REPSG
React Environmental
Professional Services Group, Inc.

December 4, 2017

Maryland Department of the Environment
Oil Control Program
1800 Washington Boulevard
Baltimore, Maryland 21230-1719
Attn: Ms. Jeannette DeBartolomeo

RE: Dual-Phase Extraction System Remedial Action Progress Report
Calvert Citgo
2815 North East Road
North East, MD
MDE OCP Case No. 1992-2616CE
Facility No. 5678
REPSG Project Reference Number 5977.130.02

Regulatory Information

Regulatory Agency:	Maryland Department of the Environment
Agency Contact:	Jeannette DeBartolomeo
Case Number:	OCP Case No. 1992-2616CE
Facility ID:	5678
General Discharge Permit Number:	2017-OGR-25712
NPDES Permit Number:	MDG919013
Vacuum Extraction System Permit:	015-0173-9-0226
Current Case Status:	Quarterly groundwater sampling. On-Site and off-Site potable well monitoring. Vapor Extraction/Groundwater Extraction (DPE) system in operation.
Reporting Period:	June 21, 2017 to September 30, 2017
DPE System Operating Days:	101

Introduction

A Dual-Phase Extraction (DPE) system at the Site was initially started on April 24, 2017. The system consists of a network of monitoring wells that have been converted to extraction wells piped to a central remediation system. At this time the DPE system is operating on well MW-005R only. System performance was previously provided in *REPSG's Dual-Phase Extraction System Remedial Action Progress Report* dated June 22, 2017.

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DPE System Performance

The DPE system began operation on April 24, 2017. The DPE system utilizes extraction of vapor and groundwater for mass removal of petroleum-related regulated compounds in the unsaturated zone from the subsurface. **Figure 1** illustrates the Site vicinity and **Figure 2** depicts the groundwater monitoring well network, on-Site and off-Site potable wells, vapor extraction wells, vapor monitoring points, and the DPE system.

As planned in REPSG's *DPE System Start-Up Report*, dated May 19, 2017, a privacy-screened fence was installed around the complete DPE system, including the catalytic oxidizer, frac tank, and electrical service panel on May 25, 2017. **Figure 2** illustrates the privacy-screened fence area.

During the quarterly groundwater monitoring event (performed on August 14 and 15, 2017, depths to groundwater and subsequent groundwater elevations were recorded. **Figure 3** illustrates groundwater elevations and flow direction, in the shallow wells, as observed during the quarterly groundwater monitoring event while the DPE system was operating.

System performance has been monitored through readings taken from diagnostic gauges on system equipment. System monitoring worksheets are included in **Attachment 3**.

As of October 17, 2017, the DPE system approximately 22,245 gallons of liquid has been processed by the system. During this reporting period, the DPE system has been extracting vapor at an average rate of 23.1 standard cubic feet per minute (SCFM). **Table 1** shows the total liquid removed by the DPE system and **Table 2** shows the total vapor recovery by the DPE system during the reporting period. Since system startup, the DPE system has removed approximately 88 pounds of volatile organic compounds (VOCs). No light non-aqueous phase liquid was recovered during this reporting period.

Table 1 - Contaminant Mass Removed - Liquid

Monitoring Period		Operating Hours	GW Recovered, Period	Average Extraction Rate for System	Total Dissolved VOC Concentration in Recovered GW	VOC Recovery, Period
start	**end**	**(hours)**	**(gallons)**	**(gpm)**	**(µg/l)**	**(lbs)**
4/24/17	6/21/17	1,056	8,250	0.13	14,963	**0.46**
6/21/17	9/30/17	1,414	13,995	0.09	9,914	**1.32**

Table 2 - Contaminant Mass Removed - Vapor

Monitoring Period		Operating Hours	Avg. Vacuum, System Inlet	Airflow	Total VOC Concentration in Vapor	VOC Recovery, Period
start	end	(hours)	(in "Hg)	(cfm)	(ppmv)	(lbs)
4/24/17	6/21/17	1,056	9.14	38.22	134.46	**76.41**
6/21/17	9/30/17	1,414	15.84	23.16	111.4	**12.41**

DPE System Vapor Extraction

During extraction, REPSG measured concentrations of volatile organic compounds (VOCs) in the exhaust of the system to ensure acceptable levels were being emitted into the atmosphere. Measurements were made utilizing a photoionization detector (PID) at two discrete locations: pre-catalytic oxidizer and post-catalytic oxidizer. A summary of the observed PID readings is provided in **Table 3**:

Table 3 - DPE System PID Readings

	Pre-Catalytic Oxidizer (ppm)	Post-Catalytic Oxidizer (ppm)
May 10, 2017	280	0.4
May 12, 2017	370	4
May 16, 2017	344	70
May 24, 2017	362	24.3
May 25, 2017	450	0.5
May 31, 2017	340	0
June 13, 2017	30	0
June 21, 2017	4,400	0
June 27, 2017	394	0
July 6, 2017	2,224	2.5
July 11, 2017	1,251	9.4
August 22, 2017	296	6.8

All PID readings were in-line with REPSG's expectations and demonstrated that the catalytic oxidizer has been effective in the removal of VOCs from the extracted vapor.

Vapor influent (pre-catalytic oxidizer, sample name "PRE-VES") and effluent (post-catalytic oxidizer, sample name "POST-VES") samples were collected on July 11, 2017. The vapor samples were analyzed for VOCs via EPA Method TO-15 at Alpha Analytical (Mansfield, MA). Analytical results were received and compared to the EPA's Regional Screening Values for Composite Workers[1]. The EPA provides both carcinogenic and noncarcinogenic screening levels for certain compounds due to differences in exposure. A composite worker is defined as a long-term receptor exposed during the work day who is a full time employee working on-Site and who spends most of the workday conducting maintenance activities outdoors. REPSG considers this screening value to be the most appropriate comparison criteria for the Site. This

[1] United States Environmental Protection Agency. Regional Screening Levels for Chemical Contaminants at Superfund Sites. (May 31, 2017).

comparison identified concentrations of benzene and ethylbenzene above the composite worker screening levels. A summary of detections is provided in **Table 4**:

Table 4 - Effluent Vapor Analytical Results

		Sample Name	**PRE-VES**	**POST-VES**
Compound	**CW Carcinogenic**	*CW Noncarcinogenic*	**µg/m³**	
2,2,4-Trimethylpentane	**	**	31800	34.6
Acetone	**	*140000*	ND	6.77
Benzene	**1.6**	*130*	***36100***	**3.67**
Benzene, 1,2,4-trimethyl	**	*260*	*1140*	6.24
Benzene, 1,3,5-trimethyl-	**	*260*	*654*	1.82
Cyclohexane	**	*26000*	23300	2.47
Ethanol	**	**	ND	146
Ethylbenzene	**4.9**	*4400*	***5910***	**5.99**
Isopropanol	**	*880*	ND	2.46
m/p-xylene	**	*440*	*18400*	21.7
m-Dichlorobenzene	**	**	ND	2.03
Methyl bromide	**	**	ND	2.1
Methyl chloride	**	**	ND	0.45
Methyl ethyl ketone	**	*22000*	ND	2.16
Methyl isobutylketone (MIBK)	**	*13000*	ND	2.09
n-Heptane	**	*1800*	*61500*	8.48
n-Hexane	**	*3100*	*162000*	25.8
o-Xylene	**	*440*	*5470*	5.78
p-Ethyltoluene	**	**	432	1.27
Propylene	**	*13000*	ND	1.14
Toluene	**	*22000*	*68600*	21
Xylene (total)	**	*440*	*23870*	27.48
Total VOCs	**	**	439,176	331.50

Bold values exceed the Composite Worker carcinogenic screening level. *Italicized values* exceed the Composite worker Noncarcinogenic screening levels. ND = Compound not detected above laboratory method detection limit (MDL). ** = Screening level does not exist.

The complete laboratory analytical report is provided in **Attachment 2**.

The next set of influent and effluent vapor samples were collected in November 2017. Analytical results of this sampling are pending, and will be provided in REPSG's January 2018 progress report.

DPE System Liquid Recovery

Effluent water samples were collected via a sampling port attached to the piping run between the system trailer and the frac tank and were submitted under chain-of-custody to ALS Environmental Laboratories (Middletown, PA). Effluent water samples were collected to

determine the concentrations of regulated compounds in extracted water, which allows for the determination of mass removal rates by water. This data collection will be utilized to inform future decisions in regards to increasing or decreasing water recovery rates, determining potential on-site water discharge ability, and/or the need for the addition of water treatment via liquid phase carbon or other methods. Analytical results were compared to the MDE Groundwater Standards[2]. This comparison identified the presence of 1,2-dibromoethane, 1,2-dichloroethane, benzene, methyl tert-butyl ether, methylene chloride, and toluene at concentrations above the groundwater standards. A summary of detections from both effluent sampling events is provided in **Table 5**:

Table 5 - Effluent Liquid Analytical Results

	Sample Location:	**OUTFALL-001**	**OUTFALL-001**
	Sample Date:	**6/21/2017**	**7/11/2017**
Compound	**MDE GW Standard (µg/L)**	**µg/L**	
1,2-Dibromoethane	0.05	**7J**	**9**
1,2-Dichloroethane	5	**19.4**	**19.8**
2-Hexanone	**	14.2J	<1.3U
Acetone	550	103	101
Benzene	5	**665**	**521**
Chloroform	80	5.3J	<0.21U
Ethylbenzene	700	97.1	48.9
Isopropyl Ether	**	<2.5U	2.9
m/p-xylene	**	556	437
Methyl bromide	0.85	<3.9U	0.5J
Methyl chloride	19	<3.1U	<0.31U
Methyl ethyl ketone	700	43.5J	41.8
Methyl tert-butyl ether	20	**21.1**	**23.9**
Methylene chloride	5	**5.7J**	<0.45U
o-Xylene	**	267	269
Tert-Amyl alcohol	**	713	892
tert-Butylalcohol	**	239	422
Toluene	1000	**1660**	**1180**
Xylene (total)	10000	823	706

Bold values exceed MDE Groundwater standard. U = Compound was not detected above the laboratory reporting limit, the MDL is provided. J = Analytical result was above the MDL, but less than the laboratory reporting limit. ** = Standard does not exist.

The complete laboratory analytical report is provided in **Attachment 2**.

[2] Maryland Department of the Environment (MDE) Voluntary Cleanup Program (VCP): Generic Numeric Cleanup Standards for Groundwater for Type I & II Aquifers, Tables 1 and 2 (March 2008).

All liquid extracted from the DPE system has been stored on-Site in a frac tank since system startup. Recovered liquid has been collected for proper disposal from the frac tank twice during this reporting period. On July 6, 2017, Monarch Environmental Services, Inc. (Woodstown, NJ) recovered approximately 3,200 gallons from the frac tank. On August 15, 2017, Environmental Recovery Corporation (ERC) (Lancaster, PA) recovered approximately 4,892 gallons from the frac tank.

