0.27	0.081	
110-82-7	Cyclohexane	ND	3.4	0.99	ND	0.99	0.29	
78-87-5	1,2-Dichloropropane	ND	1.7	0.54	ND	0.37	0.12	
75-27-4	Bromodichloromethane	ND	1.7	0.51	ND	0.25	0.076	
79-01-6	Trichloroethene	**0.55**	1.7	0.48	**0.10**	0.32	0.089	**J**
123-91-1	1,4-Dioxane	**3.4**	1.7	0.54	**0.94**	0.47	0.15	
80-62-6	Methyl Methacrylate	ND	3.4	1.1	ND	0.83	0.26	
142-82-5	n-Heptane	**0.64**	1.7	0.58	**0.16**	0.41	0.14	**J**
10061-01-5	cis-1,3-Dichloropropene	ND	1.7	0.48	ND	0.37	0.10	
108-10-1	4-Methyl-2-pentanone	**0.78**	1.7	0.54	**0.19**	0.41	0.13	**J**
10061-02-6	trans-1,3-Dichloropropene	ND	1.7	0.54	ND	0.37	0.12	
79-00-5	1,1,2-Trichloroethane	ND	1.7	0.54	ND	0.31	0.10	
108-88-3	Toluene	**9.9**	1.7	0.58	**2.6**	0.45	0.15	
591-78-6	2-Hexanone	ND	1.7	0.54	ND	0.42	0.13	
124-48-1	Dibromochloromethane	ND	1.7	0.54	ND	0.20	0.064	
106-93-4	1,2-Dibromoethane	ND	1.7	0.54	ND	0.22	0.071	
123-86-4	n-Butyl Acetate	**1.3**	1.7	0.54	**0.28**	0.36	0.11	**J**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE-OBS-01** ALS Project ID: P1801623
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1801623-001

Test Code: EPA TO-15 Date Collected: 3/26/18
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/30/18
Analyst: Simon Cao Date Analyzed: 4/9/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SC00940

Initial Pressure (psig): -0.07 Final Pressure (psig): 5.19

Container Dilution Factor: 1.36

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	**0.61**	1.7	0.61	**0.13**	0.36	0.13	**J**
127-18-4	Tetrachloroethene	**6.3**	1.7	0.48	**0.92**	0.25	0.070	
108-90-7	Chlorobenzene	ND	1.7	0.54	ND	0.37	0.12	
100-41-4	Ethylbenzene	**1.4**	1.7	0.54	**0.32**	0.39	0.13	**J**
179601-23-1	m,p-Xylenes	**6.1**	3.4	1.0	**1.4**	0.78	0.23	
75-25-2	Bromoform	ND	1.7	0.51	ND	0.16	0.049	
100-42-5	Styrene	**1.0**	1.7	0.51	**0.24**	0.40	0.12	**J**
95-47-6	o-Xylene	**2.4**	1.7	0.51	**0.55**	0.39	0.12	
111-84-2	n-Nonane	**0.66**	1.7	0.51	**0.13**	0.32	0.097	**J**
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.7	0.51	ND	0.25	0.074	
98-82-8	Cumene	ND	1.7	0.51	ND	0.35	0.10	
80-56-8	alpha-Pinene	**2.7**	1.7	0.48	**0.48**	0.31	0.085	
103-65-1	n-Propylbenzene	ND	1.7	0.54	ND	0.35	0.11	
622-96-8	4-Ethyltoluene	ND	1.7	0.54	ND	0.35	0.11	
108-67-8	1,3,5-Trimethylbenzene	ND	1.7	0.54	ND	0.35	0.11	
95-63-6	1,2,4-Trimethylbenzene	**1.1**	1.7	0.51	**0.22**	0.35	0.10	**J**
100-44-7	Benzyl Chloride	ND	3.4	0.37	ND	0.66	0.072	
541-73-1	1,3-Dichlorobenzene	ND	1.7	0.51	ND	0.28	0.085	
106-46-7	1,4-Dichlorobenzene	ND	1.7	0.48	ND	0.28	0.079	
95-50-1	1,2-Dichlorobenzene	ND	1.7	0.51	ND	0.28	0.085	
5989-27-5	d-Limonene	**4.0**	1.7	0.48	**0.72**	0.31	0.085	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.7	0.34	ND	0.18	0.035	
120-82-1	1,2,4-Trichlorobenzene	ND	1.7	0.54	ND	0.23	0.073	
91-20-3	Naphthalene	**0.81**	1.7	0.61	**0.16**	0.32	0.12	**J**
87-68-3	Hexachlorobutadiene	ND	1.7	0.48	ND	0.16	0.045	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE-OBS-02** ALS Project ID: P1801623
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1801623-002

Test Code: EPA TO-15 Date Collected: 3/26/18
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/30/18
Analyst: Simon Cao Date Analyzed: 4/9/18
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS00171

Initial Pressure (psig): -0.90 Final Pressure (psig): 5.76

Container Dilution Factor: 1.48

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	**320**	1.9	0.52	**190**	1.1	0.30	**B**
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.7**	1.9	0.63	**0.54**	0.37	0.13	
74-87-3	Chloromethane	ND	1.9	0.56	ND	0.90	0.27	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	1.9	0.70	ND	0.26	0.10	
75-01-4	Vinyl Chloride	ND	1.9	0.63	ND	0.72	0.25	
106-99-0	1,3-Butadiene	ND	1.9	0.81	ND	0.84	0.37	
74-83-9	Bromomethane	ND	1.9	0.70	ND	0.48	0.18	
75-00-3	Chloroethane	ND	1.9	0.63	ND	0.70	0.24	
64-17-5	Ethanol	**7.4**	19	3.0	**4.0**	9.8	1.6	**J**
75-05-8	Acetonitrile	ND	1.9	0.67	ND	1.1	0.40	
107-02-8	Acrolein	ND	7.4	0.63	ND	3.2	0.27	
67-64-1	Acetone	**18**	19	2.8	**7.4**	7.8	1.2	**J, B**
75-69-4	Trichlorofluoromethane (CFC 11)	**1.2**	1.9	0.63	**0.21**	0.33	0.11	**J**
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	19	1.6	ND	7.5	0.63	
107-13-1	Acrylonitrile	ND	1.9	0.63	ND	0.85	0.29	
75-35-4	1,1-Dichloroethene	**3.2**	1.9	0.63	**0.80**	0.47	0.16	
75-09-2	Methylene Chloride	**2.0**	1.9	0.63	**0.58**	0.53	0.18	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	1.9	0.59	ND	0.59	0.19	
76-13-1	Trichlorotrifluoroethane (CFC 113)	**1.5**	1.9	0.63	**0.20**	0.24	0.082	**J**
75-15-0	Carbon Disulfide	**1.3**	19	0.56	**0.42**	5.9	0.18	**J**
156-60-5	trans-1,2-Dichloroethene	ND	1.9	0.70	ND	0.47	0.18	
75-34-3	1,1-Dichloroethane	ND	1.9	0.59	ND	0.46	0.15	
1634-04-4	Methyl tert-Butyl Ether	ND	1.9	0.63	ND	0.51	0.17	
108-05-4	Vinyl Acetate	ND	19	2.4	ND	5.3	0.68	
78-93-3	2-Butanone (MEK)	**4.1**	19	0.78	**1.4**	6.3	0.26	**J**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
B = Analyte detected in both the sample and associated method blank.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE-OBS-02** ALS Project ID: P1801623
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1801623-002

Test Code: EPA TO-15 Date Collected: 3/26/18
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/30/18
Analyst: Simon Cao Date Analyzed: 4/9/18
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS00171

Initial Pressure (psig): -0.90 Final Pressure (psig): 5.76

Container Dilution Factor: 1.48

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	1.9	0.59	ND	0.47	0.15	
141-78-6	Ethyl Acetate	ND	3.7	1.3	ND	1.0	0.36	
110-54-3	n-Hexane	ND	1.9	0.56	ND	0.53	0.16	
67-66-3	Chloroform	**0.68**	1.9	0.63	**0.14**	0.38	0.13	**J**
109-99-9	Tetrahydrofuran (THF)	ND	1.9	0.74	ND	0.63	0.25	
107-06-2	1,2-Dichloroethane	ND	1.9	0.59	ND	0.46	0.15	
71-55-6	1,1,1-Trichloroethane	**6.8**	1.9	0.63	**1.2**	0.34	0.12	
71-43-2	Benzene	ND	1.9	0.59	ND	0.58	0.19	
56-23-5	Carbon Tetrachloride	ND	1.9	0.56	ND	0.29	0.088	
110-82-7	Cyclohexane	ND	3.7	1.1	ND	1.1	0.31	
78-87-5	1,2-Dichloropropane	ND	1.9	0.59	ND	0.40	0.13	
75-27-4	Bromodichloromethane	ND	1.9	0.56	ND	0.28	0.083	
79-01-6	Trichloroethene	ND	1.9	0.52	ND	0.34	0.096	
123-91-1	1,4-Dioxane	**0.91**	1.9	0.59	**0.25**	0.51	0.16	**J**
80-62-6	Methyl Methacrylate	ND	3.7	1.1	ND	0.90	0.28	
142-82-5	n-Heptane	ND	1.9	0.63	ND	0.45	0.15	
10061-01-5	cis-1,3-Dichloropropene	ND	1.9	0.52	ND	0.41	0.11	
108-10-1	4-Methyl-2-pentanone	**0.83**	1.9	0.59	**0.20**	0.45	0.14	**J**
10061-02-6	trans-1,3-Dichloropropene	ND	1.9	0.59	ND	0.41	0.13	
79-00-5	1,1,2-Trichloroethane	ND	1.9	0.59	ND	0.34	0.11	
108-88-3	Toluene	**5.5**	1.9	0.63	**1.5**	0.49	0.17	
591-78-6	2-Hexanone	ND	1.9	0.59	ND	0.45	0.14	
124-48-1	Dibromochloromethane	ND	1.9	0.59	ND	0.22	0.070	
106-93-4	1,2-Dibromoethane	ND	1.9	0.59	ND	0.24	0.077	
123-86-4	n-Butyl Acetate	**0.74**	1.9	0.59	**0.16**	0.39	0.12	**J**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE-OBS-02** ALS Project ID: P1801623
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1801623-002

Test Code: EPA TO-15 Date Collected: 3/26/18
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/30/18
Analyst: Simon Cao Date Analyzed: 4/9/18
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS00171

Initial Pressure (psig): -0.90 Final Pressure (psig): 5.76

Container Dilution Factor: 1.48

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	ND	1.9	0.67	ND	0.40	0.14	
127-18-4	Tetrachloroethene	**5.4**	1.9	0.52	**0.79**	0.27	0.076	
108-90-7	Chlorobenzene	ND	1.9	0.59	ND	0.40	0.13	
100-41-4	Ethylbenzene	**1.6**	1.9	0.59	**0.37**	0.43	0.14	**J**
179601-23-1	m,p-Xylenes	**7.2**	3.7	1.1	**1.7**	0.85	0.26	
75-25-2	Bromoform	ND	1.9	0.56	ND	0.18	0.054	
100-42-5	Styrene	**1.4**	1.9	0.56	**0.32**	0.43	0.13	**J**
95-47-6	o-Xylene	**2.7**	1.9	0.56	**0.62**	0.43	0.13	
111-84-2	n-Nonane	ND	1.9	0.56	ND	0.35	0.11	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.9	0.56	ND	0.27	0.081	
98-82-8	Cumene	ND	1.9	0.56	ND	0.38	0.11	
80-56-8	alpha-Pinene	**2.6**	1.9	0.52	**0.46**	0.33	0.093	
103-65-1	n-Propylbenzene	ND	1.9	0.59	ND	0.38	0.12	
622-96-8	4-Ethyltoluene	ND	1.9	0.59	ND	0.38	0.12	
108-67-8	1,3,5-Trimethylbenzene	ND	1.9	0.59	ND	0.38	0.12	
95-63-6	1,2,4-Trimethylbenzene	**1.3**	1.9	0.56	**0.27**	0.38	0.11	**J**
100-44-7	Benzyl Chloride	ND	3.7	0.41	ND	0.71	0.079	
541-73-1	1,3-Dichlorobenzene	ND	1.9	0.56	ND	0.31	0.092	
106-46-7	1,4-Dichlorobenzene	ND	1.9	0.52	ND	0.31	0.086	
95-50-1	1,2-Dichlorobenzene	ND	1.9	0.56	ND	0.31	0.092	
5989-27-5	d-Limonene	**4.8**	1.9	0.52	**0.85**	0.33	0.093	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.9	0.37	ND	0.19	0.038	
120-82-1	1,2,4-Trichlorobenzene	ND	1.9	0.59	ND	0.25	0.080	
91-20-3	Naphthalene	**1.4**	1.9	0.67	**0.27**	0.35	0.13	**J**
87-68-3	Hexachlorobutadiene	ND	1.9	0.52	ND	0.17	0.049	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
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ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE-OBS-03** ALS Project ID: P1801623
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1801623-003

Test Code: EPA TO-15 Date Collected: 3/26/18
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/30/18
Analyst: Simon Cao Date Analyzed: 4/9/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SC00746

Initial Pressure (psig): 0.06 Final Pressure (psig): 6.08

Container Dilution Factor: 1.41

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	**66**	1.8	0.49	**38**	1.0	0.29	**B**
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.2**	1.8	0.60	**0.45**	0.36	0.12	
74-87-3	Chloromethane	ND	1.8	0.53	ND	0.85	0.26	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	1.8	0.67	ND	0.25	0.096	
75-01-4	Vinyl Chloride	ND	1.8	0.60	ND	0.69	0.23	
106-99-0	1,3-Butadiene	ND	1.8	0.78	ND	0.80	0.35	
74-83-9	Bromomethane	ND	1.8	0.67	ND	0.45	0.17	
75-00-3	Chloroethane	ND	1.8	0.60	ND	0.67	0.23	
64-17-5	Ethanol	**42**	18	2.8	**22**	9.4	1.5	
75-05-8	Acetonitrile	**0.73**	1.8	0.63	**0.44**	1.1	0.38	**J**
107-02-8	Acrolein	**3.8**	7.1	0.60	**1.7**	3.1	0.26	**J**
67-64-1	Acetone	**85**	18	2.7	**36**	7.4	1.1	**B**
75-69-4	Trichlorofluoromethane (CFC 11)	**1.1**	1.8	0.60	**0.19**	0.31	0.11	**J**
67-63-0	2-Propanol (Isopropyl Alcohol)	**8.2**	18	1.5	**3.3**	7.2	0.60	**J**
107-13-1	Acrylonitrile	ND	1.8	0.60	ND	0.81	0.28	
75-35-4	1,1-Dichloroethene	**8.1**	1.8	0.60	**2.0**	0.44	0.15	
75-09-2	Methylene Chloride	**2.3**	1.8	0.60	**0.66**	0.51	0.17	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	1.8	0.56	ND	0.56	0.18	
76-13-1	Trichlorotrifluoroethane (CFC 113)	**1.7**	1.8	0.60	**0.22**	0.23	0.078	**J**
75-15-0	Carbon Disulfide	**1.5**	18	0.53	**0.50**	5.7	0.17	**J**
156-60-5	trans-1,2-Dichloroethene	ND	1.8	0.67	ND	0.44	0.17	
75-34-3	1,1-Dichloroethane	ND	1.8	0.56	ND	0.44	0.14	
1634-04-4	Methyl tert-Butyl Ether	ND	1.8	0.60	ND	0.49	0.17	
108-05-4	Vinyl Acetate	**37**	18	2.3	**11**	5.0	0.65	
78-93-3	2-Butanone (MEK)	**26**	18	0.74	**8.7**	6.0	0.25	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
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J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
B = Analyte detected in both the sample and associated method blank.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE-OBS-03** ALS Project ID: P1801623
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1801623-003

Test Code: EPA TO-15 Date Collected: 3/26/18
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/30/18
Analyst: Simon Cao Date Analyzed: 4/9/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SC00746

Initial Pressure (psig): 0.06 Final Pressure (psig): 6.08

Container Dilution Factor: 1.41

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	1.8	0.56	ND	0.44	0.14	
141-78-6	Ethyl Acetate	**6.3**	3.5	1.2	**1.7**	0.98	0.34	
110-54-3	n-Hexane	ND	1.8	0.53	ND	0.50	0.15	
67-66-3	Chloroform	**0.86**	1.8	0.60	**0.18**	0.36	0.12	**J**
109-99-9	Tetrahydrofuran (THF)	**1.0**	1.8	0.71	**0.35**	0.60	0.24	**J**
107-06-2	1,2-Dichloroethane	ND	1.8	0.56	ND	0.44	0.14	
71-55-6	1,1,1-Trichloroethane	**5.4**	1.8	0.60	**1.0**	0.32	0.11	
71-43-2	Benzene	ND	1.8	0.56	ND	0.55	0.18	
56-23-5	Carbon Tetrachloride	ND	1.8	0.53	ND	0.28	0.084	
110-82-7	Cyclohexane	ND	3.5	1.0	ND	1.0	0.30	
78-87-5	1,2-Dichloropropane	ND	1.8	0.56	ND	0.38	0.12	
75-27-4	Bromodichloromethane	ND	1.8	0.53	ND	0.26	0.079	
79-01-6	Trichloroethene	ND	1.8	0.49	ND	0.33	0.092	
123-91-1	1,4-Dioxane	**6.3**	1.8	0.56	**1.7**	0.49	0.16	
80-62-6	Methyl Methacrylate	ND	3.5	1.1	ND	0.86	0.27	
142-82-5	n-Heptane	ND	1.8	0.60	ND	0.43	0.15	
10061-01-5	cis-1,3-Dichloropropene	ND	1.8	0.49	ND	0.39	0.11	
108-10-1	4-Methyl-2-pentanone	**7.7**	1.8	0.56	**1.9**	0.43	0.14	
10061-02-6	trans-1,3-Dichloropropene	ND	1.8	0.56	ND	0.39	0.12	
79-00-5	1,1,2-Trichloroethane	ND	1.8	0.56	ND	0.32	0.10	
108-88-3	Toluene	**2.8**	1.8	0.60	**0.74**	0.47	0.16	
591-78-6	2-Hexanone	**14**	1.8	0.56	**3.3**	0.43	0.14	
124-48-1	Dibromochloromethane	ND	1.8	0.56	ND	0.21	0.066	
106-93-4	1,2-Dibromoethane	ND	1.8	0.56	ND	0.23	0.073	
123-86-4	n-Butyl Acetate	**4.1**	1.8	0.56	**0.86**	0.37	0.12	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE-OBS-03** ALS Project ID: P1801623
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1801623-003

Test Code: EPA TO-15 Date Collected: 3/26/18
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/30/18
Analyst: Simon Cao Date Analyzed: 4/9/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SC00746

Initial Pressure (psig): 0.06 Final Pressure (psig): 6.08

Container Dilution Factor: 1.41

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	ND	1.8	0.63	ND	0.38	0.14	
127-18-4	Tetrachloroethene	**1.8**	1.8	0.49	**0.27**	0.26	0.073	
108-90-7	Chlorobenzene	ND	1.8	0.56	ND	0.38	0.12	
100-41-4	Ethylbenzene	**0.97**	1.8	0.56	**0.22**	0.41	0.13	**J**
179601-23-1	m,p-Xylenes	**4.0**	3.5	1.1	**0.93**	0.81	0.24	
75-25-2	Bromoform	ND	1.8	0.53	ND	0.17	0.051	
100-42-5	Styrene	**0.85**	1.8	0.53	**0.20**	0.41	0.12	**J**
95-47-6	o-Xylene	**1.8**	1.8	0.53	**0.42**	0.41	0.12	
111-84-2	n-Nonane	ND	1.8	0.53	ND	0.34	0.10	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.8	0.53	ND	0.26	0.077	
98-82-8	Cumene	ND	1.8	0.53	ND	0.36	0.11	
80-56-8	alpha-Pinene	**1.6**	1.8	0.49	**0.29**	0.32	0.089	**J**
103-65-1	n-Propylbenzene	ND	1.8	0.56	ND	0.36	0.11	
622-96-8	4-Ethyltoluene	ND	1.8	0.56	ND	0.36	0.11	
108-67-8	1,3,5-Trimethylbenzene	ND	1.8	0.56	ND	0.36	0.11	
95-63-6	1,2,4-Trimethylbenzene	**1.5**	1.8	0.53	**0.30**	0.36	0.11	**J**
100-44-7	Benzyl Chloride	ND	3.5	0.39	ND	0.68	0.075	
541-73-1	1,3-Dichlorobenzene	ND	1.8	0.53	ND	0.29	0.088	
106-46-7	1,4-Dichlorobenzene	ND	1.8	0.49	ND	0.29	0.082	
95-50-1	1,2-Dichlorobenzene	ND	1.8	0.53	ND	0.29	0.088	
5989-27-5	d-Limonene	**4.1**	1.8	0.49	**0.74**	0.32	0.089	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.8	0.35	ND	0.18	0.036	
120-82-1	1,2,4-Trichlorobenzene	ND	1.8	0.56	ND	0.24	0.076	
91-20-3	Naphthalene	**1.4**	1.8	0.63	**0.26**	0.34	0.12	**J**
87-68-3	Hexachlorobutadiene	ND	1.8	0.49	ND	0.17	0.046	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE-OBS-04** ALS Project ID: P1801623
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1801623-004

Test Code: EPA TO-15 Date Collected: 3/26/18
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/30/18
Analyst: Simon Cao Date Analyzed: 4/9/18
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS00257

Initial Pressure (psig): 0.23 Final Pressure (psig): 5.87

Container Dilution Factor: 1.38

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	**63**	1.7	0.48	**37**	1.0	0.28	**B**
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.1**	1.7	0.59	**0.43**	0.35	0.12	
74-87-3	Chloromethane	**0.53**	1.7	0.52	**0.26**	0.84	0.25	**J**
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	1.7	0.66	ND	0.25	0.094	
75-01-4	Vinyl Chloride	ND	1.7	0.59	ND	0.68	0.23	
106-99-0	1,3-Butadiene	ND	1.7	0.76	ND	0.78	0.34	
74-83-9	Bromomethane	ND	1.7	0.66	ND	0.44	0.17	
75-00-3	Chloroethane	ND	1.7	0.59	ND	0.65	0.22	
64-17-5	Ethanol	**44**	17	2.8	**23**	9.2	1.5	
75-05-8	Acetonitrile	ND	1.7	0.62	ND	1.0	0.37	
107-02-8	Acrolein	**2.8**	6.9	0.59	**1.2**	3.0	0.26	**J**
67-64-1	Acetone	**30**	17	2.7	**13**	7.3	1.1	**M1, B**
75-69-4	Trichlorofluoromethane (CFC 11)	**1.1**	1.7	0.59	**0.20**	0.31	0.10	**J**
67-63-0	2-Propanol (Isopropyl Alcohol)	**4.5**	17	1.4	**1.8**	7.0	0.59	**J**
107-13-1	Acrylonitrile	ND	1.7	0.59	ND	0.80	0.27	
75-35-4	1,1-Dichloroethene	**0.88**	1.7	0.59	**0.22**	0.44	0.15	**J**
75-09-2	Methylene Chloride	**1.2**	1.7	0.59	**0.34**	0.50	0.17	**J**
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	1.7	0.55	ND	0.55	0.18	
76-13-1	Trichlorotrifluoroethane (CFC 113)	**15**	1.7	0.59	**1.9**	0.23	0.077	
75-15-0	Carbon Disulfide	**7.6**	17	0.52	**2.4**	5.5	0.17	**J**
156-60-5	trans-1,2-Dichloroethene	ND	1.7	0.66	ND	0.44	0.17	
75-34-3	1,1-Dichloroethane	ND	1.7	0.55	ND	0.43	0.14	
1634-04-4	Methyl tert-Butyl Ether	ND	1.7	0.59	ND	0.48	0.16	
108-05-4	Vinyl Acetate	**5.8**	17	2.2	**1.7**	4.9	0.64	**J**
78-93-3	2-Butanone (MEK)	**6.3**	17	0.72	**2.1**	5.9	0.25	**J**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
B = Analyte detected in both the sample and associated method blank.
M1 = Matrix interference due to coelution with a non-target compound; results may be biased high.

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE-OBS-04** ALS Project ID: P1801623
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1801623-004

Test Code: EPA TO-15 Date Collected: 3/26/18
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/30/18
Analyst: Simon Cao Date Analyzed: 4/9/18
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS00257

Initial Pressure (psig): 0.23 Final Pressure (psig): 5.87

Container Dilution Factor: 1.38

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	1.7	0.55	ND	0.44	0.14	
141-78-6	Ethyl Acetate	**25**	3.5	1.2	**7.0**	0.96	0.34	
110-54-3	n-Hexane	ND	1.7	0.52	ND	0.49	0.15	
67-66-3	Chloroform	ND	1.7	0.59	ND	0.35	0.12	
109-99-9	Tetrahydrofuran (THF)	ND	1.7	0.69	ND	0.59	0.23	
107-06-2	1,2-Dichloroethane	ND	1.7	0.55	ND	0.43	0.14	
71-55-6	1,1,1-Trichloroethane	**2.4**	1.7	0.59	**0.45**	0.32	0.11	
71-43-2	Benzene	ND	1.7	0.55	ND	0.54	0.17	
56-23-5	Carbon Tetrachloride	ND	1.7	0.52	ND	0.27	0.082	
110-82-7	Cyclohexane	ND	3.5	1.0	ND	1.0	0.29	
78-87-5	1,2-Dichloropropane	ND	1.7	0.55	ND	0.37	0.12	
75-27-4	Bromodichloromethane	ND	1.7	0.52	ND	0.26	0.077	
79-01-6	Trichloroethene	ND	1.7	0.48	ND	0.32	0.090	
123-91-1	1,4-Dioxane	ND	1.7	0.55	ND	0.48	0.15	
80-62-6	Methyl Methacrylate	ND	3.5	1.1	ND	0.84	0.26	
142-82-5	n-Heptane	ND	1.7	0.59	ND	0.42	0.14	
10061-01-5	cis-1,3-Dichloropropene	ND	1.7	0.48	ND	0.38	0.11	
108-10-1	4-Methyl-2-pentanone	**0.84**	1.7	0.55	**0.21**	0.42	0.13	**J**
10061-02-6	trans-1,3-Dichloropropene	ND	1.7	0.55	ND	0.38	0.12	
79-00-5	1,1,2-Trichloroethane	ND	1.7	0.55	ND	0.32	0.10	
108-88-3	Toluene	**5.0**	1.7	0.59	**1.3**	0.46	0.16	
591-78-6	2-Hexanone	**0.77**	1.7	0.55	**0.19**	0.42	0.13	**J**
124-48-1	Dibromochloromethane	ND	1.7	0.55	ND	0.20	0.065	
106-93-4	1,2-Dibromoethane	ND	1.7	0.55	ND	0.22	0.072	
123-86-4	n-Butyl Acetate	**1.4**	1.7	0.55	**0.30**	0.36	0.12	**J**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE-OBS-04** ALS Project ID: P1801623
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1801623-004

Test Code: EPA TO-15 Date Collected: 3/26/18
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/30/18
Analyst: Simon Cao Date Analyzed: 4/9/18
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS00257

Initial Pressure (psig): 0.23 Final Pressure (psig): 5.87

Container Dilution Factor: 1.38

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	**0.74**	1.7	0.62	**0.16**	0.37	0.13	**J**
127-18-4	Tetrachloroethene	**1.3**	1.7	0.48	**0.19**	0.25	0.071	**J**
108-90-7	Chlorobenzene	ND	1.7	0.55	ND	0.37	0.12	
100-41-4	Ethylbenzene	**2.3**	1.7	0.55	**0.53**	0.40	0.13	
179601-23-1	m,p-Xylenes	**15**	3.5	1.0	**3.5**	0.79	0.24	
75-25-2	Bromoform	ND	1.7	0.52	ND	0.17	0.050	
100-42-5	Styrene	**1.0**	1.7	0.52	**0.24**	0.41	0.12	**J**
95-47-6	o-Xylene	**9.1**	1.7	0.52	**2.1**	0.40	0.12	
111-84-2	n-Nonane	ND	1.7	0.52	ND	0.33	0.099	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.7	0.52	ND	0.25	0.075	
98-82-8	Cumene	ND	1.7	0.52	ND	0.35	0.11	
80-56-8	alpha-Pinene	**4.0**	1.7	0.48	**0.72**	0.31	0.087	
103-65-1	n-Propylbenzene	ND	1.7	0.55	ND	0.35	0.11	
622-96-8	4-Ethyltoluene	**0.78**	1.7	0.55	**0.16**	0.35	0.11	**J**
108-67-8	1,3,5-Trimethylbenzene	**1.5**	1.7	0.55	**0.30**	0.35	0.11	**J**
95-63-6	1,2,4-Trimethylbenzene	**2.5**	1.7	0.52	**0.52**	0.35	0.11	
100-44-7	Benzyl Chloride	ND	3.5	0.38	ND	0.67	0.073	
541-73-1	1,3-Dichlorobenzene	ND	1.7	0.52	ND	0.29	0.086	
106-46-7	1,4-Dichlorobenzene	ND	1.7	0.48	ND	0.29	0.080	
95-50-1	1,2-Dichlorobenzene	ND	1.7	0.52	ND	0.29	0.086	
5989-27-5	d-Limonene	**3.7**	1.7	0.48	**0.67**	0.31	0.087	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.7	0.34	ND	0.18	0.035	
120-82-1	1,2,4-Trichlorobenzene	ND	1.7	0.55	ND	0.23	0.074	
91-20-3	Naphthalene	**1.3**	1.7	0.62	**0.24**	0.33	0.12	**J**
87-68-3	Hexachlorobutadiene	ND	1.7	0.48	ND	0.16	0.045	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE-OBS-05** ALS Project ID: P1801623
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1801623-005

Test Code: EPA TO-15 Date Collected: 3/26/18
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/30/18
Analyst: Simon Cao Date Analyzed: 4/9/18
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS00127

Initial Pressure (psig): -0.21 Final Pressure (psig): 5.22

Container Dilution Factor: 1.37

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	**9.1**	1.7	0.48	**5.3**	1.0	0.28	**M1, B**
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.1**	1.7	0.58	**0.42**	0.35	0.12	
74-87-3	Chloromethane	ND	1.7	0.51	ND	0.83	0.25	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	1.7	0.65	ND	0.25	0.093	
75-01-4	Vinyl Chloride	ND	1.7	0.58	ND	0.67	0.23	
106-99-0	1,3-Butadiene	ND	1.7	0.75	ND	0.77	0.34	
74-83-9	Bromomethane	ND	1.7	0.65	ND	0.44	0.17	
75-00-3	Chloroethane	ND	1.7	0.58	ND	0.65	0.22	
64-17-5	Ethanol	**4.7**	17	2.7	**2.5**	9.1	1.5	**J**
75-05-8	Acetonitrile	ND	1.7	0.62	ND	1.0	0.37	
107-02-8	Acrolein	ND	6.9	0.58	ND	3.0	0.25	
67-64-1	Acetone	**12**	17	2.6	**4.9**	7.2	1.1	**J, B**
75-69-4	Trichlorofluoromethane (CFC 11)	**1.0**	1.7	0.58	**0.18**	0.30	0.10	**J**
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	17	1.4	ND	7.0	0.59	
107-13-1	Acrylonitrile	ND	1.7	0.58	ND	0.79	0.27	
75-35-4	1,1-Dichloroethene	ND	1.7	0.58	ND	0.43	0.15	
75-09-2	Methylene Chloride	**0.61**	1.7	0.58	**0.18**	0.49	0.17	**J**
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	1.7	0.55	ND	0.55	0.18	
76-13-1	Trichlorotrifluoroethane (CFC 113)	ND	1.7	0.58	ND	0.22	0.076	
75-15-0	Carbon Disulfide	**4.9**	17	0.51	**1.6**	5.5	0.17	**J**
156-60-5	trans-1,2-Dichloroethene	ND	1.7	0.65	ND	0.43	0.16	
75-34-3	1,1-Dichloroethane	ND	1.7	0.55	ND	0.42	0.14	
1634-04-4	Methyl tert-Butyl Ether	ND	1.7	0.58	ND	0.48	0.16	
108-05-4	Vinyl Acetate	ND	17	2.2	ND	4.9	0.63	
78-93-3	2-Butanone (MEK)	**3.1**	17	0.72	**1.1**	5.8	0.24	**J**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
B = Analyte detected in both the sample and associated method blank.
M1 = Matrix interference due to coelution with a non-target compound; results may be biased high.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE-OBS-05** ALS Project ID: P1801623
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1801623-005

Test Code: EPA TO-15 Date Collected: 3/26/18
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/30/18
Analyst: Simon Cao Date Analyzed: 4/9/18
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS00127

Initial Pressure (psig): -0.21 Final Pressure (psig): 5.22

Container Dilution Factor: 1.37

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	1.7	0.55	ND	0.43	0.14	
141-78-6	Ethyl Acetate	ND	3.4	1.2	ND	0.95	0.33	
110-54-3	n-Hexane	**0.70**	1.7	0.51	**0.20**	0.49	0.15	**J**
67-66-3	Chloroform	ND	1.7	0.58	ND	0.35	0.12	
109-99-9	Tetrahydrofuran (THF)	ND	1.7	0.69	ND	0.58	0.23	
107-06-2	1,2-Dichloroethane	ND	1.7	0.55	ND	0.42	0.14	
71-55-6	1,1,1-Trichloroethane	**1.1**	1.7	0.58	**0.20**	0.31	0.11	**J**
71-43-2	Benzene	**2.7**	1.7	0.55	**0.85**	0.54	0.17	
56-23-5	Carbon Tetrachloride	ND	1.7	0.51	ND	0.27	0.082	
110-82-7	Cyclohexane	ND	3.4	0.99	ND	1.0	0.29	
78-87-5	1,2-Dichloropropane	ND	1.7	0.55	ND	0.37	0.12	
75-27-4	Bromodichloromethane	ND	1.7	0.51	ND	0.26	0.077	
79-01-6	Trichloroethene	ND	1.7	0.48	ND	0.32	0.089	
123-91-1	1,4-Dioxane	ND	1.7	0.55	ND	0.48	0.15	
80-62-6	Methyl Methacrylate	ND	3.4	1.1	ND	0.84	0.26	
142-82-5	n-Heptane	**1.5**	1.7	0.58	**0.36**	0.42	0.14	**J**
10061-01-5	cis-1,3-Dichloropropene	ND	1.7	0.48	ND	0.38	0.11	
108-10-1	4-Methyl-2-pentanone	**0.74**	1.7	0.55	**0.18**	0.42	0.13	**J**
10061-02-6	trans-1,3-Dichloropropene	ND	1.7	0.55	ND	0.38	0.12	
79-00-5	1,1,2-Trichloroethane	ND	1.7	0.55	ND	0.31	0.10	
108-88-3	Toluene	**18**	1.7	0.58	**4.7**	0.45	0.15	
591-78-6	2-Hexanone	ND	1.7	0.55	ND	0.42	0.13	
124-48-1	Dibromochloromethane	ND	1.7	0.55	ND	0.20	0.064	
106-93-4	1,2-Dibromoethane	ND	1.7	0.55	ND	0.22	0.071	
123-86-4	n-Butyl Acetate	ND	1.7	0.55	ND	0.36	0.12	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE-OBS-05** ALS Project ID: P1801623
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1801623-005

Test Code: EPA TO-15 Date Collected: 3/26/18
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/30/18
Analyst: Simon Cao Date Analyzed: 4/9/18
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS00127

Initial Pressure (psig): -0.21 Final Pressure (psig): 5.22

Container Dilution Factor: 1.37

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	**1.4**	1.7	0.62	**0.30**	0.37	0.13	**J**
127-18-4	Tetrachloroethene	**0.94**	1.7	0.48	**0.14**	0.25	0.071	**J**
108-90-7	Chlorobenzene	ND	1.7	0.55	ND	0.37	0.12	
100-41-4	Ethylbenzene	**11**	1.7	0.55	**2.6**	0.39	0.13	
179601-23-1	m,p-Xylenes	**55**	3.4	1.0	**13**	0.79	0.24	
75-25-2	Bromoform	ND	1.7	0.51	ND	0.17	0.050	
100-42-5	Styrene	**0.52**	1.7	0.51	**0.12**	0.40	0.12	**J**
95-47-6	o-Xylene	**64**	1.7	0.51	**15**	0.39	0.12	
111-84-2	n-Nonane	**1.6**	1.7	0.51	**0.31**	0.33	0.098	**J**
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.7	0.51	ND	0.25	0.075	
98-82-8	Cumene	**2.0**	1.7	0.51	**0.40**	0.35	0.10	
80-56-8	alpha-Pinene	**1.4**	1.7	0.48	**0.25**	0.31	0.086	**J**
103-65-1	n-Propylbenzene	**3.8**	1.7	0.55	**0.78**	0.35	0.11	
622-96-8	4-Ethyltoluene	**6.1**	1.7	0.55	**1.2**	0.35	0.11	
108-67-8	1,3,5-Trimethylbenzene	**17**	1.7	0.55	**3.4**	0.35	0.11	
95-63-6	1,2,4-Trimethylbenzene	**22**	1.7	0.51	**4.6**	0.35	0.10	
100-44-7	Benzyl Chloride	ND	3.4	0.38	ND	0.66	0.073	
541-73-1	1,3-Dichlorobenzene	ND	1.7	0.51	ND	0.28	0.085	
106-46-7	1,4-Dichlorobenzene	ND	1.7	0.48	ND	0.28	0.080	
95-50-1	1,2-Dichlorobenzene	ND	1.7	0.51	ND	0.28	0.085	
5989-27-5	d-Limonene	**3.4**	1.7	0.48	**0.62**	0.31	0.086	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.7	0.34	ND	0.18	0.035	
120-82-1	1,2,4-Trichlorobenzene	ND	1.7	0.55	ND	0.23	0.074	
91-20-3	Naphthalene	**1.3**	1.7	0.62	**0.24**	0.33	0.12	**J**
87-68-3	Hexachlorobutadiene	ND	1.7	0.48	ND	0.16	0.045	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE-OBS-06** ALS Project ID: P1801623
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1801623-006

Test Code: EPA TO-15 Date Collected: 3/26/18
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/30/18
Analyst: Simon Cao Date Analyzed: 4/9/18
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS00787

Initial Pressure (psig): -0.18 Final Pressure (psig): 5.94

Container Dilution Factor: 1.42

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	**33**	1.8	0.50	**19**	1.0	0.29	**B**
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.6**	1.8	0.60	**0.52**	0.36	0.12	
74-87-3	Chloromethane	ND	1.8	0.53	ND	0.86	0.26	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	1.8	0.67	ND	0.25	0.097	
75-01-4	Vinyl Chloride	ND	1.8	0.60	ND	0.69	0.24	
106-99-0	1,3-Butadiene	ND	1.8	0.78	ND	0.80	0.35	
74-83-9	Bromomethane	ND	1.8	0.67	ND	0.46	0.17	
75-00-3	Chloroethane	ND	1.8	0.60	ND	0.67	0.23	
64-17-5	Ethanol	**15**	18	2.8	**8.1**	9.4	1.5	**J**
75-05-8	Acetonitrile	**1.4**	1.8	0.64	**0.84**	1.1	0.38	**J**
107-02-8	Acrolein	**0.83**	7.1	0.60	**0.36**	3.1	0.26	**J**
67-64-1	Acetone	**30**	18	2.7	**13**	7.5	1.2	**B**
75-69-4	Trichlorofluoromethane (CFC 11)	**1.1**	1.8	0.60	**0.20**	0.32	0.11	**J**
67-63-0	2-Propanol (Isopropyl Alcohol)	**2.8**	18	1.5	**1.1**	7.2	0.61	**J**
107-13-1	Acrylonitrile	ND	1.8	0.60	ND	0.82	0.28	
75-35-4	1,1-Dichloroethene	**32**	1.8	0.60	**8.1**	0.45	0.15	
75-09-2	Methylene Chloride	**51**	1.8	0.60	**15**	0.51	0.17	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	1.8	0.57	ND	0.57	0.18	
76-13-1	Trichlorotrifluoroethane (CFC 113)	ND	1.8	0.60	ND	0.23	0.079	
75-15-0	Carbon Disulfide	**1.5**	18	0.53	**0.48**	5.7	0.17	**J**
156-60-5	trans-1,2-Dichloroethene	ND	1.8	0.67	ND	0.45	0.17	
75-34-3	1,1-Dichloroethane	**2.4**	1.8	0.57	**0.59**	0.44	0.14	
1634-04-4	Methyl tert-Butyl Ether	ND	1.8	0.60	ND	0.49	0.17	
108-05-4	Vinyl Acetate	**5.1**	18	2.3	**1.5**	5.0	0.66	**J**
78-93-3	2-Butanone (MEK)	**4.5**	18	0.75	**1.5**	6.0	0.25	**J**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
B = Analyte detected in both the sample and associated method blank.

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE-OBS-06** ALS Project ID: P1801623
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1801623-006

Test Code: EPA TO-15 Date Collected: 3/26/18
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/30/18
Analyst: Simon Cao Date Analyzed: 4/9/18
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS00787

Initial Pressure (psig): -0.18 Final Pressure (psig): 5.94

Container Dilution Factor: 1.42

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	1.8	0.57	ND	0.45	0.14	
141-78-6	Ethyl Acetate	ND	3.6	1.2	ND	0.99	0.34	
110-54-3	n-Hexane	ND	1.8	0.53	ND	0.50	0.15	
67-66-3	Chloroform	**1.2**	1.8	0.60	**0.24**	0.36	0.12	**J**
109-99-9	Tetrahydrofuran (THF)	ND	1.8	0.71	ND	0.60	0.24	
107-06-2	1,2-Dichloroethane	ND	1.8	0.57	ND	0.44	0.14	
71-55-6	1,1,1-Trichloroethane	**45**	1.8	0.60	**8.2**	0.33	0.11	
71-43-2	Benzene	ND	1.8	0.57	ND	0.56	0.18	
56-23-5	Carbon Tetrachloride	ND	1.8	0.53	ND	0.28	0.085	
110-82-7	Cyclohexane	ND	3.6	1.0	ND	1.0	0.30	
78-87-5	1,2-Dichloropropane	**4.5**	1.8	0.57	**0.97**	0.38	0.12	
75-27-4	Bromodichloromethane	ND	1.8	0.53	ND	0.27	0.080	
79-01-6	Trichloroethene	**1.7**	1.8	0.50	**0.31**	0.33	0.093	**J**
123-91-1	1,4-Dioxane	ND	1.8	0.57	ND	0.49	0.16	
80-62-6	Methyl Methacrylate	ND	3.6	1.1	ND	0.87	0.27	
142-82-5	n-Heptane	ND	1.8	0.60	ND	0.43	0.15	
10061-01-5	cis-1,3-Dichloropropene	ND	1.8	0.50	ND	0.39	0.11	
108-10-1	4-Methyl-2-pentanone	ND	1.8	0.57	ND	0.43	0.14	
10061-02-6	trans-1,3-Dichloropropene	ND	1.8	0.57	ND	0.39	0.13	
79-00-5	1,1,2-Trichloroethane	ND	1.8	0.57	ND	0.33	0.10	
108-88-3	Toluene	**4.0**	1.8	0.60	**1.1**	0.47	0.16	
591-78-6	2-Hexanone	ND	1.8	0.57	ND	0.43	0.14	
124-48-1	Dibromochloromethane	ND	1.8	0.57	ND	0.21	0.067	
106-93-4	1,2-Dibromoethane	ND	1.8	0.57	ND	0.23	0.074	
123-86-4	n-Butyl Acetate	ND	1.8	0.57	ND	0.37	0.12	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE-OBS-06** ALS Project ID: P1801623
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1801623-006

Test Code: EPA TO-15 Date Collected: 3/26/18
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/30/18
Analyst: Simon Cao Date Analyzed: 4/9/18
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS00787

Initial Pressure (psig): -0.18 Final Pressure (psig): 5.94

Container Dilution Factor: 1.42

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	ND	1.8	0.64	ND	0.38	0.14	
127-18-4	Tetrachloroethene	**6.9**	1.8	0.50	**1.0**	0.26	0.073	
108-90-7	Chlorobenzene	ND	1.8	0.57	ND	0.39	0.12	
100-41-4	Ethylbenzene	**1.8**	1.8	0.57	**0.42**	0.41	0.13	
179601-23-1	m,p-Xylenes	**8.4**	3.6	1.1	**1.9**	0.82	0.25	
75-25-2	Bromoform	ND	1.8	0.53	ND	0.17	0.052	
100-42-5	Styrene	**0.93**	1.8	0.53	**0.22**	0.42	0.13	**J**
95-47-6	o-Xylene	**5.5**	1.8	0.53	**1.3**	0.41	0.12	
111-84-2	n-Nonane	ND	1.8	0.53	ND	0.34	0.10	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.8	0.53	ND	0.26	0.078	
98-82-8	Cumene	ND	1.8	0.53	ND	0.36	0.11	
80-56-8	alpha-Pinene	**2.7**	1.8	0.50	**0.48**	0.32	0.089	
103-65-1	n-Propylbenzene	**0.58**	1.8	0.57	**0.12**	0.36	0.12	**J**
622-96-8	4-Ethyltoluene	**1.1**	1.8	0.57	**0.21**	0.36	0.12	**J**
108-67-8	1,3,5-Trimethylbenzene	**1.7**	1.8	0.57	**0.35**	0.36	0.12	**J**
95-63-6	1,2,4-Trimethylbenzene	**4.0**	1.8	0.53	**0.81**	0.36	0.11	
100-44-7	Benzyl Chloride	ND	3.6	0.39	ND	0.69	0.075	
541-73-1	1,3-Dichlorobenzene	ND	1.8	0.53	ND	0.30	0.089	
106-46-7	1,4-Dichlorobenzene	ND	1.8	0.50	ND	0.30	0.083	
95-50-1	1,2-Dichlorobenzene	ND	1.8	0.53	ND	0.30	0.089	
5989-27-5	d-Limonene	**3.1**	1.8	0.50	**0.56**	0.32	0.089	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.8	0.35	ND	0.18	0.036	
120-82-1	1,2,4-Trichlorobenzene	ND	1.8	0.57	ND	0.24	0.077	
91-20-3	Naphthalene	**2.1**	1.8	0.64	**0.40**	0.34	0.12	
87-68-3	Hexachlorobutadiene	ND	1.8	0.50	ND	0.17	0.047	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE-OBS-07** ALS Project ID: P1801623
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1801623-007

Test Code: EPA TO-15 Date Collected: 3/26/18
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/30/18
Analyst: Simon Cao Date Analyzed: 4/9/18
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS00054

Initial Pressure (psig): -0.21 Final Pressure (psig): 5.56

Container Dilution Factor: 1.40

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	**55**	1.8	0.49	**32**	1.0	0.28	**B**
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.1**	1.8	0.60	**0.43**	0.35	0.12	
74-87-3	Chloromethane	ND	1.8	0.53	ND	0.85	0.25	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	1.8	0.67	ND	0.25	0.095	
75-01-4	Vinyl Chloride	ND	1.8	0.60	ND	0.68	0.23	
106-99-0	1,3-Butadiene	ND	1.8	0.77	ND	0.79	0.35	
74-83-9	Bromomethane	ND	1.8	0.67	ND	0.45	0.17	
75-00-3	Chloroethane	ND	1.8	0.60	ND	0.66	0.23	
64-17-5	Ethanol	**18**	18	2.8	**9.5**	9.3	1.5	
75-05-8	Acetonitrile	**2.6**	1.8	0.63	**1.6**	1.0	0.38	
107-02-8	Acrolein	**1.2**	7.0	0.60	**0.53**	3.1	0.26	**J**
67-64-1	Acetone	**17**	18	2.7	**7.3**	7.4	1.1	**J, B**
75-69-4	Trichlorofluoromethane (CFC 11)	**1.9**	1.8	0.60	**0.33**	0.31	0.11	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	18	1.5	ND	7.1	0.60	
107-13-1	Acrylonitrile	ND	1.8	0.60	ND	0.81	0.27	
75-35-4	1,1-Dichloroethene	**330**	1.8	0.60	**83**	0.44	0.15	
75-09-2	Methylene Chloride	**3.6**	1.8	0.60	**1.0**	0.50	0.17	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	1.8	0.56	ND	0.56	0.18	
76-13-1	Trichlorotrifluoroethane (CFC 113)	**7.5**	1.8	0.60	**0.99**	0.23	0.078	
75-15-0	Carbon Disulfide	**13**	18	0.53	**4.2**	5.6	0.17	**J**
156-60-5	trans-1,2-Dichloroethene	ND	1.8	0.67	ND	0.44	0.17	
75-34-3	1,1-Dichloroethane	**6.2**	1.8	0.56	**1.5**	0.43	0.14	
1634-04-4	Methyl tert-Butyl Ether	ND	1.8	0.60	ND	0.49	0.17	
108-05-4	Vinyl Acetate	ND	18	2.3	ND	5.0	0.65	
78-93-3	2-Butanone (MEK)	**2.4**	18	0.74	**0.83**	5.9	0.25	**J**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
B = Analyte detected in both the sample and associated method blank.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE-OBS-07** ALS Project ID: P1801623
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1801623-007

Test Code: EPA TO-15 Date Collected: 3/26/18
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/30/18
Analyst: Simon Cao Date Analyzed: 4/9/18
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS00054

