UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
Science and Ecosystem Support Division
Field Services Branch
980 College Station Road
Athens, Georgia 30605-2720

December 20, 2016

4SESD-EIB

MEMORANDUM

SUBJECT: Grenada Manufacturing Vapor Intrusion Investigation (a.k.a. Rockwell International Wheel and Trim) – Final Report
Grenada, Mississippi
SESD Project No. 16-0547

FROM: Landon Pruitt, Environmental Engineer
Superfund and Air Section

THRU: Laura Ackerman, Chief
Superfund and Air Section

TO: Brian Bastek, Project Manager
RCRD Division, USEPA Region 4
61 Forsyth St. SW, Atlanta, GA 30303-8960

Attached is the final report for the vapor intrusion study conducted at the Grenada Manufacturing site in Grenada, MS. The investigation occurred during the week of September 1, 2016. If you have any questions or comments please contact me at pruitt.landon@epa.gov or 706-355-8620.

Attachment

Project ID: 16-0547

Grenada Manufacturing Vapor Intrusion Investigation (a.k.a. Rockwell International Wheel and Trim) – Final Report

Grenada, MS

Project Date: September 2016

Project Leader: Landon Pruitt
Superfund and Air Section
Field Services Branch
Science & Ecosystem Support Division
USEPA – Region 4
980 College Station Road
Athens, Georgia 30605-2720

Science & Ecosystem Support Division

Requestor:

Brian Bastek
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61 Forsyth St. SW
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Analytical Services Branch
SESD
980 College Station Rd
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Approvals:

SESD Project Leader:

Landon Pruitt
Superfund and Air Section
Field Services Branch

12/20/16
Date

Approving Official:

Laura Ackerman, Chief
Superfund and Air Section
Field Services Branch

12/21/16
Date

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1.0 Introduction

This document was prepared for the purpose of reporting the results of a vapor intrusion investigation conducted by the USEPA Science and Ecosystem Support Division (SESD) at the Grenada Manufacturing Site in Grenada, MS. The site is an active facility located at 635 Hwy 332, in Grenada, MS. The investigation was conducted in September 2016 and the samples were analyzed by the USEPA Analytical Services Branch (ASB).

A previous investigation performed at this site, 16-0323, detected elevated concentrations of benzene in the indoor air of (b) (6) in the Eastern Heights neighborhood. This sampling event is intended to repeat the sampling at that location and inform the Project Manager (PM) Brian Bastek, EPA Region 4, of a potential pathway of indoor air contaminants. The data generated by the investigation and represented in the subsequent sections will be evaluated by the EPA Region 4 PM. Air results will be compared to screening levels calculated by the contractor Arcadis. Decisions for future actions on the site will be made by the PM.

The following personnel participated in the investigation:

Name	Organization	Duties
Landon Pruitt	Reg. 4 EPA/SESD	Project Leader, Sampler, Sample Processing, Safety Officer
Don Fortson	Alion/ESAT	Sampler

2.0 Site Background

The manufacturing facility was constructed by Lyon in 1961 and sold to Rockwell International Corporation (Rockwell) in 1966. Rockwell's Automotive Division operated a wheel cover manufacturing facility at the site from 1966 to 1985 when the plant and property were sold to Textron Automotive Company (Textron), formerly Randall Textron. The Automotive Division was spun off from Rockwell in 1997 to form Meritor. In 1999, Textron sold the operations and property to Grenada Manufacturing, LLC (Grenada Manufacturing), who continued to operate the wheel cover plant until 2008 when portions of the plant and property were leased to ICE Industries, Inc. (ICE). Throughout most of the site history, the facility was used to manufacture automobile wheel covers. Following ICE's lease of the premises, the facility was converted to a stamping plant, providing stamp-formed parts for various industries.

Since 1989 EPA has been involved with the site and there have been a number of investigations and sampling events to discover and delineate a trichloroethene (TCE) contaminated groundwater plume and possible vapor intrusion and other air quality issues. There are several areas of concern that are potential sources for the contamination including several lagoons, an above ground storage tank (TCE), a below ground storage tank (toluene), an on-site landfill, and a waste water treatment plant.

3.0 Summary

Indoor air and a sub-slab soil gas samples were collected at the (b) (6) house as well as well as five surrounding ambient air samples during this investigation. All samples were analyzed for the VOCs represented in Table 2 at ASB lab in Athens, GA. Several VOCs were detected in the indoor air sample including benzene, the contaminant of concern for this investigation. Benzene, chloroform and tetrachloroethene (PCE) were detected at low levels in the soil gas sample below the home.

Several VOCs were also detected in the ambient air samples taken outside the home, with TCE being the major constituent. Benzene was also detected above screening levels in four out of five samples, with the two higher concentrations on either side of the home.

4.0 Results and Discussion

All sampling results can be seen in the lab analytical reports in Appendix C, and summarized in Figure 1 in Appendix A and Table 3 in Appendix B.

4.1 Indoor Air Sampling

Two indoor air samples (duplicate location) were collected at the same time and in the same location inside (b) (6). Several VOCs were detected in the indoor air sample with benzene, chloroform, ethyl benzene, and trichloroethene (TCE) being detected above screening levels. Benzene was detected at 47 ug/m^3 (and 48 ug/m^3 duplicate), while the other VOC detections indoors were very low.

4.2 Soil Gas Sampling

Two sub-slab soil gas samples (split location) were collected below the (b) (6) residence. Benzene, chloroform and tetrachloroethene (PCE) were detected at low levels in the soil gas sample.

4.3 Ambient Air Sampling

Five ambient air samples were collected during the 24 hour period in which the indoor sample was taken. Several VOCs were detected in the ambient air samples taken outside the home, with TCE being the major constituent. TCE was detected in all five ambient samples ranging from 1.5 to 3.4 ug/m^3. The highest detection was in the western most sample, decreasing as you move east and south across the neighborhood. Benzene was also detected above screening levels in four out of five samples, with the two higher concentrations on either side of the home.

Field Observations

Prior to and during the collection of ambient air samples, several rail car tankers carrying liquid petroleum product, were parked just north of the site and in between the site and

the neighborhood. These tankers, with DOT Placard 1075, have pressure release vents that can/will open whenever they are needed. There was a great deal of automobile traffic throughout the neighborhood and off of Hwy 332 near several of the ambient air sample locations. Diesel and gas combustion byproducts as well as the venting of the tank cars likely contributed to the samples, possibly causing minimum reporting limits (MRLs) to be elevated for some analyses.

Meteorological Data

SESD personnel set up and gathered data from a meteorological station in between the site and the neighborhood. The exact location of the meteorological station can be seen in Figure 1 in Appendix A. The raw data can be seen in Table 4 in Appendix B. For the first eight hours of the 24-hour sample collections, the wind blew mostly out of the northeast, then for the remaining 16 hours blew mostly out of the west. Below is a wind rose built from the data collected by the met station.

5.0 Field Quality Control

Analytical results associated with quality control samples are presented in Appendix B. Trip blank results can be seen in analytical results in Appendix C.

Air trip blanks were prepared by the ASB lab, transported in the sampling vehicles, and handled the same as each air sample. There were no detections above the MRLs in trip blanks.

A co-located duplicate indoor air sample as well as a sub-slab soil gas split sample were collected at station GM123. The same analytes were detected in the primary samples versus the duplicate samples except for one, vinyl chloride (VC) in the indoor air. The detected amount of VC was below the MRL for VC in this sample, and therefore an estimated number. Absolute values of relative percent difference (RPD) of the two samples were between 0.00 and 27.37 %. The majority of detections in the QC samples were estimated values (J-flagged) because of the low detection needs of the project. Among the non-estimated values, the RPD values were between 0.00 and 2.00%. The RPD values can be seen in Table 5 in Appendix B. RPDs were calculated using the following equation:

$$RPD = \frac{Split\ Sample\ Result - Primary\ Sample\ Result}{Average\ of\ Split\ and\ Primary\ Sample\ Results} * 100\%$$

When working with screening levels as low as requested for this project, estimated analytical result values and RPD values for splits and duplicates of this nature are common. The RPD values should not adversely affect the outcome of the project.

6.0 Methodology

A Quality Assurance Project Plan (QAPP) previously issued in August, 2016 for SESD Project No. 16-0457 was used to guide site activities. The following SESD procedures and guidance were cited in the QAPP and used in this study:

SESDPROC-303-R5	Ambient Air Sampling
SESDPROC-307-R3	Soil Gas Sampling
SESDPROC-110-R4	Global Positioning System
SESDPROC-005-R3	Sample and Evidence Management
SESDPROC-010-R5	Logbooks
SESDPROC-205-R3	Field Equipment Cleaning and Decontamination

The specific procedures and processes used are detailed in the subsequent sections. The samples were sent to the EPA Analytical Services Branch (ASB) for analysis.

SESD collected 24-hour ambient air samples using 6 liter passivated sampling canisters equipped with flow controlling devices for indoor air as well as ambient air samples. Ambient air samples were collected in and around the neighborhood as well as between the neighborhood and the site to assess possible migration of contamination in the outdoor air.

SESD used the permanent sampling port in the floor of (b) (6) previously installed by SESD and the EPA Environmental Response Team (ERT) during the May 2016 investigation to collect a sub-slab soil gas sample from the residence. SESD connected a short length of ¼ inch diameter Teflon® tubing to the port. The tubing was passed through a stainless steel shroud. The shroud was filled with helium while a small soil gas sample was collected into a Tedlar® bag for on-site sample analysis of helium content using a helium detector. The helium concentration in the Tedlar bag was less than ten percent of the helium concentration in the shroud, insuring integrity of the sampling port. SESD then connected the sampling tube through a flow device attached to a 6-liter passivated sampling canister. The canister was filled over a period of approximately 35-minutes.

Analysis of the samples was conducted by the SESD laboratory in accordance with *EPA Compendium Method TO-15, Determination Of Volatile Organic Compounds (VOCs) In Air Collected In Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS)*, January 1999. Laboratory QA/QC procedures were conducted in accordance with the guidelines incorporated in the analytical methods.

Meteorological Data

Wind direction and speed were pulled from a meteorological station set-up by SESD personnel during which any indoor or ambient air samples were being collected. The unit used was an RM Young Meteorological Station with 6700 Series Translator.

7.0 Conclusions

This project was performed in order to produce another round of data for indoor air and sub-slab sampling of the home address (b) (6) of the Eastern Heights neighborhood. Benzene detections were confirmed for the indoor air at this address at similar numbers as seen in the sampling event performed by SESD in May 2016. TCE detections were also encountered on this investigation from the ambient air as well as the indoor air. The detections of TCE started at 3.4 ug/m3 on the western side of the neighborhood and decreased to 1.5 ug/m3 on the eastern side after passing the homes. This suggests, with westerly winds from met data confirming, that the source of the TCE would be west of the neighborhood and subsequent ambient air locations.