Ongoing Maintenance

During this reporting period, REPSG reviewed daily activity logs for the system and noted that, beginning on August 27, 2017, the system was operational, however, no liquid was being recovered. REPSG personnel inspected the system on September 14, 2017 and noted an abnormal noise emanating from the square manway near MW-005 and MW-005R. REPSG accessed the manway and observed that the elbow joint on the extraction pipe connecting MW-005R to the system had been broken. Due to this break, no liquid had been recovered from MW-005R between August 27, 2017 and September 19, 2017. Remedial Equipment & Services (RES) returned to the Site on September 19, 2017 to repair the broken pipe. RES repaired the broken pipe and reconnected MW-005R to the system. Since the repair has been made, the system has been operational through the end of the reporting period.

REPSG will continue to operate the system as indicated in the *DPE System Start-Up Report,* with withdrawal occurring at MW-005R only, through the month of December 2017. Another round of effluent and vapor samples were collected on November 15th and November 16th, 2017, respectively. Analytical results of the collected samples are pending and will be provided in the next quarterly (January 2018) progress report.

Next steps for system operation, including the potential commencement of extraction on additional wells as well as the potential usage of both vapor phase carbon and liquid phase carbon are continuing to be evaluated and will be discussed/presented as appropriate in in the next quarterly (January 2018) progress report.

In addition, REPSG is preparing to install the required piping to allow for effluent discharge to the ground surface from the DPE system as per the issued NPDES permit for the Site. The requisite permits will be updated and submitted to MDE to reflect this change in operation at the Site prior to commencement of discharge. Additional details on this system update will follow in the next quarterly (January 2018) progress report.

Sincerely,

David Bishop
Environmental Scientist

Suzanne Shourds
Project Manager
React Environmental Professional Services Group, Inc

ATTACHMENT 1: FIGURES

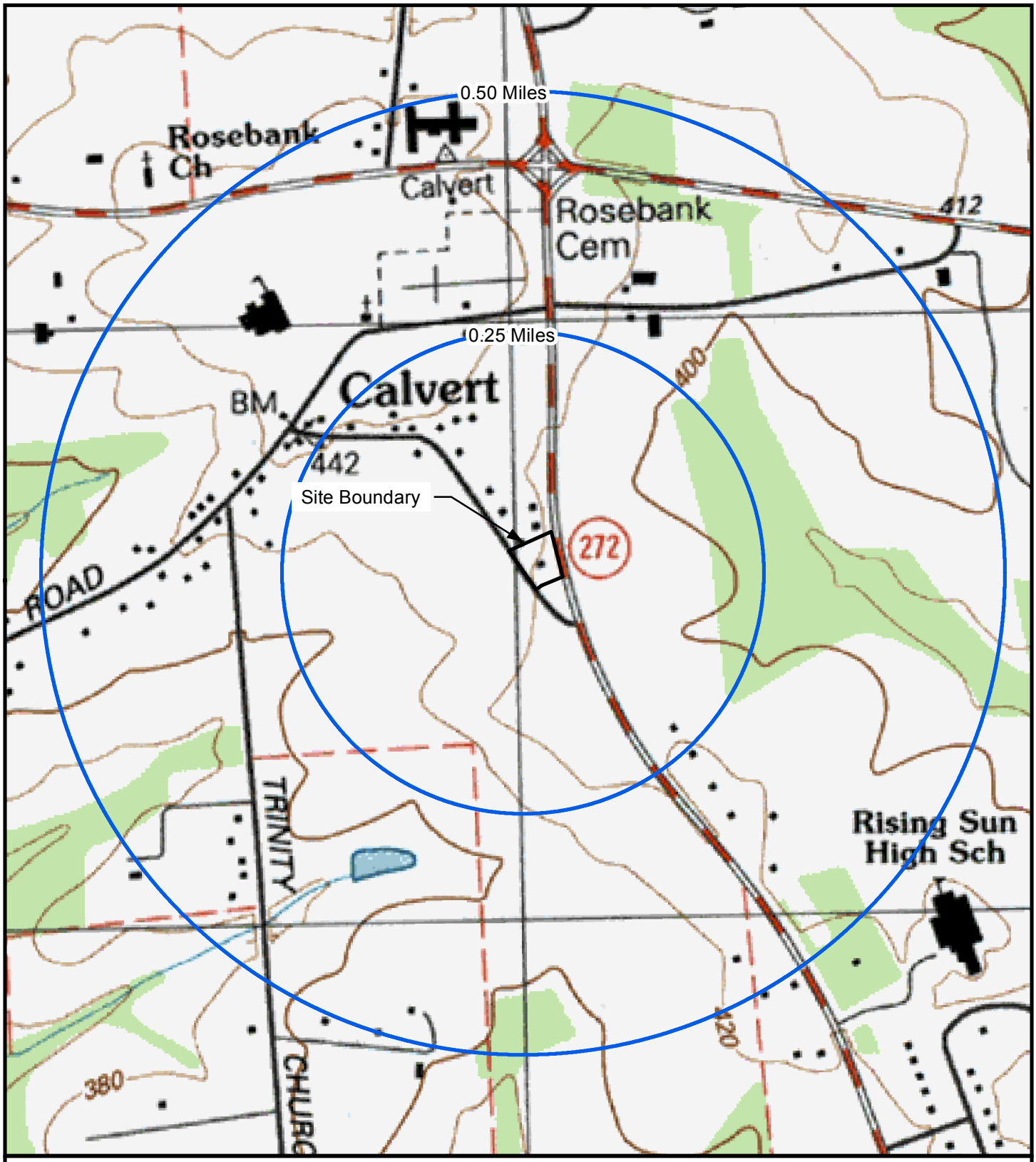


Figure 1: Site Location

REPSG
React Environmental Professional Services Group, Inc.

MAP SCALE: *1 inch = 750 feet*
0 162.5 325 650 975 1,300 Feet

PROJECT NAME: *CALVERT CITGO*
PROJECT ADDRESS: *2815 NORTH EAST ROAD, NORTH EAST, MD*
PROJECT NUMBER: *005977*
DATE: *JUNE 2017*