Initial Pressure (psig): -0.21 Final Pressure (psig): 5.56

Container Dilution Factor: 1.40

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	1.8	0.56	ND	0.44	0.14	
141-78-6	Ethyl Acetate	ND	3.5	1.2	ND	0.97	0.34	
110-54-3	n-Hexane	ND	1.8	0.53	ND	0.50	0.15	
67-66-3	Chloroform	**1.7**	1.8	0.60	**0.34**	0.36	0.12	**J**
109-99-9	Tetrahydrofuran (THF)	ND	1.8	0.70	ND	0.59	0.24	
107-06-2	1,2-Dichloroethane	ND	1.8	0.56	ND	0.43	0.14	
71-55-6	1,1,1-Trichloroethane	**6.4**	1.8	0.60	**1.2**	0.32	0.11	
71-43-2	Benzene	ND	1.8	0.56	ND	0.55	0.18	
56-23-5	Carbon Tetrachloride	**1.1**	1.8	0.53	**0.18**	0.28	0.083	**J**
110-82-7	Cyclohexane	ND	3.5	1.0	ND	1.0	0.29	
78-87-5	1,2-Dichloropropane	ND	1.8	0.56	ND	0.38	0.12	
75-27-4	Bromodichloromethane	ND	1.8	0.53	ND	0.26	0.078	
79-01-6	Trichloroethene	**1.5**	1.8	0.49	**0.29**	0.33	0.091	**J**
123-91-1	1,4-Dioxane	ND	1.8	0.56	ND	0.49	0.16	
80-62-6	Methyl Methacrylate	ND	3.5	1.1	ND	0.86	0.27	
142-82-5	n-Heptane	ND	1.8	0.60	ND	0.43	0.15	
10061-01-5	cis-1,3-Dichloropropene	ND	1.8	0.49	ND	0.39	0.11	
108-10-1	4-Methyl-2-pentanone	**1.4**	1.8	0.56	**0.35**	0.43	0.14	**J**
10061-02-6	trans-1,3-Dichloropropene	ND	1.8	0.56	ND	0.39	0.12	
79-00-5	1,1,2-Trichloroethane	**2.5**	1.8	0.56	**0.46**	0.32	0.10	
108-88-3	Toluene	**2.5**	1.8	0.60	**0.67**	0.46	0.16	
591-78-6	2-Hexanone	ND	1.8	0.56	ND	0.43	0.14	
124-48-1	Dibromochloromethane	ND	1.8	0.56	ND	0.21	0.066	
106-93-4	1,2-Dibromoethane	ND	1.8	0.56	ND	0.23	0.073	
123-86-4	n-Butyl Acetate	**0.62**	1.8	0.56	**0.13**	0.37	0.12	**J**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE-OBS-07** ALS Project ID: P1801623
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1801623-007

Test Code: EPA TO-15 Date Collected: 3/26/18
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/30/18
Analyst: Simon Cao Date Analyzed: 4/9/18
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS00054

Initial Pressure (psig): -0.21 Final Pressure (psig): 5.56

Container Dilution Factor: 1.40

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	ND	1.8	0.63	ND	0.37	0.13	
127-18-4	Tetrachloroethene	**8.1**	1.8	0.49	**1.2**	0.26	0.072	
108-90-7	Chlorobenzene	ND	1.8	0.56	ND	0.38	0.12	
100-41-4	Ethylbenzene	**3.7**	1.8	0.56	**0.86**	0.40	0.13	
179601-23-1	m,p-Xylenes	**16**	3.5	1.1	**3.7**	0.81	0.24	
75-25-2	Bromoform	ND	1.8	0.53	ND	0.17	0.051	
100-42-5	Styrene	**0.57**	1.8	0.53	**0.13**	0.41	0.12	**J**
95-47-6	o-Xylene	**18**	1.8	0.53	**4.0**	0.40	0.12	
111-84-2	n-Nonane	ND	1.8	0.53	ND	0.33	0.10	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.8	0.53	ND	0.25	0.076	
98-82-8	Cumene	**0.55**	1.8	0.53	**0.11**	0.36	0.11	**J**
80-56-8	alpha-Pinene	**4.2**	1.8	0.49	**0.76**	0.31	0.088	
103-65-1	n-Propylbenzene	**1.0**	1.8	0.56	**0.21**	0.36	0.11	**J**
622-96-8	4-Ethyltoluene	**1.2**	1.8	0.56	**0.24**	0.36	0.11	**J**
108-67-8	1,3,5-Trimethylbenzene	**1.9**	1.8	0.56	**0.38**	0.36	0.11	
95-63-6	1,2,4-Trimethylbenzene	**2.8**	1.8	0.53	**0.58**	0.36	0.11	
100-44-7	Benzyl Chloride	ND	3.5	0.39	ND	0.68	0.074	
541-73-1	1,3-Dichlorobenzene	ND	1.8	0.53	ND	0.29	0.087	
106-46-7	1,4-Dichlorobenzene	ND	1.8	0.49	ND	0.29	0.082	
95-50-1	1,2-Dichlorobenzene	ND	1.8	0.53	ND	0.29	0.087	
5989-27-5	d-Limonene	**3.3**	1.8	0.49	**0.59**	0.31	0.088	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.8	0.35	ND	0.18	0.036	
120-82-1	1,2,4-Trichlorobenzene	ND	1.8	0.56	ND	0.24	0.075	
91-20-3	Naphthalene	**1.8**	1.8	0.63	**0.34**	0.33	0.12	
87-68-3	Hexachlorobutadiene	ND	1.8	0.49	ND	0.16	0.046	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE-OBS-08** ALS Project ID: P1801623
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1801623-008

Test Code: EPA TO-15 Date Collected: 3/26/18
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/30/18
Analyst: Simon Cao Date Analyzed: 4/9/18
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS00717

Initial Pressure (psig): -0.15 Final Pressure (psig): 5.43

Container Dilution Factor: 1.38

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	**43**	1.7	0.48	**25**	1.0	0.28	**B**
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.1**	1.7	0.59	**0.42**	0.35	0.12	
74-87-3	Chloromethane	ND	1.7	0.52	ND	0.84	0.25	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	1.7	0.66	ND	0.25	0.094	
75-01-4	Vinyl Chloride	ND	1.7	0.59	ND	0.68	0.23	
106-99-0	1,3-Butadiene	ND	1.7	0.76	ND	0.78	0.34	
74-83-9	Bromomethane	ND	1.7	0.66	ND	0.44	0.17	
75-00-3	Chloroethane	ND	1.7	0.59	ND	0.65	0.22	
64-17-5	Ethanol	**17**	17	2.8	**9.2**	9.2	1.5	
75-05-8	Acetonitrile	ND	1.7	0.62	ND	1.0	0.37	
107-02-8	Acrolein	**0.69**	6.9	0.59	**0.30**	3.0	0.26	**J**
67-64-1	Acetone	**11**	17	2.7	**4.6**	7.3	1.1	**J, B**
75-69-4	Trichlorofluoromethane (CFC 11)	**1.0**	1.7	0.59	**0.18**	0.31	0.10	**J**
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	17	1.4	ND	7.0	0.59	
107-13-1	Acrylonitrile	ND	1.7	0.59	ND	0.80	0.27	
75-35-4	1,1-Dichloroethene	**250**	1.7	0.59	**63**	0.44	0.15	
75-09-2	Methylene Chloride	**11**	1.7	0.59	**3.3**	0.50	0.17	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	1.7	0.55	ND	0.55	0.18	
76-13-1	Trichlorotrifluoroethane (CFC 113)	ND	1.7	0.59	ND	0.23	0.077	
75-15-0	Carbon Disulfide	**3.9**	17	0.52	**1.2**	5.5	0.17	**J**
156-60-5	trans-1,2-Dichloroethene	ND	1.7	0.66	ND	0.44	0.17	
75-34-3	1,1-Dichloroethane	**20**	1.7	0.55	**4.9**	0.43	0.14	
1634-04-4	Methyl tert-Butyl Ether	ND	1.7	0.59	ND	0.48	0.16	
108-05-4	Vinyl Acetate	ND	17	2.2	ND	4.9	0.64	
78-93-3	2-Butanone (MEK)	**2.9**	17	0.72	**0.97**	5.9	0.25	**J**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
B = Analyte detected in both the sample and associated method blank.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE-OBS-08** ALS Project ID: P1801623
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1801623-008

Test Code: EPA TO-15 Date Collected: 3/26/18
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/30/18
Analyst: Simon Cao Date Analyzed: 4/9/18
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS00717

Initial Pressure (psig): -0.15 Final Pressure (psig): 5.43

Container Dilution Factor: 1.38

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	1.7	0.55	ND	0.44	0.14	
141-78-6	Ethyl Acetate	**1.3**	3.5	1.2	**0.35**	0.96	0.34	**J**
110-54-3	n-Hexane	ND	1.7	0.52	ND	0.49	0.15	
67-66-3	Chloroform	**0.83**	1.7	0.59	**0.17**	0.35	0.12	**J**
109-99-9	Tetrahydrofuran (THF)	ND	1.7	0.69	ND	0.59	0.23	
107-06-2	1,2-Dichloroethane	ND	1.7	0.55	ND	0.43	0.14	
71-55-6	1,1,1-Trichloroethane	**23**	1.7	0.59	**4.3**	0.32	0.11	
71-43-2	Benzene	**0.62**	1.7	0.55	**0.19**	0.54	0.17	**J**
56-23-5	Carbon Tetrachloride	ND	1.7	0.52	ND	0.27	0.082	
110-82-7	Cyclohexane	ND	3.5	1.0	ND	1.0	0.29	
78-87-5	1,2-Dichloropropane	ND	1.7	0.55	ND	0.37	0.12	
75-27-4	Bromodichloromethane	ND	1.7	0.52	ND	0.26	0.077	
79-01-6	Trichloroethene	**0.81**	1.7	0.48	**0.15**	0.32	0.090	**J**
123-91-1	1,4-Dioxane	ND	1.7	0.55	ND	0.48	0.15	
80-62-6	Methyl Methacrylate	ND	3.5	1.1	ND	0.84	0.26	
142-82-5	n-Heptane	ND	1.7	0.59	ND	0.42	0.14	
10061-01-5	cis-1,3-Dichloropropene	ND	1.7	0.48	ND	0.38	0.11	
108-10-1	4-Methyl-2-pentanone	ND	1.7	0.55	ND	0.42	0.13	
10061-02-6	trans-1,3-Dichloropropene	ND	1.7	0.55	ND	0.38	0.12	
79-00-5	1,1,2-Trichloroethane	ND	1.7	0.55	ND	0.32	0.10	
108-88-3	Toluene	**6.5**	1.7	0.59	**1.7**	0.46	0.16	
591-78-6	2-Hexanone	ND	1.7	0.55	ND	0.42	0.13	
124-48-1	Dibromochloromethane	ND	1.7	0.55	ND	0.20	0.065	
106-93-4	1,2-Dibromoethane	ND	1.7	0.55	ND	0.22	0.072	
123-86-4	n-Butyl Acetate	**0.83**	1.7	0.55	**0.18**	0.36	0.12	**J**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE-OBS-08** ALS Project ID: P1801623
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1801623-008

Test Code: EPA TO-15 Date Collected: 3/26/18
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/30/18
Analyst: Simon Cao Date Analyzed: 4/9/18
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS00717

Initial Pressure (psig): -0.15 Final Pressure (psig): 5.43

Container Dilution Factor: 1.38

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	ND	1.7	0.62	ND	0.37	0.13	
127-18-4	Tetrachloroethene	**3.7**	1.7	0.48	**0.54**	0.25	0.071	
108-90-7	Chlorobenzene	ND	1.7	0.55	ND	0.37	0.12	
100-41-4	Ethylbenzene	**1.6**	1.7	0.55	**0.37**	0.40	0.13	**J**
179601-23-1	m,p-Xylenes	**7.5**	3.5	1.0	**1.7**	0.79	0.24	
75-25-2	Bromoform	ND	1.7	0.52	ND	0.17	0.050	
100-42-5	Styrene	**1.2**	1.7	0.52	**0.28**	0.41	0.12	**J**
95-47-6	o-Xylene	**3.0**	1.7	0.52	**0.69**	0.40	0.12	
111-84-2	n-Nonane	ND	1.7	0.52	ND	0.33	0.099	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.7	0.52	ND	0.25	0.075	
98-82-8	Cumene	ND	1.7	0.52	ND	0.35	0.11	
80-56-8	alpha-Pinene	**2.3**	1.7	0.48	**0.41**	0.31	0.087	
103-65-1	n-Propylbenzene	ND	1.7	0.55	ND	0.35	0.11	
622-96-8	4-Ethyltoluene	ND	1.7	0.55	ND	0.35	0.11	
108-67-8	1,3,5-Trimethylbenzene	**0.62**	1.7	0.55	**0.13**	0.35	0.11	**J**
95-63-6	1,2,4-Trimethylbenzene	**1.8**	1.7	0.52	**0.37**	0.35	0.11	
100-44-7	Benzyl Chloride	ND	3.5	0.38	ND	0.67	0.073	
541-73-1	1,3-Dichlorobenzene	ND	1.7	0.52	ND	0.29	0.086	
106-46-7	1,4-Dichlorobenzene	ND	1.7	0.48	ND	0.29	0.080	
95-50-1	1,2-Dichlorobenzene	ND	1.7	0.52	ND	0.29	0.086	
5989-27-5	d-Limonene	**4.3**	1.7	0.48	**0.77**	0.31	0.087	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.7	0.34	ND	0.18	0.035	
120-82-1	1,2,4-Trichlorobenzene	ND	1.7	0.55	ND	0.23	0.074	
91-20-3	Naphthalene	ND	1.7	0.62	ND	0.33	0.12	
87-68-3	Hexachlorobutadiene	ND	1.7	0.48	ND	0.16	0.045	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE-OBS-09** ALS Project ID: P1801623
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1801623-009

Test Code: EPA TO-15 Date Collected: 3/26/18
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/30/18
Analyst: Simon Cao Date Analyzed: 4/9/18
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS00240

Initial Pressure (psig): 0.08 Final Pressure (psig): 5.37

Container Dilution Factor: 1.36

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	**24**	1.7	0.48	**14**	0.99	0.28	**B**
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.1**	1.7	0.58	**0.43**	0.34	0.12	
74-87-3	Chloromethane	ND	1.7	0.51	ND	0.82	0.25	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	1.7	0.65	ND	0.24	0.092	
75-01-4	Vinyl Chloride	ND	1.7	0.58	ND	0.67	0.23	
106-99-0	1,3-Butadiene	ND	1.7	0.75	ND	0.77	0.34	
74-83-9	Bromomethane	ND	1.7	0.65	ND	0.44	0.17	
75-00-3	Chloroethane	ND	1.7	0.58	ND	0.64	0.22	
64-17-5	Ethanol	**30**	17	2.7	**16**	9.0	1.4	
75-05-8	Acetonitrile	**1.2**	1.7	0.61	**0.73**	1.0	0.36	**J**
107-02-8	Acrolein	**6.6**	6.8	0.58	**2.9**	3.0	0.25	**J**
67-64-1	Acetone	**60**	17	2.6	**25**	7.2	1.1	**B**
75-69-4	Trichlorofluoromethane (CFC 11)	**1.0**	1.7	0.58	**0.18**	0.30	0.10	**J**
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	17	1.4	ND	6.9	0.58	
107-13-1	Acrylonitrile	ND	1.7	0.58	ND	0.78	0.27	
75-35-4	1,1-Dichloroethene	**16**	1.7	0.58	**4.1**	0.43	0.15	
75-09-2	Methylene Chloride	**64**	1.7	0.58	**19**	0.49	0.17	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	1.7	0.54	ND	0.54	0.17	
76-13-1	Trichlorotrifluoroethane (CFC 113)	ND	1.7	0.58	ND	0.22	0.075	
75-15-0	Carbon Disulfide	**4.5**	17	0.51	**1.4**	5.5	0.16	**J**
156-60-5	trans-1,2-Dichloroethene	ND	1.7	0.65	ND	0.43	0.16	
75-34-3	1,1-Dichloroethane	ND	1.7	0.54	ND	0.42	0.13	
1634-04-4	Methyl tert-Butyl Ether	ND	1.7	0.58	ND	0.47	0.16	
108-05-4	Vinyl Acetate	**13**	17	2.2	**3.6**	4.8	0.63	**J**
78-93-3	2-Butanone (MEK)	**18**	17	0.71	**6.1**	5.8	0.24	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
B = Analyte detected in both the sample and associated method blank.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE-OBS-09** ALS Project ID: P1801623
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1801623-009

Test Code: EPA TO-15 Date Collected: 3/26/18
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/30/18
Analyst: Simon Cao Date Analyzed: 4/9/18
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS00240

Initial Pressure (psig): 0.08 Final Pressure (psig): 5.37

Container Dilution Factor: 1.36

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	1.7	0.54	ND	0.43	0.14	
141-78-6	Ethyl Acetate	ND	3.4	1.2	ND	0.94	0.33	
110-54-3	n-Hexane	ND	1.7	0.51	ND	0.48	0.14	
67-66-3	Chloroform	ND	1.7	0.58	ND	0.35	0.12	
109-99-9	Tetrahydrofuran (THF)	ND	1.7	0.68	ND	0.58	0.23	
107-06-2	1,2-Dichloroethane	ND	1.7	0.54	ND	0.42	0.13	
71-55-6	1,1,1-Trichloroethane	**5.3**	1.7	0.58	**0.97**	0.31	0.11	
71-43-2	Benzene	ND	1.7	0.54	ND	0.53	0.17	
56-23-5	Carbon Tetrachloride	ND	1.7	0.51	ND	0.27	0.081	
110-82-7	Cyclohexane	ND	3.4	0.99	ND	0.99	0.29	
78-87-5	1,2-Dichloropropane	ND	1.7	0.54	ND	0.37	0.12	
75-27-4	Bromodichloromethane	ND	1.7	0.51	ND	0.25	0.076	
79-01-6	Trichloroethene	ND	1.7	0.48	ND	0.32	0.089	
123-91-1	1,4-Dioxane	**0.62**	1.7	0.54	**0.17**	0.47	0.15	**J**
80-62-6	Methyl Methacrylate	ND	3.4	1.1	ND	0.83	0.26	
142-82-5	n-Heptane	ND	1.7	0.58	ND	0.41	0.14	
10061-01-5	cis-1,3-Dichloropropene	ND	1.7	0.48	ND	0.37	0.10	
108-10-1	4-Methyl-2-pentanone	**1.0**	1.7	0.54	**0.25**	0.41	0.13	**J**
10061-02-6	trans-1,3-Dichloropropene	ND	1.7	0.54	ND	0.37	0.12	
79-00-5	1,1,2-Trichloroethane	ND	1.7	0.54	ND	0.31	0.10	
108-88-3	Toluene	**1.6**	1.7	0.58	**0.41**	0.45	0.15	**J**
591-78-6	2-Hexanone	**2.1**	1.7	0.54	**0.51**	0.42	0.13	
124-48-1	Dibromochloromethane	ND	1.7	0.54	ND	0.20	0.064	
106-93-4	1,2-Dibromoethane	ND	1.7	0.54	ND	0.22	0.071	
123-86-4	n-Butyl Acetate	**2.3**	1.7	0.54	**0.48**	0.36	0.11	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE-OBS-09** ALS Project ID: P1801623
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1801623-009

Test Code: EPA TO-15 Date Collected: 3/26/18
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/30/18
Analyst: Simon Cao Date Analyzed: 4/9/18
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS00240

Initial Pressure (psig): 0.08 Final Pressure (psig): 5.37

Container Dilution Factor: 1.36

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	**0.71**	1.7	0.61	**0.15**	0.36	0.13	**J**
127-18-4	Tetrachloroethene	**1.2**	1.7	0.48	**0.18**	0.25	0.070	**J**
108-90-7	Chlorobenzene	ND	1.7	0.54	ND	0.37	0.12	
100-41-4	Ethylbenzene	ND	1.7	0.54	ND	0.39	0.13	
179601-23-1	m,p-Xylenes	**2.8**	3.4	1.0	**0.64**	0.78	0.23	**J**
75-25-2	Bromoform	ND	1.7	0.51	ND	0.16	0.049	
100-42-5	Styrene	ND	1.7	0.51	ND	0.40	0.12	
95-47-6	o-Xylene	**1.2**	1.7	0.51	**0.28**	0.39	0.12	**J**
111-84-2	n-Nonane	ND	1.7	0.51	ND	0.32	0.097	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.7	0.51	ND	0.25	0.074	
98-82-8	Cumene	ND	1.7	0.51	ND	0.35	0.10	
80-56-8	alpha-Pinene	**1.1**	1.7	0.48	**0.20**	0.31	0.085	**J**
103-65-1	n-Propylbenzene	ND	1.7	0.54	ND	0.35	0.11	
622-96-8	4-Ethyltoluene	ND	1.7	0.54	ND	0.35	0.11	
108-67-8	1,3,5-Trimethylbenzene	ND	1.7	0.54	ND	0.35	0.11	
95-63-6	1,2,4-Trimethylbenzene	**0.75**	1.7	0.51	**0.15**	0.35	0.10	**J**
100-44-7	Benzyl Chloride	ND	3.4	0.37	ND	0.66	0.072	
541-73-1	1,3-Dichlorobenzene	ND	1.7	0.51	ND	0.28	0.085	
106-46-7	1,4-Dichlorobenzene	ND	1.7	0.48	ND	0.28	0.079	
95-50-1	1,2-Dichlorobenzene	ND	1.7	0.51	ND	0.28	0.085	
5989-27-5	d-Limonene	**2.1**	1.7	0.48	**0.38**	0.31	0.085	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.7	0.34	ND	0.18	0.035	
120-82-1	1,2,4-Trichlorobenzene	ND	1.7	0.54	ND	0.23	0.073	
91-20-3	Naphthalene	**2.0**	1.7	0.61	**0.39**	0.32	0.12	
87-68-3	Hexachlorobutadiene	ND	1.7	0.48	ND	0.16	0.045	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
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Client: **Environmental Management Services, Inc.**

Client Sample ID: **Method Blank** ALS Project ID: P1801623

Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P180409-MB

Test Code: EPA TO-15 Date Collected: NA

Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA

Analyst: Simon Cao Date Analyzed: 4/9/18

Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)

Test Notes:

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	**0.37**	0.50	0.14	**0.22**	0.29	0.081	**J**
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	0.50	0.17	ND	0.10	0.034	
74-87-3	Chloromethane	ND	0.50	0.15	ND	0.24	0.073	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.50	0.19	ND	0.072	0.027	
75-01-4	Vinyl Chloride	ND	0.50	0.17	ND	0.20	0.067	
106-99-0	1,3-Butadiene	ND	0.50	0.22	ND	0.23	0.099	
74-83-9	Bromomethane	ND	0.50	0.19	ND	0.13	0.049	
75-00-3	Chloroethane	ND	0.50	0.17	ND	0.19	0.064	
64-17-5	Ethanol	ND	5.0	0.80	ND	2.7	0.42	
75-05-8	Acetonitrile	ND	0.50	0.18	ND	0.30	0.11	
107-02-8	Acrolein	ND	2.0	0.17	ND	0.87	0.074	
67-64-1	Acetone	**0.90**	5.0	0.77	**0.38**	2.1	0.32	**J**
75-69-4	Trichlorofluoromethane (CFC 11)	ND	0.50	0.17	ND	0.089	0.030	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	5.0	0.42	ND	2.0	0.17	
107-13-1	Acrylonitrile	ND	0.50	0.17	ND	0.23	0.078	
75-35-4	1,1-Dichloroethene	ND	0.50	0.17	ND	0.13	0.043	
75-09-2	Methylene Chloride	ND	0.50	0.17	ND	0.14	0.049	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.50	0.16	ND	0.16	0.051	
76-13-1	Trichlorotrifluoroethane (CFC 113)	ND	0.50	0.17	ND	0.065	0.022	
75-15-0	Carbon Disulfide	ND	5.0	0.15	ND	1.6	0.048	
156-60-5	trans-1,2-Dichloroethene	ND	0.50	0.19	ND	0.13	0.048	
75-34-3	1,1-Dichloroethane	ND	0.50	0.16	ND	0.12	0.040	
1634-04-4	Methyl tert-Butyl Ether	ND	0.50	0.17	ND	0.14	0.047	
108-05-4	Vinyl Acetate	ND	5.0	0.65	ND	1.4	0.18	
78-93-3	2-Butanone (MEK)	ND	5.0	0.21	ND	1.7	0.071	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **Environmental Management Services, Inc.**

Client Sample ID: **Method Blank** ALS Project ID: P1801623

Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P180409-MB

Test Code: EPA TO-15 Date Collected: NA

Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA

Analyst: Simon Cao Date Analyzed: 4/9/18

Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)

Test Notes:

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	0.50	0.16	ND	0.13	0.040	
141-78-6	Ethyl Acetate	ND	1.0	0.35	ND	0.28	0.097	
110-54-3	n-Hexane	ND	0.50	0.15	ND	0.14	0.043	
67-66-3	Chloroform	ND	0.50	0.17	ND	0.10	0.035	
109-99-9	Tetrahydrofuran (THF)	ND	0.50	0.20	ND	0.17	0.068	
107-06-2	1,2-Dichloroethane	ND	0.50	0.16	ND	0.12	0.040	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.17	ND	0.092	0.031	
71-43-2	Benzene	ND	0.50	0.16	ND	0.16	0.050	
56-23-5	Carbon Tetrachloride	ND	0.50	0.15	ND	0.080	0.024	
110-82-7	Cyclohexane	ND	1.0	0.29	ND	0.29	0.084	
78-87-5	1,2-Dichloropropane	ND	0.50	0.16	ND	0.11	0.035	
75-27-4	Bromodichloromethane	ND	0.50	0.15	ND	0.075	0.022	
79-01-6	Trichloroethene	ND	0.50	0.14	ND	0.093	0.026	
123-91-1	1,4-Dioxane	ND	0.50	0.16	ND	0.14	0.044	
80-62-6	Methyl Methacrylate	ND	1.0	0.31	ND	0.24	0.076	
142-82-5	n-Heptane	ND	0.50	0.17	ND	0.12	0.041	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.14	ND	0.11	0.031	
108-10-1	4-Methyl-2-pentanone	ND	0.50	0.16	ND	0.12	0.039	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.16	ND	0.11	0.035	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.16	ND	0.092	0.029	
108-88-3	Toluene	ND	0.50	0.17	ND	0.13	0.045	
591-78-6	2-Hexanone	ND	0.50	0.16	ND	0.12	0.039	
124-48-1	Dibromochloromethane	ND	0.50	0.16	ND	0.059	0.019	
106-93-4	1,2-Dibromoethane	ND	0.50	0.16	ND	0.065	0.021	
123-86-4	n-Butyl Acetate	ND	0.50	0.16	ND	0.11	0.034	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Client: **Environmental Management Services, Inc.**

Client Sample ID: **Method Blank** ALS Project ID: P1801623

Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P180409-MB

Test Code: EPA TO-15 Date Collected: NA

Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA

Analyst: Simon Cao Date Analyzed: 4/9/18

Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)

Test Notes:

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	ND	0.50	0.18	ND	0.11	0.039	
127-18-4	Tetrachloroethene	ND	0.50	0.14	ND	0.074	0.021	
108-90-7	Chlorobenzene	ND	0.50	0.16	ND	0.11	0.035	
100-41-4	Ethylbenzene	ND	0.50	0.16	ND	0.12	0.037	
179601-23-1	m,p-Xylenes	ND	1.0	0.30	ND	0.23	0.069	
75-25-2	Bromoform	ND	0.50	0.15	ND	0.048	0.015	
100-42-5	Styrene	ND	0.50	0.15	ND	0.12	0.035	
95-47-6	o-Xylene	ND	0.50	0.15	ND	0.12	0.035	
111-84-2	n-Nonane	ND	0.50	0.15	ND	0.095	0.029	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.15	ND	0.073	0.022	
98-82-8	Cumene	ND	0.50	0.15	ND	0.10	0.031	
80-56-8	alpha-Pinene	ND	0.50	0.14	ND	0.090	0.025	
103-65-1	n-Propylbenzene	ND	0.50	0.16	ND	0.10	0.033	
622-96-8	4-Ethyltoluene	ND	0.50	0.16	ND	0.10	0.033	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.16	ND	0.10	0.033	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.15	ND	0.10	0.031	
100-44-7	Benzyl Chloride	ND	1.0	0.11	ND	0.19	0.021	
541-73-1	1,3-Dichlorobenzene	ND	0.50	0.15	ND	0.083	0.025	
106-46-7	1,4-Dichlorobenzene	ND	0.50	0.14	ND	0.083	0.023	
95-50-1	1,2-Dichlorobenzene	ND	0.50	0.15	ND	0.083	0.025	
5989-27-5	d-Limonene	ND	0.50	0.14	ND	0.090	0.025	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.50	0.099	ND	0.052	0.010	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.16	ND	0.067	0.022	
91-20-3	Naphthalene	ND	0.50	0.18	ND	0.095	0.034	
87-68-3	Hexachlorobutadiene	ND	0.50	0.14	ND	0.047	0.013	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

SURROGATE SPIKE RECOVERY RESULTS

Client: **Environmental Management Services, Inc.**
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Project ID: P1801623

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date(s) Collected: 3/26/18
Analyst: Simon Cao Date(s) Received: 3/30/18
Sample Type: 1.0 L Summa Canister(s) / 1.0 L Silonite Summa Canister(s) Date(s) Analyzed: 4/9/18
Test Notes:

Client Sample ID	ALS Sample ID	1,2-Dichloroethane-d4 Percent Recovered	Toluene-d8 Percent Recovered	Bromofluorobenzene Percent Recovered	Acceptance Limits	Data Qualifier
Method Blank	P180409-MB	**92**	**102**	**92**	70-130	
Lab Control Sample	P180409-LCS	**91**	**103**	**92**	70-130	
SVE-OBS-01	P1801623-001	**93**	**103**	**91**	70-130	
SVE-OBS-02	P1801623-002	**92**	**101**	**92**	70-130	
SVE-OBS-03	P1801623-003	**90**	**98**	**90**	70-130	
SVE-OBS-04	P1801623-004	**92**	**102**	**93**	70-130	
SVE-OBS-05	P1801623-005	**91**	**102**	**92**	70-130	
SVE-OBS-06	P1801623-006	**89**	**101**	**93**	70-130	
SVE-OBS-07	P1801623-007	**81**	**96**	**97**	70-130	
SVE-OBS-08	P1801623-008	**91**	**101**	**93**	70-130	
SVE-OBS-09	P1801623-009	**90**	**99**	**95**	70-130	

Surrogate percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly from the on-column percent recovery.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Environmental Management Services, Inc.**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1801623
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P180409-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Simon Cao Date Analyzed: 4/9/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	ALS Acceptance Limits	Data Qualifier
115-07-1	Propene	210	**183**	**87**	54-133	
75-71-8	Dichlorodifluoromethane (CFC 12)	213	**170**	**80**	64-115	
74-87-3	Chloromethane	210	**173**	**82**	47-140	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	211	**149**	**71**	60-112	
75-01-4	Vinyl Chloride	211	**161**	**76**	63-127	
106-99-0	1,3-Butadiene	210	**157**	**75**	57-149	
74-83-9	Bromomethane	210	**194**	**92**	63-132	
75-00-3	Chloroethane	210	**197**	**94**	68-129	
64-17-5	Ethanol	1,040	**835**	**80**	62-131	
75-05-8	Acetonitrile	210	**189**	**90**	56-136	
107-02-8	Acrolein	209	**194**	**93**	60-132	
67-64-1	Acetone	1,050	**815**	**78**	63-124	
75-69-4	Trichlorofluoromethane (CFC 11)	208	**155**	**75**	65-113	
67-63-0	2-Propanol (Isopropyl Alcohol)	422	**338**	**80**	62-135	
107-13-1	Acrylonitrile	212	**199**	**94**	68-138	
75-35-4	1,1-Dichloroethene	213	**183**	**86**	72-118	
75-09-2	Methylene Chloride	213	**180**	**85**	67-116	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	212	**186**	**88**	61-143	
76-13-1	Trichlorotrifluoroethane (CFC 113)	214	**163**	**76**	68-113	
75-15-0	Carbon Disulfide	214	**193**	**90**	68-120	
156-60-5	trans-1,2-Dichloroethene	214	**200**	**93**	71-125	
75-34-3	1,1-Dichloroethane	212	**185**	**87**	68-118	
1634-04-4	Methyl tert-Butyl Ether	213	**185**	**87**	60-123	
108-05-4	Vinyl Acetate	1,060	**975**	**92**	73-135	
78-93-3	2-Butanone (MEK)	212	**188**	**89**	70-129	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

Client: **Environmental Management Services, Inc.**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1801623
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P180409-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Simon Cao Date Analyzed: 4/9/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	**Result µg/m³**	**% Recovery**	ALS Acceptance Limits	**Data Qualifier**
156-59-2	cis-1,2-Dichloroethene	212	**185**	**87**	69-121	
141-78-6	Ethyl Acetate	426	**371**	**87**	66-140	
110-54-3	n-Hexane	213	**198**	**93**	61-124	
67-66-3	Chloroform	212	**174**	**82**	69-113	
109-99-9	Tetrahydrofuran (THF)	212	**178**	**84**	66-121	
107-06-2	1,2-Dichloroethane	212	**163**	**77**	62-120	
71-55-6	1,1,1-Trichloroethane	212	**161**	**76**	65-116	
71-43-2	Benzene	213	**179**	**84**	66-111	
56-23-5	Carbon Tetrachloride	214	**159**	**74**	64-122	
110-82-7	Cyclohexane	425	**344**	**81**	69-115	
78-87-5	1,2-Dichloropropane	212	**185**	**87**	69-121	
75-27-4	Bromodichloromethane	214	**175**	**82**	69-123	
79-01-6	Trichloroethene	212	**171**	**81**	69-112	
123-91-1	1,4-Dioxane	213	**177**	**83**	74-123	
80-62-6	Methyl Methacrylate	424	**366**	**86**	75-125	
142-82-5	n-Heptane	213	**183**	**86**	68-118	
10061-01-5	cis-1,3-Dichloropropene	208	**189**	**91**	74-129	
108-10-1	4-Methyl-2-pentanone	213	**179**	**84**	66-138	
10061-02-6	trans-1,3-Dichloropropene	213	**197**	**92**	75-130	
79-00-5	1,1,2-Trichloroethane	212	**183**	**86**	73-117	
108-88-3	Toluene	211	**176**	**83**	66-114	
591-78-6	2-Hexanone	211	**158**	**75**	58-146	
124-48-1	Dibromochloromethane	212	**184**	**87**	67-130	
106-93-4	1,2-Dibromoethane	211	**189**	**90**	70-127	
123-86-4	n-Butyl Acetate	215	**173**	**80**	62-140	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

Client: **Environmental Management Services, Inc.**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1801623
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P180409-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Simon Cao Date Analyzed: 4/9/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	ALS Acceptance Limits	Data Qualifier
111-65-9	n-Octane	212	**181**	**85**	65-121	
127-18-4	Tetrachloroethene	212	**170**	**80**	62-119	
108-90-7	Chlorobenzene	212	**176**	**83**	66-115	
100-41-4	Ethylbenzene	212	**173**	**82**	69-117	
179601-23-1	m,p-Xylenes	424	**339**	**80**	67-117	
75-25-2	Bromoform	212	**186**	**88**	67-135	
100-42-5	Styrene	211	**183**	**87**	70-128	
95-47-6	o-Xylene	211	**171**	**81**	67-118	
111-84-2	n-Nonane	212	**181**	**85**	61-127	
79-34-5	1,1,2,2-Tetrachloroethane	212	**181**	**85**	70-125	
98-82-8	Cumene	212	**170**	**80**	68-116	
80-56-8	alpha-Pinene	213	**181**	**85**	69-122	
103-65-1	n-Propylbenzene	214	**171**	**80**	70-118	
622-96-8	4-Ethyltoluene	211	**172**	**82**	69-124	
108-67-8	1,3,5-Trimethylbenzene	212	**166**	**78**	65-117	
95-63-6	1,2,4-Trimethylbenzene	212	**158**	**75**	67-124	
100-44-7	Benzyl Chloride	212	**213**	**100**	75-142	
541-73-1	1,3-Dichlorobenzene	212	**167**	**79**	70-124	
106-46-7	1,4-Dichlorobenzene	214	**167**	**78**	63-124	
95-50-1	1,2-Dichlorobenzene	214	**167**	**78**	66-125	
5989-27-5	d-Limonene	213	**170**	**80**	64-135	
96-12-8	1,2-Dibromo-3-chloropropane	210	**191**	**91**	73-136	
120-82-1	1,2,4-Trichlorobenzene	218	**195**	**89**	70-141	
91-20-3	Naphthalene	209	**209**	**100**	71-146	
87-68-3	Hexachlorobutadiene	212	**162**	**76**	63-126	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
F: +1 805 526 7270
www.alsglobal.com

LABORATORY REPORT

July 5, 2018

Jeremy Van Slyke
Environmental Management Services, Inc.
P.O. Box 15369
Hattiesburg, MS 39404

RE: SVE Performance Monitoring / KUHO-18-010

Dear Jeremy:

Enclosed are the results of the samples submitted to our laboratory on June 20, 2018. For your reference, these analyses have been assigned our service request number P1803185.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

ALS | Environmental

By Sue Anderson at 12:46 pm, Jul 05, 2018

Sue Anderson
Project Manager

2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
F: +1 805 526 7270
www.alsglobal.com

Client: Environmental Management Services, Inc. Service Request No: P1803185
Project: SVE Performance Monitoring / KUHO-18-010

CASE NARRATIVE

The samples were received intact under chain of custody on June 20, 2018 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Volatile Organic Compound Analysis

The samples were analyzed for volatile organic compounds in accordance with EPA Method TO-15 from the Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition (EPA/625/R-96/010b), January, 1999. This procedure is described in laboratory SOP VOA-TO15. The analytical system was comprised of a gas chromatograph / mass spectrometer (GC/MS) interfaced to a whole-air preconcentrator. This method is included on the laboratory's NELAP and DoD-ELAP scope of accreditation. Any analytes flagged with an X are not included on the NELAP or DoD-ELAP accreditation.

The containers were cleaned, prior to sampling, down to the method reporting limit (MRL) reported for this project. For projects requiring DoD QSM 5.1 compliance canisters were cleaned to <1/2 the MRL. Please note, projects which require reporting below the MRL could have results between the MRL and method detection limit (MDL) that are biased high.

2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
F: +1 805 526 7270
www.alsglobal.com

ALS Environmental – Simi Valley

CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
Alaska DEC	http://dec.alaska.gov/eh/lab.aspx	17-019
Arizona DHS	http://www.azdhs.gov/preparedness/state-laboratory/lab-licensure-certification/index.php#laboratory-licensure-home	AZ0694
Florida DOH (NELAP)	http://www.floridahealth.gov/licensing-and-regulation/environmental-laboratories/index.html	E871020
Louisiana DEQ (NELAP)	http://www.deq.louisiana.gov/page/la-lab-accreditation	05071
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml	2016036
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	1347317
New Jersey DEP (NELAP)	http://www.nj.gov/dep/enforcement/oqa.html	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://www.oregon.gov/oha/ph/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-005
Pennsylvania DEP	http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx	68-03307 (Registration)
PJLA (DoD ELAP)	http://www.pjlabs.com/search-accredited-labs	65818 (Testing)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/agency/qa/env_lab_accreditation.html	T104704413-18-9
Utah DOH (NELAP)	http://health.utah.gov/lab/lab_cert_env	CA016272017-8
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

ALS ENVIRONMENTAL

DETAIL SUMMARY REPORT

Client: Environmental Management Services, Inc. Service Request: P1803185

Project ID: SVE Performance Monitoring / KUHO-18-010

Date Received: 6/20/2018

Time Received: 09:20

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	Container ID	Pi1 (psig)	Pf1 (psig)	TO-15 - VOC Cans
SVE-0B5-01	P1803185-001	Air	6/12/2018	12:42	1SC00340	0.04	6.20	X
SVE-0B5-02	P1803185-002	Air	6/12/2018	12:53	1SC01278	-0.60	5.96	X
SVE-0B5-03	P1803185-003	Air	6/12/2018	13:03	1SC00152	-0.28	5.57	X
SVE-0B5-04	P1803185-004	Air	6/12/2018	13:11	1SS00070	-0.34	6.21	X
SVE-0B5-05	P1803185-005	Air	6/12/2018	13:20	1SC00839	-4.18	6.82	X
SVE-0B5-06	P1803185-006	Air	6/12/2018	13:29	1SC01203	-0.48	6.86	X
SVE-0B5-07	P1803185-007	Air	6/12/2018	13:40	1SC00873	-0.09	5.46	X
SVE-0B5-08	P1803185-008	Air	6/12/2018	13:48	1SC00550	-0.77	5.91	X
SVE-0B5-09	P1803185-009	Air	6/12/2018	13:56	1SC01290	-0.59	5.79	X

Air - Chain of Custody Record & Analytical Service Request

2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone (805) 526-7161
Fax (805) 526-7270

Requested Turnaround Time in Business Days (Surcharges) please circle
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10-Day-Standard

ALS Project No: 1803184

Company Name & Address (Reporting Information): Environmental Management Services, Inc PO Box 15369 Hattiesburg, MS 39404	Project Name: SVE Performance Monitoring	ALS Contact:	
	Project Number: KUHO-18-010	Analysis Method	
Project Manager: Jeremy Van Slyke	P.O. # / Billing Information: KUHO-18-010 Same as reporting		
Phone: 601-544-3674 / Fax: 601-544-0504			
Email Address for Result Reporting: jvanslyke@env-mgt.com	Sampler (Print & Sign): Jeremy Van Slyke		

Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Canister ID (Bar code # - AC, SC, etc.)	Flow Controller ID (Bar code # - FC #)	Canister Start Pressure "Hg	Canister End Pressure "Hg/psig	Sample Volume	TO-15		Comments e.g. Actual Preservative or specific instructions
SVE-OBS-01	1	6-12-18	1242	ISC00340				1L	X		
SVE-OBS-02	2	6-12-18	1253	ISC01278				1L	X		
SVE-OBS-03	3	6-12-18	1303	ISC00152				1L	X		
SVE-OBS-04	4	6-12-18	1311	ISS00070				1L	X		
SVE-OBS-05	5	6-12-18	1320	ISC00839				1L	X		
SVE-OBS-06	6	6-12-18	1329	ISC01203				1L	X		
SVE-OBS-07	7	6-12-18	1340	ISC00873				1L	X		
SVE-OBS-08	8	6-12-18	1348	ISC00550				1L	X		
SVE-OBS-09	9	6-12-18	1356	ISC01290				1L	X		

Report Tier Levels - please select
Tier I - Results (Default in not specified) ____ Tier III (Results + QC & Calibration Summaries) ____
Tier II (Results + QC Summaries X Tier IV (Date Validation Package) 10% Surcharge ____

EDD required YES / No
Type: _____ Units: _____

Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT

Project Requirements (MRLs, QAPP)

Relinquished by: (Signature)		Date: 6.13.18	Time: 1445	Received by: (Signature) FEDEX		Date:	Time:
Relinquished by: (Signature) FEDEX		Date:	Time:	Received by: (Signature)		Date: 6/20/18	Time: 0920

Cooler / Blank Temperature ____ °C

5 of 46

ALS Environmental

Sample Acceptance Check Form

Client: Environmental Management Services, Inc. Work order: P1803185

Project: SVE Performance Monitoring / KUHO-18-010

Sample(s) received on: 6/20/18 Date opened: 6/20/18 by: ADAVID

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Did **sample containers** arrive in good condition?	☒	☐	☐
3	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
4	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
5	Was **sample volume** received adequate for analysis?	☒	☐	☐
6	Are samples within specified holding times?	☒	☐	☐
7	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☐	☐	☒
8	Were **custody seals** on outside of cooler/Box/Container?	☒	☐	☐
	Location of seal(s)? Box sealing. Sealing Lid?	☒	☐	☐
	Were signature and date included?	☒	☐	☐
	Were seals intact?	☒	☐	☐
9	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
10	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
11	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1803185-001.01	1.0 L Source Can					
P1803185-002.01	1.0 L Source Can					
P1803185-003.01	1.0 L Source Can					
P1803185-004.01	1.0 L Source Silonite Canister					
P1803185-005.01	1.0 L Source Can					
P1803185-006.01	1.0 L Source Can					
P1803185-007.01	1.0 L Source Can					
P1803185-008.01	1.0 L Source Can					
P1803185-009.01	1.0 L Source Can					

Explain any discrepancies: (include lab sample ID numbers):

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE-0B5-01** ALS Project ID: P1803185
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1803185-001

Test Code: EPA TO-15 Date Collected: 6/12/18
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: 6/20/18
Analyst: Raneem Sahtah Date Analyzed: 6/25/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SC00340

Initial Pressure (psig): 0.04 Final Pressure (psig): 6.20

Container Dilution Factor: 1.42

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	**27**	1.8	0.46	**16**	1.1	0.27	
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.4**	1.8	0.31	**0.48**	0.37	0.062	
74-87-3	Chloromethane	**0.43**	1.8	0.31	**0.21**	0.86	0.15	**J**
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	1.8	0.30	ND	0.26	0.043	
75-01-4	Vinyl Chloride	**0.55**	1.8	0.20	**0.22**	0.72	0.079	**J**
106-99-0	1,3-Butadiene	ND	1.9	0.31	ND	0.85	0.14	
74-83-9	Bromomethane	ND	1.8	0.26	ND	0.46	0.068	
75-00-3	Chloroethane	ND	1.8	0.23	ND	0.69	0.089	
64-17-5	Ethanol	**31**	19	1.3	**16**	10	0.70	
75-05-8	Acetonitrile	**3.6**	1.9	0.46	**2.1**	1.1	0.27	
107-02-8	Acrolein	**1.6**	7.5	0.53	**0.69**	3.3	0.23	**J**
67-64-1	Acetone	**100**	19	4.3	**44**	7.9	1.8	
75-69-4	Trichlorofluoromethane (CFC 11)	**1.2**	1.9	0.29	**0.21**	0.33	0.051	**J**
67-63-0	2-Propanol (Isopropyl Alcohol)	**25**	19	0.78	**10**	7.7	0.32	
107-13-1	Acrylonitrile	ND	1.9	0.39	ND	0.87	0.18	
75-35-4	1,1-Dichloroethene	**14**	1.9	0.26	**3.5**	0.47	0.066	
75-09-2	Methylene Chloride	**8.5**	1.9	0.53	**2.5**	0.54	0.15	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	1.9	0.26	ND	0.60	0.082	
76-13-1	Trichlorotrifluoroethane (CFC 113)	**1.5**	1.9	0.27	**0.19**	0.25	0.035	**J**
75-15-0	Carbon Disulfide	**1.7**	19	0.57	**0.54**	6.0	0.18	**J**
156-60-5	trans-1,2-Dichloroethene	ND	1.9	0.26	ND	0.48	0.066	
75-34-3	1,1-Dichloroethane	**0.82**	1.8	0.28	**0.20**	0.45	0.068	**J**
1634-04-4	Methyl tert-Butyl Ether	ND	1.9	0.22	ND	0.53	0.062	
108-05-4	Vinyl Acetate	ND	19	4.3	ND	5.3	1.2	
78-93-3	2-Butanone (MEK)	**23**	19	0.39	**7.9**	6.4	0.13	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **Environmental Management Services, Inc.**

Client Sample ID: **SVE-0B5-01** ALS Project ID: P1803185

Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1803185-001

Test Code: EPA TO-15 Date Collected: 6/12/18

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: 6/20/18

Analyst: Raneem Sahtah Date Analyzed: 6/25/18

Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)

Test Notes:

Container ID: 1SC00340

Initial Pressure (psig): 0.04 Final Pressure (psig): 6.20

Container Dilution Factor: 1.42

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	1.9	0.27	ND	0.47	0.067	
141-78-6	Ethyl Acetate	**12**	3.9	0.99	**3.3**	1.1	0.28	
110-54-3	n-Hexane	**4.3**	1.9	0.39	**1.2**	0.53	0.11	
67-66-3	Chloroform	**1.0**	1.9	0.25	**0.21**	0.39	0.052	**J**
109-99-9	Tetrahydrofuran (THF)	**1.7**	1.9	0.24	**0.58**	0.64	0.081	**J**
107-06-2	1,2-Dichloroethane	**7.1**	1.9	0.21	**1.7**	0.47	0.052	
71-55-6	1,1,1-Trichloroethane	**6.9**	1.9	0.23	**1.3**	0.35	0.043	
71-43-2	Benzene	**0.46**	1.9	0.27	**0.14**	0.59	0.086	**J**
56-23-5	Carbon Tetrachloride	ND	1.9	0.26	ND	0.30	0.042	
110-82-7	Cyclohexane	**2.7**	3.9	0.53	**0.79**	1.1	0.15	**J**
78-87-5	1,2-Dichloropropane	**0.38**	1.9	0.23	**0.081**	0.41	0.051	**J**
75-27-4	Bromodichloromethane	ND	1.9	0.27	ND	0.28	0.041	
79-01-6	Trichloroethene	**0.56**	1.9	0.26	**0.10**	0.35	0.048	**J**
123-91-1	1,4-Dioxane	**3.0**	1.9	0.22	**0.84**	0.52	0.062	
80-62-6	Methyl Methacrylate	ND	3.9	0.67	ND	0.95	0.16	
142-82-5	n-Heptane	**2.3**	1.9	0.30	**0.56**	0.46	0.074	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	0.29	ND	0.44	0.065	
108-10-1	4-Methyl-2-pentanone	**0.76**	1.9	0.26	**0.18**	0.46	0.063	**J**
10061-02-6	trans-1,3-Dichloropropene	ND	1.9	0.39	ND	0.41	0.086	
79-00-5	1,1,2-Trichloroethane	ND	1.9	0.19	ND	0.34	0.035	
108-88-3	Toluene	**63**	1.9	0.23	**17**	0.50	0.061	
591-78-6	2-Hexanone	**1.1**	1.9	0.23	**0.26**	0.46	0.057	**J**
124-48-1	Dibromochloromethane	ND	1.9	0.25	ND	0.22	0.029	
106-93-4	1,2-Dibromoethane	ND	1.9	0.22	ND	0.24	0.029	
123-86-4	n-Butyl Acetate	**2.7**	1.9	0.26	**0.57**	0.40	0.055	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **Environmental Management Services, Inc.**

Client Sample ID: **SVE-0B5-01** ALS Project ID: P1803185

Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1803185-001

Test Code: EPA TO-15 Date Collected: 6/12/18

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: 6/20/18

Analyst: Raneem Sahtah Date Analyzed: 6/25/18

Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)

Test Notes:

Container ID: 1SC00340

Initial Pressure (psig): 0.04 Final Pressure (psig): 6.20

Container Dilution Factor: 1.42

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	**2.3**	1.9	0.43	**0.50**	0.40	0.091	
127-18-4	Tetrachloroethene	**3.2**	1.9	0.24	**0.48**	0.28	0.036	
108-90-7	Chlorobenzene	**0.26**	1.9	0.25	**0.057**	0.41	0.055	**J**
100-41-4	Ethylbenzene	**5.0**	1.9	0.27	**1.1**	0.43	0.061	
179601-23-1	m,p-Xylenes	**9.9**	3.9	0.50	**2.3**	0.90	0.11	
75-25-2	Bromoform	ND	1.9	0.39	ND	0.18	0.038	
100-42-5	Styrene	**6.1**	1.9	0.31	**1.4**	0.44	0.072	
95-47-6	o-Xylene	**4.2**	1.9	0.27	**0.96**	0.43	0.063	
111-84-2	n-Nonane	**2.0**	1.9	0.32	**0.39**	0.36	0.060	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.9	0.26	ND	0.27	0.038	
98-82-8	Cumene	**1.7**	1.9	0.27	**0.35**	0.38	0.056	**J**
80-56-8	alpha-Pinene	**7.0**	1.8	0.29	**1.3**	0.33	0.052	
103-65-1	n-Propylbenzene	**0.88**	1.9	0.27	**0.18**	0.38	0.056	**J**
622-96-8	4-Ethyltoluene	**2.9**	1.8	0.30	**0.58**	0.38	0.061	
108-67-8	1,3,5-Trimethylbenzene	**2.1**	1.8	0.27	**0.42**	0.38	0.056	
95-63-6	1,2,4-Trimethylbenzene	**2.2**	1.9	0.26	**0.44**	0.38	0.053	
100-44-7	Benzyl Chloride	ND	3.9	0.43	ND	0.75	0.082	
541-73-1	1,3-Dichlorobenzene	ND	1.9	0.28	ND	0.32	0.047	
106-46-7	1,4-Dichlorobenzene	ND	1.9	0.29	ND	0.31	0.048	
95-50-1	1,2-Dichlorobenzene	ND	1.9	0.28	ND	0.32	0.047	
5989-27-5	d-Limonene	**4.6**	1.8	0.39	**0.83**	0.32	0.070	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.9	0.36	ND	0.19	0.037	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	0.46	ND	0.26	0.062	
91-20-3	Naphthalene	**0.56**	1.9	0.46	**0.11**	0.36	0.088	**J**
87-68-3	Hexachlorobutadiene	ND	1.9	0.39	ND	0.18	0.037	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE-0B5-02** ALS Project ID: P1803185
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1803185-002

Test Code: EPA TO-15 Date Collected: 6/12/18
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: 6/20/18
Analyst: Raneem Sahtah Date Analyzed: 6/25/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SC01278

Initial Pressure (psig): -0.60 Final Pressure (psig): 5.96

Container Dilution Factor: 1.47

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	**13**	1.9	0.48	**7.8**	1.1	0.28	
75-71-8	Dichlorodifluoromethane (CFC 12)	**1.9**	1.9	0.32	**0.39**	0.39	0.065	
74-87-3	Chloromethane	ND	1.8	0.32	ND	0.89	0.15	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	1.9	0.31	ND	0.27	0.044	
75-01-4	Vinyl Chloride	ND	1.9	0.21	ND	0.75	0.082	
106-99-0	1,3-Butadiene	ND	1.9	0.32	ND	0.88	0.15	
74-83-9	Bromomethane	ND	1.8	0.27	ND	0.47	0.070	
75-00-3	Chloroethane	ND	1.9	0.24	ND	0.71	0.092	
64-17-5	Ethanol	**10**	19	1.4	**5.3**	10	0.72	**J**
75-05-8	Acetonitrile	ND	1.9	0.48	ND	1.2	0.28	
107-02-8	Acrolein	ND	7.7	0.55	ND	3.4	0.24	
67-64-1	Acetone	**7.9**	19	4.4	**3.3**	8.2	1.9	**J**
75-69-4	Trichlorofluoromethane (CFC 11)	**0.90**	1.9	0.30	**0.16**	0.35	0.053	**J**
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	19	0.81	ND	7.9	0.33	
107-13-1	Acrylonitrile	ND	1.9	0.40	ND	0.90	0.19	
75-35-4	1,1-Dichloroethene	**1.9**	1.9	0.27	**0.47**	0.49	0.069	**J**
75-09-2	Methylene Chloride	**2.0**	1.9	0.55	**0.57**	0.56	0.16	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	1.9	0.26	ND	0.62	0.085	
76-13-1	Trichlorotrifluoroethane (CFC 113)	**0.70**	1.9	0.28	**0.091**	0.25	0.036	**J**
75-15-0	Carbon Disulfide	**1.0**	19	0.59	**0.33**	6.3	0.19	**J**
156-60-5	trans-1,2-Dichloroethene	ND	2.0	0.27	ND	0.50	0.069	
75-34-3	1,1-Dichloroethane	ND	1.9	0.29	ND	0.46	0.071	
1634-04-4	Methyl tert-Butyl Ether	ND	2.0	0.23	ND	0.55	0.064	
108-05-4	Vinyl Acetate	ND	19	4.4	ND	5.5	1.3	
78-93-3	2-Butanone (MEK)	**1.1**	19	0.40	**0.36**	6.6	0.14	**J**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE-0B5-02** ALS Project ID: P1803185
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1803185-002

Test Code: EPA TO-15 Date Collected: 6/12/18
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: 6/20/18
Analyst: Raneem Sahtah Date Analyzed: 6/25/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SC01278

Initial Pressure (psig): -0.60 Final Pressure (psig): 5.96

Container Dilution Factor: 1.47

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	1.9	0.28	ND	0.49	0.070	
141-78-6	Ethyl Acetate	ND	4.0	1.0	ND	1.1	0.29	
110-54-3	n-Hexane	ND	1.9	0.40	ND	0.55	0.11	
67-66-3	Chloroform	**0.87**	1.9	0.26	**0.18**	0.40	0.053	**J**
109-99-9	Tetrahydrofuran (THF)	**0.30**	1.9	0.25	**0.10**	0.66	0.084	**J**
107-06-2	1,2-Dichloroethane	ND	1.9	0.22	ND	0.48	0.054	
71-55-6	1,1,1-Trichloroethane	**3.6**	2.0	0.24	**0.66**	0.36	0.044	
71-43-2	Benzene	**0.31**	1.9	0.28	**0.097**	0.61	0.089	**J**
56-23-5	Carbon Tetrachloride	ND	1.9	0.27	ND	0.31	0.043	
110-82-7	Cyclohexane	ND	4.0	0.55	ND	1.2	0.16	
78-87-5	1,2-Dichloropropane	**0.71**	1.9	0.24	**0.15**	0.42	0.053	**J**
75-27-4	Bromodichloromethane	ND	1.9	0.28	ND	0.29	0.042	
79-01-6	Trichloroethene	ND	1.9	0.26	ND	0.36	0.049	
123-91-1	1,4-Dioxane	ND	1.9	0.23	ND	0.54	0.064	
80-62-6	Methyl Methacrylate	ND	4.0	0.70	ND	0.99	0.17	
142-82-5	n-Heptane	ND	1.9	0.31	ND	0.48	0.076	
10061-01-5	cis-1,3-Dichloropropene	ND	2.1	0.31	ND	0.45	0.067	
108-10-1	4-Methyl-2-pentanone	ND	1.9	0.27	ND	0.48	0.065	
10061-02-6	trans-1,3-Dichloropropene	ND	1.9	0.40	ND	0.43	0.089	
79-00-5	1,1,2-Trichloroethane	ND	1.9	0.20	ND	0.36	0.036	
108-88-3	Toluene	**1.9**	1.9	0.24	**0.50**	0.52	0.063	**J**
591-78-6	2-Hexanone	ND	1.9	0.24	ND	0.48	0.059	
124-48-1	Dibromochloromethane	ND	1.9	0.26	ND	0.23	0.030	
106-93-4	1,2-Dibromoethane	ND	1.9	0.23	ND	0.25	0.030	
123-86-4	n-Butyl Acetate	**0.36**	1.9	0.27	**0.076**	0.41	0.056	**J**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **Environmental Management Services, Inc.**

Client Sample ID: **SVE-0B5-02** ALS Project ID: P1803185

Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1803185-002

Test Code: EPA TO-15 Date Collected: 6/12/18

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: 6/20/18

Analyst: Raneem Sahtah Date Analyzed: 6/25/18

Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)

Test Notes:

Container ID: 1SC01278

Initial Pressure (psig): -0.60 Final Pressure (psig): 5.96

Container Dilution Factor: 1.47

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	ND	1.9	0.44	ND	0.42	0.094	
127-18-4	Tetrachloroethene	**4.5**	1.9	0.25	**0.67**	0.29	0.037	
108-90-7	Chlorobenzene	ND	1.9	0.26	ND	0.42	0.057	
100-41-4	Ethylbenzene	**0.75**	1.9	0.28	**0.17**	0.45	0.063	**J**
179601-23-1	m,p-Xylenes	**3.4**	4.0	0.51	**0.77**	0.93	0.12	**J**
75-25-2	Bromoform	ND	1.9	0.40	ND	0.19	0.039	
100-42-5	Styrene	ND	1.9	0.32	ND	0.46	0.074	
95-47-6	o-Xylene	**1.6**	1.9	0.28	**0.37**	0.45	0.065	**J**
111-84-2	n-Nonane	ND	1.9	0.33	ND	0.37	0.062	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.9	0.27	ND	0.28	0.040	
98-82-8	Cumene	ND	1.9	0.28	ND	0.40	0.058	
80-56-8	alpha-Pinene	**1.4**	1.9	0.30	**0.25**	0.34	0.054	**J**
103-65-1	n-Propylbenzene	ND	1.9	0.28	ND	0.40	0.058	
622-96-8	4-Ethyltoluene	**0.35**	1.9	0.31	**0.072**	0.39	0.064	**J**
108-67-8	1,3,5-Trimethylbenzene	**0.49**	1.9	0.28	**0.099**	0.39	0.058	**J**
95-63-6	1,2,4-Trimethylbenzene	**1.4**	1.9	0.27	**0.28**	0.40	0.055	**J**
100-44-7	Benzyl Chloride	ND	4.0	0.44	ND	0.78	0.085	
541-73-1	1,3-Dichlorobenzene	ND	2.0	0.29	ND	0.33	0.049	
106-46-7	1,4-Dichlorobenzene	ND	1.9	0.30	ND	0.32	0.050	
95-50-1	1,2-Dichlorobenzene	ND	2.0	0.29	ND	0.33	0.048	
5989-27-5	d-Limonene	**4.2**	1.8	0.40	**0.75**	0.33	0.073	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.9	0.37	ND	0.20	0.038	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	0.48	ND	0.27	0.064	
91-20-3	Naphthalene	**0.59**	1.9	0.48	**0.11**	0.37	0.091	**J**
87-68-3	Hexachlorobutadiene	ND	1.9	0.40	ND	0.18	0.038	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE-0B5-03** ALS Project ID: P1803185
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1803185-003

Test Code: EPA TO-15 Date Collected: 6/12/18
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: 6/20/18
Analyst: Raneem Sahtah Date Analyzed: 6/25/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SC00152

Initial Pressure (psig): -0.28 Final Pressure (psig): 5.57

Container Dilution Factor: 1.41

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	**5.0**	1.8	0.46	**2.9**	1.1	0.27	
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.0**	1.8	0.31	**0.40**	0.37	0.062	
74-87-3	Chloromethane	ND	1.8	0.30	ND	0.85	0.15	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	1.8	0.30	ND	0.26	0.042	
75-01-4	Vinyl Chloride	ND	1.8	0.20	ND	0.72	0.079	
106-99-0	1,3-Butadiene	ND	1.9	0.31	ND	0.84	0.14	
74-83-9	Bromomethane	ND	1.8	0.26	ND	0.45	0.067	
75-00-3	Chloroethane	ND	1.8	0.23	ND	0.68	0.088	
64-17-5	Ethanol	**9.5**	19	1.3	**5.1**	9.9	0.69	**J**
75-05-8	Acetonitrile	ND	1.9	0.46	ND	1.1	0.27	
107-02-8	Acrolein	**2.2**	7.4	0.53	**0.96**	3.2	0.23	**J**
67-64-1	Acetone	**14**	19	4.2	**6.1**	7.9	1.8	**J**
75-69-4	Trichlorofluoromethane (CFC 11)	**0.97**	1.9	0.29	**0.17**	0.33	0.051	**J**
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	19	0.78	ND	7.6	0.32	
107-13-1	Acrylonitrile	ND	1.9	0.39	ND	0.86	0.18	
75-35-4	1,1-Dichloroethene	**4.6**	1.9	0.26	**1.2**	0.47	0.066	
75-09-2	Methylene Chloride	**4.4**	1.9	0.53	**1.3**	0.54	0.15	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	1.9	0.25	ND	0.60	0.081	
76-13-1	Trichlorotrifluoroethane (CFC 113)	**1.6**	1.9	0.27	**0.21**	0.24	0.035	**J**
75-15-0	Carbon Disulfide	**12**	19	0.56	**4.0**	6.0	0.18	**J**
156-60-5	trans-1,2-Dichloroethene	ND	1.9	0.26	ND	0.48	0.066	
75-34-3	1,1-Dichloroethane	ND	1.8	0.27	ND	0.44	0.068	
1634-04-4	Methyl tert-Butyl Ether	ND	1.9	0.22	ND	0.53	0.062	
108-05-4	Vinyl Acetate	**7.4**	19	4.2	**2.1**	5.3	1.2	**J**
78-93-3	2-Butanone (MEK)	**4.4**	19	0.39	**1.5**	6.3	0.13	**J**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE-0B5-03** ALS Project ID: P1803185
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1803185-003

Test Code: EPA TO-15 Date Collected: 6/12/18
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: 6/20/18
Analyst: Raneem Sahtah Date Analyzed: 6/25/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SC00152

Initial Pressure (psig): -0.28 Final Pressure (psig): 5.57

Container Dilution Factor: 1.41

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	1.9	0.26	ND	0.47	0.067	
141-78-6	Ethyl Acetate	ND	3.9	0.99	ND	1.1	0.27	
110-54-3	n-Hexane	ND	1.9	0.39	ND	0.53	0.11	
67-66-3	Chloroform	**0.91**	1.9	0.25	**0.19**	0.38	0.051	**J**
109-99-9	Tetrahydrofuran (THF)	**1.6**	1.9	0.24	**0.54**	0.63	0.080	**J**
107-06-2	1,2-Dichloroethane	ND	1.9	0.21	ND	0.46	0.051	
71-55-6	1,1,1-Trichloroethane	**3.3**	1.9	0.23	**0.61**	0.35	0.043	
71-43-2	Benzene	ND	1.9	0.27	ND	0.59	0.085	
56-23-5	Carbon Tetrachloride	ND	1.9	0.26	ND	0.30	0.041	
110-82-7	Cyclohexane	ND	3.9	0.53	ND	1.1	0.15	
78-87-5	1,2-Dichloropropane	ND	1.9	0.23	ND	0.40	0.050	
75-27-4	Bromodichloromethane	ND	1.9	0.27	ND	0.28	0.041	
79-01-6	Trichloroethene	ND	1.9	0.25	ND	0.35	0.047	
123-91-1	1,4-Dioxane	**1.0**	1.9	0.22	**0.28**	0.52	0.062	**J**
80-62-6	Methyl Methacrylate	ND	3.9	0.67	ND	0.95	0.16	
142-82-5	n-Heptane	ND	1.9	0.30	ND	0.46	0.073	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	0.29	ND	0.43	0.064	
108-10-1	4-Methyl-2-pentanone	**0.41**	1.9	0.26	**0.099**	0.46	0.063	**J**
10061-02-6	trans-1,3-Dichloropropene	ND	1.9	0.39	ND	0.41	0.085	
79-00-5	1,1,2-Trichloroethane	ND	1.9	0.19	ND	0.34	0.035	
108-88-3	Toluene	**2.6**	1.9	0.23	**0.69**	0.50	0.061	
591-78-6	2-Hexanone	**1.2**	1.9	0.23	**0.29**	0.46	0.057	**J**
124-48-1	Dibromochloromethane	ND	1.9	0.25	ND	0.22	0.029	
106-93-4	1,2-Dibromoethane	ND	1.9	0.22	ND	0.24	0.028	
123-86-4	n-Butyl Acetate	**0.64**	1.9	0.26	**0.13**	0.39	0.054	**J**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE-0B5-03** ALS Project ID: P1803185
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1803185-003

Test Code: EPA TO-15 Date Collected: 6/12/18
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: 6/20/18
Analyst: Raneem Sahtah Date Analyzed: 6/25/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SC00152

Initial Pressure (psig): -0.28 Final Pressure (psig): 5.57

Container Dilution Factor: 1.41

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	ND	1.9	0.42	ND	0.40	0.091	
127-18-4	Tetrachloroethene	**13**	1.9	0.24	**1.9**	0.28	0.036	
108-90-7	Chlorobenzene	ND	1.9	0.25	ND	0.41	0.054	
100-41-4	Ethylbenzene	**1.8**	1.9	0.26	**0.41**	0.43	0.061	**J**
179601-23-1	m,p-Xylenes	**7.2**	3.9	0.49	**1.7**	0.89	0.11	
75-25-2	Bromoform	ND	1.9	0.39	ND	0.18	0.038	
100-42-5	Styrene	ND	1.9	0.30	ND	0.44	0.071	
95-47-6	o-Xylene	**2.5**	1.9	0.27	**0.59**	0.43	0.063	
111-84-2	n-Nonane	**0.43**	1.9	0.31	**0.082**	0.36	0.060	**J**
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.9	0.26	ND	0.27	0.038	
98-82-8	Cumene	ND	1.9	0.27	ND	0.38	0.055	
80-56-8	alpha-Pinene	**0.78**	1.8	0.29	**0.14**	0.33	0.052	**J**
103-65-1	n-Propylbenzene	**0.41**	1.9	0.27	**0.084**	0.38	0.055	**J**
622-96-8	4-Ethyltoluene	**0.55**	1.8	0.30	**0.11**	0.37	0.061	**J**
108-67-8	1,3,5-Trimethylbenzene	**0.66**	1.8	0.27	**0.13**	0.37	0.055	**J**
95-63-6	1,2,4-Trimethylbenzene	**1.7**	1.9	0.26	**0.34**	0.38	0.053	**J**
100-44-7	Benzyl Chloride	ND	3.9	0.42	ND	0.75	0.082	
541-73-1	1,3-Dichlorobenzene	ND	1.9	0.28	ND	0.32	0.047	
106-46-7	1,4-Dichlorobenzene	ND	1.9	0.29	ND	0.31	0.048	
95-50-1	1,2-Dichlorobenzene	ND	1.9	0.28	ND	0.32	0.046	
5989-27-5	d-Limonene	**3.7**	1.8	0.39	**0.67**	0.32	0.070	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.9	0.35	ND	0.19	0.036	
120-82-1	1,2,4-Trichlorobenzene	ND	1.9	0.46	ND	0.26	0.062	
91-20-3	Naphthalene	**0.77**	1.9	0.46	**0.15**	0.36	0.087	**J**
87-68-3	Hexachlorobutadiene	ND	1.9	0.39	ND	0.18	0.036	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE-0B5-04** ALS Project ID: P1803185
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1803185-004

Test Code: EPA TO-15 Date Collected: 6/12/18
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: 6/20/18
Analyst: Raneem Sahtah Date Analyzed: 6/25/18
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS00070

Initial Pressure (psig): -0.34 Final Pressure (psig): 6.21

Container Dilution Factor: 1.46

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	**4.1**	1.9	0.47	**2.4**	1.1	0.28	
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.0**	1.9	0.32	**0.40**	0.38	0.064	
74-87-3	Chloromethane	ND	1.8	0.31	ND	0.88	0.15	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	1.9	0.31	ND	0.27	0.044	
75-01-4	Vinyl Chloride	ND	1.9	0.21	ND	0.74	0.081	
106-99-0	1,3-Butadiene	ND	1.9	0.32	ND	0.87	0.15	
74-83-9	Bromomethane	ND	1.8	0.27	ND	0.47	0.070	
75-00-3	Chloroethane	ND	1.9	0.24	ND	0.71	0.091	
64-17-5	Ethanol	**6.9**	19	1.4	**3.7**	10	0.72	**J**
75-05-8	Acetonitrile	ND	1.9	0.47	ND	1.2	0.28	
107-02-8	Acrolein	**0.87**	7.7	0.55	**0.38**	3.3	0.24	**J**
67-64-1	Acetone	**11**	19	4.4	**4.7**	8.1	1.8	**J**
75-69-4	Trichlorofluoromethane (CFC 11)	**0.97**	1.9	0.30	**0.17**	0.34	0.053	**J**
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	19	0.80	ND	7.9	0.33	
107-13-1	Acrylonitrile	ND	1.9	0.40	ND	0.89	0.19	
75-35-4	1,1-Dichloroethene	**1.2**	1.9	0.27	**0.30**	0.49	0.068	**J**
75-09-2	Methylene Chloride	**2.3**	1.9	0.55	**0.65**	0.56	0.16	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	1.9	0.26	ND	0.62	0.084	
76-13-1	Trichlorotrifluoroethane (CFC 113)	**4.9**	1.9	0.28	**0.64**	0.25	0.036	
75-15-0	Carbon Disulfide	**11**	19	0.58	**3.7**	6.2	0.19	**J**
156-60-5	trans-1,2-Dichloroethene	ND	2.0	0.27	ND	0.50	0.068	
75-34-3	1,1-Dichloroethane	**0.59**	1.9	0.28	**0.15**	0.46	0.070	**J**
1634-04-4	Methyl tert-Butyl Ether	ND	2.0	0.23	ND	0.55	0.064	
108-05-4	Vinyl Acetate	**6.6**	19	4.4	**1.9**	5.5	1.2	**J**
78-93-3	2-Butanone (MEK)	**2.1**	19	0.40	**0.70**	6.6	0.14	**J**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE-0B5-04** ALS Project ID: P1803185
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1803185-004

Test Code: EPA TO-15 Date Collected: 6/12/18
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: 6/20/18
Analyst: Raneem Sahtah Date Analyzed: 6/25/18
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS00070

Initial Pressure (psig): -0.34 Final Pressure (psig): 6.21

Container Dilution Factor: 1.46

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	1.9	0.27	ND	0.49	0.069	
141-78-6	Ethyl Acetate	ND	4.0	1.0	ND	1.1	0.28	
110-54-3	n-Hexane	ND	1.9	0.40	ND	0.55	0.11	
67-66-3	Chloroform	ND	1.9	0.26	ND	0.40	0.053	
109-99-9	Tetrahydrofuran (THF)	ND	1.9	0.24	ND	0.66	0.083	
107-06-2	1,2-Dichloroethane	ND	1.9	0.22	ND	0.48	0.053	
71-55-6	1,1,1-Trichloroethane	**3.5**	2.0	0.24	**0.64**	0.36	0.044	
71-43-2	Benzene	ND	1.9	0.28	ND	0.61	0.088	
56-23-5	Carbon Tetrachloride	ND	1.9	0.27	ND	0.31	0.043	
110-82-7	Cyclohexane	ND	4.0	0.55	ND	1.2	0.16	
78-87-5	1,2-Dichloropropane	ND	1.9	0.24	ND	0.42	0.052	
75-27-4	Bromodichloromethane	ND	1.9	0.28	ND	0.29	0.042	
79-01-6	Trichloroethene	ND	1.9	0.26	ND	0.36	0.049	
123-91-1	1,4-Dioxane	ND	1.9	0.23	ND	0.54	0.064	
80-62-6	Methyl Methacrylate	ND	4.0	0.69	ND	0.98	0.17	
142-82-5	n-Heptane	ND	1.9	0.31	ND	0.47	0.076	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	0.30	ND	0.45	0.067	
108-10-1	4-Methyl-2-pentanone	ND	1.9	0.27	ND	0.47	0.065	
10061-02-6	trans-1,3-Dichloropropene	ND	1.9	0.40	ND	0.43	0.088	
79-00-5	1,1,2-Trichloroethane	ND	1.9	0.20	ND	0.35	0.036	
108-88-3	Toluene	**2.2**	1.9	0.24	**0.60**	0.51	0.063	
591-78-6	2-Hexanone	ND	1.9	0.24	ND	0.47	0.059	
124-48-1	Dibromochloromethane	ND	1.9	0.26	ND	0.23	0.030	
106-93-4	1,2-Dibromoethane	ND	1.9	0.23	ND	0.25	0.029	
123-86-4	n-Butyl Acetate	ND	1.9	0.27	ND	0.41	0.056	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE-0B5-04** ALS Project ID: P1803185
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1803185-004

Test Code: EPA TO-15 Date Collected: 6/12/18
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: 6/20/18
Analyst: Raneem Sahtah Date Analyzed: 6/25/18
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS00070

Initial Pressure (psig): -0.34 Final Pressure (psig): 6.21

Container Dilution Factor: 1.46

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	ND	1.9	0.44	ND	0.41	0.094	
127-18-4	Tetrachloroethene	**7.5**	1.9	0.25	**1.1**	0.29	0.037	
108-90-7	Chlorobenzene	ND	1.9	0.26	ND	0.42	0.056	
100-41-4	Ethylbenzene	**1.7**	1.9	0.27	**0.40**	0.45	0.063	**J**
179601-23-1	m,p-Xylenes	**7.0**	4.0	0.51	**1.6**	0.92	0.12	
75-25-2	Bromoform	ND	1.9	0.40	ND	0.19	0.039	
100-42-5	Styrene	ND	1.9	0.31	ND	0.45	0.074	
95-47-6	o-Xylene	**2.4**	1.9	0.28	**0.55**	0.45	0.065	
111-84-2	n-Nonane	ND	1.9	0.32	ND	0.37	0.062	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.9	0.27	ND	0.28	0.039	
98-82-8	Cumene	ND	1.9	0.28	ND	0.39	0.057	
80-56-8	alpha-Pinene	**0.54**	1.9	0.30	**0.097**	0.34	0.054	**J**
103-65-1	n-Propylbenzene	**0.41**	1.9	0.28	**0.084**	0.39	0.057	**J**
622-96-8	4-Ethyltoluene	**0.59**	1.9	0.31	**0.12**	0.39	0.063	**J**
108-67-8	1,3,5-Trimethylbenzene	**0.68**	1.9	0.28	**0.14**	0.39	0.057	**J**
95-63-6	1,2,4-Trimethylbenzene	**1.5**	1.9	0.27	**0.30**	0.39	0.055	**J**
100-44-7	Benzyl Chloride	ND	4.0	0.44	ND	0.78	0.085	
541-73-1	1,3-Dichlorobenzene	ND	2.0	0.29	ND	0.33	0.049	
106-46-7	1,4-Dichlorobenzene	ND	1.9	0.30	ND	0.32	0.050	
95-50-1	1,2-Dichlorobenzene	ND	2.0	0.29	ND	0.33	0.048	
5989-27-5	d-Limonene	**2.4**	1.8	0.40	**0.42**	0.33	0.072	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.9	0.37	ND	0.20	0.038	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	0.47	ND	0.27	0.064	
91-20-3	Naphthalene	**0.57**	1.9	0.47	**0.11**	0.37	0.091	**J**
87-68-3	Hexachlorobutadiene	ND	1.9	0.40	ND	0.18	0.038	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE-0B5-05** ALS Project ID: P1803185
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1803185-005

Test Code: EPA TO-15 Date Collected: 6/12/18
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: 6/20/18
Analyst: Raneem Sahtah Date Analyzed: 6/25/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SC00839

Initial Pressure (psig): -4.18 Final Pressure (psig): 6.82

Container Dilution Factor: 2.05

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	**4.3**	2.7	0.67	**2.5**	1.5	0.39	
75-71-8	Dichlorodifluoromethane (CFC 12)	**1.9**	2.7	0.45	**0.39**	0.54	0.090	**J**
74-87-3	Chloromethane	ND	2.6	0.44	ND	1.2	0.21	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	2.6	0.43	ND	0.37	0.062	
75-01-4	Vinyl Chloride	ND	2.7	0.29	ND	1.0	0.11	
106-99-0	1,3-Butadiene	ND	2.7	0.45	ND	1.2	0.20	
74-83-9	Bromomethane	ND	2.6	0.38	ND	0.66	0.098	
75-00-3	Chloroethane	ND	2.6	0.34	ND	0.99	0.13	
64-17-5	Ethanol	**8.4**	27	1.9	**4.5**	14	1.0	**J**
75-05-8	Acetonitrile	ND	2.7	0.67	ND	1.6	0.40	
107-02-8	Acrolein	**3.0**	11	0.77	**1.3**	4.7	0.34	**J**
67-64-1	Acetone	**19**	27	6.2	**8.0**	11	2.6	**J**
75-69-4	Trichlorofluoromethane (CFC 11)	**0.84**	2.7	0.42	**0.15**	0.48	0.074	**J**
67-63-0	2-Propanol (Isopropyl Alcohol)	**1.5**	27	1.1	**0.62**	11	0.46	**J**
107-13-1	Acrylonitrile	ND	2.7	0.56	ND	1.3	0.26	
75-35-4	1,1-Dichloroethene	ND	2.7	0.38	ND	0.69	0.096	
75-09-2	Methylene Chloride	ND	2.7	0.77	ND	0.78	0.22	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	2.7	0.37	ND	0.87	0.12	
76-13-1	Trichlorotrifluoroethane (CFC 113)	ND	2.7	0.39	ND	0.35	0.051	
75-15-0	Carbon Disulfide	**40**	27	0.82	**13**	8.7	0.26	
156-60-5	trans-1,2-Dichloroethene	ND	2.8	0.38	ND	0.70	0.096	
75-34-3	1,1-Dichloroethane	ND	2.6	0.40	ND	0.65	0.099	
1634-04-4	Methyl tert-Butyl Ether	ND	2.8	0.32	ND	0.77	0.090	
108-05-4	Vinyl Acetate	**12**	27	6.2	**3.5**	7.7	1.7	**J**
78-93-3	2-Butanone (MEK)	**7.9**	27	0.56	**2.7**	9.2	0.19	**J**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE-0B5-05** ALS Project ID: P1803185
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1803185-005

Test Code: EPA TO-15 Date Collected: 6/12/18
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: 6/20/18
Analyst: Raneem Sahtah Date Analyzed: 6/25/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SC00839

Initial Pressure (psig): -4.18 Final Pressure (psig): 6.82

Container Dilution Factor: 2.05

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	2.7	0.38	ND	0.69	0.097	
141-78-6	Ethyl Acetate	ND	5.6	1.4	ND	1.6	0.40	
110-54-3	n-Hexane	ND	2.7	0.56	ND	0.77	0.16	
67-66-3	Chloroform	ND	2.7	0.36	ND	0.56	0.075	
109-99-9	Tetrahydrofuran (THF)	ND	2.7	0.34	ND	0.92	0.12	
107-06-2	1,2-Dichloroethane	ND	2.7	0.30	ND	0.67	0.075	
71-55-6	1,1,1-Trichloroethane	**1.6**	2.8	0.34	**0.30**	0.51	0.062	**J**
71-43-2	Benzene	ND	2.7	0.39	ND	0.85	0.12	
56-23-5	Carbon Tetrachloride	ND	2.7	0.38	ND	0.43	0.060	
110-82-7	Cyclohexane	ND	5.6	0.77	ND	1.6	0.22	
78-87-5	1,2-Dichloropropane	ND	2.7	0.34	ND	0.59	0.073	
75-27-4	Bromodichloromethane	ND	2.7	0.39	ND	0.41	0.059	
79-01-6	Trichloroethene	ND	2.7	0.37	ND	0.51	0.069	
123-91-1	1,4-Dioxane	ND	2.7	0.32	ND	0.75	0.090	
80-62-6	Methyl Methacrylate	ND	5.6	0.97	ND	1.4	0.24	
142-82-5	n-Heptane	ND	2.7	0.44	ND	0.66	0.11	
10061-01-5	cis-1,3-Dichloropropene	ND	2.9	0.43	ND	0.63	0.094	
108-10-1	4-Methyl-2-pentanone	**0.45**	2.7	0.37	**0.11**	0.66	0.091	**J**
10061-02-6	trans-1,3-Dichloropropene	ND	2.7	0.56	ND	0.60	0.12	
79-00-5	1,1,2-Trichloroethane	ND	2.7	0.28	ND	0.50	0.051	
108-88-3	Toluene	**1.6**	2.7	0.33	**0.41**	0.72	0.088	**J**
591-78-6	2-Hexanone	**1.5**	2.7	0.34	**0.37**	0.66	0.083	**J**
124-48-1	Dibromochloromethane	ND	2.7	0.36	ND	0.32	0.042	
106-93-4	1,2-Dibromoethane	ND	2.7	0.32	ND	0.35	0.041	
123-86-4	n-Butyl Acetate	**0.55**	2.7	0.37	**0.12**	0.57	0.079	**J**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE-0B5-05** ALS Project ID: P1803185
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1803185-005

Test Code: EPA TO-15 Date Collected: 6/12/18
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: 6/20/18
Analyst: Raneem Sahtah Date Analyzed: 6/25/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SC00839

Initial Pressure (psig): -4.18 Final Pressure (psig): 6.82

Container Dilution Factor: 2.05

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	ND	2.7	0.62	ND	0.58	0.13	
127-18-4	Tetrachloroethene	**6.4**	2.7	0.35	**0.95**	0.40	0.052	
108-90-7	Chlorobenzene	ND	2.7	0.36	ND	0.59	0.079	
100-41-4	Ethylbenzene	**1.2**	2.7	0.38	**0.27**	0.63	0.089	**J**
179601-23-1	m,p-Xylenes	**4.9**	5.6	0.72	**1.1**	1.3	0.17	**J**
75-25-2	Bromoform	ND	2.7	0.56	ND	0.26	0.055	
100-42-5	Styrene	ND	2.7	0.44	ND	0.64	0.10	
95-47-6	o-Xylene	**1.8**	2.7	0.39	**0.42**	0.63	0.091	**J**
111-84-2	n-Nonane	ND	2.7	0.46	ND	0.52	0.087	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.7	0.38	ND	0.40	0.055	
98-82-8	Cumene	ND	2.7	0.39	ND	0.55	0.080	
80-56-8	alpha-Pinene	**0.72**	2.7	0.42	**0.13**	0.48	0.075	**J**
103-65-1	n-Propylbenzene	ND	2.7	0.39	ND	0.55	0.080	
622-96-8	4-Ethyltoluene	**0.56**	2.7	0.44	**0.11**	0.54	0.089	**J**
108-67-8	1,3,5-Trimethylbenzene	**0.67**	2.7	0.39	**0.14**	0.54	0.080	**J**
95-63-6	1,2,4-Trimethylbenzene	**1.9**	2.7	0.38	**0.38**	0.55	0.077	**J**
100-44-7	Benzyl Chloride	ND	5.6	0.62	ND	1.1	0.12	
541-73-1	1,3-Dichlorobenzene	ND	2.8	0.41	ND	0.46	0.068	
106-46-7	1,4-Dichlorobenzene	ND	2.7	0.42	ND	0.45	0.070	
95-50-1	1,2-Dichlorobenzene	ND	2.8	0.40	ND	0.46	0.067	
5989-27-5	d-Limonene	**3.8**	2.6	0.56	**0.68**	0.46	0.10	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.7	0.51	ND	0.28	0.053	
120-82-1	1,2,4-Trichlorobenzene	ND	2.8	0.67	ND	0.38	0.090	
91-20-3	Naphthalene	**2.2**	2.7	0.67	**0.42**	0.52	0.13	**J**
87-68-3	Hexachlorobutadiene	ND	2.7	0.56	ND	0.25	0.053	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE-0B5-06** ALS Project ID: P1803185
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1803185-006

Test Code: EPA TO-15 Date Collected: 6/12/18
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: 6/20/18
Analyst: Raneem Sahtah Date Analyzed: 6/25 - 6/26/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: 0.040 Liter(s)
Container ID: 1SC01203

Initial Pressure (psig): -0.48 Final Pressure (psig): 6.86

Container Dilution Factor: 1.52

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	**6.0**	2.0	0.49	**3.5**	1.1	0.29	
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.1**	2.0	0.33	**0.42**	0.40	0.067	
74-87-3	Chloromethane	ND	1.9	0.33	ND	0.92	0.16	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	1.9	0.32	ND	0.28	0.046	
75-01-4	Vinyl Chloride	ND	2.0	0.22	ND	0.77	0.085	
106-99-0	1,3-Butadiene	ND	2.0	0.33	ND	0.91	0.15	
74-83-9	Bromomethane	ND	1.9	0.28	ND	0.49	0.072	
75-00-3	Chloroethane	ND	1.9	0.25	ND	0.73	0.095	
64-17-5	Ethanol	**3.7**	20	1.4	**2.0**	11	0.75	**J**
75-05-8	Acetonitrile	ND	2.0	0.49	ND	1.2	0.29	
107-02-8	Acrolein	ND	8.0	0.57	ND	3.5	0.25	
67-64-1	Acetone	**5.1**	20	4.6	**2.2**	8.5	1.9	**J**
75-69-4	Trichlorofluoromethane (CFC 11)	**0.93**	2.0	0.31	**0.17**	0.36	0.055	**J**
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	20	0.84	ND	8.2	0.34	
107-13-1	Acrylonitrile	ND	2.0	0.42	ND	0.93	0.19	
75-35-4	1,1-Dichloroethene	**7.4**	2.0	0.28	**1.9**	0.51	0.071	
75-09-2	Methylene Chloride	**500**	20	5.7	**150**	5.8	1.6	**D**
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	2.0	0.27	ND	0.64	0.087	
76-13-1	Trichlorotrifluoroethane (CFC 113)	**0.43**	2.0	0.29	**0.056**	0.26	0.038	**J**
75-15-0	Carbon Disulfide	**5.9**	20	0.61	**1.9**	6.5	0.20	**J**
156-60-5	trans-1,2-Dichloroethene	ND	2.1	0.28	ND	0.52	0.071	
75-34-3	1,1-Dichloroethane	**3.2**	1.9	0.30	**0.80**	0.48	0.073	
1634-04-4	Methyl tert-Butyl Ether	ND	2.1	0.24	ND	0.57	0.066	
108-05-4	Vinyl Acetate	ND	20	4.6	ND	5.7	1.3	
78-93-3	2-Butanone (MEK)	**1.7**	20	0.42	**0.58**	6.8	0.14	**J**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
D = The reported result is from a dilution.

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE-0B5-06** ALS Project ID: P1803185
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1803185-006

Test Code: EPA TO-15 Date Collected: 6/12/18
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: 6/20/18
Analyst: Raneem Sahtah Date Analyzed: 6/25 - 6/26/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: 0.040 Liter(s)
Container ID: 1SC01203

Initial Pressure (psig): -0.48 Final Pressure (psig): 6.86

Container Dilution Factor: 1.52

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	2.0	0.29	ND	0.51	0.072	
141-78-6	Ethyl Acetate	ND	4.2	1.1	ND	1.2	0.30	
110-54-3	n-Hexane	ND	2.0	0.42	ND	0.57	0.12	
67-66-3	Chloroform	**0.36**	2.0	0.27	**0.075**	0.41	0.055	**J**
109-99-9	Tetrahydrofuran (THF)	**1.8**	2.0	0.25	**0.60**	0.68	0.086	**J**
107-06-2	1,2-Dichloroethane	ND	2.0	0.22	ND	0.50	0.055	
71-55-6	1,1,1-Trichloroethane	**40**	2.1	0.25	**7.4**	0.38	0.046	
71-43-2	Benzene	ND	2.0	0.29	ND	0.63	0.092	
56-23-5	Carbon Tetrachloride	ND	2.0	0.28	ND	0.32	0.045	
110-82-7	Cyclohexane	ND	4.2	0.57	ND	1.2	0.17	
78-87-5	1,2-Dichloropropane	ND	2.0	0.25	ND	0.44	0.054	
75-27-4	Bromodichloromethane	ND	2.0	0.29	ND	0.30	0.044	
79-01-6	Trichloroethene	**0.45**	2.0	0.27	**0.083**	0.37	0.051	**J**
123-91-1	1,4-Dioxane	ND	2.0	0.24	ND	0.56	0.066	
80-62-6	Methyl Methacrylate	ND	4.2	0.72	ND	1.0	0.18	
142-82-5	n-Heptane	ND	2.0	0.32	ND	0.49	0.079	
10061-01-5	cis-1,3-Dichloropropene	ND	2.1	0.32	ND	0.47	0.070	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.28	ND	0.49	0.068	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	0.42	ND	0.44	0.092	
79-00-5	1,1,2-Trichloroethane	**0.32**	2.0	0.21	**0.058**	0.37	0.038	**J**
108-88-3	Toluene	**0.57**	2.0	0.25	**0.15**	0.53	0.066	**J**
591-78-6	2-Hexanone	ND	2.0	0.25	ND	0.49	0.061	
124-48-1	Dibromochloromethane	ND	2.0	0.27	ND	0.24	0.031	
106-93-4	1,2-Dibromoethane	ND	2.0	0.24	ND	0.26	0.031	
123-86-4	n-Butyl Acetate	ND	2.0	0.28	ND	0.42	0.058	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE-0B5-06** ALS Project ID: P1803185
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1803185-006

Test Code: EPA TO-15 Date Collected: 6/12/18
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: 6/20/18
Analyst: Raneem Sahtah Date Analyzed: 6/25 - 6/26/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: 0.040 Liter(s)
Container ID: 1SC01203

Initial Pressure (psig): -0.48 Final Pressure (psig): 6.86

Container Dilution Factor: 1.52

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	ND	2.0	0.46	ND	0.43	0.098	
127-18-4	Tetrachloroethene	**8.0**	2.0	0.26	**1.2**	0.30	0.039	
108-90-7	Chlorobenzene	ND	2.0	0.27	ND	0.44	0.059	
100-41-4	Ethylbenzene	**0.42**	2.0	0.29	**0.096**	0.46	0.066	**J**
179601-23-1	m,p-Xylenes	**2.0**	4.2	0.53	**0.46**	0.96	0.12	**J**
75-25-2	Bromoform	ND	2.0	0.42	ND	0.19	0.040	
100-42-5	Styrene	ND	2.0	0.33	ND	0.47	0.077	
95-47-6	o-Xylene	**1.1**	2.0	0.29	**0.24**	0.46	0.067	**J**
111-84-2	n-Nonane	ND	2.0	0.34	ND	0.38	0.064	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	0.28	ND	0.29	0.041	
98-82-8	Cumene	ND	2.0	0.29	ND	0.41	0.060	
80-56-8	alpha-Pinene	**0.45**	2.0	0.31	**0.081**	0.35	0.056	**J**
103-65-1	n-Propylbenzene	ND	2.0	0.29	ND	0.41	0.060	
622-96-8	4-Ethyltoluene	ND	2.0	0.32	ND	0.40	0.066	
108-67-8	1,3,5-Trimethylbenzene	**0.36**	2.0	0.29	**0.074**	0.40	0.060	**J**
95-63-6	1,2,4-Trimethylbenzene	**1.1**	2.0	0.28	**0.23**	0.41	0.057	**J**
100-44-7	Benzyl Chloride	ND	4.2	0.46	ND	0.81	0.088	
541-73-1	1,3-Dichlorobenzene	ND	2.1	0.30	ND	0.34	0.051	
106-46-7	1,4-Dichlorobenzene	ND	2.0	0.31	ND	0.34	0.052	
95-50-1	1,2-Dichlorobenzene	ND	2.1	0.30	ND	0.34	0.050	
5989-27-5	d-Limonene	**2.5**	1.9	0.42	**0.46**	0.34	0.075	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.38	ND	0.21	0.039	
120-82-1	1,2,4-Trichlorobenzene	ND	2.1	0.49	ND	0.28	0.067	
91-20-3	Naphthalene	**1.1**	2.0	0.49	**0.21**	0.38	0.094	**J**
87-68-3	Hexachlorobutadiene	ND	2.0	0.42	ND	0.19	0.039	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE-0B5-07** ALS Project ID: P1803185
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1803185-007

Test Code: EPA TO-15 Date Collected: 6/12/18
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: 6/20/18
Analyst: Raneem Sahtah Date Analyzed: 6/25/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SC00873

Initial Pressure (psig): -0.09 Final Pressure (psig): 5.46

Container Dilution Factor: 1.38

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	**29**	1.8	0.45	**17**	1.0	0.26	
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.0**	1.8	0.30	**0.40**	0.36	0.061	
74-87-3	Chloromethane	ND	1.7	0.30	ND	0.84	0.14	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	1.8	0.29	ND	0.25	0.041	
75-01-4	Vinyl Chloride	ND	1.8	0.20	ND	0.70	0.077	
106-99-0	1,3-Butadiene	ND	1.8	0.30	ND	0.83	0.14	
74-83-9	Bromomethane	ND	1.7	0.26	ND	0.44	0.066	
75-00-3	Chloroethane	ND	1.8	0.23	ND	0.67	0.086	
64-17-5	Ethanol	**28**	18	1.3	**15**	9.7	0.68	
75-05-8	Acetonitrile	ND	1.8	0.45	ND	1.1	0.27	
107-02-8	Acrolein	**2.2**	7.2	0.52	**0.97**	3.2	0.23	**J**
67-64-1	Acetone	**27**	18	4.1	**11**	7.7	1.7	
75-69-4	Trichlorofluoromethane (CFC 11)	**1.0**	1.8	0.28	**0.18**	0.33	0.050	**J**
67-63-0	2-Propanol (Isopropyl Alcohol)	**0.95**	18	0.76	**0.38**	7.4	0.31	**J**
107-13-1	Acrylonitrile	ND	1.8	0.38	ND	0.84	0.17	
75-35-4	1,1-Dichloroethene	**48**	1.8	0.26	**12**	0.46	0.064	
75-09-2	Methylene Chloride	**3.3**	1.8	0.52	**0.94**	0.53	0.15	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	1.8	0.25	ND	0.58	0.079	
76-13-1	Trichlorotrifluoroethane (CFC 113)	**0.61**	1.8	0.26	**0.079**	0.24	0.034	**J**
75-15-0	Carbon Disulfide	**31**	18	0.55	**10**	5.9	0.18	
156-60-5	trans-1,2-Dichloroethene	ND	1.9	0.26	ND	0.47	0.064	
75-34-3	1,1-Dichloroethane	**1.6**	1.8	0.27	**0.39**	0.43	0.067	**J**
1634-04-4	Methyl tert-Butyl Ether	ND	1.9	0.22	ND	0.52	0.060	
108-05-4	Vinyl Acetate	**11**	18	4.1	**3.1**	5.2	1.2	**J**
78-93-3	2-Butanone (MEK)	**3.2**	18	0.38	**1.1**	6.2	0.13	**J**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **Environmental Management Services, Inc.**

Client Sample ID: **SVE-0B5-07** ALS Project ID: P1803185

Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1803185-007

Test Code: EPA TO-15 Date Collected: 6/12/18

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: 6/20/18

Analyst: Raneem Sahtah Date Analyzed: 6/25/18

Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)

Test Notes:

Container ID: 1SC00873

Initial Pressure (psig): -0.09 Final Pressure (psig): 5.46

Container Dilution Factor: 1.38

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	1.8	0.26	ND	0.46	0.065	
141-78-6	Ethyl Acetate	ND	3.8	0.97	ND	1.1	0.27	
110-54-3	n-Hexane	ND	1.8	0.38	ND	0.52	0.11	
67-66-3	Chloroform	**0.51**	1.8	0.24	**0.10**	0.37	0.050	**J**
109-99-9	Tetrahydrofuran (THF)	ND	1.8	0.23	ND	0.62	0.078	
107-06-2	1,2-Dichloroethane	ND	1.8	0.20	ND	0.45	0.050	
71-55-6	1,1,1-Trichloroethane	**2.6**	1.9	0.23	**0.47**	0.34	0.042	
71-43-2	Benzene	ND	1.8	0.27	ND	0.57	0.083	
56-23-5	Carbon Tetrachloride	**0.30**	1.8	0.26	**0.047**	0.29	0.041	**J**
110-82-7	Cyclohexane	ND	3.8	0.52	ND	1.1	0.15	
78-87-5	1,2-Dichloropropane	ND	1.8	0.23	ND	0.40	0.049	
75-27-4	Bromodichloromethane	ND	1.8	0.27	ND	0.27	0.040	
79-01-6	Trichloroethene	**0.31**	1.8	0.25	**0.057**	0.34	0.046	**J**
123-91-1	1,4-Dioxane	ND	1.8	0.22	ND	0.51	0.060	
80-62-6	Methyl Methacrylate	ND	3.8	0.66	ND	0.93	0.16	
142-82-5	n-Heptane	ND	1.8	0.29	ND	0.45	0.072	
10061-01-5	cis-1,3-Dichloropropene	ND	1.9	0.29	ND	0.43	0.063	
108-10-1	4-Methyl-2-pentanone	**0.54**	1.8	0.25	**0.13**	0.45	0.061	**J**
10061-02-6	trans-1,3-Dichloropropene	ND	1.8	0.38	ND	0.40	0.084	
79-00-5	1,1,2-Trichloroethane	**0.61**	1.8	0.19	**0.11**	0.34	0.034	**J**
108-88-3	Toluene	**3.6**	1.8	0.22	**0.96**	0.49	0.060	
591-78-6	2-Hexanone	**0.49**	1.8	0.23	**0.12**	0.45	0.056	**J**
124-48-1	Dibromochloromethane	ND	1.8	0.24	ND	0.21	0.028	
106-93-4	1,2-Dibromoethane	ND	1.8	0.21	ND	0.24	0.028	
123-86-4	n-Butyl Acetate	ND	1.8	0.25	ND	0.39	0.053	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE-0B5-07** ALS Project ID: P1803185
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1803185-007

Test Code: EPA TO-15 Date Collected: 6/12/18
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: 6/20/18
Analyst: Raneem Sahtah Date Analyzed: 6/25/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SC00873