8.0 References

1. Arcadis, DRAFT Report. *Summary of Residential Air Sapling Analytical Results, Grenada Manufacturing Facility, Grenada, MS.* September 2015.
2. EPA Region 4 SESD ASB. *SESD Analytical Support Branch Laboratory Operations and Quality Assurance Manual*, April 2016.
3. USEPA. *EPA Compendium Method TO-15, Determination Of Volatile Organic Compounds (VOCs) In Air Collected In Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS)*, January 1999.
4. EPA Region 4 SESD. *Field Branches Quality System and Technical Procedures (Latest Versions).* http://www.epa.gov/quality/quality-system-and-technical-procedures-sesd-field-branches/. Webpage last updated July 12, 2016.
5. USEPA. *Quality Assurance Project Plan for Grenada Manufacturing Ambient Air Sampling Event*. May, 2016, SESD Project # 16-0323
6. USEPA. Memorandum, *Grenada Manufacturing Site Vapor Intrusion Study Data for* (b) (6) [redacted], *Grenada, Mississippi.* June 28, 2016, SESD Project # 16-0323

Appendix A

Figures

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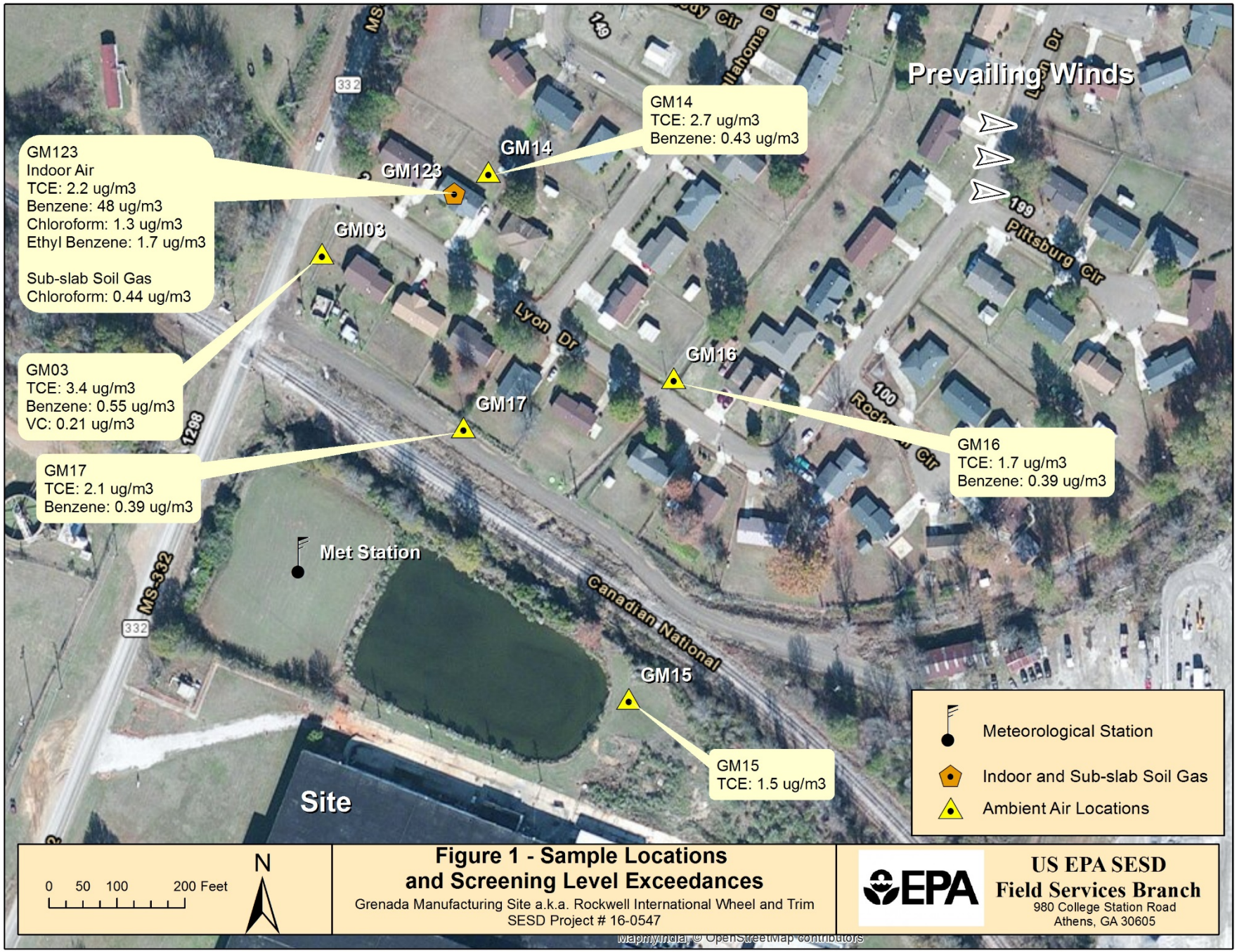
Prevailing Winds
GM14
TCE: 2.7 ug/m3
Benzene: 0.43 ug/m3
GM123
Indoor Air
TCE: 2.2 ug/m3
Benzene: 48 ug/m3
Chloroform: 1.3 ug/m3
Ethyl Benzene: 1.7 ug/m3
Sub-slab Soil Gas
Chloroform: 0.44 ug/m3
GM03
TCE: 3.4 ug/m3
Benzene: 0.55 ug/m3
VC: 0.21 ug/m3
GM17
TCE: 2.1 ug/m3
Benzene: 0.39 ug/m3
GM16
TCE: 1.7 ug/m3
Benzene: 0.39 ug/m3
GM15
TCE: 1.5 ug/m3
Met Station
Site
Lyon Dr
Pittsburg Cir
Canadian National
MS-332
Meteorological Station
Indoor and Sub-slab Soil Gas
Ambient Air Locations
0 50 100 200 Feet
N
Figure 1 - Sample Locations
and Screening Level Exceedances
Grenada Manufacturing Site a.k.a. Rockwell International Wheel and Trim
SESD Project # 16-0547
US EPA SESD
Field Services Branch
980 College Station Road
Athens, GA 30605
MapmyIndia, © OpenStreetMap contributors

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Appendix B

Tables

Table 1 – Station and Sample Information

TABLE 1 Sample Station Information			
Station ID	**Sample ID**	**Location/Address**	**Matrix**
GM03	GM03AA0916	West ambient air location	Ambient Air
GM14	GM14AA0916	North ambient air location	
GM15	GM15AA0916	Facility ambient air location	
GM16	GM16AA0916	East ambient air location	
GM17	GM17AA0916	South ambient air locations	
GM123	GM123SS0916	(b) (6)	Sub-Slab Soil Gas
	GM123IA0916		Indoor Air
	GM123SSD0916		Sub-Slab Soil Gas Split
	GM123IAD0916		Indoor Air Duplicate
#R4DART#	GMTBA0916	Trip Blank Air	Trip Blank Air

Table 2 – VOC Analyte List

Constituent	Indoor Air / Ambient Air Screening Levels (µg/m³)†	Air Minimum Detection Limit (MDLs)* (µg/m³)
Benzene	0.36	0.067
Chloroform	0.12	0.10
Dichloroethane, 1,2-	0.11	0.11
Dichloroethene, 1,1-	210	0.078
Dichloroethene, cis-1,2-	NL	0.083
Dichloroethene, trans-1,2-	NL	0.087
Ethylbenzene	1.1	0.092
Methylene chloride	100	0.077
Tetrachloroethene	11	0.14
Toluene	5200	0.08
Trichlorothane, 1,1,2-	0.18	0.12
Trichloroethene	0.48	0.11
Trimethylbenzene, 1,2,4-	7.3	0.11
Vinyl chloride	0.17	0.053
m-Xylenes	100	0.19
o-Xylenes	100	0.093
p-Xylenes	100	0.19
Xylenes	100	0.19

† USEPA VISL Calculator Version 3.4, June 2015 RSLs used to calculate target residential screening levels for indoor air, ambient air, sub-slab vapor and exterior soil gas concentrations based on the lower of either a target cancer risk of 1E-06 or a target hazard index of 1. Screening levels assume 26 year exposure duration, 350 days per year, 24 hours per day.
***** Detection limits are based on the analytical methods and instrumentation used by SESD Analytical Support Branch (ASB) and reported in

Table 3 –Air VOC Results

Station ID			GM123	GM123	GM123	GM123	GM03	GM14	GM15	GM16	GM17
Sample ID			GM123IA0916	GM123IAD0916	GM123SS0916	GM123SSS0916	GM03AA0916	GM14AA0916	GM15AA0916	GM16AA0916	GM17AA0916
Matrix			Indoor Air	Indoor Air	Soil Gas	Soil Gas	Ambient Air	Ambient Air	Ambient Air	Ambient Air	Ambient Air
Sample Date			9/21/2016 9:27	9/21/2016 9:27	9/21/2016 8:34	9/21/2016 8:34	9/21/2016 9:04	9/21/2016 9:32	9/21/2016 8:54	9/21/2016 9:35	9/21/2016 9:02
Analyte	**Units**	**VISL***									
(m- and/or p-)Xylene	ug/m3	100	2.4 J,O	2.5 J,O	< 3.8 U	< 3.8 U	0.91 J,O	0.72 J,O	< 4.4 U	0.52 J,O	0.51 J,O
1,2,4-Trimethylbenzene	ug/m3	7.3	0.41 J,O	0.54 J,O	< 2.2 U	< 2.1 U	0.51 J,O	0.38 J,O	0.28 J,O	0.28 J,O	0.27 J,O
Benzene	ug/m3	0.36	47	48	0.14 J,O	0.18 J,O	0.55 J,O	0.43 J,O	0.32 J,O	0.39 J,O	0.39 J,O
Chloroform	ug/m3	0.12	1.3 J,O	1.3 J,O	0.44 J,O	0.44 J,O	< 2.9 U	< 2.5 U	< 2.4 U	< 2.6 U	< 2.5 U
Ethyl Benzene	ug/m3	1.1	1.6 J,O	1.7 J,O	< 1.9 U	< 1.9 U	0.30 J,O	0.25 J,O	< 2.2 U	< 2.4 U	< 2.3 U
Tetrachloroethene (Tetrachloroethylene)	ug/m3	11	< 3.4 U	< 3.4 U	0.48 J,O	0.48 J,O	< 4.1 U	< 3.5 U	< 3.4 U	< 3.7 U	< 3.5 U
Toluene	ug/m3	5200	11	11	< 1.6 U	< 1.6 U	1.7 J,O	1.3 J,O	1.1 J,O	1.3 J,O	1.2 J,O
Trichloroethene (Trichloroethylene)	ug/m3	0.48	2.3 J,O	2.2 J,O	< 2.3 U	< 2.3 U	3.4	2.7 J,O	1.5 J,O	1.7 J,O	2.1 J,O
Vinyl chloride	ug/m3	0.17	0.14 J,O	< 1.3 U	< 1.1 U	< 1.1 U	0.21 J,O	< 1.3 U	< 1.3 U	< 1.4 U	< 1.3 U
cis-1,2-Dichloroethene	ug/m3	-	0.82 J,O	0.83 J,O	< 1.7 U	< 1.7 U	1.1 J,O	0.95 J,O	0.46 J,O	0.54 J,O	0.78 J,O
o-Xylene	ug/m3	100	0.88 J,O	0.89 J,O	< 1.9 U	< 1.9 U	0.42 J,O	0.29 J,O	< 2.2 U	0.24 J,O	0.26 J,O

* Vapor Intrusion Screening Level

(b) (6) Indoor and Sub-Slab Soil Gas Samples

Detection

Screening Level Exceedance

DEFINITIONS OF REGION 4 ANALYTICAL DATA QUALIFIERS

U	The analyte was not detected at or above the reporting limit.
J	The identification of the analyte is acceptable; the reported value is an estimate.
O	Other qualifiers have been assigned providing additional information. These explanatory qualifiers are included in the printable pdf report and in other columns in the export files.

