



DATE: June 1, 2016

TO: Michael Hoppe, U.S. EPA/ERT Work Assignment Manager

THROUGH: Kevin Taylor, SERAS Program Manager *OK*

FROM: David L. Adams, SERAS Task Leader *DLA*

SUBJECT: MEADOWBROOK AVE VAPOR INTRUSION SITE, HATBORO, PA
WORK ASSIGNMENT #SER00262 – REVISED TRIP REPORT

BACKGROUND

The Environmental Protection Agency/Environmental Response Team (EPA/ERT) issued Work Assignment (WA) Number SERAS-262 to Lockheed Martin under the Scientific, Engineering, Response and Analytical Services (SERAS) contract to conduct a second sub-slab soil gas, crawl space, indoor air, and ambient air sampling event as part of a vapor intrusion site investigation at Crooked Billet Elementary School, located at 101 Meadowbrook Avenue in Hatboro, Montgomery County, Pennsylvania (Site). The Site building is an L-shaped building divided into two wings, Building A and Building B. Building A comprises the southeastern portion of the L, and Building B comprises the northern portion of the L. Buildings A and B are both two-story buildings, but Building A also has a partial basement. For the purposes of this report, Buildings A and B will be collectively referred to as the Site building.

The Site is bound to the south by Meadowbrook Avenue with single-family residential properties beyond. The Site is bound to the west by Drummers Way with multi-family residential buildings and single-family residential properties beyond. The Site is bound to the north by multi-family residential buildings and to the northeast by a mixed commercial and light industrial area with East County Line Road beyond. The Site is bound to the east and northeast by a railroad line with industrial properties and the Borough of Hatboro Public Works Building with Oakdale Avenue beyond. Several EPA Superfund Cleanup Sites, including Raymark, Inc. (located approximately 1,000 feet south of the Site) and Fischer & Porter Company (located approximately 1,800 feet east of the Site), are located in the vicinity of the Site. The potential for adverse indoor air impacts associated with groundwater contamination, consisting of trichloroethylene (TCE) and several other volatile organic compounds (VOCs), suspected of being associated with the EPA Superfund Cleanup Sites is the primary driver for the vapor intrusion investigation at the Site. The data generated from this sampling event will assist EPA Region 3 personnel in determining if a potential for an adverse indoor air impact exists at the Site.

All SUMMA[®] canister samples were analyzed for a reduced analyte list of 19 VOCs. The SUMMA[®] canister sampling and analysis was conducted following 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)*. A total of thirty-five SUMMA[®] samples and one trip blank were collected for analysis.

OBSERVATIONS AND ACTIVITIES

SERAS personnel mobilized to the Site on February 20, 2016 to conduct a walkthrough of the Site building and setup the 24-hour Summa canister samples. During the walkthrough, SERAS personnel confirmed that the eight sub-slab soil gas probes previously installed during the March 2015 mobilization to the Site were intact. Indoor air samples were collected from 20 locations within the Site building. Crawl space air samples were collected from five locations within the Site building. The crawl space air sample locations consisted of three from crawl spaces adjacent to the mechanical room in the basement, one from beneath a metal floor panel in an office in the library, and one from a wall-mounted metal access panel in the girls' bathroom. A soil gas sample was collected from each of the eight existing sub-slab soil gas probes. Ambient air samples were collected from two locations, one located to the southeast of Building A and the second located to the north of Building B. Co-located samples were collected at indoor air sample locations IA9, IA14, and IA15. With the exception of the co-located samples, the sample locations during the February 2016 mobilization were consistent with the March 2015 mobilization to the Site.

SERAS personnel re-mobilized to the Site on February 21, 2016 to pick up the Summa canister samples. Samples were collected using 6-liter (L) SUMMA[®] canisters fitted with individual flow controllers. Samples were collected following ERT/SERAS SOP #1704, *SUMMA Canister Sampling*. A 4 to 5-L time-weighted-average (TWA) sample was collected during a 24-hour sampling period. A SUMMA[®] Sampling Worksheet completed by SERAS personnel is included as Appendix A. Sample locations in the basement of Building A are depicted on Figure 1. Sample locations on the ground floor of Buildings A and B are depicted on Figure 2.

The samples collected in the SUMMA[®] canisters were properly documented and hand-delivered to the ERT/SERAS Laboratory for analysis. Sub-slab soil gas, crawl space air, indoor air, and ambient air sample analysis was performed in accordance with EPA Method TO-15 for a reduced list of 19 VOCs. Prior to sampling, the SUMMA[®] canisters and orifices were certified clean to meet the reporting levels for the analysis requested. Results for the TO-15 analysis were reported both in micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) and in parts per billion by volume (ppbv).

RESULTS

A summary of the collected samples is presented in Table 1. Sample results are presented in Tables 2a through 2l in ppbv and Tables 3a through 3l in $\mu\text{g}/\text{m}^3$. Sub-slab soil gas sample results are presented together with the indoor air samples collected in their respective locations.

Consistent with the May 29, 2015 Trip Report for the Meadowbrook Avenue Vapor Intrusion Site, Hatboro, PA, prepared by Lockheed Martin, the EPA Indoor Air Regional Screening Levels (RSLs) are included in each table for comparison. A multiplier of 10 was applied to the Indoor Air RSLs to generate the sub-slab soil vapor RSLs. The EPA RSLs were not generated to represent health effect levels, action levels, or cleanup levels, but rather as technical tools. If a chemical concentration exceeds an EPA RSL, it requires further consideration by EPA and Agency for Toxic Substances and Disease Registry toxicologists.

Sample results for TCE and tetrachloroethylene (PCE) by location in the basement of Building A are depicted on Figure 3. Sample results for TCE and PCE by location on the ground floor of Buildings A and B are depicted on Figure 4.

Complete analytical results are included in the March 2016 Analytical Report prepared by Lockheed Martin, included as Appendix B. A tabulated comparison of compounds of concern detected at a concentration above the RSLs during the first or second sampling event is included as Table 4.

FUTURE ACTIVITIES

There are no additional activities scheduled at this time.

cc: Central File - WA # SERAS-262 (w/attachment)
Electronic File - I:/Archive/SERAS/262/D/TR/060116
Kevin Taylor, SERAS Program Manager (cover page only)

TABLES
Meadowbrook Avenue Vapor Intrusion Site
Hatboro, Pennsylvania
June 2016

Table 1
Sample Summary - February 2016
Meadowbrook Vapor Intrusion Site
Hatboro, PA
June 2016

| Sample Number | Location | Sub Location | Sample Type | SUMMA® Number | Flow Contoller Number | Remarks |
|---------------|--------------|-------------------------|----------------|---------------|-----------------------|--|
| 262-0038 | CBES-SS8 | Music Room 121 | Sub-Slab | 10620 | 13959 | Sub-slab sampling port located inside the classroom closet. |
| 262-0039 | CBES-IA16 | Music Room 121 | Indoor Air | 10602 | 13908 | |
| 262-0040 | CBES-SS7 | Kindergarten Room 122 | Sub-Slab | 10572 | 14035 | Sub-slab sampling port located inside the classroom closet. |
| 262-0041 | CBES-IA15 | Kindergarten Room 122 | Indoor Air | 195 | 13941 | |
| 262-0042 | CBES-IA15 CO | Kindergarten Room 122 | Indoor Air | 163 | 13781 | Co-located |
| 262-0043 | CBES-SS6 | Pre-K Room 120 | Sub-Slab | 10611 | 223011 | Sub-slab sampling port located inside the classroom closet. |
| 262-0044 | CBES-IA14 | Pre-K Room 120 | Indoor Air | 10587 | 14043 | |
| 262-0045 | CBES-IA14 CO | Pre-K Room 120 | Indoor Air | 13743 | 14021 | Co-located |
| 262-0046 | CBES-SS5 | Music/Art Room 123 | Sub-Slab | 10599 | 223037 | Sub-slab sampling port located inside the classroom closet. |
| 262-0047 | CBES-IA13 | Music/Art Room 123 | Indoor Air | 14070 | 13769 | |
| 262-0048 | CBES-SS4 | Cafeteria Room 113 | Sub-Slab | 10569 | 223015 | |
| 262-0049 | CBES-IA12 | Cafeteria Room 113 | Indoor Air | 156 | 13938 | |
| 262-0050 | CBES-IA10 | Multipurpose Room 111 | Indoor Air | 14401 | 223053 | |
| 262-0051 | CBES-IA9 | Corridor/Room 107 | Indoor Air | 14221 | 13789 | Located across from Room 107. |
| 262-0052 | CBES-IA9 CO | Corridor/Room 107 | Indoor Air | 10608 | 13924 | Co-located |
| 262-0053 | CBES-IA8 | Nurse Room 107 | Indoor Air | 10555 | 13928 | |
| 262-0054 | CBES-IA7 | Faculty Room 103 | Indoor Air | 178 | 13801 | |
| 262-0055 | CBES-IA5 | Girls Toilet | Indoor Air | 10578 | 223054 | |
| 262-0056 | CBES-CS5 | Girls Toilet Wall Panel | Indoor Air | 101 | 13907 | Collected from a wall panel located in the stall closest to the bathroom entrance. |
| 262-0057 | CBES-IA6 | Classroom Room 101 | Indoor Air | 10598 | 13911 | |
| 262-0058 | CBES-CS4 | Office CS Panel | Crawlspace Air | 10556 | 223014 | Sample collected from a crawlspace panel in the floor. |
| 262-0059 | CBES-IA3 | Office/Workroom | Indoor Air | 266 | 14038 | |
| 262-0060 | CBES-IA4 | Library Room 100 | Indoor Air | 166 | 13788 | |
| 262-0061 | CBES-IA17 | Principle Room 105 | Indoor Air | 10615 | 13906 | |
| 262-0062 | CBES-CS3 | Basement CS 3 | Crawlspace Air | 10549 | 13935 | Sample collected from the area labled "B2" on Figure 1. |
| 262-0063 | CBES-IA1 | Basement Stair | Indoor Air | 10585 | 223012 | |
| 262-0064 | CBES-CS2 | Basement CS 2 | Crawlspace Air | 10554 | 14039 | |
| 262-0065 | CBES-SS1 | Basement Stair | Sub-Slab | 10605 | 14023 | |
| 262-0066 | CBES-SS2 | Mech Room | Sub-Slab | 175 | 13931 | |
| 262-0067 | CBES-IA2 | Mech Room | Indoor Air | 209 | 14013 | |
| 262-0068 | CBES-CS1 | Basement CS 1 | Crawlspace Air | 10622 | 13961 | |
| 262-0069 | CBES-SS3 | Storage | Sub-Slab | 10534 | 223049 | |
| 262-0070 | CBES-IA11 | Storage | Indoor Air | 10564 | 223039 | |
| 262-0071 | CBES-AA1 | Bldg A South | Ambient Air | 196 | 13933 | Located to the southeast of Building A on a sign at far side of parking lot. |
| 262-0072 | CBES-AA2 | Bldg B North | Ambient Air | 10621 | 13998 | Located to the north of Building B on a sign by the dumpsters. |
| 262-0073 | Trip Blank | Trip Blank | Trip Blank | 14256 | 13963 | |

Table 2a
SUMMA Canister Sample Results in ppbv - February 2016
Meadowbrook Vapor Intrusion Site
Hatboro, PA
June 2016

BASEMENT

| Sample Number | Sub-Slab Soil Vapor Regional Screening Level | Indoor Air Regional Screening Level | 262-0063 | 262-0065 | 262-0067 | 262-0066 | 262-0068 | 262-0064 | 262-0062 |
|-------------------------------|--|---|-------------------|-------------------|--------------------|--------------------|-----------------|-----------------|-----------------|
| Location | | | CBES-IA1 | CBES-SS1 | CBES-IA2 | CBES-SS2 | CBES-CS1 | CBES-CS2 | CBES-CS3 |
| Sub-Location | | | Basement Stair | Basement Stair | Mechanical Room | Mechanical Room | Basement CS1 | Basement CS2 | Basement CS3 |
| Sample Type | | | Indoor Air | Sub-Slab | Indoor Air | Sub-Slab | Crawl Space Air | Crawl Space Air | Crawl Space Air |
| Result Units | ppbv | ppbv | ppbv | ppbv | ppbv | ppbv | ppbv | ppbv | ppbv |
| Chloromethane | 455 | 45.5 | 0.269 | 0.227 | 0.705 | 0.108 | 0.452 | 0.0200 U | 0.293 |
| Vinyl Chloride | 0.67 | 0.067 | 0.0200 U | 0.100 U | 0.0200 U | 0.100 U | 0.0200 U | 0.0200 U | 0.0200 U |
| Chloroethane (Ethyl Chloride) | 37900 | 3790 | 0.0200 U | 0.100 U | 0.0200 U | 0.100 U | 0.0200 U | 0.0200 U | 0.0200 U |
| 1,1-Dichloroethene | 530 | 53 | 0.0200 U | 0.100 U | 0.0200 U | 0.100 U | 0.0200 U | 0.0200 U | 0.0200 U |
| Methylene Chloride | 288 | 28.8 | 0.0600 | 0.100 U | 0.118 | 0.100 U | 0.0859 | 0.0611 | 0.0810 |
| trans-1,2-Dichloroethene | NS | NS | 0.0200 U | 0.100 U | 0.0200 U | 0.100 U | 0.0200 U | 0.0200 U | 0.0200 U |
| 1,1-Dichloroethane | 4.5 | 0.45 | 0.0200 U | 0.100 U | 0.0200 U | 0.100 U | 0.0200 U | 0.0200 U | 0.0200 U |
| cis-1,2-Dichloroethene | NS | NS | 0.0200 U | 0.100 U | 0.0200 U | 0.100 U | 0.0200 U | 0.0200 U | 0.0200 U |
| Chloroform | 0.25 | 0.025 | 0.0200 U | 0.247 | 0.0573 | 0.100 U | 0.0229 | 0.0215 | 0.0243 |
| 1,2-Dichloroethane | 0.27 | 0.027 | 0.0200 U | 0.100 U | 0.0217 | 0.100 U | 0.0200 U | 0.0200 U | 0.0200 U |
| 1,1,1-Trichloroethane | 9530 | 953 | 0.0307 | 0.100 U | 0.0200 U | 0.100 U | 0.0272 | 0.0473 | 0.0200 U |
| Benzene | 1.13 | 0.113 | 0.151 | 0.119 | 0.237 | 0.100 U | 0.216 | 0.111 | 0.165 |
| Carbon Tetrachloride | 0.75 | 0.075 | 0.0819 | 0.100 U | 0.106 | 0.100 U | 0.0866 | 0.0856 | 0.0848 |
| Trichloroethene | 0.89 | 0.089 | 0.0342 | 1.28 | 0.0232 | 0.806 | 0.0271 | 0.0354 | 0.0326 |
| Toluene | 13800 | 1380 | 0.286 | 0.158 | 0.385 | 0.100 U | 0.390 | 0.200 | 0.323 |
| Tetrachloroethene | 16.2 | 1.62 | 0.0509 | 0.891 | 0.0412 | 1.18 | 0.0486 | 0.0668 | 0.0443 |
| Ethylbenzene | 2.53 | 0.253 | 0.0277 | 0.100 U | 0.0405 | 0.100 U | 0.0387 | 0.0212 | 0.0333 |
| m&p-Xylene | 461 | 46.1 | 0.0839 | 0.100 U | 0.143 | 0.100 U | 0.126 | 0.0608 | 0.106 |
| o-Xylene | 230 | 23 | 0.0342 | 0.100 U | 0.0621 | 0.100 U | 0.0510 | 0.0255 | 0.0403 |

Notes and Acronyms:

1. Analyte concentrations exceeding the Regional Screening Levels (RSLs) are presented in bold and shaded gray.

CBES - Crooked Billet Elementary School

CS - Crawl space

IA - Indoor air

NS - No standard established for this analyte.

ppbv = parts per billion by volume

SS - Sub-slab soil gas

U - Analyte was not detected at a concentration above the laboratory reporting limit.

