

Sub-Slab Depressurization System Progress Report for the Former Holley Automotive/ Coltec Industries Facility Water Valley, Mississippi



Bernard T. Delaney, Ph.D., P.E., BCEE

November 1, 2017

Prepared for: EnPro Industries, Inc.
5605 Carnegie Boulevard, Suite 500
Charlotte, NC 28209

Prepared by: First Environment, Inc.
91 Fulton Street
Boonton, New Jersey 07005

EnPro002-D-08072017



CERTIFICATION STATEMENT

I, Bernard T. Delaney, Ph.D., P.E., BCEE, certify that I am currently a registered professional engineer in the State of Mississippi and had primary direct responsibility for the implementation of the subject interim remedial measure activities. I certify that this Sub-Slab Depressurization System Progress Report was completed in conformance with the laws and regulations of the State of Mississippi. I certify that all information and statements in this certification form are true.

11041

Mississippi Professional
Engineer No.

11/01/2017

Date



B. Tod Delaney, Ph.D., P.E., BCEE

TABLE OF CONTENTS

1.0	Introduction.....	1
2.0	Indoor Air Monitoring – October 19-20, 2017	1
2.1	Instrumentation	1
2.2	Methodology	1
2.3	Results.....	2
3.0	Summary of Indoor Air Sampling	5
4.0	Air Permit Evaluation	5

TABLES

Table 1 – Indoor Air Sampling Results – October 19, 2017

Table 2 – Indoor Air Sampling Results Comparison – January through October 2017

FIGURES

Figure 1 – Indoor Air Sampling Results – October 19, 2017

APPENDIX

Appendix A – Analytical Report

1.0 Introduction

This Sub-Slab Depressurization System (“SSDS”) Progress Report has been prepared by First Environment, Inc. (“First Environment”) on behalf of EnPro Industries, Inc. (“EnPro”) with respect to the former Holley Automotive/Coltec Industries Facility (hereinafter referred to as the “Plant”). The Plant is located at 600 State Highway 32 in Water Valley, Yalobusha County, Mississippi.

On June 19, 2017, First Environment submitted a VI Investigation and Mitigation Report (the “Initial SSDS Report”), which included a description of the SSDS and indoor air sampling data through June 7, 2017. On July 3, 2017, First Environment submitted a SSDS Progress Report on the June 19-20, 2017 ambient and indoor air sampling results and the installation of extraction point (“EP”) No. 3. First Environment submitted SSDS Progress Reports on subsequent rounds of ambient and indoor air sampling on July 17, August 7, August 21, September 11, October 2, October 9, and October 17, 2017. On October 19-20, 2017, First Environment collected a round of ambient and indoor air samples from the four interior rooms at the Plant—the Training Room, ATS Room, Maintenance Room, and Cafeteria. As discussed in more detail below, all sampling results for TCE were below the MDEQ action level of 26 µg/m³. Additionally, as discussed in more detail below, on October 20, 2017, First Environment resampled the influent and effluent of the SSDS for an air permit evaluation.

2.0 Indoor Air Monitoring – October 19-20, 2017

2.1 Instrumentation

On October 19-20, 2017, First Environment collected ambient and indoor air samples by placing laboratory provided 6-liter capacity 24-hour Summa® canisters, equipped with flow regulators calibrated to 24 hours.

2.2 Methodology

First Environment collected four indoor air samples at the four interior rooms at the Plant, and one ambient air sample outside the Plant. Standard chain-of-custody procedures were implemented for the sampling, including signing the sample lot in and out from the facility to the laboratory on a chain-of-custody sheet and dating the start and end dates/times of sample collection. First Environment also followed standard indoor air sampling techniques to collect the indoor air samples at the locations depicted in Figure 1. Wherever possible, First Environment mounted the Summa® canisters on columns or secured them in an area above the

floor at or near the “breathing space.” The vacuum measurements in Summa® canisters were noted before and after sampling to ensure that the flow regulator at each canister was working properly.

The sampling requires the Summa® canisters to be left in place for 24 hours and they are monitored by Plant security for that period of time. First Environment personnel, Borg Warner representatives, and Plant employees had access to the Summa® canisters during the 24-hour sampling period.

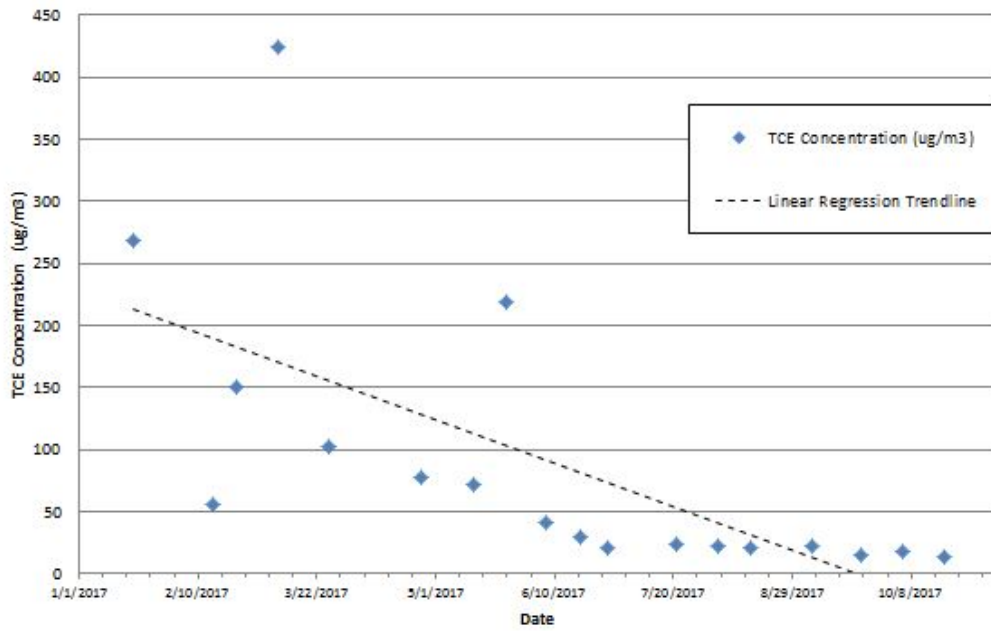
First Environment submitted the samples to ESC Lab Sciences for USEPA TO-15 SIM analysis. The laboratory was responsible for the decontamination of the Summa® canisters and for setting the internal vacuum and calibrating the regulators prior to sample collection.

2.3 Results

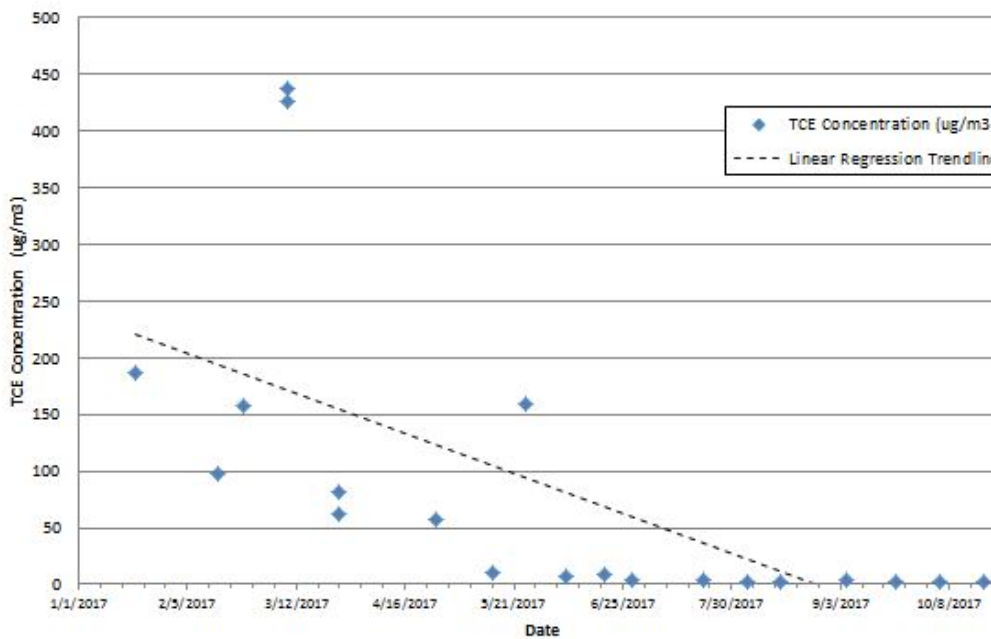
Table 1 presents the ambient and indoor air sampling results for all TO-15 analytes. Table 2 presents the results of TCE, cis-DCE, and VC in comparison of all previous rounds of sampling.

The sample results in the Training Room and Maintenance Room were above USEPA’s Vapor Intrusion Screening Level (“VISL”) for TCE of $3 \mu\text{g}/\text{m}^3$ but below the MDEQ action level of $26 \mu\text{g}/\text{m}^3$. The sample results in the ATS Room and Cafeteria were below USEPA’s VISL. The following figures show the linear regression trendline for the interior rooms.

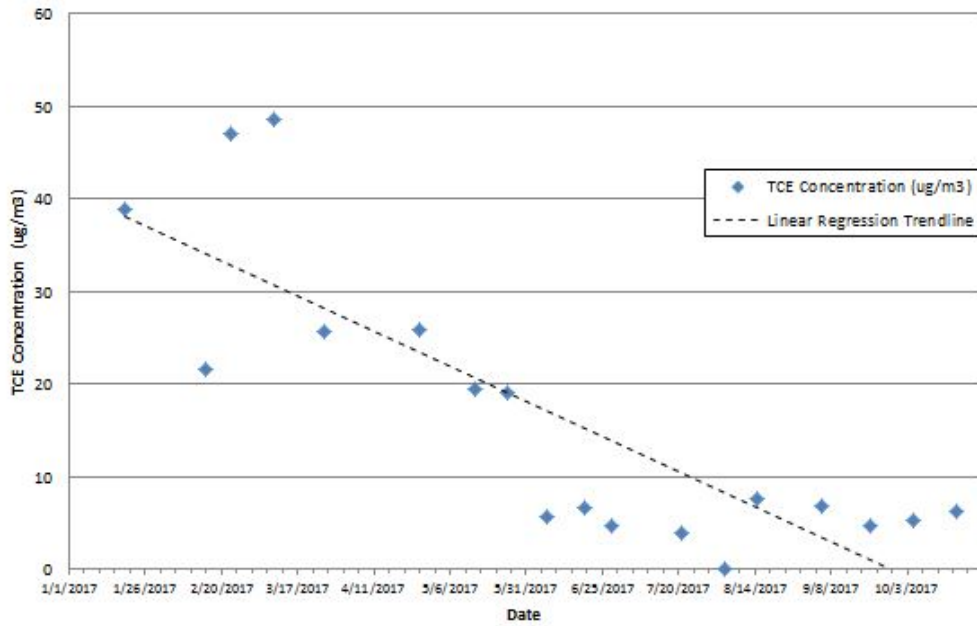
TCE Concentration History at IA-1 (Maintenance Room)



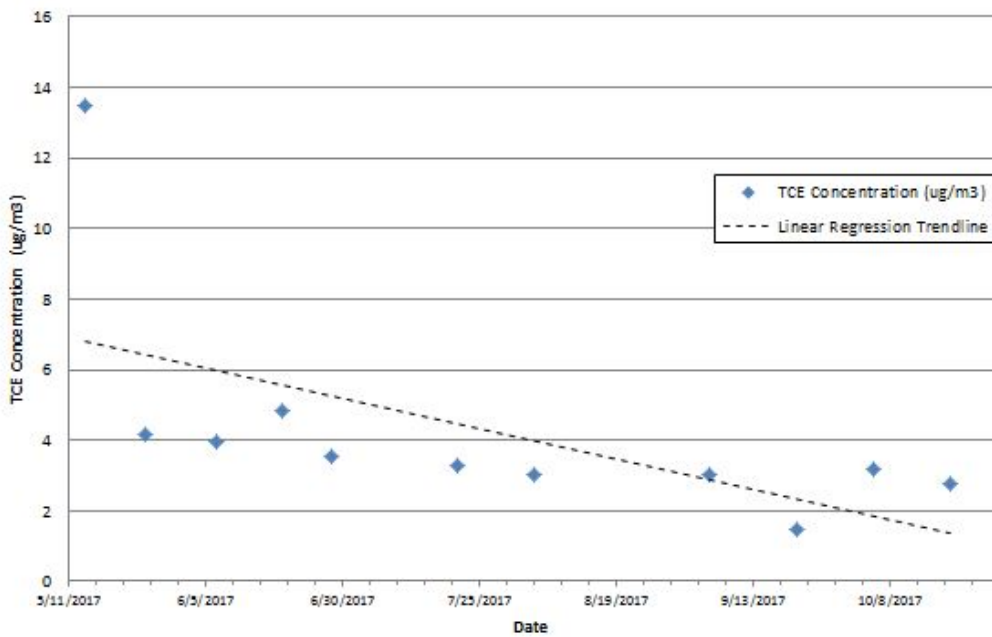
TCE Concentration History at IA-2 (ATS Room)



TCE Concentration History at IA-6 (Training Room)



TCE Concentration History at IA-17 (Cafeteria)



A copy of the laboratory report, including the chain-of-custody forms, is attached in Appendix A.