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Table 4 – Metrological station raw data

R M YOUNG CO, Traverse City, MI							
6700 SERIES TRANSLATOR							
DATE	DATE	TIME	TIME	WS:AVG	WS:MAX	WD:AVG	WD:SDV
MONTH	DAY	HR	SQ HR	MPH	MPH	DEG	DEG
9.0	21.0	9.0	1.0	0.0	0.0	0.0	0.0
9.0	21.0	10.0	2.0	1.9	7.0	61.0	41.0
9.0	21.0	11.0	3.0	2.5	7.0	72.0	36.0
9.0	21.0	12.0	4.0	1.7	6.0	44.0	64.0
9.0	21.0	13.0	5.0	2.2	7.0	54.0	45.0
9.0	21.0	14.0	6.0	2.7	9.0	65.0	39.0
9.0	21.0	15.0	7.0	2.6	7.0	35.0	44.0
9.0	21.0	16.0	8.0	2.7	7.0	33.0	40.0
9.0	21.0	17.0	9.0	2.4	7.0	46.0	39.0
9.0	21.0	18.0	10.0	1.0	4.0	27.0	53.0
9.0	21.0	19.0	11.0	0.4	2.0	241.0	21.0
9.0	21.0	20.0	12.0	0.9	2.0	253.0	10.0
9.0	21.0	21.0	13.0	0.6	2.0	247.0	23.0
9.0	21.0	22.0	14.0	0.8	2.0	269.0	42.0
9.0	21.0	23.0	15.0	0.7	3.0	265.0	42.0
9.0	22.0	0.0	16.0	0.8	2.0	264.0	21.0
9.0	22.0	1.0	17.0	0.8	3.0	272.0	37.0
9.0	22.0	2.0	18.0	0.9	2.0	262.0	27.0
9.0	22.0	3.0	19.0	0.3	1.0	274.0	40.0
9.0	22.0	4.0	20.0	0.2	2.0	275.0	40.0
9.0	22.0	5.0	21.0	0.2	2.0	316.0	62.0
9.0	22.0	6.0	22.0	0.2	2.0	282.0	39.0
9.0	22.0	7.0	23.0	0.5	2.0	258.0	17.0
9.0	22.0	8.0	24.0	0.0	1.0	288.0	71.0
9.0	22.0	9.0	25.0	0.3	3.0	191.0	56.0

Table 5 – Co-Located Duplicate Indoor Air and Sub-slab Split Comparisons

Station ID			GM123	GM123		GM123	GM123	
Sample ID			GM123IA0916	GM123IAD0916		GM123SS0916	GM123SSS0916	
Matrix			Indoor Air	Indoor Air	RPD	Soil Gas	Soil Gas	RPD
Sample Date			9/21/2016 9:27	9/21/2016 9:27	(% diff)	9/21/2016 8:34	9/21/2016 8:34	(% diff)
Analyte	**Units**	**VISL***						
(m- and/or p-)Xylene	ug/m3	100	2.4	2.5	4.08%	< 3.8 U	< 3.8 U	-
1,2,4-Trimethylbenzene	ug/m3	7.3	0.41	0.54	27.37%	< 2.2 U	< 2.1 U	-
Benzene	ug/m3	0.36	47	48	2.11%	0.14	0.18	25.00%
Chloroform	ug/m3	0.12	1.3	1.3	0.00%	0.44	0.44	0.00%
Ethyl Benzene	ug/m3	1.1	1.6	1.7	6.06%	< 1.9 U	< 1.9 U	-
Tetrachloroethene (Tetrachloroethylene)	ug/m3	11	< 3.4 U	< 3.4 U	-	0.48	0.48	0.00%
Toluene	ug/m3	5200	11	11	0.00%	< 1.6 U	< 1.6 U	
Trichloroethene (Trichloroethylene)	ug/m3	0.48	2.3	2.2	-4.44%	< 2.3 U	< 2.3 U	-
Vinyl chloride	ug/m3	0.17	0.14	< 1.3 U	-	< 1.1 U	< 1.1 U	-
cis-1,2-Dichloroethene	ug/m3	-	0.82	0.83	1.21%	< 1.7 U	< 1.7 U	-
o-Xylene	ug/m3	100	0.88	0.89	1.13%	< 1.9 U	< 1.9 U	-
* Vapor Intrusion Screening Level								
Detection								
Screening Level Exceedance								

Appendix C

Attachments

(Each attachments are individually numbered)

FINAL Analytical Report – VOC Air (18 pages)
Field Sampling Logbook 1 of 1 (13 pages)
Air Chain of Custody – No. 09/22/16-0001 (1 pages)

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 16-0152
Project: 16-0547, Grenada Manufacturing - Reported by Sallie Hale

October 24, 2016

4SESD-ASB

MEMORANDUM

SUBJECT: FINAL Analytical Report
Project: 16-0547, Grenada Manufacturing
Resource Conservation and Recovery Act

FROM: Sallie Hale
OCS Analyst

THRU: Jeffrey Hendel, Chief
ASB Organic Chemistry Section

TO: Landon Pruitt

Attached are the final results for the analytical groups listed below. These analyses were performed in accordance with the Analytical Support Branch's (ASB) Laboratory Operations and Quality Assurance Manual (ASB LOQAM) found at www.epa.gov/region4/sesd/asbsop. Any unique project data quality objectives specified in writing by the data requestor have also been incorporated into the data unless otherwise noted in the Report Narrative. Chemistry data have been verified based on the ASB LOQAM specifications and have been qualified by this laboratory if the applicable quality control criteria were not met. Verification is defined in Section 5.2 of the ASB LOQAM. For a listing of specific data qualifiers and explanations, please refer to the Data Qualifier Definitions included in this report. The reported results are accurate within the limits of the method(s) and are representative only of the samples as received by the laboratory.

Analyses Included in this report:	Method Used:	Accreditations:
Volatile Organics (VOA)		
Volatile organic compounds	EPA TO-15 (Air)	ISO

Sample Disposal Policy

Because of the laboratory's limited space for long term sample storage, our policy is to dispose of samples on a periodic schedule. Please note that within 60 days of this memo, the original samples and all sample extracts and/or sample digestates will be disposed of in accordance with applicable regulations. The 60-day sample disposal policy does not apply to criminal samples which are held until the laboratory is notified by the criminal investigators that case development and litigation are complete.

These samples may be held in the laboratory's custody for a longer period of time if you have a special project need. If you wish for the laboratory to hold samples beyond the 60-day period, please contact our Sample Control Coordinator by e-mail at R4SampleCustody@epa.gov, and provide a reason for holding samples beyond 60 days

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 16-0152
Project: 16-0547, Grenada Manufacturing - Reported by Sallie Hale

SAMPLES INCLUDED IN THIS REPORT

Project: 16-0547, Grenada Manufacturing

Sample ID	Laboratory ID	Matrix	Date Collected	Date Received
GMTBA0916	E163904-01	Trip Blank Air	9/20/16 08:00	9/23/16 7:50
GM03AA0916	E163904-02	Ambient Air	9/21/16 09:04	9/23/16 7:50
GM123IA0916	E163904-03	Indoor Air	9/21/16 09:27	9/23/16 7:50
GM123IAD0916	E163904-04	Indoor Air	9/21/16 09:27	9/23/16 7:50
GM123SS0916	E163904-05	Soil Gas	9/21/16 08:34	9/23/16 7:50
GM123SSS0916	E163904-06	Soil Gas	9/21/16 08:34	9/23/16 7:50
GM14AA0916	E163904-07	Ambient Air	9/21/16 09:32	9/23/16 7:50
GM15AA0916	E163904-08	Ambient Air	9/21/16 08:54	9/23/16 7:50
GM16AA0916	E163904-09	Ambient Air	9/21/16 09:35	9/23/16 7:50
GM17AA0916	E163904-10	Ambient Air	9/21/16 09:02	9/23/16 7:50

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DATA QUALIFIER DEFINITIONS

U	The analyte was not detected at or above the reporting limit.
D-2	Due to Matrix Interference, the sample cannot be accurately quantified. The reported result is estimated.
J	The identification of the analyte is acceptable; the reported value is an estimate.
Q-2	Result greater than MDL but less than MRL.

ACRONYMS AND ABBREVIATIONS

CAS Chemical Abstracts Service

Note: Analytes with no known CAS identifiers have been assigned codes beginning with "E", the EPA ID as assigned by the EPA Substance Registry System (www.epa.gov/srs), or beginning with "R4-", a unique identifier assigned by the EPA Region 4 laboratory.

MDL Method Detection Limit - The minimum concentration of a substance (an analyte) that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero.

MRL Minimum Reporting Limit - Analyte concentration that corresponds to the lowest demonstrated level of acceptable quantitation. The MRL is sample-specific and accounts for preparation weights and volumes, dilutions, and moisture content of soil/sediments.

TIC Tentatively Identified Compound - An analyte identified based on a match with the instrument software's mass spectral library. A calibration standard has not been analyzed to confirm the compound's identification or the estimated concentration reported.

ACCREDITATIONS:

ISO The test, if analyzed after June 26, 2012, is accredited under the EPA Region 4 ASB's ISO/IEC 17025 accreditation issued by ANSI-ASQ National Accreditation Board/ACLASS. Refer to certificate and scope of accreditation AT-1691.

NR The EPA Region 4 Laboratory has not requested accreditation for this test.

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Volatile Organics

Project: 16-0547, Grenada Manufacturing

Sample ID: GMTBA0916 **Lab ID:** E163904-01

Station ID: **Matrix:** Trip Blank Air

Date Collected: 9/20/16 8:00

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
R4-7156	(m- and/or p-)Xylene	4.5	U	ug/m3	4.5	9/27/16 10:29	10/12/16 8:42	EPA TO-15
79-00-5	1,1,2-Trichloroethane	2.8	U	ug/m3	2.8	9/27/16 10:29	10/12/16 8:42	EPA TO-15
75-35-4	1,1-Dichloroethene (1,1-Dichloroethylene)	1.9	U	ug/m3	1.9	9/27/16 10:29	10/12/16 8:42	EPA TO-15
95-63-6	1,2,4-Trimethylbenzene	2.5	U	ug/m3	2.5	9/27/16 10:29	10/12/16 8:42	EPA TO-15
107-06-2	1,2-Dichloroethane	2.0	U	ug/m3	2.0	9/27/16 10:29	10/12/16 8:42	EPA TO-15
71-43-2	Benzene	1.6	U	ug/m3	1.6	9/27/16 10:29	10/12/16 8:42	EPA TO-15
67-66-3	Chloroform	2.4	U	ug/m3	2.4	9/27/16 10:29	10/12/16 8:42	EPA TO-15
156-59-2	cis-1,2-Dichloroethene	2.0	U	ug/m3	2.0	9/27/16 10:29	10/12/16 8:42	EPA TO-15
100-41-4	Ethyl Benzene	2.2	U	ug/m3	2.2	9/27/16 10:29	10/12/16 8:42	EPA TO-15
75-09-2	Methylene Chloride	1.7	U	ug/m3	1.7	9/27/16 10:29	10/12/16 8:42	EPA TO-15
95-47-6	o-Xylene	2.2	U	ug/m3	2.2	9/27/16 10:29	10/12/16 8:42	EPA TO-15
127-18-4	Tetrachloroethene (Tetrachloroethylene)	3.4	U	ug/m3	3.4	9/27/16 10:29	10/12/16 8:42	EPA TO-15
108-88-3	Toluene	1.9	U	ug/m3	1.9	9/27/16 10:29	10/12/16 8:42	EPA TO-15
156-60-5	trans-1,2-Dichloroethene	2.1	U	ug/m3	2.1	9/27/16 10:29	10/12/16 8:42	EPA TO-15
79-01-6	Trichloroethene (Trichloroethylene)	2.7	U	ug/m3	2.7	9/27/16 10:29	10/12/16 8:42	EPA TO-15
75-01-4	Vinyl chloride	1.3	U	ug/m3	1.3	9/27/16 10:29	10/12/16 8:42	EPA TO-15

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Volatile Organics

Project: 16-0547, Grenada Manufacturing

Sample ID: GM03AA0916 **Lab ID:** E163904-02
Station ID: GM03 **Matrix:** Ambient Air