Initial Pressure (psig): -0.09 Final Pressure (psig): 5.46

Container Dilution Factor: 1.38

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	ND	1.8	0.41	ND	0.39	0.089	
127-18-4	Tetrachloroethene	**1.8**	1.8	0.24	**0.26**	0.27	0.035	**J**
108-90-7	Chlorobenzene	ND	1.8	0.24	ND	0.40	0.053	
100-41-4	Ethylbenzene	**0.73**	1.8	0.26	**0.17**	0.42	0.060	**J**
179601-23-1	m,p-Xylenes	**3.4**	3.8	0.48	**0.79**	0.87	0.11	**J**
75-25-2	Bromoform	ND	1.8	0.38	ND	0.18	0.037	
100-42-5	Styrene	ND	1.8	0.30	ND	0.43	0.070	
95-47-6	o-Xylene	**1.6**	1.8	0.27	**0.37**	0.42	0.061	**J**
111-84-2	n-Nonane	**0.35**	1.8	0.31	**0.066**	0.35	0.059	**J**
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.8	0.26	ND	0.27	0.037	
98-82-8	Cumene	ND	1.8	0.27	ND	0.37	0.054	
80-56-8	alpha-Pinene	**0.77**	1.8	0.28	**0.14**	0.32	0.051	**J**
103-65-1	n-Propylbenzene	ND	1.8	0.27	ND	0.37	0.054	
622-96-8	4-Ethyltoluene	**0.41**	1.8	0.29	**0.084**	0.37	0.060	**J**
108-67-8	1,3,5-Trimethylbenzene	**0.52**	1.8	0.27	**0.11**	0.37	0.054	**J**
95-63-6	1,2,4-Trimethylbenzene	**1.5**	1.8	0.26	**0.31**	0.37	0.052	**J**
100-44-7	Benzyl Chloride	ND	3.8	0.41	ND	0.73	0.080	
541-73-1	1,3-Dichlorobenzene	ND	1.9	0.28	ND	0.31	0.046	
106-46-7	1,4-Dichlorobenzene	ND	1.8	0.28	ND	0.30	0.047	
95-50-1	1,2-Dichlorobenzene	ND	1.9	0.27	ND	0.31	0.045	
5989-27-5	d-Limonene	**3.2**	1.7	0.38	**0.57**	0.31	0.068	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.8	0.35	ND	0.19	0.036	
120-82-1	1,2,4-Trichlorobenzene	ND	1.9	0.45	ND	0.26	0.060	
91-20-3	Naphthalene	**0.95**	1.8	0.45	**0.18**	0.35	0.086	**J**
87-68-3	Hexachlorobutadiene	ND	1.8	0.38	ND	0.17	0.036	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE-0B5-08** ALS Project ID: P1803185
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1803185-008

Test Code: EPA TO-15 Date Collected: 6/12/18
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: 6/20/18
Analyst: Raneem Sahtah Date Analyzed: 6/25/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SC00550

Initial Pressure (psig): -0.77 Final Pressure (psig): 5.91

Container Dilution Factor: 1.48

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	**14**	1.9	0.48	**8.3**	1.1	0.28	
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.0**	1.9	0.32	**0.41**	0.39	0.065	
74-87-3	Chloromethane	ND	1.9	0.32	ND	0.90	0.15	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	1.9	0.31	ND	0.27	0.044	
75-01-4	Vinyl Chloride	ND	1.9	0.21	ND	0.75	0.083	
106-99-0	1,3-Butadiene	ND	2.0	0.33	ND	0.89	0.15	
74-83-9	Bromomethane	ND	1.9	0.27	ND	0.48	0.071	
75-00-3	Chloroethane	ND	1.9	0.24	ND	0.72	0.093	
64-17-5	Ethanol	**21**	20	1.4	**11**	10	0.73	
75-05-8	Acetonitrile	**0.87**	2.0	0.48	**0.52**	1.2	0.29	**J**
107-02-8	Acrolein	**2.4**	7.8	0.56	**1.0**	3.4	0.24	**J**
67-64-1	Acetone	**50**	20	4.4	**21**	8.3	1.9	
75-69-4	Trichlorofluoromethane (CFC 11)	**0.98**	2.0	0.30	**0.18**	0.35	0.053	**J**
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	20	0.81	ND	8.0	0.33	
107-13-1	Acrylonitrile	ND	2.0	0.41	ND	0.90	0.19	
75-35-4	1,1-Dichloroethene	**260**	2.0	0.27	**66**	0.49	0.069	
75-09-2	Methylene Chloride	**47**	2.0	0.56	**13**	0.56	0.16	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	2.0	0.27	ND	0.63	0.085	
76-13-1	Trichlorotrifluoroethane (CFC 113)	**0.34**	2.0	0.28	**0.045**	0.26	0.037	**J**
75-15-0	Carbon Disulfide	**7.2**	20	0.59	**2.3**	6.3	0.19	**J**
156-60-5	trans-1,2-Dichloroethene	ND	2.0	0.27	ND	0.50	0.069	
75-34-3	1,1-Dichloroethane	**12**	1.9	0.29	**3.1**	0.47	0.071	
1634-04-4	Methyl tert-Butyl Ether	ND	2.0	0.23	ND	0.55	0.065	
108-05-4	Vinyl Acetate	**13**	20	4.4	**3.6**	5.6	1.3	**J**
78-93-3	2-Butanone (MEK)	**11**	20	0.41	**3.6**	6.7	0.14	**J**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **Environmental Management Services, Inc.**

Client Sample ID: **SVE-0B5-08** ALS Project ID: P1803185

Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1803185-008

Test Code: EPA TO-15 Date Collected: 6/12/18

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: 6/20/18

Analyst: Raneem Sahtah Date Analyzed: 6/25/18

Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)

Test Notes:

Container ID: 1SC00550

Initial Pressure (psig): -0.77 Final Pressure (psig): 5.91

Container Dilution Factor: 1.48

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	2.0	0.28	ND	0.49	0.070	
141-78-6	Ethyl Acetate	ND	4.1	1.0	ND	1.1	0.29	
110-54-3	n-Hexane	ND	2.0	0.41	ND	0.56	0.12	
67-66-3	Chloroform	**0.70**	2.0	0.26	**0.14**	0.40	0.054	**J**
109-99-9	Tetrahydrofuran (THF)	ND	2.0	0.25	ND	0.67	0.084	
107-06-2	1,2-Dichloroethane	**2.0**	2.0	0.22	**0.50**	0.48	0.054	
71-55-6	1,1,1-Trichloroethane	**21**	2.0	0.24	**3.8**	0.37	0.045	
71-43-2	Benzene	**0.60**	2.0	0.28	**0.19**	0.61	0.089	**J**
56-23-5	Carbon Tetrachloride	ND	2.0	0.27	ND	0.31	0.044	
110-82-7	Cyclohexane	ND	4.1	0.56	ND	1.2	0.16	
78-87-5	1,2-Dichloropropane	ND	2.0	0.24	ND	0.42	0.053	
75-27-4	Bromodichloromethane	ND	2.0	0.28	ND	0.29	0.043	
79-01-6	Trichloroethene	**0.94**	2.0	0.27	**0.17**	0.37	0.050	**J**
123-91-1	1,4-Dioxane	**0.94**	2.0	0.23	**0.26**	0.54	0.065	**J**
80-62-6	Methyl Methacrylate	ND	4.1	0.70	ND	0.99	0.17	
142-82-5	n-Heptane	ND	2.0	0.31	ND	0.48	0.077	
10061-01-5	cis-1,3-Dichloropropene	ND	2.1	0.31	ND	0.46	0.068	
108-10-1	4-Methyl-2-pentanone	**0.79**	2.0	0.27	**0.19**	0.48	0.066	**J**
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	0.41	ND	0.43	0.090	
79-00-5	1,1,2-Trichloroethane	ND	2.0	0.20	ND	0.36	0.037	
108-88-3	Toluene	**6.5**	2.0	0.24	**1.7**	0.52	0.064	
591-78-6	2-Hexanone	**1.5**	2.0	0.24	**0.37**	0.48	0.060	**J**
124-48-1	Dibromochloromethane	ND	2.0	0.26	ND	0.23	0.030	
106-93-4	1,2-Dibromoethane	ND	2.0	0.23	ND	0.26	0.030	
123-86-4	n-Butyl Acetate	**0.34**	2.0	0.27	**0.072**	0.41	0.057	**J**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **Environmental Management Services, Inc.**

Client Sample ID: **SVE-0B5-08** ALS Project ID: P1803185

Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1803185-008

Test Code: EPA TO-15 Date Collected: 6/12/18

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: 6/20/18

Analyst: Raneem Sahtah Date Analyzed: 6/25/18

Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)

Test Notes:

Container ID: 1SC00550

Initial Pressure (psig): -0.77 Final Pressure (psig): 5.91

Container Dilution Factor: 1.48

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	ND	2.0	0.44	ND	0.42	0.095	
127-18-4	Tetrachloroethene	**19**	2.0	0.26	**2.8**	0.29	0.038	
108-90-7	Chlorobenzene	ND	2.0	0.26	ND	0.43	0.057	
100-41-4	Ethylbenzene	**1.8**	2.0	0.28	**0.41**	0.45	0.064	**J**
179601-23-1	m,p-Xylenes	**8.9**	4.1	0.52	**2.1**	0.94	0.12	
75-25-2	Bromoform	ND	2.0	0.41	ND	0.19	0.039	
100-42-5	Styrene	**0.39**	2.0	0.32	**0.091**	0.46	0.075	**J**
95-47-6	o-Xylene	**4.1**	2.0	0.28	**0.96**	0.45	0.066	
111-84-2	n-Nonane	ND	2.0	0.33	ND	0.37	0.063	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	0.27	ND	0.29	0.040	
98-82-8	Cumene	**0.30**	2.0	0.28	**0.061**	0.40	0.058	**J**
80-56-8	alpha-Pinene	**0.90**	1.9	0.30	**0.16**	0.35	0.054	**J**
103-65-1	n-Propylbenzene	**0.76**	2.0	0.28	**0.15**	0.40	0.058	**J**
622-96-8	4-Ethyltoluene	**1.3**	1.9	0.31	**0.26**	0.39	0.064	**J**
108-67-8	1,3,5-Trimethylbenzene	**1.5**	1.9	0.28	**0.31**	0.39	0.058	**J**
95-63-6	1,2,4-Trimethylbenzene	**4.6**	2.0	0.27	**0.94**	0.40	0.056	
100-44-7	Benzyl Chloride	ND	4.1	0.44	ND	0.79	0.086	
541-73-1	1,3-Dichlorobenzene	ND	2.0	0.30	ND	0.33	0.049	
106-46-7	1,4-Dichlorobenzene	ND	2.0	0.30	ND	0.33	0.050	
95-50-1	1,2-Dichlorobenzene	ND	2.0	0.29	ND	0.33	0.049	
5989-27-5	d-Limonene	**2.6**	1.9	0.41	**0.47**	0.33	0.073	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.37	ND	0.20	0.038	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	0.48	ND	0.27	0.065	
91-20-3	Naphthalene	**1.5**	2.0	0.48	**0.28**	0.37	0.092	**J**
87-68-3	Hexachlorobutadiene	ND	2.0	0.41	ND	0.18	0.038	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE-0B5-09** ALS Project ID: P1803185
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1803185-009

Test Code: EPA TO-15 Date Collected: 6/12/18
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: 6/20/18
Analyst: Raneem Sahtah Date Analyzed: 6/25/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SC01290

Initial Pressure (psig): -0.59 Final Pressure (psig): 5.79

Container Dilution Factor: 1.45

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	**19**	1.9	0.47	**11**	1.1	0.27	
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.0**	1.9	0.32	**0.40**	0.38	0.064	
74-87-3	Chloromethane	ND	1.8	0.31	ND	0.88	0.15	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	1.8	0.30	ND	0.26	0.044	
75-01-4	Vinyl Chloride	ND	1.9	0.21	ND	0.74	0.081	
106-99-0	1,3-Butadiene	ND	1.9	0.32	ND	0.87	0.14	
74-83-9	Bromomethane	ND	1.8	0.27	ND	0.47	0.069	
75-00-3	Chloroethane	ND	1.8	0.24	ND	0.70	0.091	
64-17-5	Ethanol	**29**	19	1.3	**16**	10	0.71	
75-05-8	Acetonitrile	ND	1.9	0.47	ND	1.1	0.28	
107-02-8	Acrolein	ND	7.6	0.54	ND	3.3	0.24	
67-64-1	Acetone	**7.9**	19	4.4	**3.3**	8.1	1.8	**J**
75-69-4	Trichlorofluoromethane (CFC 11)	**0.97**	1.9	0.29	**0.17**	0.34	0.052	**J**
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	19	0.80	ND	7.8	0.32	
107-13-1	Acrylonitrile	ND	1.9	0.40	ND	0.89	0.18	
75-35-4	1,1-Dichloroethene	**4.7**	1.9	0.27	**1.2**	0.48	0.068	
75-09-2	Methylene Chloride	**160**	1.9	0.54	**45**	0.55	0.16	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	1.9	0.26	ND	0.61	0.083	
76-13-1	Trichlorotrifluoroethane (CFC 113)	**0.31**	1.9	0.28	**0.041**	0.25	0.036	**J**
75-15-0	Carbon Disulfide	**0.68**	19	0.58	**0.22**	6.2	0.19	**J**
156-60-5	trans-1,2-Dichloroethene	ND	2.0	0.27	ND	0.49	0.068	
75-34-3	1,1-Dichloroethane	ND	1.8	0.28	ND	0.46	0.070	
1634-04-4	Methyl tert-Butyl Ether	ND	2.0	0.23	ND	0.54	0.063	
108-05-4	Vinyl Acetate	ND	19	4.4	ND	5.5	1.2	
78-93-3	2-Butanone (MEK)	**1.8**	19	0.40	**0.60**	6.5	0.14	**J**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **Environmental Management Services, Inc.**

Client Sample ID: **SVE-0B5-09** ALS Project ID: P1803185

Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1803185-009

Test Code: EPA TO-15 Date Collected: 6/12/18

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: 6/20/18

Analyst: Raneem Sahtah Date Analyzed: 6/25/18

Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)

Test Notes:

Container ID: 1SC01290

Initial Pressure (psig): -0.59 Final Pressure (psig): 5.79

Container Dilution Factor: 1.45

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	1.9	0.27	ND	0.48	0.069	
141-78-6	Ethyl Acetate	ND	4.0	1.0	ND	1.1	0.28	
110-54-3	n-Hexane	ND	1.9	0.40	ND	0.55	0.11	
67-66-3	Chloroform	ND	1.9	0.26	ND	0.39	0.053	
109-99-9	Tetrahydrofuran (THF)	**0.47**	1.9	0.24	**0.16**	0.65	0.082	**J**
107-06-2	1,2-Dichloroethane	ND	1.9	0.21	ND	0.47	0.053	
71-55-6	1,1,1-Trichloroethane	**3.4**	2.0	0.24	**0.62**	0.36	0.044	
71-43-2	Benzene	**0.38**	1.9	0.28	**0.12**	0.60	0.087	**J**
56-23-5	Carbon Tetrachloride	ND	1.9	0.27	ND	0.31	0.043	
110-82-7	Cyclohexane	ND	4.0	0.54	ND	1.2	0.16	
78-87-5	1,2-Dichloropropane	ND	1.9	0.24	ND	0.42	0.052	
75-27-4	Bromodichloromethane	ND	1.9	0.28	ND	0.29	0.042	
79-01-6	Trichloroethene	**0.53**	1.9	0.26	**0.098**	0.36	0.049	**J**
123-91-1	1,4-Dioxane	ND	1.9	0.23	ND	0.53	0.063	
80-62-6	Methyl Methacrylate	ND	4.0	0.69	ND	0.97	0.17	
142-82-5	n-Heptane	ND	1.9	0.31	ND	0.47	0.075	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	0.30	ND	0.45	0.066	
108-10-1	4-Methyl-2-pentanone	**0.53**	1.9	0.26	**0.13**	0.47	0.065	**J**
10061-02-6	trans-1,3-Dichloropropene	ND	1.9	0.40	ND	0.42	0.088	
79-00-5	1,1,2-Trichloroethane	ND	1.9	0.20	ND	0.35	0.036	
108-88-3	Toluene	**2.3**	1.9	0.24	**0.61**	0.51	0.063	
591-78-6	2-Hexanone	ND	1.9	0.24	ND	0.47	0.058	
124-48-1	Dibromochloromethane	ND	1.9	0.25	ND	0.23	0.030	
106-93-4	1,2-Dibromoethane	ND	1.9	0.22	ND	0.25	0.029	
123-86-4	n-Butyl Acetate	ND	1.9	0.26	ND	0.40	0.056	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE-0B5-09** ALS Project ID: P1803185
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1803185-009

Test Code: EPA TO-15 Date Collected: 6/12/18
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: 6/20/18
Analyst: Raneem Sahtah Date Analyzed: 6/25/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SC01290

Initial Pressure (psig): -0.59 Final Pressure (psig): 5.79

Container Dilution Factor: 1.45

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	ND	1.9	0.44	ND	0.41	0.093	
127-18-4	Tetrachloroethene	**8.3**	1.9	0.25	**1.2**	0.28	0.037	
108-90-7	Chlorobenzene	ND	1.9	0.26	ND	0.42	0.056	
100-41-4	Ethylbenzene	**0.56**	1.9	0.27	**0.13**	0.44	0.063	**J**
179601-23-1	m,p-Xylenes	**2.5**	4.0	0.51	**0.58**	0.92	0.12	**J**
75-25-2	Bromoform	ND	1.9	0.40	ND	0.19	0.039	
100-42-5	Styrene	ND	1.9	0.31	ND	0.45	0.073	
95-47-6	o-Xylene	**1.3**	1.9	0.28	**0.30**	0.44	0.064	**J**
111-84-2	n-Nonane	ND	1.9	0.32	ND	0.37	0.062	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.9	0.27	ND	0.28	0.039	
98-82-8	Cumene	ND	1.9	0.28	ND	0.39	0.057	
80-56-8	alpha-Pinene	**0.74**	1.9	0.30	**0.13**	0.34	0.053	**J**
103-65-1	n-Propylbenzene	ND	1.9	0.28	ND	0.39	0.057	
622-96-8	4-Ethyltoluene	**0.34**	1.9	0.31	**0.069**	0.38	0.063	**J**
108-67-8	1,3,5-Trimethylbenzene	**0.46**	1.9	0.28	**0.094**	0.38	0.057	**J**
95-63-6	1,2,4-Trimethylbenzene	**1.2**	1.9	0.27	**0.24**	0.39	0.055	**J**
100-44-7	Benzyl Chloride	ND	4.0	0.44	ND	0.77	0.084	
541-73-1	1,3-Dichlorobenzene	ND	2.0	0.29	ND	0.33	0.048	
106-46-7	1,4-Dichlorobenzene	ND	1.9	0.30	ND	0.32	0.049	
95-50-1	1,2-Dichlorobenzene	ND	2.0	0.29	ND	0.33	0.048	
5989-27-5	d-Limonene	**2.3**	1.8	0.40	**0.41**	0.33	0.072	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.9	0.36	ND	0.20	0.038	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	0.47	ND	0.27	0.064	
91-20-3	Naphthalene	**11**	1.9	0.47	**2.1**	0.37	0.090	
87-68-3	Hexachlorobutadiene	ND	1.9	0.40	ND	0.18	0.037	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **Method Blank** ALS Project ID: P1803185
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P180625-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: NA
Analyst: Raneem Sahtah Date Analyzed: 6/25/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	ND	0.52	0.13	ND	0.30	0.076	
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	0.52	0.087	ND	0.11	0.018	
74-87-3	Chloromethane	ND	0.50	0.086	ND	0.24	0.042	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.51	0.084	ND	0.073	0.012	
75-01-4	Vinyl Chloride	ND	0.52	0.057	ND	0.20	0.022	
106-99-0	1,3-Butadiene	ND	0.53	0.088	ND	0.24	0.040	
74-83-9	Bromomethane	ND	0.50	0.074	ND	0.13	0.019	
75-00-3	Chloroethane	ND	0.51	0.066	ND	0.19	0.025	
64-17-5	Ethanol	ND	5.3	0.37	ND	2.8	0.20	
75-05-8	Acetonitrile	ND	0.53	0.13	ND	0.32	0.077	
107-02-8	Acrolein	ND	2.1	0.15	ND	0.92	0.065	
67-64-1	Acetone	ND	5.3	1.2	ND	2.2	0.51	
75-69-4	Trichlorofluoromethane (CFC 11)	ND	0.53	0.081	ND	0.094	0.014	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	5.3	0.22	ND	2.2	0.090	
107-13-1	Acrylonitrile	ND	0.53	0.11	ND	0.24	0.051	
75-35-4	1,1-Dichloroethene	ND	0.53	0.074	ND	0.13	0.019	
75-09-2	Methylene Chloride	ND	0.53	0.15	ND	0.15	0.043	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.53	0.072	ND	0.17	0.023	
76-13-1	Trichlorotrifluoroethane (CFC 113)	ND	0.53	0.076	ND	0.069	0.0099	
75-15-0	Carbon Disulfide	ND	5.3	0.16	ND	1.7	0.051	
156-60-5	trans-1,2-Dichloroethene	ND	0.54	0.074	ND	0.14	0.019	
75-34-3	1,1-Dichloroethane	ND	0.51	0.078	ND	0.13	0.019	
1634-04-4	Methyl tert-Butyl Ether	ND	0.54	0.063	ND	0.15	0.017	
108-05-4	Vinyl Acetate	ND	5.3	1.2	ND	1.5	0.34	
78-93-3	2-Butanone (MEK)	ND	5.3	0.11	ND	1.8	0.037	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Client: **Environmental Management Services, Inc.**

Client Sample ID: **Method Blank** ALS Project ID: P1803185

Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P180625-MB

Test Code: EPA TO-15 Date Collected: NA

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: NA

Analyst: Raneem Sahtah Date Analyzed: 6/25/18

Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)

Test Notes:

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	0.53	0.075	ND	0.13	0.019	
141-78-6	Ethyl Acetate	ND	1.1	0.28	ND	0.31	0.078	
110-54-3	n-Hexane	ND	0.53	0.11	ND	0.15	0.031	
67-66-3	Chloroform	ND	0.53	0.071	ND	0.11	0.015	
109-99-9	Tetrahydrofuran (THF)	ND	0.53	0.067	ND	0.18	0.023	
107-06-2	1,2-Dichloroethane	ND	0.53	0.059	ND	0.13	0.015	
71-55-6	1,1,1-Trichloroethane	ND	0.54	0.066	ND	0.099	0.012	
71-43-2	Benzene	ND	0.53	0.077	ND	0.17	0.024	
56-23-5	Carbon Tetrachloride	ND	0.53	0.074	ND	0.084	0.012	
110-82-7	Cyclohexane	ND	1.1	0.15	ND	0.32	0.044	
78-87-5	1,2-Dichloropropane	ND	0.53	0.066	ND	0.11	0.014	
75-27-4	Bromodichloromethane	ND	0.53	0.077	ND	0.079	0.011	
79-01-6	Trichloroethene	ND	0.53	0.072	ND	0.099	0.013	
123-91-1	1,4-Dioxane	ND	0.53	0.063	ND	0.15	0.017	
80-62-6	Methyl Methacrylate	ND	1.1	0.19	ND	0.27	0.046	
142-82-5	n-Heptane	ND	0.53	0.085	ND	0.13	0.021	
10061-01-5	cis-1,3-Dichloropropene	ND	0.56	0.083	ND	0.12	0.018	
108-10-1	4-Methyl-2-pentanone	ND	0.53	0.073	ND	0.13	0.018	
10061-02-6	trans-1,3-Dichloropropene	ND	0.53	0.11	ND	0.12	0.024	
79-00-5	1,1,2-Trichloroethane	ND	0.53	0.054	ND	0.097	0.0099	
108-88-3	Toluene	ND	0.53	0.065	ND	0.14	0.017	
591-78-6	2-Hexanone	ND	0.53	0.066	ND	0.13	0.016	
124-48-1	Dibromochloromethane	ND	0.53	0.070	ND	0.062	0.0082	
106-93-4	1,2-Dibromoethane	ND	0.53	0.062	ND	0.069	0.0081	
123-86-4	n-Butyl Acetate	ND	0.53	0.073	ND	0.11	0.015	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Client: **Environmental Management Services, Inc.**

Client Sample ID: **Method Blank** ALS Project ID: P1803185

Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P180625-MB

Test Code:	EPA TO-15	Date Collected:	NA
Instrument ID:	Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13	Date Received:	NA
Analyst:	Raneem Sahtah	Date Analyzed:	6/25/18
Sample Type:	1.0 L Summa Canister	Volume(s) Analyzed:	1.00 Liter(s)
Test Notes:			

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	ND	0.53	0.12	ND	0.11	0.026	
127-18-4	Tetrachloroethene	ND	0.53	0.069	ND	0.078	0.010	
108-90-7	Chlorobenzene	ND	0.53	0.071	ND	0.12	0.015	
100-41-4	Ethylbenzene	ND	0.53	0.075	ND	0.12	0.017	
179601-23-1	m,p-Xylenes	ND	1.1	0.14	ND	0.25	0.032	
75-25-2	Bromoform	ND	0.53	0.11	ND	0.051	0.011	
100-42-5	Styrene	ND	0.53	0.086	ND	0.12	0.020	
95-47-6	o-Xylene	ND	0.53	0.077	ND	0.12	0.018	
111-84-2	n-Nonane	ND	0.53	0.089	ND	0.10	0.017	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.53	0.074	ND	0.077	0.011	
98-82-8	Cumene	ND	0.53	0.077	ND	0.11	0.016	
80-56-8	alpha-Pinene	ND	0.52	0.082	ND	0.093	0.015	
103-65-1	n-Propylbenzene	ND	0.53	0.077	ND	0.11	0.016	
622-96-8	4-Ethyltoluene	ND	0.52	0.085	ND	0.11	0.017	
108-67-8	1,3,5-Trimethylbenzene	ND	0.52	0.077	ND	0.11	0.016	
95-63-6	1,2,4-Trimethylbenzene	ND	0.53	0.074	ND	0.11	0.015	
100-44-7	Benzyl Chloride	ND	1.1	0.12	ND	0.21	0.023	
541-73-1	1,3-Dichlorobenzene	ND	0.54	0.080	ND	0.090	0.013	
106-46-7	1,4-Dichlorobenzene	ND	0.53	0.082	ND	0.088	0.014	
95-50-1	1,2-Dichlorobenzene	ND	0.54	0.079	ND	0.090	0.013	
5989-27-5	d-Limonene	ND	0.50	0.11	ND	0.090	0.020	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.53	0.10	ND	0.055	0.010	
120-82-1	1,2,4-Trichlorobenzene	ND	0.55	0.13	ND	0.074	0.018	
91-20-3	Naphthalene	ND	0.53	0.13	ND	0.10	0.025	
87-68-3	Hexachlorobutadiene	ND	0.53	0.11	ND	0.050	0.010	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Client: **Environmental Management Services, Inc.**

Client Sample ID: **Method Blank** ALS Project ID: P1803185

Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P180626-MB

Test Code: EPA TO-15 Date Collected: NA

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: NA

Analyst: Raneem Sahtah Date Analyzed: 6/26/18

Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)

Test Notes:

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	ND	0.52	0.13	ND	0.30	0.076	
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	0.52	0.087	ND	0.11	0.018	
74-87-3	Chloromethane	ND	0.50	0.086	ND	0.24	0.042	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.51	0.084	ND	0.073	0.012	
75-01-4	Vinyl Chloride	ND	0.52	0.057	ND	0.20	0.022	
106-99-0	1,3-Butadiene	ND	0.53	0.088	ND	0.24	0.040	
74-83-9	Bromomethane	ND	0.50	0.074	ND	0.13	0.019	
75-00-3	Chloroethane	ND	0.51	0.066	ND	0.19	0.025	
64-17-5	Ethanol	ND	5.3	0.37	ND	2.8	0.20	
75-05-8	Acetonitrile	ND	0.53	0.13	ND	0.32	0.077	
107-02-8	Acrolein	ND	2.1	0.15	ND	0.92	0.065	
67-64-1	Acetone	ND	5.3	1.2	ND	2.2	0.51	
75-69-4	Trichlorofluoromethane (CFC 11)	ND	0.53	0.081	ND	0.094	0.014	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	5.3	0.22	ND	2.2	0.090	
107-13-1	Acrylonitrile	ND	0.53	0.11	ND	0.24	0.051	
75-35-4	1,1-Dichloroethene	ND	0.53	0.074	ND	0.13	0.019	
75-09-2	Methylene Chloride	ND	0.53	0.15	ND	0.15	0.043	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.53	0.072	ND	0.17	0.023	
76-13-1	Trichlorotrifluoroethane (CFC 113)	ND	0.53	0.076	ND	0.069	0.0099	
75-15-0	Carbon Disulfide	ND	5.3	0.16	ND	1.7	0.051	
156-60-5	trans-1,2-Dichloroethene	ND	0.54	0.074	ND	0.14	0.019	
75-34-3	1,1-Dichloroethane	ND	0.51	0.078	ND	0.13	0.019	
1634-04-4	Methyl tert-Butyl Ether	ND	0.54	0.063	ND	0.15	0.017	
108-05-4	Vinyl Acetate	ND	5.3	1.2	ND	1.5	0.34	
78-93-3	2-Butanone (MEK)	ND	5.3	0.11	ND	1.8	0.037	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Client: **Environmental Management Services, Inc.**

Client Sample ID: **Method Blank** ALS Project ID: P1803185

Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P180626-MB

Test Code: EPA TO-15 Date Collected: NA

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: NA

Analyst: Raneem Sahtah Date Analyzed: 6/26/18

Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)

Test Notes:

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	0.53	0.075	ND	0.13	0.019	
141-78-6	Ethyl Acetate	ND	1.1	0.28	ND	0.31	0.078	
110-54-3	n-Hexane	ND	0.53	0.11	ND	0.15	0.031	
67-66-3	Chloroform	ND	0.53	0.071	ND	0.11	0.015	
109-99-9	Tetrahydrofuran (THF)	ND	0.53	0.067	ND	0.18	0.023	
107-06-2	1,2-Dichloroethane	ND	0.53	0.059	ND	0.13	0.015	
71-55-6	1,1,1-Trichloroethane	ND	0.54	0.066	ND	0.099	0.012	
71-43-2	Benzene	ND	0.53	0.077	ND	0.17	0.024	
56-23-5	Carbon Tetrachloride	ND	0.53	0.074	ND	0.084	0.012	
110-82-7	Cyclohexane	ND	1.1	0.15	ND	0.32	0.044	
78-87-5	1,2-Dichloropropane	ND	0.53	0.066	ND	0.11	0.014	
75-27-4	Bromodichloromethane	ND	0.53	0.077	ND	0.079	0.011	
79-01-6	Trichloroethene	ND	0.53	0.072	ND	0.099	0.013	
123-91-1	1,4-Dioxane	ND	0.53	0.063	ND	0.15	0.017	
80-62-6	Methyl Methacrylate	ND	1.1	0.19	ND	0.27	0.046	
142-82-5	n-Heptane	ND	0.53	0.085	ND	0.13	0.021	
10061-01-5	cis-1,3-Dichloropropene	ND	0.56	0.083	ND	0.12	0.018	
108-10-1	4-Methyl-2-pentanone	ND	0.53	0.073	ND	0.13	0.018	
10061-02-6	trans-1,3-Dichloropropene	ND	0.53	0.11	ND	0.12	0.024	
79-00-5	1,1,2-Trichloroethane	ND	0.53	0.054	ND	0.097	0.0099	
108-88-3	Toluene	ND	0.53	0.065	ND	0.14	0.017	
591-78-6	2-Hexanone	ND	0.53	0.066	ND	0.13	0.016	
124-48-1	Dibromochloromethane	ND	0.53	0.070	ND	0.062	0.0082	
106-93-4	1,2-Dibromoethane	ND	0.53	0.062	ND	0.069	0.0081	
123-86-4	n-Butyl Acetate	ND	0.53	0.073	ND	0.11	0.015	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Client: **Environmental Management Services, Inc.**

Client Sample ID: **Method Blank** ALS Project ID: P1803185

Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P180626-MB

Test Code: EPA TO-15 Date Collected: NA

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: NA

Analyst: Raneem Sahtah Date Analyzed: 6/26/18

Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)

Test Notes:

Container Dilution Factor: 1.00

CAS #	Compound	**Result µg/m³**	MRL µg/m³	MDL µg/m³	**Result ppbV**	MRL ppbV	MDL ppbV	**Data Qualifier**
111-65-9	n-Octane	ND	0.53	0.12	ND	0.11	0.026	
127-18-4	Tetrachloroethene	ND	0.53	0.069	ND	0.078	0.010	
108-90-7	Chlorobenzene	ND	0.53	0.071	ND	0.12	0.015	
100-41-4	Ethylbenzene	ND	0.53	0.075	ND	0.12	0.017	
179601-23-1	m,p-Xylenes	ND	1.1	0.14	ND	0.25	0.032	
75-25-2	Bromoform	ND	0.53	0.11	ND	0.051	0.011	
100-42-5	Styrene	ND	0.53	0.086	ND	0.12	0.020	
95-47-6	o-Xylene	ND	0.53	0.077	ND	0.12	0.018	
111-84-2	n-Nonane	ND	0.53	0.089	ND	0.10	0.017	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.53	0.074	ND	0.077	0.011	
98-82-8	Cumene	ND	0.53	0.077	ND	0.11	0.016	
80-56-8	alpha-Pinene	ND	0.52	0.082	ND	0.093	0.015	
103-65-1	n-Propylbenzene	ND	0.53	0.077	ND	0.11	0.016	
622-96-8	4-Ethyltoluene	ND	0.52	0.085	ND	0.11	0.017	
108-67-8	1,3,5-Trimethylbenzene	ND	0.52	0.077	ND	0.11	0.016	
95-63-6	1,2,4-Trimethylbenzene	ND	0.53	0.074	ND	0.11	0.015	
100-44-7	Benzyl Chloride	ND	1.1	0.12	ND	0.21	0.023	
541-73-1	1,3-Dichlorobenzene	ND	0.54	0.080	ND	0.090	0.013	
106-46-7	1,4-Dichlorobenzene	ND	0.53	0.082	ND	0.088	0.014	
95-50-1	1,2-Dichlorobenzene	ND	0.54	0.079	ND	0.090	0.013	
5989-27-5	d-Limonene	ND	0.50	0.11	ND	0.090	0.020	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.53	0.10	ND	0.055	0.010	
120-82-1	1,2,4-Trichlorobenzene	ND	0.55	0.13	ND	0.074	0.018	
91-20-3	Naphthalene	ND	0.53	0.13	ND	0.10	0.025	
87-68-3	Hexachlorobutadiene	ND	0.53	0.11	ND	0.050	0.010	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

SURROGATE SPIKE RECOVERY RESULTS

Client: **Environmental Management Services, Inc.**
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Project ID: P1803185

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date(s) Collected: 6/12/18
Analyst: Raneem Sahtah Date(s) Received: 6/20/18
Sample Type: 1.0 L Summa Canister(s) / 1.0 L Silonite Summa Canister(s) Date(s) Analyzed: 6/25 - 6/26/18
Test Notes:

Client Sample ID	ALS Sample ID	1,2-Dichloroethane-d4 Percent Recovered	Toluene-d8 Percent Recovered	Bromofluorobenzene Percent Recovered	Acceptance Limits	Data Qualifier
Method Blank	P180625-MB	**98**	**105**	**103**	70-130	
Method Blank	P180626-MB	**100**	**105**	**102**	70-130	
Lab Control Sample	P180625-LCS	**95**	**105**	**106**	70-130	
Lab Control Sample	P180626-LCS	**96**	**105**	**106**	70-130	
SVE-0B5-01	P1803185-001	**97**	**104**	**106**	70-130	
SVE-0B5-02	P1803185-002	**98**	**104**	**105**	70-130	
SVE-0B5-03	P1803185-003	**98**	**103**	**105**	70-130	
SVE-0B5-04	P1803185-004	**97**	**104**	**105**	70-130	
SVE-0B5-05	P1803185-005	**97**	**104**	**105**	70-130	
SVE-0B5-06	P1803185-006	**98**	**104**	**105**	70-130	
SVE-0B5-07	P1803185-007	**97**	**104**	**105**	70-130	
SVE-0B5-08	P1803185-008	**98**	**104**	**107**	70-130	
SVE-0B5-09	P1803185-009	**98**	**103**	**107**	70-130	

Surrogate percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly from the on-column percent recovery.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Environmental Management Services, Inc.**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1803185
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P180625-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: NA
Analyst: Raneem Sahtah Date Analyzed: 6/25/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	ALS Acceptance Limits	Data Qualifier
115-07-1	Propene	210	**174**	**83**	54-133	
75-71-8	Dichlorodifluoromethane (CFC 12)	213	**174**	**82**	64-115	
74-87-3	Chloromethane	210	**173**	**82**	47-140	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	211	**173**	**82**	60-112	
75-01-4	Vinyl Chloride	211	**175**	**83**	63-127	
106-99-0	1,3-Butadiene	210	**201**	**96**	57-149	
74-83-9	Bromomethane	210	**182**	**87**	63-132	
75-00-3	Chloroethane	210	**180**	**86**	68-129	
64-17-5	Ethanol	1,040	**931**	**90**	62-131	
75-05-8	Acetonitrile	210	**211**	**100**	56-136	
107-02-8	Acrolein	209	**222**	**106**	60-132	
67-64-1	Acetone	1,050	**908**	**86**	63-124	
75-69-4	Trichlorofluoromethane (CFC 11)	208	**169**	**81**	65-113	
67-63-0	2-Propanol (Isopropyl Alcohol)	422	**374**	**89**	62-135	
107-13-1	Acrylonitrile	212	**209**	**99**	68-138	
75-35-4	1,1-Dichloroethene	213	**185**	**87**	72-118	
75-09-2	Methylene Chloride	213	**191**	**90**	67-116	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	212	**193**	**91**	61-143	
76-13-1	Trichlorotrifluoroethane (CFC 113)	214	**184**	**86**	68-113	
75-15-0	Carbon Disulfide	214	**178**	**83**	68-120	
156-60-5	trans-1,2-Dichloroethene	214	**195**	**91**	71-125	
75-34-3	1,1-Dichloroethane	212	**175**	**83**	68-118	
1634-04-4	Methyl tert-Butyl Ether	213	**181**	**85**	60-123	
108-05-4	Vinyl Acetate	1,060	**1120**	**106**	73-135	
78-93-3	2-Butanone (MEK)	212	**200**	**94**	70-129	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

Client: **Environmental Management Services, Inc.**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1803185
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P180625-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: NA
Analyst: Raneem Sahtah Date Analyzed: 6/25/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	**Result µg/m³**	**% Recovery**	ALS Acceptance Limits	**Data Qualifier**
156-59-2	cis-1,2-Dichloroethene	212	**183**	**86**	69-121	
141-78-6	Ethyl Acetate	426	**435**	**102**	66-140	
110-54-3	n-Hexane	213	**173**	**81**	61-124	
67-66-3	Chloroform	212	**176**	**83**	69-113	
109-99-9	Tetrahydrofuran (THF)	212	**177**	**83**	66-121	
107-06-2	1,2-Dichloroethane	212	**175**	**83**	62-120	
71-55-6	1,1,1-Trichloroethane	212	**161**	**76**	65-116	
71-43-2	Benzene	213	**166**	**78**	66-111	
56-23-5	Carbon Tetrachloride	214	**167**	**78**	64-122	
110-82-7	Cyclohexane	425	**324**	**76**	69-115	
78-87-5	1,2-Dichloropropane	212	**166**	**78**	69-121	
75-27-4	Bromodichloromethane	214	**169**	**79**	69-123	
79-01-6	Trichloroethene	212	**171**	**81**	69-112	
123-91-1	1,4-Dioxane	213	**184**	**86**	74-123	
80-62-6	Methyl Methacrylate	424	**376**	**89**	75-125	
142-82-5	n-Heptane	213	**164**	**77**	68-118	
10061-01-5	cis-1,3-Dichloropropene	208	**184**	**88**	74-129	
108-10-1	4-Methyl-2-pentanone	213	**167**	**78**	66-138	
10061-02-6	trans-1,3-Dichloropropene	213	**208**	**98**	75-130	
79-00-5	1,1,2-Trichloroethane	212	**172**	**81**	73-117	
108-88-3	Toluene	211	**181**	**86**	66-114	
591-78-6	2-Hexanone	211	**205**	**97**	58-146	
124-48-1	Dibromochloromethane	212	**207**	**98**	67-130	
106-93-4	1,2-Dibromoethane	211	**206**	**98**	70-127	
123-86-4	n-Butyl Acetate	215	**213**	**99**	62-140	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

Client: **Environmental Management Services, Inc.**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1803185
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P180625-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: NA
Analyst: Raneem Sahtah Date Analyzed: 6/25/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	**Result µg/m³**	**% Recovery**	ALS Acceptance Limits	**Data Qualifier**
111-65-9	n-Octane	212	**186**	**88**	65-121	
127-18-4	Tetrachloroethene	212	**193**	**91**	62-119	
108-90-7	Chlorobenzene	212	**187**	**88**	66-115	
100-41-4	Ethylbenzene	212	**185**	**87**	69-117	
179601-23-1	m,p-Xylenes	424	**377**	**89**	67-117	
75-25-2	Bromoform	212	**220**	**104**	67-135	
100-42-5	Styrene	211	**201**	**95**	70-128	
95-47-6	o-Xylene	211	**188**	**89**	67-118	
111-84-2	n-Nonane	212	**181**	**85**	61-127	
79-34-5	1,1,2,2-Tetrachloroethane	212	**194**	**92**	70-125	
98-82-8	Cumene	212	**186**	**88**	68-116	
80-56-8	alpha-Pinene	213	**190**	**89**	69-122	
103-65-1	n-Propylbenzene	214	**191**	**89**	70-118	
622-96-8	4-Ethyltoluene	211	**205**	**97**	69-124	
108-67-8	1,3,5-Trimethylbenzene	212	**187**	**88**	65-117	
95-63-6	1,2,4-Trimethylbenzene	212	**198**	**93**	67-124	
100-44-7	Benzyl Chloride	212	**252**	**119**	75-142	
541-73-1	1,3-Dichlorobenzene	212	**207**	**98**	70-124	
106-46-7	1,4-Dichlorobenzene	214	**208**	**97**	63-124	
95-50-1	1,2-Dichlorobenzene	214	**212**	**99**	66-125	
5989-27-5	d-Limonene	213	**198**	**93**	64-135	
96-12-8	1,2-Dibromo-3-chloropropane	210	**228**	**109**	73-136	
120-82-1	1,2,4-Trichlorobenzene	218	**230**	**106**	70-141	
91-20-3	Naphthalene	209	**212**	**101**	71-146	
87-68-3	Hexachlorobutadiene	212	**203**	**96**	63-126	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Environmental Management Services, Inc.**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1803185
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P180626-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: NA
Analyst: Raneem Sahtah Date Analyzed: 6/26/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	**Result µg/m³**	**% Recovery**	ALS Acceptance Limits	**Data Qualifier**
115-07-1	Propene	210	**165**	**79**	54-133	
75-71-8	Dichlorodifluoromethane (CFC 12)	213	**170**	**80**	64-115	
74-87-3	Chloromethane	210	**165**	**79**	47-140	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	211	**169**	**80**	60-112	
75-01-4	Vinyl Chloride	211	**170**	**81**	63-127	
106-99-0	1,3-Butadiene	210	**190**	**90**	57-149	
74-83-9	Bromomethane	210	**174**	**83**	63-132	
75-00-3	Chloroethane	210	**172**	**82**	68-129	
64-17-5	Ethanol	1,040	**903**	**87**	62-131	
75-05-8	Acetonitrile	210	**203**	**97**	56-136	
107-02-8	Acrolein	209	**211**	**101**	60-132	
67-64-1	Acetone	1,050	**882**	**84**	63-124	
75-69-4	Trichlorofluoromethane (CFC 11)	208	**166**	**80**	65-113	
67-63-0	2-Propanol (Isopropyl Alcohol)	422	**363**	**86**	62-135	
107-13-1	Acrylonitrile	212	**200**	**94**	68-138	
75-35-4	1,1-Dichloroethene	213	**179**	**84**	72-118	
75-09-2	Methylene Chloride	213	**185**	**87**	67-116	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	212	**184**	**87**	61-143	
76-13-1	Trichlorotrifluoroethane (CFC 113)	214	**178**	**83**	68-113	
75-15-0	Carbon Disulfide	214	**171**	**80**	68-120	
156-60-5	trans-1,2-Dichloroethene	214	**189**	**88**	71-125	
75-34-3	1,1-Dichloroethane	212	**169**	**80**	68-118	
1634-04-4	Methyl tert-Butyl Ether	213	**175**	**82**	60-123	
108-05-4	Vinyl Acetate	1,060	**1090**	**103**	73-135	
78-93-3	2-Butanone (MEK)	212	**190**	**90**	70-129	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Environmental Management Services, Inc.**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1803185
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P180626-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: NA
Analyst: Raneem Sahtah Date Analyzed: 6/26/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	ALS Acceptance Limits	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	212	**177**	**83**	69-121	
141-78-6	Ethyl Acetate	426	**423**	**99**	66-140	
110-54-3	n-Hexane	213	**169**	**79**	61-124	
67-66-3	Chloroform	212	**171**	**81**	69-113	
109-99-9	Tetrahydrofuran (THF)	212	**170**	**80**	66-121	
107-06-2	1,2-Dichloroethane	212	**172**	**81**	62-120	
71-55-6	1,1,1-Trichloroethane	212	**156**	**74**	65-116	
71-43-2	Benzene	213	**160**	**75**	66-111	
56-23-5	Carbon Tetrachloride	214	**162**	**76**	64-122	
110-82-7	Cyclohexane	425	**313**	**74**	69-115	
78-87-5	1,2-Dichloropropane	212	**159**	**75**	69-121	
75-27-4	Bromodichloromethane	214	**165**	**77**	69-123	
79-01-6	Trichloroethene	212	**165**	**78**	69-112	
123-91-1	1,4-Dioxane	213	**179**	**84**	74-123	
80-62-6	Methyl Methacrylate	424	**358**	**84**	75-125	
142-82-5	n-Heptane	213	**157**	**74**	68-118	
10061-01-5	cis-1,3-Dichloropropene	208	**177**	**85**	74-129	
108-10-1	4-Methyl-2-pentanone	213	**160**	**75**	66-138	
10061-02-6	trans-1,3-Dichloropropene	213	**200**	**94**	75-130	
79-00-5	1,1,2-Trichloroethane	212	**165**	**78**	73-117	
108-88-3	Toluene	211	**175**	**83**	66-114	
591-78-6	2-Hexanone	211	**196**	**93**	58-146	
124-48-1	Dibromochloromethane	212	**199**	**94**	67-130	
106-93-4	1,2-Dibromoethane	211	**198**	**94**	70-127	
123-86-4	n-Butyl Acetate	215	**204**	**95**	62-140	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

Client: **Environmental Management Services, Inc.**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1803185
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P180626-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: NA
Analyst: Raneem Sahtah Date Analyzed: 6/26/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	**Result µg/m³**	**% Recovery**	ALS Acceptance Limits	**Data Qualifier**
111-65-9	n-Octane	212	**180**	**85**	65-121	
127-18-4	Tetrachloroethene	212	**186**	**88**	62-119	
108-90-7	Chlorobenzene	212	**180**	**85**	66-115	
100-41-4	Ethylbenzene	212	**178**	**84**	69-117	
179601-23-1	m,p-Xylenes	424	**365**	**86**	67-117	
75-25-2	Bromoform	212	**212**	**100**	67-135	
100-42-5	Styrene	211	**194**	**92**	70-128	
95-47-6	o-Xylene	211	**182**	**86**	67-118	
111-84-2	n-Nonane	212	**174**	**82**	61-127	
79-34-5	1,1,2,2-Tetrachloroethane	212	**186**	**88**	70-125	
98-82-8	Cumene	212	**180**	**85**	68-116	
80-56-8	alpha-Pinene	213	**183**	**86**	69-122	
103-65-1	n-Propylbenzene	214	**185**	**86**	70-118	
622-96-8	4-Ethyltoluene	211	**198**	**94**	69-124	
108-67-8	1,3,5-Trimethylbenzene	212	**181**	**85**	65-117	
95-63-6	1,2,4-Trimethylbenzene	212	**194**	**92**	67-124	
100-44-7	Benzyl Chloride	212	**244**	**115**	75-142	
541-73-1	1,3-Dichlorobenzene	212	**200**	**94**	70-124	
106-46-7	1,4-Dichlorobenzene	214	**202**	**94**	63-124	
95-50-1	1,2-Dichlorobenzene	214	**207**	**97**	66-125	
5989-27-5	d-Limonene	213	**193**	**91**	64-135	
96-12-8	1,2-Dibromo-3-chloropropane	210	**218**	**104**	73-136	
120-82-1	1,2,4-Trichlorobenzene	218	**221**	**101**	70-141	
91-20-3	Naphthalene	209	**206**	**99**	71-146	
87-68-3	Hexachlorobutadiene	212	**196**	**92**	63-126	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

Appendix B

SVE Laboratory Analytical Results and Mass Removal Calculations

2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
F: +1 805 526 7270
www.alsglobal.com

LABORATORY REPORT

March 16, 2018

Stephanie Kilgore
Environmental Management Services, Inc.
P.O. Box 15369
Hattiesburg, MS 39404

RE: SVE Performance Monitoring / KUHO-18-010

Dear Stephanie:

Enclosed are the results of the samples submitted to our laboratory on March 2, 2018. For your reference, these analyses have been assigned our service request number P1800981.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

ALS | Environmental

By Sue Anderson at 11:08 am, Mar 16, 2018

Sue Anderson
Project Manager

2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
F: +1 805 526 7270
www.alsglobal.com

Client: Environmental Management Services, Inc. Service Request No: P1800981
Project: SVE Performance Monitoring / KUHO-18-010

CASE NARRATIVE

The samples were received intact under chain of custody on March 2, 2018 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Volatile Organic Compound Analysis

The samples were analyzed for volatile organic compounds in accordance with EPA Method TO-15 from the Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition (EPA/625/R-96/010b), January, 1999. This procedure is described in laboratory SOP VOA-TO15. The analytical system was comprised of a gas chromatograph / mass spectrometer (GC/MS) interfaced to a whole-air preconcentrator. This method is included on the laboratory's NELAP and DoD-ELAP scope of accreditation. Any analytes flagged with an X are not included on the NELAP or DoD-ELAP accreditation.

The containers were cleaned, prior to sampling, down to the method reporting limit (MRL) reported for this project. For projects requiring DoD QSM 5.1 compliance canisters were cleaned to <1/2 the MRL. Please note, projects which require reporting below the MRL could have results between the MRL and method detection limit (MDL) that are biased high.