3.0 Summary of Indoor Air Sampling

Since June 2017, the sample results in the Maintenance Room (IA-1), ATS Room (IA-2), Training Room (IA-6), and Cafeteria (IA-17) have been below the MDEQ action level of 26 $\mu\text{g}/\text{m}^3$.

On September 20, 2017, First Environment, on behalf of EnPro, submitted a letter request to the MDEQ for modification to the indoor air sampling program pursuant to Section 3.A. of the Agreed Order. The revised indoor air sampling schedule provides for bi-weekly sampling for the four interior room indoor air sampling locations (IA-1, IA-2, IA-6, & IA-17) and semi-annual sampling of three locations at the west, center, and east areas of the Plant (IA-C16, IA-K13, and IA-G4). On September 28, 2017, the MDEQ approved the sampling schedule with a request that IA-C16, IA-K13, and IA-G4 be sampled on a quarterly basis. Accordingly, IA-C16, IA-K13, and IA-G4 will be sampled quarterly. Subsequent indoor air sampling results under the approved sampling schedule will be provided to the MDEQ on an ongoing basis.

4.0 Air Permit Evaluation

As reported in First Environment's June 19, 2017 Vapor Intrusion Investigation and Mitigation Report, based on the June 13, 2017 measurements, the discharge of TCE vapors to the atmosphere were estimated to be approximately 36.4 pounds/year, which is equivalent to approximately 0.02 tons/year. On July 17, 2017, at the request of MDEQ, First Environment resampled the influent and effluent of the SSDS and estimated the discharge of TCE vapors to the atmosphere to be about 2.35×10^{-4} pounds/hour, which is equivalent to approximately 0.001 tons/year. On October 4, 2017, the MDEQ responded that "the results from the analytical sample collected during the evaluation [in July] are promising," but the agency needed additional samples. On October 11, 2017, to address the MDEQ's requests, First Environment proposed four rounds of bi-weekly sampling of the influent and effluent of the SSDS.

On October 20, 2017, First Environment resampled the influent and effluent of the SSDS. Prior to sampling, First Environment closed the intake control valve on the roof of the Plant so that no outside ambient air would influence the sampling results. As discussed with MDEQ, First Environment left open the ambient air extraction system intake valve located in the ATS room,

which is part of the SSDS' treatment system. The discharge flow rate measured at the stack of the SSDS was about 265 cubic feet per minute ("cfm"). The effluent TCE concentration measured at the stack was 2390 $\mu\text{g}/\text{m}^3$. Based on these measurements, the discharge of TCE vapors to the atmosphere is estimated to be about 2.37×10^{-3} pounds/hour, which is equivalent to approximately 0.01 tons/year.

Subsequent influent and effluent sampling results under the approved sampling schedule will be provided to the MDEQ on an ongoing basis.

TABLES

TABLE 1
INDOOR AIR SAMPLING RESULTS
OCTOBER 19, 2017
FORMER HOLLEY AUTOMOTIVE/COLTEC INDUSTRIES FACILITY
WATER VALLEY, MS

Analyte	SAMPLE LOCATION: SAMPING DATE: LABORATORY ID:	IA-1 10/19/2017 L945503-01	IA-2 10/19/2017 L945503-02	IA-6 10/19/2017 L945503-03	IA-17 10/19/2017 L945503-04	AA-2 10/19/2017 L945503-05	SSD-EFFLU (3) 10/19/2017 L945503-06	SSD-INFKU-UV (3) 10/19/2017 L945503-07
		µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³		
ACETONE		310	309	301	277	5.78	352	299
ALLYL CHLORIDE		<0.626	<0.626	<0.626	<0.626	<0.626	<1.25	<1.25
BENZENE		1.03	0.936	1.05	1.01	<0.639	<1.28	<1.28
BENZYL CHLORIDE		<1.04	<1.04	<1.04	<1.04	<1.04	<2.08	<2.08
BROMODICHLOROMETHANE		<1.34	<1.34	<1.34	<1.34	<1.34	<2.68	<2.68
BROMOFORM		<6.21	<6.21	<6.21	<6.21	<6.21	<12.4	<12.4
BROMOMETHANE		<0.776	<0.776	<0.776	<0.776	<0.776	<1.55	<1.55
1,3-BUTADIENE		<4.43	<4.43	<4.43	<4.43	<4.43	<8.85	<8.85
CARBON DISULFIDE		<0.622	<0.622	<0.622	<0.622	<0.622	<1.24	<1.24
CARBON TETRACHLORIDE		<1.26	<1.26	<1.26	<1.26	<1.26	<2.52	<2.52
CHLOROBENZENE		<0.924	<0.924	<0.924	<0.924	<0.924	<1.85	<1.85
CHLOROETHANE		<0.528	<0.528	<0.528	<0.528	<0.528	<1.06	<1.06
CHLOROFORM		<0.973	<0.973	<0.973	<0.973	<0.973	<1.95	<1.95
CHLOROMETHANE		0.979	1.12	0.918	1.01	0.89	1.4	1.05
2-CHLOROTOLUENE		<1.03	<1.03	<1.03	<1.03	<1.03	<2.06	<2.06
CYCLOHEXANE		<0.689	<0.689	<0.689	<0.689	<0.689	<1.38	<1.38
CHLORODIBROMOMETHANE		<1.7	<1.7	<1.7	<1.7	<1.7	<3.4	<3.4
1,2-DIBROMOETHANE		<1.54	<1.54	<1.54	<1.54	<1.54	<3.08	<3.08
1,2-DICHLOROBENZENE		<1.2	<1.2	<1.2	<1.2	<1.2	<2.4	<2.4
1,3-DICHLOROBENZENE		<1.2	<1.2	<1.2	<1.2	<1.2	<2.4	<2.4
1,4-DICHLOROBENZENE		<1.2	<1.2	<1.2	<1.2	<1.2	<2.4	<2.4
1,2-DICHLOROETHANE		<0.81	<0.81	<0.81	<0.81	<0.81	<1.62	<1.62
1,1-DICHLOROETHANE		<0.802	<0.802	<0.802	<0.802	<0.802	<1.6	<1.6

TABLE 1
INDOOR AIR SAMPLING RESULTS
OCTOBER 19, 2017
FORMER HOLLEY AUTOMOTIVE/COLTEC INDUSTRIES FACILITY
WATER VALLEY, MS

SAMPLE LOCATION:	IA-1	IA-2	IA-6	IA-17	AA-2	SSD-EFFLU (3)	SSD-INFKU-UV (3)
SAMPING DATE:	10/19/2017	10/19/2017	10/19/2017	10/19/2017	10/19/2017	10/19/2017	10/19/2017
LABORATORY ID:	L945503-01	L945503-02	L945503-03	L945503-04	L945503-05	L945503-06	L945503-07
Analyte	$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$		
1,1-DICHLOROETHENE	<0.793	<0.793	<0.793	<0.793	<0.793	<1.59	1.72
CIS-1,2-DICHLOROETHENE	<0.793	<0.793	<0.793	<0.793	<0.793	1240	1450
TRANS-1,2-DICHLOROETHENE	<0.793	0.862	<0.793	<0.793	<0.793	13.4	15.6
1,2-DICHLOROPROPANE	<0.924	<0.924	<0.924	<0.924	<0.924	<1.85	<1.85
CIS-1,3-DICHLOROPROPENE	<0.908	<0.908	<0.908	<0.908	<0.908	<1.82	<1.82
TRANS-1,3-DICHLOROPROPENE	<0.908	<0.908	<0.908	<0.908	<0.908	<1.82	<1.82
1,4-DIOXANE	0.725	0.942	<0.721	<0.721	<0.721	<1.44	<1.44
ETHANOL	6,960 (E)	9,050 (E)	7,570 (E)	8,140 (E)	22.4	5,560 (E)	6,990 (E)
ETHYLBENZENE	1.9	2.02	1.62	1.78	<0.867	<1.73	2.02
4-ETHYLTOLUENE	<0.982	<0.982	<0.982	<0.982	<0.982	<1.96	<1.96
TRICHLOROFLUOROMETHANE	1.43	1.44	1.38	1.39	1.34	<2.25	<2.25
DICHLORODIFLUOROMETHANE	1.82	1.72	1.82	1.86	1.82	<1.98	<1.98
1,1,2-TRICHLOROTRIFLUOROETHANE	<1.53	<1.53	<1.53	<1.53	<1.53	20	23.7
1,2-DICHLOROTETRAFLUROETHANE	<1.4	<1.4	<1.4	<1.4	<1.4	<2.8	<2.8
HEPTANE	46.6	32.5	32.8	36.3	<0.818	6.35	7.41
HEXACHLORO-1,3-BUTADIENE	<6.73	<6.73	<6.73	<6.73	<6.73	<13.5	<13.5
N-HEXANE	0.891	<0.705	<0.705	<0.705	<0.705	<1.41	<1.41
ISOPROPYLBENZENE	<0.983	<0.983	<0.983	<0.983	<0.983	<1.97	<1.97
METHYLENE CHLORIDE	<0.694	<0.694	0.854	<0.694	<0.694	<1.39	<1.39
METHYL BUTYL KETONE	<5.11	<5.11	<5.11	<5.11	<5.11	<10.2	<10.2
2-BUTANONE (MEK)	645	966	687	632	<3.69	440	535
4-METHYL-2-PENTANONE (MIBK)	<5.12	<5.12	<5.12	<5.12	<5.12	<10.2	<10.2
METHYL METHACRYLATE	<0.819	<0.819	<0.819	<0.819	<0.819	<1.64	<1.64
METHYL TERT-BUTYL ETHER	<0.721	<0.721	<0.721	<0.721	<0.721	<1.44	<1.44
NAPHTHALENE	<3.3	<3.3	<3.3	<3.3	<3.3	<6.6	<6.6
2-PROPANOL	8,880 (E)	8,730 (E)	7,440 (E)	6,870 (E)	9	5,810 (E)	7,480 (E)

TABLE 1
INDOOR AIR SAMPLING RESULTS
OCTOBER 19, 2017
FORMER HOLLEY AUTOMOTIVE/COLTEC INDUSTRIES FACILITY
WATER VALLEY, MS