Date Collected: 9/21/16 9:04

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
R4-7156	(m- and/or p-)Xylene	0.91	J, Q-2	ug/m3	5.3	9/27/16 10:29	10/12/16 9:33	EPA TO-15
79-00-5	1,1,2-Trichloroethane	3.3	U	ug/m3	3.3	9/27/16 10:29	10/12/16 9:33	EPA TO-15
75-35-4	1,1-Dichloroethene (1,1-Dichloroethylene)	2.2	U	ug/m3	2.2	9/27/16 10:29	10/12/16 9:33	EPA TO-15
95-63-6	1,2,4-Trimethylbenzene	0.51	J, Q-2	ug/m3	3.0	9/27/16 10:29	10/12/16 9:33	EPA TO-15
107-06-2	1,2-Dichloroethane	2.4	U	ug/m3	2.4	9/27/16 10:29	10/12/16 9:33	EPA TO-15
71-43-2	Benzene	0.55	J, Q-2	ug/m3	1.9	9/27/16 10:29	10/12/16 9:33	EPA TO-15
67-66-3	Chloroform	2.9	U	ug/m3	2.9	9/27/16 10:29	10/12/16 9:33	EPA TO-15
156-59-2	cis-1,2-Dichloroethene	1.1	J, Q-2	ug/m3	2.4	9/27/16 10:29	10/12/16 9:33	EPA TO-15
100-41-4	Ethyl Benzene	0.30	J, Q-2	ug/m3	2.6	9/27/16 10:29	10/12/16 9:33	EPA TO-15
75-09-2	Methylene Chloride	2.0	U	ug/m3	2.0	9/27/16 10:29	10/12/16 9:33	EPA TO-15
95-47-6	o-Xylene	0.42	J, Q-2	ug/m3	2.7	9/27/16 10:29	10/12/16 9:33	EPA TO-15
127-18-4	Tetrachloroethene (Tetrachloroethylene)	4.1	U	ug/m3	4.1	9/27/16 10:29	10/12/16 9:33	EPA TO-15
108-88-3	Toluene	1.7	J, Q-2	ug/m3	2.3	9/27/16 10:29	10/12/16 9:33	EPA TO-15
156-60-5	trans-1,2-Dichloroethene	2.5	U	ug/m3	2.5	9/27/16 10:29	10/12/16 9:33	EPA TO-15
79-01-6	Trichloroethene (Trichloroethylene)	3.4		ug/m3	3.2	9/27/16 10:29	10/12/16 9:33	EPA TO-15
75-01-4	Vinyl chloride	0.21	J, Q-2	ug/m3	1.5	9/27/16 10:29	10/12/16 9:33	EPA TO-15

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Volatile Organics

Project: 16-0547, Grenada Manufacturing

Sample ID: GM123IA0916 **Lab ID:** E163904-03
Station ID: GM123 **Matrix:** Indoor Air

Date Collected: 9/21/16 9:27

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
R4-7156	(m- and/or p-)Xylene	2.4	J, Q-2	ug/m3	4.4	9/27/16 10:29	10/12/16 14:25	EPA TO-15
79-00-5	1,1,2-Trichloroethane	2.8	U	ug/m3	2.8	9/27/16 10:29	10/12/16 14:25	EPA TO-15
75-35-4	1,1-Dichloroethene (1,1-Dichloroethylene)	1.9	U	ug/m3	1.9	9/27/16 10:29	10/12/16 14:25	EPA TO-15
95-63-6	1,2,4-Trimethylbenzene	0.41	J, D-2, Q-2	ug/m3	2.5	9/27/16 10:29	10/12/16 14:25	EPA TO-15
107-06-2	1,2-Dichloroethane	2.0	U	ug/m3	2.0	9/27/16 10:29	10/12/16 14:25	EPA TO-15
71-43-2	Benzene	47		ug/m3	1.6	9/27/16 10:29	10/12/16 14:25	EPA TO-15
67-66-3	Chloroform	1.3	J, Q-2	ug/m3	2.4	9/27/16 10:29	10/12/16 14:25	EPA TO-15
156-59-2	cis-1,2-Dichloroethene	0.82	J, Q-2	ug/m3	2.0	9/27/16 10:29	10/12/16 14:25	EPA TO-15
100-41-4	Ethyl Benzene	1.6	J, Q-2	ug/m3	2.2	9/27/16 10:29	10/12/16 14:25	EPA TO-15
75-09-2	Methylene Chloride	1.7	U	ug/m3	1.7	9/27/16 10:29	10/12/16 14:25	EPA TO-15
95-47-6	o-Xylene	0.88	J, Q-2	ug/m3	2.2	9/27/16 10:29	10/12/16 14:25	EPA TO-15
127-18-4	Tetrachloroethene (Tetrachloroethylene)	3.4	U	ug/m3	3.4	9/27/16 10:29	10/12/16 14:25	EPA TO-15
108-88-3	Toluene	11		ug/m3	1.9	9/27/16 10:29	10/12/16 14:25	EPA TO-15
156-60-5	trans-1,2-Dichloroethene	2.1	U	ug/m3	2.1	9/27/16 10:29	10/12/16 14:25	EPA TO-15
79-01-6	Trichloroethene (Trichloroethylene)	2.3	J, Q-2	ug/m3	2.7	9/27/16 10:29	10/12/16 14:25	EPA TO-15
75-01-4	Vinyl chloride	0.14	J, Q-2	ug/m3	1.3	9/27/16 10:29	10/12/16 14:25	EPA TO-15

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Volatile Organics

Project: 16-0547, Grenada Manufacturing

Sample ID: GM123IAD0916 **Lab ID:** E163904-04
Station ID: GM123 **Matrix:** Indoor Air

Date Collected: 9/21/16 9:27

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
R4-7156	(m- and/or p-)Xylene	2.5	J, Q-2	ug/m3	4.5	9/27/16 10:29	10/12/16 15:16	EPA TO-15
79-00-5	1,1,2-Trichloroethane	2.8	U	ug/m3	2.8	9/27/16 10:29	10/12/16 15:16	EPA TO-15
75-35-4	1,1-Dichloroethene (1,1-Dichloroethylene)	1.9	U	ug/m3	1.9	9/27/16 10:29	10/12/16 15:16	EPA TO-15
95-63-6	1,2,4-Trimethylbenzene	0.54	J, D-2, Q-2	ug/m3	2.5	9/27/16 10:29	10/12/16 15:16	EPA TO-15
107-06-2	1,2-Dichloroethane	2.0	U	ug/m3	2.0	9/27/16 10:29	10/12/16 15:16	EPA TO-15
71-43-2	Benzene	48		ug/m3	1.6	9/27/16 10:29	10/12/16 15:16	EPA TO-15
67-66-3	Chloroform	1.3	J, Q-2	ug/m3	2.4	9/27/16 10:29	10/12/16 15:16	EPA TO-15
156-59-2	cis-1,2-Dichloroethene	0.83	J, Q-2	ug/m3	2.0	9/27/16 10:29	10/12/16 15:16	EPA TO-15
100-41-4	Ethyl Benzene	1.7	J, Q-2	ug/m3	2.2	9/27/16 10:29	10/12/16 15:16	EPA TO-15
75-09-2	Methylene Chloride	1.7	U	ug/m3	1.7	9/27/16 10:29	10/12/16 15:16	EPA TO-15
95-47-6	o-Xylene	0.89	J, Q-2	ug/m3	2.2	9/27/16 10:29	10/12/16 15:16	EPA TO-15
127-18-4	Tetrachloroethene (Tetrachloroethylene)	3.4	U	ug/m3	3.4	9/27/16 10:29	10/12/16 15:16	EPA TO-15
108-88-3	Toluene	11		ug/m3	1.9	9/27/16 10:29	10/12/16 15:16	EPA TO-15
156-60-5	trans-1,2-Dichloroethene	2.1	U	ug/m3	2.1	9/27/16 10:29	10/12/16 15:16	EPA TO-15
79-01-6	Trichloroethene (Trichloroethylene)	2.2	J, Q-2	ug/m3	2.7	9/27/16 10:29	10/12/16 15:16	EPA TO-15
75-01-4	Vinyl chloride	1.3	U	ug/m3	1.3	9/27/16 10:29	10/12/16 15:16	EPA TO-15

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Project: 16-0547, Grenada Manufacturing - Reported by Sallie Hale

Volatile Organics

Project: 16-0547, Grenada Manufacturing

Sample ID: GM123SS0916 **Lab ID:** E163904-05
Station ID: GM123 **Matrix:** Soil Gas

Date Collected: 9/21/16 8:34

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
R4-7156	(m- and/or p-)Xylene	3.8	U	ug/m3	3.8	9/27/16 10:29	10/12/16 16:58	EPA TO-15
79-00-5	1,1,2-Trichloroethane	2.4	U	ug/m3	2.4	9/27/16 10:29	10/12/16 16:58	EPA TO-15
75-35-4	1,1-Dichloroethene (1,1-Dichloroethylene)	1.6	U	ug/m3	1.6	9/27/16 10:29	10/12/16 16:58	EPA TO-15
95-63-6	1,2,4-Trimethylbenzene	2.2	U	ug/m3	2.2	9/27/16 10:29	10/12/16 16:58	EPA TO-15
107-06-2	1,2-Dichloroethane	1.7	U	ug/m3	1.7	9/27/16 10:29	10/12/16 16:58	EPA TO-15
71-43-2	Benzene	0.14	J, Q-2	ug/m3	1.4	9/27/16 10:29	10/12/16 16:58	EPA TO-15
67-66-3	Chloroform	0.44	J, Q-2	ug/m3	2.1	9/27/16 10:29	10/12/16 16:58	EPA TO-15
156-59-2	cis-1,2-Dichloroethene	1.7	U	ug/m3	1.7	9/27/16 10:29	10/12/16 16:58	EPA TO-15
100-41-4	Ethyl Benzene	1.9	U	ug/m3	1.9	9/27/16 10:29	10/12/16 16:58	EPA TO-15
75-09-2	Methylene Chloride	1.4	U	ug/m3	1.4	9/27/16 10:29	10/12/16 16:58	EPA TO-15
95-47-6	o-Xylene	1.9	U	ug/m3	1.9	9/27/16 10:29	10/12/16 16:58	EPA TO-15
127-18-4	Tetrachloroethene (Tetrachloroethylene)	0.48	J, Q-2	ug/m3	2.9	9/27/16 10:29	10/12/16 16:58	EPA TO-15
108-88-3	Toluene	1.6	U	ug/m3	1.6	9/27/16 10:29	10/12/16 16:58	EPA TO-15
156-60-5	trans-1,2-Dichloroethene	1.8	U	ug/m3	1.8	9/27/16 10:29	10/12/16 16:58	EPA TO-15
79-01-6	Trichloroethene (Trichloroethylene)	2.3	U	ug/m3	2.3	9/27/16 10:29	10/12/16 16:58	EPA TO-15
75-01-4	Vinyl chloride	1.1	U	ug/m3	1.1	9/27/16 10:29	10/12/16 16:58	EPA TO-15

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Volatile Organics

Project: 16-0547, Grenada Manufacturing

Sample ID: GM123SSS0916 **Lab ID:** E163904-06
Station ID: GM123 **Matrix:** Soil Gas