N
S

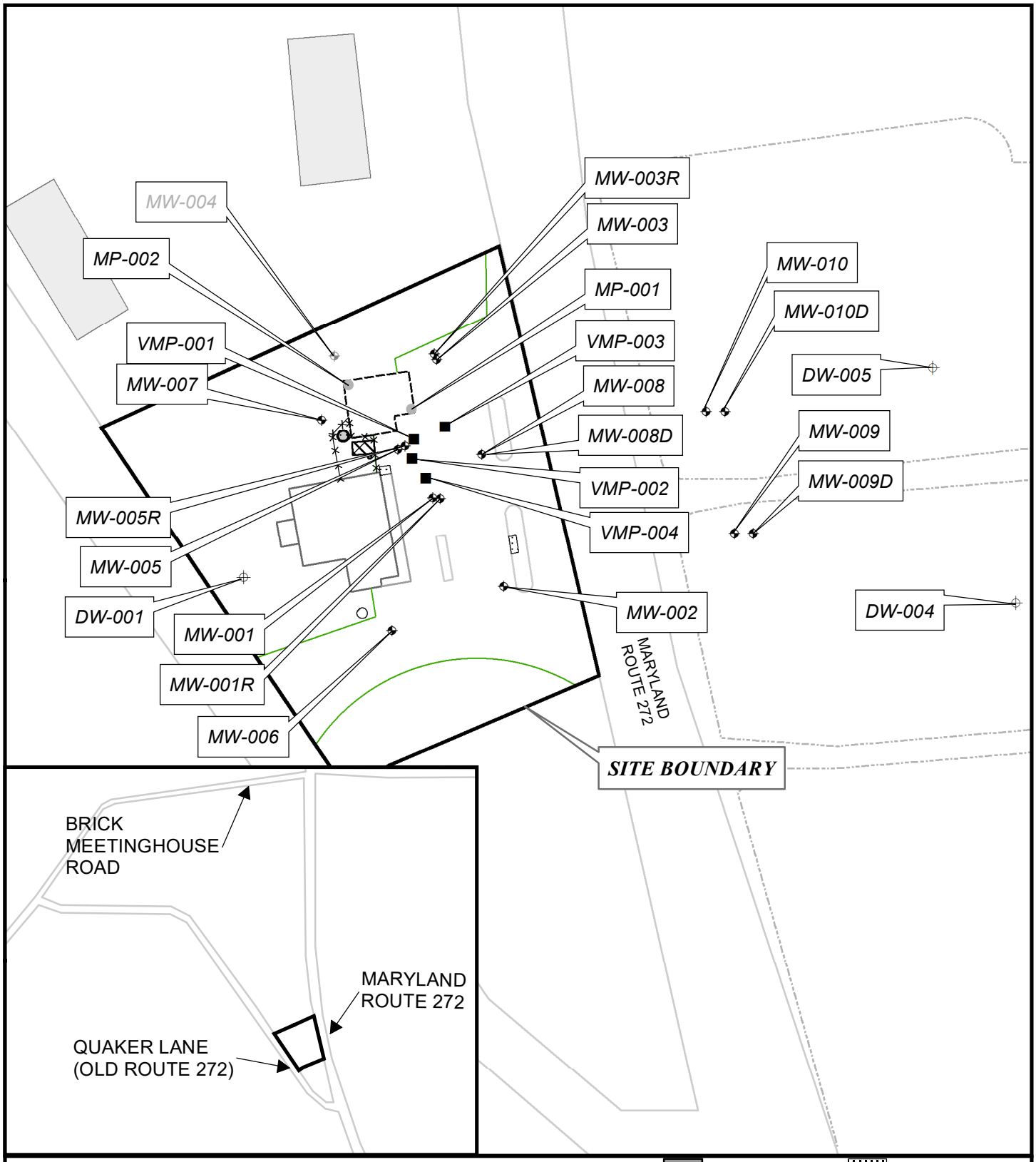


FIGURE 2: SITE PLAN

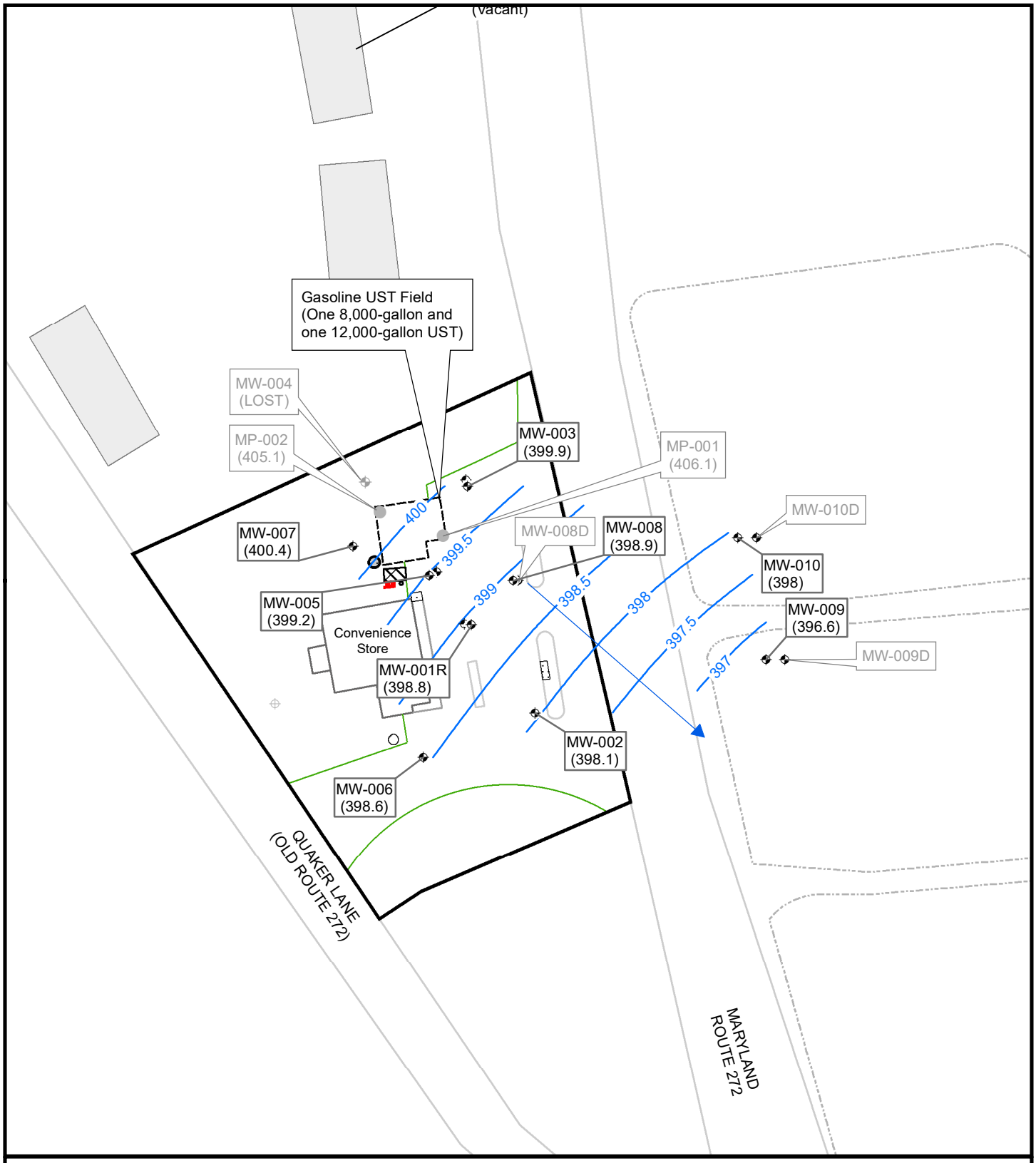
- Monitoring Well
- Lost/Abandoned Monitoring Well
- On-Site Potable Well
- Leak Detection Well
- Vapor Monitoring Points
- Remediation Trailer
- Catalytic Oxidizer
- Frac Tank
- Diesel Pump
- Kerosene Pump
- Off-Site Bulding
- Septic Tank
- Fencing

REPSG
React Environmental Professional Services Group, Inc.

MAP SCALE: 1 inch = 75 feet
0 15 30 60 90 120 Feet

PROJECT NAME: *CALVERT CITGO*
PROJECT ADDRESS: *2815 NORTH EAST ROAD, NORTH EAST, MD*
PROJECT NUMBER: *005977*
DATE: *JUNE 2017*

N
S



GROUNDWATER CONTOUR MAP (August 14, 2017)

MW-001
(176.01)
Site ID
Groundwater Elevation (feet above datum)

Groundwater Directional Flow

- Monitoring Well
- Leak Detection Wells
- Lost/Abandoned Monitoring Well
- Potable Well
- Remediation Trailer
- Frac Tank
- Catalytic Oxidizer
- GAC Unit - Disconnected
- Diesel Pump
- Kerosene Pump
- Off-Site Bulding
- Septic Tank

REPSG
React Environmental
Professional Services Group, Inc.

MAP SCALE: 1 inch = 75 feet

0 15 30 60 90 120 Feet

PROJECT NAME: CALVERT CITGO
PROJECT ADDRESS: 2815 NORTH EAST ROAD, NORTH EAST, MD
PROJECT NUMBER: 005977
DATE: AUGUST 2017

N
S

Groundwater Depth Interpolation Method: Local Polynomial Interpolation (Order of Polynomial: 1, Exploratory Trend Surface Analysis: 1)

ATTACHMENT 2: LABORATORY ANALYTICAL REPORTS

ANALYTICAL REPORT

Lab Number:	L1742574
Client:	REPSG, Inc. 6901 Kingsessing Ave. Suite 201 Philadelphia, PA 19142-0377
ATTN:	Natalie Griffith
Phone:	(215) 729-3220
Project Name:	CALVERT
Project Number:	5977
Report Date:	11/28/17

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA030), NH NELAP (2062), NJ NELAP (MA015), CT (PH-0141), FL (E87814), IL (200081), LA (85084), ME (MA00030), MD (350), NY (11627), NC (685), OH (CL106), PA (68-02089), RI (LAO00299), TX (T104704419), VT (VT-0015), VA (460194), WA (C954), US Army Corps of Engineers, USDA (Permit #P330-13-00067), USFWS (Permit #LE2069641).

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Project Name: CALVERT
Project Number: 5977

Lab Number: L1742574
Report Date: 11/28/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1742574-01	PRE-VES	SOIL_VAPOR	NORTH EAST, MD	11/16/17 11:17	11/17/17
L1742574-02	POST-VES	SOIL_VAPOR	NORTH EAST, MD	11/16/17 11:51	11/17/17

Project Name: CALVERT
Project Number: 5977

Lab Number: L1742574
Report Date: 11/28/17

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

Project Name: CALVERT
Project Number: 5977

Lab Number: L1742574
Report Date: 11/28/17

Case Narrative (continued)

Volatile Organics in Air

Canisters were released from the laboratory on November 14, 2017. The canister certification results are provided as an addendum.

L1742574-01 and -02: The sample were re-analyzed on dilution in order to quantify the results within the calibration range. The result(s) should be considered estimated, and are qualified with an E flag, for any compound(s) that exceeded the calibration range in the initial analysis. The re-analysis was performed only for the compound(s) that exceeded the calibration range.

L1742574-01: The sample has elevated detection limits due to the dilution required by the elevated concentrations of target compounds in the sample.

L1742574-01 The presence of Acetone could not be determined in this sample due to a non-target compound interfering with the identification and quantification of this compound.

L1742574-02 The presence of Acetone could not be determined in this sample due to a non-target compound interfering with the identification and quantification of this compound.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:  Christopher J. Anderson

Title: Technical Director/Representative Date: 11/28/17

AIR

Project Name: CALVERT
Project Number: 5977
Lab Number: L1742574
Report Date: 11/28/17

SAMPLE RESULTS

Lab ID: L1742574-01 D
Client ID: PRE-VES
Sample Location: NORTH EAST, MD
Matrix: Soil_Vapor
Anaytical Method: 48,TO-15
Analytical Date: 11/21/17 21:23
Analyst: RY

Date Collected: 11/16/17 11:17
Date Received: 11/17/17
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Propylene	ND	64.1	--	ND	110	--		128.2
Dichlorodifluoromethane	ND	25.6	--	ND	127	--		128.2
Chloromethane	ND	25.6	--	ND	52.9	--		128.2
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	25.6	--	ND	179	--		128.2
Vinyl chloride	ND	25.6	--	ND	65.4	--		128.2
1,3-Butadiene	ND	25.6	--	ND	56.6	--		128.2
Bromomethane	ND	25.6	--	ND	99.4	--		128.2
Chloroethane	ND	25.6	--	ND	67.6	--		128.2
Ethyl Alcohol	ND	641	--	ND	1210	--		128.2
Vinyl bromide	ND	25.6	--	ND	112	--		128.2
Acetone	ND	128.	--	ND	304	--		128.2
Trichlorofluoromethane	ND	25.6	--	ND	144	--		128.2
iso-Propyl Alcohol	ND	64.1	--	ND	158	--		128.2
1,1-Dichloroethene	ND	25.6	--	ND	101	--		128.2
Methylene chloride	ND	64.1	--	ND	223	--		128.2
3-Chloropropene	ND	25.6	--	ND	80.1	--		128.2
Carbon disulfide	ND	25.6	--	ND	79.7	--		128.2
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	25.6	--	ND	196	--		128.2
trans-1,2-Dichloroethene	ND	25.6	--	ND	101	--		128.2
1,1-Dichloroethane	ND	25.6	--	ND	104	--		128.2
Methyl tert butyl ether	ND	25.6	--	ND	92.3	--		128.2
Vinyl acetate	ND	128.	--	ND	451	--		128.2
2-Butanone	ND	64.1	--	ND	189	--		128.2
cis-1,2-Dichloroethene	ND	25.6	--	ND	101	--		128.2

Project Name: CALVERT
Project Number: 5977
Lab Number: L1742574
Report Date: 11/28/17

SAMPLE RESULTS

Lab ID: L1742574-01 D
Client ID: PRE-VES
Sample Location: NORTH EAST, MD
Date Collected: 11/16/17 11:17
Date Received: 11/17/17
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Ethyl Acetate	ND	64.1	--	ND	231	--		128.2
Chloroform	ND	25.6	--	ND	125	--		128.2
Tetrahydrofuran	ND	64.1	--	ND	189	--		128.2
1,2-Dichloroethane	ND	25.6	--	ND	104	--		128.2
n-Hexane	19400	25.6	--	68400	90.2	--	E	128.2
1,1,1-Trichloroethane	ND	25.6	--	ND	140	--		128.2
Benzene	4150	25.6	--	13300	81.8	--		128.2
Carbon tetrachloride	ND	25.6	--	ND	161	--		128.2
Cyclohexane	2330	25.6	--	8020	88.1	--		128.2
1,2-Dichloropropane	ND	25.6	--	ND	118	--		128.2
Bromodichloromethane	ND	25.6	--	ND	172	--		128.2
1,4-Dioxane	ND	25.6	--	ND	92.3	--		128.2
Trichloroethene	ND	25.6	--	ND	138	--		128.2
2,2,4-Trimethylpentane	2710	25.6	--	12700	120	--		128.2
Heptane	6860	25.6	--	28100	105	--		128.2
cis-1,3-Dichloropropene	ND	25.6	--	ND	116	--		128.2
4-Methyl-2-pentanone	ND	64.1	--	ND	263	--		128.2
trans-1,3-Dichloropropene	ND	25.6	--	ND	116	--		128.2
1,1,2-Trichloroethane	ND	25.6	--	ND	140	--		128.2
Toluene	10900	25.6	--	41100	96.5	--		128.2
2-Hexanone	ND	25.6	--	ND	105	--		128.2
Dibromochloromethane	ND	25.6	--	ND	218	--		128.2
1,2-Dibromoethane	ND	25.6	--	ND	197	--		128.2
Tetrachloroethene	ND	25.6	--	ND	174	--		128.2
Chlorobenzene	ND	25.6	--	ND	118	--		128.2
Ethylbenzene	1160	25.6	--	5040	111	--		128.2
p/m-Xylene	4190	51.3	--	18200	223	--		128.2
Bromoform	ND	25.6	--	ND	265	--		128.2