Table 2b
SUMMA Canister Sample Results in ppbv - February 2016
Meadowbrook Vapor Intrusion Site
Hatboro, PA
June 2016

STORAGE

| Sample Number | Sub-Slab Soil Vapor Regional Screening Level | Indoor Air Regional Screening Level | 262-0070 | 262-0069 |
|-------------------------------|--|---|------------|----------|
| Location | | | CBES-IA11 | CBES-SS3 |
| Sub-Location | | | Storage | Storage |
| Sample Type | | | Indoor Air | Sub-Slab |
| Result Units | ppbv | ppbv | ppbv | ppbv |
| Chloromethane | 455 | 45.5 | 0.550 | 0.100 U |
| Vinyl Chloride | 0.67 | 0.067 | 0.0200 U | 0.100 U |
| Chloroethane (Ethyl Chloride) | 37900 | 3790 | 0.0200 U | 0.100 U |
| 1,1-Dichloroethene | 530 | 53 | 0.0200 U | 0.100 U |
| Methylene Chloride | 288 | 28.8 | 0.0922 | 0.100 U |
| trans-1,2-Dichloroethene | NS | NS | 0.0200 U | 0.100 U |
| 1,1-Dichloroethane | 4.5 | 0.45 | 0.0200 U | 0.100 U |
| cis-1,2-Dichloroethene | NS | NS | 0.0200 U | 0.100 U |
| Chloroform | 0.25 | 0.025 | 0.0269 | 0.100 U |
| 1,2-Dichloroethane | 0.27 | 0.027 | 0.0200 U | 0.100 U |
| 1,1,1-Trichloroethane | 9530 | 953 | 0.0200 U | 0.100 U |
| Benzene | 1.13 | 0.113 | 0.248 | 0.100 U |
| Carbon Tetrachloride | 0.75 | 0.075 | 0.0823 | 0.100 U |
| Trichloroethene | 0.89 | 0.089 | 0.0212 | 0.100 U |
| Toluene | 13800 | 1380 | 0.495 | 0.100 U |
| Tetrachloroethene | 16.2 | 1.62 | 0.0442 | 0.100 U |
| Ethylbenzene | 2.53 | 0.253 | 0.0519 | 0.100 U |
| m&p-Xylene | 461 | 46.1 | 0.164 | 0.100 U |
| o-Xylene | 230 | 23 | 0.0609 | 0.100 U |

Notes and Acronyms:

1. Analyte concentrations exceeding the Regional Screening Levels (RSLs) are presented in bold and shaded gray.

CBES - Crooked Billet Elementary School

IA - Indoor air

NS - No standard established for this analyte.

ppbv = parts per billion by volume

SS - Sub-slab soil gas

U - Analyte was not detected at a concentration above the laboratory reporting limit.

Table 2c
SUMMA Canister Sample Results in ppbv - February 2016
Meadowbrook Vapor Intrusion Site
Hatboro, PA
June 2016

CAFETERIA

| Sample Number | Sub-Slab Soil Vapor Regional Screening Level | Indoor Air Regional Screening Level | 262-0049 | 262-0048 |
|-------------------------------|--|---|-----------------------|-----------------------|
| Location | | | CBES-IA12 | CBES-SS4 |
| Sub-Location | | | Cafeteria Room 113 | Cafeteria Room 113 |
| Sample Type | | | Indoor Air | Sub-Slab |
| Result Units | ppbv | ppbv | ppbv | ppbv |
| Chloromethane | 455 | 45.5 | 0.519 | 0.100 U |
| Vinyl Chloride | 0.67 | 0.067 | 0.0200 U | 0.100 U |
| Chloroethane (Ethyl Chloride) | 37900 | 3790 | 0.0200 U | 0.100 U |
| 1,1-Dichloroethene | 530 | 53 | 0.0200 U | 0.100 U |
| Methylene Chloride | 288 | 28.8 | 0.0808 | 0.100 U |
| trans-1,2-Dichloroethene | NS | NS | 0.0200 U | 0.100 U |
| 1,1-Dichloroethane | 4.5 | 0.45 | 0.0200 U | 0.100 U |
| cis-1,2-Dichloroethene | NS | NS | 0.0200 U | 0.100 U |
| Chloroform | 0.25 | 0.025 | 0.0218 | 0.100 U |
| 1,2-Dichloroethane | 0.27 | 0.027 | 0.0200 U | 0.100 U |
| 1,1,1-Trichloroethane | 9530 | 953 | 0.0200 U | 0.100 U |
| Benzene | 1.13 | 0.113 | 0.203 | 0.100 U |
| Carbon Tetrachloride | 0.75 | 0.075 | 0.0815 | 0.100 U |
| Trichloroethene | 0.89 | 0.089 | 0.0200 U | 0.100 U |
| Toluene | 13800 | 1380 | 0.365 | 0.100 U |
| Tetrachloroethene | 16.2 | 1.62 | 0.0342 | 0.308 |
| Ethylbenzene | 2.53 | 0.253 | 0.0340 | 0.100 U |
| m&p-Xylene | 461 | 46.1 | 0.113 | 0.100 U |
| o-Xylene | 230 | 23 | 0.0456 | 0.100 U |

Notes and Acronyms:

1. Analyte concentrations exceeding the Regional Screening Levels (RSLs) are presented in bold and shaded gray.

CBES - Crooked Billet Elementary School

IA - Indoor air

NS - No standard established for this analyte.

ppbv = parts per billion by volume

SS - Sub-slab soil gas

U - Analyte was not detected at a concentration above the laboratory reporting limit.

Table 2d
SUMMA Canister Sample Results in ppbv - February 2016
Meadowbrook Vapor Intrusion Site
Hatboro, PA
June 2016

MUSIC/ART ROOM 123

| Sample Number | Sub-Slab Soil Vapor Regional Screening Level | Indoor Air Regional Screening Level | 262-0047 | 262-0046 |
|-------------------------------|--|---|-----------------------|-----------------------|
| Location | | | CBES-IA13 | CBES-SS5 |
| Sub-Location | | | Music/Art Room 123 | Music/Art Room 123 |
| Sample Type | | | Indoor Air | Sub-Slab |
| Result Units | ppbv | ppbv | ppbv | ppbv |
| Chloromethane | 455 | 45.5 | 0.526 | 0.100 U |
| Vinyl Chloride | 0.67 | 0.067 | 0.0200 U | 0.100 U |
| Chloroethane (Ethyl Chloride) | 37900 | 3790 | 0.0200 U | 0.100 U |
| 1,1-Dichloroethene | 530 | 53 | 0.0200 U | 0.100 U |
| Methylene Chloride | 288 | 28.8 | 0.0892 | 0.100 U |
| trans-1,2-Dichloroethene | NS | NS | 0.0200 U | 0.100 U |
| 1,1-Dichloroethane | 4.5 | 0.45 | 0.0200 U | 0.100 U |
| cis-1,2-Dichloroethene | NS | NS | 0.0200 U | 0.100 U |
| Chloroform | 0.25 | 0.025 | 0.0200 U | 0.100 U |
| 1,2-Dichloroethane | 0.27 | 0.027 | 0.0200 U | 0.100 U |
| 1,1,1-Trichloroethane | 9530 | 953 | 0.0200 U | 0.100 U |
| Benzene | 1.13 | 0.113 | 0.231 | 0.100 U |
| Carbon Tetrachloride | 0.75 | 0.075 | 0.0815 | 0.100 U |
| Trichloroethene | 0.89 | 0.089 | 0.0200 U | 0.100 U |
| Toluene | 13800 | 1380 | 0.430 | 0.100 U |
| Tetrachloroethene | 16.2 | 1.62 | 0.0393 | 0.612 |
| Ethylbenzene | 2.53 | 0.253 | 0.0483 | 0.100 U |
| m&p-Xylene | 461 | 46.1 | 0.158 | 0.100 U |
| o-Xylene | 230 | 23 | 0.0573 | 0.100 U |

Notes and Acronyms:

1. Analyte concentrations exceeding the Regional Screening Levels (RSLs) are presented in bold and shaded gray.

CBES - Crooked Billet Elementary School

IA - Indoor air

NS - No standard established for this analyte.

ppbv = parts per billion by volume

SS - Sub-slab soil gas

U - Analyte was not detected at a concentration above the laboratory reporting limit.

Table 2e
SUMMA Canister Sample Results in ppbv - February 2016
Meadowbrook Vapor Intrusion Site
Hatboro, PA
June 2016

PRE-KINDERGARTEN CLASSROOM 120

| Sample Number | Sub-Slab Soil Vapor Regional Screening Level | Indoor Air Regional Screening Level | 262-0044 | 262-0045 | 262-0043 |
|-------------------------------|--|---|-------------------|-------------------|-------------------|
| Location | | | CBES-IA14 | CBES-IA14CO | CBES-SS6 |
| Sub-Location | | | Pre-K Room 120 | Pre-K Room 120 | Pre-K Room 120 |
| Sample Type | | | Indoor Air | Indoor Air | Sub-Slab |
| Result Units | ppbv | ppbv | ppbv | ppbv | ppbv |
| Chloromethane | 455 | 45.5 | 0.549 | 0.540 | 0.100 U |
| Vinyl Chloride | 0.67 | 0.067 | 0.0200 U | 0.0200 U | 0.100 U |
| Chloroethane (Ethyl Chloride) | 37900 | 3790 | 0.0200 U | 0.0200 U | 0.100 U |
| 1,1-Dichloroethene | 530 | 53 | 0.0200 U | 0.0200 U | 0.100 U |
| Methylene Chloride | 288 | 28.8 | 0.0900 | 0.0874 | 0.100 U |
| trans-1,2-Dichloroethene | NS | NS | 0.0200 U | 0.0200 U | 0.100 U |
| 1,1-Dichloroethane | 4.5 | 0.45 | 0.0200 U | 0.0200 U | 0.100 U |
| cis-1,2-Dichloroethene | NS | NS | 0.0200 U | 0.0200 U | 0.100 U |
| Chloroform | 0.25 | 0.025 | 0.0213 | 0.0214 | 0.596 |
| 1,2-Dichloroethane | 0.27 | 0.027 | 0.0200 U | 0.0200 U | 0.100 U |
| 1,1,1-Trichloroethane | 9530 | 953 | 0.0200 U | 0.0200 U | 0.100 U |
| Benzene | 1.13 | 0.113 | 0.230 | 0.225 | 0.100 U |
| Carbon Tetrachloride | 0.75 | 0.075 | 0.0819 | 0.0817 | 0.100 U |
| Trichloroethene | 0.89 | 0.089 | 0.0200 U | 0.0200 U | 1.88 |
| Toluene | 13800 | 1380 | 0.389 | 0.398 | 0.100 U |
| Tetrachloroethene | 16.2 | 1.62 | 0.0427 | 0.0428 | 15.6 |
| Ethylbenzene | 2.53 | 0.253 | 0.0380 | 0.0387 | 0.100 U |
| m&p-Xylene | 461 | 46.1 | 0.128 | 0.131 | 0.100 U |
| o-Xylene | 230 | 23 | 0.0510 | 0.0514 | 0.100 U |

Notes and Acronyms:

1. Analyte concentrations exceeding the Regional Screening Levels (RSLs) are presented in bold and shaded gray.

CBES - Crooked Billet Elementary School

CO - Co-located

IA - Indoor air

NS - No standard established for this analyte.

ppbv = parts per billion by volume

SS - Sub-slab soil gas

U - Analyte was not detected at a concentration above the laboratory reporting limit.

Table 2f
SUMMA Canister Sample Results in ppbv - February 2016
Meadowbrook Vapor Intrusion Site
Hatboro, PA
June 2016

KINDERGARTEN CLASSROOM 122

| Sample Number | Sub-Slab Soil Vapor Regional Screening Level | Indoor Air Regional Screening Level | 262-0041 | 262-0042 | 262-0040 |
|-------------------------------|--|---|--------------------------|--------------------------|--------------------------|
| Location | | | CBES-IA15 | CBES-IA15CO | CBES-SS7 |
| Sub-Location | | | Kindergarten Room 122 | Kindergarten Room 122 | Kindergarten Room 122 |
| Sample Type | | | Indoor Air | Indoor Air | Sub-Slab |
| Result Units | ppbv | ppbv | ppbv | ppbv | ppbv |
| Chloromethane | 455 | 45.5 | 0.544 | 0.511 | 0.100 U |
| Vinyl Chloride | 0.67 | 0.067 | 0.0200 U | 0.0200 U | 0.100 U |
| Chloroethane (Ethyl Chloride) | 37900 | 3790 | 0.0200 U | 0.0200 U | 0.100 U |
| 1,1-Dichloroethene | 530 | 53 | 0.0200 U | 0.0200 U | 0.100 U |
| Methylene Chloride | 288 | 28.8 | 0.0865 | 0.0934 | 0.100 U |
| trans-1,2-Dichloroethene | NS | NS | 0.0200 U | 0.0200 U | 0.100 U |
| 1,1-Dichloroethane | 4.5 | 0.45 | 0.0200 U | 0.0200 U | 0.100 U |
| cis-1,2-Dichloroethene | NS | NS | 0.0200 U | 0.0200 U | 0.100 U |
| Chloroform | 0.25 | 0.025 | 0.0200 U | 0.0208 | 0.100 U |
| 1,2-Dichloroethane | 0.27 | 0.027 | 0.0200 U | 0.0200 U | 0.100 U |
| 1,1,1-Trichloroethane | 9530 | 953 | 0.0200 U | 0.0200 U | 0.100 U |
| Benzene | 1.13 | 0.113 | 0.218 | 0.225 | 0.100 U |
| Carbon Tetrachloride | 0.75 | 0.075 | 0.0812 | 0.0800 | 0.100 U |
| Trichloroethene | 0.89 | 0.089 | 0.0200 U | 0.0200 U | 0.100 U |
| Toluene | 13800 | 1380 | 0.431 | 0.407 | 0.100 U |
| Tetrachloroethene | 16.2 | 1.62 | 0.0428 | 0.0406 | 1.86 |
| Ethylbenzene | 2.53 | 0.253 | 0.0378 | 0.0355 | 0.100 U |
| m&p-Xylene | 461 | 46.1 | 0.126 | 0.120 | 0.100 U |
| o-Xylene | 230 | 23 | 0.0485 | 0.0483 | 0.100 U |

Notes and Acronyms:

1. Analyte concentrations exceeding the Regional Screening Levels (RSLs) are presented in bold and shaded gray.

CBES - Crooked Billet Elementary School

CO - Co-located

IA - Indoor air

NS - No standard established for this analyte.

ppbv = parts per billion by volume

SS - Sub-slab soil gas

U - Analyte was not detected at a concentration above the laboratory reporting limit.

Table 2g
SUMMA Canister Sample Results in ppbv - February 2016
Meadowbrook Vapor Intrusion Site
Hatboro, PA
June 2016

MUSIC ROOM 121

| Sample Number | Sub-Slab Soil Vapor Regional Screening Level | Indoor Air Regional Screening Level | 262-0039 | 262-0038 |
|-------------------------------|--|---|-------------------|-------------------|
| Location | | | CBES-IA16 | CBES-SS8 |
| Sub-Location | | | Music Room 121 | Music Room 121 |
| Sample Type | | | Indoor Air | Sub-Slab |
| Result Units | ppbv | ppbv | ppbv | ppbv |
| Chloromethane | 455 | 45.5 | 0.528 | 0.100 U |
| Vinyl Chloride | 0.67 | 0.067 | 0.0200 U | 0.100 U |
| Chloroethane (Ethyl Chloride) | 37900 | 3790 | 0.0200 U | 0.100 U |
| 1,1-Dichloroethene | 530 | 53 | 0.0200 U | 0.100 U |
| Methylene Chloride | 288 | 28.8 | 0.0864 | 0.100 U |
| trans-1,2-Dichloroethene | NS | NS | 0.0200 U | 0.100 U |
| 1,1-Dichloroethane | 4.5 | 0.45 | 0.0200 U | 0.100 U |
| cis-1,2-Dichloroethene | NS | NS | 0.0200 U | 0.100 U |
| Chloroform | 0.25 | 0.025 | 0.0200 U | 0.100 U |
| 1,2-Dichloroethane | 0.27 | 0.027 | 0.0200 U | 0.100 U |
| 1,1,1-Trichloroethane | 9530 | 953 | 0.0200 U | 0.100 U |
| Benzene | 1.13 | 0.113 | 0.228 | 0.100 U |
| Carbon Tetrachloride | 0.75 | 0.075 | 0.0844 | 0.100 U |
| Trichloroethene | 0.89 | 0.089 | 0.0200 U | 0.100 U |
| Toluene | 13800 | 1380 | 0.395 | 0.100 U |
| Tetrachloroethene | 16.2 | 1.62 | 0.0389 | 0.303 |
| Ethylbenzene | 2.53 | 0.253 | 0.0359 | 0.100 U |
| m&p-Xylene | 461 | 46.1 | 0.121 | 0.100 U |
| o-Xylene | 230 | 23 | 0.0492 | 0.100 U |

Notes and Acronyms:

1. Analyte concentrations exceeding the Regional Screening Levels (RSLs) are presented in bold and shaded gray.

CBES - Crooked Billet Elementary School

IA - Indoor air

NS - No standard established for this analyte.

ppbv = parts per billion by volume

SS - Sub-slab soil gas

U - Analyte was not detected at a concentration above the laboratory reporting limit.