Date Collected: 9/21/16 8:34

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
R4-7156	(m- and/or p-)Xylene	3.8	U	ug/m3	3.8	9/27/16 10:29	10/12/16 17:49	EPA TO-15
79-00-5	1,1,2-Trichloroethane	2.3	U	ug/m3	2.3	9/27/16 10:29	10/12/16 17:49	EPA TO-15
75-35-4	1,1-Dichloroethene (1,1-Dichloroethylene)	1.6	U	ug/m3	1.6	9/27/16 10:29	10/12/16 17:49	EPA TO-15
95-63-6	1,2,4-Trimethylbenzene	2.1	U	ug/m3	2.1	9/27/16 10:29	10/12/16 17:49	EPA TO-15
107-06-2	1,2-Dichloroethane	1.7	U	ug/m3	1.7	9/27/16 10:29	10/12/16 17:49	EPA TO-15
71-43-2	Benzene	0.18	J, Q-2	ug/m3	1.4	9/27/16 10:29	10/12/16 17:49	EPA TO-15
67-66-3	Chloroform	0.44	J, Q-2	ug/m3	2.0	9/27/16 10:29	10/12/16 17:49	EPA TO-15
156-59-2	cis-1,2-Dichloroethene	1.7	U	ug/m3	1.7	9/27/16 10:29	10/12/16 17:49	EPA TO-15
100-41-4	Ethyl Benzene	1.9	U	ug/m3	1.9	9/27/16 10:29	10/12/16 17:49	EPA TO-15
75-09-2	Methylene Chloride	1.4	U	ug/m3	1.4	9/27/16 10:29	10/12/16 17:49	EPA TO-15
95-47-6	o-Xylene	1.9	U	ug/m3	1.9	9/27/16 10:29	10/12/16 17:49	EPA TO-15
127-18-4	Tetrachloroethene (Tetrachloroethylene)	0.48	J, Q-2	ug/m3	2.9	9/27/16 10:29	10/12/16 17:49	EPA TO-15
108-88-3	Toluene	1.6	U	ug/m3	1.6	9/27/16 10:29	10/12/16 17:49	EPA TO-15
156-60-5	trans-1,2-Dichloroethene	1.8	U	ug/m3	1.8	9/27/16 10:29	10/12/16 17:49	EPA TO-15
79-01-6	Trichloroethene (Trichloroethylene)	2.3	U	ug/m3	2.3	9/27/16 10:29	10/12/16 17:49	EPA TO-15
75-01-4	Vinyl chloride	1.1	U	ug/m3	1.1	9/27/16 10:29	10/12/16 17:49	EPA TO-15

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Project: 16-0547, Grenada Manufacturing - Reported by Sallie Hale

Volatile Organics

Project: 16-0547, Grenada Manufacturing

Sample ID: GM14AA0916 **Lab ID:** E163904-07
Station ID: GM14 **Matrix:** Ambient Air

Date Collected: 9/21/16 9:32

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
R4-7156	(m- and/or p-)Xylene	0.72	J, Q-2	ug/m3	4.6	9/27/16 10:29	10/12/16 18:39	EPA TO-15
79-00-5	1,1,2-Trichloroethane	2.9	U	ug/m3	2.9	9/27/16 10:29	10/12/16 18:39	EPA TO-15
75-35-4	1,1-Dichloroethene (1,1-Dichloroethylene)	2.0	U	ug/m3	2.0	9/27/16 10:29	10/12/16 18:39	EPA TO-15
95-63-6	1,2,4-Trimethylbenzene	0.38	J, Q-2	ug/m3	2.6	9/27/16 10:29	10/12/16 18:39	EPA TO-15
107-06-2	1,2-Dichloroethane	2.1	U	ug/m3	2.1	9/27/16 10:29	10/12/16 18:39	EPA TO-15
71-43-2	Benzene	0.43	J, Q-2	ug/m3	1.7	9/27/16 10:29	10/12/16 18:39	EPA TO-15
67-66-3	Chloroform	2.5	U	ug/m3	2.5	9/27/16 10:29	10/12/16 18:39	EPA TO-15
156-59-2	cis-1,2-Dichloroethene	0.95	J, Q-2	ug/m3	2.1	9/27/16 10:29	10/12/16 18:39	EPA TO-15
100-41-4	Ethyl Benzene	0.25	J, Q-2	ug/m3	2.3	9/27/16 10:29	10/12/16 18:39	EPA TO-15
75-09-2	Methylene Chloride	1.7	U	ug/m3	1.7	9/27/16 10:29	10/12/16 18:39	EPA TO-15
95-47-6	o-Xylene	0.29	J, Q-2	ug/m3	2.3	9/27/16 10:29	10/12/16 18:39	EPA TO-15
127-18-4	Tetrachloroethene (Tetrachloroethylene)	3.5	U	ug/m3	3.5	9/27/16 10:29	10/12/16 18:39	EPA TO-15
108-88-3	Toluene	1.3	J, Q-2	ug/m3	2.0	9/27/16 10:29	10/12/16 18:39	EPA TO-15
156-60-5	trans-1,2-Dichloroethene	2.2	U	ug/m3	2.2	9/27/16 10:29	10/12/16 18:39	EPA TO-15
79-01-6	Trichloroethene (Trichloroethylene)	2.7	J, Q-2	ug/m3	2.8	9/27/16 10:29	10/12/16 18:39	EPA TO-15
75-01-4	Vinyl chloride	1.3	U	ug/m3	1.3	9/27/16 10:29	10/12/16 18:39	EPA TO-15

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 16-0152
Project: 16-0547, Grenada Manufacturing - Reported by Sallie Hale

Volatile Organics

Project: 16-0547, Grenada Manufacturing

Sample ID: GM15AA0916 **Lab ID:** E163904-08
Station ID: GM15 **Matrix:** Ambient Air

Date Collected: 9/21/16 8:54

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
R4-7156	(m- and/or p-)Xylene	4.4	U	ug/m3	4.4	9/27/16 10:29	10/12/16 19:30	EPA TO-15
79-00-5	1,1,2-Trichloroethane	2.8	U	ug/m3	2.8	9/27/16 10:29	10/12/16 19:30	EPA TO-15
75-35-4	1,1-Dichloroethene (1,1-Dichloroethylene)	1.9	U	ug/m3	1.9	9/27/16 10:29	10/12/16 19:30	EPA TO-15
95-63-6	1,2,4-Trimethylbenzene	0.28	J, Q-2	ug/m3	2.5	9/27/16 10:29	10/12/16 19:30	EPA TO-15
107-06-2	1,2-Dichloroethane	2.0	U	ug/m3	2.0	9/27/16 10:29	10/12/16 19:30	EPA TO-15
71-43-2	Benzene	0.32	J, Q-2	ug/m3	1.6	9/27/16 10:29	10/12/16 19:30	EPA TO-15
67-66-3	Chloroform	2.4	U	ug/m3	2.4	9/27/16 10:29	10/12/16 19:30	EPA TO-15
156-59-2	cis-1,2-Dichloroethene	0.46	J, Q-2	ug/m3	2.0	9/27/16 10:29	10/12/16 19:30	EPA TO-15
100-41-4	Ethyl Benzene	2.2	U	ug/m3	2.2	9/27/16 10:29	10/12/16 19:30	EPA TO-15
75-09-2	Methylene Chloride	1.7	U	ug/m3	1.7	9/27/16 10:29	10/12/16 19:30	EPA TO-15
95-47-6	o-Xylene	2.2	U	ug/m3	2.2	9/27/16 10:29	10/12/16 19:30	EPA TO-15
127-18-4	Tetrachloroethene (Tetrachloroethylene)	3.4	U	ug/m3	3.4	9/27/16 10:29	10/12/16 19:30	EPA TO-15
108-88-3	Toluene	1.1	J, Q-2	ug/m3	1.9	9/27/16 10:29	10/12/16 19:30	EPA TO-15
156-60-5	trans-1,2-Dichloroethene	2.1	U	ug/m3	2.1	9/27/16 10:29	10/12/16 19:30	EPA TO-15
79-01-6	Trichloroethene (Trichloroethylene)	1.5	J, Q-2	ug/m3	2.7	9/27/16 10:29	10/12/16 19:30	EPA TO-15
75-01-4	Vinyl chloride	1.3	U	ug/m3	1.3	9/27/16 10:29	10/12/16 19:30	EPA TO-15

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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D.A.R.T. Id: 16-0152
Project: 16-0547, Grenada Manufacturing - Reported by Sallie Hale

Volatile Organics

Project: 16-0547, Grenada Manufacturing

Sample ID: GM16AA0916 **Lab ID:** E163904-09
Station ID: GM16 **Matrix:** Ambient Air

Date Collected: 9/21/16 9:35

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
R4-7156	(m- and/or p-)Xylene	0.52	J, Q-2	ug/m3	4.9	9/27/16 10:29	10/12/16 20:21	EPA TO-15
79-00-5	1,1,2-Trichloroethane	3.0	U	ug/m3	3.0	9/27/16 10:29	10/12/16 20:21	EPA TO-15
75-35-4	1,1-Dichloroethene (1,1-Dichloroethylene)	2.1	U	ug/m3	2.1	9/27/16 10:29	10/12/16 20:21	EPA TO-15
95-63-6	1,2,4-Trimethylbenzene	0.28	J, Q-2	ug/m3	2.8	9/27/16 10:29	10/12/16 20:21	EPA TO-15
107-06-2	1,2-Dichloroethane	2.2	U	ug/m3	2.2	9/27/16 10:29	10/12/16 20:21	EPA TO-15
71-43-2	Benzene	0.39	J, Q-2	ug/m3	1.8	9/27/16 10:29	10/12/16 20:21	EPA TO-15
67-66-3	Chloroform	2.6	U	ug/m3	2.6	9/27/16 10:29	10/12/16 20:21	EPA TO-15
156-59-2	cis-1,2-Dichloroethene	0.54	J, Q-2	ug/m3	2.2	9/27/16 10:29	10/12/16 20:21	EPA TO-15
100-41-4	Ethyl Benzene	2.4	U	ug/m3	2.4	9/27/16 10:29	10/12/16 20:21	EPA TO-15
75-09-2	Methylene Chloride	1.8	U	ug/m3	1.8	9/27/16 10:29	10/12/16 20:21	EPA TO-15
95-47-6	o-Xylene	0.24	J, Q-2	ug/m3	2.4	9/27/16 10:29	10/12/16 20:21	EPA TO-15
127-18-4	Tetrachloroethene (Tetrachloroethylene)	3.7	U	ug/m3	3.7	9/27/16 10:29	10/12/16 20:21	EPA TO-15
108-88-3	Toluene	1.3	J, Q-2	ug/m3	2.1	9/27/16 10:29	10/12/16 20:21	EPA TO-15
156-60-5	trans-1,2-Dichloroethene	2.3	U	ug/m3	2.3	9/27/16 10:29	10/12/16 20:21	EPA TO-15
79-01-6	Trichloroethene (Trichloroethylene)	1.7	J, Q-2	ug/m3	3.0	9/27/16 10:29	10/12/16 20:21	EPA TO-15
75-01-4	Vinyl chloride	1.4	U	ug/m3	1.4	9/27/16 10:29	10/12/16 20:21	EPA TO-15

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 16-0152
Project: 16-0547, Grenada Manufacturing - Reported by Sallie Hale

Volatile Organics

Project: 16-0547, Grenada Manufacturing

Sample ID: GM17AA0916 **Lab ID:** E163904-10
Station ID: GM17 **Matrix:** Ambient Air