Project Name: CALVERT
Project Number: 5977

Lab Number: L1742574
Report Date: 11/28/17

SAMPLE RESULTS

Lab ID: L1742574-01 D
Client ID: PRE-VES
Sample Location: NORTH EAST, MD

Date Collected: 11/16/17 11:17
Date Received: 11/17/17
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Styrene	ND	25.6	--	ND	109	--		128.2
1,1,2,2-Tetrachloroethane	ND	25.6	--	ND	176	--		128.2
o-Xylene	1440	25.6	--	6250	111	--		128.2
4-Ethyltoluene	248	25.6	--	1220	126	--		128.2
1,3,5-Trimethylbenzene	292	25.6	--	1440	126	--		128.2
1,2,4-Trimethylbenzene	741	25.6	--	3640	126	--		128.2
Benzyl chloride	ND	25.6	--	ND	133	--		128.2
1,3-Dichlorobenzene	ND	25.6	--	ND	154	--		128.2
1,4-Dichlorobenzene	ND	25.6	--	ND	154	--		128.2
1,2-Dichlorobenzene	ND	25.6	--	ND	154	--		128.2
1,2,4-Trichlorobenzene	ND	25.6	--	ND	190	--		128.2
Naphthalene	ND	25.6	--	ND	134	--		128.2
Hexachlorobutadiene	ND	25.6	--	ND	273	--		128.2

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-Difluorobenzene	99		60-140
Bromochloromethane	100		60-140
chlorobenzene-d5	103		60-140

Project Name: CALVERT
Project Number: 5977
Lab Number: L1742574
Report Date: 11/28/17

SAMPLE RESULTS

Lab ID: L1742574-01 D2
Client ID: PRE-VES
Sample Location: NORTH EAST, MD
Matrix: Soil_Vapor
Anaytical Method: 48,TO-15
Analytical Date: 11/22/17 07:40
Analyst: RY

Date Collected: 11/16/17 11:17
Date Received: 11/17/17
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
n-Hexane	21200	64.1	--	74700	226	--		320.5

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-Difluorobenzene	103		60-140
Bromochloromethane	103		60-140
chlorobenzene-d5	107		60-140

Project Name: CALVERT
Project Number: 5977
Lab Number: L1742574
Report Date: 11/28/17

SAMPLE RESULTS

Lab ID: L1742574-02
Client ID: POST-VES
Sample Location: NORTH EAST, MD
Matrix: Soil_Vapor
Anaytical Method: 48,TO-15
Analytical Date: 11/21/17 16:13
Analyst: RY

Date Collected: 11/16/17 11:51
Date Received: 11/17/17
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Propylene	0.778	0.500	--	1.34	0.861	--		1
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	4.02	0.200	--	8.30	0.413	--		1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	0.200	--	ND	1.40	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	0.222	0.200	--	0.491	0.442	--		1
Bromomethane	4.72	0.200	--	18.3	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethyl Alcohol	ND	5.00	--	ND	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
iso-Propyl Alcohol	ND	0.500	--	ND	1.23	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	1.00	--	ND	3.52	--		1
2-Butanone	1.45	0.500	--	4.28	1.47	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1

Project Name: CALVERT
Project Number: 5977
Lab Number: L1742574
Report Date: 11/28/17

SAMPLE RESULTS

Lab ID: L1742574-02
Client ID: POST-VES
Sample Location: NORTH EAST, MD
Date Collected: 11/16/17 11:51
Date Received: 11/17/17
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	177	0.200	--	624	0.705	--	E	1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Benzene	5.48	0.200	--	17.5	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	6.20	0.200	--	21.3	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	13.9	0.200	--	64.9	0.934	--		1
Heptane	7.58	0.200	--	31.1	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	6.70	0.200	--	25.2	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	0.919	0.200	--	3.99	0.869	--		1
p/m-Xylene	3.61	0.400	--	15.7	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1

Project Name: CALVERT
Project Number: 5977
Lab Number: L1742574
Report Date: 11/28/17

SAMPLE RESULTS

Lab ID: L1742574-02
Client ID: POST-VES
Sample Location: NORTH EAST, MD
Date Collected: 11/16/17 11:51
Date Received: 11/17/17
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	1.37	0.200	--	5.95	0.869	--		1
4-Ethyltoluene	0.286	0.200	--	1.41	0.983	--		1
1,3,5-Trimethylbenzene	0.357	0.200	--	1.76	0.983	--		1
1,2,4-Trimethylbenzene	0.991	0.200	--	4.87	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-Difluorobenzene	94		60-140
Bromochloromethane	96		60-140
chlorobenzene-d5	97		60-140

Project Name: CALVERT
Project Number: 5977
Lab Number: L1742574
Report Date: 11/28/17

SAMPLE RESULTS

Lab ID: L1742574-02 D
Client ID: POST-VES
Sample Location: NORTH EAST, MD
Matrix: Soil_Vapor
Anaytical Method: 48,TO-15
Analytical Date: 11/22/17 08:10
Analyst: RY

Date Collected: 11/16/17 11:51
Date Received: 11/17/17
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
n-Hexane	191	0.667	--	673	2.35	--		3.333

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-Difluorobenzene	97		60-140
Bromochloromethane	97		60-140
chlorobenzene-d5	94		60-140

Project Name: CALVERT
Project Number: 5977

Lab Number: L1742574
Report Date: 11/28/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 11/21/17 12:15

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab for sample(s): 01-02 Batch: WG1065310-4								
Chlorodifluoromethane	ND	0.200	--	ND	0.707	--		1
Propylene	ND	0.500	--	ND	0.861	--		1
Propane	ND	0.500	--	ND	0.902	--		1
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	0.200	--	ND	1.40	--		1
Methanol	ND	5.00	--	ND	6.55	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Butane	ND	0.200	--	ND	0.475	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethyl Alcohol	ND	5.00	--	ND	9.42	--		1
Dichlorofluoromethane	ND	0.200	--	ND	0.842	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acrolein	ND	0.500	--	ND	1.15	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Acetonitrile	ND	0.200	--	ND	0.336	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
iso-Propyl Alcohol	ND	0.500	--	ND	1.23	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
Pentane	ND	0.200	--	ND	0.590	--		1
Ethyl ether	ND	0.200	--	ND	0.606	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
tert-Butyl Alcohol	ND	0.500	--	ND	1.52	--		1

Project Name: CALVERT
Project Number: 5977

Lab Number: L1742574
Report Date: 11/28/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 11/21/17 12:15

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab for sample(s): 01-02 Batch: WG1065310-4								
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	1.00	--	ND	3.52	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
2,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Isopropyl Ether	ND	0.200	--	ND	0.836	--		1
Ethyl-Tert-Butyl-Ether	ND	0.200	--	ND	0.836	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
1,1-Dichloropropene	ND	0.200	--	ND	0.908	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
Tertiary-Amyl Methyl Ether	ND	0.200	--	ND	0.836	--		1
Dibromomethane	ND	0.200	--	ND	1.42	--		1

Project Name: CALVERT
Project Number: 5977
Lab Number: L1742574
Report Date: 11/28/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 11/21/17 12:15

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab for sample(s): 01-02 Batch: WG1065310-4								
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Methyl Methacrylate	ND	0.500	--	ND	2.05	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
1,3-Dichloropropane	ND	0.200	--	ND	0.924	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Butyl Acetate	ND	0.500	--	ND	2.38	--		1
Octane	ND	0.200	--	ND	0.934	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
1,1,1,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1

Project Name: CALVERT
Project Number: 5977
Lab Number: L1742574
Report Date: 11/28/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 11/21/17 12:15

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab for sample(s): 01-02 Batch: WG1065310-4								
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
1,2,3-Trichloropropane	ND	0.200	--	ND	1.21	--		1
Nonane (C9)	ND	0.200	--	ND	1.05	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
Bromobenzene	ND	0.200	--	ND	0.793	--		1
o-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
n-Propylbenzene	ND	0.200	--	ND	0.983	--		1
p-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
tert-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Decane (C10)	ND	0.200	--	ND	1.16	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2-Dibromo-3-chloropropane	ND	0.200	--	ND	1.93	--		1
Undecane	ND	0.200	--	ND	1.28	--		1
Dodecane (C12)	ND	0.200	--	ND	1.39	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1

Project Name: CALVERT
Project Number: 5977

Lab Number: L1742574
Report Date: 11/28/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 11/21/17 12:15

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab for sample(s): 01-02 Batch: WG1065310-4								
Naphthalene	ND	0.200	--	ND	1.05	--		1
1,2,3-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

	Results	Qualifier	Units	RDL	Dilution Factor
Tentatively Identified Compounds					
No Tentatively Identified Compounds					

Project Name: CALVERT
Project Number: 5977
Lab Number: L1742574
Report Date: 11/28/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 11/22/17 14:42

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab for sample(s): 01-02 Batch: WG1065310-9								
Chlorodifluoromethane	ND	0.200	--	ND	0.707	--		1
Propylene	ND	0.500	--	ND	0.861	--		1
Propane	ND	0.500	--	ND	0.902	--		1
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	0.200	--	ND	1.40	--		1
Methanol	ND	5.00	--	ND	6.55	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Butane	ND	0.200	--	ND	0.475	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethyl Alcohol	ND	5.00	--	ND	9.42	--		1
Dichlorofluoromethane	ND	0.200	--	ND	0.842	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acrolein	ND	0.500	--	ND	1.15	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Acetonitrile	ND	0.200	--	ND	0.336	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
iso-Propyl Alcohol	ND	0.500	--	ND	1.23	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
Pentane	ND	0.200	--	ND	0.590	--		1
Ethyl ether	ND	0.200	--	ND	0.606	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
tert-Butyl Alcohol	ND	0.500	--	ND	1.52	--		1

Project Name: CALVERT
Project Number: 5977

Lab Number: L1742574
Report Date: 11/28/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 11/22/17 14:42

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab for sample(s): 01-02 Batch: WG1065310-9								
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	1.00	--	ND	3.52	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
2,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Isopropyl Ether	ND	0.200	--	ND	0.836	--		1
Ethyl-Tert-Butyl-Ether	ND	0.200	--	ND	0.836	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
1,1-Dichloropropene	ND	0.200	--	ND	0.908	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
Tertiary-Amyl Methyl Ether	ND	0.200	--	ND	0.836	--		1
Dibromomethane	ND	0.200	--	ND	1.42	--		1

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Analytical Method: 48,TO-15
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Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab for sample(s): 01-02 Batch: WG1065310-9								
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Methyl Methacrylate	ND	0.500	--	ND	2.05	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
1,3-Dichloropropane	ND	0.200	--	ND	0.924	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Butyl Acetate	ND	0.500	--	ND	2.38	--		1
Octane	ND	0.200	--	ND	0.934	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
1,1,1,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1