Table 2h
SUMMA Canister Sample Results in ppbv - February 2016
Meadowbrook Vapor Intrusion Site
Hatboro, PA
June 2016

LIBRARY ROOM 100

| Sample Number | Sub-Slab Soil Vapor Regional Screening Level | Indoor Air Regional Screening Level | 262-0058 | 262-0059 | 262-0060 |
|-------------------------------|--|---|-----------------|----------------------|---------------------|
| Location | | | CBES-CS4 | CBES-IA3 | CBES-IA4 |
| Sub-Location | | | Office CS | Office / Workroom | Library Room 100 |
| Sample Type | | | Crawl Space Air | Indoor Air | Indoor Air |
| Result Units | ppbv | ppbv | ppbv | ppbv | ppbv |
| Chloromethane | 455 | 45.5 | 0.0736 | 0.562 | 0.507 |
| Vinyl Chloride | 0.67 | 0.067 | 0.0200 U | 0.0200 U | 0.0200 U |
| Chloroethane (Ethyl Chloride) | 37900 | 3790 | 0.0200 U | 0.0200 U | 0.0200 U |
| 1,1-Dichloroethene | 530 | 53 | 0.0200 U | 0.0200 U | 0.0200 U |
| Methylene Chloride | 288 | 28.8 | 0.0321 | 0.0874 | 0.0896 |
| trans-1,2-Dichloroethene | NS | NS | 0.0200 U | 0.0200 U | 0.0200 U |
| 1,1-Dichloroethane | 4.5 | 0.45 | 0.0200 U | 0.0200 U | 0.0200 U |
| cis-1,2-Dichloroethene | NS | NS | 0.0200 U | 0.0200 U | 0.0200 U |
| Chloroform | 0.25 | 0.025 | 0.0200 U | 0.0232 | 0.0218 |
| 1,2-Dichloroethane | 0.27 | 0.027 | 0.0200 U | 0.0241 | 0.0200 U |
| 1,1,1-Trichloroethane | 9530 | 953 | 0.783 | 0.573 | 0.0406 |
| Benzene | 1.13 | 0.113 | 0.0492 | 0.216 | 0.228 |
| Carbon Tetrachloride | 0.75 | 0.075 | 0.0764 | 0.0876 | 0.0769 |
| Trichloroethene | 0.89 | 0.089 | 0.0200 U | 0.0370 | 0.0257 |
| Toluene | 13800 | 1380 | 0.0641 | 0.419 | 0.378 |
| Tetrachloroethene | 16.2 | 1.62 | 0.0335 | 0.0417 | 0.0434 |
| Ethylbenzene | 2.53 | 0.253 | 0.0200 U | 0.0635 | 0.0402 |
| m&p-Xylene | 461 | 46.1 | 0.0589 | 0.210 | 0.137 |
| o-Xylene | 230 | 23 | 0.0209 | 0.0821 | 0.0548 |

Notes and Acronyms:

1. Analyte concentrations exceeding the Regional Screening Levels (RSLs) are presented in bold and shaded gray.

CBES - Crooked Billet Elementary School

CS - Crawl space

IA - Indoor air

NS - No standard established for this analyte.

ppbv = parts per billion by volume

U - Analyte was not detected at a concentration above the laboratory reporting limit.

Table 2i
SUMMA Canister Sample Results in ppbv - February 2016
Meadowbrook Vapor Intrusion Site
Hatboro, PA
June 2016

FACULTY ROOM 103

| Sample Number | Sub-Slab Soil Vapor Regional Screening Level | Indoor Air Regional Screening Level | 262-0054 |
|-------------------------------|--|---|---------------------|
| Location | | | CBES-IA7 |
| Sub-Location | | | Faculty Room 103 |
| Sample Type | | | Indoor Air |
| Result Units | ppbv | ppbv | ppbv |
| Chloromethane | 455 | 45.5 | 0.569 |
| Vinyl Chloride | 0.67 | 0.067 | 0.0200 U |
| Chloroethane (Ethyl Chloride) | 37900 | 3790 | 0.0200 U |
| 1,1-Dichloroethene | 530 | 53 | 0.0200 U |
| Methylene Chloride | 288 | 28.8 | 0.0871 |
| trans-1,2-Dichloroethene | NS | NS | 0.0200 U |
| 1,1-Dichloroethane | 4.5 | 0.45 | 0.0200 U |
| cis-1,2-Dichloroethene | NS | NS | 0.0200 U |
| Chloroform | 0.25 | 0.025 | 0.0230 |
| 1,2-Dichloroethane | 0.27 | 0.027 | 0.0200 U |
| 1,1,1-Trichloroethane | 9530 | 953 | 0.0200 U |
| Benzene | 1.13 | 0.113 | 0.213 |
| Carbon Tetrachloride | 0.75 | 0.075 | 0.0780 |
| Trichloroethene | 0.89 | 0.089 | 0.0222 |
| Toluene | 13800 | 1380 | 0.368 |
| Tetrachloroethene | 16.2 | 1.62 | 0.0426 |
| Ethylbenzene | 2.53 | 0.253 | 0.0355 |
| m&p-Xylene | 461 | 46.1 | 0.121 |
| o-Xylene | 230 | 23 | 0.0411 |

Notes and Acronyms:

1. Analyte concentrations exceeding the Regional Screening Levels (RSLs) are presented in bold and shaded gray.

CBES - Crooked Billet Elementary School

IA - Indoor air

NS - No standard established for this analyte.

ppbv = parts per billion by volume

U - Analyte was not detected at a concentration above the laboratory reporting limit.

Table 2j
SUMMA Canister Sample Results in ppbv - February 2016
Meadowbrook Vapor Intrusion Site
Hatboro, PA
June 2016

GIRLS' BATHROOM

| Sample Number | Sub-Slab Soil Vapor Regional Screening Level | Indoor Air Regional Screening Level | 262-0056 | 262-0055 |
|-------------------------------|--|---|-------------------------------|--------------------|
| Location | | | CBES-CS5 | CBES-IA5 |
| Sub-Location | | | Girls' Bathroom Wall Panel | Girls' Bathroom |
| Sample Type | | | Crawl Space Air | Indoor Air |
| Result Units | ppbv | ppbv | ppbv | ppbv |
| Chloromethane | 455 | 45.5 | 0.496 | 0.543 |
| Vinyl Chloride | 0.67 | 0.067 | 0.0200 U | 0.0200 U |
| Chloroethane (Ethyl Chloride) | 37900 | 3790 | 0.0200 U | 0.0200 U |
| 1,1-Dichloroethene | 530 | 53 | 0.0200 U | 0.0200 U |
| Methylene Chloride | 288 | 28.8 | 0.0880 | 0.0970 |
| trans-1,2-Dichloroethene | NS | NS | 0.0200 U | 0.0200 U |
| 1,1-Dichloroethane | 4.5 | 0.45 | 0.0200 U | 0.0200 U |
| cis-1,2-Dichloroethene | NS | NS | 0.0200 U | 0.0200 U |
| Chloroform | 0.25 | 0.025 | 0.0205 | 0.0276 |
| 1,2-Dichloroethane | 0.27 | 0.027 | 0.0200 U | 0.0260 |
| 1,1,1-Trichloroethane | 9530 | 953 | 0.0200 U | 0.0200 U |
| Benzene | 1.13 | 0.113 | 0.202 | 0.215 |
| Carbon Tetrachloride | 0.75 | 0.075 | 0.0742 | 0.0805 |
| Trichloroethene | 0.89 | 0.089 | 0.0200 U | 0.0256 |
| Toluene | 13800 | 1380 | 0.364 | 0.326 |
| Tetrachloroethene | 16.2 | 1.62 | 0.0407 | 0.0407 |
| Ethylbenzene | 2.53 | 0.253 | 0.0346 | 0.0366 |
| m&p-Xylene | 461 | 46.1 | 0.119 | 0.134 |
| o-Xylene | 230 | 23 | 0.0474 | 0.0562 |

Notes and Acronyms:

1. Analyte concentrations exceeding the Regional Screening Levels (RSLs) are presented in bold and shaded gray.

CBES - Crooked Billet Elementary School

CS - Crawl space

IA - Indoor air

NS - No standard established for this analyte.

ppbv = parts per billion by volume

U - Analyte was not detected at a concentration above the laboratory reporting limit.

Table 2k
SUMMA Canister Sample Results in ppbv - February 2016
Meadowbrook Vapor Intrusion Site
Hatboro, PA
June 2016

ADDITIONAL LOCATIONS

| Sample Number | Sub-Slab Soil Vapor Regional Screening Level | Indoor Air Regional Screening Level | 262-0057 | 262-0053 | 262-0051 | 262-0052 | 262-0050 | 262-0061 | 262-0073 |
|-------------------------------|--|---|-----------------------|-------------------|---------------------------------|---------------------------------|--------------------------|-----------------------|------------|
| Location | | | CBES-IA6 | CBES-IA8 | CBES-IA9 | CBES-IA9CO | CBES-IA10 | CBES-IA17 | Trip Blank |
| Sub-Location | | | Classroom Room 101 | Nurse Room 107 | Corridor/ Across Room 107 | Corridor/ Across Room 107 | Multipurpose Room 111 | Principal Room 105 | Trip Blank |
| Sample Type | | | Indoor Air | Indoor Air | Indoor Air | Indoor Air | Indoor Air | Indoor Air | Trip Blank |
| Result Units | ppbv | ppbv | ppbv | ppbv | ppbv | ppbv | ppbv | ppbv | ppbv |
| Chloromethane | 455 | 45.5 | 0.565 | 0.565 | 0.487 | 0.463 | 0.559 | 0.495 | 0.0200 U |
| Vinyl Chloride | 0.67 | 0.067 | 0.0200 U | 0.0200 U | 0.0200 U | 0.0200 U | 0.0200 U | 0.0200 U | 0.0200 U |
| Chloroethane (Ethyl Chloride) | 37900 | 3790 | 0.0200 U | 0.0200 U | 0.0200 U | 0.0200 U | 0.0200 U | 0.0200 U | 0.0200 U |
| 1,1-Dichloroethene | 530 | 53 | 0.0200 U | 0.0200 U | 0.0200 U | 0.0200 U | 0.0200 U | 0.0200 U | 0.0200 U |
| Methylene Chloride | 288 | 28.8 | 0.0976 | 0.0937 | 0.0866 | 0.0786 | 0.0915 | 0.0823 | 0.0200 U |
| trans-1,2-Dichloroethene | NS | NS | 0.0200 U | 0.0200 U | 0.0200 U | 0.0200 U | 0.0200 U | 0.0200 U | 0.0200 U |
| 1,1-Dichloroethane | 4.5 | 0.45 | 0.0200 U | 0.0200 U | 0.0200 U | 0.0200 U | 0.0200 U | 0.0200 U | 0.0200 U |
| cis-1,2-Dichloroethene | NS | NS | 0.0200 U | 0.0200 U | 0.0200 U | 0.0200 U | 0.0200 U | 0.0200 U | 0.0200 U |
| Chloroform | 0.25 | 0.025 | 0.0245 | 0.0234 | 0.0215 | 0.0200 U | 0.0209 | 0.0210 | 0.0200 U |
| 1,2-Dichloroethane | 0.27 | 0.027 | 0.0276 | 0.0502 | 0.0200 U | 0.0200 U | 0.0200 U | 0.0364 | 0.0200 U |
| 1,1,1-Trichloroethane | 9530 | 953 | 0.0200 U | 0.0200 U | 0.0200 U | 0.0200 U | 0.0200 U | 0.0200 U | 0.0200 U |
| Benzene | 1.13 | 0.113 | 0.237 | 0.228 | 0.220 | 0.197 | 0.217 | 0.192 | 0.0200 U |
| Carbon Tetrachloride | 0.75 | 0.075 | 0.0866 | 0.0843 | 0.0787 | 0.0741 | 0.0808 | 0.0793 | 0.0200 U |
| Trichloroethene | 0.89 | 0.089 | 0.0232 | 0.0238 | 0.0208 | 0.0207 | 0.0200 U | 0.0220 | 0.0200 U |
| Toluene | 13800 | 1380 | 0.398 | 0.408 | 0.375 | 0.357 | 0.409 | 0.353 | 0.0200 U |
| Tetrachloroethene | 16.2 | 1.62 | 0.0492 | 0.0397 | 0.0361 | 0.0341 | 0.0398 | 0.0356 | 0.0200 U |
| Ethylbenzene | 2.53 | 0.253 | 0.0422 | 0.0385 | 0.0347 | 0.0366 | 0.0412 | 0.0352 | 0.0200 U |
| m&p-Xylene | 461 | 46.1 | 0.144 | 0.126 | 0.116 | 0.128 | 0.137 | 0.116 | 0.0200 U |
| o-Xylene | 230 | 23 | 0.0522 | 0.0483 | 0.0451 | 0.0449 | 0.0511 | 0.0449 | 0.0200 U |

Notes and Acronyms:

1. Analyte concentrations exceeding the Regional Screening Levels (RSLs) are presented in bold and shaded gray.

CBES - Crooked Billet Elementary School

IA - Indoor air

NS - No standard established for this analyte.

ppbv = parts per billion by volume

U - Analyte was not detected at a concentration above the laboratory reporting limit.

Table 21
SUMMA Canister Sample Results in ppbv - February 2016
Meadowbrook Vapor Intrusion Site
Hatboro, PA
June 2016

AMBIENT/SCHOOL GROUNDS

| Sample Number | Sub-Slab Soil Vapor Regional Screening Level | Indoor Air Regional Screening Level | 262-0071 | 262-0072 |
|-------------------------------|--|---|------------------|---------------------|
| Location | | | CBES-AA1 | CBES-AA2 |
| Sub-Location | | | Building A South | Building B North |
| Sample Type | | | Ambient Air | Ambient Air |
| Result Units | ppbv | ppbv | ppbv | ppbv |
| Chloromethane | 455 | 45.5 | 0.534 | 0.563 |
| Vinyl Chloride | 0.67 | 0.067 | 0.0200 U | 0.0200 U |
| Chloroethane (Ethyl Chloride) | 37900 | 3790 | 0.0200 U | 0.0200 U |
| 1,1-Dichloroethene | 530 | 53 | 0.0200 U | 0.0200 U |
| Methylene Chloride | 288 | 28.8 | 0.0895 | 0.0844 |
| trans-1,2-Dichloroethene | NS | NS | 0.0200 U | 0.0200 U |
| 1,1-Dichloroethane | 4.5 | 0.45 | 0.0200 U | 0.0200 U |
| cis-1,2-Dichloroethene | NS | NS | 0.0200 U | 0.0200 U |
| Chloroform | 0.25 | 0.025 | 0.0215 | 0.0202 |
| 1,2-Dichloroethane | 0.27 | 0.027 | 0.0200 U | 0.0200 U |
| 1,1,1-Trichloroethane | 9530 | 953 | 0.0200 U | 0.0200 U |
| Benzene | 1.13 | 0.113 | 0.222 | 0.220 |
| Carbon Tetrachloride | 0.75 | 0.075 | 0.0795 | 0.0839 |
| Trichloroethene | 0.89 | 0.089 | 0.0200 U | 0.0200 U |
| Toluene | 13800 | 1380 | 0.364 | 0.426 |
| Tetrachloroethene | 16.2 | 1.62 | 0.0367 | 0.0477 |
| Ethylbenzene | 2.53 | 0.253 | 0.0348 | 0.0382 |
| m&p-Xylene | 461 | 46.1 | 0.127 | 0.133 |
| o-Xylene | 230 | 23 | 0.0500 | 0.0506 |

Notes and Acronyms:

1. Analyte concentrations exceeding the Regional Screening Levels (RSLs) are presented in bold and shaded gray.

AA - Ambient air

CBES - Crooked Billet Elementary School

NS - No standard established for this analyte.

ppbv = parts per billion by volume

U - Analyte was not detected at a concentration above the laboratory reporting limit.