2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
F: +1 805 526 7270
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ALS Environmental – Simi Valley

CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
Arizona DHS	http://www.azdhs.gov/preparedness/state-laboratory/lab-licensure-certification/index.php#laboratory-licensure-home	AZ0694
Florida DOH (NELAP)	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E871020
Louisiana DEQ (NELAP)	http://www.deq.louisiana.gov/portal/DIVISIONS/PublicParticipationandPermitSupport/LouisianaLaboratoryAccreditationProgram.aspx	05071
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/labcert.htm	2016036
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	1347317
New Jersey DEP (NELAP)	http://www.nj.gov/dep/oqa/	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-005
Pennsylvania DEP	http://www.depweb.state.pa.us/labs	68-03307 (Registration)
PJLA (DoD ELAP)	http://www.pjlabs.com/search-accredited-labs	65818 (Testing)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704413-17-8
Utah DOH (NELAP)	http://health.utah.gov/lab/environmental-lab-certification/	CA016272017-8
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

ALS ENVIRONMENTAL

DETAIL SUMMARY REPORT

Client: Environmental Management Services, Inc. Service Request: P1800981

Project ID: SVE Performance Monitoring / KUHO-18-010

Date Received: 3/2/2018

Time Received: 09:30

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	Container ID	Pi1 (psig)	Pf1 (psig)	TO-15 - VOC Cans
SVE Exhaust	P1800981-001	Air	2/26/2018	08:34	1SC00379	0.69	5.45	X
SVE Carbon 1	P1800981-002	Air	2/26/2018	08:41	1SS00260	0.52	5.20	X
SVE Carbon 2	P1800981-003	Air	2/26/2018	08:48	1SC00911	0.32	5.15	X

Air - Chain of Custody Record & Analytical Service Request

Page 1 of 1

2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone (805) 526-7161
Fax (805) 526-7270

Requested Turnaround Time in Business Days (Surcharges) please circle
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10-Day-Standard

ALS Project No: P1800981

Company Name & Address (Reporting Information): Environmental Management Services, Inc.
P.O. Box 15369
Hattiesburg, MS 39404

Project Name: SVE Performance Monitoring

Project Number: KUHD-18-010

Project Manager: Stephanie Kilgore

P.O. # / Billing Information: KUHD-18-010 / same as reporting

Phone: 601-544-3674 Fax: 601-544-0504

Email Address for Result Reporting: skilgore@env-mgt.com

Sampler (Print & Sign): Stephanie Kilgore Stephanie Kilgore

ALS Contact:

Analysis Method

Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Canister ID (Bar code # - AC, SC, etc.)	Flow Controller ID (Bar code # - FC #)	Canister Start Pressure "Hg	Canister End Pressure "Hg/psig	Sample Volume	TO-15		Comments e.g. Actual Preservative or specific instructions
SVE Exhaust	1	2-26-18	8:34	ISC 00379					X		
SVE Carbon 1	2	2-26-18	8:41	ISSD0260					X		
SVE Carbon 2	3	2-26-18	8:48	ISC 00911					X		

5 of 22

Report Tier Levels - please select

Tier I - Results (Default in not specified) _____ Tier III (Results + QC & Calibration Summaries) _____
Tier II (Results + QC Summaries X Tier IV (Date Validation Package) 10% Surcharge _____

EDD required YES / No
Type: _____ Units: _____

Chain of Custody Seal: (Circle) INTACT BROKEN (ABSENT)

Project Requirements (MRLs, QAPP)

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Stephanie Kilgore	2-27-18	12:30	FedEx		
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
			Henry Perez	3/2/18	0930

Cooler / Blank Temperature _____ °C

ALS Environmental

Sample Acceptance Check Form

Client: Environmental Management Services, Inc. Work order: P1800981

Project: SVE Performance Monitoring / KUHO-18-010

Sample(s) received on: 3/2/18 Date opened: 3/2/18 by: E.PEREZ

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Did **sample containers** arrive in good condition?	☒	☐	☐
3	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
4	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
5	Was **sample volume** received adequate for analysis?	☒	☐	☐
6	Are samples within specified holding times?	☒	☐	☐
7	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☐	☐	☒
8	Were **custody seals** on outside of cooler/Box/Container?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
9	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
10	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
11	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1800981-001.01	1.0 L Source Can					
P1800981-002.01	1.0 L Source Silonite Canister					
P1800981-003.01	1.0 L Source Can					

Explain any discrepancies: (include lab sample ID numbers):

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE Exhaust** ALS Project ID: P1800981
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1800981-001

Test Code: EPA TO-15 Date Collected: 2/26/18
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/2/18
Analyst: Anusha Bayyarapu Date Analyzed: 3/9/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.10 Liter(s)
Test Notes: 0.025 Liter(s)
Container ID: 1SC00379

Initial Pressure (psig): 0.69 Final Pressure (psig): 5.45

Container Dilution Factor: 1.31

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	**16**	6.6	1.8	**9.4**	3.8	1.1	
75-71-8	Dichlorodifluoromethane (CFC 12)	**4.1**	6.6	2.2	**0.83**	1.3	0.45	**J**
74-87-3	Chloromethane	ND	6.6	2.0	ND	3.2	0.95	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	6.6	2.5	ND	0.94	0.36	
75-01-4	Vinyl Chloride	ND	6.6	2.2	ND	2.6	0.87	
106-99-0	1,3-Butadiene	ND	6.6	2.9	ND	3.0	1.3	
74-83-9	Bromomethane	ND	6.6	2.5	ND	1.7	0.64	
75-00-3	Chloroethane	ND	6.6	2.2	ND	2.5	0.84	
64-17-5	Ethanol	ND	66	10	ND	35	5.6	
75-05-8	Acetonitrile	ND	6.6	2.4	ND	3.9	1.4	
107-02-8	Acrolein	ND	26	2.2	ND	11	0.97	
67-64-1	Acetone	**38**	66	10	**16**	28	4.2	**J**
75-69-4	Trichlorofluoromethane (CFC 11)	ND	6.6	2.2	ND	1.2	0.40	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	66	5.5	ND	27	2.2	
107-13-1	Acrylonitrile	ND	6.6	2.2	ND	3.0	1.0	
75-35-4	1,1-Dichloroethene	**130**	6.6	2.2	**32**	1.7	0.56	
75-09-2	Methylene Chloride	**2.5**	6.6	2.2	**0.72**	1.9	0.64	**J**
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	6.6	2.1	ND	2.1	0.67	
76-13-1	Trichlorotrifluoroethane (CFC 113)	**5.4**	6.6	2.2	**0.70**	0.86	0.29	**J**
75-15-0	Carbon Disulfide	**8.1**	66	2.0	**2.6**	21	0.63	**J, B**
156-60-5	trans-1,2-Dichloroethene	ND	6.6	2.5	ND	1.7	0.63	
75-34-3	1,1-Dichloroethane	**3.2**	6.6	2.1	**0.79**	1.6	0.52	**J**
1634-04-4	Methyl tert-Butyl Ether	ND	6.6	2.2	ND	1.8	0.62	
108-05-4	Vinyl Acetate	ND	66	8.5	ND	19	2.4	
78-93-3	2-Butanone (MEK)	**4.9**	66	2.8	**1.7**	22	0.93	**J**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
B = Analyte detected in both the sample and associated method blank.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE Exhaust** ALS Project ID: P1800981
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1800981-001

Test Code: EPA TO-15 Date Collected: 2/26/18
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/2/18
Analyst: Anusha Bayyarapu Date Analyzed: 3/9/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.10 Liter(s)
Test Notes: 0.025 Liter(s)
Container ID: 1SC00379

Initial Pressure (psig): 0.69 Final Pressure (psig): 5.45

Container Dilution Factor: 1.31

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	6.6	2.1	ND	1.7	0.53	
141-78-6	Ethyl Acetate	ND	13	4.6	ND	3.6	1.3	
110-54-3	n-Hexane	**2.2**	6.6	2.0	**0.62**	1.9	0.56	**J**
67-66-3	Chloroform	ND	6.6	2.2	ND	1.3	0.46	
109-99-9	Tetrahydrofuran (THF)	ND	6.6	2.6	ND	2.2	0.89	
107-06-2	1,2-Dichloroethane	ND	6.6	2.1	ND	1.6	0.52	
71-55-6	1,1,1-Trichloroethane	**33**	6.6	2.2	**6.1**	1.2	0.41	
71-43-2	Benzene	ND	6.6	2.1	ND	2.1	0.66	
56-23-5	Carbon Tetrachloride	ND	6.6	2.0	ND	1.0	0.31	
110-82-7	Cyclohexane	ND	13	3.8	ND	3.8	1.1	
78-87-5	1,2-Dichloropropane	ND	6.6	2.1	ND	1.4	0.45	
75-27-4	Bromodichloromethane	ND	6.6	2.0	ND	0.98	0.29	
79-01-6	Trichloroethene	ND	6.6	1.8	ND	1.2	0.34	
123-91-1	1,4-Dioxane	**2,300**	26	8.4	**640**	7.3	2.3	**D**
80-62-6	Methyl Methacrylate	ND	13	4.1	ND	3.2	0.99	
142-82-5	n-Heptane	**11**	6.6	2.2	**2.6**	1.6	0.54	
10061-01-5	cis-1,3-Dichloropropene	ND	6.6	1.8	ND	1.4	0.40	
108-10-1	4-Methyl-2-pentanone	**4.4**	6.6	2.1	**1.1**	1.6	0.51	**J**
10061-02-6	trans-1,3-Dichloropropene	ND	6.6	2.1	ND	1.4	0.46	
79-00-5	1,1,2-Trichloroethane	ND	6.6	2.1	ND	1.2	0.38	
108-88-3	Toluene	**3.2**	6.6	2.2	**0.86**	1.7	0.59	**J**
591-78-6	2-Hexanone	ND	6.6	2.1	ND	1.6	0.51	
124-48-1	Dibromochloromethane	ND	6.6	2.1	ND	0.77	0.25	
106-93-4	1,2-Dibromoethane	ND	6.6	2.1	ND	0.85	0.27	
123-86-4	n-Butyl Acetate	ND	6.6	2.1	ND	1.4	0.44	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
D = The reported result is from a dilution.

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE Exhaust** ALS Project ID: P1800981
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1800981-001

Test Code: EPA TO-15 Date Collected: 2/26/18
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/2/18
Analyst: Anusha Bayyarapu Date Analyzed: 3/9/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.10 Liter(s)
Test Notes: 0.025 Liter(s)
Container ID: 1SC00379

Initial Pressure (psig): 0.69 Final Pressure (psig): 5.45

Container Dilution Factor: 1.31

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	ND	6.6	2.4	ND	1.4	0.50	
127-18-4	Tetrachloroethene	**16**	6.6	1.8	**2.3**	0.97	0.27	
108-90-7	Chlorobenzene	ND	6.6	2.1	ND	1.4	0.46	
100-41-4	Ethylbenzene	ND	6.6	2.1	ND	1.5	0.48	
179601-23-1	m,p-Xylenes	**4.0**	13	3.9	**0.93**	3.0	0.91	**J**
75-25-2	Bromoform	ND	6.6	2.0	ND	0.63	0.19	
100-42-5	Styrene	ND	6.6	2.0	ND	1.5	0.46	
95-47-6	o-Xylene	**2.0**	6.6	2.0	**0.47**	1.5	0.45	**J**
111-84-2	n-Nonane	ND	6.6	2.0	ND	1.2	0.37	
79-34-5	1,1,2,2-Tetrachloroethane	ND	6.6	2.0	ND	0.95	0.29	
98-82-8	Cumene	ND	6.6	2.0	ND	1.3	0.40	
80-56-8	alpha-Pinene	ND	6.6	1.8	ND	1.2	0.33	
103-65-1	n-Propylbenzene	ND	6.6	2.1	ND	1.3	0.43	
622-96-8	4-Ethyltoluene	ND	6.6	2.1	ND	1.3	0.43	
108-67-8	1,3,5-Trimethylbenzene	ND	6.6	2.1	ND	1.3	0.43	
95-63-6	1,2,4-Trimethylbenzene	ND	6.6	2.0	ND	1.3	0.40	
100-44-7	Benzyl Chloride	ND	13	1.4	ND	2.5	0.28	
541-73-1	1,3-Dichlorobenzene	ND	6.6	2.0	ND	1.1	0.33	
106-46-7	1,4-Dichlorobenzene	ND	6.6	1.8	ND	1.1	0.31	
95-50-1	1,2-Dichlorobenzene	ND	6.6	2.0	ND	1.1	0.33	
5989-27-5	d-Limonene	**2.3**	6.6	1.8	**0.40**	1.2	0.33	**J**
96-12-8	1,2-Dibromo-3-chloropropane	ND	6.6	1.3	ND	0.68	0.13	
120-82-1	1,2,4-Trichlorobenzene	ND	6.6	2.1	ND	0.88	0.28	
91-20-3	Naphthalene	ND	6.6	2.4	ND	1.3	0.45	
87-68-3	Hexachlorobutadiene	ND	6.6	1.8	ND	0.61	0.17	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE Carbon 1** ALS Project ID: P1800981
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1800981-002

Test Code: EPA TO-15 Date Collected: 2/26/18
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/2/18
Analyst: Anusha Bayyarapu Date Analyzed: 3/9/18
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.10 Liter(s)
Test Notes: 0.025 Liter(s)
Container ID: 1SS00260

Initial Pressure (psig): 0.52 Final Pressure (psig): 5.20

Container Dilution Factor: 1.31

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	**160**	6.6	1.8	**93**	3.8	1.1	
75-71-8	Dichlorodifluoromethane (CFC 12)	**4.9**	6.6	2.2	**1.0**	1.3	0.45	**J**
74-87-3	Chloromethane	ND	6.6	2.0	ND	3.2	0.95	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	6.6	2.5	ND	0.94	0.36	
75-01-4	Vinyl Chloride	ND	6.6	2.2	ND	2.6	0.87	
106-99-0	1,3-Butadiene	ND	6.6	2.9	ND	3.0	1.3	
74-83-9	Bromomethane	ND	6.6	2.5	ND	1.7	0.64	
75-00-3	Chloroethane	ND	6.6	2.2	ND	2.5	0.84	
64-17-5	Ethanol	**78**	66	10	**41**	35	5.6	
75-05-8	Acetonitrile	ND	6.6	2.4	ND	3.9	1.4	
107-02-8	Acrolein	ND	26	2.2	ND	11	0.97	
67-64-1	Acetone	**74**	66	10	**31**	28	4.2	
75-69-4	Trichlorofluoromethane (CFC 11)	**2.5**	6.6	2.2	**0.45**	1.2	0.40	**J**
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	66	5.5	ND	27	2.2	
107-13-1	Acrylonitrile	ND	6.6	2.2	ND	3.0	1.0	
75-35-4	1,1-Dichloroethene	**180**	6.6	2.2	**45**	1.7	0.56	
75-09-2	Methylene Chloride	**5.0**	6.6	2.2	**1.4**	1.9	0.64	**J**
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	6.6	2.1	ND	2.1	0.67	
76-13-1	Trichlorotrifluoroethane (CFC 113)	**5.0**	6.6	2.2	**0.65**	0.86	0.29	**J**
75-15-0	Carbon Disulfide	ND	66	2.0	ND	21	0.63	
156-60-5	trans-1,2-Dichloroethene	ND	6.6	2.5	ND	1.7	0.63	
75-34-3	1,1-Dichloroethane	ND	6.6	2.1	ND	1.6	0.52	
1634-04-4	Methyl tert-Butyl Ether	ND	6.6	2.2	ND	1.8	0.62	
108-05-4	Vinyl Acetate	ND	66	8.5	ND	19	2.4	
78-93-3	2-Butanone (MEK)	ND	66	2.8	ND	22	0.93	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE Carbon 1** ALS Project ID: P1800981
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1800981-002

Test Code: EPA TO-15 Date Collected: 2/26/18
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/2/18
Analyst: Anusha Bayyarapu Date Analyzed: 3/9/18
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.10 Liter(s)
Test Notes: 0.025 Liter(s)
Container ID: 1SS00260

Initial Pressure (psig): 0.52 Final Pressure (psig): 5.20

Container Dilution Factor: 1.31

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	6.6	2.1	ND	1.7	0.53	
141-78-6	Ethyl Acetate	ND	13	4.6	ND	3.6	1.3	
110-54-3	n-Hexane	ND	6.6	2.0	ND	1.9	0.56	
67-66-3	Chloroform	ND	6.6	2.2	ND	1.3	0.46	
109-99-9	Tetrahydrofuran (THF)	ND	6.6	2.6	ND	2.2	0.89	
107-06-2	1,2-Dichloroethane	ND	6.6	2.1	ND	1.6	0.52	
71-55-6	1,1,1-Trichloroethane	**14**	6.6	2.2	**2.5**	1.2	0.41	
71-43-2	Benzene	ND	6.6	2.1	ND	2.1	0.66	
56-23-5	Carbon Tetrachloride	ND	6.6	2.0	ND	1.0	0.31	
110-82-7	Cyclohexane	ND	13	3.8	ND	3.8	1.1	
78-87-5	1,2-Dichloropropane	ND	6.6	2.1	ND	1.4	0.45	
75-27-4	Bromodichloromethane	ND	6.6	2.0	ND	0.98	0.29	
79-01-6	Trichloroethene	ND	6.6	1.8	ND	1.2	0.34	
123-91-1	1,4-Dioxane	**1,900**	26	8.4	**520**	7.3	2.3	**D**
80-62-6	Methyl Methacrylate	ND	13	4.1	ND	3.2	0.99	
142-82-5	n-Heptane	**3.9**	6.6	2.2	**0.95**	1.6	0.54	**J**
10061-01-5	cis-1,3-Dichloropropene	ND	6.6	1.8	ND	1.4	0.40	
108-10-1	4-Methyl-2-pentanone	ND	6.6	2.1	ND	1.6	0.51	
10061-02-6	trans-1,3-Dichloropropene	ND	6.6	2.1	ND	1.4	0.46	
79-00-5	1,1,2-Trichloroethane	ND	6.6	2.1	ND	1.2	0.38	
108-88-3	Toluene	ND	6.6	2.2	ND	1.7	0.59	
591-78-6	2-Hexanone	ND	6.6	2.1	ND	1.6	0.51	
124-48-1	Dibromochloromethane	ND	6.6	2.1	ND	0.77	0.25	
106-93-4	1,2-Dibromoethane	ND	6.6	2.1	ND	0.85	0.27	
123-86-4	n-Butyl Acetate	ND	6.6	2.1	ND	1.4	0.44	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
D = The reported result is from a dilution.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE Carbon 1** ALS Project ID: P1800981
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1800981-002

Test Code: EPA TO-15 Date Collected: 2/26/18
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/2/18
Analyst: Anusha Bayyarapu Date Analyzed: 3/9/18
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.10 Liter(s)
Test Notes: 0.025 Liter(s)
Container ID: 1SS00260

Initial Pressure (psig): 0.52 Final Pressure (psig): 5.20

Container Dilution Factor: 1.31

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	ND	6.6	2.4	ND	1.4	0.50	
127-18-4	Tetrachloroethene	ND	6.6	1.8	ND	0.97	0.27	
108-90-7	Chlorobenzene	ND	6.6	2.1	ND	1.4	0.46	
100-41-4	Ethylbenzene	ND	6.6	2.1	ND	1.5	0.48	
179601-23-1	m,p-Xylenes	ND	13	3.9	ND	3.0	0.91	
75-25-2	Bromoform	ND	6.6	2.0	ND	0.63	0.19	
100-42-5	Styrene	ND	6.6	2.0	ND	1.5	0.46	
95-47-6	o-Xylene	ND	6.6	2.0	ND	1.5	0.45	
111-84-2	n-Nonane	ND	6.6	2.0	ND	1.2	0.37	
79-34-5	1,1,2,2-Tetrachloroethane	ND	6.6	2.0	ND	0.95	0.29	
98-82-8	Cumene	ND	6.6	2.0	ND	1.3	0.40	
80-56-8	alpha-Pinene	ND	6.6	1.8	ND	1.2	0.33	
103-65-1	n-Propylbenzene	ND	6.6	2.1	ND	1.3	0.43	
622-96-8	4-Ethyltoluene	ND	6.6	2.1	ND	1.3	0.43	
108-67-8	1,3,5-Trimethylbenzene	ND	6.6	2.1	ND	1.3	0.43	
95-63-6	1,2,4-Trimethylbenzene	ND	6.6	2.0	ND	1.3	0.40	
100-44-7	Benzyl Chloride	ND	13	1.4	ND	2.5	0.28	
541-73-1	1,3-Dichlorobenzene	ND	6.6	2.0	ND	1.1	0.33	
106-46-7	1,4-Dichlorobenzene	ND	6.6	1.8	ND	1.1	0.31	
95-50-1	1,2-Dichlorobenzene	ND	6.6	2.0	ND	1.1	0.33	
5989-27-5	d-Limonene	ND	6.6	1.8	ND	1.2	0.33	
96-12-8	1,2-Dibromo-3-chloropropane	ND	6.6	1.3	ND	0.68	0.13	
120-82-1	1,2,4-Trichlorobenzene	ND	6.6	2.1	ND	0.88	0.28	
91-20-3	Naphthalene	ND	6.6	2.4	ND	1.3	0.45	
87-68-3	Hexachlorobutadiene	ND	6.6	1.8	ND	0.61	0.17	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE Carbon 2** ALS Project ID: P1800981
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1800981-003

Test Code: EPA TO-15 Date Collected: 2/26/18
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/2/18
Analyst: Anusha Bayyarapu Date Analyzed: 3/9/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SC00911

Initial Pressure (psig): 0.32 Final Pressure (psig): 5.15

Container Dilution Factor: 1.32

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	**100**	1.7	0.46	**60**	0.96	0.27	
75-71-8	Dichlorodifluoromethane (CFC 12)	**4.0**	1.7	0.56	**0.81**	0.33	0.11	
74-87-3	Chloromethane	**0.52**	1.7	0.50	**0.25**	0.80	0.24	**J**
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	1.7	0.63	ND	0.24	0.090	
75-01-4	Vinyl Chloride	ND	1.7	0.56	ND	0.65	0.22	
106-99-0	1,3-Butadiene	ND	1.7	0.73	ND	0.75	0.33	
74-83-9	Bromomethane	ND	1.7	0.63	ND	0.43	0.16	
75-00-3	Chloroethane	ND	1.7	0.56	ND	0.63	0.21	
64-17-5	Ethanol	**48**	17	2.6	**26**	8.8	1.4	
75-05-8	Acetonitrile	ND	1.7	0.59	ND	0.98	0.35	
107-02-8	Acrolein	**3.8**	6.6	0.56	**1.6**	2.9	0.24	**J**
67-64-1	Acetone	**57**	17	2.5	**24**	6.9	1.1	**M1**
75-69-4	Trichlorofluoromethane (CFC 11)	**1.2**	1.7	0.56	**0.21**	0.29	0.10	**J**
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	17	1.4	ND	6.7	0.56	
107-13-1	Acrylonitrile	ND	1.7	0.56	ND	0.76	0.26	
75-35-4	1,1-Dichloroethene	**86**	1.7	0.56	**22**	0.42	0.14	
75-09-2	Methylene Chloride	**1.7**	1.7	0.56	**0.50**	0.48	0.16	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	1.7	0.53	ND	0.53	0.17	
76-13-1	Trichlorotrifluoroethane (CFC 113)	ND	1.7	0.56	ND	0.22	0.073	
75-15-0	Carbon Disulfide	**4.7**	17	0.50	**1.5**	5.3	0.16	**J, B**
156-60-5	trans-1,2-Dichloroethene	ND	1.7	0.63	ND	0.42	0.16	
75-34-3	1,1-Dichloroethane	ND	1.7	0.53	ND	0.41	0.13	
1634-04-4	Methyl tert-Butyl Ether	ND	1.7	0.56	ND	0.46	0.16	
108-05-4	Vinyl Acetate	**8.3**	17	2.1	**2.3**	4.7	0.61	**J**
78-93-3	2-Butanone (MEK)	**4.6**	17	0.69	**1.6**	5.6	0.24	**J**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
B = Analyte detected in both the sample and associated method blank.
M1 = Matrix interference due to coelution with a non-target compound; results may be biased high.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE Carbon 2** ALS Project ID: P1800981
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1800981-003

Test Code: EPA TO-15 Date Collected: 2/26/18
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/2/18
Analyst: Anusha Bayyarapu Date Analyzed: 3/9/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SC00911

Initial Pressure (psig): 0.32 Final Pressure (psig): 5.15

Container Dilution Factor: 1.32

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	1.7	0.53	ND	0.42	0.13	
141-78-6	Ethyl Acetate	**2.1**	3.3	1.2	**0.57**	0.92	0.32	**J**
110-54-3	n-Hexane	ND	1.7	0.50	ND	0.47	0.14	
67-66-3	Chloroform	ND	1.7	0.56	ND	0.34	0.11	
109-99-9	Tetrahydrofuran (THF)	ND	1.7	0.66	ND	0.56	0.22	
107-06-2	1,2-Dichloroethane	ND	1.7	0.53	ND	0.41	0.13	
71-55-6	1,1,1-Trichloroethane	ND	1.7	0.56	ND	0.30	0.10	
71-43-2	Benzene	ND	1.7	0.53	ND	0.52	0.17	
56-23-5	Carbon Tetrachloride	ND	1.7	0.50	ND	0.26	0.079	
110-82-7	Cyclohexane	ND	3.3	0.96	ND	0.96	0.28	
78-87-5	1,2-Dichloropropane	**2.1**	1.7	0.53	**0.45**	0.36	0.11	
75-27-4	Bromodichloromethane	ND	1.7	0.50	ND	0.25	0.074	
79-01-6	Trichloroethene	ND	1.7	0.46	ND	0.31	0.086	
123-91-1	1,4-Dioxane	**23**	1.7	0.53	**6.4**	0.46	0.15	
80-62-6	Methyl Methacrylate	ND	3.3	1.0	ND	0.81	0.25	
142-82-5	n-Heptane	**3.3**	1.7	0.56	**0.81**	0.40	0.14	
10061-01-5	cis-1,3-Dichloropropene	ND	1.7	0.46	ND	0.36	0.10	
108-10-1	4-Methyl-2-pentanone	**1.6**	1.7	0.53	**0.39**	0.40	0.13	**J**
10061-02-6	trans-1,3-Dichloropropene	ND	1.7	0.53	ND	0.36	0.12	
79-00-5	1,1,2-Trichloroethane	ND	1.7	0.53	ND	0.30	0.097	
108-88-3	Toluene	**0.96**	1.7	0.56	**0.26**	0.44	0.15	**J**
591-78-6	2-Hexanone	**0.84**	1.7	0.53	**0.21**	0.40	0.13	**J**
124-48-1	Dibromochloromethane	ND	1.7	0.53	ND	0.19	0.062	
106-93-4	1,2-Dibromoethane	ND	1.7	0.53	ND	0.21	0.069	
123-86-4	n-Butyl Acetate	ND	1.7	0.53	ND	0.35	0.11	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE Carbon 2** ALS Project ID: P1800981
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P1800981-003

Test Code: EPA TO-15 Date Collected: 2/26/18
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/2/18
Analyst: Anusha Bayyarapu Date Analyzed: 3/9/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SC00911

Initial Pressure (psig): 0.32 Final Pressure (psig): 5.15

Container Dilution Factor: 1.32

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	**0.80**	1.7	0.59	**0.17**	0.35	0.13	**J**
127-18-4	Tetrachloroethene	ND	1.7	0.46	ND	0.24	0.068	
108-90-7	Chlorobenzene	ND	1.7	0.53	ND	0.36	0.11	
100-41-4	Ethylbenzene	ND	1.7	0.53	ND	0.38	0.12	
179601-23-1	m,p-Xylenes	ND	3.3	0.99	ND	0.76	0.23	
75-25-2	Bromoform	ND	1.7	0.50	ND	0.16	0.048	
100-42-5	Styrene	ND	1.7	0.50	ND	0.39	0.12	
95-47-6	o-Xylene	ND	1.7	0.50	ND	0.38	0.11	
111-84-2	n-Nonane	**0.79**	1.7	0.50	**0.15**	0.31	0.094	**J**
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.7	0.50	ND	0.24	0.072	
98-82-8	Cumene	ND	1.7	0.50	ND	0.34	0.10	
80-56-8	alpha-Pinene	ND	1.7	0.46	ND	0.30	0.083	
103-65-1	n-Propylbenzene	ND	1.7	0.53	ND	0.34	0.11	
622-96-8	4-Ethyltoluene	ND	1.7	0.53	ND	0.34	0.11	
108-67-8	1,3,5-Trimethylbenzene	ND	1.7	0.53	ND	0.34	0.11	
95-63-6	1,2,4-Trimethylbenzene	ND	1.7	0.50	ND	0.34	0.10	
100-44-7	Benzyl Chloride	ND	3.3	0.36	ND	0.64	0.070	
541-73-1	1,3-Dichlorobenzene	ND	1.7	0.50	ND	0.27	0.082	
106-46-7	1,4-Dichlorobenzene	ND	1.7	0.46	ND	0.27	0.077	
95-50-1	1,2-Dichlorobenzene	ND	1.7	0.50	ND	0.27	0.082	
5989-27-5	d-Limonene	**0.76**	1.7	0.46	**0.14**	0.30	0.083	**J**
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.7	0.33	ND	0.17	0.034	
120-82-1	1,2,4-Trichlorobenzene	ND	1.7	0.53	ND	0.22	0.071	
91-20-3	Naphthalene	ND	1.7	0.59	ND	0.31	0.11	
87-68-3	Hexachlorobutadiene	ND	1.7	0.46	ND	0.15	0.043	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **Method Blank** ALS Project ID: P1800981
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P180309-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Anusha Bayyarapu Date Analyzed: 3/9/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	ND	0.50	0.14	ND	0.29	0.081	
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	0.50	0.17	ND	0.10	0.034	
74-87-3	Chloromethane	ND	0.50	0.15	ND	0.24	0.073	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.50	0.19	ND	0.072	0.027	
75-01-4	Vinyl Chloride	ND	0.50	0.17	ND	0.20	0.067	
106-99-0	1,3-Butadiene	ND	0.50	0.22	ND	0.23	0.099	
74-83-9	Bromomethane	ND	0.50	0.19	ND	0.13	0.049	
75-00-3	Chloroethane	ND	0.50	0.17	ND	0.19	0.064	
64-17-5	Ethanol	ND	5.0	0.80	ND	2.7	0.42	
75-05-8	Acetonitrile	ND	0.50	0.18	ND	0.30	0.11	
107-02-8	Acrolein	ND	2.0	0.17	ND	0.87	0.074	
67-64-1	Acetone	ND	5.0	0.77	ND	2.1	0.32	
75-69-4	Trichlorofluoromethane (CFC 11)	ND	0.50	0.17	ND	0.089	0.030	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	5.0	0.42	ND	2.0	0.17	
107-13-1	Acrylonitrile	ND	0.50	0.17	ND	0.23	0.078	
75-35-4	1,1-Dichloroethene	ND	0.50	0.17	ND	0.13	0.043	
75-09-2	Methylene Chloride	ND	0.50	0.17	ND	0.14	0.049	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.50	0.16	ND	0.16	0.051	
76-13-1	Trichlorotrifluoroethane (CFC 113)	ND	0.50	0.17	ND	0.065	0.022	
75-15-0	Carbon Disulfide	**0.21**	5.0	0.15	**0.068**	1.6	0.048	**J**
156-60-5	trans-1,2-Dichloroethene	ND	0.50	0.19	ND	0.13	0.048	
75-34-3	1,1-Dichloroethane	ND	0.50	0.16	ND	0.12	0.040	
1634-04-4	Methyl tert-Butyl Ether	ND	0.50	0.17	ND	0.14	0.047	
108-05-4	Vinyl Acetate	ND	5.0	0.65	ND	1.4	0.18	
78-93-3	2-Butanone (MEK)	ND	5.0	0.21	ND	1.7	0.071	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **Environmental Management Services, Inc.**

Client Sample ID: **Method Blank** ALS Project ID: P1800981

Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P180309-MB

Test Code: EPA TO-15 Date Collected: NA

Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA

Analyst: Anusha Bayyarapu Date Analyzed: 3/9/18

Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)

Test Notes:

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	0.50	0.16	ND	0.13	0.040	
141-78-6	Ethyl Acetate	ND	1.0	0.35	ND	0.28	0.097	
110-54-3	n-Hexane	ND	0.50	0.15	ND	0.14	0.043	
67-66-3	Chloroform	ND	0.50	0.17	ND	0.10	0.035	
109-99-9	Tetrahydrofuran (THF)	ND	0.50	0.20	ND	0.17	0.068	
107-06-2	1,2-Dichloroethane	ND	0.50	0.16	ND	0.12	0.040	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.17	ND	0.092	0.031	
71-43-2	Benzene	ND	0.50	0.16	ND	0.16	0.050	
56-23-5	Carbon Tetrachloride	ND	0.50	0.15	ND	0.080	0.024	
110-82-7	Cyclohexane	ND	1.0	0.29	ND	0.29	0.084	
78-87-5	1,2-Dichloropropane	ND	0.50	0.16	ND	0.11	0.035	
75-27-4	Bromodichloromethane	ND	0.50	0.15	ND	0.075	0.022	
79-01-6	Trichloroethene	ND	0.50	0.14	ND	0.093	0.026	
123-91-1	1,4-Dioxane	ND	0.50	0.16	ND	0.14	0.044	
80-62-6	Methyl Methacrylate	ND	1.0	0.31	ND	0.24	0.076	
142-82-5	n-Heptane	ND	0.50	0.17	ND	0.12	0.041	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.14	ND	0.11	0.031	
108-10-1	4-Methyl-2-pentanone	ND	0.50	0.16	ND	0.12	0.039	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.16	ND	0.11	0.035	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.16	ND	0.092	0.029	
108-88-3	Toluene	ND	0.50	0.17	ND	0.13	0.045	
591-78-6	2-Hexanone	ND	0.50	0.16	ND	0.12	0.039	
124-48-1	Dibromochloromethane	ND	0.50	0.16	ND	0.059	0.019	
106-93-4	1,2-Dibromoethane	ND	0.50	0.16	ND	0.065	0.021	
123-86-4	n-Butyl Acetate	ND	0.50	0.16	ND	0.11	0.034	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Client: **Environmental Management Services, Inc.**

Client Sample ID: **Method Blank** ALS Project ID: P1800981

Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P180309-MB

Test Code: EPA TO-15 Date Collected: NA

Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA

Analyst: Anusha Bayyarapu Date Analyzed: 3/9/18

Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)

Test Notes:

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	ND	0.50	0.18	ND	0.11	0.039	
127-18-4	Tetrachloroethene	ND	0.50	0.14	ND	0.074	0.021	
108-90-7	Chlorobenzene	ND	0.50	0.16	ND	0.11	0.035	
100-41-4	Ethylbenzene	ND	0.50	0.16	ND	0.12	0.037	
179601-23-1	m,p-Xylenes	ND	1.0	0.30	ND	0.23	0.069	
75-25-2	Bromoform	ND	0.50	0.15	ND	0.048	0.015	
100-42-5	Styrene	ND	0.50	0.15	ND	0.12	0.035	
95-47-6	o-Xylene	ND	0.50	0.15	ND	0.12	0.035	
111-84-2	n-Nonane	ND	0.50	0.15	ND	0.095	0.029	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.15	ND	0.073	0.022	
98-82-8	Cumene	ND	0.50	0.15	ND	0.10	0.031	
80-56-8	alpha-Pinene	ND	0.50	0.14	ND	0.090	0.025	
103-65-1	n-Propylbenzene	ND	0.50	0.16	ND	0.10	0.033	
622-96-8	4-Ethyltoluene	ND	0.50	0.16	ND	0.10	0.033	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.16	ND	0.10	0.033	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.15	ND	0.10	0.031	
100-44-7	Benzyl Chloride	ND	1.0	0.11	ND	0.19	0.021	
541-73-1	1,3-Dichlorobenzene	ND	0.50	0.15	ND	0.083	0.025	
106-46-7	1,4-Dichlorobenzene	ND	0.50	0.14	ND	0.083	0.023	
95-50-1	1,2-Dichlorobenzene	ND	0.50	0.15	ND	0.083	0.025	
5989-27-5	d-Limonene	ND	0.50	0.14	ND	0.090	0.025	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.50	0.099	ND	0.052	0.010	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.16	ND	0.067	0.022	
91-20-3	Naphthalene	ND	0.50	0.18	ND	0.095	0.034	
87-68-3	Hexachlorobutadiene	ND	0.50	0.14	ND	0.047	0.013	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

SURROGATE SPIKE RECOVERY RESULTS

Client: **Environmental Management Services, Inc.**
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Project ID: P1800981

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date(s) Collected: 2/26/18
Analyst: Anusha Bayyarapu Date(s) Received: 3/2/18
Sample Type: 1.0 L Summa Canister(s) / 1.0 L Silonite Summa Canister(s) Date(s) Analyzed: 3/9/18
Test Notes:

Client Sample ID	ALS Sample ID	1,2-Dichloroethane-d4 Percent Recovered	Toluene-d8 Percent Recovered	Bromofluorobenzene Percent Recovered	Acceptance Limits	Data Qualifier
Method Blank	P180309-MB	**107**	**103**	**95**	70-130	
Lab Control Sample	P180309-LCS	**100**	**100**	**97**	70-130	
SVE Exhaust	P1800981-001	**104**	**101**	**93**	70-130	
SVE Carbon 1	P1800981-002	**103**	**102**	**95**	70-130	
SVE Carbon 2	P1800981-003	**106**	**102**	**94**	70-130	

Surrogate percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly from the on-column percent recovery.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Environmental Management Services, Inc.**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1800981
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P180309-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Anusha Bayyarapu Date Analyzed: 3/9/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	ALS Acceptance Limits	Data Qualifier
115-07-1	Propene	210	**177**	**84**	54-133	
75-71-8	Dichlorodifluoromethane (CFC 12)	213	**196**	**92**	64-115	
74-87-3	Chloromethane	210	**185**	**88**	47-140	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	211	**186**	**88**	60-112	
75-01-4	Vinyl Chloride	211	**200**	**95**	63-127	
106-99-0	1,3-Butadiene	210	**201**	**96**	57-149	
74-83-9	Bromomethane	210	**190**	**90**	63-132	
75-00-3	Chloroethane	210	**184**	**88**	68-129	
64-17-5	Ethanol	1,040	**926**	**89**	62-131	
75-05-8	Acetonitrile	210	**186**	**89**	56-136	
107-02-8	Acrolein	209	**190**	**91**	60-132	
67-64-1	Acetone	1,050	**938**	**89**	63-124	
75-69-4	Trichlorofluoromethane (CFC 11)	208	**183**	**88**	65-113	
67-63-0	2-Propanol (Isopropyl Alcohol)	422	**386**	**91**	62-135	
107-13-1	Acrylonitrile	212	**202**	**95**	68-138	
75-35-4	1,1-Dichloroethene	213	**190**	**89**	72-118	
75-09-2	Methylene Chloride	213	**184**	**86**	67-116	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	212	**198**	**93**	61-143	
76-13-1	Trichlorotrifluoroethane (CFC 113)	214	**188**	**88**	68-113	
75-15-0	Carbon Disulfide	214	**203**	**95**	68-120	
156-60-5	trans-1,2-Dichloroethene	214	**211**	**99**	71-125	
75-34-3	1,1-Dichloroethane	212	**189**	**89**	68-118	
1634-04-4	Methyl tert-Butyl Ether	213	**199**	**93**	60-123	
108-05-4	Vinyl Acetate	1,060	**1130**	**107**	73-135	
78-93-3	2-Butanone (MEK)	212	**199**	**94**	70-129	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

Client: **Environmental Management Services, Inc.**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1800981
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P180309-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Anusha Bayyarapu Date Analyzed: 3/9/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	ALS Acceptance Limits	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	212	**199**	**94**	69-121	
141-78-6	Ethyl Acetate	426	**419**	**98**	66-140	
110-54-3	n-Hexane	213	**211**	**99**	61-124	
67-66-3	Chloroform	212	**195**	**92**	69-113	
109-99-9	Tetrahydrofuran (THF)	212	**181**	**85**	66-121	
107-06-2	1,2-Dichloroethane	212	**195**	**92**	62-120	
71-55-6	1,1,1-Trichloroethane	212	**201**	**95**	65-116	
71-43-2	Benzene	213	**196**	**92**	66-111	
56-23-5	Carbon Tetrachloride	214	**208**	**97**	64-122	
110-82-7	Cyclohexane	425	**400**	**94**	69-115	
78-87-5	1,2-Dichloropropane	212	**195**	**92**	69-121	
75-27-4	Bromodichloromethane	214	**215**	**100**	69-123	
79-01-6	Trichloroethene	212	**193**	**91**	69-112	
123-91-1	1,4-Dioxane	213	**200**	**94**	74-123	
80-62-6	Methyl Methacrylate	424	**417**	**98**	75-125	
142-82-5	n-Heptane	213	**195**	**92**	68-118	
10061-01-5	cis-1,3-Dichloropropene	208	**218**	**105**	74-129	
108-10-1	4-Methyl-2-pentanone	213	**206**	**97**	66-138	
10061-02-6	trans-1,3-Dichloropropene	213	**229**	**108**	75-130	
79-00-5	1,1,2-Trichloroethane	212	**204**	**96**	73-117	
108-88-3	Toluene	211	**191**	**91**	66-114	
591-78-6	2-Hexanone	211	**190**	**90**	58-146	
124-48-1	Dibromochloromethane	212	**215**	**101**	67-130	
106-93-4	1,2-Dibromoethane	211	**209**	**99**	70-127	
123-86-4	n-Butyl Acetate	215	**202**	**94**	62-140	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Environmental Management Services, Inc.**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1800981
Client Project ID: **SVE Performance Monitoring / KUHO-18-010** ALS Sample ID: P180309-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Anusha Bayyarapu Date Analyzed: 3/9/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	ALS Acceptance Limits	Data Qualifier
111-65-9	n-Octane	212	**194**	**92**	65-121	
127-18-4	Tetrachloroethene	212	**192**	**91**	62-119	
108-90-7	Chlorobenzene	212	**196**	**92**	66-115	
100-41-4	Ethylbenzene	212	**199**	**94**	69-117	
179601-23-1	m,p-Xylenes	424	**404**	**95**	67-117	
75-25-2	Bromoform	212	**223**	**105**	67-135	
100-42-5	Styrene	211	**212**	**100**	70-128	
95-47-6	o-Xylene	211	**203**	**96**	67-118	
111-84-2	n-Nonane	212	**213**	**100**	61-127	
79-34-5	1,1,2,2-Tetrachloroethane	212	**212**	**100**	70-125	
98-82-8	Cumene	212	**201**	**95**	68-116	
80-56-8	alpha-Pinene	213	**209**	**98**	69-122	
103-65-1	n-Propylbenzene	214	**205**	**96**	70-118	
622-96-8	4-Ethyltoluene	211	**212**	**100**	69-124	
108-67-8	1,3,5-Trimethylbenzene	212	**201**	**95**	65-117	
95-63-6	1,2,4-Trimethylbenzene	212	**204**	**96**	67-124	
100-44-7	Benzyl Chloride	212	**262**	**124**	75-142	
541-73-1	1,3-Dichlorobenzene	212	**205**	**97**	70-124	
106-46-7	1,4-Dichlorobenzene	214	**203**	**95**	63-124	
95-50-1	1,2-Dichlorobenzene	214	**211**	**99**	66-125	
5989-27-5	d-Limonene	213	**220**	**103**	64-135	
96-12-8	1,2-Dibromo-3-chloropropane	210	**229**	**109**	73-136	
120-82-1	1,2,4-Trichlorobenzene	218	**230**	**106**	70-141	
91-20-3	Naphthalene	209	**261**	**125**	71-146	
87-68-3	Hexachlorobutadiene	212	**194**	**92**	63-126	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
F: +1 805 526 7270
www.alsglobal.com

LABORATORY REPORT

June 14, 2018

Jeremy Van Slyke
Environmental Management Services, Inc.
P.O. Box 15369
Hattiesburg, MS 39404

RE: SVE Performance Monitoring / KUH0-18-010

Dear Jeremy:

Enclosed are the results of the samples submitted to our laboratory on May 31, 2018. For your reference, these analyses have been assigned our service request number P1802773.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

ALS | Environmental

By Sue Anderson at 8:21 am, Jun 14, 2018

Sue Anderson
Project Manager

2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
F: +1 805 526 7270
www.alsglobal.com

Client: Environmental Management Services, Inc. Service Request No: P1802773
Project: SVE Performance Monitoring / KUH0-18-010

CASE NARRATIVE

The samples were received intact under chain of custody on May 31, 2018 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Volatile Organic Compound Analysis

The samples were analyzed for volatile organic compounds in accordance with EPA Method TO-15 from the Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition (EPA/625/R-96/010b), January, 1999. This procedure is described in laboratory SOP VOA-TO15. The analytical system was comprised of a gas chromatograph / mass spectrometer (GC/MS) interfaced to a whole-air preconcentrator. This method is included on the laboratory's NELAP and DoD-ELAP scope of accreditation. Any analytes flagged with an X are not included on the NELAP or DoD-ELAP accreditation.

The containers were cleaned, prior to sampling, down to the method reporting limit (MRL) reported for this project. For projects requiring DoD QSM 5.1 compliance canisters were cleaned to <1/2 the MRL. Please note, projects which require reporting below the MRL could have results between the MRL and method detection limit (MDL) that are biased high.