Date Collected: 9/21/16 9:02

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
R4-7156	(m- and/or p-)Xylene	0.51	J, Q-2	ug/m3	4.6	9/27/16 10:29	10/12/16 21:11	EPA TO-15
79-00-5	1,1,2-Trichloroethane	2.9	U	ug/m3	2.9	9/27/16 10:29	10/12/16 21:11	EPA TO-15
75-35-4	1,1-Dichloroethene (1,1-Dichloroethylene)	1.9	U	ug/m3	1.9	9/27/16 10:29	10/12/16 21:11	EPA TO-15
95-63-6	1,2,4-Trimethylbenzene	0.27	J, Q-2	ug/m3	2.6	9/27/16 10:29	10/12/16 21:11	EPA TO-15
107-06-2	1,2-Dichloroethane	2.1	U	ug/m3	2.1	9/27/16 10:29	10/12/16 21:11	EPA TO-15
71-43-2	Benzene	0.39	J, Q-2	ug/m3	1.7	9/27/16 10:29	10/12/16 21:11	EPA TO-15
67-66-3	Chloroform	2.5	U	ug/m3	2.5	9/27/16 10:29	10/12/16 21:11	EPA TO-15
156-59-2	cis-1,2-Dichloroethene	0.78	J, Q-2	ug/m3	2.1	9/27/16 10:29	10/12/16 21:11	EPA TO-15
100-41-4	Ethyl Benzene	2.3	U	ug/m3	2.3	9/27/16 10:29	10/12/16 21:11	EPA TO-15
75-09-2	Methylene Chloride	1.7	U	ug/m3	1.7	9/27/16 10:29	10/12/16 21:11	EPA TO-15
95-47-6	o-Xylene	0.26	J, Q-2	ug/m3	2.3	9/27/16 10:29	10/12/16 21:11	EPA TO-15
127-18-4	Tetrachloroethene (Tetrachloroethylene)	3.5	U	ug/m3	3.5	9/27/16 10:29	10/12/16 21:11	EPA TO-15
108-88-3	Toluene	1.2	J, Q-2	ug/m3	2.0	9/27/16 10:29	10/12/16 21:11	EPA TO-15
156-60-5	trans-1,2-Dichloroethene	2.2	U	ug/m3	2.2	9/27/16 10:29	10/12/16 21:11	EPA TO-15
79-01-6	Trichloroethene (Trichloroethylene)	2.1	J, Q-2	ug/m3	2.8	9/27/16 10:29	10/12/16 21:11	EPA TO-15
75-01-4	Vinyl chloride	1.3	U	ug/m3	1.3	9/27/16 10:29	10/12/16 21:11	EPA TO-15

Volatile Organics (VOA) - Quality Control

US-EPA, Region 4, SESD

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1609089 - V TO-15 Air Canister										
Blank (1609089-BLK1)				Prepared: 09/27/16 Analyzed: 10/12/16						
EPA TO-15										
(m- and/or p-)Xylene	U	1.9	ug/m3							U
1,1,2-Trichloroethane	U	1.2	"							U
1,1-Dichloroethene (1,1-Dichloroethylene)	U	0.78	"							U
1,2,4-Trimethylbenzene	U	1.0	"							U
1,2-Dichloroethane	U	0.83	"							U
Benzene	U	0.67	"							U
Chloroform	U	1.0	"							U
cis-1,2-Dichloroethene	U	0.83	"							U
Ethyl Benzene	U	0.92	"							U
Methylene Chloride	U	0.70	"							U
o-Xylene	U	0.93	"							U
Tetrachloroethene (Tetrachloroethylene)	U	1.4	"							U
Toluene	U	0.80	"							U
trans-1,2-Dichloroethene	U	0.87	"							U
Trichloroethene (Trichloroethylene)	U	1.1	"							U
Vinyl chloride	U	0.53	"							U
LCS (1609089-BS1)				Prepared: 09/27/16 Analyzed: 10/12/16						
EPA TO-15										
(m- and/or p-)Xylene	4.3673		ppbv	4.3180		101	72-140			
1,1,2-Trichloroethane	1.8746		"	2.1590		86.8	71-142			
1,1-Dichloroethene (1,1-Dichloroethylene)	2.1311		"	2.1590		98.7	70-140			
1,2,4-Trimethylbenzene	2.3466		"	2.1590		109	66-136			
1,2-Dichloroethane	1.7809		"	2.1590		82.5	71-137			
Benzene	1.8746		"	2.1590		86.8	70-140			
Chloroform	1.7701		"	2.1590		82.0	70-141			
cis-1,2-Dichloroethene	2.2989		"	2.1590		106	70-136			
Ethyl Benzene	2.1733		"	2.1590		101	70-137			
Methylene Chloride	1.8845		"	2.1590		87.3	70-142			
o-Xylene	2.2499		"	2.1590		104	72-136			
Tetrachloroethene (Tetrachloroethylene)	2.0468		"	2.1590		94.8	68-148			
Toluene	2.0747		"	2.1590		96.1	72-138			
trans-1,2-Dichloroethene	1.8837		"	2.1394		88.0	73-136			
Trichloroethene (Trichloroethylene)	1.9953		"	2.1590		92.4	69-137			
Vinyl chloride	2.1263		"	2.3552		90.3	62-151			

Volatile Organics (VOA) - Quality Control

US-EPA, Region 4, SESD

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1609089 - V TO-15 Air Canister										
LCS Dup (1609089-BSD1)				Prepared: 09/27/16 Analyzed: 10/12/16						
EPA TO-15										
(m- and/or p-)Xylene	4.4504		ppbv	4.3180		103	72-140	1.88	25	
1,1,2-Trichloroethane	1.8564		"	2.1590		86.0	71-142	0.975	25	
1,1-Dichloroethene (1,1-Dichloroethylene)	2.1975		"	2.1590		102	70-140	3.07	25	
1,2,4-Trimethylbenzene	2.3411		"	2.1590		108	66-136	0.236	25	
1,2-Dichloroethane	1.8024		"	2.1590		83.5	71-137	1.20	25	
Benzene	1.8842		"	2.1590		87.3	70-140	0.514	25	
Chloroform	1.7862		"	2.1590		82.7	70-141	0.905	25	
cis-1,2-Dichloroethene	2.3304		"	2.1590		108	70-136	1.36	25	
Ethyl Benzene	2.1991		"	2.1590		102	70-137	1.18	25	
Methylene Chloride	1.9900		"	2.1590		92.2	70-142	5.45	25	
o-Xylene	2.2642		"	2.1590		105	72-136	0.631	25	
Tetrachloroethene (Tetrachloroethylene)	1.9782		"	2.1590		91.6	68-148	3.41	25	
Toluene	2.0707		"	2.1590		95.9	72-138	0.197	25	
trans-1,2-Dichloroethene	1.9478		"	2.1394		91.0	73-136	3.35	25	
Trichloroethene (Trichloroethylene)	1.9848		"	2.1590		91.9	69-137	0.528	25	
Vinyl chloride	2.1008		"	2.3552		89.2	62-151	1.20	25	
Duplicate (1609089-DUP1)		**Source: E163904-04**		Prepared: 09/27/16 Analyzed: 10/12/16						
EPA TO-15										
(m- and/or p-)Xylene	2.5483	4.5	ug/m3		2.4868			2.44	20	Q-2, J
1,1,2-Trichloroethane	U	2.8	"		U				20	U
1,1-Dichloroethene (1,1-Dichloroethylene)	U	1.9	"		U				20	U
1,2,4-Trimethylbenzene	0.54414	2.5	"		0.54402			0.0218	20	D-2, Q-2, J
1,2-Dichloroethane	U	2.0	"		U				20	U
Benzene	46.509	1.6	"		47.570			2.26	20	
Chloroform	1.2408	2.4	"		1.2720			2.48	20	Q-2, J
cis-1,2-Dichloroethene	0.82791	2.0	"		0.82925			0.161	20	Q-2, J
Ethyl Benzene	1.6446	2.2	"		1.6619			1.04	20	Q-2, J
Methylene Chloride	U	1.7	"		U				20	U
o-Xylene	0.90957	2.2	"		0.88582			2.65	20	Q-2, J
Tetrachloroethene (Tetrachloroethylene)	U	3.4	"		U				18.2	U
Toluene	11.210	1.9	"		11.136			0.666	20	
trans-1,2-Dichloroethene	U	2.1	"		U				20	U
Trichloroethene (Trichloroethylene)	2.2530	2.7	"		2.2338			0.854	20	Q-2, J
Vinyl chloride	0.14011	1.3	"		U				20	Q-2, J

Volatile Organics (VOA) - Quality Control

US-EPA, Region 4, SESD

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1609089 - V TO-15 Air Canister										
MRL Verification (1609089-PS1)				Prepared: 09/27/16 Analyzed: 10/12/16						
EPA TO-15										
(m- and/or p-)Xylene	0.46639		ppbv	0.43152		108	52-160			MRL-5
1,1,2-Trichloroethane	0.25657		"	0.21576		119	51-162			MRL-5
1,1-Dichloroethene (1,1-Dichloroethylene)	0.32390		"	0.21576		150	50-160			MRL-5
1,2,4-Trimethylbenzene	0.22126		"	0.21576		103	46-156			MRL-5
1,2-Dichloroethane	0.27384		"	0.21576		127	51-157			MRL-5
Benzene	0.28467		"	0.21576		132	50-160			MRL-5
Chloroform	0.28640		"	0.21576		133	50-161			MRL-5
cis-1,2-Dichloroethene	0.33114		"	0.21576		153	50-156			MRL-5
Ethyl Benzene	0.24299		"	0.21576		113	50-157			MRL-5
Methylene Chloride	0.32766		"	0.21576		152	50-162			MRL-5
o-Xylene	0.23150		"	0.21576		107	52-156			MRL-5
Tetrachloroethene (Tetrachloroethylene)	0.28745		"	0.21576		133	48-168			MRL-5
Toluene	0.25086		"	0.21576		116	52-158			MRL-5
trans-1,2-Dichloroethene	0.28822		"	0.19947		144	53-156			MRL-5
Trichloroethene (Trichloroethylene)	0.30588		"	0.21576		142	49-157			MRL-5
Vinyl chloride	0.34568		"	0.23537		147	42-171			MRL-5

Notes and Definitions for QC Samples

U	The analyte was not detected at or above the reporting limit.
D-2	Due to Matrix Interference, the sample cannot be accurately quantified. The reported result is estimated.
J	The identification of the analyte is acceptable; the reported value is an estimate.
MRL-5	MRL verification for Air matrix
Q-2	Result greater than MDL but less than MRL.