SAMPLE LOCATION: SAMPLING DATE: LABORATORY ID:	IA-1	IA-2	IA-6	IA-17	AA-2	SSD-EFFLU (3)	SSD-INFKU-UV (3)
	10/19/2017 L945503-01	10/19/2017 L945503-02	10/19/2017 L945503-03	10/19/2017 L945503-04	10/19/2017 L945503-05	10/19/2017 L945503-06	10/19/2017 L945503-07
Analyte	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³		
PROPENE	<0.689	<0.689	<0.689	<0.689	<0.689	<1.38	<1.38
STYRENE	<0.851	<0.851	0.973	1.17	<0.851	<1.7	<1.7
1,1,2,2-TETRACHLOROETHANE	<1.37	<1.37	<1.37	<1.37	<1.37	<2.75	<2.75
TETRACHLOROETHENE	<1.36	<1.36	<1.36	<1.36	<1.36	8.16	9.5
TETRAHYDROFURAN	<0.59	<0.59	<0.59	<0.59	<0.59	6.61	<1.18
TOLUENE	15.3	8.16	9.19	12.1	<0.753	4.18	4.35
1,2,4-TRICHLOROBENZENE	<4.66	<4.66	<4.66	<4.66	<4.66	<9.33	<9.33
1,1,1-TRICHLOROETHANE	<1.09	<1.09	<1.09	<1.09	<1.09	<2.18	<2.18
1,1,2-TRICHLOROETHANE	<1.09	<1.09	<1.09	<1.09	<1.09	<2.18	<2.18
TRICHLOROETHENE	14.1	1.87	6.31	2.79	<1.07	2390	2720
1,2,4-TRIMETHYLBENZENE	3.15	3.88	2.66	3.08	<0.982	2.35	2.94
1,3,5-TRIMETHYLBENZENE	1.03	1.31	<0.982	1.02	<0.982	<1.96	<1.96
2,2,4-TRIMETHYLPENTANE	9.54	12	8.01	9.78	<0.934	7.15	9.05
VINYL CHLORIDE	<0.511	<0.511	<0.511	<0.511	<0.511	11.2	13.5
VINYL BROMIDE	<0.875	<0.875	<0.875	<0.875	<0.875	<1.75	<1.75
VINYL ACETATE	<0.704	<0.704	<0.704	<0.704	<0.704	<1.41	<1.41
M&P-XYLENE	6.47	6.86	5.52	6.14	<1.73	5.03	6.98
O-XYLENE	2.08	2.27	1.8	1.96	<0.867	<1.73	2.25
1,4-BROMOFLUOROBENZENE	105 95.9	97.1 106	104 94.0	95.9 105	99.5	99.7 96.3	98.8 97.0

E: The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL)

**TABLE 2
INDOOR AIR SAMPLING RESULTS COMPARISON
JANUARY THROUGH OCTOBER 2017
FORMER HOLLEY AUTOMOTIVE/COLTEC INDUSTRIES FACILITY
WATER VALLEY, MS**

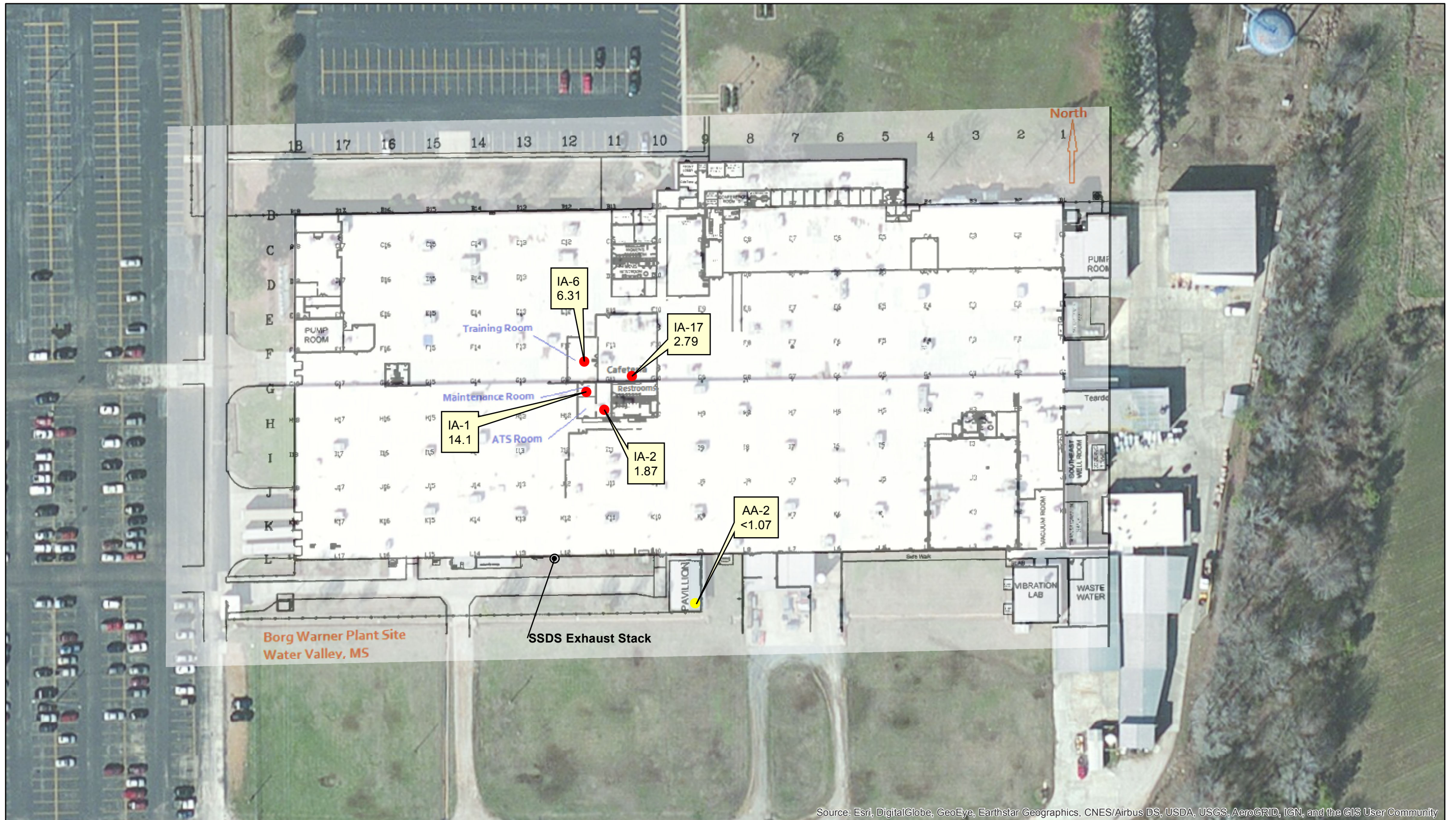
SAMPLE ID	SAMPLING DATE	LABORATORY ID	CoC Concentrations (µg/m³)		
			Trichloroethene	cis-1,2-Dichloroethene	Vinyl chloride
USEPA Vapor Intrusion Screening Level (VISL):			3	NA	2.8
IA-1	19-Jan-17	L1702183-01	268(D)	63.8	<0.051
	15-Feb-17	L890396-01	55.8	<0.793	2.51
	23-Feb-17	L892423-01	150	82.1	1.68
	9-Mar-17	L895061-01	425	97.9	2.47
	26-Mar-17	L898762-01	103	11.4	0.604
	26-Apr-17	L905292-01	78.3	<0.793	0.712
	14-May-17	L909544-01	72.7	14	<0.511
	25-May-17	L912423-03	219	<0.793	0.526
	7-Jun-17	L914832-13	41.7	<0.793	<0.511
	19-Jun-17	L917924-13	29.4	3.68	<0.511
	28-Jun-17	L920054-12	21.4	<0.793	<0.511
	21-Jul-17	L924410-01	23.8	<0.793	<0.511
	4-Aug-17	L927407-01	22.9	2.85	<0.511
	15-Aug-17	L930026-01	20.6	<0.793	<0.511
	5-Sep-17	L934535-01	21.8	3.17	<0.511
	21-Sep-17	L938896-01	14.7	<0.793	<0.511
5-Oct-17	L942068-01	18.2	<0.793	<0.511	
19-Oct-17	L945503-01	14.1	<0.793	<0.511	
IA-2 IA-2 (2ND CANISTER) IA-2 (DUPLICATE)	19-Jan-17	L1702183-02	187	43.2	<0.051
	15-Feb-17	L890396-02	97.1	<0.793	2.27
	23-Feb-17	L892423-02	157	79.4	1.57
	9-Mar-17	L895061-02	426	86.7	1.18
	9-Mar-17	L895061-04	438	88.7	1.68
	26-Mar-17	L898762-02	61.8	<0.793	<0.511
	26-Mar-17	L898762-04	82.3	<0.793	<0.511
	26-Apr-17	L905292-02	56.6	10.8	<0.511
	14-May-17	L909544-02	10.8	<0.793	<0.511
	25-May-17	L912423-08	160	<0.793	<0.511
	7-Jun-17	L914832-12	6.58	<0.793	<0.511
	19-Jun-17	L917924-12	8.16	1.88	<0.511
	28-Jun-17	L920054-13	4.21	<0.793	<0.511
	21-Jul-17	L924410-02	4.3	<0.793	<0.511
	4-Aug-17	L927407-02	2.94	<0.793	<0.511
	15-Aug-17	L930026-02	2.91	<0.793	<0.511
5-Sep-17	L934535-02	3.52	0.967	<0.511	
21-Sep-17	L938896-02	2.22	<0.793	<0.511	
5-Oct-17	L942068-02	2.46	<0.793	<0.511	
19-Oct-17	L945503-02	1.87	<0.793	<0.511	
IA-6	19-Jan-17	L1702183-06	39	12.8	0.585
	15-Feb-17	L890396-03	21.7	<0.793	0.57
	23-Feb-17	L892423-03	47.1	14.2	<0.511
	9-Mar-17	L895061-03	48.6	12.3	0.511
	26-Mar-17	L898762-03	25.8	<0.793	<0.511
	26-Apr-17	L905292-03	26	9.12	<0.511
	14-May-17	L909544-03	19.5	<0.793	<0.511
	25-May-17	L912423-01	19.1	<0.793	<0.511
	7-Jun-17	L914832-11	5.75	<0.793	<0.511
	19-Jun-17	L917924-11	6.67	4.14	<0.511
	28-Jun-17	L920054-11	4.84	<0.793	<0.511
	21-Jul-17	L924410-03	4	<0.793	<0.511
	4-Aug-17	L927407-03	<1.07	<0.793	<0.511
	15-Aug-17	L930026-03	7.61	<0.793	<0.511
	5-Sep-17	L934535-03	6.85	5.17	<0.511
	21-Sep-17	L938896-03	4.65	<0.793	<0.511
5-Oct-17	L942068-03	5.37	<0.793	<0.511	
19-Oct-17	L945503-03	6.31	<0.793	<0.511	
IA-14	19-Jan-17	L1702183-14	3.07	0.928	<0.051
	23-Feb-17	L892423-04	3.32	<0.793	<0.511
IA-17	14-May-17	L909544-05	13.5	<0.793	<0.511
	25-May-17	L912423-02	4.15	<0.793	<0.511
	7-Jun-17	L914832-10	3.96	<0.793	<0.511
	19-Jun-17	L917924-10	4.82	4.48	<0.511
	28-Jun-17	L920054-10	3.56	<0.793	<0.511
	21-Jul-17	L924410-04	3.27	<0.793	<0.511
	4-Aug-17	L927407-04	3.02	<0.793	<0.511
	15-Aug-17	L930026-04	<5.36	<3.96	<2.56
	5-Sep-17	L934535-04	3.04	5.6	<0.511
	21-Sep-17	L938896-04	1.46	<0.793	<0.511
5-Oct-17	L942068-04	3.2	<0.793	<0.511	
19-Oct-17	L945503-04	2.79	<0.793	<0.511	
IA-B12	26-Apr-17	L905292-04	6.54	1.77	<0.511
	25-May-17	L912423-05	3.08	<0.793	<0.511
	7-Jun-17	L914832-07	1.64	<0.793	<0.511
	19-Jun-17	L917924-09	1.66	<0.793	<0.511
	28-Jun-17	L920054-08	<1.07	<0.793	<0.511
	21-Jul-17	L924410-05	1.08	<0.793	<0.511
	4-Aug-17	L927407-05	<1.07	<0.793	<0.511
15-Aug-17	L930026-05	<1.07	<0.793	<0.511	
5-Sep-17	L934535-05	<1.07	<0.793	<0.511	
IA-C16	26-Apr-17	L905292-05	6.48	1.82	<0.511
	25-May-17	L912423-06	3.88	<0.793	<0.511
	7-Jun-17	L914832-08	1.55	<0.793	<0.511
	19-Jun-17	L917924-07	2	<0.793	<0.511
	28-Jun-17	L920054-07	1.22	<0.793	<0.511
	21-Jul-17	L924410-06	1.08	<0.793	<0.511
4-Aug-17	L927407-06	1.25	<0.793	<0.511	