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Simi Valley, CA 93065
T: +1 805 526 7161
F: +1 805 526 7270
www.alsglobal.com

ALS Environmental – Simi Valley

CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
Arizona DHS	http://www.azdhs.gov/preparedness/state-laboratory/lab-licensure-certification/index.php#laboratory-licensure-home	AZ0694
Florida DOH (NELAP)	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E871020
Louisiana DEQ (NELAP)	http://www.deq.louisiana.gov/portal/DIVISIONS/PublicParticipationandPermitSupport/LouisianaLaboratoryAccreditationProgram.aspx	05071
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/labcert.htm	2016036
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	1347317
New Jersey DEP (NELAP)	http://www.nj.gov/dep/oqa/	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-005
Pennsylvania DEP	http://www.depweb.state.pa.us/labs	68-03307 (Registration)
PJLA (DoD ELAP)	http://www.pjlabs.com/search-accredited-labs	65818 (Testing)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704413-17-8
Utah DOH (NELAP)	http://health.utah.gov/lab/environmental-lab-certification/	CA016272017-8
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

ALS ENVIRONMENTAL

DETAIL SUMMARY REPORT

Client: Environmental Management Services, Inc. Service Request: P1802773

Project ID: SVE Performance Monitoring / KUH0-18-010

Date Received: 5/31/2018

Time Received: 10:30

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	Container ID	Pi1 (psig)	Pf1 (psig)	TO-15 - VOC Cans
SVE Exhaust	P1802773-001	Air	5/30/2018	07:57	1SS00055	0.24	5.22	X
SVE Carbon 1	P1802773-002	Air	5/30/2018	08:04	1SC00710	0.06	5.50	X
SVE Carbon 2	P1802773-003	Air	5/30/2018	08:08	1SC00346	-0.55	5.42	X

Air - Chain of Custody Record & Analytical Service Request

2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone (805) 526-7161
Fax (805) 526-7270

Requested Turnaround Time in Business Days (Surcharges) please circle
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10-Day-Standard

ALS Project No. P180 2773

Company Name & Address (Reporting Information)
Environmental Management Services, Inc.
P.O Box 15369
Hattiesburg, MS 39404

Project Name: SVE Performance Monitoring

Project Number: KUHO-18-010

Project Manager: Stephanie Kilgore

P.O. # / Billing Information: KUHO-18-010 / same as reporting

Phone: 601 544 3674 | Fax: 601 544 0504

Email Address for Result Reporting: SKilgore@env-mgt.com

Sampler (Print & Sign): Stephanie Kilgore Stephanie Kilgore

ALS Contact:

Analysis Method: TO-15

Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Canister ID (Bar code # - AC, SC, etc.)	Flow Controller ID (Bar code # - FC #)	Canister Start Pressure "Hg	Canister End Pressure "Hg/psig	Sample Volume	Analysis Method		Comments e.g. Actual Preservative or specific instructions
SVE Exhaust	1	5-30-18	7:57	1550D055					X		
SVE Carbon 1	2	5-30-18	8:04	ISC 00710					X		
SVE Carbon 2	3	5-30-18	8:08	ISC 00346					X		

Report Tier Levels - please select

Tier I - Results (Default in not specified) ____
Tier II (Results + QC Summaries X
Tier III (Results + QC & Calibration Summaries) ____
Tier IV (Date Validation Package) 10% Surcharge ____

EDD required YES / No
Type: ____ Units: ____

Chain of Custody Seal: (Circle)
INTACT BROKEN ABSENT

Project Requirements (MRLs, QAPP)

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Stephanie Kilgore	5-30-18	17:15	FedEx		
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
				5-31-18	1030

Cooler / Blank Temperature ____ °C

ALS Environmental
Sample Acceptance Check Form

Client: Environmental Management Services, Inc. Work order: P1802773

Project: SVE Performance Monitoring / KUH0-18-010

Sample(s) received on: 5/31/18 Date opened: 5/31/18 by: ADAVID

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Did **sample containers** arrive in good condition?	☒	☐	☐
3	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
4	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
5	Was **sample volume** received adequate for analysis?	☒	☐	☐
6	Are samples within specified holding times?	☒	☐	☐
7	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☐	☐	☒
8	Were **custody seals** on outside of cooler/Box/Container?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
9	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
10	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
11	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1802773-001.01	1.0 L Source Silonite Canister					
P1802773-002.01	1.0 L Source Can					
P1802773-003.01	1.0 L Source Can					

Explain any discrepancies: (include lab sample ID numbers): _____

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE Exhaust** ALS Project ID: P1802773
Client Project ID: **SVE Performance Monitoring / KUH0-18-010** ALS Sample ID: P1802773-001

Test Code: EPA TO-15 Date Collected: 5/30/18
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 5/31/18
Analyst: Simon Cao Date Analyzed: 6/4/18
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.050 Liter(s)
Test Notes:
Container ID: 1SS00055

Initial Pressure (psig): 0.24 Final Pressure (psig): 5.22

Container Dilution Factor: 1.33

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	**86**	14	3.5	**50**	8.0	2.0	
75-71-8	Dichlorodifluoromethane (CFC 12)	**4.4**	14	2.3	**0.90**	2.8	0.47	**J**
74-87-3	Chloromethane	ND	13	2.3	ND	6.4	1.1	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	14	2.2	ND	1.9	0.32	
75-01-4	Vinyl Chloride	ND	14	1.5	ND	5.4	0.59	
106-99-0	1,3-Butadiene	ND	14	2.3	ND	6.4	1.1	
74-83-9	Bromomethane	ND	13	2.0	ND	3.4	0.51	
75-00-3	Chloroethane	ND	14	1.8	ND	5.1	0.67	
64-17-5	Ethanol	**13**	140	9.8	**6.7**	75	5.2	**J**
75-05-8	Acetonitrile	ND	14	3.5	ND	8.4	2.1	
107-02-8	Acrolein	ND	56	4.0	ND	24	1.7	
67-64-1	Acetone	ND	140	32	ND	59	13	
75-69-4	Trichlorofluoromethane (CFC 11)	ND	14	2.2	ND	2.5	0.38	
67-63-0	2-Propanol (Isopropyl Alcohol)	**9.5**	140	5.9	**3.9**	57	2.4	**J**
107-13-1	Acrylonitrile	ND	14	2.9	ND	6.5	1.3	
75-35-4	1,1-Dichloroethene	**110**	14	2.0	**29**	3.6	0.50	
75-09-2	Methylene Chloride	**460**	14	4.0	**130**	4.1	1.1	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	14	1.9	ND	4.5	0.61	
76-13-1	Trichlorotrifluoroethane (CFC 113)	**5.2**	14	2.0	**0.68**	1.8	0.26	**J**
75-15-0	Carbon Disulfide	ND	140	4.3	ND	45	1.4	
156-60-5	trans-1,2-Dichloroethene	ND	14	2.0	ND	3.6	0.50	
75-34-3	1,1-Dichloroethane	**3.0**	14	2.1	**0.73**	3.4	0.51	**J**
1634-04-4	Methyl tert-Butyl Ether	ND	14	1.7	ND	4.0	0.47	
108-05-4	Vinyl Acetate	ND	140	32	ND	40	9.1	
78-93-3	2-Butanone (MEK)	ND	140	2.9	ND	48	0.99	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE Exhaust** ALS Project ID: P1802773
Client Project ID: **SVE Performance Monitoring / KUH0-18-010** ALS Sample ID: P1802773-001

Test Code: EPA TO-15 Date Collected: 5/30/18
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 5/31/18
Analyst: Simon Cao Date Analyzed: 6/4/18
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.050 Liter(s)
Test Notes:
Container ID: 1SS00055

Initial Pressure (psig): 0.24 Final Pressure (psig): 5.22

Container Dilution Factor: 1.33

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	14	2.0	ND	3.6	0.50	
141-78-6	Ethyl Acetate	ND	29	7.4	ND	8.1	2.1	
110-54-3	n-Hexane	**13**	14	2.9	**3.7**	4.0	0.83	**J**
67-66-3	Chloroform	**3.1**	14	1.9	**0.64**	2.9	0.39	**J**
109-99-9	Tetrahydrofuran (THF)	ND	14	1.8	ND	4.8	0.60	
107-06-2	1,2-Dichloroethane	ND	14	1.6	ND	3.5	0.39	
71-55-6	1,1,1-Trichloroethane	**36**	14	1.8	**6.6**	2.6	0.32	
71-43-2	Benzene	ND	14	2.0	ND	4.4	0.64	
56-23-5	Carbon Tetrachloride	ND	14	2.0	ND	2.2	0.31	
110-82-7	Cyclohexane	ND	29	4.0	ND	8.5	1.2	
78-87-5	1,2-Dichloropropane	**2.8**	14	1.8	**0.62**	3.1	0.38	**J**
75-27-4	Bromodichloromethane	ND	14	2.0	ND	2.1	0.31	
79-01-6	Trichloroethene	ND	14	1.9	ND	2.6	0.36	
123-91-1	1,4-Dioxane	**2,400**	14	1.7	**670**	3.9	0.47	
80-62-6	Methyl Methacrylate	ND	29	5.1	ND	7.1	1.2	
142-82-5	n-Heptane	**17**	14	2.3	**4.2**	3.4	0.55	
10061-01-5	cis-1,3-Dichloropropene	ND	15	2.2	ND	3.3	0.49	
108-10-1	4-Methyl-2-pentanone	**6.1**	14	1.9	**1.5**	3.4	0.47	**J**
10061-02-6	trans-1,3-Dichloropropene	ND	14	2.9	ND	3.1	0.64	
79-00-5	1,1,2-Trichloroethane	ND	14	1.4	ND	2.6	0.26	
108-88-3	Toluene	**12**	14	1.7	**3.1**	3.7	0.46	**J**
591-78-6	2-Hexanone	ND	14	1.8	ND	3.4	0.43	
124-48-1	Dibromochloromethane	ND	14	1.9	ND	1.7	0.22	
106-93-4	1,2-Dibromoethane	ND	14	1.6	ND	1.8	0.21	
123-86-4	n-Butyl Acetate	ND	14	1.9	ND	3.0	0.41	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE Exhaust** ALS Project ID: P1802773
Client Project ID: **SVE Performance Monitoring / KUH0-18-010** ALS Sample ID: P1802773-001

Test Code: EPA TO-15 Date Collected: 5/30/18
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 5/31/18
Analyst: Simon Cao Date Analyzed: 6/4/18
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.050 Liter(s)
Test Notes:
Container ID: 1SS00055

Initial Pressure (psig): 0.24 Final Pressure (psig): 5.22

Container Dilution Factor: 1.33

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	ND	14	3.2	ND	3.0	0.68	
127-18-4	Tetrachloroethene	**19**	14	1.8	**2.8**	2.1	0.27	
108-90-7	Chlorobenzene	ND	14	1.9	ND	3.1	0.41	
100-41-4	Ethylbenzene	**2.6**	14	2.0	**0.59**	3.2	0.46	**J**
179601-23-1	m,p-Xylenes	**9.6**	29	3.7	**2.2**	6.7	0.86	**J**
75-25-2	Bromoform	ND	14	2.9	ND	1.4	0.28	
100-42-5	Styrene	ND	14	2.3	ND	3.3	0.54	
95-47-6	o-Xylene	**5.7**	14	2.0	**1.3**	3.2	0.47	**J**
111-84-2	n-Nonane	ND	14	2.4	ND	2.7	0.45	
79-34-5	1,1,2,2-Tetrachloroethane	ND	14	2.0	ND	2.1	0.29	
98-82-8	Cumene	ND	14	2.0	ND	2.9	0.42	
80-56-8	alpha-Pinene	ND	14	2.2	ND	2.5	0.39	
103-65-1	n-Propylbenzene	ND	14	2.0	ND	2.9	0.42	
622-96-8	4-Ethyltoluene	ND	14	2.3	ND	2.8	0.46	
108-67-8	1,3,5-Trimethylbenzene	ND	14	2.0	ND	2.8	0.42	
95-63-6	1,2,4-Trimethylbenzene	**2.8**	14	2.0	**0.57**	2.9	0.40	**J**
100-44-7	Benzyl Chloride	ND	29	3.2	ND	5.7	0.62	
541-73-1	1,3-Dichlorobenzene	ND	14	2.1	ND	2.4	0.35	
106-46-7	1,4-Dichlorobenzene	ND	14	2.2	ND	2.3	0.36	
95-50-1	1,2-Dichlorobenzene	ND	14	2.1	ND	2.4	0.35	
5989-27-5	d-Limonene	ND	13	2.9	ND	2.4	0.53	
96-12-8	1,2-Dibromo-3-chloropropane	ND	14	2.7	ND	1.5	0.28	
120-82-1	1,2,4-Trichlorobenzene	ND	15	3.5	ND	2.0	0.47	
91-20-3	Naphthalene	ND	14	3.5	ND	2.7	0.66	
87-68-3	Hexachlorobutadiene	ND	14	2.9	ND	1.3	0.27	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE Carbon 1** ALS Project ID: P1802773
Client Project ID: **SVE Performance Monitoring / KUH0-18-010** ALS Sample ID: P1802773-002

Test Code: EPA TO-15 Date Collected: 5/30/18
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 5/31/18
Analyst: Simon Cao Date Analyzed: 6/4/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.10 Liter(s)
Test Notes:
Container ID: 1SC00710

Initial Pressure (psig): 0.06 Final Pressure (psig): 5.50

Container Dilution Factor: 1.37

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	**62**	7.1	1.8	**36**	4.1	1.0	
75-71-8	Dichlorodifluoromethane (CFC 12)	**3.9**	7.1	1.2	**0.78**	1.4	0.24	**J**
74-87-3	Chloromethane	**1.2**	6.9	1.2	**0.60**	3.3	0.57	**J**
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	7.0	1.2	ND	1.0	0.16	
75-01-4	Vinyl Chloride	ND	7.1	0.78	ND	2.8	0.31	
106-99-0	1,3-Butadiene	ND	7.3	1.2	ND	3.3	0.55	
74-83-9	Bromomethane	ND	6.9	1.0	ND	1.8	0.26	
75-00-3	Chloroethane	ND	7.0	0.90	ND	2.6	0.34	
64-17-5	Ethanol	**150**	73	5.1	**77**	39	2.7	
75-05-8	Acetonitrile	ND	7.3	1.8	ND	4.3	1.1	
107-02-8	Acrolein	**2.1**	29	2.1	**0.93**	13	0.90	**J**
67-64-1	Acetone	**200**	73	16	**83**	31	6.9	
75-69-4	Trichlorofluoromethane (CFC 11)	**2.1**	7.3	1.1	**0.37**	1.3	0.20	**J**
67-63-0	2-Propanol (Isopropyl Alcohol)	**5.5**	73	3.0	**2.3**	30	1.2	**J**
107-13-1	Acrylonitrile	ND	7.3	1.5	ND	3.3	0.69	
75-35-4	1,1-Dichloroethene	**85**	7.3	1.0	**22**	1.8	0.26	
75-09-2	Methylene Chloride	**1,200**	7.3	2.1	**360**	2.1	0.59	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	7.3	0.99	ND	2.3	0.32	
76-13-1	Trichlorotrifluoroethane (CFC 113)	ND	7.3	1.0	ND	0.95	0.14	
75-15-0	Carbon Disulfide	**9.3**	73	2.2	**3.0**	23	0.70	**J**
156-60-5	trans-1,2-Dichloroethene	ND	7.4	1.0	ND	1.9	0.26	
75-34-3	1,1-Dichloroethane	ND	7.0	1.1	ND	1.7	0.26	
1634-04-4	Methyl tert-Butyl Ether	ND	7.4	0.86	ND	2.1	0.24	
108-05-4	Vinyl Acetate	ND	73	16	ND	21	4.7	
78-93-3	2-Butanone (MEK)	**5.4**	73	1.5	**1.8**	25	0.51	**J**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **Environmental Management Services, Inc.**

Client Sample ID: **SVE Carbon 1** ALS Project ID: P1802773

Client Project ID: **SVE Performance Monitoring / KUH0-18-010** ALS Sample ID: P1802773-002

Test Code: EPA TO-15 Date Collected: 5/30/18

Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 5/31/18

Analyst: Simon Cao Date Analyzed: 6/4/18

Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.10 Liter(s)

Test Notes:

Container ID: 1SC00710

Initial Pressure (psig): 0.06 Final Pressure (psig): 5.50

Container Dilution Factor: 1.37

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	7.3	1.0	ND	1.8	0.26	
141-78-6	Ethyl Acetate	**24**	15	3.8	**6.8**	4.2	1.1	
110-54-3	n-Hexane	ND	7.3	1.5	ND	2.1	0.43	
67-66-3	Chloroform	ND	7.3	0.97	ND	1.5	0.20	
109-99-9	Tetrahydrofuran (THF)	ND	7.3	0.92	ND	2.5	0.31	
107-06-2	1,2-Dichloroethane	ND	7.3	0.81	ND	1.8	0.20	
71-55-6	1,1,1-Trichloroethane	ND	7.4	0.90	ND	1.4	0.17	
71-43-2	Benzene	**3.3**	7.3	1.1	**1.0**	2.3	0.33	**J**
56-23-5	Carbon Tetrachloride	ND	7.3	1.0	ND	1.2	0.16	
110-82-7	Cyclohexane	ND	15	2.1	ND	4.4	0.60	
78-87-5	1,2-Dichloropropane	ND	7.3	0.90	ND	1.6	0.20	
75-27-4	Bromodichloromethane	ND	7.3	1.1	ND	1.1	0.16	
79-01-6	Trichloroethene	ND	7.3	0.99	ND	1.4	0.18	
123-91-1	1,4-Dioxane	**69**	7.3	0.86	**19**	2.0	0.24	
80-62-6	Methyl Methacrylate	ND	15	2.6	ND	3.7	0.64	
142-82-5	n-Heptane	**7.7**	7.3	1.2	**1.9**	1.8	0.28	
10061-01-5	cis-1,3-Dichloropropene	ND	7.7	1.1	ND	1.7	0.25	
108-10-1	4-Methyl-2-pentanone	**3.5**	7.3	1.0	**0.86**	1.8	0.24	**J**
10061-02-6	trans-1,3-Dichloropropene	ND	7.3	1.5	ND	1.6	0.33	
79-00-5	1,1,2-Trichloroethane	ND	7.3	0.74	ND	1.3	0.14	
108-88-3	Toluene	**4.1**	7.3	0.89	**1.1**	1.9	0.24	**J**
591-78-6	2-Hexanone	ND	7.3	0.90	ND	1.8	0.22	
124-48-1	Dibromochloromethane	ND	7.3	0.96	ND	0.85	0.11	
106-93-4	1,2-Dibromoethane	ND	7.3	0.85	ND	0.95	0.11	
123-86-4	n-Butyl Acetate	ND	7.3	1.0	ND	1.5	0.21	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE Carbon 1** ALS Project ID: P1802773
Client Project ID: **SVE Performance Monitoring / KUH0-18-010** ALS Sample ID: P1802773-002

Test Code: EPA TO-15 Date Collected: 5/30/18
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 5/31/18
Analyst: Simon Cao Date Analyzed: 6/4/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.10 Liter(s)
Test Notes:
Container ID: 1SC00710

Initial Pressure (psig): 0.06 Final Pressure (psig): 5.50

Container Dilution Factor: 1.37

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	**1.8**	7.3	1.6	**0.39**	1.6	0.35	**J**
127-18-4	Tetrachloroethene	**1.8**	7.3	0.95	**0.27**	1.1	0.14	**J**
108-90-7	Chlorobenzene	ND	7.3	0.97	ND	1.6	0.21	
100-41-4	Ethylbenzene	ND	7.3	1.0	ND	1.7	0.24	
179601-23-1	m,p-Xylenes	**2.1**	15	1.9	**0.48**	3.5	0.44	**J**
75-25-2	Bromoform	ND	7.3	1.5	ND	0.70	0.15	
100-42-5	Styrene	ND	7.3	1.2	ND	1.7	0.28	
95-47-6	o-Xylene	ND	7.3	1.1	ND	1.7	0.24	
111-84-2	n-Nonane	**1.4**	7.3	1.2	**0.27**	1.4	0.23	**J**
79-34-5	1,1,2,2-Tetrachloroethane	ND	7.3	1.0	ND	1.1	0.15	
98-82-8	Cumene	ND	7.3	1.1	ND	1.5	0.21	
80-56-8	alpha-Pinene	ND	7.1	1.1	ND	1.3	0.20	
103-65-1	n-Propylbenzene	ND	7.3	1.1	ND	1.5	0.21	
622-96-8	4-Ethyltoluene	ND	7.1	1.2	ND	1.4	0.24	
108-67-8	1,3,5-Trimethylbenzene	ND	7.1	1.1	ND	1.4	0.21	
95-63-6	1,2,4-Trimethylbenzene	ND	7.3	1.0	ND	1.5	0.21	
100-44-7	Benzyl Chloride	ND	15	1.6	ND	2.9	0.32	
541-73-1	1,3-Dichlorobenzene	ND	7.4	1.1	ND	1.2	0.18	
106-46-7	1,4-Dichlorobenzene	ND	7.3	1.1	ND	1.2	0.19	
95-50-1	1,2-Dichlorobenzene	ND	7.4	1.1	ND	1.2	0.18	
5989-27-5	d-Limonene	**1.8**	6.9	1.5	**0.32**	1.2	0.27	**J**
96-12-8	1,2-Dibromo-3-chloropropane	ND	7.3	1.4	ND	0.75	0.14	
120-82-1	1,2,4-Trichlorobenzene	ND	7.5	1.8	ND	1.0	0.24	
91-20-3	Naphthalene	ND	7.3	1.8	ND	1.4	0.34	
87-68-3	Hexachlorobutadiene	ND	7.3	1.5	ND	0.68	0.14	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE Carbon 2** ALS Project ID: P1802773
Client Project ID: **SVE Performance Monitoring / KUH0-18-010** ALS Sample ID: P1802773-003

Test Code: EPA TO-15 Date Collected: 5/30/18
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 5/31/18
Analyst: Simon Cao Date Analyzed: 6/1/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SC00346

Initial Pressure (psig): -0.55 Final Pressure (psig): 5.42

Container Dilution Factor: 1.42

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	**150**	1.8	0.46	**85**	1.1	0.27	
75-71-8	Dichlorodifluoromethane (CFC 12)	**4.1**	1.8	0.31	**0.84**	0.37	0.062	
74-87-3	Chloromethane	**0.47**	1.8	0.31	**0.23**	0.86	0.15	**J**
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	**0.58**	1.8	0.30	**0.082**	0.26	0.043	**J**
75-01-4	Vinyl Chloride	ND	1.8	0.20	ND	0.72	0.079	
106-99-0	1,3-Butadiene	ND	1.9	0.31	ND	0.85	0.14	
74-83-9	Bromomethane	ND	1.8	0.26	ND	0.46	0.068	
75-00-3	Chloroethane	**0.33**	1.8	0.23	**0.13**	0.69	0.089	**J**
64-17-5	Ethanol	**110**	19	1.3	**58**	10	0.70	
75-05-8	Acetonitrile	ND	1.9	0.46	ND	1.1	0.27	
107-02-8	Acrolein	**0.94**	7.5	0.53	**0.41**	3.3	0.23	**J**
67-64-1	Acetone	**120**	19	4.3	**51**	7.9	1.8	
75-69-4	Trichlorofluoromethane (CFC 11)	**0.31**	1.9	0.29	**0.056**	0.33	0.051	**J**
67-63-0	2-Propanol (Isopropyl Alcohol)	**2.6**	19	0.78	**1.1**	7.7	0.32	**J**
107-13-1	Acrylonitrile	ND	1.9	0.39	ND	0.87	0.18	
75-35-4	1,1-Dichloroethene	ND	1.9	0.26	ND	0.47	0.066	
75-09-2	Methylene Chloride	**93**	1.9	0.53	**27**	0.54	0.15	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	1.9	0.26	ND	0.60	0.082	
76-13-1	Trichlorotrifluoroethane (CFC 113)	ND	1.9	0.27	ND	0.25	0.035	
75-15-0	Carbon Disulfide	**9.6**	19	0.57	**3.1**	6.0	0.18	**J**
156-60-5	trans-1,2-Dichloroethene	ND	1.9	0.26	ND	0.48	0.066	
75-34-3	1,1-Dichloroethane	ND	1.8	0.28	ND	0.45	0.068	
1634-04-4	Methyl tert-Butyl Ether	ND	1.9	0.22	ND	0.53	0.062	
108-05-4	Vinyl Acetate	**5.1**	19	4.3	**1.5**	5.3	1.2	**J**
78-93-3	2-Butanone (MEK)	**3.7**	19	0.39	**1.3**	6.4	0.13	**J**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE Carbon 2** ALS Project ID: P1802773
Client Project ID: **SVE Performance Monitoring / KUH0-18-010** ALS Sample ID: P1802773-003

Test Code: EPA TO-15 Date Collected: 5/30/18
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 5/31/18
Analyst: Simon Cao Date Analyzed: 6/1/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SC00346

Initial Pressure (psig): -0.55 Final Pressure (psig): 5.42

Container Dilution Factor: 1.42

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	1.9	0.27	ND	0.47	0.067	
141-78-6	Ethyl Acetate	**22**	3.9	0.99	**6.2**	1.1	0.28	
110-54-3	n-Hexane	**0.48**	1.9	0.39	**0.14**	0.53	0.11	**J**
67-66-3	Chloroform	**0.46**	1.9	0.25	**0.094**	0.39	0.052	**J**
109-99-9	Tetrahydrofuran (THF)	**0.27**	1.9	0.24	**0.090**	0.64	0.081	**J**
107-06-2	1,2-Dichloroethane	ND	1.9	0.21	ND	0.47	0.052	
71-55-6	1,1,1-Trichloroethane	ND	1.9	0.23	ND	0.35	0.043	
71-43-2	Benzene	**2.1**	1.9	0.27	**0.66**	0.59	0.086	
56-23-5	Carbon Tetrachloride	ND	1.9	0.26	ND	0.30	0.042	
110-82-7	Cyclohexane	ND	3.9	0.53	ND	1.1	0.15	
78-87-5	1,2-Dichloropropane	ND	1.9	0.23	ND	0.41	0.051	
75-27-4	Bromodichloromethane	ND	1.9	0.27	ND	0.28	0.041	
79-01-6	Trichloroethene	ND	1.9	0.26	ND	0.35	0.048	
123-91-1	1,4-Dioxane	**5.9**	1.9	0.22	**1.6**	0.52	0.062	
80-62-6	Methyl Methacrylate	ND	3.9	0.67	ND	0.95	0.16	
142-82-5	n-Heptane	**7.5**	1.9	0.30	**1.8**	0.46	0.074	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	0.29	ND	0.44	0.065	
108-10-1	4-Methyl-2-pentanone	**3.9**	1.9	0.26	**0.96**	0.46	0.063	
10061-02-6	trans-1,3-Dichloropropene	ND	1.9	0.39	ND	0.41	0.086	
79-00-5	1,1,2-Trichloroethane	ND	1.9	0.19	ND	0.34	0.035	
108-88-3	Toluene	**5.5**	1.9	0.23	**1.5**	0.50	0.061	
591-78-6	2-Hexanone	ND	1.9	0.23	ND	0.46	0.057	
124-48-1	Dibromochloromethane	ND	1.9	0.25	ND	0.22	0.029	
106-93-4	1,2-Dibromoethane	ND	1.9	0.22	ND	0.24	0.029	
123-86-4	n-Butyl Acetate	ND	1.9	0.26	ND	0.40	0.055	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE Carbon 2** ALS Project ID: P1802773
Client Project ID: **SVE Performance Monitoring / KUH0-18-010** ALS Sample ID: P1802773-003

Test Code: EPA TO-15 Date Collected: 5/30/18
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 5/31/18
Analyst: Simon Cao Date Analyzed: 6/1/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SC00346

Initial Pressure (psig): -0.55 Final Pressure (psig): 5.42

Container Dilution Factor: 1.42

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	**2.8**	1.9	0.43	**0.59**	0.40	0.091	
127-18-4	Tetrachloroethene	**0.73**	1.9	0.24	**0.11**	0.28	0.036	**J**
108-90-7	Chlorobenzene	ND	1.9	0.25	ND	0.41	0.055	
100-41-4	Ethylbenzene	**3.0**	1.9	0.27	**0.68**	0.43	0.061	
179601-23-1	m,p-Xylenes	**4.0**	3.9	0.50	**0.91**	0.90	0.11	
75-25-2	Bromoform	ND	1.9	0.39	ND	0.18	0.038	
100-42-5	Styrene	**0.33**	1.9	0.31	**0.078**	0.44	0.072	**J**
95-47-6	o-Xylene	**2.0**	1.9	0.27	**0.47**	0.43	0.063	
111-84-2	n-Nonane	**2.2**	1.9	0.32	**0.43**	0.36	0.060	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.9	0.26	ND	0.27	0.038	
98-82-8	Cumene	**0.65**	1.9	0.27	**0.13**	0.38	0.056	**J**
80-56-8	alpha-Pinene	**0.88**	1.8	0.29	**0.16**	0.33	0.052	**J**
103-65-1	n-Propylbenzene	**0.39**	1.9	0.27	**0.079**	0.38	0.056	**J**
622-96-8	4-Ethyltoluene	**0.50**	1.8	0.30	**0.10**	0.38	0.061	**J**
108-67-8	1,3,5-Trimethylbenzene	**0.36**	1.8	0.27	**0.074**	0.38	0.056	**J**
95-63-6	1,2,4-Trimethylbenzene	**1.3**	1.9	0.26	**0.26**	0.38	0.053	**J**
100-44-7	Benzyl Chloride	ND	3.9	0.43	ND	0.75	0.082	
541-73-1	1,3-Dichlorobenzene	ND	1.9	0.28	ND	0.32	0.047	
106-46-7	1,4-Dichlorobenzene	ND	1.9	0.29	ND	0.31	0.048	
95-50-1	1,2-Dichlorobenzene	ND	1.9	0.28	ND	0.32	0.047	
5989-27-5	d-Limonene	**1.8**	1.8	0.39	**0.32**	0.32	0.070	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.9	0.36	ND	0.19	0.037	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	0.46	ND	0.26	0.062	
91-20-3	Naphthalene	**0.78**	1.9	0.46	**0.15**	0.36	0.088	**J, B**
87-68-3	Hexachlorobutadiene	ND	1.9	0.39	ND	0.18	0.037	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
B = Analyte detected in both the sample and associated method blank.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **Method Blank** ALS Project ID: P1802773
Client Project ID: **SVE Performance Monitoring / KUH0-18-010** ALS Sample ID: P180601-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 6/1/18
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	ND	0.52	0.13	ND	0.30	0.076	
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	0.52	0.087	ND	0.11	0.018	
74-87-3	Chloromethane	ND	0.50	0.086	ND	0.24	0.042	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.51	0.084	ND	0.073	0.012	
75-01-4	Vinyl Chloride	ND	0.52	0.057	ND	0.20	0.022	
106-99-0	1,3-Butadiene	ND	0.53	0.088	ND	0.24	0.040	
74-83-9	Bromomethane	ND	0.50	0.074	ND	0.13	0.019	
75-00-3	Chloroethane	ND	0.51	0.066	ND	0.19	0.025	
64-17-5	Ethanol	ND	5.3	0.37	ND	2.8	0.20	
75-05-8	Acetonitrile	ND	0.53	0.13	ND	0.32	0.077	
107-02-8	Acrolein	ND	2.1	0.15	ND	0.92	0.065	
67-64-1	Acetone	ND	5.3	1.2	ND	2.2	0.51	
75-69-4	Trichlorofluoromethane (CFC 11)	ND	0.53	0.081	ND	0.094	0.014	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	5.3	0.22	ND	2.2	0.090	
107-13-1	Acrylonitrile	ND	0.53	0.11	ND	0.24	0.051	
75-35-4	1,1-Dichloroethene	ND	0.53	0.074	ND	0.13	0.019	
75-09-2	Methylene Chloride	ND	0.53	0.15	ND	0.15	0.043	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.53	0.072	ND	0.17	0.023	
76-13-1	Trichlorotrifluoroethane (CFC 113)	ND	0.53	0.076	ND	0.069	0.0099	
75-15-0	Carbon Disulfide	ND	5.3	0.16	ND	1.7	0.051	
156-60-5	trans-1,2-Dichloroethene	ND	0.54	0.074	ND	0.14	0.019	
75-34-3	1,1-Dichloroethane	ND	0.51	0.078	ND	0.13	0.019	
1634-04-4	Methyl tert-Butyl Ether	ND	0.54	0.063	ND	0.15	0.017	
108-05-4	Vinyl Acetate	ND	5.3	1.2	ND	1.5	0.34	
78-93-3	2-Butanone (MEK)	ND	5.3	0.11	ND	1.8	0.037	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Client: **Environmental Management Services, Inc.**

Client Sample ID: **Method Blank** ALS Project ID: P1802773

Client Project ID: **SVE Performance Monitoring / KUH0-18-010** ALS Sample ID: P180601-MB

Test Code: EPA TO-15 Date Collected: NA

Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA

Analyst: Simon Cao Date Analyzed: 6/1/18

Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 1.00 Liter(s)

Test Notes:

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	0.53	0.075	ND	0.13	0.019	
141-78-6	Ethyl Acetate	ND	1.1	0.28	ND	0.31	0.078	
110-54-3	n-Hexane	ND	0.53	0.11	ND	0.15	0.031	
67-66-3	Chloroform	ND	0.53	0.071	ND	0.11	0.015	
109-99-9	Tetrahydrofuran (THF)	ND	0.53	0.067	ND	0.18	0.023	
107-06-2	1,2-Dichloroethane	ND	0.53	0.059	ND	0.13	0.015	
71-55-6	1,1,1-Trichloroethane	ND	0.54	0.066	ND	0.099	0.012	
71-43-2	Benzene	ND	0.53	0.077	ND	0.17	0.024	
56-23-5	Carbon Tetrachloride	ND	0.53	0.074	ND	0.084	0.012	
110-82-7	Cyclohexane	ND	1.1	0.15	ND	0.32	0.044	
78-87-5	1,2-Dichloropropane	ND	0.53	0.066	ND	0.11	0.014	
75-27-4	Bromodichloromethane	ND	0.53	0.077	ND	0.079	0.011	
79-01-6	Trichloroethene	ND	0.53	0.072	ND	0.099	0.013	
123-91-1	1,4-Dioxane	ND	0.53	0.063	ND	0.15	0.017	
80-62-6	Methyl Methacrylate	ND	1.1	0.19	ND	0.27	0.046	
142-82-5	n-Heptane	ND	0.53	0.085	ND	0.13	0.021	
10061-01-5	cis-1,3-Dichloropropene	ND	0.56	0.083	ND	0.12	0.018	
108-10-1	4-Methyl-2-pentanone	ND	0.53	0.073	ND	0.13	0.018	
10061-02-6	trans-1,3-Dichloropropene	ND	0.53	0.11	ND	0.12	0.024	
79-00-5	1,1,2-Trichloroethane	ND	0.53	0.054	ND	0.097	0.0099	
108-88-3	Toluene	ND	0.53	0.065	ND	0.14	0.017	
591-78-6	2-Hexanone	ND	0.53	0.066	ND	0.13	0.016	
124-48-1	Dibromochloromethane	ND	0.53	0.070	ND	0.062	0.0082	
106-93-4	1,2-Dibromoethane	ND	0.53	0.062	ND	0.069	0.0081	
123-86-4	n-Butyl Acetate	ND	0.53	0.073	ND	0.11	0.015	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Client: **Environmental Management Services, Inc.**

Client Sample ID: **Method Blank** ALS Project ID: P1802773

Client Project ID: **SVE Performance Monitoring / KUH0-18-010** ALS Sample ID: P180601-MB

Test Code: EPA TO-15 Date Collected: NA

Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA

Analyst: Simon Cao Date Analyzed: 6/1/18

Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 1.00 Liter(s)

Test Notes:

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	ND	0.53	0.12	ND	0.11	0.026	
127-18-4	Tetrachloroethene	ND	0.53	0.069	ND	0.078	0.010	
108-90-7	Chlorobenzene	ND	0.53	0.071	ND	0.12	0.015	
100-41-4	Ethylbenzene	ND	0.53	0.075	ND	0.12	0.017	
179601-23-1	m,p-Xylenes	ND	1.1	0.14	ND	0.25	0.032	
75-25-2	Bromoform	ND	0.53	0.11	ND	0.051	0.011	
100-42-5	Styrene	ND	0.53	0.086	ND	0.12	0.020	
95-47-6	o-Xylene	ND	0.53	0.077	ND	0.12	0.018	
111-84-2	n-Nonane	ND	0.53	0.089	ND	0.10	0.017	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.53	0.074	ND	0.077	0.011	
98-82-8	Cumene	ND	0.53	0.077	ND	0.11	0.016	
80-56-8	alpha-Pinene	ND	0.52	0.082	ND	0.093	0.015	
103-65-1	n-Propylbenzene	ND	0.53	0.077	ND	0.11	0.016	
622-96-8	4-Ethyltoluene	ND	0.52	0.085	ND	0.11	0.017	
108-67-8	1,3,5-Trimethylbenzene	ND	0.52	0.077	ND	0.11	0.016	
95-63-6	1,2,4-Trimethylbenzene	ND	0.53	0.074	ND	0.11	0.015	
100-44-7	Benzyl Chloride	ND	1.1	0.12	ND	0.21	0.023	
541-73-1	1,3-Dichlorobenzene	ND	0.54	0.080	ND	0.090	0.013	
106-46-7	1,4-Dichlorobenzene	ND	0.53	0.082	ND	0.088	0.014	
95-50-1	1,2-Dichlorobenzene	ND	0.54	0.079	ND	0.090	0.013	
5989-27-5	d-Limonene	ND	0.50	0.11	ND	0.090	0.020	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.53	0.10	ND	0.055	0.010	
120-82-1	1,2,4-Trichlorobenzene	ND	0.55	0.13	ND	0.074	0.018	
91-20-3	Naphthalene	**0.17**	0.53	0.13	**0.033**	0.10	0.025	**J**
87-68-3	Hexachlorobutadiene	ND	0.53	0.11	ND	0.050	0.010	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **Method Blank** ALS Project ID: P1802773
Client Project ID: **SVE Performance Monitoring / KUH0-18-010** ALS Sample ID: P180604-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 6/4/18
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	ND	0.52	0.13	ND	0.30	0.076	
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	0.52	0.087	ND	0.11	0.018	
74-87-3	Chloromethane	ND	0.50	0.086	ND	0.24	0.042	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.51	0.084	ND	0.073	0.012	
75-01-4	Vinyl Chloride	ND	0.52	0.057	ND	0.20	0.022	
106-99-0	1,3-Butadiene	ND	0.53	0.088	ND	0.24	0.040	
74-83-9	Bromomethane	ND	0.50	0.074	ND	0.13	0.019	
75-00-3	Chloroethane	ND	0.51	0.066	ND	0.19	0.025	
64-17-5	Ethanol	ND	5.3	0.37	ND	2.8	0.20	
75-05-8	Acetonitrile	ND	0.53	0.13	ND	0.32	0.077	
107-02-8	Acrolein	ND	2.1	0.15	ND	0.92	0.065	
67-64-1	Acetone	ND	5.3	1.2	ND	2.2	0.51	
75-69-4	Trichlorofluoromethane (CFC 11)	ND	0.53	0.081	ND	0.094	0.014	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	5.3	0.22	ND	2.2	0.090	
107-13-1	Acrylonitrile	ND	0.53	0.11	ND	0.24	0.051	
75-35-4	1,1-Dichloroethene	ND	0.53	0.074	ND	0.13	0.019	
75-09-2	Methylene Chloride	ND	0.53	0.15	ND	0.15	0.043	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.53	0.072	ND	0.17	0.023	
76-13-1	Trichlorotrifluoroethane (CFC 113)	ND	0.53	0.076	ND	0.069	0.0099	
75-15-0	Carbon Disulfide	ND	5.3	0.16	ND	1.7	0.051	
156-60-5	trans-1,2-Dichloroethene	ND	0.54	0.074	ND	0.14	0.019	
75-34-3	1,1-Dichloroethane	ND	0.51	0.078	ND	0.13	0.019	
1634-04-4	Methyl tert-Butyl Ether	ND	0.54	0.063	ND	0.15	0.017	
108-05-4	Vinyl Acetate	ND	5.3	1.2	ND	1.5	0.34	
78-93-3	2-Butanone (MEK)	ND	5.3	0.11	ND	1.8	0.037	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Client: **Environmental Management Services, Inc.**

Client Sample ID: **Method Blank** ALS Project ID: P1802773

Client Project ID: **SVE Performance Monitoring / KUH0-18-010** ALS Sample ID: P180604-MB

Test Code: EPA TO-15 Date Collected: NA

Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA

Analyst: Simon Cao Date Analyzed: 6/4/18

Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 1.00 Liter(s)

Test Notes:

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	0.53	0.075	ND	0.13	0.019	
141-78-6	Ethyl Acetate	ND	1.1	0.28	ND	0.31	0.078	
110-54-3	n-Hexane	ND	0.53	0.11	ND	0.15	0.031	
67-66-3	Chloroform	ND	0.53	0.071	ND	0.11	0.015	
109-99-9	Tetrahydrofuran (THF)	ND	0.53	0.067	ND	0.18	0.023	
107-06-2	1,2-Dichloroethane	ND	0.53	0.059	ND	0.13	0.015	
71-55-6	1,1,1-Trichloroethane	ND	0.54	0.066	ND	0.099	0.012	
71-43-2	Benzene	ND	0.53	0.077	ND	0.17	0.024	
56-23-5	Carbon Tetrachloride	ND	0.53	0.074	ND	0.084	0.012	
110-82-7	Cyclohexane	ND	1.1	0.15	ND	0.32	0.044	
78-87-5	1,2-Dichloropropane	ND	0.53	0.066	ND	0.11	0.014	
75-27-4	Bromodichloromethane	ND	0.53	0.077	ND	0.079	0.011	
79-01-6	Trichloroethene	ND	0.53	0.072	ND	0.099	0.013	
123-91-1	1,4-Dioxane	ND	0.53	0.063	ND	0.15	0.017	
80-62-6	Methyl Methacrylate	ND	1.1	0.19	ND	0.27	0.046	
142-82-5	n-Heptane	ND	0.53	0.085	ND	0.13	0.021	
10061-01-5	cis-1,3-Dichloropropene	ND	0.56	0.083	ND	0.12	0.018	
108-10-1	4-Methyl-2-pentanone	ND	0.53	0.073	ND	0.13	0.018	
10061-02-6	trans-1,3-Dichloropropene	ND	0.53	0.11	ND	0.12	0.024	
79-00-5	1,1,2-Trichloroethane	ND	0.53	0.054	ND	0.097	0.0099	
108-88-3	Toluene	ND	0.53	0.065	ND	0.14	0.017	
591-78-6	2-Hexanone	ND	0.53	0.066	ND	0.13	0.016	
124-48-1	Dibromochloromethane	ND	0.53	0.070	ND	0.062	0.0082	
106-93-4	1,2-Dibromoethane	ND	0.53	0.062	ND	0.069	0.0081	
123-86-4	n-Butyl Acetate	ND	0.53	0.073	ND	0.11	0.015	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Client: **Environmental Management Services, Inc.**

Client Sample ID: **Method Blank** ALS Project ID: P1802773

Client Project ID: **SVE Performance Monitoring / KUH0-18-010** ALS Sample ID: P180604-MB

Test Code:	EPA TO-15	Date Collected:	NA
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	NA
Analyst:	Simon Cao	Date Analyzed:	6/4/18
Sample Type:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	1.00 Liter(s)
Test Notes:			

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	ND	0.53	0.12	ND	0.11	0.026	
127-18-4	Tetrachloroethene	ND	0.53	0.069	ND	0.078	0.010	
108-90-7	Chlorobenzene	ND	0.53	0.071	ND	0.12	0.015	
100-41-4	Ethylbenzene	ND	0.53	0.075	ND	0.12	0.017	
179601-23-1	m,p-Xylenes	ND	1.1	0.14	ND	0.25	0.032	
75-25-2	Bromoform	ND	0.53	0.11	ND	0.051	0.011	
100-42-5	Styrene	ND	0.53	0.086	ND	0.12	0.020	
95-47-6	o-Xylene	ND	0.53	0.077	ND	0.12	0.018	
111-84-2	n-Nonane	ND	0.53	0.089	ND	0.10	0.017	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.53	0.074	ND	0.077	0.011	
98-82-8	Cumene	ND	0.53	0.077	ND	0.11	0.016	
80-56-8	alpha-Pinene	ND	0.52	0.082	ND	0.093	0.015	
103-65-1	n-Propylbenzene	ND	0.53	0.077	ND	0.11	0.016	
622-96-8	4-Ethyltoluene	ND	0.52	0.085	ND	0.11	0.017	
108-67-8	1,3,5-Trimethylbenzene	ND	0.52	0.077	ND	0.11	0.016	
95-63-6	1,2,4-Trimethylbenzene	ND	0.53	0.074	ND	0.11	0.015	
100-44-7	Benzyl Chloride	ND	1.1	0.12	ND	0.21	0.023	
541-73-1	1,3-Dichlorobenzene	ND	0.54	0.080	ND	0.090	0.013	
106-46-7	1,4-Dichlorobenzene	ND	0.53	0.082	ND	0.088	0.014	
95-50-1	1,2-Dichlorobenzene	ND	0.54	0.079	ND	0.090	0.013	
5989-27-5	d-Limonene	ND	0.50	0.11	ND	0.090	0.020	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.53	0.10	ND	0.055	0.010	
120-82-1	1,2,4-Trichlorobenzene	ND	0.55	0.13	ND	0.074	0.018	
91-20-3	Naphthalene	ND	0.53	0.13	ND	0.10	0.025	
87-68-3	Hexachlorobutadiene	ND	0.53	0.11	ND	0.050	0.010	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

SURROGATE SPIKE RECOVERY RESULTS

Client: **Environmental Management Services, Inc.**
Client Project ID: **SVE Performance Monitoring / KUH0-18-010** ALS Project ID: P1802773

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date(s) Collected: 5/30/18
Analyst: Simon Cao Date(s) Received: 5/31/18
Sample Type: 1.0 L Silonite Summa Canister(s) / 1.0 L Summa Canister(s) Date(s) Analyzed: 6/1 - 6/4/18
Test Notes:

Client Sample ID	ALS Sample ID	1,2-Dichloroethane-d4 Percent Recovered	Toluene-d8 Percent Recovered	Bromofluorobenzene Percent Recovered	Acceptance Limits	Data Qualifier
Method Blank	P180601-MB	**101**	**103**	**97**	70-130	
Method Blank	P180604-MB	**102**	**103**	**94**	70-130	
Lab Control Sample	P180601-LCS	**96**	**101**	**99**	70-130	
Lab Control Sample	P180604-LCS	**100**	**101**	**98**	70-130	
SVE Exhaust	P1802773-001	**103**	**100**	**101**	70-130	
SVE Carbon 1	P1802773-002	**100**	**100**	**98**	70-130	
SVE Carbon 1	P1802773-002DUP	**99**	**100**	**98**	70-130	
SVE Carbon 2	P1802773-003	**107**	**100**	**102**	70-130	

Surrogate percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly from the on-column percent recovery.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Environmental Management Services, Inc.**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1802773
Client Project ID: **SVE Performance Monitoring / KUH0-18-010** ALS Sample ID: P180601-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 6/1/18
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	ALS Acceptance Limits	Data Qualifier
115-07-1	Propene	210	**173**	**82**	54-133	
75-71-8	Dichlorodifluoromethane (CFC 12)	213	**187**	**88**	64-115	
74-87-3	Chloromethane	210	**190**	**90**	47-140	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	211	**191**	**91**	60-112	
75-01-4	Vinyl Chloride	211	**193**	**91**	63-127	
106-99-0	1,3-Butadiene	210	**230**	**110**	57-149	
74-83-9	Bromomethane	210	**187**	**89**	63-132	
75-00-3	Chloroethane	210	**190**	**90**	68-129	
64-17-5	Ethanol	1,040	**898**	**86**	62-131	
75-05-8	Acetonitrile	210	**196**	**93**	56-136	
107-02-8	Acrolein	209	**166**	**79**	60-132	
67-64-1	Acetone	1,050	**1020**	**97**	63-124	
75-69-4	Trichlorofluoromethane (CFC 11)	208	**186**	**89**	65-113	
67-63-0	2-Propanol (Isopropyl Alcohol)	422	**418**	**99**	62-135	
107-13-1	Acrylonitrile	212	**207**	**98**	68-138	
75-35-4	1,1-Dichloroethene	213	**199**	**93**	72-118	
75-09-2	Methylene Chloride	213	**189**	**89**	67-116	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	212	**216**	**102**	61-143	
76-13-1	Trichlorotrifluoroethane (CFC 113)	214	**193**	**90**	68-113	
75-15-0	Carbon Disulfide	214	**195**	**91**	68-120	
156-60-5	trans-1,2-Dichloroethene	214	**202**	**94**	71-125	
75-34-3	1,1-Dichloroethane	212	**192**	**91**	68-118	
1634-04-4	Methyl tert-Butyl Ether	213	**207**	**97**	60-123	
108-05-4	Vinyl Acetate	1,060	**1310**	**124**	73-135	
78-93-3	2-Butanone (MEK)	212	**203**	**96**	70-129	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Environmental Management Services, Inc.**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1802773
Client Project ID: **SVE Performance Monitoring / KUH0-18-010** ALS Sample ID: P180601-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 6/1/18
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	ALS Acceptance Limits	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	212	**199**	**94**	69-121	
141-78-6	Ethyl Acetate	426	**416**	**98**	66-140	
110-54-3	n-Hexane	213	**200**	**94**	61-124	
67-66-3	Chloroform	212	**190**	**90**	69-113	
109-99-9	Tetrahydrofuran (THF)	212	**201**	**95**	66-121	
107-06-2	1,2-Dichloroethane	212	**189**	**89**	62-120	
71-55-6	1,1,1-Trichloroethane	212	**194**	**92**	65-116	
71-43-2	Benzene	213	**196**	**92**	66-111	
56-23-5	Carbon Tetrachloride	214	**196**	**92**	64-122	
110-82-7	Cyclohexane	425	**409**	**96**	69-115	
78-87-5	1,2-Dichloropropane	212	**202**	**95**	69-121	
75-27-4	Bromodichloromethane	214	**204**	**95**	69-123	
79-01-6	Trichloroethene	212	**194**	**92**	69-112	
123-91-1	1,4-Dioxane	213	**211**	**99**	74-123	
80-62-6	Methyl Methacrylate	424	**434**	**102**	75-125	
142-82-5	n-Heptane	213	**208**	**98**	68-118	
10061-01-5	cis-1,3-Dichloropropene	208	**213**	**102**	74-129	
108-10-1	4-Methyl-2-pentanone	213	**221**	**104**	66-138	
10061-02-6	trans-1,3-Dichloropropene	213	**222**	**104**	75-130	
79-00-5	1,1,2-Trichloroethane	212	**204**	**96**	73-117	
108-88-3	Toluene	211	**200**	**95**	66-114	
591-78-6	2-Hexanone	211	**229**	**109**	58-146	
124-48-1	Dibromochloromethane	212	**205**	**97**	67-130	
106-93-4	1,2-Dibromoethane	211	**209**	**99**	70-127	
123-86-4	n-Butyl Acetate	215	**237**	**110**	62-140	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