United States Environmental Protection Agency
Region 4
Science and Ecosystem Support Division
980 College Station Road
Athens, Georgia 30605-2720

PROJECT NAME: Grenada Manufacturing Air Study
PROJECT LOCATION: Grenada, Grenada County, MS
PROJECT ID NUMBER: 16-0547
PROJECT LEADER: Landon Pruitt

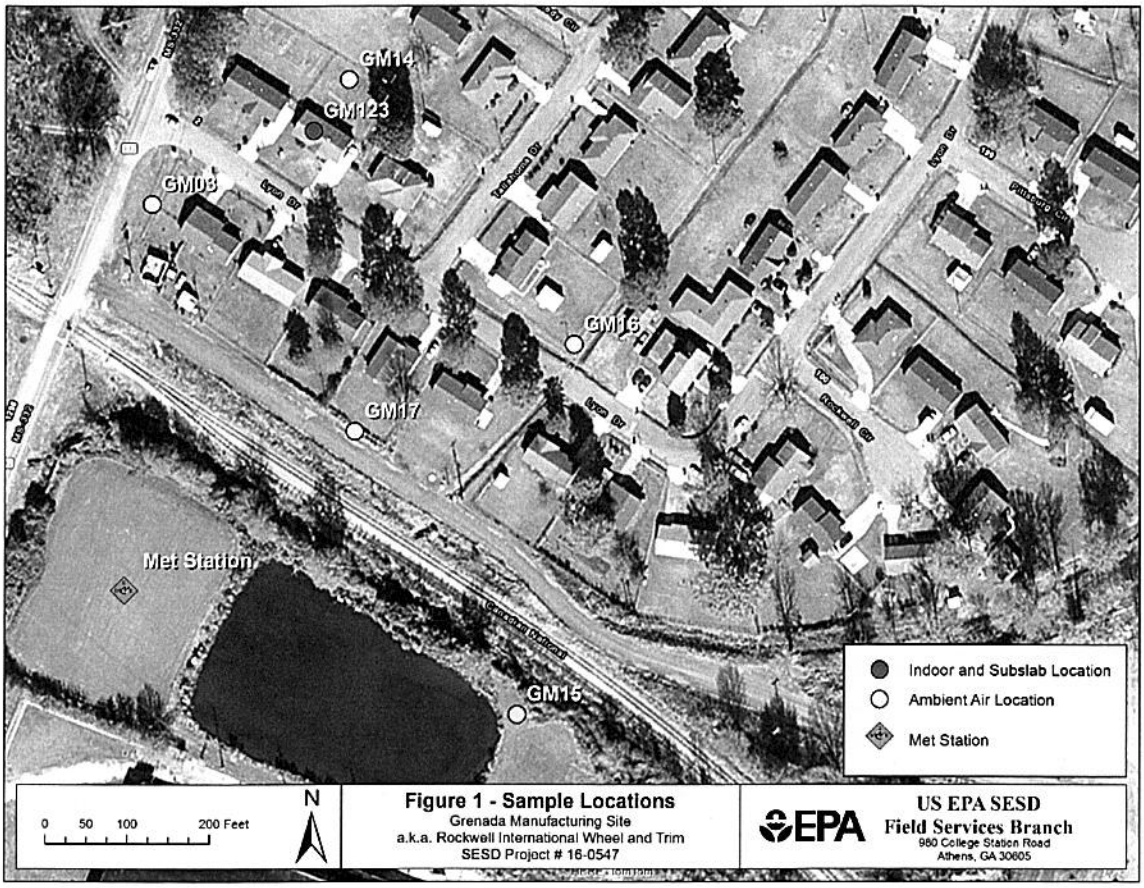
Air Sampling Logbook

Book 1 **of** 1
Inclusive Dates: 9/20/16 - 9/22/16

List of personnel in logbook:

Name	Initials	Duties
Landon Pruitt	LP	Sampler, Team Leader
Don Fortson	DF	Sampler

Team Leader (Initials) LP Date 12/20/16



Excerpt from 16-0323 Logbook for sample station GM123, (b) (6) residential sampling locations map:

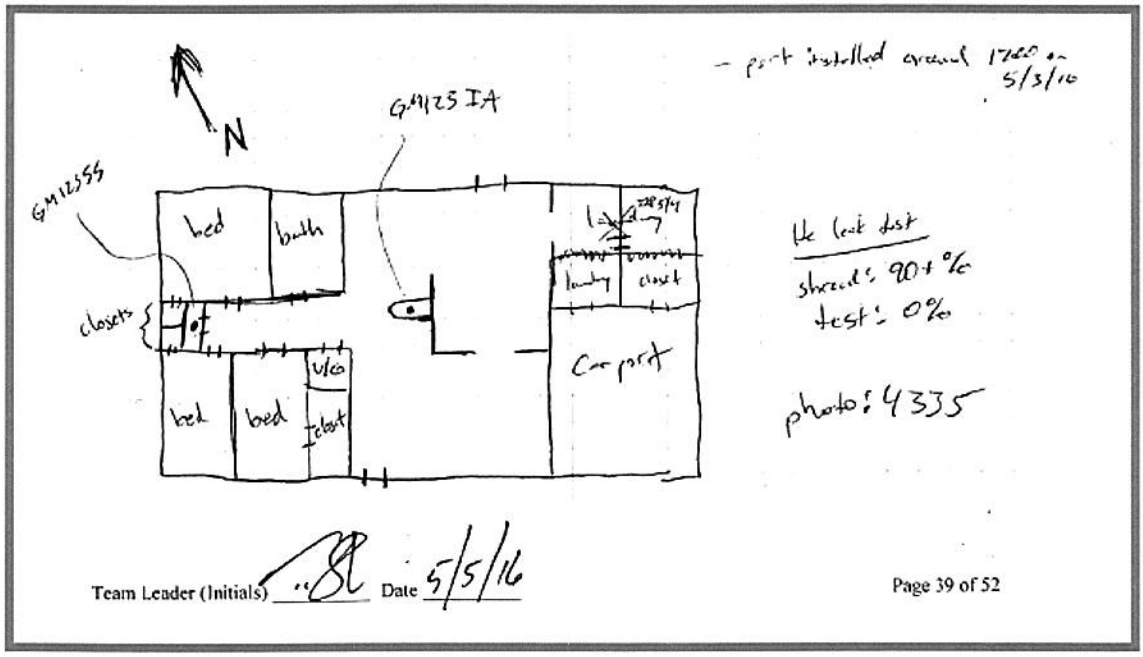


TABLE 1 Sample Station Information

Station ID	Sample ID	Location/Address	Latitude*	Longitude*	Matrix
GM03	GM01AA0916	West ambient air location	33.80583513	-89.80123448	Ambient Air
GM14	GM11AA0916	North ambient air location			
GM15	GM12AA0916	Facility ambient air location			
GM16	GM13AA0916	East ambient air location			
GM17	GM17AA0916	South ambient air locations			
GM123	GM123SS0916	(b) (6)	33.80607618	-89.80064464	Sub-Slab Soil Gas
	GM123IA0916				Indoor Air
	GM123SSD0916		duplicate sample locations		Sub-Slab Soil Gas
	GM123IAD0916				Indoor Air
#R4DART#	GMTBA0916		-	-	Trip Blank Air

* Latitudes and Longitudes for indoor air and sub-slab soil gas samples are recorded for the center of the house, the samples may not be taken directly at that spot. Field collections of GPS coordinates for new sample locations were electronically logged only and taken with the following equipment: Trimble GPS Unit, Serial # 5344436912 SESD Instrument # A77111 to an accuracy of — feet / inches.

General Sampling Methods:

Ambient Air samples will be collected using 6L Summa Canisters with a 24 hour flow controller following EPA Method TO-15 for Volatile Organics collection.

Indoor Air samples will be collected using 6L Summa Canisters with a 24 hour flow controller following EPA Method TO-15 for Volatile Organics collection. Prior to collection, EPA will attempt a "cleanout" of the chemicals in the house that might contribute to analyte detections.

Sub-Slab Soil Gas samples will be collected by connecting a 6L Summa Canister with a critical orifice soil gas controller via Teflon tubing to a permanent sampling port previously installed by EPA. The sampling techniques will following SESD Soil Gas Sampling SOP SESDPROC-307-R3. Prior to sample collection, a helium leak check will be performed on the sub-slab port by placing a shroud over the hole, filling the shroud up to ~100% He, immediately filling a Tedlar bag from the sample port using a lung box, and testing the Tedlar sample for He leaks. Any detection above 10% will be considered a leak in the system.

VOC Air Trip Blank
Station ID: #R4DART#
Sample ID: GMTBA0916
Sample Time: 0800
Sample Date: 9/20/16
Collected by: L. Pruitt
CANISTER: 3939
Notes: —

Meteorological Station Set-up
Model Used: RM Young
Start Date and Time: 9/21/16 08:51
End Date and Time: 9/22/16 09:00
Location: See map p.2
Data Saved Location: On unit

Notes: —

Team Leader (Initials) ZP Date 12/10/16

Station I.D. GM15 Sample I.D. GM15AA0916 Date. 9/20/16
<Station ID><media code><Date >

GPS Location

Street Address Facility ambient air location

Site Description see map on pg 2

Type of sample: (Ambient Air Sample) Indoor Air Sample Soil Gas Sample

Sampling Depth Orifice or Flow Controller # FC 32

Canister # 3927

Name of Person Collecting Sample LANDON Pruitt

			Can Pressure Gauge
Start Date 9/21/16	Start Time 08:54	Initial -30 in Hg	
Stop Date 9/22/16	Stop Time 09:29	Final -5 in Hg	

Notes: (other measurements)

Other Notes/Sketch (Include North and Scale)

See map on pg 2.

Team Leader (Initials) A Date 12/10/16

Station I.D. GM17 Sample I.D. GM17AA0916 Date. 9/20/16
<Station ID><media code><Date >

GPS Location

Street Address South ambient air location

Site Description See map on pg. 2

Type of sample: (Ambient Air Sample) Indoor Air Sample Soil Gas Sample

Sampling Depth Orifice or Flow Controller # FC33

Canister # 3590

Name of Person Collecting Sample Landon Pruitt

			Can Pressure Gauge
Start Date 9/21/16	Start Time 09:02	Initial	-30 in Hg
Stop Date 9/22/16	Stop Time 09:51	Final	-5.5 in Hg

Notes: (other measurements)

Other Notes/Sketch (Include North and Scale)

Liquefied Petroleum Gas tanks on rail next to station. Placard 1075.

Station I.D. GM03 Sample I.D. GM03AA0916 Date. 9/20/16
<Station ID><media code><Date >

GPS Location

Street Address West ambient air location

Site Description see map on pg. 2

Type of sample: (Ambient Air Sample) Indoor Air Sample Soil Gas Sample

Sampling Depth Orifice or Flow Controller # FC 35

Canister # 3916

Name of Person Collecting Sample Landon Pruitt

				Can Pressure Gauge	
Start Date	9/21/16	Start Time	09:04	Initial	-30 in Hg
Stop Date	9/22/16	Stop Time	08:56	Final	-5 in Hg

Notes: (other measurements)

Other Notes/Sketch (Include North and Scale)

Station I.D. GM16 Sample I.D. GM16AA0916 Date. 9/20/16
<Station ID><media code><Date>

GPS Location

Street Address East ambient air location

Site Description See map on pg. 2

Type of sample: (Ambient Air Sample) Indoor Air Sample Soil Gas Sample

Sampling Depth Orifice or Flow Controller # FC 36

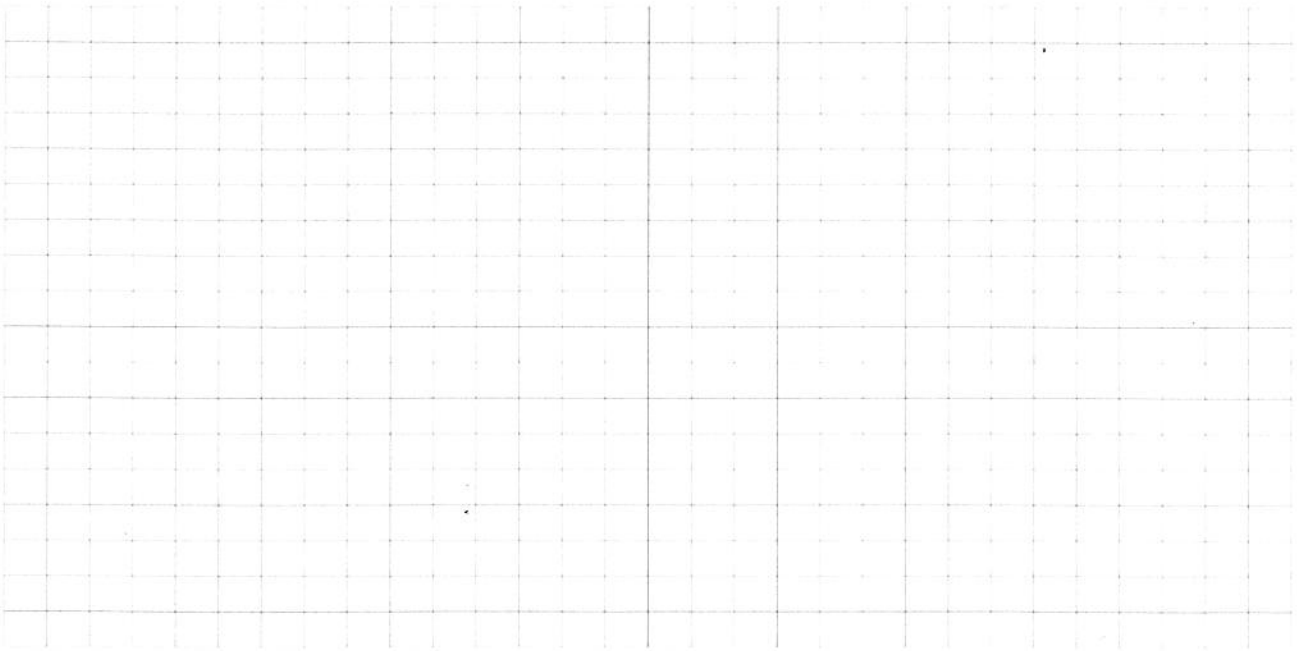
Canister # 20647

Name of Person Collecting Sample Landon Pruitt

			Can Pressure Gauge
Start Date 9/21/16	Start Time 09:35	Initial	-30 in Hg
Stop Date 9/22/16	Stop Time 10:03	Final	-7 in Hg