**TABLE 2
INDOOR AIR SAMPLING RESULTS COMPARISON
JANUARY THROUGH OCTOBER 2017
FORMER HOLLEY AUTOMOTIVE/COLTEC INDUSTRIES FACILITY
WATER VALLEY, MS**

SAMPLE ID	SAMPLING DATE	LABORATORY ID	CoC Concentrations (µg/m³)		
			Trichloroethene	cis-1,2-Dichloroethene	Vinyl chloride
USEPA Vapor Intrusion Screening Level (VISL):			3	NA	2.8
	15-Aug-17	L930026-06	<1.07	<0.793	<0.511
	5-Sep-17	L934535-06	<1.07	<0.793	<0.511
IA-D5	25-May-17	L912423-12	<1.07	<0.793	<0.511
	7-Jun-17	L914832-03	1.47	<0.793	<0.511
	19-Jun-17	L917924-03	1.66	<0.793	<0.511
	28-Jun-17	L920054-03	<1.07	<0.793	<0.511
	21-Jul-17	L924410-08	<1.07	<0.793	<0.511
	4-Aug-17	L927407-10	<1.07	<0.793	<0.511
	15-Aug-17	L930026-10	<1.07	<0.793	<0.511
	5-Sep-17	L934535-10	1.3	<0.793	<0.511
IA-G4	25-May-17	L912423-11	<1.07	<0.793	<0.511
	7-Jun-17	L914832-02	3.31	<0.793	<0.511
	19-Jun-17	L917924-02	1.35	<0.793	<0.511
	28-Jun-17	L920054-02	<1.07	<0.793	<0.511
	21-Jul-17	L924410-09	<1.07	<0.793	<0.511
	4-Aug-17	L927407-11	<1.07	<0.793	<0.511
	15-Aug-17	L930026-11	<1.07	<0.793	<0.511
	5-Sep-17	L934535-11	1.17	<0.793	<0.511
IA-G13	26-Apr-17	L905292-06	8.98	<0.793	<0.511
	14-May-17	L909544-04	4.65	<0.793	<0.511
	25-May-17	L912423-06	3.88	<0.793	<0.511
	7-Jun-17	L914832-06	2.54	<0.793	<0.511
	19-Jun-17	L917924-06	2.46	<0.793	<0.511
	28-Jun-17	L920054-06	1.41	<0.793	<0.511
	21-Jul-17	L924410-07	1.6	<0.793	<0.511
	4-Aug-17	L927407-07	1.76	<0.793	<0.511
15-Aug-17	L930026-07	1.25	<0.793	<0.511	
5-Sep-17	L934535-07	1.78	<0.793	<0.511	
IA-K8	25-May-17	L912423-10	1.47	<0.793	<0.511
	7-Jun-17	L914832-01	7.86	<0.793	<0.511
	19-Jun-17	L917924-01	1.31	<0.793	<0.511
	28-Jun-17	L920054-01	<1.07	<0.793	<0.511
	21-Jul-17	L924410-10	<1.07	<0.793	<0.511
	4-Aug-17	L927407-12	<1.07	<0.793	<0.511
	15-Aug-17	L930026-12	<1.07	<0.793	<0.511
	5-Sep-17	L934535-12	<1.07	<0.793	<0.511
IA-K13	26-Apr-17	L905292-07	6.53	<0.793	<0.511
	25-May-17	L912423-04	5.28	<0.793	<0.511
	7-Jun-17	L914832-05	1.59	<0.793	<0.511
	19-Jun-17	L917924-05	2.2	<0.793	<0.511
	28-Jun-17	L920054-05	1.33	<0.793	<0.511
	21-Jul-17	L924410-12	1.34	<0.793	<0.511
	4-Aug-17	L927407-08	<1.07	<0.793	<0.511
	15-Aug-17	L930026-08	<1.07	<0.793	<0.511
5-Sep-17	L934535-08	1.67	<0.793	<0.511	
IA-L16	26-Apr-17	L905292-08	5.77	1.75	<0.511
	7-Jun-17	L914832-04	2.09	<0.793	<0.511
	25-May-17	L912423-09	1.36	<0.793	<0.511
	19-Jun-17	L917924-04	2.81	<0.793	<0.511
	28-Jun-17	L920054-04	1.32	<0.793	<0.511
	21-Jul-17	L924410-11	1.18	<0.793	<0.511
	4-Aug-17	L927407-09	<1.07	<0.793	<0.511
	15-Aug-17	L930026-09	1.13	<0.793	<0.511
5-Sep-17	L934535-09	1.14	<0.793	<0.511	
EP-1	14-May-17	L909544-06	1420000	361000	46300
EP-2	14-May-17	L909544-07	2820000	560000	13200
IA-SUMP-DUP	25-May-17	L912423-15	83.1	<0.793	<0.511
IA-SUMP	19-Jun-17	L917924-14	5.33	1.19	<0.511
	28-Jun-17	L920054-14	3.75	<0.793	<0.511
AA-1	19-Jan-17	L1702183-17	<0.107	<0.079	<0.051
AA-2	19-Jan-17	L1702183-18	0.129	<0.079	<0.051
	26-Apr-17	L905292-09	<0.107	<0.793	<0.051
	25-May-17	L912423-13	<1.07	<0.793	<0.511
	7-Jun-17	L914832-09	<1.07	<0.793	<0.511
	19-Jun-17	L917924-08	<1.07	<0.793	<0.511
	28-Jun-17	L920054-09	16.7	<0.793	<0.511
	21-Jul-17	L924410-13	<1.07	<0.793	<0.511
	4-Aug-17	L927407-13	<1.07	<0.793	<0.511
	15-Aug-17	L930026-13	<1.07	<0.793	<0.511
	5-Sep-17	L934535-13	<1.07	<0.793	<0.511
	21-Sep-17	L938896-05	<1.07	<0.793	<0.511
	5-Oct-17	L942068-05	<1.07	<0.793	<0.511
	19-Oct-17	L945503-05	<1.07	<0.793	<0.511
IA-ATS-2ND F	15-Aug-17	L930026-14	1.86	<0.793	<0.511
IA-OFFICE 2ND F	15-Aug-17	L930026-15	<1.07	<0.793	<0.511

D: Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte
VISL: Calculated based on USEPA's OSWER Vapor Intrusion Assessment VISL Calculator Version 3.4, November 2015 RSLs for Target Indoor Air Concentration @ TCR=1E-6 or THQ=1
TCR: Target Carcinogen Risk
THQ: Target Hazard Quotient for Non-Carcinogens

FIGURE



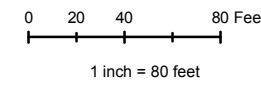
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

- IA-1: Indoor Air Concentrations in ug/m3
- AA-1: Ambient Air Concentrations in ug/m3
- SSDS Exhaust Stack

USEPA Screening Level for TCE: 3 ug/m3
 MDEQ Action Level for TCE: 26 ug/m3

- TCE Level Exceeding the MDEQ Action Level
- ND Concentration not detected above laboratory reported limits



BORG WARNER FACILITY
 600 Highway 32E, Water Valley, MS
 FIGURE 1
 INDOOR AIR SAMPLING RESULTS
 OCTOBER 19, 2017

91 Fulton Street
 Boonton, New Jersey 07005

Revised	Drawn	Checked	Approved	Date
LS	NMT	NMT	NMT	10/27/17

APPENDIX A

October 27, 2017

First Environment, Inc.

Sample Delivery Group: L945503
Samples Received: 10/21/2017
Project Number: ENPRO 002D-VM
Description: EnPro 002d-VM BorgWarner Plant Site
Site: WATER VALLEY, MS
Report To: Michael T. Slack
91 Fulton Street
Boonton, NJ 07005

Entire Report Reviewed By:



John Hawkins
Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

TABLE OF CONTENTS



Cp: Cover Page	1	
Tc: Table of Contents	2	
Ss: Sample Summary	3	
Cn: Case Narrative	4	
Sr: Sample Results	5	
IA-1 L945503-01	5	
IA-2 L945503-02	7	
IA-6 L945503-03	9	
IA-17 L945503-04	11	
AA-2 L945503-05	13	
SSD-EFFLU (3) L945503-06	15	
SSD-INFLU-UV(3) L945503-07	17	
Qc: Quality Control Summary	19	
Volatile Organic Compounds (MS) by Method TO-15	19	
Gl: Glossary of Terms	24	
Al: Accreditations & Locations	25	
Sc: Sample Chain of Custody	26	

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



IA-1 L945503-01 Air

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Collected by: Micheal T. Slack Collected date/time: 10/19/17 13:35 Received date/time: 10/21/17 08:45					
Volatile Organic Compounds (MS) by Method TO-15	WG1034556	1	10/23/17 13:24	10/23/17 13:24	MBF
Volatile Organic Compounds (MS) by Method TO-15	WG1034862	25	10/24/17 09:47	10/24/17 09:47	AMC



IA-2 L945503-02 Air

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Collected by: Micheal T. Slack Collected date/time: 10/19/17 13:33 Received date/time: 10/21/17 08:45					
Volatile Organic Compounds (MS) by Method TO-15	WG1034556	1	10/23/17 14:07	10/23/17 14:07	MBF
Volatile Organic Compounds (MS) by Method TO-15	WG1034862	25	10/24/17 10:28	10/24/17 10:28	AMC



IA-6 L945503-03 Air

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Collected by: Micheal T. Slack Collected date/time: 10/19/17 13:30 Received date/time: 10/21/17 08:45					
Volatile Organic Compounds (MS) by Method TO-15	WG1034556	1	10/23/17 14:51	10/23/17 14:51	MBF
Volatile Organic Compounds (MS) by Method TO-15	WG1034862	25	10/24/17 11:09	10/24/17 11:09	AMC



IA-17 L945503-04 Air

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Collected by: Micheal T. Slack Collected date/time: 10/19/17 13:31 Received date/time: 10/21/17 08:45					
Volatile Organic Compounds (MS) by Method TO-15	WG1034556	1	10/23/17 15:34	10/23/17 15:34	MBF
Volatile Organic Compounds (MS) by Method TO-15	WG1034862	25	10/24/17 11:50	10/24/17 11:50	AMC

AA-2 L945503-05 Air

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Collected by: Micheal T. Slack Collected date/time: 10/19/17 13:20 Received date/time: 10/21/17 08:45					
Volatile Organic Compounds (MS) by Method TO-15	WG1034556	1	10/23/17 16:18	10/23/17 16:18	MBF

SSD-EFFLU (3) L945503-06 Air

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Collected by: Micheal T. Slack Collected date/time: 10/19/17 13:36 Received date/time: 10/21/17 08:45					
Volatile Organic Compounds (MS) by Method TO-15	WG1034556	2	10/23/17 16:58	10/23/17 16:58	MBF
Volatile Organic Compounds (MS) by Method TO-15	WG1034862	25	10/24/17 12:32	10/24/17 12:32	AMC