Table 3a
SUMMA Canister Sample Results in $\mu\text{g}/\text{m}^3$ - February 2016
Meadowbrook Vapor Intrusion Site
Hatboro, PA
June 2016

BASEMENT

| Sample Number | Sub-Slab Soil Vapor Regional Screening Level | Indoor Air Regional Screening Level | 262-0063 | 262-0065 | 262-0067 | 262-0066 | 262-0068 | 262-0064 | 262-0062 |
|-------------------------------|--|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Location | | | CBES-IA1 | CBES-SS1 | CBES-IA2 | CBES-SS2 | CBES-CS1 | CBES-CS2 | CBES-CS3 |
| Sub-Location | | | Basement Stair | Basement Stair | Mechanical Room | Mechanical Room | Basement CS1 | Basement CS2 | Basement CS3 |
| Sample Type | | | Indoor Air | Sub-Slab | Indoor Air | Sub-Slab | Crawl Space Air | Crawl Space Air | Crawl Space Air |
| Result Units | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ |
| Chloromethane | 940 | 94 | 0.556 | 0.469 | 1.46 | 0.224 | 0.933 | 0.0413 U | 0.605 |
| Vinyl Chloride | 1.7 | 0.17 | 0.0511 U | 0.256 U | 0.0511 U | 0.256 U | 0.0511 U | 0.0511 U | 0.0511 U |
| Chloroethane (Ethyl Chloride) | 100000 | 10000 | 0.0528 U | 0.264 U | 0.0528 U | 0.264 U | 0.0528 U | 0.0528 U | 0.0528 U |
| 1,1-Dichloroethene | 2100 | 210 | 0.0793 U | 0.396 U | 0.0793 U | 0.396 U | 0.0793 U | 0.0793 U | 0.0793 U |
| Methylene Chloride | 1000 | 100 | 0.208 | 0.347 U | 0.411 | 0.347 U | 0.298 | 0.212 | 0.281 |
| trans-1,2-Dichloroethene | NS | NS | 0.0793 U | 0.396 U | 0.0793 U | 0.396 U | 0.0793 U | 0.0793 U | 0.0793 U |
| 1,1-Dichloroethane | 18 | 1.8 | 0.0809 U | 0.405 U | 0.0809 U | 0.405 U | 0.0809 U | 0.0809 U | 0.0809 U |
| cis-1,2-Dichloroethene | NS | NS | 0.0793 U | 0.396 U | 0.0793 U | 0.396 U | 0.0793 U | 0.0793 U | 0.0793 U |
| Chloroform | 1.2 | 0.12 | 0.0977 U | 1.21 | 0.280 | 0.488 U | 0.112 | 0.105 | 0.119 |
| 1,2-Dichloroethane | 1.1 | 0.11 | 0.0809 U | 0.405 U | 0.0879 | 0.405 U | 0.0809 U | 0.0809 U | 0.0809 U |
| 1,1,1-Trichloroethane | 52000 | 5200 | 0.168 | 0.546 U | 0.109 U | 0.546 U | 0.148 | 0.258 | 0.109 U |
| Benzene | 3.6 | 0.36 | 0.483 | 0.380 | 0.758 | 0.319 U | 0.691 | 0.353 | 0.528 |
| Carbon Tetrachloride | 4.7 | 0.47 | 0.515 | 0.629 U | 0.665 | 0.629 U | 0.545 | 0.538 | 0.534 |
| Trichloroethene | 4.8 | 0.48 | 0.184 | 6.87 | 0.125 | 4.33 | 0.146 | 0.190 | 0.175 |
| Toluene | 52000 | 5200 | 1.08 | 0.595 | 1.45 | 0.377 U | 1.47 | 0.754 | 1.22 |
| Tetrachloroethene | 110 | 11 | 0.345 | 6.05 | 0.279 | 8.00 | 0.330 | 0.453 | 0.300 |
| Ethylbenzene | 11 | 1.1 | 0.120 | 0.434 U | 0.176 | 0.434 U | 0.168 | 0.0919 | 0.145 |
| m&p-Xylene | 2000 | 200 | 0.364 | 0.434 U | 0.622 | 0.434 U | 0.549 | 0.264 | 0.460 |
| o-Xylene | 1000 | 100 | 0.149 | 0.434 U | 0.269 | 0.434 U | 0.222 | 0.111 | 0.175 |

Notes and Acronyms:

1. Analyte concentrations exceeding the Regional Screening Levels (RSLs) are presented in bold and shaded gray.

CBES - Crooked Billet Elementary School

CS - Crawl space

IA - Indoor air

$\mu\text{g}/\text{m}^3$ - Micrograms per cubic meter

NS - No standard established for this analyte.

SS - Sub-slab soil gas

U - Analyte was not detected at a concentration above the laboratory reporting limit.

Table 3b
SUMMA Canister Sample Results in $\mu\text{g}/\text{m}^3$ - February 2016
Meadowbrook Vapor Intrusion Site
Hatboro, PA
June 2016

STORAGE

| Sample Number | Sub-Slab Soil Vapor Regional Screening Level | Indoor Air Regional Screening Level | 262-0070 | 262-0069 |
|-------------------------------|--|---|--------------------------|--------------------------|
| Location | | | CBES-IA11 | CBES-SS3 |
| Sub-Location | | | Storage | Storage |
| Sample Type | | | Indoor Air | Sub-Slab |
| Result Units | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ |
| Chloromethane | 940 | 94 | 1.14 | 0.207 U |
| Vinyl Chloride | 1.7 | 0.17 | 0.0511 U | 0.256 U |
| Chloroethane (Ethyl Chloride) | 100000 | 10000 | 0.0528 U | 0.264 U |
| 1,1-Dichloroethene | 2100 | 210 | 0.0793 U | 0.396 U |
| Methylene Chloride | 1000 | 100 | 0.320 | 0.347 U |
| trans-1,2-Dichloroethene | NS | NS | 0.0793 U | 0.396 U |
| 1,1-Dichloroethane | 18 | 1.8 | 0.0809 U | 0.405 U |
| cis-1,2-Dichloroethene | NS | NS | 0.0793 U | 0.396 U |
| Chloroform | 1.2 | 0.12 | 0.131 | 0.488 U |
| 1,2-Dichloroethane | 1.1 | 0.11 | 0.0809 U | 0.405 U |
| 1,1,1-Trichloroethane | 52000 | 5200 | 0.109 U | 0.546 U |
| Benzene | 3.6 | 0.36 | 0.793 | 0.319 U |
| Carbon Tetrachloride | 4.7 | 0.47 | 0.518 | 0.629 U |
| Trichloroethene | 4.8 | 0.48 | 0.114 | 0.537 U |
| Toluene | 52000 | 5200 | 1.86 | 0.377 U |
| Tetrachloroethene | 110 | 11 | 0.300 | 0.678 U |
| Ethylbenzene | 11 | 1.1 | 0.225 | 0.434 U |
| m&p-Xylene | 2000 | 200 | 0.711 | 0.434 U |
| o-Xylene | 1000 | 100 | 0.264 | 0.434 U |

Notes and Acronyms:

1. Analyte concentrations exceeding the Regional Screening Levels (RSLs) are presented in bold and shaded gray.

CBES - Crooked Billet Elementary School

IA - Indoor air

$\mu\text{g}/\text{m}^3$ - Micrograms per cubic meter

NS - No standard established for this analyte.

SS - Sub-slab soil gas

U - Analyte was not detected at a concentration above the laboratory reporting limit.

Table 3c
SUMMA Canister Sample Results in $\mu\text{g}/\text{m}^3$ - February 2016
Meadowbrook Vapor Intrusion Site
Hatboro, PA
June 2016

CAFETERIA

| Sample Number | Sub-Slab Soil Vapor Regional Screening Level | Indoor Air Regional Screening Level | 262-0049 | 262-0048 |
|-------------------------------|--|---|--------------------------|--------------------------|
| Location | | | CBES-IA12 | CBES-SS4 |
| Sub-Location | | | Cafeteria Room 113 | Cafeteria Room 113 |
| Sample Type | | | Indoor Air | Sub-Slab |
| Result Units | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ |
| Chloromethane | 940 | 94 | 1.07 | 0.207 U |
| Vinyl Chloride | 1.7 | 0.17 | 0.0511 U | 0.256 U |
| Chloroethane (Ethyl Chloride) | 100000 | 10000 | 0.0528 U | 0.264 U |
| 1,1-Dichloroethene | 2100 | 210 | 0.0793 U | 0.396 U |
| Methylene Chloride | 1000 | 100 | 0.281 | 0.347 U |
| trans-1,2-Dichloroethene | NS | NS | 0.0793 U | 0.396 U |
| 1,1-Dichloroethane | 18 | 1.8 | 0.0809 U | 0.405 U |
| cis-1,2-Dichloroethene | NS | NS | 0.0793 U | 0.396 U |
| Chloroform | 1.2 | 0.12 | 0.107 | 0.488 U |
| 1,2-Dichloroethane | 1.1 | 0.11 | 0.0809 U | 0.405 U |
| 1,1,1-Trichloroethane | 52000 | 5200 | 0.109 U | 0.546 U |
| Benzene | 3.6 | 0.36 | 0.648 | 0.319 U |
| Carbon Tetrachloride | 4.7 | 0.47 | 0.512 | 0.629 U |
| Trichloroethene | 4.8 | 0.48 | 0.107 U | 0.537 U |
| Toluene | 52000 | 5200 | 1.38 | 0.377 U |
| Tetrachloroethene | 110 | 11 | 0.232 | 2.09 |
| Ethylbenzene | 11 | 1.1 | 0.148 | 0.434 U |
| m&p-Xylene | 2000 | 200 | 0.490 | 0.434 U |
| o-Xylene | 1000 | 100 | 0.198 | 0.434 U |

Notes and Acronyms:

1. Analyte concentrations exceeding the Regional Screening Levels (RSLs) are presented in bold and shaded gray.

CBES - Crooked Billet Elementary School

IA - Indoor air

$\mu\text{g}/\text{m}^3$ - Micrograms per cubic meter

NS - No standard established for this analyte.

SS - Sub-slab soil gas

U - Analyte was not detected at a concentration above the laboratory reporting limit.

Table 3d
SUMMA Canister Sample Results in $\mu\text{g}/\text{m}^3$ - February 2016
Meadowbrook Vapor Intrusion Site
Hatboro, PA
June 2016

MUSIC/ART ROOM 123

| Sample Number | Sub-Slab Soil Vapor Regional Screening Level | Indoor Air Regional Screening Level | 262-0047 | 262-0046 |
|-------------------------------|--|---|--------------------------|--------------------------|
| Location | | | CBES-IA13 | CBES-SS5 |
| Sub-Location | | | Music/Art Room 123 | Music/Art Room 123 |
| Sample Type | | | Indoor Air | Sub-Slab |
| Result Units | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ |
| Chloromethane | 940 | 94 | 1.09 | 0.207 U |
| Vinyl Chloride | 1.7 | 0.17 | 0.0511 U | 0.256 U |
| Chloroethane (Ethyl Chloride) | 100000 | 10000 | 0.0528 U | 0.264 U |
| 1,1-Dichloroethene | 2100 | 210 | 0.0793 U | 0.396 U |
| Methylene Chloride | 1000 | 100 | 0.310 | 0.347 U |
| trans-1,2-Dichloroethene | NS | NS | 0.0793 U | 0.396 U |
| 1,1-Dichloroethane | 18 | 1.8 | 0.0809 U | 0.405 U |
| cis-1,2-Dichloroethene | NS | NS | 0.0793 U | 0.396 U |
| Chloroform | 1.2 | 0.12 | 0.104 U | 0.488 U |
| 1,2-Dichloroethane | 1.1 | 0.11 | 0.0809 U | 0.405 U |
| 1,1,1-Trichloroethane | 52000 | 5200 | 0.109 U | 0.546 U |
| Benzene | 3.6 | 0.36 | 0.738 | 0.319 U |
| Carbon Tetrachloride | 4.7 | 0.47 | 0.513 | 0.629 U |
| Trichloroethene | 4.8 | 0.48 | 0.107 U | 0.537 U |
| Toluene | 52000 | 5200 | 1.62 | 0.377 U |
| Tetrachloroethene | 110 | 11 | 0.267 | 4.15 |
| Ethylbenzene | 11 | 1.1 | 0.210 | 0.434 U |
| m&p-Xylene | 2000 | 200 | 0.686 | 0.434 U |
| o-Xylene | 1000 | 100 | 0.249 | 0.434 U |

Notes and Acronyms:

1. Analyte concentrations exceeding the Regional Screening Levels (RSLs) are presented in bold and shaded gray.

CBES - Crooked Billet Elementary School

IA - Indoor air

$\mu\text{g}/\text{m}^3$ - Micrograms per cubic meter

NS - No standard established for this analyte.

SS - Sub-slab soil gas

U - Analyte was not detected at a concentration above the laboratory reporting limit.

Table 3e
SUMMA Canister Sample Results in $\mu\text{g}/\text{m}^3$ - February 2016
Meadowbrook Vapor Intrusion Site
Hatboro, PA
June 2016

PRE-KINDERGARTEN CLASSROOM 120

| Sample Number | Sub-Slab Soil Vapor Regional Screening Level | Indoor Air Regional Screening Level | 262-0044 | 262-0045 | 262-0043 |
|-------------------------------|--|---|--------------------------|--------------------------|--------------------------|
| Location | | | CBES-IA14 | CBES-IA14CO | CBES-SS6 |
| Sub-Location | | | Pre-K Room 120 | Pre-K Room 120 | Pre-K Room 120 |
| Sample Type | | | Indoor Air | Indoor Air | Sub-Slab |
| Result Units | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ |
| Chloromethane | 940 | 94 | 1.13 | 1.12 | 0.207 U |
| Vinyl Chloride | 1.7 | 0.17 | 0.0511 U | 0.0511 U | 0.256 U |
| Chloroethane (Ethyl Chloride) | 100000 | 10000 | 0.0528 U | 0.0528 U | 0.264 U |
| 1,1-Dichloroethene | 2100 | 210 | 0.0793 U | 0.0793 U | 0.396 U |
| Methylene Chloride | 1000 | 100 | 0.313 | 0.303 | 0.347 U |
| trans-1,2-Dichloroethene | NS | NS | 0.0793 U | 0.0793 U | 0.396 U |
| 1,1-Dichloroethane | 18 | 1.8 | 0.0809 U | 0.0809 U | 0.405 U |
| cis-1,2-Dichloroethene | NS | NS | 0.0793 U | 0.0793 U | 0.396 U |
| Chloroform | 1.2 | 0.12 | 0.104 | 0.105 | 2.91 |
| 1,2-Dichloroethane | 1.1 | 0.11 | 0.0809 U | 0.0809 U | 0.405 U |
| 1,1,1-Trichloroethane | 52000 | 5200 | 0.109 U | 0.109 U | 0.546 U |
| Benzene | 3.6 | 0.36 | 0.735 | 0.717 | 0.319 U |
| Carbon Tetrachloride | 4.7 | 0.47 | 0.515 | 0.514 | 0.629 U |
| Trichloroethene | 4.8 | 0.48 | 0.107 U | 0.107 U | 10.1 |
| Toluene | 52000 | 5200 | 1.47 | 1.50 | 0.377 U |
| Tetrachloroethene | 110 | 11 | 0.290 | 0.290 | 106 |
| Ethylbenzene | 11 | 1.1 | 0.165 | 0.168 | 0.434 U |
| m&p-Xylene | 2000 | 200 | 0.558 | 0.568 | 0.434 U |
| o-Xylene | 1000 | 100 | 0.222 | 0.223 | 0.434 U |

Notes and Acronyms:

1. Analyte concentrations exceeding the Regional Screening Levels (RSLs) are presented in bold and shaded gray.

CBES - Crooked Billet Elementary School

CO - Co-located

IA - Indoor air

$\mu\text{g}/\text{m}^3$ - Micrograms per cubic meter

NS - No standard established for this analyte.

SS - Sub-slab soil gas

U - Analyte was not detected at a concentration above the laboratory reporting limit.

Table 3f
SUMMA Canister Sample Results in $\mu\text{g}/\text{m}^3$ - February 2016
Meadowbrook Vapor Intrusion Site
Hatboro, PA
June 2016

KINDERGARTEN CLASSROOM 122

| Sample Number | Sub-Slab Soil Vapor Regional Screening Level | Indoor Air Regional Screening Level | 262-0041 | 262-0042 | 262-0040 |
|-------------------------------|--|---|--------------------------|--------------------------|--------------------------|
| Location | | | CBES-IA15 | CBES-IA15CO | CBES-SS7 |
| Sub-Location | | | Kindergarten Room 122 | Kindergarten Room 122 | Kindergarten Room 122 |
| Sample Type | | | Indoor Air | Indoor Air | Sub-Slab |
| Result Units | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ |
| Chloromethane | 940 | 94 | 1.12 | 1.06 | 0.207 U |
| Vinyl Chloride | 1.7 | 0.17 | 0.0511 U | 0.0511 U | 0.256 U |
| Chloroethane (Ethyl Chloride) | 100000 | 10000 | 0.0528 U | 0.0528 U | 0.264 U |
| 1,1-Dichloroethene | 2100 | 210 | 0.0793 U | 0.0793 U | 0.396 U |
| Methylene Chloride | 1000 | 100 | 0.300 | 0.324 | 0.347 U |
| trans-1,2-Dichloroethene | NS | NS | 0.0793 U | 0.0793 U | 0.396 U |
| 1,1-Dichloroethane | 18 | 1.8 | 0.0809 U | 0.0809 U | 0.405 U |
| cis-1,2-Dichloroethene | NS | NS | 0.0793 U | 0.0793 U | 0.396 U |
| Chloroform | 1.2 | 0.12 | 0.0977 U | 0.102 | 0.488 U |
| 1,2-Dichloroethane | 1.1 | 0.11 | 0.0809 U | 0.0809 U | 0.405 U |
| 1,1,1-Trichloroethane | 52000 | 5200 | 0.109 U | 0.109 U | 0.546 U |
| Benzene | 3.6 | 0.36 | 0.696 | 0.720 | 0.319 U |
| Carbon Tetrachloride | 4.7 | 0.47 | 0.511 | 0.503 | 0.629 U |
| Trichloroethene | 4.8 | 0.48 | 0.107 U | 0.107 U | 0.537 U |
| Toluene | 52000 | 5200 | 1.62 | 1.53 | 0.377 U |
| Tetrachloroethene | 110 | 11 | 0.291 | 0.276 | 12.6 |
| Ethylbenzene | 11 | 1.1 | 0.164 | 0.154 | 0.434 U |
| m&p-Xylene | 2000 | 200 | 0.546 | 0.519 | 0.434 U |
| o-Xylene | 1000 | 100 | 0.210 | 0.210 | 0.434 U |

Notes and Acronyms:

1. Analyte concentrations exceeding the Regional Screening Levels (RSLs) are presented in bold and shaded gray.

CBES - Crooked Billet Elementary School

CO - Co-located

IA - Indoor air

$\mu\text{g}/\text{m}^3$ - Micrograms per cubic meter

NS - No standard established for this analyte.