Client: **Environmental Management Services, Inc.**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1802773
Client Project ID: **SVE Performance Monitoring / KUH0-18-010** ALS Sample ID: P180601-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 6/1/18
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	**Result µg/m³**	**% Recovery**	ALS Acceptance Limits	**Data Qualifier**
111-65-9	n-Octane	212	**212**	**100**	65-121	
127-18-4	Tetrachloroethene	212	**198**	**93**	62-119	
108-90-7	Chlorobenzene	212	**203**	**96**	66-115	
100-41-4	Ethylbenzene	212	**208**	**98**	69-117	
179601-23-1	m,p-Xylenes	424	**417**	**98**	67-117	
75-25-2	Bromoform	212	**215**	**101**	67-135	
100-42-5	Styrene	211	**223**	**106**	70-128	
95-47-6	o-Xylene	211	**208**	**99**	67-118	
111-84-2	n-Nonane	212	**218**	**103**	61-127	
79-34-5	1,1,2,2-Tetrachloroethane	212	**216**	**102**	70-125	
98-82-8	Cumene	212	**207**	**98**	68-116	
80-56-8	alpha-Pinene	213	**217**	**102**	69-122	
103-65-1	n-Propylbenzene	214	**217**	**101**	70-118	
622-96-8	4-Ethyltoluene	211	**225**	**107**	69-124	
108-67-8	1,3,5-Trimethylbenzene	212	**211**	**100**	65-117	
95-63-6	1,2,4-Trimethylbenzene	212	**219**	**103**	67-124	
100-44-7	Benzyl Chloride	212	**253**	**119**	75-142	
541-73-1	1,3-Dichlorobenzene	212	**219**	**103**	70-124	
106-46-7	1,4-Dichlorobenzene	214	**220**	**103**	63-124	
95-50-1	1,2-Dichlorobenzene	214	**220**	**103**	66-125	
5989-27-5	d-Limonene	213	**229**	**108**	64-135	
96-12-8	1,2-Dibromo-3-chloropropane	210	**236**	**112**	73-136	
120-82-1	1,2,4-Trichlorobenzene	218	**248**	**114**	70-141	
91-20-3	Naphthalene	209	**252**	**121**	71-146	
87-68-3	Hexachlorobutadiene	212	**210**	**99**	63-126	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Environmental Management Services, Inc.**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1802773
Client Project ID: **SVE Performance Monitoring / KUH0-18-010** ALS Sample ID: P180604-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 6/4/18
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	ALS Acceptance Limits	Data Qualifier
115-07-1	Propene	210	**177**	**84**	54-133	
75-71-8	Dichlorodifluoromethane (CFC 12)	213	**198**	**93**	64-115	
74-87-3	Chloromethane	210	**207**	**99**	47-140	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	211	**198**	**94**	60-112	
75-01-4	Vinyl Chloride	211	**203**	**96**	63-127	
106-99-0	1,3-Butadiene	210	**237**	**113**	57-149	
74-83-9	Bromomethane	210	**190**	**90**	63-132	
75-00-3	Chloroethane	210	**192**	**91**	68-129	
64-17-5	Ethanol	1,040	**901**	**87**	62-131	
75-05-8	Acetonitrile	210	**198**	**94**	56-136	
107-02-8	Acrolein	209	**188**	**90**	60-132	
67-64-1	Acetone	1,050	**1050**	**100**	63-124	
75-69-4	Trichlorofluoromethane (CFC 11)	208	**195**	**94**	65-113	
67-63-0	2-Propanol (Isopropyl Alcohol)	422	**429**	**102**	62-135	
107-13-1	Acrylonitrile	212	**208**	**98**	68-138	
75-35-4	1,1-Dichloroethene	213	**200**	**94**	72-118	
75-09-2	Methylene Chloride	213	**191**	**90**	67-116	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	212	**223**	**105**	61-143	
76-13-1	Trichlorotrifluoroethane (CFC 113)	214	**196**	**92**	68-113	
75-15-0	Carbon Disulfide	214	**200**	**93**	68-120	
156-60-5	trans-1,2-Dichloroethene	214	**208**	**97**	71-125	
75-34-3	1,1-Dichloroethane	212	**196**	**92**	68-118	
1634-04-4	Methyl tert-Butyl Ether	213	**212**	**100**	60-123	
108-05-4	Vinyl Acetate	1,060	**1330**	**125**	73-135	
78-93-3	2-Butanone (MEK)	212	**208**	**98**	70-129	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Environmental Management Services, Inc.**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1802773
Client Project ID: **SVE Performance Monitoring / KUH0-18-010** ALS Sample ID: P180604-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 6/4/18
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	ALS Acceptance Limits	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	212	**206**	**97**	69-121	
141-78-6	Ethyl Acetate	426	**426**	**100**	66-140	
110-54-3	n-Hexane	213	**207**	**97**	61-124	
67-66-3	Chloroform	212	**198**	**93**	69-113	
109-99-9	Tetrahydrofuran (THF)	212	**207**	**98**	66-121	
107-06-2	1,2-Dichloroethane	212	**200**	**94**	62-120	
71-55-6	1,1,1-Trichloroethane	212	**201**	**95**	65-116	
71-43-2	Benzene	213	**199**	**93**	66-111	
56-23-5	Carbon Tetrachloride	214	**206**	**96**	64-122	
110-82-7	Cyclohexane	425	**416**	**98**	69-115	
78-87-5	1,2-Dichloropropane	212	**207**	**98**	69-121	
75-27-4	Bromodichloromethane	214	**211**	**99**	69-123	
79-01-6	Trichloroethene	212	**197**	**93**	69-112	
123-91-1	1,4-Dioxane	213	**214**	**100**	74-123	
80-62-6	Methyl Methacrylate	424	**439**	**104**	75-125	
142-82-5	n-Heptane	213	**212**	**100**	68-118	
10061-01-5	cis-1,3-Dichloropropene	208	**219**	**105**	74-129	
108-10-1	4-Methyl-2-pentanone	213	**228**	**107**	66-138	
10061-02-6	trans-1,3-Dichloropropene	213	**229**	**108**	75-130	
79-00-5	1,1,2-Trichloroethane	212	**206**	**97**	73-117	
108-88-3	Toluene	211	**204**	**97**	66-114	
591-78-6	2-Hexanone	211	**238**	**113**	58-146	
124-48-1	Dibromochloromethane	212	**214**	**101**	67-130	
106-93-4	1,2-Dibromoethane	211	**215**	**102**	70-127	
123-86-4	n-Butyl Acetate	215	**245**	**114**	62-140	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Environmental Management Services, Inc.**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1802773
Client Project ID: **SVE Performance Monitoring / KUH0-18-010** ALS Sample ID: P180604-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 6/4/18
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	ALS Acceptance Limits	Data Qualifier
111-65-9	n-Octane	212	**219**	**103**	65-121	
127-18-4	Tetrachloroethene	212	**202**	**95**	62-119	
108-90-7	Chlorobenzene	212	**208**	**98**	66-115	
100-41-4	Ethylbenzene	212	**214**	**101**	69-117	
179601-23-1	m,p-Xylenes	424	**430**	**101**	67-117	
75-25-2	Bromoform	212	**222**	**105**	67-135	
100-42-5	Styrene	211	**229**	**109**	70-128	
95-47-6	o-Xylene	211	**217**	**103**	67-118	
111-84-2	n-Nonane	212	**229**	**108**	61-127	
79-34-5	1,1,2,2-Tetrachloroethane	212	**225**	**106**	70-125	
98-82-8	Cumene	212	**216**	**102**	68-116	
80-56-8	alpha-Pinene	213	**224**	**105**	69-122	
103-65-1	n-Propylbenzene	214	**225**	**105**	70-118	
622-96-8	4-Ethyltoluene	211	**235**	**111**	69-124	
108-67-8	1,3,5-Trimethylbenzene	212	**219**	**103**	65-117	
95-63-6	1,2,4-Trimethylbenzene	212	**229**	**108**	67-124	
100-44-7	Benzyl Chloride	212	**265**	**125**	75-142	
541-73-1	1,3-Dichlorobenzene	212	**229**	**108**	70-124	
106-46-7	1,4-Dichlorobenzene	214	**228**	**107**	63-124	
95-50-1	1,2-Dichlorobenzene	214	**230**	**107**	66-125	
5989-27-5	d-Limonene	213	**237**	**111**	64-135	
96-12-8	1,2-Dibromo-3-chloropropane	210	**248**	**118**	73-136	
120-82-1	1,2,4-Trichlorobenzene	218	**260**	**119**	70-141	
91-20-3	Naphthalene	209	**264**	**126**	71-146	
87-68-3	Hexachlorobutadiene	212	**219**	**103**	63-126	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

ALS ENVIRONMENTAL

LABORATORY DUPLICATE SUMMARY RESULTS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE Carbon 1** ALS Project ID: P1802773
Client Project ID: **SVE Performance Monitoring / KUH0-18-010** ALS Sample ID: P1802773-002DUP

Test Code: EPA TO-15 Date Collected: 5/30/18
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 5/31/18
Analyst: Simon Cao Date Analyzed: 6/4/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.10 Liter(s)
Test Notes:
Container ID: 1SC00710

Initial Pressure (psig): 0.06 Final Pressure (psig): 5.50

Container Dilution Factor: 1.37

Compound	Sample Result		Duplicate Sample Result		Average	% RPD	RPD Limit	Data Qualifier
	µg/m³	ppbV	µg/m³	ppbV	µg/m³			
Propene	62.2	36.2	61.5	35.8	61.85	**1**	25	
Dichlorodifluoromethane (CFC 12)	3.88	0.784	3.63	0.735	3.755	**7**	25	**J**
Chloromethane	1.25	0.604	1.25	0.604	1.25	**0**	25	**J**
1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	ND	ND	ND	-	-	25	
Vinyl Chloride	ND	ND	ND	ND	-	-	25	
1,3-Butadiene	ND	ND	ND	ND	-	-	25	
Bromomethane	ND	ND	ND	ND	-	-	25	
Chloroethane	ND	ND	ND	ND	-	-	25	
Ethanol	146	77.5	139	73.6	142.5	**5**	25	
Acetonitrile	ND	ND	ND	ND	-	-	25	
Acrolein	2.12	0.927	ND	ND	-	-	25	
Acetone	198	83.4	186	78.5	192	**6**	25	
Trichlorofluoromethane	2.06	0.366	1.95	0.346	2.005	**5**	25	**J**
2-Propanol (Isopropyl Alcohol)	5.53	2.25	5.25	2.14	5.39	**5**	25	**J**
Acrylonitrile	ND	ND	ND	ND	-	-	25	
1,1-Dichloroethene	85.2	21.5	81.4	20.5	83.3	**5**	25	
Methylene Chloride	1,250	360	1,180	341	1215	**6**	25	
3-Chloro-1-propene (Allyl Chloride)	ND	ND	ND	ND	-	-	25	
Trichlorotrifluoroethane	ND	ND	ND	ND	-	-	25	
Carbon Disulfide	9.34	3.00	8.84	2.84	9.09	**6**	25	**J**
trans-1,2-Dichloroethene	ND	ND	ND	ND	-	-	25	
1,1-Dichloroethane	ND	ND	ND	ND	-	-	25	
Methyl tert-Butyl Ether	ND	ND	ND	ND	-	-	25	
Vinyl Acetate	ND	ND	ND	ND	-	-	25	
2-Butanone (MEK)	5.37	1.82	4.95	1.68	5.16	**8**	25	**J**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

LABORATORY DUPLICATE SUMMARY RESULTS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE Carbon 1** ALS Project ID: P1802773
Client Project ID: **SVE Performance Monitoring / KUH0-18-010** ALS Sample ID: P1802773-002DUP

Test Code: EPA TO-15 Date Collected: 5/30/18
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 5/31/18
Analyst: Simon Cao Date Analyzed: 6/4/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.10 Liter(s)
Test Notes:
Container ID: 1SC00710

Initial Pressure (psig): 0.06 Final Pressure (psig): 5.50

Container Dilution Factor: 1.37

Compound	Sample Result µg/m³	Sample Result ppbV	Duplicate Sample Result µg/m³	Duplicate Sample Result ppbV	Average µg/m³	% RPD	RPD Limit	Data Qualifier
cis-1,2-Dichloroethene	ND	ND	ND	ND	-	-	25	
Ethyl Acetate	24.3	6.75	21.7	6.02	23	**11**	25	
n-Hexane	ND	ND	ND	ND	-	-	25	
Chloroform	ND	ND	ND	ND	-	-	25	
Tetrahydrofuran (THF)	ND	ND	ND	ND	-	-	25	
1,2-Dichloroethane	ND	ND	ND	ND	-	-	25	
1,1,1-Trichloroethane	ND	ND	ND	ND	-	-	25	
Benzene	3.34	1.05	3.21	1.00	3.275	**4**	25	**J**
Carbon Tetrachloride	ND	ND	ND	ND	-	-	25	
Cyclohexane	ND	ND	ND	ND	-	-	25	
1,2-Dichloropropane	ND	ND	ND	ND	-	-	25	
Bromodichloromethane	ND	ND	ND	ND	-	-	25	
Trichloroethene	ND	ND	ND	ND	-	-	25	
1,4-Dioxane	69.4	19.3	65.0	18.0	67.2	**7**	25	
Methyl Methacrylate	ND	ND	ND	ND	-	-	25	
n-Heptane	7.66	1.87	7.58	1.85	7.62	**1**	25	
cis-1,3-Dichloropropene	ND	ND	ND	ND	-	-	25	
4-Methyl-2-pentanone	3.51	0.856	3.55	0.866	3.53	**1**	25	**J**
trans-1,3-Dichloropropene	ND	ND	ND	ND	-	-	25	
1,1,2-Trichloroethane	ND	ND	ND	ND	-	-	25	
Toluene	4.11	1.09	3.81	1.01	3.96	**8**	25	**J**
2-Hexanone	ND	ND	ND	ND	-	-	25	
Dibromochloromethane	ND	ND	ND	ND	-	-	25	
1,2-Dibromoethane	ND	ND	ND	ND	-	-	25	
n-Butyl Acetate	ND	ND	ND	ND	-	-	25	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

LABORATORY DUPLICATE SUMMARY RESULTS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **SVE Carbon 1** ALS Project ID: P1802773
Client Project ID: **SVE Performance Monitoring / KUH0-18-010** ALS Sample ID: P1802773-002DUP

Test Code: EPA TO-15 Date Collected: 5/30/18
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 5/31/18
Analyst: Simon Cao Date Analyzed: 6/4/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.10 Liter(s)
Test Notes:
Container ID: 1SC00710

Initial Pressure (psig): 0.06 Final Pressure (psig): 5.50

Container Dilution Factor: 1.37

Compound	Sample Result		Duplicate Sample Result		Average	% RPD	RPD	Data
	µg/m³	ppbV	µg/m³	ppbV	µg/m³		Limit	Qualifier
n-Octane	1.82	0.390	1.77	0.378	1.795	**3**	25	**J**
Tetrachloroethene	1.82	0.269	1.64	0.243	1.73	**10**	25	**J**
Chlorobenzene	ND	ND	ND	ND	-	-	25	
Ethylbenzene	ND	ND	ND	ND	-	-	25	
m,p-Xylenes	2.07	0.476	ND	ND	-	-	25	
Bromoform	ND	ND	ND	ND	-	-	25	
Styrene	ND	ND	ND	ND	-	-	25	
o-Xylene	ND	ND	ND	ND	-	-	25	
n-Nonane	1.42	0.272	ND	ND	-	-	25	
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	-	-	25	
Cumene	ND	ND	ND	ND	-	-	25	
alpha-Pinene	ND	ND	ND	ND	-	-	25	
n-Propylbenzene	ND	ND	ND	ND	-	-	25	
4-Ethyltoluene	ND	ND	ND	ND	-	-	25	
1,3,5-Trimethylbenzene	ND	ND	ND	ND	-	-	25	
1,2,4-Trimethylbenzene	ND	ND	ND	ND	-	-	25	
Benzyl Chloride	ND	ND	ND	ND	-	-	25	
1,3-Dichlorobenzene	ND	ND	ND	ND	-	-	25	
1,4-Dichlorobenzene	ND	ND	ND	ND	-	-	25	
1,2-Dichlorobenzene	ND	ND	ND	ND	-	-	25	
d-Limonene	1.81	0.325	1.82	0.327	1.815	**0.6**	25	**J**
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	-	-	25	
1,2,4-Trichlorobenzene	ND	ND	ND	ND	-	-	25	
Naphthalene	ND	ND	ND	ND	-	-	25	
Hexachlorobutadiene	ND	ND	ND	ND	-	-	25	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Calculation of Mass Recovery Per Day and Per Month
SVE system
Kuhlman Electric Corporation
Crystal Springs, MS

OPERATING PARAMETER	UNITS	1,1,1-Trichloroethane	1,1-Dichloroethene	1,4-Dioxane
Constituent concentration	ppmv	**0.007**	**0.04**	**0.89**
enter avg flow rate in ACFM air	cubic ft/min	**315.64**	315.64	315.64
ave flow rate in cubic ft per day	ft3/day	454522	454522	454522
enter avg vapor temperature	degrees F	70	70	70
enter nominal pressure in psig	lb/in2	**0.38**	0.38	0.38
temp in degrees rankin	degrees R	529.67	529.67	529.67
Ru = universal gas constant	psi ft3/(lbmol deg R)	10.73	10.73	10.73
R = specific gas constant air (R=Ru/mw)	(ft3 psi mol)/(R lbmol g)	0.37	0.37	0.37
molecular weight of air	lbm/lbmol	29	29	29
molecular weight of constituent	lbm/lbmol	133.4	96.94	88.11
density of air = P/(RT)= (psi R lbm)/(ft3 psi R) =lbm/ft3	lbm/ft3	0.0769	0.0769	0.0769
mass of air recovered per day= flow (ft3/day)*density (lb/ft3)	lbm/day	34971.9	34971.9	34971.9
moles of air recovered per day = mass air/day (lb/day) / mw (lbm/lbmol)	lbmol/ day	1205.93	1205.93	1205.93
moles of constituent recovered per day = ppmv/(10^6)* (lb mol/ day)	lbmol/day	8.80326E-06	4.8237E-05	0.001073274
mass of constituent recovered per day = (lbmol/day) * lbm/lbmol = lb/day	lbm/day	**0.00**	**0.00**	**0.09**
January 2018 Recovery		**0.04**	**0.1**	**2.932**

Calculation of Mass Recovery Per Day and Per Month
SVE system
Kuhlman Electric Corporation
Crystal Springs, MS

OPERATING PARAMETER	UNITS	1,1,1-Trichloroethane	1,1-Dichloroethene	1,4-Dioxane
Constituent concentration	ppmv	**0.006**	**0.03**	**0.64**
enter avg flow rate in ACFM air	cubic ft/min	**305.79**	305.79	305.79
ave flow rate in cubic ft per day	ft3/day	440338	440338	440338
enter avg vapor temperature	degrees F	70	70	70
enter nominal pressure in psig	lb/in2	**0.38**	0.38	0.38
temp in degrees rankin	degrees R	529.67	529.67	529.67
Ru = universal gas constant	psi ft3/(lbmol deg R)	10.73	10.73	10.73
R = specific gas constant air (R=Ru/mw)	(ft3 psi)/(R lbm)	0.37	0.37	0.37
molecular weight of air	lbm/lbmol	29	29	29
molecular weight of constituent	lbm/lbmol	133.4	96.94	88.11
density of air = P/(RT)= (psi R lbm)/(ft3 psi R) =lbm/ft3	lbm/ft3	0.0769	0.0769	0.0769
mass of air recovered per day= flow (ft3/day)*density (lb/ft3)	lbm/day	33880.5	33880.5	33880.5
moles of air recovered per day = mass air/day (lb/day) / mw (lbm/lbmol)	lbmol/ day	1168.29	1168.29	1168.29
moles of constituent recovered per day = ppmv/(10^6)* (lb mol/ day)	lbmol/day	7.12659E-06	3.73854E-05	0.000747708
mass of constituent recovered per day = (lbmol/day) * lbm/lbmol = lb/day	lbm/day	**0.00**	**0.00**	**0.07**
February 2018 Recovery		**0.03**	**0.11**	**2.04**

Calculation of Mass Recovery Per Day and Per Month
SVE system
Kuhlman Electric Corporation
Crystal Springs, MS

OPERATING PARAMETER	UNITS	1,1,1-Trichloroethane	1,1-Dichloroethene	1,4-Dioxane
Constituent concentration	ppmv	**0.006**	**0.03**	**0.64**
enter avg flow rate in ACFM air	cubic ft/min	**312.61**	312.61	312.61
ave flow rate in cubic ft per day	ft3/day	450158	450158	450158
enter avg vapor temperature	degrees F	70	70	70
enter nominal pressure in psig	lb/in2	**0.38**	0.38	0.38
temp in degrees rankin	degrees R	529.67	529.67	529.67
Ru = universal gas constant	psi ft3/(lbmol deg R)	10.73	10.73	10.73
R = specific gas constant air (R=Ru/mw)	(ft3 psi)/(R lbm)	0.37	0.37	0.37
molecular weight of air	lbm/lbmol	29	29	29
molecular weight of constituent	lbm/lbmol	133.4	96.94	88.11
density of air = P/(RT)= (psi R lbm)/(ft3 psi R) =lbm/ft3	lbm/ft3	0.0769	0.0769	0.0769
mass of air recovered per day= flow (ft3/day)*density (lb/ft3)	lbm/day	34636.1	34636.1	34636.1
moles of air recovered per day = mass air/day (lb/day) / mw (lbm/lbmol)	lbmol/ day	1194.35	1194.35	1194.35
moles of constituent recovered per day = ppmv/(10^6)* (lb mol/ day)	lbmol/day	7.28553E-06	3.82192E-05	0.000764384
mass of constituent recovered per day = (lbmol/day) * lbm/lbmol = lb/day	lbm/day	**0.00**	**0.00**	**0.07**
March 2018 Recovery		**0.02**	**0.08**	**1.48**

Calculation of Mass Recovery Per Day and Per Month
SVE system
Kuhlman Electric Corporation
Crystal Springs, MS

OPERATING PARAMETER	UNITS	1,1,1-Trichloroethane	1,1-Dichloroethene	1,4-Dioxane
Constituent concentration	ppmv	**0.006**	**0.03**	**0.64**
enter avg flow rate in ACFM air	cubic ft/min	**303.60**	303.60	303.60
ave flow rate in cubic ft per day	ft3/day	437184	437184	437184
enter avg vapor temperature	degrees F	70	70	70
enter nominal pressure in psig	lb/in2	**0.38**	0.38	0.38
temp in degrees rankin	degrees R	529.67	529.67	529.67
Ru = universal gas constant	psi ft3/(lbmol deg R)	10.73	10.73	10.73
R = specific gas constant air (R=Ru/mw)	(ft3 psi)/(R lbm)	0.37	0.37	0.37
molecular weight of air	lbm/lbmol	29	29	29
molecular weight of constituent	lbm/lbmol	133.4	96.94	88.11
density of air = P/(RT)= (psi R lbm)/(ft3 psi R) =lbm/ft3	lbm/ft3	0.0769	0.0769	0.0769
mass of air recovered per day= flow (ft3/day)*density (lb/ft3)	lbm/day	33637.9	33637.9	33637.9
moles of air recovered per day = mass air/day (lb/day) / mw (lbm/lbmol)	lbmol/ day	1159.93	1159.93	1159.93
moles of constituent recovered per day = ppmv/(10^6)* (lb mol/ day)	lbmol/day	7.07555E-06	3.71176E-05	0.000742353
mass of constituent recovered per day = (lbmol/day) * lbm/lbmol = lb/day	lbm/day	**0.00**	**0.00**	**0.07**
April 2018 Recovery		**0.03**	**0.11**	**2.03**

Calculation of Mass Recovery Per Day and Per Month
SVE system
Kuhlman Electric Corporation
Crystal Springs, MS

OPERATING PARAMETER	UNITS	1,1,1-Trichloroethane	1,1-Dichloroethene	1,4-Dioxane
Constituent concentration	ppmv	**0.007**	**0.001**	**0.67**
enter avg flow rate in ACFM air	cubic ft/min	**304.13**	304.13	304.13
ave flow rate in cubic ft per day	ft3/day	437947	437947	437947
enter avg vapor temperature	degrees F	70	70	70
enter nominal pressure in psig	lb/in2	**0.38**	0.38	0.38
temp in degrees rankin	degrees R	529.67	529.67	529.67
Ru = universal gas constant	psi ft3/(lbmol deg R)	10.73	10.73	10.73
R = specific gas constant air (R=Ru/mw)	(ft3 psi)/(R lbm)	0.37	0.37	0.37
molecular weight of air	lbm/lbmol	29	29	29
molecular weight of constituent	lbm/lbmol	133.4	96.94	88.11
density of air = P/(RT)= (psi R lbm)/(ft3 psi R) =lbm/ft3	lbm/ft3	0.0769	0.0769	0.0769
mass of air recovered per day= flow (ft3/day)*density (lb/ft3)	lbm/day	33696.6	33696.6	33696.6
moles of air recovered per day = mass air/day (lb/day) / mw (lbm/lbmol)	lbmol/ day	1161.95	1161.95	1161.95
moles of constituent recovered per day = ppmv/(10^6)* (lb mol/ day)	lbmol/day	7.66888E-06	1.16195E-06	0.000778507
mass of constituent recovered per day = (lbmol/day) * lbm/lbmol = lb/day	lbm/day	**0.001**	**0.000**	**0.07**
May 2018 Recovery		**0.03**	**0.00**	**2.06**

Calculation of Mass Recovery Per Day and Per Month
SVE system
Kuhlman Electric Corporation
Crystal Springs, MS

OPERATING PARAMETER	UNITS	1,1,1-Trichloroethane	1,1-Dichloroethene	1,4-Dioxane
Constituent concentration	ppmv	**0.007**	**0.001**	**0.67**
enter avg flow rate in ACFM air	cubic ft/min	**298.52**	298.52	298.52
ave flow rate in cubic ft per day	ft3/day	429869	429869	429869
enter avg vapor temperature	degrees F	70	70	70
enter nominal pressure in psig	lb/in2	**0.38**	0.38	0.38
temp in degrees rankin	degrees R	529.67	529.67	529.67
Ru = universal gas constant	psi ft3/(lbmol deg R)	10.73	10.73	10.73
R = specific gas constant air (R=Ru/mw)	(ft3 psi)/(R lbm)	0.37	0.37	0.37
molecular weight of air	lbm/lbmol	29	29	29
molecular weight of constituent	lbm/lbmol	133.4	96.94	88.11
density of air = P/(RT)= (psi R lbm)/(ft3 psi R) =lbm/ft3	lbm/ft3	0.0769	0.0769	0.0769
mass of air recovered per day= flow (ft3/day)*density (lb/ft3)	lbm/day	33075.0	33075.0	33075.0
moles of air recovered per day = mass air/day (lb/day) / mw (lbm/lbmol)	lbmol/ day	1140.52	1140.52	1140.52
moles of constituent recovered per day = ppmv/(10^6)* (lb mol/ day)	lbmol/day	7.52742E-06	8.32578E-07	0.000764147
mass of constituent recovered per day = (lbmol/day) * lbm/lbmol = lb/day	lbm/day	**0.001**	**0.000**	**0.07**
June 2018 Recovery		**0.03**	**0.00**	**1.89**

Appendix C

Ambient Air Sampling Laboratory

Analytical Results

2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
F: +1 805 526 7270
www.alsglobal.com

LABORATORY REPORT

March 16, 2018

Stephanie Kilgore
Environmental Management Services, Inc.
P.O. Box 15369
Hattiesburg, MS 39404

RE: SVE In Plant Monitoring / KUH0-18-011

Dear Stephanie:

Enclosed are the results of the samples submitted to our laboratory on March 2, 2018. For your reference, these analyses have been assigned our service request number P1800983.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

ALS | Environmental

By Sue Anderson at 11:11 am, Mar 16, 2018

Sue Anderson
Project Manager

2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
F: +1 805 526 7270
www.alsglobal.com

Client: Environmental Management Services, Inc. Service Request No: P1800983
Project: SVE In Plant Monitoring / KUH0-18-011

CASE NARRATIVE

The samples were received intact under chain of custody on March 2, 2018 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Volatile Organic Compound Analysis

The samples were analyzed for volatile organic compounds in accordance with EPA Method TO-15 from the Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition (EPA/625/R-96/010b), January, 1999. This procedure is described in laboratory SOP VOA-TO15. The analytical system was comprised of a gas chromatograph / mass spectrometer (GC/MS) interfaced to a whole-air preconcentrator. This method is included on the laboratory's NELAP and DoD-ELAP scope of accreditation. Any analytes flagged with an X are not included on the NELAP or DoD-ELAP accreditation.

The containers were cleaned, prior to sampling, down to the method reporting limit (MRL) reported for this project. For projects requiring DoD QSM 5.1 compliance canisters were cleaned to <1/2 the MRL. Please note, projects which require reporting below the MRL could have results between the MRL and method detection limit (MDL) that are biased high.

2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
F: +1 805 526 7270
www.alsglobal.com

ALS Environmental – Simi Valley

CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
Arizona DHS	http://www.azdhs.gov/preparedness/state-laboratory/lab-licensure-certification/index.php#laboratory-licensure-home	AZ0694
Florida DOH (NELAP)	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E871020
Louisiana DEQ (NELAP)	http://www.deq.louisiana.gov/portal/DIVISIONS/PublicParticipationandPermitSupport/LouisianaLaboratoryAccreditationProgram.aspx	05071
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/labcert.htm	2016036
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	1347317
New Jersey DEP (NELAP)	http://www.nj.gov/dep/oqa/	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-005
Pennsylvania DEP	http://www.depweb.state.pa.us/labs	68-03307 (Registration)
PJLA (DoD ELAP)	http://www.pjlabs.com/search-accredited-labs	65818 (Testing)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704413-17-8
Utah DOH (NELAP)	http://health.utah.gov/lab/environmental-lab-certification/	CA016272017-8
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

ALS ENVIRONMENTAL

DETAIL SUMMARY REPORT

Client: Environmental Management Services, Inc. Service Request: P1800983

Project ID: SVE In Plant Monitoring / KUH0-18-011

Date Received: 3/2/2018

Time Received: 09:30

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	Container ID	Pi1 (psig)	Pf1 (psig)	TO-15 - VOC Cans
Air Mon 01-28	P1800983-001	Air	2/26/2018	07:02	1SS00601	-0.56	5.62	X
Air Mon 02-28	P1800983-002	Air	2/26/2018	07:09	1SS00775	-2.25	5.70	X

Air - Chain of Custody Record & Analytical Service Request

Page 1 of 1

2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone (805) 526-7161
Fax (805) 526-7270

Requested Turnaround Time in Business Days (Surcharges) please circle
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10-Day-Standard

ALS Project No. 1800983

Company Name & Address (Reporting Information)
Environmental Management Services, Inc.
P.O. Box 16369
Hattiesburg, MS 39404

Project Name: SVE In Plant Monitoring

Project Number: KUHO-18-011

Project Manager: Stephanie Kilgore

P.O. # / Billing Information: KUHO-18-011 / same as reporting

Phone: 601-544-3674 Fax: 601-544 0504

Email Address for Result Reporting: SKilgore@env-mgt.com

Sampler (Print & Sign): Stephanie Kilgore Stephanie Kilgore

ALS Contact:

Analysis Method

Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Canister ID (Bar code # - AC, SC, etc.)	Flow Controller ID (Bar code # - FC #)	Canister Start Pressure "Hg	Canister End Pressure "Hg/psig	Sample Volume	TO-15		Comments e.g. Actual Preservative or specific instructions
Air Mon 01-28	1	2-26-18	7:02	1SSD0601	DAD0810	29			X		
Air Mon 02-28	2	2-26-18	7:09	1SSD0775	DAD1480	30			X		

Report Tier Levels - please select

Tier I - Results (Default in not specified) _____ Tier III (Results + QC & Calibration Summaries) _____

Tier II (Results + QC Summaries X Tier IV (Date Validation Package) 10% Surcharge _____

EDD required YES / No

Type: _____ Units: _____

Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT

Project Requirements (MRLs, QAPP)

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Stephanie Kilgore	2-27-18	12:30	Fed Ex		
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
			Henry Perez	3/2/18	0930

Cooler / Blank Temperature _____ °C

ALS Environmental

Sample Acceptance Check Form

Client: Environmental Management Services, Inc. Work order: P1800983

Project: SVE In Plant Monitoring / KUH0-18-011

Sample(s) received on: 3/2/18 Date opened: 3/2/18 by: E.PEREZ

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Did **sample containers** arrive in good condition?	☒	☐	☐
3	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
4	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
5	Was **sample volume** received adequate for analysis?	☒	☐	☐
6	Are samples within specified holding times?	☒	☐	☐
7	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☐	☐	☒
8	Were **custody seals** on outside of cooler/Box/Container?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
9	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
10	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
11	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1800983-001.01	1.0 L Source Silonite Canister					
P1800983-002.01	1.0 L Source Silonite Canister					

Explain any discrepancies: (include lab sample ID numbers):

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **Air Mon 01-28** ALS Project ID: P1800983
Client Project ID: **SVE In Plant Monitoring / KUH0-18-011** ALS Sample ID: P1800983-001

Test Code: EPA TO-15 Date Collected: 2/26/18
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: 3/2/18
Analyst: Raneem Sahtah Date Analyzed: 3/9/18
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS00601

Initial Pressure (psig): -0.56 Final Pressure (psig): 5.62

Container Dilution Factor: 1.44

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	**180**	1.8	0.50	**110**	1.0	0.29	
75-71-8	Dichlorodifluoromethane (CFC 12)	**1.9**	1.8	0.61	**0.39**	0.36	0.12	
74-87-3	Chloromethane	**0.90**	1.8	0.54	**0.43**	0.87	0.26	**J**
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	1.8	0.68	ND	0.26	0.098	
75-01-4	Vinyl Chloride	ND	1.8	0.61	ND	0.70	0.24	
106-99-0	1,3-Butadiene	ND	1.8	0.79	ND	0.81	0.36	
74-83-9	Bromomethane	ND	1.8	0.68	ND	0.46	0.18	
75-00-3	Chloroethane	ND	1.8	0.61	ND	0.68	0.23	
64-17-5	Ethanol	**180**	18	2.9	**96**	9.6	1.5	
75-05-8	Acetonitrile	ND	1.8	0.65	ND	1.1	0.39	
107-02-8	Acrolein	ND	7.2	0.61	ND	3.1	0.27	
67-64-1	Acetone	**200**	18	2.8	**83**	7.6	1.2	
75-69-4	Trichlorofluoromethane (CFC 11)	**0.94**	1.8	0.61	**0.17**	0.32	0.11	**J**
67-63-0	2-Propanol (Isopropyl Alcohol)	**20**	18	1.5	**8.0**	7.3	0.62	
107-13-1	Acrylonitrile	ND	1.8	0.61	ND	0.83	0.28	
75-35-4	1,1-Dichloroethene	ND	1.8	0.61	ND	0.45	0.15	
75-09-2	Methylene Chloride	ND	1.8	0.61	ND	0.52	0.18	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	1.8	0.58	ND	0.58	0.18	
76-13-1	Trichlorotrifluoroethane (CFC 113)	ND	1.8	0.61	ND	0.23	0.080	
75-15-0	Carbon Disulfide	**3.3**	18	0.54	**1.1**	5.8	0.17	**J**
156-60-5	trans-1,2-Dichloroethene	ND	1.8	0.68	ND	0.45	0.17	
75-34-3	1,1-Dichloroethane	ND	1.8	0.58	ND	0.44	0.14	
1634-04-4	Methyl tert-Butyl Ether	ND	1.8	0.61	ND	0.50	0.17	
108-05-4	Vinyl Acetate	ND	18	2.3	ND	5.1	0.66	
78-93-3	2-Butanone (MEK)	**17**	18	0.76	**5.8**	6.1	0.26	**J**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **Environmental Management Services, Inc.**

Client Sample ID: **Air Mon 01-28** ALS Project ID: P1800983

Client Project ID: **SVE In Plant Monitoring / KUH0-18-011** ALS Sample ID: P1800983-001

Test Code: EPA TO-15 Date Collected: 2/26/18

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: 3/2/18

Analyst: Raneem Sahtah Date Analyzed: 3/9/18

Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)

Test Notes:

Container ID: 1SS00601

Initial Pressure (psig): -0.56 Final Pressure (psig): 5.62

Container Dilution Factor: 1.44

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	1.8	0.58	ND	0.45	0.15	
141-78-6	Ethyl Acetate	**2.0**	3.6	1.3	**0.56**	1.0	0.35	**J**
110-54-3	n-Hexane	**6.0**	1.8	0.54	**1.7**	0.51	0.15	
67-66-3	Chloroform	ND	1.8	0.61	ND	0.37	0.13	
109-99-9	Tetrahydrofuran (THF)	ND	1.8	0.72	ND	0.61	0.24	
107-06-2	1,2-Dichloroethane	ND	1.8	0.58	ND	0.44	0.14	
71-55-6	1,1,1-Trichloroethane	ND	1.8	0.61	ND	0.33	0.11	
71-43-2	Benzene	ND	1.8	0.58	ND	0.56	0.18	
56-23-5	Carbon Tetrachloride	ND	1.8	0.54	ND	0.29	0.086	
110-82-7	Cyclohexane	ND	3.6	1.0	ND	1.0	0.30	
78-87-5	1,2-Dichloropropane	ND	1.8	0.58	ND	0.39	0.12	
75-27-4	Bromodichloromethane	ND	1.8	0.54	ND	0.27	0.081	
79-01-6	Trichloroethene	ND	1.8	0.50	ND	0.34	0.094	
123-91-1	1,4-Dioxane	ND	1.8	0.58	ND	0.50	0.16	
80-62-6	Methyl Methacrylate	ND	3.6	1.1	ND	0.88	0.27	
142-82-5	n-Heptane	ND	1.8	0.61	ND	0.44	0.15	
10061-01-5	cis-1,3-Dichloropropene	ND	1.8	0.50	ND	0.40	0.11	
108-10-1	4-Methyl-2-pentanone	**2.1**	1.8	0.58	**0.52**	0.44	0.14	
10061-02-6	trans-1,3-Dichloropropene	ND	1.8	0.58	ND	0.40	0.13	
79-00-5	1,1,2-Trichloroethane	ND	1.8	0.58	ND	0.33	0.11	
108-88-3	Toluene	**23**	1.8	0.61	**6.2**	0.48	0.16	
591-78-6	2-Hexanone	ND	1.8	0.58	ND	0.44	0.14	
124-48-1	Dibromochloromethane	ND	1.8	0.58	ND	0.21	0.068	
106-93-4	1,2-Dibromoethane	ND	1.8	0.58	ND	0.23	0.075	
123-86-4	n-Butyl Acetate	**31**	1.8	0.58	**6.5**	0.38	0.12	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **Environmental Management Services, Inc.**
Client Sample ID: **Air Mon 01-28** ALS Project ID: P1800983
Client Project ID: **SVE In Plant Monitoring / KUH0-18-011** ALS Sample ID: P1800983-001

Test Code: EPA TO-15 Date Collected: 2/26/18
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: 3/2/18
Analyst: Raneem Sahtah Date Analyzed: 3/9/18
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS00601

Initial Pressure (psig): -0.56 Final Pressure (psig): 5.62

Container Dilution Factor: 1.44

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	ND	1.8	0.65	ND	0.39	0.14	
127-18-4	Tetrachloroethene	ND	1.8	0.50	ND	0.27	0.074	
108-90-7	Chlorobenzene	ND	1.8	0.58	ND	0.39	0.13	
100-41-4	Ethylbenzene	**3.0**	1.8	0.58	**0.69**	0.41	0.13	
179601-23-1	m,p-Xylenes	**16**	3.6	1.1	**3.6**	0.83	0.25	
75-25-2	Bromoform	ND	1.8	0.54	ND	0.17	0.052	
100-42-5	Styrene	ND	1.8	0.54	ND	0.42	0.13	
95-47-6	o-Xylene	**6.1**	1.8	0.54	**1.4**	0.41	0.12	
111-84-2	n-Nonane	**0.76**	1.8	0.54	**0.15**	0.34	0.10	**J**
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.8	0.54	ND	0.26	0.079	
98-82-8	Cumene	ND	1.8	0.54	ND	0.37	0.11	
80-56-8	alpha-Pinene	**3.4**	1.8	0.50	**0.62**	0.32	0.090	
103-65-1	n-Propylbenzene	**0.62**	1.8	0.58	**0.13**	0.37	0.12	**J**
622-96-8	4-Ethyltoluene	**1.1**	1.8	0.58	**0.22**	0.37	0.12	**J**
108-67-8	1,3,5-Trimethylbenzene	**1.0**	1.8	0.58	**0.21**	0.37	0.12	**J**
95-63-6	1,2,4-Trimethylbenzene	**4.1**	1.8	0.54	**0.84**	0.37	0.11	
100-44-7	Benzyl Chloride	ND	3.6	0.40	ND	0.70	0.077	
541-73-1	1,3-Dichlorobenzene	ND	1.8	0.54	ND	0.30	0.090	
106-46-7	1,4-Dichlorobenzene	**1.4**	1.8	0.50	**0.23**	0.30	0.084	**J**
95-50-1	1,2-Dichlorobenzene	ND	1.8	0.54	ND	0.30	0.090	
5989-27-5	d-Limonene	**6.9**	1.8	0.50	**1.2**	0.32	0.090	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.8	0.36	ND	0.19	0.037	
120-82-1	1,2,4-Trichlorobenzene	ND	1.8	0.58	ND	0.24	0.078	
91-20-3	Naphthalene	**1.7**	1.8	0.65	**0.33**	0.34	0.12	**J**
87-68-3	Hexachlorobutadiene	ND	1.8	0.50	ND	0.17	0.047	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **Air Mon 02-28** ALS Project ID: P1800983
Client Project ID: **SVE In Plant Monitoring / KUH0-18-011** ALS Sample ID: P1800983-002

Test Code: EPA TO-15 Date Collected: 2/26/18
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: 3/2/18
Analyst: Raneem Sahtah Date Analyzed: 3/9/18
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS00775

Initial Pressure (psig): -2.25 Final Pressure (psig): 5.70

Container Dilution Factor: 1.64

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	**78**	2.1	0.57	**45**	1.2	0.33	
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.0**	2.1	0.70	**0.40**	0.41	0.14	**J**
74-87-3	Chloromethane	**0.87**	2.1	0.62	**0.42**	0.99	0.30	**J**
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	2.1	0.78	ND	0.29	0.11	
75-01-4	Vinyl Chloride	ND	2.1	0.70	ND	0.80	0.27	
106-99-0	1,3-Butadiene	ND	2.1	0.90	ND	0.93	0.41	
74-83-9	Bromomethane	ND	2.1	0.78	ND	0.53	0.20	
75-00-3	Chloroethane	ND	2.1	0.70	ND	0.78	0.26	
64-17-5	Ethanol	**70**	21	3.3	**37**	11	1.7	
75-05-8	Acetonitrile	ND	2.1	0.74	ND	1.2	0.44	
107-02-8	Acrolein	ND	8.2	0.70	ND	3.6	0.30	
67-64-1	Acetone	**170**	21	3.2	**73**	8.6	1.3	
75-69-4	Trichlorofluoromethane (CFC 11)	**0.96**	2.1	0.70	**0.17**	0.36	0.12	**J**
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	21	1.7	ND	8.3	0.70	
107-13-1	Acrylonitrile	ND	2.1	0.70	ND	0.95	0.32	
75-35-4	1,1-Dichloroethene	ND	2.1	0.70	ND	0.52	0.18	
75-09-2	Methylene Chloride	**0.77**	2.1	0.70	**0.22**	0.59	0.20	**J**
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	2.1	0.66	ND	0.66	0.21	
76-13-1	Trichlorotrifluoroethane (CFC 113)	ND	2.1	0.70	ND	0.27	0.091	
75-15-0	Carbon Disulfide	**0.88**	21	0.62	**0.28**	6.6	0.20	**J**
156-60-5	trans-1,2-Dichloroethene	ND	2.1	0.78	ND	0.52	0.20	
75-34-3	1,1-Dichloroethane	ND	2.1	0.66	ND	0.51	0.16	
1634-04-4	Methyl tert-Butyl Ether	ND	2.1	0.70	ND	0.57	0.19	
108-05-4	Vinyl Acetate	ND	21	2.7	ND	5.8	0.76	
78-93-3	2-Butanone (MEK)	**10**	21	0.86	**3.4**	7.0	0.29	**J**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **Environmental Management Services, Inc.**

Client Sample ID: **Air Mon 02-28** ALS Project ID: P1800983

Client Project ID: **SVE In Plant Monitoring / KUH0-18-011** ALS Sample ID: P1800983-002

Test Code: EPA TO-15 Date Collected: 2/26/18

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: 3/2/18

Analyst: Raneem Sahtah Date Analyzed: 3/9/18

Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)

Test Notes:

Container ID: 1SS00775

Initial Pressure (psig): -2.25 Final Pressure (psig): 5.70

Container Dilution Factor: 1.64

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	2.1	0.66	ND	0.52	0.17	
141-78-6	Ethyl Acetate	ND	4.1	1.4	ND	1.1	0.40	
110-54-3	n-Hexane	**2.9**	2.1	0.62	**0.84**	0.58	0.17	
67-66-3	Chloroform	ND	2.1	0.70	ND	0.42	0.14	
109-99-9	Tetrahydrofuran (THF)	ND	2.1	0.82	ND	0.70	0.28	
107-06-2	1,2-Dichloroethane	ND	2.1	0.66	ND	0.51	0.16	
71-55-6	1,1,1-Trichloroethane	ND	2.1	0.70	ND	0.38	0.13	
71-43-2	Benzene	ND	2.1	0.66	ND	0.64	0.21	
56-23-5	Carbon Tetrachloride	ND	2.1	0.62	ND	0.33	0.098	
110-82-7	Cyclohexane	ND	4.1	1.2	ND	1.2	0.35	
78-87-5	1,2-Dichloropropane	ND	2.1	0.66	ND	0.44	0.14	
75-27-4	Bromodichloromethane	ND	2.1	0.62	ND	0.31	0.092	
79-01-6	Trichloroethene	ND	2.1	0.57	ND	0.38	0.11	
123-91-1	1,4-Dioxane	ND	2.1	0.66	ND	0.57	0.18	
80-62-6	Methyl Methacrylate	ND	4.1	1.3	ND	1.0	0.31	
142-82-5	n-Heptane	ND	2.1	0.70	ND	0.50	0.17	
10061-01-5	cis-1,3-Dichloropropene	ND	2.1	0.57	ND	0.45	0.13	
108-10-1	4-Methyl-2-pentanone	**0.84**	2.1	0.66	**0.21**	0.50	0.16	**J**
10061-02-6	trans-1,3-Dichloropropene	ND	2.1	0.66	ND	0.45	0.14	
79-00-5	1,1,2-Trichloroethane	ND	2.1	0.66	ND	0.38	0.12	
108-88-3	Toluene	**9.7**	2.1	0.70	**2.6**	0.54	0.19	
591-78-6	2-Hexanone	ND	2.1	0.66	ND	0.50	0.16	
124-48-1	Dibromochloromethane	ND	2.1	0.66	ND	0.24	0.077	
106-93-4	1,2-Dibromoethane	ND	2.1	0.66	ND	0.27	0.085	
123-86-4	n-Butyl Acetate	**28**	2.1	0.66	**5.9**	0.43	0.14	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **Air Mon 02-28** ALS Project ID: P1800983
Client Project ID: **SVE In Plant Monitoring / KUH0-18-011** ALS Sample ID: P1800983-002

Test Code: EPA TO-15 Date Collected: 2/26/18
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: 3/2/18
Analyst: Raneem Sahtah Date Analyzed: 3/9/18
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SS00775

Initial Pressure (psig): -2.25 Final Pressure (psig): 5.70

Container Dilution Factor: 1.64

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	ND	2.1	0.74	ND	0.44	0.16	
127-18-4	Tetrachloroethene	ND	2.1	0.57	ND	0.30	0.085	
108-90-7	Chlorobenzene	ND	2.1	0.66	ND	0.45	0.14	
100-41-4	Ethylbenzene	**3.8**	2.1	0.66	**0.87**	0.47	0.15	
179601-23-1	m,p-Xylenes	**18**	4.1	1.2	**4.1**	0.94	0.28	
75-25-2	Bromoform	ND	2.1	0.62	ND	0.20	0.060	
100-42-5	Styrene	ND	2.1	0.62	ND	0.48	0.14	
95-47-6	o-Xylene	**6.1**	2.1	0.62	**1.4**	0.47	0.14	
111-84-2	n-Nonane	**0.68**	2.1	0.62	**0.13**	0.39	0.12	**J**
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.1	0.62	ND	0.30	0.090	
98-82-8	Cumene	ND	2.1	0.62	ND	0.42	0.13	
80-56-8	alpha-Pinene	**4.8**	2.1	0.57	**0.87**	0.37	0.10	
103-65-1	n-Propylbenzene	ND	2.1	0.66	ND	0.42	0.13	
622-96-8	4-Ethyltoluene	ND	2.1	0.66	ND	0.42	0.13	
108-67-8	1,3,5-Trimethylbenzene	**0.72**	2.1	0.66	**0.15**	0.42	0.13	**J**
95-63-6	1,2,4-Trimethylbenzene	**2.5**	2.1	0.62	**0.50**	0.42	0.13	
100-44-7	Benzyl Chloride	ND	4.1	0.45	ND	0.79	0.087	
541-73-1	1,3-Dichlorobenzene	ND	2.1	0.62	ND	0.34	0.10	
106-46-7	1,4-Dichlorobenzene	ND	2.1	0.57	ND	0.34	0.096	
95-50-1	1,2-Dichlorobenzene	ND	2.1	0.62	ND	0.34	0.10	
5989-27-5	d-Limonene	**8.2**	2.1	0.57	**1.5**	0.37	0.10	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.1	0.41	ND	0.21	0.042	
120-82-1	1,2,4-Trichlorobenzene	ND	2.1	0.66	ND	0.28	0.088	
91-20-3	Naphthalene	ND	2.1	0.74	ND	0.39	0.14	
87-68-3	Hexachlorobutadiene	ND	2.1	0.57	ND	0.19	0.054	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **Method Blank** ALS Project ID: P1800983
Client Project ID: **SVE In Plant Monitoring / KUH0-18-011** ALS Sample ID: P180308-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: NA
Analyst: Raneem Sahtah Date Analyzed: 3/8/18
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	ND	0.50	0.14	ND	0.29	0.081	
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	0.50	0.17	ND	0.10	0.034	
74-87-3	Chloromethane	ND	0.50	0.15	ND	0.24	0.073	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.50	0.19	ND	0.072	0.027	
75-01-4	Vinyl Chloride	ND	0.50	0.17	ND	0.20	0.067	
106-99-0	1,3-Butadiene	ND	0.50	0.22	ND	0.23	0.099	
74-83-9	Bromomethane	ND	0.50	0.19	ND	0.13	0.049	
75-00-3	Chloroethane	ND	0.50	0.17	ND	0.19	0.064	
64-17-5	Ethanol	ND	5.0	0.80	ND	2.7	0.42	
75-05-8	Acetonitrile	ND	0.50	0.18	ND	0.30	0.11	
107-02-8	Acrolein	ND	2.0	0.17	ND	0.87	0.074	
67-64-1	Acetone	ND	5.0	0.77	ND	2.1	0.32	
75-69-4	Trichlorofluoromethane (CFC 11)	ND	0.50	0.17	ND	0.089	0.030	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	5.0	0.42	ND	2.0	0.17	
107-13-1	Acrylonitrile	ND	0.50	0.17	ND	0.23	0.078	
75-35-4	1,1-Dichloroethene	ND	0.50	0.17	ND	0.13	0.043	
75-09-2	Methylene Chloride	ND	0.50	0.17	ND	0.14	0.049	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.50	0.16	ND	0.16	0.051	
76-13-1	Trichlorotrifluoroethane (CFC 113)	ND	0.50	0.17	ND	0.065	0.022	
75-15-0	Carbon Disulfide	ND	5.0	0.15	ND	1.6	0.048	
156-60-5	trans-1,2-Dichloroethene	ND	0.50	0.19	ND	0.13	0.048	
75-34-3	1,1-Dichloroethane	ND	0.50	0.16	ND	0.12	0.040	
1634-04-4	Methyl tert-Butyl Ether	ND	0.50	0.17	ND	0.14	0.047	
108-05-4	Vinyl Acetate	ND	5.0	0.65	ND	1.4	0.18	
78-93-3	2-Butanone (MEK)	ND	5.0	0.21	ND	1.7	0.071	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Client: **Environmental Management Services, Inc.**

Client Sample ID: **Method Blank** ALS Project ID: P1800983

Client Project ID: **SVE In Plant Monitoring / KUH0-18-011** ALS Sample ID: P180308-MB

Test Code:	EPA TO-15	Date Collected:	NA
Instrument ID:	Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13	Date Received:	NA
Analyst:	Raneem Sahtah	Date Analyzed:	3/8/18
Sample Type:	1.0 L Silonite Summa Canister	Volume(s) Analyzed:	1.00 Liter(s)
Test Notes:			