SSD-INFLU-UV(3) L945503-07 Air

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Collected by: Micheal T. Slack Collected date/time: 10/19/17 13:56 Received date/time: 10/21/17 08:45					
Volatile Organic Compounds (MS) by Method TO-15	WG1034556	2	10/23/17 17:39	10/23/17 17:39	MBF
Volatile Organic Compounds (MS) by Method TO-15	WG1034862	25	10/24/17 13:13	10/24/17 13:13	AMC



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Technical Service Representative

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Collected date/time: 10/19/17 13:35

L945503

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	31.2	74.1	130	310		25	WG1034862
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1034556
Benzene	71-43-2	78.10	0.200	0.639	0.323	1.03		1	WG1034556
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1034556
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1034556
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1034556
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1034556
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1034556
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1034556
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1034556
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1034556
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1034556
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG1034556
Chloromethane	74-87-3	50.50	0.200	0.413	0.474	0.979		1	WG1034556
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1034556
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1034556
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1034556
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1034556
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1034556
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1034556
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1034556
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1034556
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1034556
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1034556
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1034556
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1034556
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1034556
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1034556
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1034556
1,4-Dioxane	123-91-1	88.10	0.200	0.721	0.201	0.725		1	WG1034556
Ethanol	64-17-5	46.10	15.8	29.8	3690	6960	E	25	WG1034862
Ethylbenzene	100-41-4	106	0.200	0.867	0.439	1.90		1	WG1034556
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1034556
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.254	1.43		1	WG1034556
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.367	1.82		1	WG1034556
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1034556
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1034556
Heptane	142-82-5	100	0.200	0.818	11.4	46.6		1	WG1034556
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1034556
n-Hexane	110-54-3	86.20	0.200	0.705	0.253	0.891		1	WG1034556
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1034556
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1034556
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1034556
2-Butanone (MEK)	78-93-3	72.10	31.2	92.0	219	645		25	WG1034862
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1034556
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1034556
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1034556
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1034556
2-Propanol	67-63-0	60.10	31.2	76.7	3610	8880	E	25	WG1034862
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1034556
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1034556
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1034556
Tetrachloroethylene	127-18-4	166	0.200	1.36	ND	ND		1	WG1034556
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1034556
Toluene	108-88-3	92.10	0.200	0.753	4.05	15.3		1	WG1034556
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1034556

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/19/17 13:35

L945503

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch	
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1034556	1 Cp
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1034556	2 Tc
Trichloroethylene	79-01-6	131	0.200	1.07	2.63	14.1		1	WG1034556	
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	0.641	3.15		1	WG1034556	3 Ss
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	0.211	1.03		1	WG1034556	
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	2.04	9.54		1	WG1034556	4 Cn
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1034556	
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1034556	5 Sr
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1034556	
m&p-Xylene	1330-20-7	106	0.400	1.73	1.49	6.47		1	WG1034556	
o-Xylene	95-47-6	106	0.200	0.867	0.480	2.08		1	WG1034556	6 Qc
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		95.9				WG1034862	7 Gl
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		105				WG1034556	8 Al
										9 Sc



Collected date/time: 10/19/17 13:33

L945503

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	31.2	74.1	130	309		25	WG1034862
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1034556
Benzene	71-43-2	78.10	0.200	0.639	0.293	0.936		1	WG1034556
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1034556
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1034556
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1034556
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1034556
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1034556
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1034556
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1034556
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1034556
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1034556
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG1034556
Chloromethane	74-87-3	50.50	0.200	0.413	0.543	1.12		1	WG1034556
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1034556
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1034556
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1034556
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1034556
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1034556
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1034556
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1034556
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1034556
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1034556
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1034556
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1034556
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	0.217	0.862		1	WG1034556
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1034556
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1034556
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1034556
1,4-Dioxane	123-91-1	88.10	0.200	0.721	0.261	0.942		1	WG1034556
Ethanol	64-17-5	46.10	15.8	29.8	4800	9050	E	25	WG1034862
Ethylbenzene	100-41-4	106	0.200	0.867	0.466	2.02		1	WG1034556
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1034556
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.256	1.44		1	WG1034556
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.348	1.72		1	WG1034556
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1034556
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1034556
Heptane	142-82-5	100	0.200	0.818	7.95	32.5		1	WG1034556
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1034556
n-Hexane	110-54-3	86.20	0.200	0.705	ND	ND		1	WG1034556
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1034556
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1034556
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1034556
2-Butanone (MEK)	78-93-3	72.10	31.2	92.0	328	966		25	WG1034862
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1034556
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1034556
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1034556
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1034556
2-Propanol	67-63-0	60.10	31.2	76.7	3550	8730	E	25	WG1034862
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1034556
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1034556
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1034556
Tetrachloroethylene	127-18-4	166	0.200	1.36	ND	ND		1	WG1034556
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1034556
Toluene	108-88-3	92.10	0.200	0.753	2.17	8.16		1	WG1034556
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1034556

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc



Collected date/time: 10/19/17 13:33

L945503

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1034556
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1034556
Trichloroethylene	79-01-6	131	0.200	1.07	0.350	1.87		1	WG1034556
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	0.791	3.88		1	WG1034556
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	0.267	1.31		1	WG1034556
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	2.57	12.0		1	WG1034556
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1034556
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1034556
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1034556
m&p-Xylene	1330-20-7	106	0.400	1.73	1.58	6.86		1	WG1034556
o-Xylene	95-47-6	106	0.200	0.867	0.525	2.27		1	WG1034556
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		106				WG1034556
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		97.1				WG1034862

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/19/17 13:30

L945503

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	31.2	74.1	127	301		25	WG1034862
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1034556
Benzene	71-43-2	78.10	0.200	0.639	0.328	1.05		1	WG1034556
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1034556
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1034556
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1034556
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1034556
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1034556
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1034556
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1034556
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1034556
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1034556
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG1034556
Chloromethane	74-87-3	50.50	0.200	0.413	0.444	0.918		1	WG1034556
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1034556
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1034556
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1034556
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1034556
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1034556
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1034556
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1034556
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1034556
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1034556
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1034556
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1034556
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1034556
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1034556
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1034556
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1034556
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1034556
Ethanol	64-17-5	46.10	15.8	29.8	4010	7570	E	25	WG1034862
Ethylbenzene	100-41-4	106	0.200	0.867	0.374	1.62		1	WG1034556
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1034556
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.246	1.38		1	WG1034556
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.369	1.82		1	WG1034556
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1034556
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1034556
Heptane	142-82-5	100	0.200	0.818	8.02	32.8		1	WG1034556
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1034556
n-Hexane	110-54-3	86.20	0.200	0.705	ND	ND		1	WG1034556
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1034556
Methylene Chloride	75-09-2	84.90	0.200	0.694	0.246	0.854		1	WG1034556
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1034556
2-Butanone (MEK)	78-93-3	72.10	31.2	92.0	233	687		25	WG1034862
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1034556
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1034556
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1034556
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1034556
2-Propanol	67-63-0	60.10	31.2	76.7	3030	7440	E	25	WG1034862
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1034556
Styrene	100-42-5	104	0.200	0.851	0.229	0.973		1	WG1034556
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1034556
Tetrachloroethylene	127-18-4	166	0.200	1.36	ND	ND		1	WG1034556
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1034556
Toluene	108-88-3	92.10	0.200	0.753	2.44	9.19		1	WG1034556
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1034556

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1034556
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1034556
Trichloroethylene	79-01-6	131	0.200	1.07	1.18	6.31		1	WG1034556
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	0.543	2.66		1	WG1034556
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1034556
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	1.71	8.01		1	WG1034556
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1034556
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1034556
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1034556
m&p-Xylene	1330-20-7	106	0.400	1.73	1.27	5.52		1	WG1034556
o-Xylene	95-47-6	106	0.200	0.867	0.414	1.80		1	WG1034556
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		94.0				WG1034862
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		104				WG1034556

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/19/17 13:31

L945503

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	31.2	74.1	117	277		25	WG1034862
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1034556
Benzene	71-43-2	78.10	0.200	0.639	0.316	1.01		1	WG1034556
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1034556
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1034556
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1034556
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1034556
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1034556
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1034556
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1034556
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1034556
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1034556
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG1034556
Chloromethane	74-87-3	50.50	0.200	0.413	0.490	1.01		1	WG1034556
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1034556
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1034556
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1034556
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1034556
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1034556
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1034556
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1034556
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1034556
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1034556
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1034556
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1034556
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1034556
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1034556
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1034556
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1034556
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1034556
Ethanol	64-17-5	46.10	15.8	29.8	4320	8140	E	25	WG1034862
Ethylbenzene	100-41-4	106	0.200	0.867	0.410	1.78		1	WG1034556
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1034556
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.247	1.39		1	WG1034556
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.375	1.86		1	WG1034556
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1034556
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1034556
Heptane	142-82-5	100	0.200	0.818	8.86	36.3		1	WG1034556
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1034556
n-Hexane	110-54-3	86.20	0.200	0.705	ND	ND		1	WG1034556
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1034556
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1034556
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1034556
2-Butanone (MEK)	78-93-3	72.10	31.2	92.0	214	632		25	WG1034862
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1034556
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1034556
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1034556
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1034556
2-Propanol	67-63-0	60.10	31.2	76.7	2790	6870	E	25	WG1034862
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1034556
Styrene	100-42-5	104	0.200	0.851	0.274	1.17		1	WG1034556
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1034556
Tetrachloroethylene	127-18-4	166	0.200	1.36	ND	ND		1	WG1034556
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1034556
Toluene	108-88-3	92.10	0.200	0.753	3.20	12.1		1	WG1034556
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1034556

Cp

Tc

Ss

Cn

Sr

Qc

GI

Al

Sc



Collected date/time: 10/19/17 13:31

L945503

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1034556
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1034556
Trichloroethylene	79-01-6	131	0.200	1.07	0.521	2.79		1	WG1034556
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	0.627	3.08		1	WG1034556
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	0.208	1.02		1	WG1034556
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	2.09	9.78		1	WG1034556
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1034556
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1034556
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1034556
m&p-Xylene	1330-20-7	106	0.400	1.73	1.42	6.14		1	WG1034556
o-Xylene	95-47-6	106	0.200	0.867	0.453	1.96		1	WG1034556
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		105				WG1034556
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		95.9				WG1034862

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/19/17 13:20

L945503

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	2.43	5.78		1	WG1034556
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1034556
Benzene	71-43-2	78.10	0.200	0.639	ND	ND		1	WG1034556
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1034556
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1034556
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1034556
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1034556
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1034556
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1034556
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1034556
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1034556
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1034556
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG1034556
Chloromethane	74-87-3	50.50	0.200	0.413	0.431	0.890		1	WG1034556
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1034556
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1034556
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1034556
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1034556
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1034556
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1034556
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1034556
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1034556
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1034556
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1034556
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1034556
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1034556
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1034556
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1034556
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1034556
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1034556
Ethanol	64-17-5	46.10	0.630	1.19	11.9	22.4		1	WG1034556
Ethylbenzene	100-41-4	106	0.200	0.867	ND	ND		1	WG1034556
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1034556
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.239	1.34		1	WG1034556
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.367	1.82		1	WG1034556
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1034556
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1034556
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1034556
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1034556
n-Hexane	110-54-3	86.20	0.200	0.705	ND	ND		1	WG1034556
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1034556
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1034556
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1034556
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1034556
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1034556
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1034556
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1034556
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1034556
2-Propanol	67-63-0	60.10	1.25	3.07	3.66	9.00		1	WG1034556
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1034556
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1034556
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1034556
Tetrachloroethylene	127-18-4	166	0.200	1.36	ND	ND		1	WG1034556
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1034556
Toluene	108-88-3	92.10	0.200	0.753	ND	ND		1	WG1034556
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1034556