SS - Sub-slab soil gas

U - Analyte was not detected at a concentration above the laboratory reporting limit.

Table 3g
SUMMA Canister Sample Results in $\mu\text{g}/\text{m}^3$ - February 2016
Meadowbrook Vapor Intrusion Site
Hatboro, PA
June 2016

MUSIC ROOM 121

| Sample Number | Sub-Slab Soil Vapor Regional Screening Level | Indoor Air Regional Screening Level | 262-0039 | 262-0038 |
|-------------------------------|--|---|--------------------------|--------------------------|
| Location | | | CBES-IA16 | CBES-SS8 |
| Sub-Location | | | Music Room 121 | Music Room 121 |
| Sample Type | | | Indoor Air | Sub-Slab |
| Result Units | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ |
| Chloromethane | 940 | 94 | 1.09 | 0.207 U |
| Vinyl Chloride | 1.7 | 0.17 | 0.0511 U | 0.256 U |
| Chloroethane (Ethyl Chloride) | 100000 | 10000 | 0.0528 U | 0.264 U |
| 1,1-Dichloroethene | 2100 | 210 | 0.0793 U | 0.396 U |
| Methylene Chloride | 1000 | 100 | 0.300 | 0.347 U |
| trans-1,2-Dichloroethene | NS | NS | 0.0793 U | 0.396 U |
| 1,1-Dichloroethane | 18 | 1.8 | 0.0809 U | 0.405 U |
| cis-1,2-Dichloroethene | NS | NS | 0.0793 U | 0.396 U |
| Chloroform | 1.2 | 0.12 | 0.0977 U | 0.488 U |
| 1,2-Dichloroethane | 1.1 | 0.11 | 0.0809 U | 0.405 U |
| 1,1,1-Trichloroethane | 52000 | 5200 | 0.109 U | 0.546 U |
| Benzene | 3.6 | 0.36 | 0.730 | 0.319 U |
| Carbon Tetrachloride | 4.7 | 0.47 | 0.531 | 0.629 U |
| Trichloroethene | 4.8 | 0.48 | 0.107 U | 0.537 U |
| Toluene | 52000 | 5200 | 1.49 | 0.377 U |
| Tetrachloroethene | 110 | 11 | 0.264 | 2.05 |
| Ethylbenzene | 11 | 1.1 | 0.156 | 0.434 U |
| m&p-Xylene | 2000 | 200 | 0.524 | 0.434 U |
| o-Xylene | 1000 | 100 | 0.214 | 0.434 U |

Notes and Acronyms:

1. Analyte concentrations exceeding the Regional Screening Levels (RSLs) are presented in bold and shaded gray.

CBES - Crooked Billet Elementary School

IA - Indoor air

$\mu\text{g}/\text{m}^3$ - Micrograms per cubic meter

NS - No standard established for this analyte.

SS - Sub-slab soil gas

U - Analyte was not detected at a concentration above the laboratory reporting limit.

Table 3h
SUMMA Canister Sample Results in $\mu\text{g}/\text{m}^3$ - February 2016
Meadowbrook Vapor Intrusion Site
Hatboro, PA
June 2016

LIBRARY ROOM 100

| Sample Number | Sub-Slab Soil Vapor Regional Screening Level | Indoor Air Regional Screening Level | 262-0058 | 262-0059 | 262-0060 |
|-------------------------------|--|---|--------------------------|--------------------------|--------------------------|
| Location | | | CBES-CS4 | CBES-IA3 | CBES-IA4 |
| Sub-Location | | | Office CS | Office / Workroom | Library Room 100 |
| Sample Type | | | Crawl Space Air | Indoor Air | Indoor Air |
| Result Units | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ |
| Chloromethane | 940 | 94 | 0.152 | 1.16 | 1.05 |
| Vinyl Chloride | 1.7 | 0.17 | 0.0511 U | 0.0511 U | 0.0511 U |
| Chloroethane (Ethyl Chloride) | 100000 | 10000 | 0.0528 U | 0.0528 U | 0.0528 U |
| 1,1-Dichloroethene | 2100 | 210 | 0.0793 U | 0.0793 U | 0.0793 U |
| Methylene Chloride | 1000 | 100 | 0.111 | 0.304 | 0.311 |
| trans-1,2-Dichloroethene | NS | NS | 0.0793 U | 0.0793 U | 0.0793 U |
| 1,1-Dichloroethane | 18 | 1.8 | 0.0809 U | 0.0809 U | 0.0809 U |
| cis-1,2-Dichloroethene | NS | NS | 0.0793 U | 0.0793 U | 0.0793 U |
| Chloroform | 1.2 | 0.12 | 0.0977 U | 0.113 | 0.107 |
| 1,2-Dichloroethane | 1.1 | 0.11 | 0.0809 U | 0.0975 | 0.0975 U |
| 1,1,1-Trichloroethane | 52000 | 5200 | 4.27 | 3.13 | 0.222 |
| Benzene | 3.6 | 0.36 | 0.157 | 0.690 | 0.728 |
| Carbon Tetrachloride | 4.7 | 0.47 | 0.481 | 0.551 | 0.484 |
| Trichloroethene | 4.8 | 0.48 | 0.107 U | 0.199 | 0.138 |
| Toluene | 52000 | 5200 | 0.242 | 1.58 | 1.42 |
| Tetrachloroethene | 110 | 11 | 0.227 | 0.283 | 0.294 |
| Ethylbenzene | 11 | 1.1 | 0.0868 U | 0.276 | 0.175 |
| m&p-Xylene | 2000 | 200 | 0.256 | 0.910 | 0.597 |
| o-Xylene | 1000 | 100 | 0.0909 | 0.357 | 0.238 |

Notes and Acronyms:

1. Analyte concentrations exceeding the Regional Screening Levels (RSLs) are presented in bold and shaded gray.

CBES - Crooked Billet Elementary School

CS - Crawl space

IA - Indoor air

$\mu\text{g}/\text{m}^3$ - Micrograms per cubic meter

NS - No standard established for this analyte.

U - Analyte was not detected at a concentration above the laboratory reporting limit.

Table 3i
SUMMA Canister Sample Results in $\mu\text{g}/\text{m}^3$ - February 2016
Meadowbrook Vapor Intrusion Site
Hatboro, PA
June 2016

FACULTY ROOM 103

| Sample Number | Sub-Slab Soil Vapor Regional Screening Level | Indoor Air Regional Screening Level | 262-0054 |
|-------------------------------|--|---|--------------------------|
| Location | | | CBES-IA7 |
| Sub-Location | | | Faculty Room 103 |
| Sample Type | | | Indoor Air |
| Result Units | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ |
| Chloromethane | 940 | 94 | 1.17 |
| Vinyl Chloride | 1.7 | 0.17 | 0.0511 U |
| Chloroethane (Ethyl Chloride) | 100000 | 10000 | 0.0528 U |
| 1,1-Dichloroethene | 2100 | 210 | 0.0793 U |
| Methylene Chloride | 1000 | 100 | 0.303 |
| trans-1,2-Dichloroethene | NS | NS | 0.0793 U |
| 1,1-Dichloroethane | 18 | 1.8 | 0.0809 U |
| cis-1,2-Dichloroethene | NS | NS | 0.0793 U |
| Chloroform | 1.2 | 0.12 | 0.112 |
| 1,2-Dichloroethane | 1.1 | 0.11 | 0.0809 U |
| 1,1,1-Trichloroethane | 52000 | 5200 | 0.109 U |
| Benzene | 3.6 | 0.36 | 0.682 |
| Carbon Tetrachloride | 4.7 | 0.47 | 0.491 |
| Trichloroethene | 4.8 | 0.48 | 0.119 |
| Toluene | 52000 | 5200 | 1.39 |
| Tetrachloroethene | 110 | 11 | 0.289 |
| Ethylbenzene | 11 | 1.1 | 0.154 |
| m&p-Xylene | 2000 | 200 | 0.524 |
| o-Xylene | 1000 | 100 | 0.179 |

Notes and Acronyms:

1. Analyte concentrations exceeding the Regional Screening Levels (RSLs) are presented in bold and shaded gray.

CBES - Crooked Billet Elementary School

IA - Indoor air

$\mu\text{g}/\text{m}^3$ - Micrograms per cubic meter

NS - No standard established for this analyte.

U - Analyte was not detected at a concentration above the laboratory reporting limit.

Table 3j
SUMMA Canister Sample Results in $\mu\text{g}/\text{m}^3$ - February 2016
Meadowbrook Vapor Intrusion Site
Hatboro, PA
June 2016

GIRLS' BATHROOM

| Sample Number | Sub-Slab Soil Vapor Regional Screening Level | Indoor Air Regional Screening Level | 262-0056 | 262-0055 |
|-------------------------------|--|---|-------------------------------|--------------------------|
| Location | | | CBES-CS5 | CBES-IA5 |
| Sub-Location | | | Girls' Bathroom Wall Panel | Girls' Bathroom |
| Sample Type | | | Crawl Space Air | Indoor Air |
| Result Units | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ |
| Chloromethane | 940 | 94 | 1.02 | 1.12 |
| Vinyl Chloride | 1.7 | 0.17 | 0.0511 U | 0.0511 U |
| Chloroethane (Ethyl Chloride) | 100000 | 10000 | 0.0528 U | 0.0528 U |
| 1,1-Dichloroethene | 2100 | 210 | 0.0793 U | 0.0793 U |
| Methylene Chloride | 1000 | 100 | 0.306 | 0.337 |
| trans-1,2-Dichloroethene | NS | NS | 0.0793 U | 0.0793 U |
| 1,1-Dichloroethane | 18 | 1.8 | 0.0809 U | 0.0809 U |
| cis-1,2-Dichloroethene | NS | NS | 0.0793 U | 0.0793 U |
| Chloroform | 1.2 | 0.12 | 0.100 | 0.135 |
| 1,2-Dichloroethane | 1.1 | 0.11 | 0.0809 U | 0.105 |
| 1,1,1-Trichloroethane | 52000 | 5200 | 0.109 U | 0.109 U |
| Benzene | 3.6 | 0.36 | 0.645 | 0.687 |
| Carbon Tetrachloride | 4.7 | 0.47 | 0.467 | 0.506 |
| Trichloroethene | 4.8 | 0.48 | 0.107 U | 0.137 |
| Toluene | 52000 | 5200 | 1.37 | 1.23 |
| Tetrachloroethene | 110 | 11 | 0.276 | 0.276 |
| Ethylbenzene | 11 | 1.1 | 0.150 | 0.159 |
| m&p-Xylene | 2000 | 200 | 0.516 | 0.584 |
| o-Xylene | 1000 | 100 | 0.206 | 0.244 |

Notes and Acronyms:

1. Analyte concentrations exceeding the Regional Screening Levels (RSLs) are presented in bold and shaded gray.

CBES - Crooked Billet Elementary School

CS - Crawl space

IA - Indoor air

$\mu\text{g}/\text{m}^3$ - Micrograms per cubic meter

NS - No standard established for this analyte.

U - Analyte was not detected at a concentration above the laboratory reporting limit.

Table 3k
SUMMA Canister Sample Results in $\mu\text{g}/\text{m}^3$ - February 2016
Meadowbrook Vapor Intrusion Site
Hatboro, PA
June 2016

ADDITIONAL LOCATIONS

| Sample Number | Sub-Slab Soil Vapor Regional Screening Level | Indoor Air Regional Screening Level | 262-0057 | 262-0053 | 262-0051 | 262-0052 | 262-0050 | 262-0061 | 262-0073 |
|-------------------------------|--|---|--------------------------|--------------------------|---------------------------------|---------------------------------|--------------------------|--------------------------|--------------------------|
| Location | | | CBES-IA6 | CBES-IA8 | CBES-IA9 | CBES-IA9CO | CBES-IA10 | CBES-IA17 | Trip Blank |
| Sub-Location | | | Classroom Room 101 | Nurse Room 107 | Corridor/ Across Room 107 | Corridor/ Across Room 107 | Multipurpose Room 111 | Principal Room 105 | Trip Blank |
| Sample Type | | | Indoor Air | Indoor Air | Indoor Air | Indoor Air | Indoor Air | Indoor Air | Trip Blank |
| Result Units | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ |
| Chloromethane | 940 | 94 | 1.17 | 1.17 | 1.01 | 0.957 | 1.16 | 1.02 | 0.0413 U |
| Vinyl Chloride | 1.7 | 0.17 | 0.0511 U | 0.0511 U | 0.0511 U | 0.0511 U | 0.0512 U | 0.0511 U | 0.0511 U |
| Chloroethane (Ethyl Chloride) | 100000 | 10000 | 0.0528 U | 0.0528 U | 0.0528 U | 0.0528 U | 0.0529 U | 0.0528 U | 0.0528 U |
| 1,1-Dichloroethene | 2100 | 210 | 0.0793 U | 0.0793 U | 0.0793 U | 0.0793 U | 0.0794 U | 0.0793 U | 0.0793 U |
| Methylene Chloride | 1000 | 100 | 0.339 | 0.325 | 0.301 | 0.273 | 0.318 | 0.286 | 0.0695 U |
| trans-1,2-Dichloroethene | NS | NS | 0.0793 U | 0.0793 U | 0.0793 U | 0.0793 U | 0.0794 U | 0.0793 U | 0.0793 U |
| 1,1-Dichloroethane | 18 | 1.8 | 0.0809 U | 0.0809 U | 0.0809 U | 0.0809 U | 0.0811 U | 0.0809 U | 0.0809 U |
| cis-1,2-Dichloroethene | NS | NS | 0.0793 U | 0.0793 U | 0.0793 U | 0.0793 U | 0.0794 U | 0.0793 U | 0.0793 U |
| Chloroform | 1.2 | 0.12 | 0.120 | 0.114 | 0.105 | 0.0977 U | 0.102 | 0.102 | 0.0977 U |
| 1,2-Dichloroethane | 1.1 | 0.11 | 0.112 | 0.203 | 0.0809 U | 0.0809 U | 0.0811 U | 0.147 | 0.0809 U |
| 1,1,1-Trichloroethane | 52000 | 5200 | 0.109 U | 0.109 U | 0.109 U | 0.109 U | 0.109 U | 0.109 U | 0.109 U |
| Benzene | 3.6 | 0.36 | 0.757 | 0.727 | 0.703 | 0.629 | 0.692 | 0.612 | 0.0639 U |
| Carbon Tetrachloride | 4.7 | 0.47 | 0.545 | 0.530 | 0.495 | 0.466 | 0.508 | 0.499 | 0.126 U |
| Trichloroethene | 4.8 | 0.48 | 0.125 | 0.128 | 0.112 | 0.111 | 0.108 U | 0.118 | 0.107 U |
| Toluene | 52000 | 5200 | 1.50 | 1.54 | 1.41 | 1.34 | 1.54 | 1.33 | 0.0754 U |
| Tetrachloroethene | 110 | 11 | 0.334 | 0.270 | 0.245 | 0.231 | 0.270 | 0.241 | 0.136 U |
| Ethylbenzene | 11 | 1.1 | 0.183 | 0.167 | 0.151 | 0.159 | 0.179 | 0.153 | 0.0868 U |
| m&p-Xylene | 2000 | 200 | 0.626 | 0.546 | 0.504 | 0.556 | 0.596 | 0.502 | 0.0868 U |
| o-Xylene | 1000 | 100 | 0.227 | 0.210 | 0.196 | 0.195 | 0.222 | 0.195 | 0.0868 U |

Notes and Acronyms:

1. Analyte concentrations exceeding the Regional Screening Levels (RSLs) are presented in bold and shaded gray.

CBES - Crooked Billet Elementary School

IA - Indoor air

$\mu\text{g}/\text{m}^3$ - Micrograms per cubic meter

NS - No standard established for this analyte.