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Analytical Method: 48,TO-15
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Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab for sample(s): 01-02 Batch: WG1065310-9								
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
1,2,3-Trichloropropane	ND	0.200	--	ND	1.21	--		1
Nonane (C9)	ND	0.200	--	ND	1.05	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
Bromobenzene	ND	0.200	--	ND	0.793	--		1
o-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
n-Propylbenzene	ND	0.200	--	ND	0.983	--		1
p-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
tert-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Decane (C10)	ND	0.200	--	ND	1.16	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2-Dibromo-3-chloropropane	ND	0.200	--	ND	1.93	--		1
Undecane	ND	0.200	--	ND	1.28	--		1
Dodecane (C12)	ND	0.200	--	ND	1.39	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1

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Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab for sample(s): 01-02 Batch: WG1065310-9								
Naphthalene	ND	0.200	--	ND	1.05	--		1
1,2,3-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

	Results	Qualifier	Units	RDL	Dilution Factor
Tentatively Identified Compounds					
No Tentatively Identified Compounds					

Lab Control Sample Analysis

Batch Quality Control

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Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-02 Batch: WG1065310-3								
Chlorodifluoromethane	86		-		70-130	-		
Propylene	96		-		70-130	-		
Propane	74		-		70-130	-		
Dichlorodifluoromethane	73		-		70-130	-		
Chloromethane	90		-		70-130	-		
1,2-Dichloro-1,1,2,2-tetrafluoroethane	102		-		70-130	-		
Methanol	73		-		70-130	-		
Vinyl chloride	97		-		70-130	-		
1,3-Butadiene	97		-		70-130	-		
Butane	79		-		70-130	-		
Bromomethane	98		-		70-130	-		
Chloroethane	94		-		70-130	-		
Ethyl Alcohol	75		-		70-130	-		
Dichlorofluoromethane	92		-		70-130	-		
Vinyl bromide	100		-		70-130	-		
Acrolein	77		-		70-130	-		
Acetone	94		-		70-130	-		
Acetonitrile	82		-		70-130	-		
Trichlorofluoromethane	109		-		70-130	-		
iso-Propyl Alcohol	92		-		70-130	-		
Acrylonitrile	87		-		70-130	-		
Pentane	84		-		70-130	-		
Ethyl ether	77		-		70-130	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: CALVERT
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Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-02 Batch: WG1065310-3								
1,1-Dichloroethene	97		-		70-130	-		
tert-Butyl Alcohol	88		-		70-130	-		
Methylene chloride	96		-		70-130	-		
3-Chloropropene	88		-		70-130	-		
Carbon disulfide	90		-		70-130	-		
1,1,2-Trichloro-1,2,2-Trifluoroethane	103		-		70-130	-		
trans-1,2-Dichloroethene	87		-		70-130	-		
1,1-Dichloroethane	96		-		70-130	-		
Methyl tert butyl ether	91		-		70-130	-		
Vinyl acetate	103		-		70-130	-		
2-Butanone	91		-		70-130	-		
cis-1,2-Dichloroethene	95		-		70-130	-		
Ethyl Acetate	99		-		70-130	-		
Chloroform	105		-		70-130	-		
Tetrahydrofuran	87		-		70-130	-		
2,2-Dichloropropane	92		-		70-130	-		
1,2-Dichloroethane	101		-		70-130	-		
n-Hexane	92		-		70-130	-		
Isopropyl Ether	90		-		70-130	-		
Ethyl-Tert-Butyl-Ether	83		-		70-130	-		
1,1,1-Trichloroethane	99		-		70-130	-		
1,1-Dichloropropene	91		-		70-130	-		
Benzene	95		-		70-130	-		

Lab Control Sample Analysis

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Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-02 Batch: WG1065310-3								
Carbon tetrachloride	106		-		70-130	-		
Cyclohexane	88		-		70-130	-		
Tertiary-Amyl Methyl Ether	84		-		70-130	-		
Dibromomethane	98		-		70-130	-		
1,2-Dichloropropane	94		-		70-130	-		
Bromodichloromethane	101		-		70-130	-		
1,4-Dioxane	95		-		70-130	-		
Trichloroethene	101		-		70-130	-		
2,2,4-Trimethylpentane	93		-		70-130	-		
Methyl Methacrylate	98		-		70-130	-		
Heptane	86		-		70-130	-		
cis-1,3-Dichloropropene	101		-		70-130	-		
4-Methyl-2-pentanone	90		-		70-130	-		
trans-1,3-Dichloropropene	86		-		70-130	-		
1,1,2-Trichloroethane	104		-		70-130	-		
Toluene	92		-		70-130	-		
1,3-Dichloropropane	88		-		70-130	-		
2-Hexanone	88		-		70-130	-		
Dibromochloromethane	105		-		70-130	-		
1,2-Dibromoethane	100		-		70-130	-		
Butyl Acetate	86		-		70-130	-		
Octane	83		-		70-130	-		
Tetrachloroethene	97		-		70-130	-		

Lab Control Sample Analysis

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Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-02 Batch: WG1065310-3								
1,1,1,2-Tetrachloroethane	99		-		70-130	-		
Chlorobenzene	103		-		70-130	-		
Ethylbenzene	96		-		70-130	-		
p/m-Xylene	98		-		70-130	-		
Bromoform	106		-		70-130	-		
Styrene	98		-		70-130	-		
1,1,2,2-Tetrachloroethane	108		-		70-130	-		
o-Xylene	101		-		70-130	-		
1,2,3-Trichloropropane	94		-		70-130	-		
Nonane (C9)	88		-		70-130	-		
Isopropylbenzene	99		-		70-130	-		
Bromobenzene	93		-		70-130	-		
o-Chlorotoluene	94		-		70-130	-		
n-Propylbenzene	97		-		70-130	-		
p-Chlorotoluene	95		-		70-130	-		
4-Ethyltoluene	97		-		70-130	-		
1,3,5-Trimethylbenzene	102		-		70-130	-		
tert-Butylbenzene	100		-		70-130	-		
1,2,4-Trimethylbenzene	107		-		70-130	-		
Decane (C10)	94		-		70-130	-		
Benzyl chloride	101		-		70-130	-		
1,3-Dichlorobenzene	105		-		70-130	-		
1,4-Dichlorobenzene	105		-		70-130	-		

Lab Control Sample Analysis
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Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-02 Batch: WG1065310-3								
sec-Butylbenzene	98		-		70-130	-		
p-Isopropyltoluene	92		-		70-130	-		
1,2-Dichlorobenzene	106		-		70-130	-		
n-Butylbenzene	100		-		70-130	-		
1,2-Dibromo-3-chloropropane	95		-		70-130	-		
Undecane	99		-		70-130	-		
Dodecane (C12)	111		-		70-130	-		
1,2,4-Trichlorobenzene	116		-		70-130	-		
Naphthalene	100		-		70-130	-		
1,2,3-Trichlorobenzene	102		-		70-130	-		
Hexachlorobutadiene	109		-		70-130	-		

Lab Control Sample Analysis

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Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-02 Batch: WG1065310-8								
Chlorodifluoromethane	86		-		70-130	-		
Propylene	94		-		70-130	-		
Propane	72		-		70-130	-		
Dichlorodifluoromethane	70		-		70-130	-		
Chloromethane	88		-		70-130	-		
1,2-Dichloro-1,1,2,2-tetrafluoroethane	103		-		70-130	-		
Methanol	71		-		70-130	-		
Vinyl chloride	97		-		70-130	-		
1,3-Butadiene	97		-		70-130	-		
Butane	80		-		70-130	-		
Bromomethane	101		-		70-130	-		
Chloroethane	95		-		70-130	-		
Ethyl Alcohol	74		-		70-130	-		
Dichlorofluoromethane	92		-		70-130	-		
Vinyl bromide	100		-		70-130	-		
Acrolein	80		-		70-130	-		
Acetone	93		-		70-130	-		
Acetonitrile	81		-		70-130	-		
Trichlorofluoromethane	111		-		70-130	-		
iso-Propyl Alcohol	90		-		70-130	-		
Acrylonitrile	85		-		70-130	-		
Pentane	82		-		70-130	-		
Ethyl ether	74		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

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Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-02 Batch: WG1065310-8								
1,1-Dichloroethene	98		-		70-130	-		
tert-Butyl Alcohol	84		-		70-130	-		
Methylene chloride	94		-		70-130	-		
3-Chloropropene	87		-		70-130	-		
Carbon disulfide	89		-		70-130	-		
1,1,2-Trichloro-1,2,2-Trifluoroethane	102		-		70-130	-		
trans-1,2-Dichloroethene	81		-		70-130	-		
1,1-Dichloroethane	82		-		70-130	-		
Methyl tert butyl ether	82		-		70-130	-		
Vinyl acetate	87		-		70-130	-		
2-Butanone	90		-		70-130	-		
cis-1,2-Dichloroethene	94		-		70-130	-		
Ethyl Acetate	102		-		70-130	-		
Chloroform	105		-		70-130	-		
Tetrahydrofuran	83		-		70-130	-		
2,2-Dichloropropane	92		-		70-130	-		
1,2-Dichloroethane	101		-		70-130	-		
n-Hexane	88		-		70-130	-		
Isopropyl Ether	87		-		70-130	-		
Ethyl-Tert-Butyl-Ether	80		-		70-130	-		
1,1,1-Trichloroethane	96		-		70-130	-		
1,1-Dichloropropene	90		-		70-130	-		
Benzene	92		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: CALVERT
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Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-02 Batch: WG1065310-8								
Carbon tetrachloride	104		-		70-130	-		
Cyclohexane	88		-		70-130	-		
Tertiary-Amyl Methyl Ether	81		-		70-130	-		
Dibromomethane	94		-		70-130	-		
1,2-Dichloropropane	93		-		70-130	-		
Bromodichloromethane	99		-		70-130	-		
1,4-Dioxane	95		-		70-130	-		
Trichloroethene	100		-		70-130	-		
2,2,4-Trimethylpentane	92		-		70-130	-		
Methyl Methacrylate	95		-		70-130	-		
Heptane	84		-		70-130	-		
cis-1,3-Dichloropropene	98		-		70-130	-		
4-Methyl-2-pentanone	88		-		70-130	-		
trans-1,3-Dichloropropene	84		-		70-130	-		
1,1,2-Trichloroethane	102		-		70-130	-		
Toluene	93		-		70-130	-		
1,3-Dichloropropane	88		-		70-130	-		
2-Hexanone	88		-		70-130	-		
Dibromochloromethane	105		-		70-130	-		
1,2-Dibromoethane	98		-		70-130	-		
Butyl Acetate	82		-		70-130	-		
Octane	82		-		70-130	-		
Tetrachloroethene	98		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: CALVERT
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Lab Number: L1742574
Report Date: 11/28/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-02 Batch: WG1065310-8								
1,1,1,2-Tetrachloroethane	99		-		70-130	-		
Chlorobenzene	103		-		70-130	-		
Ethylbenzene	102		-		70-130	-		
p/m-Xylene	100		-		70-130	-		
Bromoform	112		-		70-130	-		
Styrene	102		-		70-130	-		
1,1,2,2-Tetrachloroethane	111		-		70-130	-		
o-Xylene	105		-		70-130	-		
1,2,3-Trichloropropane	95		-		70-130	-		
Nonane (C9)	88		-		70-130	-		
Isopropylbenzene	97		-		70-130	-		
Bromobenzene	94		-		70-130	-		
o-Chlorotoluene	95		-		70-130	-		
n-Propylbenzene	97		-		70-130	-		
p-Chlorotoluene	91		-		70-130	-		
4-Ethyltoluene	101		-		70-130	-		
1,3,5-Trimethylbenzene	102		-		70-130	-		
tert-Butylbenzene	99		-		70-130	-		
1,2,4-Trimethylbenzene	107		-		70-130	-		
Decane (C10)	94		-		70-130	-		
Benzyl chloride	101		-		70-130	-		
1,3-Dichlorobenzene	106		-		70-130	-		
1,4-Dichlorobenzene	104		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: CALVERT