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/19/17 13:20

L945503

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch	
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1034556	1 Cp
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1034556	2 Tc
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG1034556	3 Ss
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	ND	ND		1	WG1034556	4 Cn
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1034556	5 Sr
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1034556	6 Qc
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1034556	7 Gl
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1034556	8 Al
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1034556	9 Sc
m&p-Xylene	1330-20-7	106	0.400	1.73	ND	ND		1	WG1034556	
o-Xylene	95-47-6	106	0.200	0.867	ND	ND		1	WG1034556	
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		99.5				WG1034556	



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	31.2	74.1	148	352		25	WG1034862
Allyl chloride	107-05-1	76.53	0.400	1.25	ND	ND		2	WG1034556
Benzene	71-43-2	78.10	0.400	1.28	ND	ND		2	WG1034556
Benzyl Chloride	100-44-7	127	0.400	2.08	ND	ND		2	WG1034556
Bromodichloromethane	75-27-4	164	0.400	2.68	ND	ND		2	WG1034556
Bromoform	75-25-2	253	1.20	12.4	ND	ND		2	WG1034556
Bromomethane	74-83-9	94.90	0.400	1.55	ND	ND		2	WG1034556
1,3-Butadiene	106-99-0	54.10	4.00	8.85	ND	ND		2	WG1034556
Carbon disulfide	75-15-0	76.10	0.400	1.24	ND	ND		2	WG1034556
Carbon tetrachloride	56-23-5	154	0.400	2.52	ND	ND		2	WG1034556
Chlorobenzene	108-90-7	113	0.400	1.85	ND	ND		2	WG1034556
Chloroethane	75-00-3	64.50	0.400	1.06	ND	ND		2	WG1034556
Chloroform	67-66-3	119	0.400	1.95	ND	ND		2	WG1034556
Chloromethane	74-87-3	50.50	0.400	0.826	0.680	1.40		2	WG1034556
2-Chlorotoluene	95-49-8	126	0.400	2.06	ND	ND		2	WG1034556
Cyclohexane	110-82-7	84.20	0.400	1.38	ND	ND		2	WG1034556
Dibromochloromethane	124-48-1	208	0.400	3.40	ND	ND		2	WG1034556
1,2-Dibromoethane	106-93-4	188	0.400	3.08	ND	ND		2	WG1034556
1,2-Dichlorobenzene	95-50-1	147	0.400	2.40	ND	ND		2	WG1034556
1,3-Dichlorobenzene	541-73-1	147	0.400	2.40	ND	ND		2	WG1034556
1,4-Dichlorobenzene	106-46-7	147	0.400	2.40	ND	ND		2	WG1034556
1,2-Dichloroethane	107-06-2	99	0.400	1.62	ND	ND		2	WG1034556
1,1-Dichloroethane	75-34-3	98	0.400	1.60	ND	ND		2	WG1034556
1,1-Dichloroethene	75-35-4	96.90	0.400	1.59	ND	ND		2	WG1034556
cis-1,2-Dichloroethene	156-59-2	96.90	5.00	19.8	314	1240		25	WG1034862
trans-1,2-Dichloroethene	156-60-5	96.90	0.400	1.59	3.39	13.4		2	WG1034556
1,2-Dichloropropane	78-87-5	113	0.400	1.85	ND	ND		2	WG1034556
cis-1,3-Dichloropropene	10061-01-5	111	0.400	1.82	ND	ND		2	WG1034556
trans-1,3-Dichloropropene	10061-02-6	111	0.400	1.82	ND	ND		2	WG1034556
1,4-Dioxane	123-91-1	88.10	0.400	1.44	ND	ND		2	WG1034556
Ethanol	64-17-5	46.10	15.8	29.8	2950	5560	E	25	WG1034862
Ethylbenzene	100-41-4	106	0.400	1.73	ND	ND		2	WG1034556
4-Ethyltoluene	622-96-8	120	0.400	1.96	ND	ND		2	WG1034556
Trichlorofluoromethane	75-69-4	137.40	0.400	2.25	ND	ND		2	WG1034556
Dichlorodifluoromethane	75-71-8	120.92	0.400	1.98	ND	ND		2	WG1034556
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.400	3.07	2.60	20.0		2	WG1034556
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.400	2.80	ND	ND		2	WG1034556
Heptane	142-82-5	100	0.400	1.64	1.55	6.35		2	WG1034556
Hexachloro-1,3-butadiene	87-68-3	261	1.26	13.5	ND	ND		2	WG1034556
n-Hexane	110-54-3	86.20	0.400	1.41	ND	ND		2	WG1034556
Isopropylbenzene	98-82-8	120.20	0.400	1.97	ND	ND		2	WG1034556
Methylene Chloride	75-09-2	84.90	0.400	1.39	ND	ND		2	WG1034556
Methyl Butyl Ketone	591-78-6	100	2.50	10.2	ND	ND		2	WG1034556
2-Butanone (MEK)	78-93-3	72.10	31.2	92.0	149	440		25	WG1034862
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	2.50	10.2	ND	ND		2	WG1034556
Methyl methacrylate	80-62-6	100.12	0.400	1.64	ND	ND		2	WG1034556
MTBE	1634-04-4	88.10	0.400	1.44	ND	ND		2	WG1034556
Naphthalene	91-20-3	128	1.26	6.60	ND	ND		2	WG1034556
2-Propanol	67-63-0	60.10	31.2	76.7	2360	5810	E	25	WG1034862
Propene	115-07-1	42.10	0.800	1.38	ND	ND		2	WG1034556
Styrene	100-42-5	104	0.400	1.70	ND	ND		2	WG1034556
1,1,2,2-Tetrachloroethane	79-34-5	168	0.400	2.75	ND	ND		2	WG1034556
Tetrachloroethylene	127-18-4	166	0.400	2.72	1.20	8.16		2	WG1034556
Tetrahydrofuran	109-99-9	72.10	0.400	1.18	2.24	6.61		2	WG1034556
Toluene	108-88-3	92.10	0.400	1.51	1.11	4.18		2	WG1034556
1,2,4-Trichlorobenzene	120-82-1	181	1.26	9.33	ND	ND		2	WG1034556

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/19/17 13:36

L945503

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.400	2.18	ND	ND		2	WG1034556
1,1,2-Trichloroethane	79-00-5	133	0.400	2.18	ND	ND		2	WG1034556
Trichloroethylene	79-01-6	131	5.00	26.8	446	2390		25	WG1034862
1,2,4-Trimethylbenzene	95-63-6	120	0.400	1.96	0.479	2.35		2	WG1034556
1,3,5-Trimethylbenzene	108-67-8	120	0.400	1.96	ND	ND		2	WG1034556
2,2,4-Trimethylpentane	540-84-1	114.22	0.400	1.87	1.53	7.15		2	WG1034556
Vinyl chloride	75-01-4	62.50	0.400	1.02	4.38	11.2		2	WG1034556
Vinyl Bromide	593-60-2	106.95	0.400	1.75	ND	ND		2	WG1034556
Vinyl acetate	108-05-4	86.10	0.400	1.41	ND	ND		2	WG1034556
m&p-Xylene	1330-20-7	106	0.800	3.47	1.16	5.03		2	WG1034556
o-Xylene	95-47-6	106	0.400	1.73	ND	ND		2	WG1034556
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		99.7				WG1034556
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		96.3				WG1034862

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/19/17 13:56

L945503

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	31.2	74.1	126	299		25	WG1034862
Allyl chloride	107-05-1	76.53	0.400	1.25	ND	ND		2	WG1034556
Benzene	71-43-2	78.10	0.400	1.28	ND	ND		2	WG1034556
Benzyl Chloride	100-44-7	127	0.400	2.08	ND	ND		2	WG1034556
Bromodichloromethane	75-27-4	164	0.400	2.68	ND	ND		2	WG1034556
Bromoform	75-25-2	253	1.20	12.4	ND	ND		2	WG1034556
Bromomethane	74-83-9	94.90	0.400	1.55	ND	ND		2	WG1034556
1,3-Butadiene	106-99-0	54.10	4.00	8.85	ND	ND		2	WG1034556
Carbon disulfide	75-15-0	76.10	0.400	1.24	ND	ND		2	WG1034556
Carbon tetrachloride	56-23-5	154	0.400	2.52	ND	ND		2	WG1034556
Chlorobenzene	108-90-7	113	0.400	1.85	ND	ND		2	WG1034556
Chloroethane	75-00-3	64.50	0.400	1.06	ND	ND		2	WG1034556
Chloroform	67-66-3	119	0.400	1.95	ND	ND		2	WG1034556
Chloromethane	74-87-3	50.50	0.400	0.826	0.509	1.05		2	WG1034556
2-Chlorotoluene	95-49-8	126	0.400	2.06	ND	ND		2	WG1034556
Cyclohexane	110-82-7	84.20	0.400	1.38	ND	ND		2	WG1034556
Dibromochloromethane	124-48-1	208	0.400	3.40	ND	ND		2	WG1034556
1,2-Dibromoethane	106-93-4	188	0.400	3.08	ND	ND		2	WG1034556
1,2-Dichlorobenzene	95-50-1	147	0.400	2.40	ND	ND		2	WG1034556
1,3-Dichlorobenzene	541-73-1	147	0.400	2.40	ND	ND		2	WG1034556
1,4-Dichlorobenzene	106-46-7	147	0.400	2.40	ND	ND		2	WG1034556
1,2-Dichloroethane	107-06-2	99	0.400	1.62	ND	ND		2	WG1034556
1,1-Dichloroethane	75-34-3	98	0.400	1.60	ND	ND		2	WG1034556
1,1-Dichloroethene	75-35-4	96.90	0.400	1.59	0.435	1.72		2	WG1034556
cis-1,2-Dichloroethene	156-59-2	96.90	5.00	19.8	365	1450		25	WG1034862
trans-1,2-Dichloroethene	156-60-5	96.90	0.400	1.59	3.94	15.6		2	WG1034556
1,2-Dichloropropane	78-87-5	113	0.400	1.85	ND	ND		2	WG1034556
cis-1,3-Dichloropropene	10061-01-5	111	0.400	1.82	ND	ND		2	WG1034556
trans-1,3-Dichloropropene	10061-02-6	111	0.400	1.82	ND	ND		2	WG1034556
1,4-Dioxane	123-91-1	88.10	0.400	1.44	ND	ND		2	WG1034556
Ethanol	64-17-5	46.10	15.8	29.8	3710	6990	E	25	WG1034862
Ethylbenzene	100-41-4	106	0.400	1.73	0.466	2.02		2	WG1034556
4-Ethyltoluene	622-96-8	120	0.400	1.96	ND	ND		2	WG1034556
Trichlorofluoromethane	75-69-4	137.40	0.400	2.25	ND	ND		2	WG1034556
Dichlorodifluoromethane	75-71-8	120.92	0.400	1.98	ND	ND		2	WG1034556
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.400	3.07	3.09	23.7		2	WG1034556
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.400	2.80	ND	ND		2	WG1034556
Heptane	142-82-5	100	0.400	1.64	1.81	7.41		2	WG1034556
Hexachloro-1,3-butadiene	87-68-3	261	1.26	13.5	ND	ND		2	WG1034556
n-Hexane	110-54-3	86.20	0.400	1.41	ND	ND		2	WG1034556
Isopropylbenzene	98-82-8	120.20	0.400	1.97	ND	ND		2	WG1034556
Methylene Chloride	75-09-2	84.90	0.400	1.39	ND	ND		2	WG1034556
Methyl Butyl Ketone	591-78-6	100	2.50	10.2	ND	ND		2	WG1034556
2-Butanone (MEK)	78-93-3	72.10	31.2	92.0	181	535		25	WG1034862
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	2.50	10.2	ND	ND		2	WG1034556
Methyl methacrylate	80-62-6	100.12	0.400	1.64	ND	ND		2	WG1034556
MTBE	1634-04-4	88.10	0.400	1.44	ND	ND		2	WG1034556
Naphthalene	91-20-3	128	1.26	6.60	ND	ND		2	WG1034556
2-Propanol	67-63-0	60.10	31.2	76.7	3040	7480	E	25	WG1034862
Propene	115-07-1	42.10	0.800	1.38	ND	ND		2	WG1034556
Styrene	100-42-5	104	0.400	1.70	ND	ND		2	WG1034556
1,1,2,2-Tetrachloroethane	79-34-5	168	0.400	2.75	ND	ND		2	WG1034556
Tetrachloroethylene	127-18-4	166	0.400	2.72	1.40	9.50		2	WG1034556
Tetrahydrofuran	109-99-9	72.10	0.400	1.18	ND	ND		2	WG1034556
Toluene	108-88-3	92.10	0.400	1.51	1.16	4.35		2	WG1034556
1,2,4-Trichlorobenzene	120-82-1	181	1.26	9.33	ND	ND		2	WG1034556