U - Analyte was not detected at a concentration above the laboratory reporting limit.

Table 31
SUMMA Canister Sample Results in $\mu\text{g}/\text{m}^3$ - February 2016
Meadowbrook Vapor Intrusion Site
Hatboro, PA
June 2016

AMBIENT/SCHOOL GROUNDS

| Sample Number | Sub-Slab Soil Vapor Regional Screening Level | Indoor Air Regional Screening Level | 262-0071 | 262-0072 |
|-------------------------------|--|---|--------------------------|--------------------------|
| Location | | | CBES-AA1 | CBES-AA2 |
| Sub-Location | | | Building A South | Building B North |
| Sample Type | | | Ambient Air | Ambient Air |
| Result Units | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ |
| Chloromethane | 940 | 94 | 1.10 | 1.16 |
| Vinyl Chloride | 1.7 | 0.17 | 0.0511 U | 0.0511 U |
| Chloroethane (Ethyl Chloride) | 100000 | 10000 | 0.0528 U | 0.0528 U |
| 1,1-Dichloroethene | 2100 | 210 | 0.0793 U | 0.0793 U |
| Methylene Chloride | 1000 | 100 | 0.311 | 0.293 |
| trans-1,2-Dichloroethene | NS | NS | 0.0793 U | 0.0793 U |
| 1,1-Dichloroethane | 18 | 1.8 | 0.0809 U | 0.0809 U |
| cis-1,2-Dichloroethene | NS | NS | 0.0793 U | 0.0793 U |
| Chloroform | 1.2 | 0.12 | 0.105 | 0.0988 |
| 1,2-Dichloroethane | 1.1 | 0.11 | 0.0809 U | 0.0809 U |
| 1,1,1-Trichloroethane | 52000 | 5200 | 0.109 U | 0.109 U |
| Benzene | 3.6 | 0.36 | 0.710 | 0.702 |
| Carbon Tetrachloride | 4.7 | 0.47 | 0.500 | 0.528 |
| Trichloroethene | 4.8 | 0.48 | 0.107 U | 0.107 U |
| Toluene | 52000 | 5200 | 1.37 | 1.61 |
| Tetrachloroethene | 110 | 11 | 0.249 | 0.323 |
| Ethylbenzene | 11 | 1.1 | 0.151 | 0.166 |
| m&p-Xylene | 2000 | 200 | 0.549 | 0.578 |
| o-Xylene | 1000 | 100 | 0.217 | 0.220 |

Notes and Acronyms:

1. Analyte concentrations exceeding the Regional Screening Levels (RSLs) are presented in bold and shaded gray.

AA - Ambient air

CBES - Crooked Billet Elementary School

$\mu\text{g}/\text{m}^3$ - Micrograms per cubic meter

NS - No standard established for this analyte.

U - Analyte was not detected at a concentration above the laboratory reporting limit.

Table 4
Comparison of First Round and Second Round SUMMA Canister Sample Results Exceeding the RSLs in $\mu\text{g}/\text{m}^3$
Meadowbrook Site
Hatboro, PA
June 2016

| Location ¹ | Sub-Location | Sample # ^{2,3,4,5} | Analyte ⁶ | Results ($\mu\text{g}/\text{m}^3$) | RSL ($\mu\text{g}/\text{m}^3$) |
|-----------------------|----------------------------|-----------------------------|----------------------|--------------------------------------|----------------------------------|
| CBES-AA1 | Building A South | 262-0030 | Benzene | 0.755 | 0.36 |
| | | 262-0031 | Benzene | 0.730 | 0.36 |
| | | 262-0071 | Benzene | 0.710 | 0.36 |
| | | 262-0030 | Carbon Tetrachloride | 0.573 | 0.47 |
| | | 262-0031 | Carbon Tetrachloride | 0.555 | 0.47 |
| | | 262-0071 | Carbon Tetrachloride | 0.500 | 0.48 |
| CBES-AA2 | Building B North | 262-0032 | Benzene | 0.736 | 0.36 |
| | | 262-0033 | Benzene | 0.765 | 0.36 |
| | | 262-0072 | Benzene | 0.702 | 0.36 |
| | | 262-0032 | Carbon Tetrachloride | 0.571 | 0.47 |
| | | 262-0033 | Carbon Tetrachloride | 0.576 | 0.47 |
| | | 262-0072 | Carbon Tetrachloride | 0.528 | 0.48 |
| CBES-CS1 | Basement CS1 | 262-0025 | Benzene | 0.380 | 0.36 |
| | | 262-0068 | Benzene | 0.691 | 0.36 |
| | | 262-0025 | Carbon Tetrachloride | 0.525 | 0.47 |
| | | 262-0068 | Carbon Tetrachloride | 0.545 | 0.48 |
| | | 262-0025 | Chloroform | 0.211 | 0.12 |
| | | 262-0068 | Chloroform | 0.112 | 0.12 |
| CBES-CS2 | Basement CS2 | 262-0026 | Benzene | 0.220 | 0.36 |
| | | 262-0064 | Benzene | 0.353 | 0.36 |
| | | 262-0026 | Carbon Tetrachloride | 0.515 | 0.47 |
| | | 262-0064 | Carbon Tetrachloride | 0.538 | 0.48 |
| | | 262-0026 | Chloroform | 0.182 | 0.12 |
| | | 262-0064 | Chloroform | 0.105 | 0.12 |
| CBES-CS3 | Basement CS3 | 262-0027 | Benzene | 0.465 | 0.36 |
| | | 262-0062 | Benzene | 0.528 | 0.36 |
| | | 262-0027 | Carbon Tetrachloride | 0.547 | J 0.47 |
| | | 262-0062 | Carbon Tetrachloride | 0.534 | 0.48 |
| CBES-CS4 | Office CS | 262-0028 | Carbon Tetrachloride | 0.528 | 0.47 |
| | | 262-0058 | Carbon Tetrachloride | 0.481 | 0.48 |
| CBES-CS5 | Girls' Bathroom Wall Panel | 262-0029 | Benzene | 0.714 | 0.36 |
| | | 262-0056 | Benzene | 0.645 | 0.36 |
| | | 262-0029 | Carbon Tetrachloride | 0.561 | J 0.47 |
| | | 262-0056 | Carbon Tetrachloride | 0.467 | 0.48 |
| CBES-IA1 | Basement Stair | 262-0009 | Benzene | ND | 0.36 |
| | | 262-0063 | Benzene | 0.483 | 0.36 |
| | | 262-0009 | Carbon Tetrachloride | 0.595 | J 0.47 |
| | | 262-0063 | Carbon Tetrachloride | 0.515 | 0.48 |
| | | 262-0009 | Chloroform | 0.213 | J 0.12 |
| | | 262-0063 | Chloroform | ND | 0.12 |

Table 4
Comparison of First Round and Second Round SUMMA Canister Sample Results Exceeding the RSLs in $\mu\text{g}/\text{m}^3$
Meadowbrook Site
Hatboro, PA
June 2016

| Location ¹ | Sub-Location | Sample # ^{2,3,4,5} | Analyte ⁶ | Results ($\mu\text{g}/\text{m}^3$) | RSL ($\mu\text{g}/\text{m}^3$) |
|-----------------------|--------------------|-----------------------------|----------------------|--------------------------------------|----------------------------------|
| CBES-IA2 | Mechanical Room | 262-0010 | Benzene | 0.694 | 0.36 |
| | | 262-0034 | Benzene | 0.764 | 0.36 |
| | | 262-0067 | Benzene | 0.758 | 0.36 |
| | | 262-0010 | Carbon Tetrachloride | 0.588 | J 0.47 |
| | | 262-0034 | Carbon Tetrachloride | 0.520 | 0.47 |
| | | 262-0067 | Carbon Tetrachloride | 0.665 | 0.48 |
| | | 262-0010 | Chloroform | ND | 0.12 |
| | | 262-0034 | Chloroform | 0.108 | 0.12 |
| | | 262-0067 | Chloroform | 0.280 | 0.12 |
| CBES-IA3 | Office / Workroom | 262-0011 | Benzene | 0.734 | 0.36 |
| | | 262-0059 | Benzene | 0.690 | 0.36 |
| | | 262-0011 | Carbon Tetrachloride | 0.529 | 0.47 |
| | | 262-0059 | Carbon Tetrachloride | 0.551 | 0.48 |
| CBES-IA4 | Library Room 100 | 262-0012 | Benzene | 0.703 | 0.36 |
| | | 262-0060 | Benzene | 0.728 | 0.36 |
| | | 262-0012 | Carbon Tetrachloride | 0.491 | 0.47 |
| | | 262-0060 | Carbon Tetrachloride | 0.484 | 0.48 |
| CBES-IA5 | Girls' Bathroom | 262-0013 | Benzene | 0.653 | 0.36 |
| | | 262-0055 | Benzene | 0.687 | 0.36 |
| | | 262-0013 | Carbon Tetrachloride | 0.520 | 0.47 |
| | | 262-0055 | Carbon Tetrachloride | 0.506 | 0.48 |
| | | 262-0013 | Chloroform | 0.107 | 0.12 |
| | | 262-0055 | Chloroform | 0.135 | 0.12 |
| CBES-IA6 | Classroom Room 101 | 262-0014 | 1,2-Dichloroethane | ND | 0.11 |
| | | 262-0057 | 1,2-Dichloroethane | 0.112 | 0.11 |
| | | 262-0014 | Benzene | 0.591 | 0.36 |
| | | 262-0057 | Benzene | 0.757 | 0.36 |
| | | 262-0014 | Carbon Tetrachloride | 0.495 | J 0.47 |
| | | 262-0057 | Carbon Tetrachloride | 0.545 | 0.48 |
| CBES-IA7 | Faculty Room 103 | 262-0015 | Benzene | 0.749 | 0.36 |
| | | 262-0035 | Benzene | 0.749 | 0.36 |
| | | 262-0054 | Benzene | 0.682 | 0.36 |
| | | 262-0015 | Carbon Tetrachloride | 0.568 | J 0.47 |
| | | 262-0035 | Carbon Tetrachloride | 0.510 | 0.47 |
| | | 262-0054 | Carbon Tetrachloride | 0.491 | 0.48 |
| CBES-IA8 | Nurse Room 107 | 262-0016 | 1,2-Dichloroethane | 0.374 | 0.11 |
| | | 262-0053 | 1,2-Dichloroethane | 0.203 | 0.11 |
| | | 262-0016 | Benzene | 0.722 | 0.36 |
| | | 262-0053 | Benzene | 0.727 | 0.36 |
| | | 262-0016 | Carbon Tetrachloride | 0.527 | 0.47 |
| | | 262-0053 | Carbon Tetrachloride | 0.530 | 0.48 |

Table 4
Comparison of First Round and Second Round SUMMA Canister Sample Results Exceeding the RSLs in $\mu\text{g}/\text{m}^3$
Meadowbrook Site
Hatboro, PA
June 2016

| Location ¹ | Sub-Location | Sample # ^{2,3,4,5} | Analyte ⁶ | Results ($\mu\text{g}/\text{m}^3$) | RSL ($\mu\text{g}/\text{m}^3$) |
|-----------------------|------------------------------|-----------------------------|----------------------|--------------------------------------|----------------------------------|
| CBES-IA9 | Corridor/ Across Room 107 | 262-0017 | Benzene | 0.687 | 0.36 |
| | | 262-0051 | Benzene | 0.703 | 0.36 |
| | | 262-0052 | Benzene | 0.629 | 0.36 |
| | | 262-0017 | Carbon Tetrachloride | 0.542 | 0.47 |
| | | 262-0051 | Carbon Tetrachloride | 0.495 | 0.48 |
| | | 262-0052 | Carbon Tetrachloride | 0.466 | 0.48 |
| | | 262-0017 | Trichloroethylene | 0.816 | 0.48 |
| | | 262-0051 | Trichloroethylene | 0.112 | 0.48 |
| | | 262-0052 | Trichloroethylene | 0.111 | 0.48 |
| CBES-IA10 | Multipurpose Room 111 | 262-0018 | Benzene | 0.683 | 0.36 |
| | | 262-0050 | Benzene | 0.692 | 0.36 |
| | | 262-0018 | Carbon Tetrachloride | 0.683 | 0.47 |
| | | 262-0050 | Carbon Tetrachloride | 0.508 | 0.48 |
| | | 262-0018 | Chloroform | 0.188 | 0.12 |
| | | 262-0050 | Chloroform | 0.102 | 0.12 |
| CBES-IA11 | Storage | 262-0019 | Benzene | 0.735 | 0.36 |
| | | 262-0070 | Benzene | 0.793 | 0.36 |
| | | 262-0019 | Carbon Tetrachloride | 0.522 | 0.47 |
| | | 262-0070 | Carbon Tetrachloride | 0.518 | 0.48 |
| | | 262-0019 | Chloroform | 0.103 | 0.12 |
| | | 262-0070 | Chloroform | 0.131 | 0.12 |
| CBES-IA12 | Cafeteria Room 113 | 262-0020 | Benzene | 0.717 | 0.36 |
| | | 262-0049 | Benzene | 0.648 | 0.36 |
| | | 262-0020 | Carbon Tetrachloride | 0.518 | 0.47 |
| | | 262-0049 | Carbon Tetrachloride | 0.512 | 0.48 |
| CBES-IA13 | Music/Art Room 123 | 262-0021 | Benzene | 0.715 | 0.36 |
| | | 262-0047 | Benzene | 0.738 | 0.36 |
| | | 262-0021 | Carbon Tetrachloride | 0.501 | 0.47 |
| | | 262-0047 | Carbon Tetrachloride | 0.513 | 0.48 |
| CBES-IA14 | Pre-K Room 120 | 262-0022 | Benzene | 0.782 | 0.36 |
| | | 262-0044 | Benzene | 0.735 | 0.36 |
| | | 262-0045 | Benzene | 0.717 | 0.36 |
| | | 262-0022 | Carbon Tetrachloride | 0.512 | 0.47 |
| | | 262-0044 | Carbon Tetrachloride | 0.515 | 0.48 |
| | | 262-0045 | Carbon Tetrachloride | 0.514 | 0.48 |
| CBES-IA15 | Kindergarten Room 122 | 262-0023 | Benzene | 0.729 | 0.36 |
| | | 262-0041 | Benzene | 0.696 | 0.36 |
| | | 262-0042 | Benzene | 0.720 | 0.36 |
| | | 262-0023 | Carbon Tetrachloride | 0.507 | 0.47 |
| | | 262-0041 | Carbon Tetrachloride | 0.511 | 0.48 |
| | | 262-0042 | Carbon Tetrachloride | 0.503 | 0.48 |

Table 4
Comparison of First Round and Second Round SUMMA Canister Sample Results Exceeding the RSLs in $\mu\text{g}/\text{m}^3$
Meadowbrook Site
Hatboro, PA
June 2016

| Location ¹ | Sub-Location | Sample # ^{2,3,4,5} | Analyte ⁶ | Results ($\mu\text{g}/\text{m}^3$) | RSL ($\mu\text{g}/\text{m}^3$) |
|-----------------------|--------------------|-----------------------------|----------------------|--------------------------------------|----------------------------------|
| CBES-IA16 | Music Room 121 | 262-0024 | Benzene | 0.728 | 0.36 |
| | | 262-0039 | Benzene | 0.730 | 0.36 |
| | | 262-0024 | Carbon Tetrachloride | 0.512 | 0.47 |
| | | 262-0039 | Carbon Tetrachloride | 0.531 | 0.48 |
| CBES-IA17 | Principal Room 105 | 262-0037 | 1,2-Dichloroethane | 0.214 | 0.11 |
| | | 262-0061 | 1,2-Dichloroethane | 0.147 | 0.11 |
| | | 262-0037 | Benzene | 0.631 | 0.36 |
| | | 262-0061 | Benzene | 0.612 | 0.36 |
| | | 262-0037 | Carbon Tetrachloride | 0.487 | 0.47 |
| | | 262-0061 | Carbon Tetrachloride | 0.499 | 0.48 |

Notes and Acronyms:

1. The sample locations utilized during the second sampling event corresponded to the sample locations utilized during the first sampling event.
2. Blue shading indicates that a result corresponds with the February 20-21, 2016 sampling event.
3. Sample numbers 262-0001 through 262-0037 correspond to the March 14-15, 2015 sampling event.
4. Sample numbers 262-0038 through 262-0073 correspond to the February 20-21, 2016 sampling event.
5. Sample numbers 262-0031, 262-0033, 262-0034, 262-0035, 262-0042, 262-0045, and 262-0052 are collocated samples.
6. Results are presented for compounds of concern if they were detected at a concentration above their respective Regional Screening Level (RSL) during the first or second sampling event.