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Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-02 Batch: WG1065310-8								
sec-Butylbenzene	98		-		70-130	-		
p-Isopropyltoluene	92		-		70-130	-		
1,2-Dichlorobenzene	104		-		70-130	-		
n-Butylbenzene	100		-		70-130	-		
1,2-Dibromo-3-chloropropane	94		-		70-130	-		
Undecane	98		-		70-130	-		
Dodecane (C12)	112		-		70-130	-		
1,2,4-Trichlorobenzene	114		-		70-130	-		
Naphthalene	100		-		70-130	-		
1,2,3-Trichlorobenzene	101		-		70-130	-		
Hexachlorobutadiene	109		-		70-130	-		

Lab Duplicate Analysis
Batch Quality Control

Project Name: CALVERT
Project Number: 5977

Lab Number: L1742574
Report Date: 11/28/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1065310-5 QC Sample: L1742312-01 Client ID: DUP Sample						
Dichlorodifluoromethane	0.887	0.748	ppbV	17		25
Chloromethane	ND	ND	ppbV	NC		25
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	ND	ppbV	NC		25
Vinyl chloride	ND	ND	ppbV	NC		25
1,3-Butadiene	ND	ND	ppbV	NC		25
Bromomethane	ND	ND	ppbV	NC		25
Chloroethane	ND	ND	ppbV	NC		25
Ethyl Alcohol	ND	ND	ppbV	NC		25
Vinyl bromide	ND	ND	ppbV	NC		25
Acetone	104	106	ppbV	2		25
Trichlorofluoromethane	2.99	3.08	ppbV	3		25
iso-Propyl Alcohol	ND	ND	ppbV	NC		25
1,1-Dichloroethene	ND	ND	ppbV	NC		25
tert-Butyl Alcohol	ND	ND	ppbV	NC		25
Methylene chloride	ND	ND	ppbV	NC		25
3-Chloropropene	ND	ND	ppbV	NC		25
Carbon disulfide	0.324	0.343	ppbV	6		25
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	ND	ppbV	NC		25
trans-1,2-Dichloroethene	ND	ND	ppbV	NC		25
1,1-Dichloroethane	ND	ND	ppbV	NC		25
Methyl tert butyl ether	ND	ND	ppbV	NC		25

Lab Duplicate Analysis
Batch Quality Control

Project Name: CALVERT
Project Number: 5977

Lab Number: L1742574
Report Date: 11/28/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1065310-5 QC Sample: L1742312-01 Client ID: DUP Sample						
2-Butanone	2.35	2.04	ppbV	14		25
cis-1,2-Dichloroethene	ND	ND	ppbV	NC		25
Ethyl Acetate	ND	ND	ppbV	NC		25
Chloroform	3.23	3.28	ppbV	2		25
Tetrahydrofuran	ND	ND	ppbV	NC		25
1,2-Dichloroethane	ND	ND	ppbV	NC		25
n-Hexane	0.230	0.242	ppbV	5		25
1,1,1-Trichloroethane	ND	ND	ppbV	NC		25
Benzene	0.282	0.276	ppbV	2		25
Carbon tetrachloride	0.385	0.393	ppbV	2		25
Cyclohexane	ND	ND	ppbV	NC		25
1,2-Dichloropropane	ND	ND	ppbV	NC		25
Bromodichloromethane	ND	ND	ppbV	NC		25
1,4-Dioxane	ND	ND	ppbV	NC		25
Trichloroethene	ND	ND	ppbV	NC		25
2,2,4-Trimethylpentane	ND	ND	ppbV	NC		25
Heptane	0.588	0.595	ppbV	1		25
cis-1,3-Dichloropropene	ND	ND	ppbV	NC		25
4-Methyl-2-pentanone	ND	ND	ppbV	NC		25
trans-1,3-Dichloropropene	ND	ND	ppbV	NC		25
1,1,2-Trichloroethane	ND	ND	ppbV	NC		25

Lab Duplicate Analysis
Batch Quality Control

Project Name: CALVERT
Project Number: 5977

Lab Number: L1742574
Report Date: 11/28/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1065310-5 QC Sample: L1742312-01 Client ID: DUP Sample						
Toluene	4.14	4.16	ppbV	0		25
2-Hexanone	0.764	0.812	ppbV	6		25
Dibromochloromethane	ND	ND	ppbV	NC		25
1,2-Dibromoethane	ND	ND	ppbV	NC		25
Tetrachloroethene	2.63	2.64	ppbV	0		25
Chlorobenzene	ND	ND	ppbV	NC		25
Ethylbenzene	1.95	1.97	ppbV	1		25
p/m-Xylene	7.39	7.40	ppbV	0		25
Bromoform	ND	ND	ppbV	NC		25
Styrene	ND	ND	ppbV	NC		25
1,1,2,2-Tetrachloroethane	ND	ND	ppbV	NC		25
o-Xylene	2.44	2.43	ppbV	0		25
4-Ethyltoluene	0.605	0.600	ppbV	1		25
1,3,5-Trimethylbenzene	0.409	0.415	ppbV	1		25
1,2,4-Trimethylbenzene	1.42	1.43	ppbV	1		25
Benzyl chloride	ND	ND	ppbV	NC		25
1,3-Dichlorobenzene	ND	ND	ppbV	NC		25
1,4-Dichlorobenzene	ND	ND	ppbV	NC		25
1,2-Dichlorobenzene	ND	ND	ppbV	NC		25
1,2,4-Trichlorobenzene	ND	ND	ppbV	NC		25
Hexachlorobutadiene	ND	ND	ppbV	NC		25

Project Name: CALVERT

Project Number: 5977

Lab Number: L1742574

Report Date: 11/28/17

Canister and Flow Controller Information

Samplenum	Client ID	Media ID	Media Type	Date Prepared	Bottle Order	Cleaning Batch ID	Can Leak Check	Initial Pressure (in. Hg)	Pressure on Receipt (in. Hg)	Flow Controler Leak Chk	Flow Out mL/min	Flow In mL/min	% RPD
L1742574-01	PRE-VES	0887	SV200	11/14/17	253403		-	-	-	Pass	222	222	0
L1742574-01	PRE-VES	1646	6.0L Can	11/14/17	253403	L1741370-03	Pass	-30.0	-4.0	-	-	-	-
L1742574-02	POST-VES	0519	SV200	11/14/17	253403		-	-	-	Pass	220	218	1
L1742574-02	POST-VES	1704	6.0L Can	11/14/17	253403	L1741370-03	Pass	-30.0	-3.3	-	-	-	-

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1741370
Report Date: 11/28/17

Air Canister Certification Results

Lab ID: L1741370-03
Client ID: CAN 1658 SHELF 58
Sample Location:
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 11/10/17 22:05
Analyst: RY

Date Collected: 11/09/17 16:00
Date Received: 11/10/17
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Chlorodifluoromethane	ND	0.200	--	ND	0.707	--		1
Propylene	ND	0.500	--	ND	0.861	--		1
Propane	ND	0.500	--	ND	0.902	--		1
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Methanol	ND	5.00	--	ND	6.55	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Butane	ND	0.200	--	ND	0.475	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	5.00	--	ND	9.42	--		1
Dichlorofluoromethane	ND	0.200	--	ND	0.842	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acrolein	ND	0.500	--	ND	1.15	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Acetonitrile	ND	0.200	--	ND	0.336	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
Pentane	ND	0.200	--	ND	0.590	--		1
Ethyl ether	ND	0.200	--	ND	0.606	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1741370
Report Date: 11/28/17

Air Canister Certification Results

Lab ID: L1741370-03
Client ID: CAN 1658 SHELF 58
Sample Location:
Date Collected: 11/09/17 16:00
Date Received: 11/10/17
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	1.00	--	ND	3.52	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
2,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Diisopropyl ether	ND	0.200	--	ND	0.836	--		1
tert-Butyl Ethyl Ether	ND	0.200	--	ND	0.836	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
1,1-Dichloropropene	ND	0.200	--	ND	0.908	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
tert-Amyl Methyl Ether	ND	0.200	--	ND	0.836	--		1
Dibromomethane	ND	0.200	--	ND	1.42	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1741370
Report Date: 11/28/17

Air Canister Certification Results

Lab ID: L1741370-03
Client ID: CAN 1658 SHELF 58
Sample Location:
Date Collected: 11/09/17 16:00
Date Received: 11/10/17
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Methyl Methacrylate	ND	0.500	--	ND	2.05	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
1,3-Dichloropropane	ND	0.200	--	ND	0.924	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Butyl acetate	ND	0.500	--	ND	2.38	--		1
Octane	ND	0.200	--	ND	0.934	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
1,1,1,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
1,2,3-Trichloropropane	ND	0.200	--	ND	1.21	--		1
Nonane	ND	0.200	--	ND	1.05	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
Bromobenzene	ND	0.200	--	ND	0.793	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1741370
Report Date: 11/28/17

Air Canister Certification Results

Lab ID: L1741370-03
Client ID: CAN 1658 SHELF 58
Sample Location:
Date Collected: 11/09/17 16:00
Date Received: 11/10/17
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
2-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
n-Propylbenzene	ND	0.200	--	ND	0.983	--		1
4-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
tert-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Decane	ND	0.200	--	ND	1.16	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2-Dibromo-3-chloropropane	ND	0.200	--	ND	1.93	--		1
Undecane	ND	0.200	--	ND	1.28	--		1
Dodecane	ND	0.200	--	ND	1.39	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1
1,2,3-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

	Results	**Qualifier**	**Units**	**RDL**	**Dilution Factor**
Tentatively Identified Compounds					
No Tentatively Identified Compounds					

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1741370
Report Date: 11/28/17

Air Canister Certification Results

Lab ID: L1741370-03
Client ID: CAN 1658 SHELF 58
Sample Location:
Date Collected: 11/09/17 16:00
Date Received: 11/10/17
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	79		60-140
Bromochloromethane	86		60-140
chlorobenzene-d5	76		60-140

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1741370
Report Date: 11/28/17