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc



Collected date/time: 10/19/17 13:56

L945503

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.400	2.18	ND	ND		2	WG1034556
1,1,2-Trichloroethane	79-00-5	133	0.400	2.18	ND	ND		2	WG1034556
Trichloroethylene	79-01-6	131	5.00	26.8	507	2720		25	WG1034862
1,2,4-Trimethylbenzene	95-63-6	120	0.400	1.96	0.599	2.94		2	WG1034556
1,3,5-Trimethylbenzene	108-67-8	120	0.400	1.96	ND	ND		2	WG1034556
2,2,4-Trimethylpentane	540-84-1	114.22	0.400	1.87	1.94	9.05		2	WG1034556
Vinyl chloride	75-01-4	62.50	0.400	1.02	5.29	13.5		2	WG1034556
Vinyl Bromide	593-60-2	106.95	0.400	1.75	ND	ND		2	WG1034556
Vinyl acetate	108-05-4	86.10	0.400	1.41	ND	ND		2	WG1034556
m&p-Xylene	1330-20-7	106	0.800	3.47	1.61	6.98		2	WG1034556
o-Xylene	95-47-6	106	0.400	1.73	0.519	2.25		2	WG1034556
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		97.0				WG1034862
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		98.8				WG1034556

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

WG1034556

Volatile Organic Compounds (MS) by Method TO-15

QUALITY CONTROL SUMMARY

L945503-01,02,03,04,05,06,07

ONE LAB. NATIONWIDE



Method Blank (MB)

(MB) R3259923-2 10/23/17 08:44

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Acetone	U		0.0569	1.25
Allyl Chloride	U		0.0546	0.200
Benzene	U		0.0460	0.200
Benzyl Chloride	U		0.0598	0.200
Bromodichloromethane	U		0.0436	0.200
Bromoform	U		0.0786	0.600
Bromomethane	U		0.0609	0.200
1,3-Butadiene	U		0.0563	2.00
Carbon disulfide	U		0.0544	0.200
Carbon tetrachloride	U		0.0585	0.200
Chlorobenzene	U		0.0601	0.200
Chloroethane	U		0.0489	0.200
Chloroform	U		0.0574	0.200
Chloromethane	U		0.0544	0.200
2-Chlorotoluene	U		0.0605	0.200
Cyclohexane	U		0.0534	0.200
Dibromochloromethane	U		0.0494	0.200
1,2-Dibromoethane	U		0.0185	0.200
1,2-Dichlorobenzene	U		0.0603	0.200
1,3-Dichlorobenzene	U		0.0597	0.200
1,4-Dichlorobenzene	U		0.0557	0.200
1,2-Dichloroethane	U		0.0616	0.200
1,1-Dichloroethane	U		0.0514	0.200
1,1-Dichloroethene	U		0.0490	0.200
cis-1,2-Dichloroethene	U		0.0389	0.200
trans-1,2-Dichloroethene	U		0.0464	0.200
1,2-Dichloropropane	U		0.0599	0.200
cis-1,3-Dichloropropene	U		0.0588	0.200
trans-1,3-Dichloropropene	U		0.0435	0.200
1,4-Dioxane	U		0.0554	0.200
Ethylbenzene	U		0.0506	0.200
4-Ethyltoluene	U		0.0666	0.200
Trichlorofluoromethane	U		0.0673	0.200
Dichlorodifluoromethane	U		0.0601	0.200
1,1,2-Trichlorotrifluoroethane	U		0.0687	0.200
1,2-Dichlorotetrafluoroethane	U		0.0458	0.200
Heptane	U		0.0626	0.200
Hexachloro-1,3-butadiene	U		0.0656	0.630
n-Hexane	U		0.0457	0.200
Isopropylbenzene	U		0.0563	0.200

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Cc

7 GI

8 AI

9 Sc

ACCOUNT:
First Environment, Inc.

PROJECT:
ENPRO 002D-VM

SDG:
L945503

DATE/TIME:
10/27/17 11:44

PAGE:
19 of 28

WG1034556

Volatile Organic Compounds (MS) by Method TO-15

QUALITY CONTROL SUMMARY

[L945503-01,02,03,04,05,06,07](#)

ONE LAB. NATIONWIDE.



Method Blank (MB)

(MB) R3259923-2 10/23/17 08:44

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ppbv		ppbv	ppbv
Methylene Chloride	U		0.0465	0.200
Methyl Butyl Ketone	U		0.0682	1.25
2-Butanone (MEK)	U		0.0493	1.25
4-Methyl-2-pentanone (MIBK)	U		0.0650	1.25
Methyl Methacrylate	U		0.0773	0.200
MTBE	U		0.0505	0.200
Naphthalene	U		0.154	0.630
2-Propanol	U		0.0882	1.25
Propene	U		0.0932	0.400
Styrene	U		0.0465	0.200
1,1,2-Tetrachloroethane	U		0.0576	0.200
Tetrachloroethylene	U		0.0497	0.200
Tetrahydrofuran	U		0.0508	0.200
Toluene	U		0.0499	0.200
1,2,4-Trichlorobenzene	U		0.148	0.630
1,1,1-Trichloroethane	U		0.0665	0.200
1,1,2-Trichloroethane	U		0.0287	0.200
Trichloroethylene	U		0.0545	0.200
1,2,4-Trimethylbenzene	U		0.0483	0.200
1,3,5-Trimethylbenzene	U		0.0631	0.200
2,2,4-Trimethylpentane	U		0.0456	0.200
Vinyl chloride	U		0.0457	0.200
Vinyl Bromide	U		0.0727	0.200
Vinyl acetate	U		0.0639	0.200
m&p-Xylene	U		0.0946	0.400
o-Xylene	U		0.0633	0.200
Ethanol	U		0.0832	0.630
(S) 1,4-Bromofluorobenzene	98.6			60.0-140

Cp

Tc

Ss

Cn

Sr

Qc

Gl

Al

Sc

Laboratory Control Sample (LCS) - Laboratory Control Sample Duplicate (LCSD)

(LCS) R3259923-1 10/23/17 08:02 - (LCSD) R3259923-3 10/23/17 09:45

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ppbv	ppbv	ppbv	%	%	%			%	%
Ethanol	3.75	3.17	3.35	84.6	89.5	52.0-158			5.58	25
Propene	3.75	3.19	3.22	85.1	85.9	54.0-155			0.960	25
Dichlorodifluoromethane	3.75	4.05	3.96	108	106	69.0-143			2.18	25
1,2-Dichlorotetrafluoroethane	3.75	3.65	3.69	97.4	98.5	70.0-130			1.15	25
Chloromethane	3.75	3.25	3.36	86.8	89.6	70.0-130			3.21	25

ACCOUNT:
First Environment, Inc.

PROJECT:
ENPRO 002D-VM

SDG:
L945503

DATE/TIME:
10/27/17 11:44

PAGE:
20 of 28

WG1034556

Volatile Organic Compounds (MS) by Method TO-15

QUALITY CONTROL SUMMARY

L945503-01,02,03,04,05,06,07

ONE LAB. NATIONWIDE.



Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3259923-1 10/23/17 08:02 • (LCSD) R3259923-3 10/23/17 09:45

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Vinyl chloride	3.75	3.57	3.53	95.3	94.1	70.0-130			1.25	25
1,3-Butadiene	3.75	3.63	3.55	96.9	94.8	70.0-130			2.18	25
Bromomethane	3.75	4.10	4.10	109	109	70.0-130			0.0600	25
Chloroethane	3.75	3.58	3.78	95.5	101	70.0-130			5.32	25
Trichlorofluoromethane	3.75	4.15	4.13	111	110	70.0-130			0.400	25
1,1,2-Trichlorotrifluoroethane	3.75	3.75	3.80	100	101	70.0-130			1.43	25
1,1-Dichloroethene	3.75	3.48	3.46	92.9	92.4	70.0-130			0.560	25
1,1-Dichloroethane	3.75	3.45	3.45	91.9	92.1	70.0-130			0.200	25
Acetone	3.75	3.20	3.36	85.4	89.7	70.0-130			4.92	25
2-Propanol	3.75	3.22	3.38	85.8	90.2	66.0-150			4.95	25
Carbon disulfide	3.75	3.38	3.38	90.1	90.2	70.0-130			0.0800	25
Methylene Chloride	3.75	3.15	3.19	84.1	85.0	70.0-130			1.03	25
MTBE	3.75	3.62	3.71	96.6	99.0	70.0-130			2.47	25
trans-1,2-Dichloroethene	3.75	3.42	3.48	91.2	92.8	70.0-130			1.75	25
n-Hexane	3.75	3.33	3.37	88.8	89.8	70.0-130			1.13	25
Vinyl acetate	3.75	3.35	3.40	89.4	90.7	70.0-130			1.51	25
Methyl Ethyl Ketone	3.75	3.51	3.60	93.5	96.0	70.0-130			2.68	25
cis-1,2-Dichloroethene	3.75	3.55	3.62	94.7	96.4	70.0-130			1.80	25
Chloroform	3.75	3.64	3.70	97.1	98.6	70.0-130			1.44	25
Cyclohexane	3.75	3.55	3.55	94.5	94.6	70.0-130			0.0500	25
1,1,1-Trichloroethane	3.75	3.88	3.94	103	105	70.0-130			1.54	25
Carbon tetrachloride	3.75	3.98	4.08	106	109	70.0-130			2.56	25
Benzene	3.75	3.60	3.63	96.1	96.7	70.0-130			0.610	25
1,2-Dichloroethane	3.75	3.88	3.96	104	106	70.0-130			1.99	25
Heptane	3.75	3.55	3.55	94.6	94.6	70.0-130			0.000	25
Trichloroethylene	3.75	3.82	3.84	102	102	70.0-130			0.420	25
1,2-Dichloropropane	3.75	3.43	3.48	91.3	92.8	70.0-130			1.59	25
1,4-Dioxane	3.75	3.74	3.82	99.8	102	70.0-152			2.20	25
Bromodichloromethane	3.75	3.85	3.90	103	104	70.0-130			1.40	25
cis-1,3-Dichloropropene	3.75	3.70	3.75	98.7	99.9	70.0-130			1.26	25
4-Methyl-2-pentanone (MIBK)	3.75	3.41	3.52	91.0	93.8	70.0-142			3.13	25
Toluene	3.75	3.91	3.90	104	104	70.0-130			0.300	25
trans-1,3-Dichloropropene	3.75	3.89	3.91	104	104	70.0-130			0.510	25
1,1,2-Trichloroethane	3.75	3.87	3.86	103	103	70.0-130			0.210	25
Tetrachloroethylene	3.75	4.39	4.45	117	119	70.0-130			1.29	25
Methyl Butyl Ketone	3.75	3.55	3.71	94.7	99.0	70.0-150			4.48	25
Dibromochloromethane	3.75	4.19	4.23	112	113	70.0-130			0.930	25
1,2-Dibromoethane	3.75	3.94	4.00	105	107	70.0-130			1.59	25
Chlorobenzene	3.75	4.13	4.19	110	112	70.0-130			1.47	25
Ethylbenzene	3.75	4.05	4.04	108	108	70.0-130			0.330	25

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

ACCOUNT:
First Environment, Inc.