AA - Ambient air

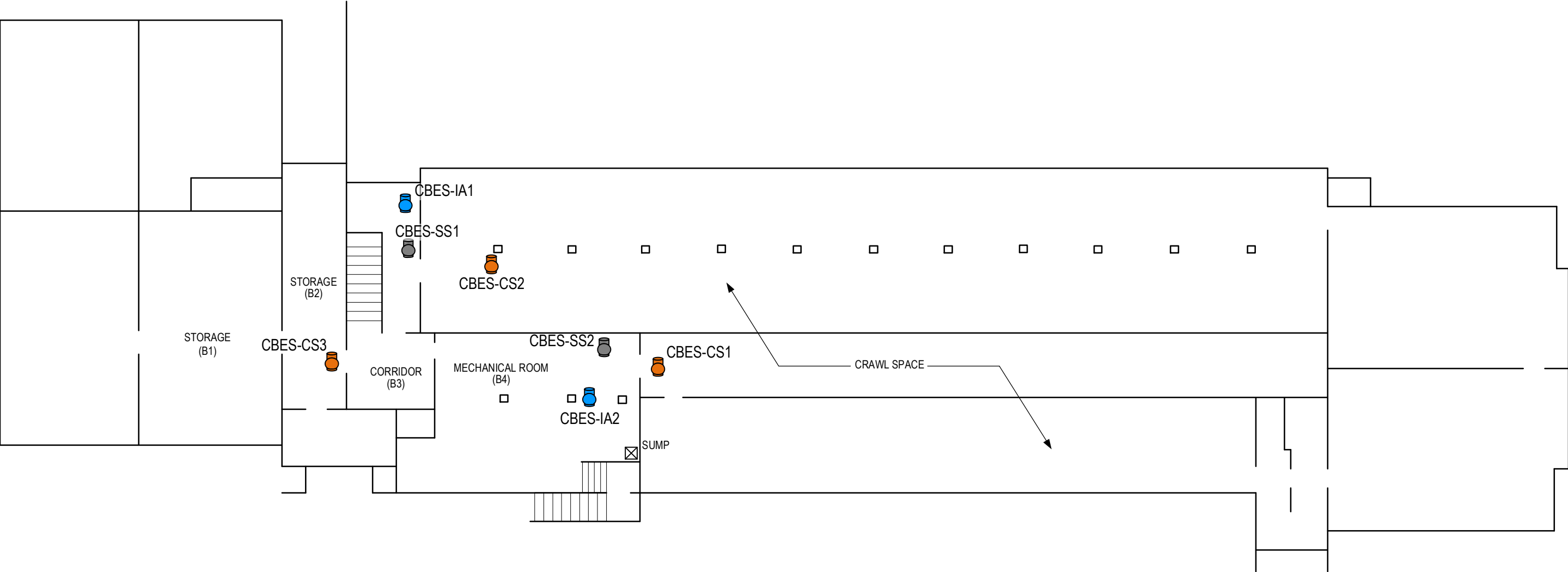
CBES - Crooked Billet Elementary School

CS - Crawl space

IA - Indoor air

$\mu\text{g}/\text{m}^3$ - Micrograms per cubic meter

FIGURES
Meadowbrook Avenue Vapor Intrusion Site
Hatboro, Pennsylvania
June 2016






- Legend**
-  Sub-Slab SUMMA
 -  Indoor Air SUMMA
 -  Crawl space SUMMA

Figure 1
Basement Sub-Slab, Indoor and Crawl Space SUMMA Locations
Meadowbrook Vapor Intrusion Site
Hatboro, Pennsylvania

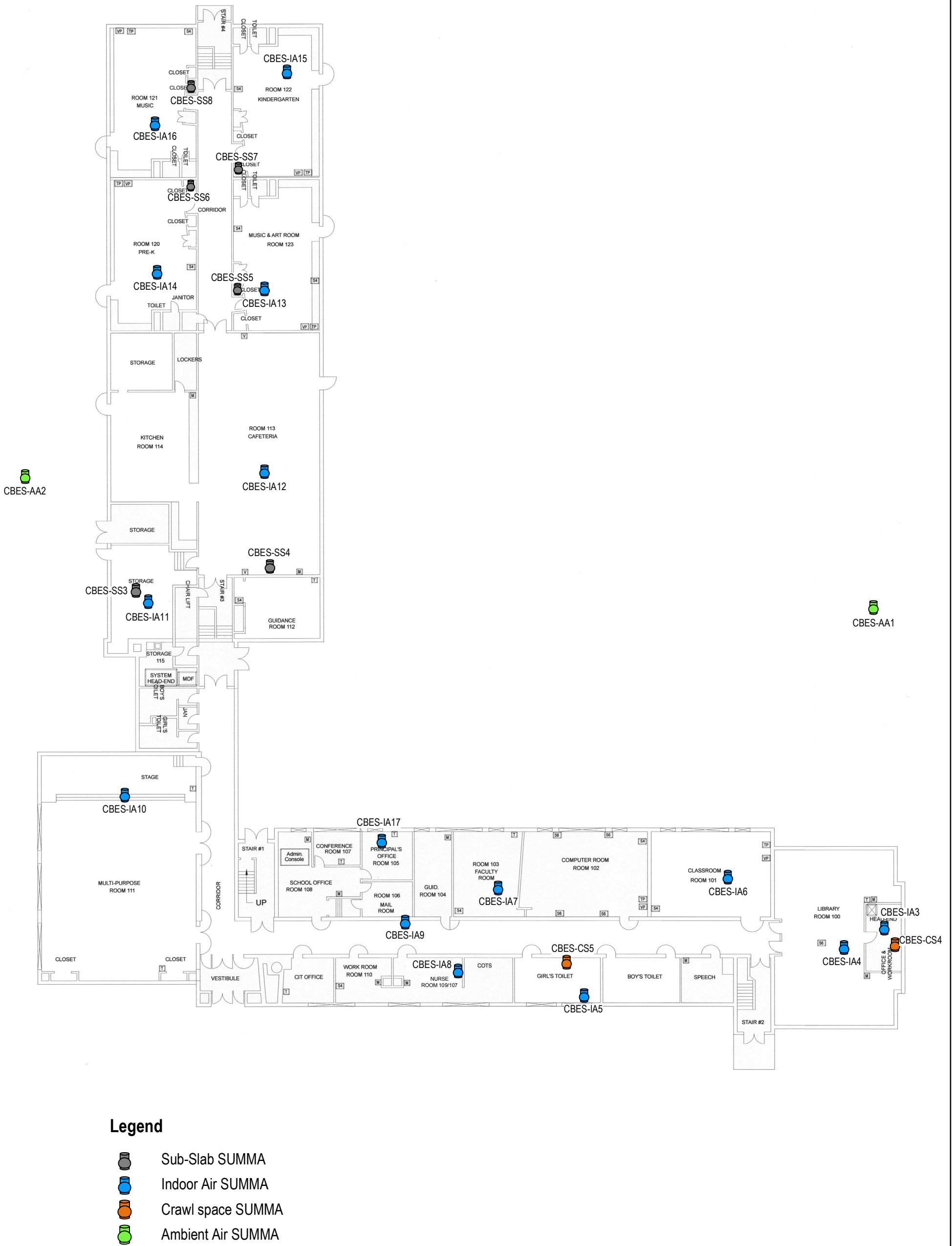


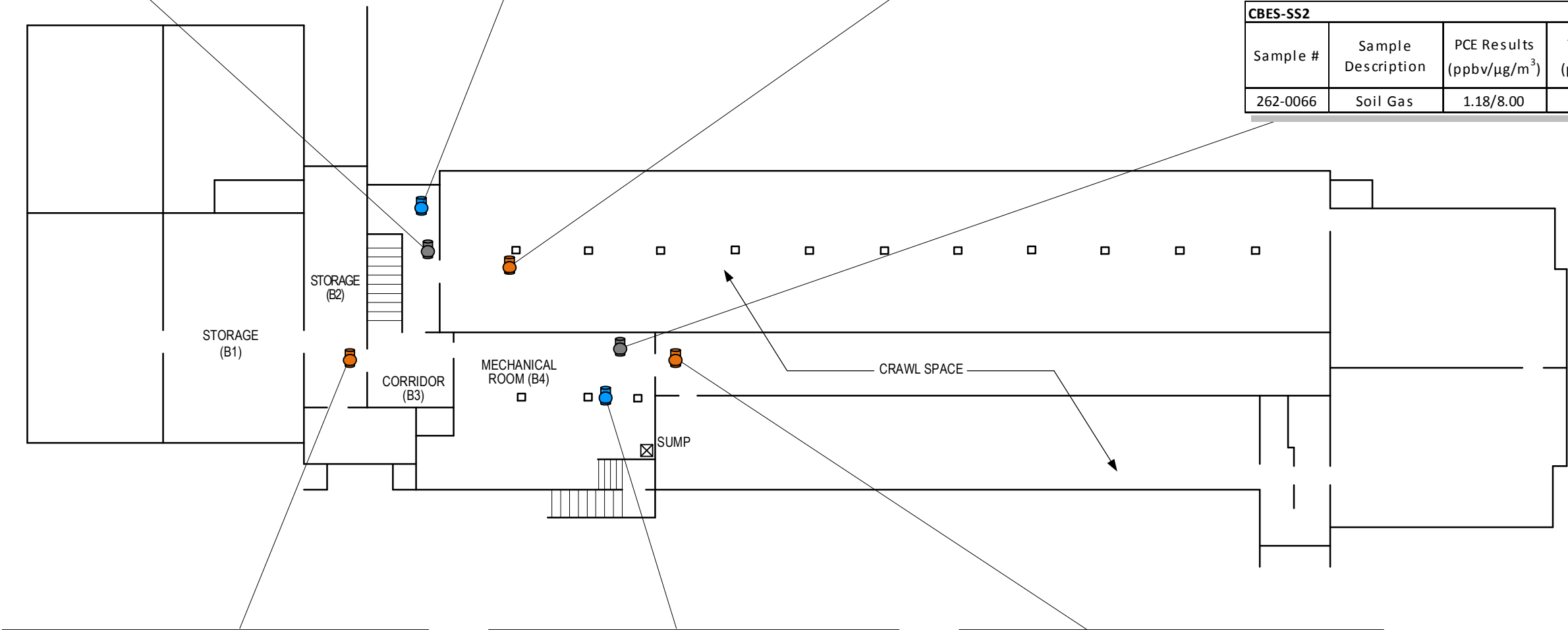
Figure 2
Ground Floor Sub-Slab, Indoor and Crawl Space SUMMA Locations
Meadowbrook Vapor Intrusion Site
Hatboro, Pennsylvania

| CBES-SS1 | | | |
|----------|--------------------|---------------------------------------|---------------------------------------|
| Sample # | Sample Description | PCE Results (ppbv/μg/m ³) | TCE Results (ppbv/μg/m ³) |
| 262-0065 | Soil Gas | 0.891/6.05 | 1.28/6.87 |

| CBES-IA1 | | | |
|----------|--------------------|---------------------------------------|---------------------------------------|
| Sample # | Sample Description | PCE Results (ppbv/μg/m ³) | TCE Results (ppbv/μg/m ³) |
| 262-0063 | Indoor Air | 0.0509/0.345 | 0.0342/0.184 |

| CBES-CS2 | | | |
|----------|--------------------|---------------------------------------|---------------------------------------|
| Sample # | Sample Description | PCE Results (ppbv/μg/m ³) | TCE Results (ppbv/μg/m ³) |
| 262-0064 | Crawl space Air | 0.0668/0.453 | 0.0354/0.190 |

| CBES-SS2 | | | |
|----------|--------------------|---------------------------------------|---------------------------------------|
| Sample # | Sample Description | PCE Results (ppbv/μg/m ³) | TCE Results (ppbv/μg/m ³) |
| 262-0066 | Soil Gas | 1.18/8.00 | 0.806/4.33 |



| CBES-CS3 | | | |
|----------|--------------------|---------------------------------------|---------------------------------------|
| Sample # | Sample Description | PCE Results (ppbv/μg/m ³) | TCE Results (ppbv/μg/m ³) |
| 262-0062 | Crawl space Air | 0.0443/0.300 | 0.0326/0.175 |

| CBES-IA2 | | | |
|----------|--------------------|---------------------------------------|---------------------------------------|
| Sample # | Sample Description | PCE Results (ppbv/μg/m ³) | TCE Results (ppbv/μg/m ³) |
| 262-0067 | Indoor Air | 0.0412/0.279 | 0.0232/0.125 |

| CBES-CS1 | | | |
|----------|--------------------|---------------------------------------|---------------------------------------|
| Sample # | Sample Description | PCE Results (ppbv/μg/m ³) | TCE Results (ppbv/μg/m ³) |
| 262-0068 | Crawl space Air | 0.0486/0.330 | 0.0271/0.146 |

- Legend**
- ppbv parts per billion by volume
 - μg/m³ micrograms per cubic meter
 - PCE Tetrachloroethene
 - TCE Trichloroethene
 - Sub-Slab SUMMA
 - Indoor Air SUMMA
 - Crawl space SUMMA

Figure 3
Basement Sub-Slab, Indoor and Crawl Space SUMMA Results
Meadowbrook Vapor Intrusion Site
Hatboro, Pennsylvania

| CBES-IA16 | | | |
|-----------|--------------------|--------------------------|--------------------------|
| Sample # | Sample Description | PCE Results (ppbv/µg/m³) | TCE Results (ppbv/µg/m³) |
| 262-0039 | Indoor Air | 0.0389/0.264 | ND |

| CBES-SS8 | | | |
|----------|--------------------|--------------------------|--------------------------|
| Sample # | Sample Description | PCE Results (ppbv/µg/m³) | TCE Results (ppbv/µg/m³) |
| 262-0038 | Soil Gas | 0.303/2.05 | ND |

| CBES-IA15 | | | |
|-----------|--------------------|--------------------------|--------------------------|
| Sample # | Sample Description | PCE Results (ppbv/µg/m³) | TCE Results (ppbv/µg/m³) |
| 262-0041 | Indoor Air | 0.0428/0.291 | ND |
| 262-0042 | Indoor Air | 0.0406/0.276 | ND |

| CBES-SS6 | | | |
|----------|--------------------|--------------------------|--------------------------|
| Sample # | Sample Description | PCE Results (ppbv/µg/m³) | TCE Results (ppbv/µg/m³) |
| 262-0043 | Soil Gas | 15.6/106 | 1.88/10.1 |

| CBES-SS7 | | | |
|----------|--------------------|--------------------------|--------------------------|
| Sample # | Sample Description | PCE Results (ppbv/µg/m³) | TCE Results (ppbv/µg/m³) |
| 262-0040 | Soil Gas | 1.86/12.6 | ND |

| CBES-IA14 | | | |
|-----------|--------------------|--------------------------|--------------------------|
| Sample # | Sample Description | PCE Results (ppbv/µg/m³) | TCE Results (ppbv/µg/m³) |
| 262-0044 | Indoor Air | 0.0427/0.290 | ND |
| 262-0045 | Indoor Air | 0.0428/0.290 | ND |

| CBES-SS5 | | | |
|----------|--------------------|--------------------------|--------------------------|
| Sample # | Sample Description | PCE Results (ppbv/µg/m³) | TCE Results (ppbv/µg/m³) |
| 262-0046 | Soil Gas | 0.612/4.15 | ND |

| CBES-IA13 | | | |
|-----------|--------------------|--------------------------|--------------------------|
| Sample # | Sample Description | PCE Results (ppbv/µg/m³) | TCE Results (ppbv/µg/m³) |
| 262-0047 | Indoor Air | 0.0393/0.267 | ND |

| CBES-AA2 | | | |
|----------|--------------------|--------------------------|--------------------------|
| Sample # | Sample Description | PCE Results (ppbv/µg/m³) | TCE Results (ppbv/µg/m³) |
| 262-0072 | Ambient Air | 0.0477/0.323 | ND |

| CBES-IA12 | | | |
|-----------|--------------------|--------------------------|--------------------------|
| Sample # | Sample Description | PCE Results (ppbv/µg/m³) | TCE Results (ppbv/µg/m³) |
| 262-0049 | Indoor Air | 0.0342/0.232 | ND |

| CBES-SS3 | | | |
|----------|--------------------|--------------------------|--------------------------|
| Sample # | Sample Description | PCE Results (ppbv/µg/m³) | TCE Results (ppbv/µg/m³) |
| 262-0069 | Soil Gas | ND | ND |