Air Canister Certification Results

Lab ID: L1741370-03
Client ID: CAN 1658 SHELF 58
Sample Location:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 11/10/17 22:05
Analyst: RY

Date Collected: 11/09/17 16:00
Date Received: 11/10/17
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab								
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.050	--	ND	0.349	--		1
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,3-Butadiene	ND	0.020	--	ND	0.044	--		1
Bromomethane	ND	0.020	--	ND	0.078	--		1
Chloroethane	ND	0.100	--	ND	0.264	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Trichlorofluoromethane	ND	0.050	--	ND	0.281	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
Freon-113	ND	0.050	--	ND	0.383	--		1
Halothane	ND	0.050	--	ND	0.404	--		1
trans-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1-Dichloroethane	ND	0.020	--	ND	0.081	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Chloroform	ND	0.020	--	ND	0.098	--		1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Benzene	ND	0.100	--	ND	0.319	--		1
Carbon tetrachloride	ND	0.020	--	ND	0.126	--		1
1,2-Dichloropropane	ND	0.020	--	ND	0.092	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1741370
Report Date: 11/28/17

Air Canister Certification Results

Lab ID: L1741370-03
Client ID: CAN 1658 SHELF 58
Sample Location:
Date Collected: 11/09/17 16:00
Date Received: 11/10/17
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM - Mansfield Lab								
Bromodichloromethane	ND	0.020	--	ND	0.134	--		1
1,4-Dioxane	ND	0.100	--	ND	0.360	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
cis-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
1,1,2-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Toluene	ND	0.050	--	ND	0.188	--		1
Dibromochloromethane	ND	0.020	--	ND	0.170	--		1
1,2-Dibromoethane	ND	0.020	--	ND	0.154	--		1
Tetrachloroethene	ND	0.020	--	ND	0.136	--		1
1,1,1,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
Chlorobenzene	ND	0.100	--	ND	0.461	--		1
Ethylbenzene	ND	0.020	--	ND	0.087	--		1
p/m-Xylene	ND	0.040	--	ND	0.174	--		1
Bromoform	ND	0.020	--	ND	0.207	--		1
Styrene	ND	0.020	--	ND	0.085	--		1
1,1,2,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
o-Xylene	ND	0.020	--	ND	0.087	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
4-Ethyltoluene	ND	0.020	--	ND	0.098	--		1
1,3,5-Trimethybenzene	ND	0.020	--	ND	0.098	--		1
1,2,4-Trimethylbenzene	ND	0.020	--	ND	0.098	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
1,4-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1

Project Name: BATCH CANISTER CERTIFICATION **Lab Number:** L1741370

Project Number: CANISTER QC BAT **Report Date:** 11/28/17

Air Canister Certification Results

Lab ID: L1741370-03 Date Collected: 11/09/17 16:00

Client ID: CAN 1658 SHELF 58 Date Received: 11/10/17

Sample Location: Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM - Mansfield Lab								
1,2-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Naphthalene	ND	0.050	--	ND	0.262	--		1
1,2,3-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Hexachlorobutadiene	ND	0.050	--	ND	0.533	--		1

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-difluorobenzene	81		60-140
bromochloromethane	88		60-140
chlorobenzene-d5	80		60-140

Project Name: CALVERT
Project Number: 5977

Lab Number: L1742574
Report Date: 11/28/17

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
N/A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1742574-01A	Canister - 6 Liter	N/A	NA			Y	Absent		TO15-LL(30)
L1742574-02A	Canister - 6 Liter	N/A	NA			Y	Absent		TO15-LL(30)

*Values in parentheses indicate holding time in days

Project Name:	CALVERT	**Lab Number:**	L1742574
Project Number:	5977	**Report Date:**	11/28/17

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

1	- The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A	- Spectra identified as "Aldol Condensation Product".
B	- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related

Report Format: Data Usability Report

Project Name:	CALVERT	**Lab Number:**	L1742574
Project Number:	5977	**Report Date:**	11/28/17

Data Qualifiers

projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

Project Name:	CALVERT	**Lab Number:**	L1742574
Project Number:	5977	**Report Date:**	11/28/17

REFERENCES

48 Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air. Second Edition. EPA/625/R-96/010b, January 1999.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
EPA 300: DW: Bromide
EPA 6860: NPW and SCM: Perchlorate
EPA 9010: NPW and SCM: Amenable Cyanide Distillation
EPA 9012B: NPW: Total Cyanide
EPA 9050A: NPW: Specific Conductance
SM3500: NPW: Ferrous Iron
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility
SM 2540D: TSS
EPA 3005A NPW
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F, EPA 353.2**: Nitrate-N**, EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.**
EPA 624: Volatile Halocarbons & Aromatics,
EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E.**

Mansfield Facility:

Drinking Water
EPA 200.7: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1** Hg.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

AIR ANALYSIS

ALPHA ANALYTICAL

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 11/18/17

ALPHA Job #: L1742574

320 Forbes Blvd, Mansfield, MA 02048
TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: REPSG, Inc

Address: 6901 Kingsessing Ave, Philadelphia, PA 19142

Phone: 215-729-3220

Fax: 215-729-1557

Email: ~~[illegible]~~ sgriffith@repsg.com

❑ These samples have been previously analyzed by Alpha

Project Information

Project Name: Calvert

Project Location: North East, MD

Project #: 5977

Project Manager: ~~Suzanne Shourds~~ Natalie Griffith

ALPHA Quote #:

Turn-Around Time

☒ Standard ❑ RUSH (only confirmed if pre-approved!)

Date Due: Time:

Report Information - Data Deliverables

❑ FAX

❑ ADEx

Criteria Checker:

(Default based on Regulatory Criteria Indicated)

Other Formats:

❑ EMAIL (standard pdf report)

❑ Additional Deliverables:

Report to: (if different than Project Manager)

Billing Information

❑ Same as Client info PO #: 15158

Regulatory Requirements/Report Limits

State/Fed	Program	Res / Comm
MD	MDE	

Other Project Specific Requirements/Comments: EQUIS EDD Required

Project-Specific Target Compound List: ❑

All Columns Below Must Be Filled Out

ALPHA Lab ID (Lab Use Only)	Sample ID	COLLECTION End Date	Start Time	End Time	Initial Vacuum	Final Vacuum	Sample Matrix*	Sampler's Initials	Can Size	I D Can	I D - Flow Controller	TO-15	TO-15 SIM	APH	Fixed Gases	Sulfides & Mercaptans by TO-15	Sample Comments (i.e. PID)
42574-01	Pre-Ves	11-16-17	1053	1117	-29.71	-3.74	SV	SL	6L	1646	0887	X					
02	Post-Ves	11-16-17	1125	1151	-30.12	-3.83	SV	SL	6L	1704	0519	X					

*SAMPLE MATRIX CODES

AA = Ambient Air (Indoor/Outdoor)
SV = Soil Vapor/Landfill Gas/SVE
Other = Please Specify

Container Type

Relinquished By:	Date/Time	Received By:	Date/Time:
Natalie Griffith	11/17/17 1030	Tom [illegible] AAL	11-17-17 1630
Tom [illegible] AAL	11/17/17 17:30	[illegible] AAL	11-17-17 17:30
[illegible] AAL	11/17/17 2020	[illegible]	11/17/17 2020
[illegible]	11/18/17 0110	[illegible]	11/18/17 01:11

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

Form No: 101-02 Rev: (25-Sep-15)

ALS Environmental

34 Dogwood Lane ■ Middletown, PA 17057 ■ Phone: 717-944-5541 ■ Fax: 717-944-1430 ■ www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

November 28, 2017

Ms. Natalie Griffith
REPSG
6901 Kingsessing Ave
Suite 201
Philadelphia, PA 19142

Certificate of Analysis

Project Name:	**2017-CALVERT CITGO/5977**	Workorder:	**2277560**
Purchase Order:	**15157**	Workorder ID:	**Citgo Calvert/5977**

Dear Ms. Griffith:

Enclosed are the analytical results for samples received by the laboratory on Friday, November 17, 2017.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Ms. Susan J Scherer (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

This laboratory report may not be reproduced, except in full, without the written approval of ALS Environmental.

ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

CC: Ms. Sarah Szymanski , Ms. S Shourds

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

Susan J. Scherer

Ms. Susan J Scherer
Project Coordinator

ALS Environmental

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

SAMPLE SUMMARY

Workorder: 2277560 Citgo Calvert/5977

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2277560001	Outfall-001	Ground Water	11/15/2017 09:45	11/17/2017 20:00	Collected by Client

Notes

-- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
-- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
-- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
-- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
-- The Chain of Custody document is included as part of this report.
-- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
-- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
-- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.
-- For microbiological analyses, the "Prepared" value is the date/time into the incurbator and the "Analyzed" value is the date/time out the incubator.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

PROJECT SUMMARY

Workorder: 2277560 Citgo Calvert/5977

Sample Comments

Lab ID: 2277560001 **Sample ID:** Outfall-001 **Sample Type:** SAMPLE

The GCMS volatiles analysis was performed at a dilution due to the level of target compounds.