PROJECT:
ENPRO 002D-VM

SDG:
L945503

DATE/TIME:
10/27/17 11:44

PAGE:
21 of 28

WG1034556

Volatile Organic Compounds (MS) by Method TO-15

QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.



[L945503-01,02,03,04,05,06,07](#)

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3259923-1 10/23/17 08:02 • (LCSD) R3259923-3 10/23/17 09:45

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
m&p-Xylene	7.50	8.42	8.52	112	114	70.0-130			1.27	25
o-Xylene	3.75	4.08	4.19	109	112	70.0-130			2.72	25
Styrene	3.75	4.21	4.26	112	113	70.0-130			0.990	25
Bromoform	3.75	4.50	4.55	120	121	70.0-130			1.12	25
1,1,2,2-Tetrachloroethane	3.75	3.80	3.90	101	104	70.0-130			2.64	25
4-Ethyltoluene	3.75	4.30	4.42	115	118	70.0-130			2.89	25
1,3,5-Trimethylbenzene	3.75	4.28	4.43	114	118	70.0-130			3.51	25
1,2,4-Trimethylbenzene	3.75	4.28	4.41	114	117	70.0-130			2.84	25
1,3-Dichlorobenzene	3.75	4.57	4.71	122	126	70.0-130			3.07	25
1,4-Dichlorobenzene	3.75	4.58	4.79	122	128	70.0-130			4.38	25
Benzyl Chloride	3.75	4.21	4.42	112	118	70.0-144			4.77	25
1,2-Dichlorobenzene	3.75	4.53	4.71	121	126	70.0-130			3.96	25
1,2,4-Trichlorobenzene	3.75	4.77	4.88	127	130	70.0-155			2.37	25
Hexachloro-1,3-butadiene	3.75	4.75	4.85	127	129	70.0-145			2.03	25
Naphthalene	3.75	4.53	4.59	121	122	70.0-155			1.27	25
Allyl Chloride	3.75	3.13	3.18	83.4	84.8	70.0-130			1.67	25
2-Chlorotoluene	3.75	4.38	4.49	117	120	70.0-130			2.65	25
Methyl Methacrylate	3.75	3.59	3.75	95.7	100	70.0-130			4.46	25
Tetrahydrofuran	3.75	3.09	3.24	82.4	86.4	70.0-140			4.71	25
2,2,4-Trimethylpentane	3.75	3.49	3.56	93.1	95.0	70.0-130			2.06	25
Vinyl Bromide	3.75	4.13	4.14	110	110	70.0-130			0.280	25
Isopropylbenzene	3.75	4.16	4.27	111	114	70.0-130			2.48	25
(S) 1,4-Bromofluorobenzene				99.2	100	60.0-140				

Cp

Tc

Ss

Cn

Sr

Qc

Gl

Al

Sc

ACCOUNT:
First Environment, Inc.

PROJECT:
ENPRO 002D-VM

SDG:
L945503

DATE/TIME:
10/27/17 11:44

PAGE:
22 of 28

WG1034862

Volatile Organic Compounds (MS) by Method TO-15

QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.



L945503-01,02,03,04,06,07

Method Blank (MB)

(MB) R3260107-3 10/24/17 08:56

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Acetone	U		0.0569	1.25
cis-1,2-Dichloroethene	U		0.0389	0.200
2-Butanone (MEK)	U		0.0493	1.25
2-Propanol	U		0.0882	1.25
Trichloroethylene	U		0.0545	0.200
Ethanol	U		0.0832	0.630
(S) 1,4-Bromofluorobenzene	95.6			60.0-140

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3260107-1 10/24/17 07:28 • (LCSD) R3260107-2 10/24/17 08:12

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Ethanol	3.75	4.20	4.32	112	115	52.0-158			2.74	25
Acetone	3.75	4.29	4.32	114	115	70.0-130			0.820	25
2-Propanol	3.75	4.36	4.36	116	116	66.0-150			0.0700	25
Methyl Ethyl Ketone	3.75	4.37	4.43	116	118	70.0-130			1.38	25
cis-1,2-Dichloroethene	3.75	4.08	4.19	109	112	70.0-130			2.75	25
Trichloroethylene	3.75	4.23	4.25	113	113	70.0-130			0.500	25
(S) 1,4-Bromofluorobenzene				96.6	95.4	60.0-140				

6 Qc

7 GI

8 AI

9 Sc

ACCOUNT:
First Environment, Inc.

PROJECT:
ENPRO 002D-VM

SDG:
L945503

DATE/TIME:
10/27/17 11:44

PAGE:
23 of 28



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions



MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
---	---



ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE**.
 * Not all certifications held by the laboratory are applicable to the results reported in the attached report.

State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey-NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Connecticut	PH-0197	North Carolina ¹	DW21704
Florida	E87487	North Carolina ²	41
Georgia	NELAP	North Dakota	R-140
Georgia ¹	923	Ohio-VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky ¹	90010	South Dakota	n/a
Kentucky ²	16	Tennessee ¹⁴	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Ai

⁹ Sc

Third Party & Federal Accreditations


A2LA – ISO 17025	1461.01	AIHA-LAP, LLC	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ^{n/a} Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**



Company Name/Address: FIRST ENVIRONMENT, INC. 91 FULTON ST. BOONTON, NJ 07005		Billing Information: PROJECT: ENPRO 002D-VM FIRST ENVIRONMENT, INC. 91 FULTON ST. BOONTON, NJ 07005 JUSTIN PICCOLI - ATTENTION JPICOLI@FIRSTENVIRONMENT.COM		Analysis		Chain of Custody Page <u> </u> of <u> </u>	
Report to: MICHAEL T. SLACK (FE)		Email To: MSLACK@FIRSTENVIRONMENT.COM		TO-15 SUMMA		 12005 Lebanon Rd Mount Juliet, TN 37122 Phone: 615-758-5854 Phone: 800-767-5859 Fax: 615-758-5859	
Project Description: ENPRO-COLTEC, WATER VALLEY, MS BORG WARNER PLANT SITE		City/State Collected: WATER VALLEY, MS BORG WARNER PLANT SITE				L# 94588	
Phone: 973-334-0003 Fax: 973-334-0928		Client Project # ENPRO 002D-VM				Table #	
Collected by (print): MICHAEL T. SLACK		Lab Project # FIRENBUNJ- OXFORDMS				Acctnum: FIRENBUNJ	
Collected by (signature): <i>M.T. Slack</i> MICHAEL SLACK		P.O. #				Template: T120396	
Site/Facility ID # BORG WARNER PLANT SITE		Date Results Needed STANDARD 5-DAY TURN AROUND TIME		Prelogin: P622449 TSR: John Hawkins PB: TB 10-10-17 Shipped Via: Ground			
Rush? (Lab MUST Be Notified) <input type="checkbox"/> Same Day 200% <input type="checkbox"/> Next Day 100% <input type="checkbox"/> Two Day 50% <input type="checkbox"/> Three Day 25%		Email? <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes FAX? <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes		Canister Pressure/Vacuum		Rem./Contaminant Sample # (lab only)	
Sample ID	Sample Description	Can #	Date START	Time START	Initial	Final	
IA-1	MAINTENANCE ROOM	6885	10/19/17	13:35	29	1	X
IA-2	ATS ROOM	7255	10/19/17	13:33	30	1	X
IA-6	TRAINING ROOM	7188	10/19/17	13:30	27	4	X
IA-17	CAFETERIA	7619	10/19/17	13:31	28	3	X
AA-2	PAVILLION - AMBIENT	7231	10/19/17	13:20	29	4	X
"SSD-EFFLU(3)"	EFFLUENT-STACK	8487	10/20/17	13:36	30	1	X
"SSD-INFLU-UV(3)"	INFLUENT-CONTROL	5492	10/20/17	13:56	28	1	X
SEE SAMPLE TABLE FOR ADDITIONAL INFO. 4894 2307 0193 SSD-EFFLU(3) & SSD-INFLU-UV(3) - 1-LITER SUMMA CANISTERS							
Remarks:		Received by: (Signature)		Samples returned via: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> Courier <input type="checkbox"/> _____		Condition: (lab use only) NA	
Relinquished by: (Signature) <i>M.T. Slack</i>		Date: 10/20/17 Time: 16:15		Received by: (Signature) <i>[Signature]</i>		Temp: Amb °C Bottles Received: 7	
Relinquished by: (Signature)		Date:		Received for lab by: (Signature) <i>Joan Miller</i>		COC Seal Intact: Y N <input checked="" type="checkbox"/> NA	
Relinquished by: (Signature)		Date:		Date: 10/27/17 Time: 0845		pH Checked: NCF:	

Vapor Intrusion Investigation
 Borg Warner Facility
 Water Valley, Yalobusha Co., MS
 October 19-20, 2017

Inv: FIRENVBNJ-OXFORD Date : 10Oct17 Shipping : 0.00
 Customer : P622448 Weight : 10 LBS Special : 0.00
 Phone : (615)758-5858 COD : Handling : 0.00
 SAT Del : Y DV : 0.00 Total : 0.00

Svs: PRIORITY OVERNIGHT
 TRCK: 4094 8307 0193

Indoor Air (IA), Ambient Air (AA), Air Permit Evaluation (SSD) - Sampling Event

Sample ID	Sample Location	Flow Controller ID	Canister ID	Canister Size (liters)	Initial Date/time	Initial Vacuum ("Hg)	Final Date/time	Final Vacuum ("Hg)	Sampler
IA-1	Maintenance Room	7684	6885	6	10/19/17 13:35	29	10/20/17 12:20	1	M. Slack
IA-2	ATS Room	8405	7255	6	10/19/17 13:33	30	10/20/17 12:15	1	M. Slack
IA-6	Training Room	6693	7188	6	10/19/17 13:30	27	10/20/17 13:05	4	M. Slack
IA-17	Cafeteria	8695	7619	6	10/19/17 13:31	28	10/20/17 12:35	3	M. Slack
AA-2	Pavilion	8376	7231	6	10/19/17 13:20	29	10/20/17 13:20	4	M. Slack
SSD-EFFLU(3)	Effluent Stack	7864	8487	1	10/20/17 13:36	30 34 ^{MTS}	10/20/17 13:41	1	M. Slack
SSD-INFLU-UV(3)	Influent Control Unit	8437	5492	1	10/20/17 13:56	28	10/20/17 14:01	1 ^{MTS} 10/30	M. Slack

Weather Conditions (@ time of canister placement):

10/19/17 - 72° F - 69% Humidity
 WINDS: CALM - ESE 1 mph

Michael T. Slack (First Environment)

Inv: FIRENVBNJ-OXFORD Date : 10Oct17 Shipping : 0.00
 Customer : P622448 Weight : 10 LBS Special : 0.00
 Phone : (615)758-5858 COD : Handling : 0.00
 SAT Del : Y DV : 0.00 Total : 0.00

Svs: PRIORITY OVERNIGHT
 TRCK: 4094 8307 0208

Inv: FIRENVBNJ-OXFORD Date : 10Oct17 Shipping : 0.00
 Customer : P622448 Weight : 10 LBS Special : 0.00
 Phone : (615)758-5858 COD : Handling : 0.00
 SAT Del : Y DV : 0.00 Total : 0.00

Svs: PRIORITY OVERNIGHT
 TRCK: 4094 8307 0219

MTS

**ESC LAB SCIENCES
Cooler Receipt Form**

Client: FIKEN VIB NJ	SDG# 945502
Cooler Received/Opened On: 10/21/17	Temperature: Amb
Received by: Sean Mills	
Signature: <i>Sean Mills</i>	

Receipt Check List	NP	Yes	No
COC Seal Present / Intact?	/	/	
COC Signed / Accurate?		/	
Bottles arrive intact?		/	
Correct bottles used?		/	
Sufficient volume sent?			
If Applicable			
VOA Zero headspace?			
Preservation Correct / Checked?			