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	0.50	0.16	ND	0.13	0.040	
141-78-6	Ethyl Acetate	ND	1.0	0.35	ND	0.28	0.097	
110-54-3	n-Hexane	ND	0.50	0.15	ND	0.14	0.043	
67-66-3	Chloroform	ND	0.50	0.17	ND	0.10	0.035	
109-99-9	Tetrahydrofuran (THF)	ND	0.50	0.20	ND	0.17	0.068	
107-06-2	1,2-Dichloroethane	ND	0.50	0.16	ND	0.12	0.040	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.17	ND	0.092	0.031	
71-43-2	Benzene	ND	0.50	0.16	ND	0.16	0.050	
56-23-5	Carbon Tetrachloride	ND	0.50	0.15	ND	0.080	0.024	
110-82-7	Cyclohexane	ND	1.0	0.29	ND	0.29	0.084	
78-87-5	1,2-Dichloropropane	ND	0.50	0.16	ND	0.11	0.035	
75-27-4	Bromodichloromethane	ND	0.50	0.15	ND	0.075	0.022	
79-01-6	Trichloroethene	ND	0.50	0.14	ND	0.093	0.026	
123-91-1	1,4-Dioxane	ND	0.50	0.16	ND	0.14	0.044	
80-62-6	Methyl Methacrylate	ND	1.0	0.31	ND	0.24	0.076	
142-82-5	n-Heptane	ND	0.50	0.17	ND	0.12	0.041	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.14	ND	0.11	0.031	
108-10-1	4-Methyl-2-pentanone	ND	0.50	0.16	ND	0.12	0.039	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.16	ND	0.11	0.035	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.16	ND	0.092	0.029	
108-88-3	Toluene	ND	0.50	0.17	ND	0.13	0.045	
591-78-6	2-Hexanone	ND	0.50	0.16	ND	0.12	0.039	
124-48-1	Dibromochloromethane	ND	0.50	0.16	ND	0.059	0.019	
106-93-4	1,2-Dibromoethane	ND	0.50	0.16	ND	0.065	0.021	
123-86-4	n-Butyl Acetate	ND	0.50	0.16	ND	0.11	0.034	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Client: **Environmental Management Services, Inc.**

Client Sample ID: **Method Blank** ALS Project ID: P1800983

Client Project ID: **SVE In Plant Monitoring / KUH0-18-011** ALS Sample ID: P180308-MB

Test Code: EPA TO-15 Date Collected: NA

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: NA

Analyst: Raneem Sahtah Date Analyzed: 3/8/18

Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 1.00 Liter(s)

Test Notes:

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	ND	0.50	0.18	ND	0.11	0.039	
127-18-4	Tetrachloroethene	ND	0.50	0.14	ND	0.074	0.021	
108-90-7	Chlorobenzene	ND	0.50	0.16	ND	0.11	0.035	
100-41-4	Ethylbenzene	ND	0.50	0.16	ND	0.12	0.037	
179601-23-1	m,p-Xylenes	ND	1.0	0.30	ND	0.23	0.069	
75-25-2	Bromoform	ND	0.50	0.15	ND	0.048	0.015	
100-42-5	Styrene	ND	0.50	0.15	ND	0.12	0.035	
95-47-6	o-Xylene	ND	0.50	0.15	ND	0.12	0.035	
111-84-2	n-Nonane	ND	0.50	0.15	ND	0.095	0.029	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.15	ND	0.073	0.022	
98-82-8	Cumene	ND	0.50	0.15	ND	0.10	0.031	
80-56-8	alpha-Pinene	ND	0.50	0.14	ND	0.090	0.025	
103-65-1	n-Propylbenzene	ND	0.50	0.16	ND	0.10	0.033	
622-96-8	4-Ethyltoluene	ND	0.50	0.16	ND	0.10	0.033	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.16	ND	0.10	0.033	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.15	ND	0.10	0.031	
100-44-7	Benzyl Chloride	ND	1.0	0.11	ND	0.19	0.021	
541-73-1	1,3-Dichlorobenzene	ND	0.50	0.15	ND	0.083	0.025	
106-46-7	1,4-Dichlorobenzene	ND	0.50	0.14	ND	0.083	0.023	
95-50-1	1,2-Dichlorobenzene	ND	0.50	0.15	ND	0.083	0.025	
5989-27-5	d-Limonene	ND	0.50	0.14	ND	0.090	0.025	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.50	0.099	ND	0.052	0.010	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.16	ND	0.067	0.022	
91-20-3	Naphthalene	ND	0.50	0.18	ND	0.095	0.034	
87-68-3	Hexachlorobutadiene	ND	0.50	0.14	ND	0.047	0.013	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

SURROGATE SPIKE RECOVERY RESULTS

Client: **Environmental Management Services, Inc.**
Client Project ID: **SVE In Plant Monitoring / KUH0-18-011** ALS Project ID: P1800983

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date(s) Collected: 2/26/18
Analyst: Raneem Sahtah Date(s) Received: 3/2/18
Sample Type: 1.0 L Silonite Summa Canister(s) Date(s) Analyzed: 3/8 - 3/9/18
Test Notes:

Client Sample ID	ALS Sample ID	1,2-Dichloroethane-d4 Percent Recovered	Toluene-d8 Percent Recovered	Bromofluorobenzene Percent Recovered	Acceptance Limits	Data Qualifier
Method Blank	P180308-MB	**102**	**101**	**103**	70-130	
Lab Control Sample	P180308-LCS	**100**	**98**	**106**	70-130	
Air Mon 01-28	P1800983-001	**103**	**100**	**102**	70-130	
Air Mon 02-28	P1800983-002	**103**	**101**	**104**	70-130	

Surrogate percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly from the on-column percent recovery.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Environmental Management Services, Inc.**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1800983
Client Project ID: **SVE In Plant Monitoring / KUH0-18-011** ALS Sample ID: P180308-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: NA
Analyst: Raneem Sahtah Date Analyzed: 3/8/18
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	ALS Acceptance Limits	Data Qualifier
115-07-1	Propene	210	**158**	**75**	54-133	
75-71-8	Dichlorodifluoromethane (CFC 12)	213	**163**	**77**	64-115	
74-87-3	Chloromethane	210	**173**	**82**	47-140	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	211	**176**	**83**	60-112	
75-01-4	Vinyl Chloride	211	**177**	**84**	63-127	
106-99-0	1,3-Butadiene	210	**180**	**86**	57-149	
74-83-9	Bromomethane	210	**167**	**80**	63-132	
75-00-3	Chloroethane	210	**161**	**77**	68-129	
64-17-5	Ethanol	1,040	**940**	**90**	62-131	
75-05-8	Acetonitrile	210	**192**	**91**	56-136	
107-02-8	Acrolein	209	**207**	**99**	60-132	
67-64-1	Acetone	1,050	**873**	**83**	63-124	
75-69-4	Trichlorofluoromethane (CFC 11)	208	**166**	**80**	65-113	
67-63-0	2-Propanol (Isopropyl Alcohol)	422	**377**	**89**	62-135	
107-13-1	Acrylonitrile	212	**186**	**88**	68-138	
75-35-4	1,1-Dichloroethene	213	**173**	**81**	72-118	
75-09-2	Methylene Chloride	213	**180**	**85**	67-116	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	212	**174**	**82**	61-143	
76-13-1	Trichlorotrifluoroethane (CFC 113)	214	**175**	**82**	68-113	
75-15-0	Carbon Disulfide	214	**181**	**85**	68-120	
156-60-5	trans-1,2-Dichloroethene	214	**191**	**89**	71-125	
75-34-3	1,1-Dichloroethane	212	**165**	**78**	68-118	
1634-04-4	Methyl tert-Butyl Ether	213	**175**	**82**	60-123	
108-05-4	Vinyl Acetate	1,060	**1120**	**106**	73-135	
78-93-3	2-Butanone (MEK)	212	**202**	**95**	70-129	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Environmental Management Services, Inc.**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1800983
Client Project ID: **SVE In Plant Monitoring / KUH0-18-011** ALS Sample ID: P180308-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: NA
Analyst: Raneem Sahtah Date Analyzed: 3/8/18
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	ALS Acceptance Limits	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	212	**177**	**83**	69-121	
141-78-6	Ethyl Acetate	426	**424**	**100**	66-140	
110-54-3	n-Hexane	213	**156**	**73**	61-124	
67-66-3	Chloroform	212	**177**	**83**	69-113	
109-99-9	Tetrahydrofuran (THF)	212	**182**	**86**	66-121	
107-06-2	1,2-Dichloroethane	212	**178**	**84**	62-120	
71-55-6	1,1,1-Trichloroethane	212	**179**	**84**	65-116	
71-43-2	Benzene	213	**178**	**84**	66-111	
56-23-5	Carbon Tetrachloride	214	**189**	**88**	64-122	
110-82-7	Cyclohexane	425	**346**	**81**	69-115	
78-87-5	1,2-Dichloropropane	212	**174**	**82**	69-121	
75-27-4	Bromodichloromethane	214	**194**	**91**	69-123	
79-01-6	Trichloroethene	212	**181**	**85**	69-112	
123-91-1	1,4-Dioxane	213	**201**	**94**	74-123	
80-62-6	Methyl Methacrylate	424	**448**	**106**	75-125	
142-82-5	n-Heptane	213	**156**	**73**	68-118	
10061-01-5	cis-1,3-Dichloropropene	208	**200**	**96**	74-129	
108-10-1	4-Methyl-2-pentanone	213	**202**	**95**	66-138	
10061-02-6	trans-1,3-Dichloropropene	213	**216**	**101**	75-130	
79-00-5	1,1,2-Trichloroethane	212	**188**	**89**	73-117	
108-88-3	Toluene	211	**166**	**79**	66-114	
591-78-6	2-Hexanone	211	**196**	**93**	58-146	
124-48-1	Dibromochloromethane	212	**201**	**95**	67-130	
106-93-4	1,2-Dibromoethane	211	**203**	**96**	70-127	
123-86-4	n-Butyl Acetate	215	**190**	**88**	62-140	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Environmental Management Services, Inc.**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1800983
Client Project ID: **SVE In Plant Monitoring / KUH0-18-011** ALS Sample ID: P180308-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: NA
Analyst: Raneem Sahtah Date Analyzed: 3/8/18
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	ALS Acceptance Limits	Data Qualifier
111-65-9	n-Octane	212	**155**	**73**	65-121	
127-18-4	Tetrachloroethene	212	**177**	**83**	62-119	
108-90-7	Chlorobenzene	212	**173**	**82**	66-115	
100-41-4	Ethylbenzene	212	**174**	**82**	69-117	
179601-23-1	m,p-Xylenes	424	**360**	**85**	67-117	
75-25-2	Bromoform	212	**223**	**105**	67-135	
100-42-5	Styrene	211	**200**	**95**	70-128	
95-47-6	o-Xylene	211	**181**	**86**	67-118	
111-84-2	n-Nonane	212	**157**	**74**	61-127	
79-34-5	1,1,2,2-Tetrachloroethane	212	**198**	**93**	70-125	
98-82-8	Cumene	212	**162**	**76**	68-116	
80-56-8	alpha-Pinene	213	**191**	**90**	69-122	
103-65-1	n-Propylbenzene	214	**168**	**79**	70-118	
622-96-8	4-Ethyltoluene	211	**191**	**91**	69-124	
108-67-8	1,3,5-Trimethylbenzene	212	**165**	**78**	65-117	
95-63-6	1,2,4-Trimethylbenzene	212	**202**	**95**	67-124	
100-44-7	Benzyl Chloride	212	**233**	**110**	75-142	
541-73-1	1,3-Dichlorobenzene	212	**198**	**93**	70-124	
106-46-7	1,4-Dichlorobenzene	214	**188**	**88**	63-124	
95-50-1	1,2-Dichlorobenzene	214	**203**	**95**	66-125	
5989-27-5	d-Limonene	213	**214**	**100**	64-135	
96-12-8	1,2-Dibromo-3-chloropropane	210	**229**	**109**	73-136	
120-82-1	1,2,4-Trichlorobenzene	218	**223**	**102**	70-141	
91-20-3	Naphthalene	209	**221**	**106**	71-146	
87-68-3	Hexachlorobutadiene	212	**189**	**89**	63-126	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
F: +1 805 526 7270
www.alsglobal.com

LABORATORY REPORT

June 18, 2018

Jeremy Van Slyke
Environmental Management Services, Inc.
P.O. Box 15369
Hattiesburg, MS 39404

RE: SVE In Plant Monitoring / KUH0-18-011

Dear Jeremy:

Enclosed are the results of the samples submitted to our laboratory on June 4, 2018. For your reference, these analyses have been assigned our service request number P1802841.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

ALS | Environmental

By Sue Anderson at 10:58 am, Jun 18, 2018

Sue Anderson
Project Manager

2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
F: +1 805 526 7270
www.alsglobal.com

Client: Environmental Management Services, Inc. Service Request No: P1802841
Project: SVE In Plant Monitoring / KUH0-18-011

CASE NARRATIVE

The samples were received intact under chain of custody on June 4, 2018 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Volatile Organic Compound Analysis

The samples were analyzed for volatile organic compounds in accordance with EPA Method TO-15 from the Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition (EPA/625/R-96/010b), January, 1999. This procedure is described in laboratory SOP VOA-TO15. The analytical system was comprised of a gas chromatograph / mass spectrometer (GC/MS) interfaced to a whole-air preconcentrator. This method is included on the laboratory's NELAP and DoD-ELAP scope of accreditation. Any analytes flagged with an X are not included on the NELAP or DoD-ELAP accreditation.

The containers were cleaned, prior to sampling, down to the method reporting limit (MRL) reported for this project. For projects requiring DoD QSM 5.1 compliance canisters were cleaned to <1/2 the MRL. Please note, projects which require reporting below the MRL could have results between the MRL and method detection limit (MDL) that are biased high.

2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
F: +1 805 526 7270
www.alsglobal.com

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CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
Arizona DHS	http://www.azdhs.gov/preparedness/state-laboratory/lab-licensure-certification/index.php#laboratory-licensure-home	AZ0694
Florida DOH (NELAP)	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E871020
Louisiana DEQ (NELAP)	http://www.deq.louisiana.gov/portal/DIVISIONS/PublicParticipationandPermitSupport/LouisianaLaboratoryAccreditationProgram.aspx	05071
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/labcert.htm	2016036
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	1347317
New Jersey DEP (NELAP)	http://www.nj.gov/dep/oqa/	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-005
Pennsylvania DEP	http://www.depweb.state.pa.us/labs	68-03307 (Registration)
PJLA (DoD ELAP)	http://www.pjlabs.com/search-accredited-labs	65818 (Testing)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704413-17-8
Utah DOH (NELAP)	http://health.utah.gov/lab/environmental-lab-certification/	CA016272017-8
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

ALS ENVIRONMENTAL

DETAIL SUMMARY REPORT

Client: Environmental Management Services, Inc. Service Request: P1802841

Project ID: SVE In Plant Monitoring / KUH0-18-011

Date Received: 6/4/2018

Time Received: 09:30

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	Container ID	Pi1 (psig)	Pf1 (psig)	TO-15 - VOC Cans
Air Mon 01-29	P1802841-001	Air	5/30/2018	07:03	1SC00471	-2.58	5.08	X
Air Mon 02-29	P1802841-002	Air	5/30/2018	07:16	1SC01001	-2.49	5.13	X

Air - Chain of Custody Record & Analytical Service Request

Page 1 of 1

2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone (805) 526-7161
Fax (805) 526-7270

Requested Turnaround Time in Business Days (Surcharges) please circle
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10-Day-Standard

ALS Project No. R1802381

Company Name & Address (Reporting Information)
Environmental Management Services, Inc.
P.O. Box 15369
Hattiesburg, MS 39404

Project Name: SVE In Plant Monitoring
Project Number: KUHO-18-011
P.O. # / Billing Information: KUHO-18-011 | same as reporting

Project Manager: Stephanie Kilgore
Phone: 601-544-3674
Fax: 601-544-0504
Email Address for Result Reporting: SKilgore@env-mgt.com
Sampler (Print & Sign): Stephanie Kilgore Stephanie Kilgore

ALS Contact:

Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Canister ID (Bar code # - AC, SC, etc.)	Flow Controller ID (Bar code # - FC #)	Canister Start Pressure "Hg	Canister End Pressure "Hg/psig	Sample Volume	Analysis Method: TO-15		Comments e.g. Actual Preservative or specific instructions
AirMon 01-29	1	5-30-18	7:03	ISC00471	DAD2103	30	7 "Hg		X		
AirMon 02-29	2	5-30-18	7:16	ISC01001	DAD0984	29	4 "Hg		X		

Report Tier Levels - please select
Tier I - Results (Default in not specified) ____
Tier II (Results + QC Summaries X
Tier III (Results + QC & Calibration Summaries) ____
Tier IV (Date Validation Package) 10% Surcharge ____

EDD required YES / No
Type: ____ Units: ____

Chain of Custody Seal: (Circle)
INTACT BROKEN ABSENT

Project Requirements (MRLs, QAPP)

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Stephanie Kilgore	5-30-18	17:15	FEDEX		
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date: 6-4-18	Time: 0830

Cooler / Blank Temperature ____°C

5 of 19

ALS Environmental

Sample Acceptance Check Form

Client: Environmental Management Services, Inc. Work order: P1802841

Project: SVE In Plant Monitoring / KUH0-18-011

Sample(s) received on: 6/4/18 Date opened: 6/4/18 by: ADAVID

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Did **sample containers** arrive in good condition?	☒	☐	☐
3	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
4	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
5	Was **sample volume** received adequate for analysis?	☒	☐	☐
6	Are samples within specified holding times?	☒	☐	☐
7	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☐	☐	☒
8	Were **custody seals** on outside of cooler/Box/Container?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
9	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
10	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
11	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1802841-001.01	1.0 L Source Can					
P1802841-002.01	1.0 L Source Can					

Explain any discrepancies: (include lab sample ID numbers):

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **Air Mon 01-29** ALS Project ID: P1802841
Client Project ID: **SVE In Plant Monitoring / KUH0-18-011** ALS Sample ID: P1802841-001

Test Code: EPA TO-15 Date Collected: 5/30/18
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 6/4/18
Analyst: Anusha Bayyarapu Date Analyzed: 6/5/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: 0.040 Liter(s)
Container ID: 1SC00471

Initial Pressure (psig): -2.58 Final Pressure (psig): 5.08

Container Dilution Factor: 1.63

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	**630**	21	5.3	**370**	12	3.1	**D**
75-71-8	Dichlorodifluoromethane (CFC 12)	**1.9**	2.1	0.35	**0.39**	0.43	0.072	**J**
74-87-3	Chloromethane	**0.79**	2.0	0.35	**0.38**	0.99	0.17	**J**
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	2.1	0.34	ND	0.30	0.049	
75-01-4	Vinyl Chloride	ND	2.1	0.23	ND	0.83	0.091	
106-99-0	1,3-Butadiene	ND	2.2	0.36	ND	0.98	0.16	
74-83-9	Bromomethane	ND	2.0	0.30	ND	0.52	0.078	
75-00-3	Chloroethane	ND	2.1	0.27	ND	0.79	0.10	
64-17-5	Ethanol	**290**	22	1.5	**150**	11	0.80	
75-05-8	Acetonitrile	ND	2.2	0.53	ND	1.3	0.32	
107-02-8	Acrolein	**1.9**	8.6	0.61	**0.85**	3.7	0.27	**J**
67-64-1	Acetone	**120**	22	4.9	**50**	9.1	2.1	
75-69-4	Trichlorofluoromethane (CFC 11)	**0.95**	2.2	0.33	**0.17**	0.38	0.059	**J**
67-63-0	2-Propanol (Isopropyl Alcohol)	**31**	22	0.90	**12**	8.8	0.36	
107-13-1	Acrylonitrile	**0.56**	2.2	0.45	**0.26**	1.0	0.21	**J**
75-35-4	1,1-Dichloroethene	ND	2.2	0.30	ND	0.54	0.076	
75-09-2	Methylene Chloride	**9.2**	2.2	0.61	**2.7**	0.62	0.18	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	2.2	0.29	ND	0.69	0.094	
76-13-1	Trichlorotrifluoroethane (CFC 113)	**0.40**	2.2	0.31	**0.052**	0.28	0.040	**J**
75-15-0	Carbon Disulfide	**1.1**	22	0.65	**0.35**	6.9	0.21	**J**
156-60-5	trans-1,2-Dichloroethene	ND	2.2	0.30	ND	0.56	0.076	
75-34-3	1,1-Dichloroethane	ND	2.1	0.32	ND	0.51	0.079	
1634-04-4	Methyl tert-Butyl Ether	ND	2.2	0.26	ND	0.61	0.071	
108-05-4	Vinyl Acetate	ND	22	4.9	ND	6.1	1.4	
78-93-3	2-Butanone (MEK)	**6.7**	22	0.45	**2.3**	7.3	0.15	**J**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
D = The reported result is from a dilution.

Client: **Environmental Management Services, Inc.**

Client Sample ID: **Air Mon 01-29** ALS Project ID: P1802841

Client Project ID: **SVE In Plant Monitoring / KUH0-18-011** ALS Sample ID: P1802841-001

Test Code:	EPA TO-15	Date Collected:	5/30/18
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8	Date Received:	6/4/18
Analyst:	Anusha Bayyarapu	Date Analyzed:	6/5/18
Sample Type:	1.0 L Summa Canister	Volume(s) Analyzed:	0.40 Liter(s)
Test Notes:			0.040 Liter(s)
Container ID:	1SC00471		

Initial Pressure (psig): -2.58 Final Pressure (psig): 5.08

Container Dilution Factor: 1.63

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	2.2	0.31	ND	0.54	0.077	
141-78-6	Ethyl Acetate	**32**	4.5	1.1	**9.0**	1.2	0.32	
110-54-3	n-Hexane	**1.4**	2.2	0.45	**0.39**	0.61	0.13	**J**
67-66-3	Chloroform	ND	2.2	0.29	ND	0.44	0.059	
109-99-9	Tetrahydrofuran (THF)	**0.33**	2.2	0.27	**0.11**	0.73	0.093	**J**
107-06-2	1,2-Dichloroethane	ND	2.2	0.24	ND	0.53	0.059	
71-55-6	1,1,1-Trichloroethane	ND	2.2	0.27	ND	0.40	0.049	
71-43-2	Benzene	**0.71**	2.2	0.31	**0.22**	0.68	0.098	**J**
56-23-5	Carbon Tetrachloride	ND	2.2	0.30	ND	0.34	0.048	
110-82-7	Cyclohexane	**0.84**	4.5	0.61	**0.25**	1.3	0.18	**J**
78-87-5	1,2-Dichloropropane	ND	2.2	0.27	ND	0.47	0.058	
75-27-4	Bromodichloromethane	ND	2.2	0.31	ND	0.32	0.047	
79-01-6	Trichloroethene	ND	2.2	0.29	ND	0.40	0.055	
123-91-1	1,4-Dioxane	ND	2.2	0.26	ND	0.60	0.071	
80-62-6	Methyl Methacrylate	ND	4.5	0.77	ND	1.1	0.19	
142-82-5	n-Heptane	**1.3**	2.2	0.35	**0.32**	0.53	0.085	**J**
10061-01-5	cis-1,3-Dichloropropene	ND	2.3	0.34	ND	0.50	0.075	
108-10-1	4-Methyl-2-pentanone	**6.8**	2.2	0.30	**1.7**	0.53	0.073	
10061-02-6	trans-1,3-Dichloropropene	ND	2.2	0.45	ND	0.48	0.099	
79-00-5	1,1,2-Trichloroethane	ND	2.2	0.22	ND	0.40	0.040	
108-88-3	Toluene	**130**	2.2	0.26	**34**	0.57	0.070	
591-78-6	2-Hexanone	**0.53**	2.2	0.27	**0.13**	0.53	0.066	**J**
124-48-1	Dibromochloromethane	ND	2.2	0.29	ND	0.25	0.033	
106-93-4	1,2-Dibromoethane	ND	2.2	0.25	ND	0.28	0.033	
123-86-4	n-Butyl Acetate	**12**	2.2	0.30	**2.6**	0.45	0.063	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **Air Mon 01-29** ALS Project ID: P1802841
Client Project ID: **SVE In Plant Monitoring / KUH0-18-011** ALS Sample ID: P1802841-001

Test Code: EPA TO-15 Date Collected: 5/30/18
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 6/4/18
Analyst: Anusha Bayyarapu Date Analyzed: 6/5/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: 0.040 Liter(s)
Container ID: 1SC00471

Initial Pressure (psig): -2.58 Final Pressure (psig): 5.08

Container Dilution Factor: 1.63

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	**1.2**	2.2	0.49	**0.25**	0.46	0.10	**J**
127-18-4	Tetrachloroethene	**4.8**	2.2	0.28	**0.71**	0.32	0.041	
108-90-7	Chlorobenzene	ND	2.2	0.29	ND	0.47	0.063	
100-41-4	Ethylbenzene	**8.3**	2.2	0.31	**1.9**	0.50	0.070	
179601-23-1	m,p-Xylenes	**36**	4.5	0.57	**8.3**	1.0	0.13	
75-25-2	Bromoform	ND	2.2	0.45	ND	0.21	0.043	
100-42-5	Styrene	**2.8**	2.2	0.35	**0.65**	0.51	0.082	
95-47-6	o-Xylene	**18**	2.2	0.31	**4.2**	0.50	0.072	
111-84-2	n-Nonane	**1.7**	2.2	0.36	**0.32**	0.41	0.069	**J**
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.2	0.30	ND	0.31	0.044	
98-82-8	Cumene	**0.62**	2.2	0.31	**0.13**	0.44	0.064	**J**
80-56-8	alpha-Pinene	**9.0**	2.1	0.33	**1.6**	0.38	0.060	
103-65-1	n-Propylbenzene	**1.9**	2.2	0.31	**0.39**	0.44	0.064	**J**
622-96-8	4-Ethyltoluene	**2.6**	2.1	0.35	**0.52**	0.43	0.070	
108-67-8	1,3,5-Trimethylbenzene	**2.6**	2.1	0.31	**0.52**	0.43	0.064	
95-63-6	1,2,4-Trimethylbenzene	**6.6**	2.2	0.30	**1.3**	0.44	0.061	
100-44-7	Benzyl Chloride	ND	4.5	0.49	ND	0.87	0.094	
541-73-1	1,3-Dichlorobenzene	ND	2.2	0.33	ND	0.37	0.054	
106-46-7	1,4-Dichlorobenzene	**0.37**	2.2	0.33	**0.062**	0.36	0.056	**J**
95-50-1	1,2-Dichlorobenzene	ND	2.2	0.32	ND	0.37	0.054	
5989-27-5	d-Limonene	**5.4**	2.0	0.45	**0.98**	0.37	0.080	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.2	0.41	ND	0.22	0.042	
120-82-1	1,2,4-Trichlorobenzene	ND	2.2	0.53	ND	0.30	0.071	
91-20-3	Naphthalene	ND	2.2	0.53	ND	0.41	0.10	
87-68-3	Hexachlorobutadiene	ND	2.2	0.45	ND	0.20	0.042	

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MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **Air Mon 02-29** ALS Project ID: P1802841
Client Project ID: **SVE In Plant Monitoring / KUH0-18-011** ALS Sample ID: P1802841-002

Test Code: EPA TO-15 Date Collected: 5/30/18
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 6/4/18
Analyst: Anusha Bayyarapu Date Analyzed: 6/5/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SC01001

Initial Pressure (psig): -2.49 Final Pressure (psig): 5.13

Container Dilution Factor: 1.62

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	**68**	2.1	0.53	**40**	1.2	0.31	
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.0**	2.1	0.35	**0.41**	0.43	0.071	**J**
74-87-3	Chloromethane	**0.77**	2.0	0.35	**0.37**	0.98	0.17	**J**
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	2.1	0.34	ND	0.30	0.049	
75-01-4	Vinyl Chloride	ND	2.1	0.23	ND	0.82	0.090	
106-99-0	1,3-Butadiene	ND	2.1	0.36	ND	0.97	0.16	
74-83-9	Bromomethane	ND	2.0	0.30	ND	0.52	0.077	
75-00-3	Chloroethane	ND	2.1	0.27	ND	0.78	0.10	
64-17-5	Ethanol	**72**	21	1.5	**38**	11	0.80	
75-05-8	Acetonitrile	ND	2.1	0.53	ND	1.3	0.31	
107-02-8	Acrolein	**2.0**	8.5	0.61	**0.86**	3.7	0.27	**J**
67-64-1	Acetone	**290**	21	4.9	**120**	9.0	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	**1.0**	2.1	0.33	**0.18**	0.38	0.058	**J**
67-63-0	2-Propanol (Isopropyl Alcohol)	**4.9**	21	0.89	**2.0**	8.7	0.36	**J**
107-13-1	Acrylonitrile	**0.45**	2.1	0.45	**0.21**	0.99	0.21	**J**
75-35-4	1,1-Dichloroethene	ND	2.1	0.30	ND	0.54	0.076	
75-09-2	Methylene Chloride	**2.1**	2.1	0.61	**0.62**	0.62	0.17	**J**
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	2.1	0.29	ND	0.69	0.093	
76-13-1	Trichlorotrifluoroethane (CFC 113)	**0.43**	2.1	0.31	**0.056**	0.28	0.040	**J**
75-15-0	Carbon Disulfide	**2.9**	21	0.65	**0.94**	6.9	0.21	**J**
156-60-5	trans-1,2-Dichloroethene	ND	2.2	0.30	ND	0.55	0.076	
75-34-3	1,1-Dichloroethane	ND	2.1	0.32	ND	0.51	0.078	
1634-04-4	Methyl tert-Butyl Ether	ND	2.2	0.26	ND	0.61	0.071	
108-05-4	Vinyl Acetate	**5.0**	21	4.9	**1.4**	6.1	1.4	**J**
78-93-3	2-Butanone (MEK)	**6.2**	21	0.45	**2.1**	7.3	0.15	**J**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **Air Mon 02-29** ALS Project ID: P1802841
Client Project ID: **SVE In Plant Monitoring / KUH0-18-011** ALS Sample ID: P1802841-002

Test Code: EPA TO-15 Date Collected: 5/30/18
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 6/4/18
Analyst: Anusha Bayyarapu Date Analyzed: 6/5/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SC01001

Initial Pressure (psig): -2.49 Final Pressure (psig): 5.13

Container Dilution Factor: 1.62

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	2.1	0.30	ND	0.54	0.077	
141-78-6	Ethyl Acetate	**9.2**	4.5	1.1	**2.6**	1.2	0.31	
110-54-3	n-Hexane	**0.91**	2.1	0.45	**0.26**	0.61	0.13	**J**
67-66-3	Chloroform	ND	2.1	0.29	ND	0.44	0.059	
109-99-9	Tetrahydrofuran (THF)	**0.34**	2.1	0.27	**0.12**	0.73	0.092	**J**
107-06-2	1,2-Dichloroethane	ND	2.1	0.24	ND	0.53	0.059	
71-55-6	1,1,1-Trichloroethane	ND	2.2	0.27	ND	0.40	0.049	
71-43-2	Benzene	**0.51**	2.1	0.31	**0.16**	0.67	0.098	**J**
56-23-5	Carbon Tetrachloride	**0.32**	2.1	0.30	**0.052**	0.34	0.048	**J**
110-82-7	Cyclohexane	ND	4.5	0.61	ND	1.3	0.18	
78-87-5	1,2-Dichloropropane	ND	2.1	0.27	ND	0.46	0.058	
75-27-4	Bromodichloromethane	ND	2.1	0.31	ND	0.32	0.047	
79-01-6	Trichloroethene	ND	2.1	0.29	ND	0.40	0.054	
123-91-1	1,4-Dioxane	ND	2.1	0.26	ND	0.60	0.071	
80-62-6	Methyl Methacrylate	ND	4.5	0.77	ND	1.1	0.19	
142-82-5	n-Heptane	**0.51**	2.1	0.34	**0.13**	0.52	0.084	**J**
10061-01-5	cis-1,3-Dichloropropene	ND	2.3	0.34	ND	0.50	0.074	
108-10-1	4-Methyl-2-pentanone	**3.5**	2.1	0.30	**0.85**	0.52	0.072	
10061-02-6	trans-1,3-Dichloropropene	ND	2.1	0.45	ND	0.47	0.098	
79-00-5	1,1,2-Trichloroethane	ND	2.1	0.22	ND	0.39	0.040	
108-88-3	Toluene	**32**	2.1	0.26	**8.5**	0.57	0.070	
591-78-6	2-Hexanone	**0.46**	2.1	0.27	**0.11**	0.52	0.065	**J**
124-48-1	Dibromochloromethane	ND	2.1	0.28	ND	0.25	0.033	
106-93-4	1,2-Dibromoethane	ND	2.1	0.25	ND	0.28	0.033	
123-86-4	n-Butyl Acetate	**42**	2.1	0.30	**8.7**	0.45	0.062	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **Air Mon 02-29** ALS Project ID: P1802841
Client Project ID: **SVE In Plant Monitoring / KUH0-18-011** ALS Sample ID: P1802841-002

Test Code: EPA TO-15 Date Collected: 5/30/18
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 6/4/18
Analyst: Anusha Bayyarapu Date Analyzed: 6/5/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1SC01001

Initial Pressure (psig): -2.49 Final Pressure (psig): 5.13

Container Dilution Factor: 1.62

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	**0.93**	2.1	0.49	**0.20**	0.46	0.10	**J**
127-18-4	Tetrachloroethene	ND	2.1	0.28	ND	0.32	0.041	
108-90-7	Chlorobenzene	ND	2.1	0.29	ND	0.47	0.062	
100-41-4	Ethylbenzene	**16**	2.1	0.30	**3.6**	0.49	0.070	
179601-23-1	m,p-Xylenes	**65**	4.5	0.57	**15**	1.0	0.13	
75-25-2	Bromoform	ND	2.1	0.45	ND	0.21	0.043	
100-42-5	Styrene	**1.8**	2.1	0.35	**0.43**	0.50	0.082	**J**
95-47-6	o-Xylene	**21**	2.1	0.31	**4.7**	0.49	0.072	
111-84-2	n-Nonane	**1.1**	2.1	0.36	**0.21**	0.41	0.069	**J**
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.1	0.30	ND	0.31	0.044	
98-82-8	Cumene	**0.98**	2.1	0.31	**0.20**	0.44	0.063	**J**
80-56-8	alpha-Pinene	**8.7**	2.1	0.33	**1.6**	0.38	0.060	
103-65-1	n-Propylbenzene	**2.7**	2.1	0.31	**0.55**	0.44	0.063	
622-96-8	4-Ethyltoluene	**3.8**	2.1	0.34	**0.77**	0.43	0.070	
108-67-8	1,3,5-Trimethylbenzene	**4.5**	2.1	0.31	**0.93**	0.43	0.063	
95-63-6	1,2,4-Trimethylbenzene	**8.4**	2.1	0.30	**1.7**	0.44	0.061	
100-44-7	Benzyl Chloride	ND	4.5	0.49	ND	0.86	0.094	
541-73-1	1,3-Dichlorobenzene	ND	2.2	0.32	ND	0.36	0.054	
106-46-7	1,4-Dichlorobenzene	ND	2.1	0.33	ND	0.36	0.055	
95-50-1	1,2-Dichlorobenzene	ND	2.2	0.32	ND	0.36	0.053	
5989-27-5	d-Limonene	**4.9**	2.0	0.45	**0.88**	0.36	0.080	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.1	0.41	ND	0.22	0.042	
120-82-1	1,2,4-Trichlorobenzene	ND	2.2	0.53	ND	0.30	0.071	
91-20-3	Naphthalene	ND	2.1	0.53	ND	0.41	0.10	
87-68-3	Hexachlorobutadiene	ND	2.1	0.45	ND	0.20	0.042	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Management Services, Inc.**
Client Sample ID: **Method Blank** ALS Project ID: P1802841
Client Project ID: **SVE In Plant Monitoring / KUH0-18-011** ALS Sample ID: P180605-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Anusha Bayyarapu Date Analyzed: 6/5/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	ND	0.52	0.13	ND	0.30	0.076	
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	0.52	0.087	ND	0.11	0.018	
74-87-3	Chloromethane	ND	0.50	0.086	ND	0.24	0.042	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.51	0.084	ND	0.073	0.012	
75-01-4	Vinyl Chloride	ND	0.52	0.057	ND	0.20	0.022	
106-99-0	1,3-Butadiene	ND	0.53	0.088	ND	0.24	0.040	
74-83-9	Bromomethane	ND	0.50	0.074	ND	0.13	0.019	
75-00-3	Chloroethane	ND	0.51	0.066	ND	0.19	0.025	
64-17-5	Ethanol	ND	5.3	0.37	ND	2.8	0.20	
75-05-8	Acetonitrile	ND	0.53	0.13	ND	0.32	0.077	
107-02-8	Acrolein	ND	2.1	0.15	ND	0.92	0.065	
67-64-1	Acetone	ND	5.3	1.2	ND	2.2	0.51	
75-69-4	Trichlorofluoromethane (CFC 11)	ND	0.53	0.081	ND	0.094	0.014	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	5.3	0.22	ND	2.2	0.090	
107-13-1	Acrylonitrile	ND	0.53	0.11	ND	0.24	0.051	
75-35-4	1,1-Dichloroethene	ND	0.53	0.074	ND	0.13	0.019	
75-09-2	Methylene Chloride	ND	0.53	0.15	ND	0.15	0.043	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.53	0.072	ND	0.17	0.023	
76-13-1	Trichlorotrifluoroethane (CFC 113)	ND	0.53	0.076	ND	0.069	0.0099	
75-15-0	Carbon Disulfide	ND	5.3	0.16	ND	1.7	0.051	
156-60-5	trans-1,2-Dichloroethene	ND	0.54	0.074	ND	0.14	0.019	
75-34-3	1,1-Dichloroethane	ND	0.51	0.078	ND	0.13	0.019	
1634-04-4	Methyl tert-Butyl Ether	ND	0.54	0.063	ND	0.15	0.017	
108-05-4	Vinyl Acetate	ND	5.3	1.2	ND	1.5	0.34	
78-93-3	2-Butanone (MEK)	ND	5.3	0.11	ND	1.8	0.037	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Client: **Environmental Management Services, Inc.**

Client Sample ID: **Method Blank** ALS Project ID: P1802841

Client Project ID: **SVE In Plant Monitoring / KUH0-18-011** ALS Sample ID: P180605-MB

Test Code: EPA TO-15 Date Collected: NA

Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA

Analyst: Anusha Bayyarapu Date Analyzed: 6/5/18

Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)

Test Notes:

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	0.53	0.075	ND	0.13	0.019	
141-78-6	Ethyl Acetate	ND	1.1	0.28	ND	0.31	0.078	
110-54-3	n-Hexane	ND	0.53	0.11	ND	0.15	0.031	
67-66-3	Chloroform	ND	0.53	0.071	ND	0.11	0.015	
109-99-9	Tetrahydrofuran (THF)	ND	0.53	0.067	ND	0.18	0.023	
107-06-2	1,2-Dichloroethane	ND	0.53	0.059	ND	0.13	0.015	
71-55-6	1,1,1-Trichloroethane	ND	0.54	0.066	ND	0.099	0.012	
71-43-2	Benzene	ND	0.53	0.077	ND	0.17	0.024	
56-23-5	Carbon Tetrachloride	ND	0.53	0.074	ND	0.084	0.012	
110-82-7	Cyclohexane	ND	1.1	0.15	ND	0.32	0.044	
78-87-5	1,2-Dichloropropane	ND	0.53	0.066	ND	0.11	0.014	
75-27-4	Bromodichloromethane	ND	0.53	0.077	ND	0.079	0.011	
79-01-6	Trichloroethene	ND	0.53	0.072	ND	0.099	0.013	
123-91-1	1,4-Dioxane	ND	0.53	0.063	ND	0.15	0.017	
80-62-6	Methyl Methacrylate	ND	1.1	0.19	ND	0.27	0.046	
142-82-5	n-Heptane	ND	0.53	0.085	ND	0.13	0.021	
10061-01-5	cis-1,3-Dichloropropene	ND	0.56	0.083	ND	0.12	0.018	
108-10-1	4-Methyl-2-pentanone	ND	0.53	0.073	ND	0.13	0.018	
10061-02-6	trans-1,3-Dichloropropene	ND	0.53	0.11	ND	0.12	0.024	
79-00-5	1,1,2-Trichloroethane	ND	0.53	0.054	ND	0.097	0.0099	
108-88-3	Toluene	ND	0.53	0.065	ND	0.14	0.017	
591-78-6	2-Hexanone	ND	0.53	0.066	ND	0.13	0.016	
124-48-1	Dibromochloromethane	ND	0.53	0.070	ND	0.062	0.0082	
106-93-4	1,2-Dibromoethane	ND	0.53	0.062	ND	0.069	0.0081	
123-86-4	n-Butyl Acetate	ND	0.53	0.073	ND	0.11	0.015	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Client: **Environmental Management Services, Inc.**

Client Sample ID: **Method Blank** ALS Project ID: P1802841

Client Project ID: **SVE In Plant Monitoring / KUH0-18-011** ALS Sample ID: P180605-MB

Test Code: EPA TO-15 Date Collected: NA

Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA

Analyst: Anusha Bayyarapu Date Analyzed: 6/5/18

Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)

Test Notes:

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	ND	0.53	0.12	ND	0.11	0.026	
127-18-4	Tetrachloroethene	ND	0.53	0.069	ND	0.078	0.010	
108-90-7	Chlorobenzene	ND	0.53	0.071	ND	0.12	0.015	
100-41-4	Ethylbenzene	ND	0.53	0.075	ND	0.12	0.017	
179601-23-1	m,p-Xylenes	ND	1.1	0.14	ND	0.25	0.032	
75-25-2	Bromoform	ND	0.53	0.11	ND	0.051	0.011	
100-42-5	Styrene	ND	0.53	0.086	ND	0.12	0.020	
95-47-6	o-Xylene	ND	0.53	0.077	ND	0.12	0.018	
111-84-2	n-Nonane	ND	0.53	0.089	ND	0.10	0.017	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.53	0.074	ND	0.077	0.011	
98-82-8	Cumene	ND	0.53	0.077	ND	0.11	0.016	
80-56-8	alpha-Pinene	ND	0.52	0.082	ND	0.093	0.015	
103-65-1	n-Propylbenzene	ND	0.53	0.077	ND	0.11	0.016	
622-96-8	4-Ethyltoluene	ND	0.52	0.085	ND	0.11	0.017	
108-67-8	1,3,5-Trimethylbenzene	ND	0.52	0.077	ND	0.11	0.016	
95-63-6	1,2,4-Trimethylbenzene	ND	0.53	0.074	ND	0.11	0.015	
100-44-7	Benzyl Chloride	ND	1.1	0.12	ND	0.21	0.023	
541-73-1	1,3-Dichlorobenzene	ND	0.54	0.080	ND	0.090	0.013	
106-46-7	1,4-Dichlorobenzene	ND	0.53	0.082	ND	0.088	0.014	
95-50-1	1,2-Dichlorobenzene	ND	0.54	0.079	ND	0.090	0.013	
5989-27-5	d-Limonene	ND	0.50	0.11	ND	0.090	0.020	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.53	0.10	ND	0.055	0.010	
120-82-1	1,2,4-Trichlorobenzene	ND	0.55	0.13	ND	0.074	0.018	
91-20-3	Naphthalene	ND	0.53	0.13	ND	0.10	0.025	
87-68-3	Hexachlorobutadiene	ND	0.53	0.11	ND	0.050	0.010	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

SURROGATE SPIKE RECOVERY RESULTS

Client: **Environmental Management Services, Inc.**
Client Project ID: **SVE In Plant Monitoring / KUH0-18-011** ALS Project ID: P1802841

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date(s) Collected: 5/30/18
Analyst: Anusha Bayyarapu Date(s) Received: 6/4/18
Sample Type: 1.0 L Summa Canister(s) Date(s) Analyzed: 6/5/18
Test Notes:

Client Sample ID	ALS Sample ID	1,2-Dichloroethane-d4 Percent Recovered	Toluene-d8 Percent Recovered	Bromofluorobenzene Percent Recovered	Acceptance Limits	Data Qualifier
Method Blank	P180605-MB	**101**	**100**	**92**	70-130	
Lab Control Sample	P180605-LCS	**98**	**99**	**93**	70-130	
Air Mon 01-29	P1802841-001	**100**	**99**	**93**	70-130	
Air Mon 02-29	P1802841-002	**102**	**99**	**94**	70-130	

Surrogate percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly from the on-column percent recovery.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Environmental Management Services, Inc.**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1802841
Client Project ID: **SVE In Plant Monitoring / KUH0-18-011** ALS Sample ID: P180605-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Anusha Bayyarapu Date Analyzed: 6/5/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	ALS Acceptance Limits	Data Qualifier
115-07-1	Propene	210	**157**	**75**	54-133	
75-71-8	Dichlorodifluoromethane (CFC 12)	213	**160**	**75**	64-115	
74-87-3	Chloromethane	210	**157**	**75**	47-140	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	211	**150**	**71**	60-112	
75-01-4	Vinyl Chloride	211	**161**	**76**	63-127	
106-99-0	1,3-Butadiene	210	**164**	**78**	57-149	
74-83-9	Bromomethane	210	**161**	**77**	63-132	
75-00-3	Chloroethane	210	**160**	**76**	68-129	
64-17-5	Ethanol	1,040	**766**	**74**	62-131	
75-05-8	Acetonitrile	210	**163**	**78**	56-136	
107-02-8	Acrolein	209	**160**	**77**	60-132	
67-64-1	Acetone	1,050	**763**	**73**	63-124	
75-69-4	Trichlorofluoromethane (CFC 11)	208	**151**	**73**	65-113	
67-63-0	2-Propanol (Isopropyl Alcohol)	422	**310**	**73**	62-135	
107-13-1	Acrylonitrile	212	**167**	**79**	68-138	
75-35-4	1,1-Dichloroethene	213	**160**	**75**	72-118	
75-09-2	Methylene Chloride	213	**152**	**71**	67-116	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	212	**160**	**75**	61-143	
76-13-1	Trichlorotrifluoroethane (CFC 113)	214	**155**	**72**	68-113	
75-15-0	Carbon Disulfide	214	**169**	**79**	68-120	
156-60-5	trans-1,2-Dichloroethene	214	**176**	**82**	71-125	
75-34-3	1,1-Dichloroethane	212	**164**	**77**	68-118	
1634-04-4	Methyl tert-Butyl Ether	213	**167**	**78**	60-123	
108-05-4	Vinyl Acetate	1,060	**949**	**90**	73-135	
78-93-3	2-Butanone (MEK)	212	**169**	**80**	70-129	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Environmental Management Services, Inc.**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1802841
Client Project ID: **SVE In Plant Monitoring / KUH0-18-011** ALS Sample ID: P180605-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Anusha Bayyarapu Date Analyzed: 6/5/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	ALS Acceptance Limits	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	212	**165**	**78**	69-121	
141-78-6	Ethyl Acetate	426	**355**	**83**	66-140	
110-54-3	n-Hexane	213	**186**	**87**	61-124	
67-66-3	Chloroform	212	**160**	**75**	69-113	
109-99-9	Tetrahydrofuran (THF)	212	**153**	**72**	66-121	
107-06-2	1,2-Dichloroethane	212	**159**	**75**	62-120	
71-55-6	1,1,1-Trichloroethane	212	**174**	**82**	65-116	
71-43-2	Benzene	213	**178**	**84**	66-111	
56-23-5	Carbon Tetrachloride	214	**175**	**82**	64-122	
110-82-7	Cyclohexane	425	**352**	**83**	69-115	
78-87-5	1,2-Dichloropropane	212	**177**	**83**	69-121	
75-27-4	Bromodichloromethane	214	**187**	**87**	69-123	
79-01-6	Trichloroethene	212	**176**	**83**	69-112	
123-91-1	1,4-Dioxane	213	**176**	**83**	74-123	
80-62-6	Methyl Methacrylate	424	**367**	**87**	75-125	
142-82-5	n-Heptane	213	**179**	**84**	68-118	
10061-01-5	cis-1,3-Dichloropropene	208	**192**	**92**	74-129	
108-10-1	4-Methyl-2-pentanone	213	**179**	**84**	66-138	
10061-02-6	trans-1,3-Dichloropropene	213	**201**	**94**	75-130	
79-00-5	1,1,2-Trichloroethane	212	**181**	**85**	73-117	
108-88-3	Toluene	211	**163**	**77**	66-114	
591-78-6	2-Hexanone	211	**155**	**73**	58-146	
124-48-1	Dibromochloromethane	212	**179**	**84**	67-130	
106-93-4	1,2-Dibromoethane	211	**176**	**83**	70-127	
123-86-4	n-Butyl Acetate	215	**165**	**77**	62-140	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Environmental Management Services, Inc.**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1802841
Client Project ID: **SVE In Plant Monitoring / KUH0-18-011** ALS Sample ID: P180605-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Anusha Bayyarapu Date Analyzed: 6/5/18
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	ALS Acceptance Limits	Data Qualifier
111-65-9	n-Octane	212	**166**	**78**	65-121	
127-18-4	Tetrachloroethene	212	**162**	**76**	62-119	
108-90-7	Chlorobenzene	212	**166**	**78**	66-115	
100-41-4	Ethylbenzene	212	**166**	**78**	69-117	
179601-23-1	m,p-Xylenes	424	**338**	**80**	67-117	
75-25-2	Bromoform	212	**184**	**87**	67-135	
100-42-5	Styrene	211	**175**	**83**	70-128	
95-47-6	o-Xylene	211	**167**	**79**	67-118	
111-84-2	n-Nonane	212	**178**	**84**	61-127	
79-34-5	1,1,2,2-Tetrachloroethane	212	**173**	**82**	70-125	
98-82-8	Cumene	212	**166**	**78**	68-116	
80-56-8	alpha-Pinene	213	**174**	**82**	69-122	
103-65-1	n-Propylbenzene	214	**170**	**79**	70-118	
622-96-8	4-Ethyltoluene	211	**179**	**85**	69-124	
108-67-8	1,3,5-Trimethylbenzene	212	**164**	**77**	65-117	
95-63-6	1,2,4-Trimethylbenzene	212	**168**	**79**	67-124	
100-44-7	Benzyl Chloride	212	**197**	**93**	75-142	
541-73-1	1,3-Dichlorobenzene	212	**170**	**80**	70-124	
106-46-7	1,4-Dichlorobenzene	214	**165**	**77**	63-124	
95-50-1	1,2-Dichlorobenzene	214	**173**	**81**	66-125	
5989-27-5	d-Limonene	213	**169**	**79**	64-135	
96-12-8	1,2-Dibromo-3-chloropropane	210	**186**	**89**	73-136	
120-82-1	1,2,4-Trichlorobenzene	218	**184**	**84**	70-141	
91-20-3	Naphthalene	209	**207**	**99**	71-146	
87-68-3	Hexachlorobutadiene	212	**154**	**73**	63-126	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.