Notes: (other measurements)

Other Notes/Sketch (Include North and Scale)



Team Leader (Initials) JP Date 12/10/16

Station I.D. GM1H Sample I.D. GM1HAA0916 Date. 9/20/16
<Station ID><media code><Date >

GPS Location

Street Address North ambient air location

Site Description See map on pg. 2

Type of sample: (Ambient Air Sample) Indoor Air Sample Soil Gas Sample

Sampling Depth Orifice or Flow Controller # FC37

Canister # 4479

Name of Person Collecting Sample Landon Pruitt

				Can Pressure Gauge	
Start Date	9/21/16	Start Time	09:32	Initial	-30 in Hg
Stop Date	9/22/16	Stop Time	09:57	Final	-5 in Hg

Notes: (other measurements)

Other Notes/Sketch (Include North and Scale)

Team Leader (Initials) JP Date 12/10/16

Station I.D. GM123 Sample I.D. GM123SS0916 Date. 9/21/16
<Station ID><media code><Date>

GPS Location _____

Street Address (b) (6) [redacted]

Site Description See map on pg. 2.

Type of sample: Ambient Air Sample Indoor Air Sample (Soil Gas Sample)

Sampling Depth _____ Orifice or Flow Controller # SGC21

Canister # 4081

Name of Person Collecting Sample Landon Pruitt

			Can Pressure Gauge
Start Date 9/21/16	Start Time 08:34	Initial	-29 in Hg
Stop Date 9/21/16	Stop Time 09:09	Final	0 in Hg

Notes: (other measurements)

Other Notes/Sketch (Include North and Scale)

Helium Leak Test
Shroud 99.0 %
Test 0 %

Team Leader (Initials) JP Date 12/10/16

Station I.D. GM123 Sample I.D. GM123SSS0916 Date. 9/21/16
<Station ID><media code><Date >

GPS Location _____

Street Address (b) (6) [redacted]

Site Description See map on pg 2

Type of sample: Ambient Air Sample Indoor Air Sample (Soil Gas Sample)

Sampling Depth _____ Orifice or Flow Controller # SGC23

Canister # 20650

Name of Person Collecting Sample Landon Pruitt

			Can Pressure Gauge
Start Date 9/21/16	Start Time 08:34	Initial	-29 in Hg
Stop Date 9/21/16	Stop Time 09:09	Final	0 in Hg

Notes: (other measurements)

Other Notes/Sketch (Include North and Scale)

Station I.D. GM123 Sample I.D. GM123IA 0916 Date. 9/21/16
<Station ID><media code><Date >

GPS Location _____

Street Address (b) (6) [redacted]

Site Description See map on pg 2

Type of sample: Ambient Air Sample (Indoor Air Sample) Soil Gas Sample

Sampling Depth _____ Orifice or Flow Controller # FC34

Canister # 2777

Name of Person Collecting Sample Landon Pruitt

			Can Pressure Gauge
Start Date 9/21/16	Start Time 09:27	Initial	-30 in Hg
Stop Date 9/22/16	Stop Time 09:07	Final	-4 in Hg

Notes: (other measurements)

Other Notes/Sketch (Include North and Scale)

Half the house was cleaned with PineSol the morning of initial setup (9/21/16).

Team Leader (Initials) _____ Date 12/10/16

Station I.D. GM123 Sample I.D. GM123IAD0916 Date. 9/21/16
<Station ID><media code><Date >

GPS Location _____

Street Address (b) (6) [redacted]

Site Description See map on pg. 2

Type of sample: Ambient Air Sample (Indoor Air Sample) Soil Gas Sample

Sampling Depth _____ Orifice or Flow Controller # FC 31

Canister # 5935

Name of Person Collecting Sample Landon Pruitt

			Can Pressure Gauge
Start Date 9/21/16	Start Time 09:27	Initial	-30 in Hg
Stop Date 9/22/16	Stop Time 09:07	Final	-4 in Hg

Notes: (other measurements)

Other Notes/Sketch (Include North and Scale)

Team Leader (Initials) _____ Date 12/20/16

Station I.D. _____ Sample I.D. _____ Date. _____
<Station ID><media code><Date >

GPS Location _____

Street Address _____

Site Description _____

_____

Type of sample: Ambient Air Sample Indoor Air Sample Soil Gas Sample

Sampling Depth _____ Orifice or Flow Controller # _____

Canister # _____

Name of Person Collecting Sample _____

Can Pressure Gauge

Start Date _____ Start Time _____ Initial _____

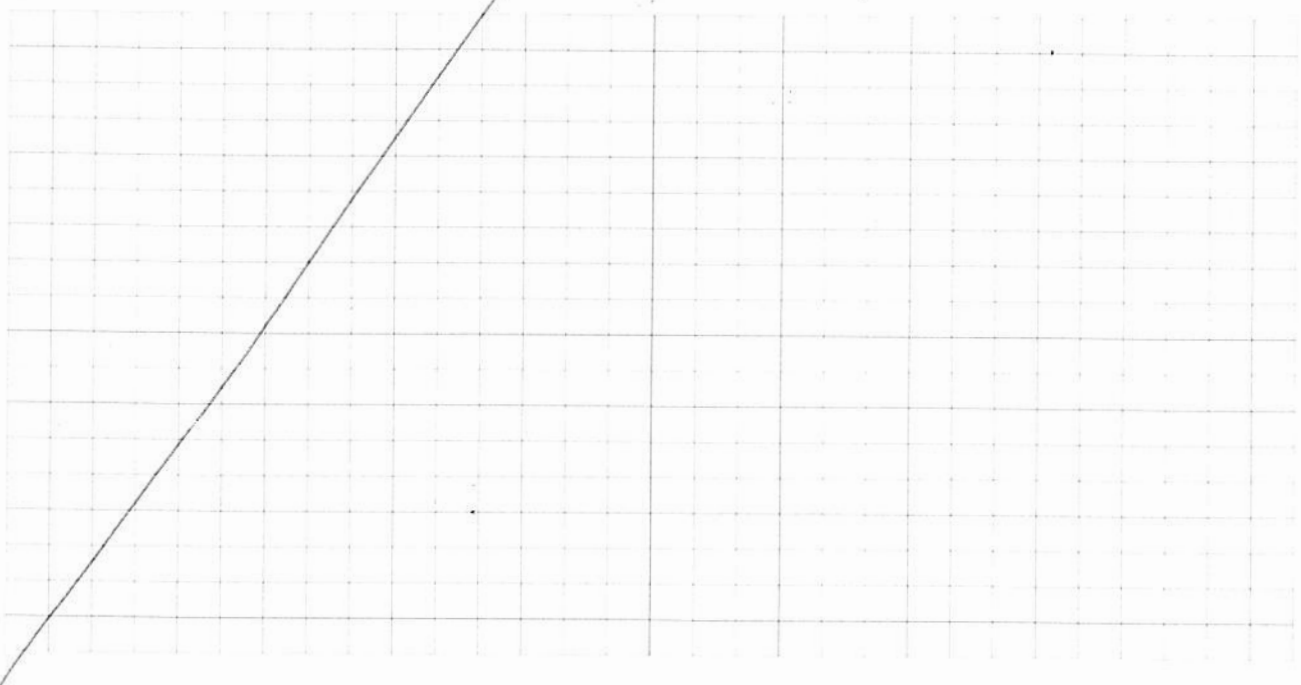
Stop Date _____ Stop Time _____ Final _____

_____

Notes: (other measurements) 2nd can

logbook 12/8/16

Other Notes/Sketch (Include North and Scale)



Team Leader (Initials) _____ Date _____

E163904

USEPA Region 4 COC (REGION COPY)
DateShipped: 9/22/2016
CarrierName: GOV Carrier
AirbillNo:

CHAIN OF CUSTODY RECORD
Grenada Manufacturing/MS
Project Number: 16-0547
Cooler #:

No: 09/21/16-0001
Lab: Region 4 Lab
Lab Contact: Mike Beall
Lab Phone: 706-355-8856

	Sample Identifier	CLP Sample No.	Media/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	Sample Type
-02	GM03AA0916		Ambient Air/ Pruitt, Landon	Comp.	VOA	A (None) (1) ✓	GM03	09/21/2016 09:04	Field Sample
-03	GM123IA0916		Indoor Air/ Pruitt, Landon	Comp.	VOA	A (None) (1) ✓	GM123	09/21/2016 09:27	Field Sample
-04	GM123IAD0916		Indoor Air/ Pruitt, Landon	Comp.	VOA	A (None) (1) ✓	GM123	09/21/2016 09:27	Field Duplicate
-05	GM123SS0916		Soil Gas/ Pruitt, Landon	Comp.	VOA	A (None) (1) ✓	GM123	09/21/2016 08:34	Field Sample
-06	GM123SSS0916		Soil Gas/ Pruitt, Landon	Comp.	VOA	A (None) (1) ✓	GM123	09/21/2016 08:34	Field Duplicate
-07	GM14AA0916		Ambient Air/ Pruitt, Landon	Comp.	VOA	A (None) (1) ✓	GM14	09/21/2016 09:32	Field Sample
-08	GM15AA0916		Ambient Air/ Pruitt, Landon	Comp.	VOA	A (None) (1) ✓	GM15	09/21/2016 08:54	Field Sample
-09	GM16AA0916		Ambient Air/ Pruitt, Landon	Comp.	VOA	A (None) (1) ✓	GM16	09/21/2016 09:35	Field Sample
-10	GM17AA0916		Ambient Air/ Pruitt, Landon	Comp.	VOA	A (None) (1) ✓	GM17	09/21/2016 09:02	Field Sample
-01	GMTBA0916		Trip Blank Air/ Pruitt, Landon	Grab	VOA	A (None) (1) ✓	#R4DART#	09/20/2016 08:00	Trip Blank

Special Instructions: Can #'s: GMTBA0916=3939 ✓, GM15AA0916=3927 ✓, GM17AA0916=3590 ✓, GM03AA0916=3916 ✓, GM16AA0916=20647 ✓, GM14AA0916=4479 ✓, GM123SS0916=4081 ✓, GM123SSS0916=20650 ✓, GM123IA0916=2777 ✓, GM123IAD0916=5935 ✓

Analysis Key: VOA=(VOA) Volatile Organics

Shipment for Case Complete? N Y 9/21/16

Samples Transferred From Chain of Custody #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
Samples	SESD	9/22/16 19:28	RMBeall EPA SESD ASB	9-23-16 0750	Good

END OF REPORT