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ANALYTICAL RESULTS

Workorder: 2277560 Citgo Calvert/5977

Lab ID: **2277560001** Date Collected: 11/15/2017 09:45 Matrix: Ground Water

Sample ID: **Outfall-001** Date Received: 11/17/2017 20:00

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS											
Acetone	119		ug/L	100	31.0	SW846 8260B			11/22/17 19:10	TMP	A
tert-Amyl methyl ether	ND		ug/L	10.0	2.0	SW846 8260B			11/22/17 19:10	TMP	A
tert-Amyl Alcohol	852		ug/L	100	66.0	SW846 8260B			11/22/17 19:10	TMP	A
tert-Amyl Ethylether	ND		ug/L	10.0	2.9	SW846 8260B			11/22/17 19:10	TMP	A
Benzene	248		ug/L	10.0	2.3	SW846 8260B			11/22/17 19:10	TMP	A
Bromochloromethane	ND		ug/L	10.0	3.2	SW846 8260B			11/22/17 19:10	TMP	A
Bromodichloromethane	ND		ug/L	10.0	2.7	SW846 8260B			11/22/17 19:10	TMP	A
Bromoform	ND		ug/L	10.0	4.0	SW846 8260B			11/22/17 19:10	TMP	A
Bromomethane	ND		ug/L	10.0	3.9	SW846 8260B			11/22/17 19:10	TMP	A
2-Butanone	36.3J	J	ug/L	100	18.0	SW846 8260B			11/22/17 19:10	TMP	A
tert-Butyl Alcohol	336		ug/L	100	22.0	SW846 8260B			11/22/17 19:10	TMP	A
Carbon Disulfide	ND		ug/L	10.0	2.3	SW846 8260B			11/22/17 19:10	TMP	A
Carbon Tetrachloride	ND		ug/L	10.0	3.1	SW846 8260B			11/22/17 19:10	TMP	A
Chlorobenzene	ND		ug/L	10.0	1.9	SW846 8260B			11/22/17 19:10	TMP	A
Chlorodibromomethane	ND		ug/L	10.0	4.5	SW846 8260B			11/22/17 19:10	TMP	A
Chloroethane	ND		ug/L	10.0	3.3	SW846 8260B			11/22/17 19:10	TMP	A
Chloroform	ND		ug/L	10.0	2.1	SW846 8260B			11/22/17 19:10	TMP	A
Chloromethane	ND		ug/L	10.0	3.1	SW846 8260B			11/22/17 19:10	TMP	A
1,2-Dibromo-3-chloropropane	ND		ug/L	70.0	15.0	SW846 8260B			11/22/17 19:10	TMP	A
1,2-Dibromoethane	ND		ug/L	10.0	2.8	SW846 8260B			11/22/17 19:10	TMP	A
Dichlorodifluoromethane	ND		ug/L	10.0	3.3	SW846 8260B			11/22/17 19:10	TMP	A
1,1-Dichloroethane	ND		ug/L	10.0	2.8	SW846 8260B			11/22/17 19:10	TMP	A
1,2-Dichloroethane	10.4		ug/L	10.0	3.2	SW846 8260B			11/22/17 19:10	TMP	A
1,1-Dichloroethene	ND		ug/L	10.0	2.9	SW846 8260B			11/22/17 19:10	TMP	A
cis-1,2-Dichloroethene	ND		ug/L	10.0	3.2	SW846 8260B			11/22/17 19:10	TMP	A
trans-1,2-Dichloroethene	ND		ug/L	10.0	2.6	SW846 8260B			11/22/17 19:10	TMP	A
Dichlorofluoromethane	ND		ug/L	10.0	3.7	SW846 8260B			11/22/17 19:10	TMP	A
1,2-Dichloropropane	ND		ug/L	10.0	2.4	SW846 8260B			11/22/17 19:10	TMP	A
cis-1,3-Dichloropropene	ND		ug/L	10.0	3.1	SW846 8260B			11/22/17 19:10	TMP	A
trans-1,3-Dichloropropene	ND		ug/L	10.0	2.9	SW846 8260B			11/22/17 19:10	TMP	A
Diisopropyl ether	ND		ug/L	10.0	2.5	SW846 8260B			11/22/17 19:10	TMP	A
Ethyl tert-butyl ether	ND		ug/L	10.0	1.9	SW846 8260B			11/22/17 19:10	TMP	A
Ethylbenzene	63.9		ug/L	10.0	3.4	SW846 8260B			11/22/17 19:10	TMP	A
2-Hexanone	ND		ug/L	50.0	13.0	SW846 8260B			11/22/17 19:10	TMP	A
Methyl t-Butyl Ether	17.7		ug/L	10.0	3.3	SW846 8260B			11/22/17 19:10	TMP	A
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	50.0	15.0	SW846 8260B			11/22/17 19:10	TMP	A

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NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2277560 Citgo Calvert/5977

Lab ID: **2277560001** Date Collected: 11/15/2017 09:45 Matrix: Ground Water

Sample ID: **Outfall-001** Date Received: 11/17/2017 20:00

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared	By	Analyzed	By	Cntr
Methylene Chloride	ND		ug/L	10.0	4.5	SW846 8260B			11/22/17 19:10	TMP	A
Styrene	ND		ug/L	10.0	2.4	SW846 8260B			11/22/17 19:10	TMP	A
1,1,2,2-Tetrachloroethane	ND		ug/L	10.0	3.4	SW846 8260B			11/22/17 19:10	TMP	A
Tetrachloroethene	ND		ug/L	10.0	3.5	SW846 8260B			11/22/17 19:10	TMP	A
Toluene	843		ug/L	10.0	2.3	SW846 8260B			11/22/17 19:10	TMP	A
Total Xylenes	499		ug/L	30.0	6.6	SW846 8260B			11/22/17 19:10	TMP	A
1,1,1-Trichloroethane	ND		ug/L	10.0	2.2	SW846 8260B			11/22/17 19:10	TMP	A
1,1,2-Trichloroethane	ND		ug/L	10.0	3.3	SW846 8260B			11/22/17 19:10	TMP	A
Trichloroethene	ND		ug/L	10.0	3.3	SW846 8260B			11/22/17 19:10	TMP	A
Vinyl Chloride	ND		ug/L	10.0	3.0	SW846 8260B			11/22/17 19:10	TMP	A
o-Xylene	163		ug/L	10.0	3.3	SW846 8260B			11/22/17 19:10	TMP	A
mp-Xylene	336		ug/L	20.0	5.2	SW846 8260B			11/22/17 19:10	TMP	A

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	107		%	62 - 133	SW846 8260B			11/22/17 19:10	TMP	A
4-Bromofluorobenzene (S)	89.2		%	79 - 114	SW846 8260B			11/22/17 19:10	TMP	A
Dibromofluoromethane (S)	86.2		%	78 - 116	SW846 8260B			11/22/17 19:10	TMP	A
Toluene-d8 (S)	90.1		%	76 - 127	SW846 8260B			11/22/17 19:10	TMP	A

Ms. Susan J Scherer
Project Coordinator

Tuesday, November 28, 2017 11:30:10 AM

ALS Environmental
34 Dogwood Lane
Middletown, PA 17057
P. 717-944-5541
F. 717-944-1430

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER. INSTRUCTIONS ON THE BACK.

Courier:

Tracking #:

2277560

Co. Name: REPSG, Inc

Contact (Report to): Natalie Griffith

Phone: 215 729-3220

Address: 6961 Kingsessing Ave
Philadelphia, PA 19142

Bill to (if different than Report to): Same

PO#: 15157

Project Name/#: Citgo Closure / 5477

ALS Quote #:

TAT: [X] Normal-Standard TAT is 10-12 business days. [ ] Rush-Subject to ALS approval and surcharges.

Date Required:

Approved By:

Email? [X] -Y NGriffith@REPSG.com

Fax? [ ] -Y No.: 215-729-1557

Sample Description/Location (as it will appear on the lab report)	COC Comments	Sample Date	Military Time	*G or C	**Matrix	Enter Number of Containers Per Analysis
1 CitgoSL-11-001		11-15-17	0945	G	GW	4
2						
3						
4						
5						
6						
7						
8						

***Container Type: VOA

***Container Size: 40ml

*** Preservative: HCl

ANALYSES/METHOD REQUESTED: VOC's including fuel oxygenates via 8260B

Receipt Information (completed by Sample Receipt)

Performed by: INITIAL HERE

Cooler Temp: 0°C

Therm. ID: 402

No. of Coolers: 1

Notes:

Circle appropriate Y or N.	Container in good condition?	COC/Labels complete/accurate?	Received on ice?	(If present) Seals intact?	Custody seals Present?
Correct containers? N	N	N	N	N	Y
Correct sample volume? N	N	N	N	N	Y
Correct preservation? N	N	N	N	N	Y
Headspace/Volatiles? Y	N	N	N	N	Y

SAMPLED BY (Please Print): Greg Heard

Project Comments:

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1 Natalie Griffith / REPSG	11/17/17	945	2 Chris Anderson	11/17/17	0945
3 Chris Anderson	11/17/17		4 [illegible]	11-17	1530
5 [illegible]	11-17	[illegible]	6 [illegible] ALS	11/17/17	2020
7			8		
9			10		

Data Deliverables: [ ] Standard [ ] CLP-like [ ] NJ-Reduced [ ] NJ-Full [ ] other

EDDs Required? [X] If yes, format type: EQUIS

SDWA Forms? yes [ ] yes [ ] yes [ ] yes [ ]

State Samples Collected in? MD [X] NJ [ ] NY [ ] PA [ ]

Other

DOD Criteria Required?

ALS FIELD SERVICES: [ ] Pickup [ ] Labor [ ] Composite Sampling [ ] Rental Equipment [ ] Other:

* G=Grab; C=Composite

**Matrix: Al=Air; DW=Drinking Water; GW=Groundwater; Oil=Oil; OL=Other Liquid; SL=Sludge; SO=Soil; WP=Wipe; WW=Wastewater

Copies: WHITE - ORIGINAL CANARY - CUSTOMER COPY

***Container Type: AG-Amber Glass; CG-Clear Glass, PL-Plastic. Container Size: 250ml, 500ml, 1L, 8oz., etc. Preservative: HCl, HNO3, NaOH, etc.

Rev 01-2013

ATTACHMENT 3: SYSTEM MONITORING WORKSHEETS

Date	*Time Onsite*	*Time Offsite*	*Personnel*	*HASP Reviewed*	*Unit Running on Arrival*	*Unit Running upon departure*	*Alarms Present*	*Which Alarms*	*LRP Filter PSI*	*Vacuum at Header*	*Vacuum after MS inline filter (VT-1)*	*LRP Motor "Hg*
7/6/2017	830		NJ, JA	-	N	Y	N	-	3	0.04	18.3	-18
7/11/2017	930	1250	JA, GSM	-	Y	Y	N	-	3	0.06	16.6	-19
7/18/2017	830		GAM	-	N	Y	Y	Low Temp	3	0.04	19.2	-18
7/24/2017	930	1200	SM, MK	-	Y	Y	N	-	2	0.04	17.7	-18
8/22/2017	1300			-	-	-	-	-	3	-	14.5	-16
8/25/2017	1000	1200	JA	-	Y	Y	N	-	4	0.14	15	-13.5
9/14/2017	1000		GSM,ND	-	Y	Y	N	-	4.5	0.5	7.5	-10
9/19/2017	1030		MK	-	Y	Y	N	-	2	0.45	16.3	-17
9/29/2017	910	1050	GSM,ND	-	Y	Y	N	-	2	0.5	16.1	-14

Date	*Pressure after LRP (PT-1)*	*Air Flow after LRP CFM*	*Temp. After LRP (TC-1) On screen*	*Totalizer to tank*	*Pre MS Reading*	*Post MS Reading*	*Vac. At Well # MW-005R*	*Falco T1*	*Falco T2*	*Falco T3*	*Pre Falco PPM*	*Post Falco PPM*	*LRP oil*
7/6/2017	0	13.9	155.6	9663	-20.5	-17.5	18.0	383	558	526	2,224	2.5	Good
7/11/2017	0	16.8	168.7	10831	-18.5	-15.5	16.0	404	536	513	1251	9.4	Good
7/18/2017	0	11.9	156.0	12364	-23.0	-17.0	-	371	535	504	-	-	Good
7/24/2017	0	14.1	184.4	13807	-19.0	-17.0	18.5	445	589	574	-	-	Good
8/22/2017	0	30.0	208.3	-	-18.0	-13.0	19.0	369	418	407	296	6.8	Good
8/25/2017	0	30.9	191.4	17541	-17.0	-14.0	16.0	369	415	406	-	-	Good
9/14/2017	0	92.0	191.2	17800	-8.0	-7.0	4.0	334.0	329.0	337.0	-	-	good
9/19/2017	0	47.2	160.0	17805	-18.0	-16.0	16.0	370.0	422.0	417.0	234.7	0.6	Good
9/29/2017	0	54.0	172.4	19800	-18.0	-15.5	15.5	370.0	418.0	409.0	-	-	good