| CBES-SS4 | | | |
|----------|--------------------|--------------------------|--------------------------|
| Sample # | Sample Description | PCE Results (ppbv/µg/m³) | TCE Results (ppbv/µg/m³) |
| 262-0048 | Soil Gas | 0.308/2.09 | ND |

| CBES-IA11 | | | |
|-----------|--------------------|--------------------------|--------------------------|
| Sample # | Sample Description | PCE Results (ppbv/µg/m³) | TCE Results (ppbv/µg/m³) |
| 262-0070 | Indoor Air | 0.0442/0.300 | 0.0212/0.114 |

| CBES-AA1 | | | |
|----------|--------------------|--------------------------|--------------------------|
| Sample # | Sample Description | PCE Results (ppbv/µg/m³) | TCE Results (ppbv/µg/m³) |
| 262-0071 | Ambient Air | 0.0367/0.249 | ND |

| CBES-IA10 | | | |
|-----------|--------------------|--------------------------|--------------------------|
| Sample # | Sample Description | PCE Results (ppbv/µg/m³) | TCE Results (ppbv/µg/m³) |
| 262-0050 | Indoor Air | 0.0398/0.270 | ND |

| CBES-IA7 | | | |
|----------|--------------------|--------------------------|--------------------------|
| Sample # | Sample Description | PCE Results (ppbv/µg/m³) | TCE Results (ppbv/µg/m³) |
| 262-0054 | Indoor Air | 0.0426/0.289 | 0.0222/0.119 |

| CBES-IA17 | | | |
|-----------|--------------------|--------------------------|--------------------------|
| Sample # | Sample Description | PCE Results (ppbv/µg/m³) | TCE Results (ppbv/µg/m³) |
| 262-0061 | Indoor Air | 0.0356/0.241 | 0.0220/0.118 |

| CBES-IA6 | | | |
|----------|--------------------|--------------------------|--------------------------|
| Sample # | Sample Description | PCE Results (ppbv/µg/m³) | TCE Results (ppbv/µg/m³) |
| 262-0057 | Indoor Air | 0.0492/0.334 | 0.0232/0.125 |

| CBES-IA3 | | | |
|----------|--------------------|--------------------------|--------------------------|
| Sample # | Sample Description | PCE Results (ppbv/µg/m³) | TCE Results (ppbv/µg/m³) |
| 262-0059 | Indoor Air | 0.0417/0.283 | 0.0370/0.199 |

| CBES-IA9 | | | |
|----------|--------------------|--------------------------|--------------------------|
| Sample # | Sample Description | PCE Results (ppbv/µg/m³) | TCE Results (ppbv/µg/m³) |
| 262-0051 | Indoor Air | 0.0361/0.245 | 0.0208/0.112 |
| 262-0052 | Indoor Air | 0.0341/0.231 | 0.0207/0.111 |

| CBES-IA8 | | | |
|----------|--------------------|--------------------------|--------------------------|
| Sample # | Sample Description | PCE Results (ppbv/µg/m³) | TCE Results (ppbv/µg/m³) |
| 262-0053 | Indoor Air | 0.0397/0.270 | 0.0238/0.128 |

| CBES-CS5 | | | |
|----------|--------------------|--------------------------|--------------------------|
| Sample # | Sample Description | PCE Results (ppbv/µg/m³) | TCE Results (ppbv/µg/m³) |
| 262-0056 | Crawlspace Air | 0.0407/0.276 | ND |

| CBES-IA5 | | | |
|----------|--------------------|--------------------------|--------------------------|
| Sample # | Sample Description | PCE Results (ppbv/µg/m³) | TCE Results (ppbv/µg/m³) |
| 262-0055 | Indoor Air | 0.0407/0.276 | 0.0256/0.137 |

| CBES-IA4 | | | |
|----------|--------------------|--------------------------|--------------------------|
| Sample # | Sample Description | PCE Results (ppbv/µg/m³) | TCE Results (ppbv/µg/m³) |
| 262-0060 | Indoor Air | 0.0434/0.294 | 0.0257/0.138 |

| CBES-CS4 | | | |
|----------|--------------------|--------------------------|--------------------------|
| Sample # | Sample Description | PCE Results (ppbv/µg/m³) | TCE Results (ppbv/µg/m³) |
| 262-0058 | Crawlspace Air | 0.0335/0.227 | ND |

Legend

- ppbv


µg/m³


PCE


TCE
- parts per billion by volume


micrograms per cubic meter

Tetrachloroethene

Trichloroethene
- 






- Sub-Slab SUMMA

Indoor Air SUMMA

Crawl space SUMMA

Ambient Air SUMMA

Figure 4
Ground Floor Sub-Slab, Indoor and Crawl Space SUMMA Results
Meadowbrook Vapor Intrusion Site
Hatboro, Pennsylvania

APPENDIX A
SUMMA® Sampling Work Sheet
Meadowbrook Avenue Vapor Intrusion Site
Hatboro, Pennsylvania
June 2016



EPA/Environmental Response Team
Scientific, Engineering, Response and Analytical Services
Lockheed Martin Corp., Edison, NJ
U.S. EPA Contract No. EP-W-09-031



SUMMA Sampling Work Sheet

Site: Meadowbrook

WA# 262

Sampler: Adams/Klingseis

U.S. EPA/ERT WAM: Hoppe

Date Start: 2/20/16

Date Stop: 2/21/16

SERAS Task Leader: Adams

| Sample # | Location | Sub-Location | Matrix | Summa # | Orifice ID | Analysis/Method | Start Pressure | Flow Rate (Start) | Time/(Start) | Time/(Stop) | End Pressure | PID Reading |
|----------|------------------------------------|---------------------|--------|---------|------------|-----------------|----------------|-------------------|--------------|-------------|--------------|-------------|
| (38) | CBES-SS8 262-0008 PL | Music Rm 121 | SS | 10620 | 13959 | TU-15 | -29 | -3.5 | 09:42 | 09:50 | -1.5 | 0.0 |
| (39) | CBES-IA16 | Music Rm 121 | IA | 10602 | 13908 | TU-15 | -29 | -3.5 | 09:43 | 09:51 | -4 | 0.0 |
| (40) | CBES-SS7 | Kindergarten Rm 122 | SS | 10572 | 14035 | TU-15 | -29 | -3.5 | 09:47 | 09:55 | -6 | 0.0 |
| (41) | CBES-IA15 | Kindergarten Rm 122 | IA | 195 | 13941 | TU-15 | -29 | -3.5 | 09:48 | 09:55 | -9 | 0.0 |
| (42) | CBES-IA15C | Kindergarten Rm 122 | IA | 163 | 13781 | TU-15 | -29 | -3.5 | 09:48 | 09:55 | -6 | 0.0 |
| (43) | CBES-SS6 | Pre-K Rm 120 | SS | 10611 | 223011 | TU-15 | -29 | -3.5 | 09:51 | 10:00 | -6 | 0.0 |
| (44) | CBES-IA14 | Pre-K Rm 120 | IA | 10587C | 14043 | TU-15 | -29 | -3.5 | 09:52 | 09:59 | -7 | 0.0 |
| (45) | CBES-IA14C | Pre-K Rm 120 | IA | 13743 | 14021 | TU-15 | -29 | -3.5 | 09:52 | 09:59 | -7.5 | 0.0 |
| (46) | CBES-SS5 | Music/Art Rm 123 | SS | 10599 | 223037 | TU-15 | -29 | -3.5 | 09:55 | 10:05 | -5 | 0.0 |
| (47) | CBES-IA13 | Music/Art Rm 123 | IA | 14070 | 013769 | TU-15 | -29 | -3.5 | 09:56 | 10:05 | -7.5 | 0.0 |

MET Station on Site?: Y (N)

Flow meter: 012796

Pre gauge - T284-26

Post gauge - T284-38



EPA/Environmental Response Team
Scientific, Engineering, Response and Analytical Services
Lockheed Martin Corp., Edison, NJ
U.S. EPA Contract No. EP-W-09-031



SUMMA Sampling Work Sheet

Site: Meadowbrook

WA# 262

Sampler: Adams / Klinge

U.S. EPA/ERT WAM: Hoppe

Date Start: 2/20/16 Date Stop: 2/21/16

SERAS Task Leader: Adams

| Sample # | Location | Sub-Location | Matrix | Summa # | Orifice ID | Analysis/Method | Start Pressure | Flow Rate (Start) | Time/(Start) | Time/(Stop) | End Pressure | PID Readings |
|---------------|--------------|--|--------|---------|------------|-----------------|----------------|-------------------|--------------|-------------|--------------|--------------|
| ⁴⁸ | CBES-SS4 | Cafeteria Rm 113 | SS | 10569 | Z23015 | TU-15 | -29 | -3.5 | 09:59 | 10:09 | -5 | 0.0 |
| ⁴⁹ | CBES-IA 12 | Cafeteria Rm 113 | IA | 156 | 13938 | TU-15 | -29 | -3.5 | 10:00 | 10:09 | -10 | 0.0 |
| ⁵⁰ | CBES-IA 10 | ^{Rm 111} Multipurpose Rm 112 | IA | 14401 | Z23053 | TU-15 | -29 | -3.5 | 10:02 | 10:16 | -6 | 0.0 |
| ⁵¹ | CBES-IA 9 | Corridor/Rm 107 | IA | 14221 | 13789 | TU-15 | -29 | -3.5 | 10:04 | 10:13 | -17 | 0.0 |
| ⁵² | CBES-IA 9 CO | Corridor/Rm 107 | IA | 10608 | 13924 | TU-15 | -29 | -3.5 | 10:04 | 10:13 | -8 | 0.0 |
| ⁵³ | CBES-IA 8 | Nurse Rm 107 | IA | 10555 | 13928 | TU-15 | -29 | -3.5 | 10:05 | 10:19 | -6 | 0.0 |
| ⁵⁴ | CBES-IA 7 | Faculty Rm 103 | IA | 178 | 13801 | TU-15 | -29 | -3.5 | 10:06 | 10:21 | -6 | 0.0 |
| ⁵⁵ | CBES-IA 5 | Girls Toilet | IA | 10578 | Z23054 | TU-15 | -29 | -3.5 | 10:15 | 10:22 | -6 | 0.0* |
| ⁵⁶ | CBES-CS5 | ^{Panel} Girls Toilet Wall | IA | 101 | 13907 | TU-15 | -29 | -3.5 | 10:15 | 10:22 | -6 | 0.0 |
| ⁵⁷ | CBES-IA 6 | Classroom Rm 104 | IA | 10598 | 13911 | TU-15 | -29 | -3.5 | 10:16 | 10:26 | -6 | 0.0 |

MET Station on Site?: Y ☒ N

Flow meter: 012746

Pre gauge - T 284-36

Post gauge - T 284-38

* 10 ppb PID reading noted in Girls Bathroom during Summa collection; strong cleaner/disinfectant odor also noted.



EPA/Environmental Response Team
Scientific, Engineering, Response and Analytical Services
Lockheed Martin Corp., Edison, NJ
U.S. EPA Contract No. EP-W-09-031



SUMMA Sampling Work Sheet

Site: Meadowbrook

WA# 262

Sampler: Adams/Kl. Hg se is

U.S. EPA/ERT WAM: Hoppe

Date Start: 2/20/16 Date Stop: 2/21/16

SERAS Task Leader: Adams

| Sample # | Location | Sub-Location | Matrix | Summa # | Orifice ID | Analysis/Method | Start Pressure | Flow Rate (Start) | Time/(Start) | Time/(Stop) | End Pressure | PII Readings |
|----------|------------|------------------|--------|---------|--------------------|-----------------|----------------|-------------------|--------------|-------------|--------------|--------------|
| (58) | CBES-CS 4 | Office CS | IA | 10556 | 223014 266 P/L | TU-15 | -29 | -3.5 | 10:18 | 10:29 | -5 | 0.0 |
| (59) | CBES-IA 3 | Office/Workroom | IA | 266 | 14038 | TU-15 | -29 | -3.5 | 10:19 | 10:29 | -7 | 0.0 |
| (60) | CBES-IA 4 | Library Rm 100 | IA | 166 | 13788 | TU-15 | -29 | -3.5 | 10:21 | 10:32 | -6 | 0.0 |
| (61) | CBES-IA 17 | Principal Rm 105 | IA | 10615 | 13906 | TU-15 | -29 | -3.5 | 10:24 | 10:35 | -6 | 0.0 |
| (62) | CBES-CS 3 | Basement CS 3 | IA | 10549 | 13935 13793 P/L | TU-15 | -29 | -3.5 | 10:27 | 10:37 | -6 | 0.0 |
| (63) | CBES-IA 1 | Basement Stair | IA | 10585 | 223012 | TU-15 | -29 | -3.5 | 10:31 | 10:39 | -5 | 0.0 |
| (64) | CBES-CS 2 | Basement CS 2 | IA | 10554C | 014039 | TU-15 | -29 | -3.5 | 10:31 | 10:39 | -6 | 0.0 |
| (65) | CBES-SS 1 | Basement Stair | SS | 10605 | 014023 | TU-15 | -29 | -3.5 | 10:31 | 10:39 | -6 | 0.0 |
| (66) | CBES-SS 2 | Mech Room | SS | 175 | 13931 | TU-15 | -29 | -3.5 | 10:37 | 10:43 | -7 | 0.0 |
| (67) | CBES-IA 2 | Mech Room | IA | 209 | 14013 | TU-15 | -29 | -3.5 | 10:37 | 10:43 | -6 | 0.0 |

MET Station on Site?: Y (N)

Flow meter: 012746

Pre gauge - T 284-36

Post gauge - T 284-38



EPA/Environmental Response Team
Scientific, Engineering, Response and Analytical Services
Lockheed Martin Corp., Edison, NJ
U.S. EPA Contract No. EP-W-09-031



SUMMA Sampling Work Sheet

Site: Meadowbrook

WA# 262

Sampler: Adams/Klingseis

U.S. EPA/ERT WAM: Hoppe

Date Start: 2/20/16 Date Stop: 2/21/16

SERAS Task Leader: Adams

| Sample # | Location | Sub-Location | Matrix | Summa # | Orifice ID | Analysis/Method | Start Pressure | Flow Rate (Start) | Time/(Start) | Time/(Stop) | End Pressure | PID Reading |
|-----------|-------------------|---------------------|-----------|--|---------------|-----------------|----------------|-------------------|--------------|--------------|--------------|-------------|
| <u>68</u> | <u>CBES-CS1</u> | <u>Rosemont CS1</u> | <u>IA</u> | <u>10622</u> | <u>13961</u> | <u>TU-15</u> | <u>-29</u> | <u>-3.5</u> | <u>10:37</u> | <u>10:43</u> | <u>-5.5</u> | <u>0.0</u> |
| <u>69</u> | <u>CBES-SS3</u> | <u>Storage</u> | <u>SS</u> | <u>10534</u> | <u>223049</u> | <u>TU-15</u> | <u>-29</u> | <u>-3.5</u> | <u>10:42</u> | <u>10:52</u> | <u>-6</u> | <u>0.0</u> |
| <u>70</u> | <u>CBES-IA11</u> | <u>Storage</u> | <u>IA</u> | <u>10564</u> | <u>223039</u> | <u>TU-15</u> | <u>-29</u> | <u>-3.5</u> | <u>10:42</u> | <u>10:52</u> | <u>-5.5</u> | <u>0.0</u> |
| <u>71</u> | <u>CBES-AA1</u> | <u>Bldg A South</u> | <u>AA</u> | <u>¹⁹⁶ 13613</u> | <u>13933</u> | <u>TU-15</u> | <u>-29</u> | <u>-3.5</u> | <u>10:48</u> | <u>10:58</u> | <u>-5</u> | <u>0.0</u> |
| <u>72</u> | <u>CBES-AA2</u> | <u>Bldg B North</u> | <u>AA</u> | <u>10621</u> | <u>013998</u> | <u>TU-15</u> | <u>-29</u> | <u>-3.5</u> | <u>10:52</u> | <u>11:02</u> | <u>-3</u> | <u>0.0</u> |
| <u>73</u> | <u>Trip Blank</u> | <u>Trip Blank</u> | <u>IA</u> | <u>014256</u> | <u>13963</u> | <u>TU-15</u> | <u>-29</u> | <u>-</u> | <u>11:10</u> | <u>11:10</u> | <u>-29</u> | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

MET Station on Site?: Y (N)

Flow meter: 012746

Pre-gauge - T-284-36
Post-gauge - T-284-38

APPENDIX B
Final Analytical Report
Meadowbrook Avenue Vapor Intrusion Site
Hatboro, Pennsylvania
June 2016

ANALYTICAL REPORT

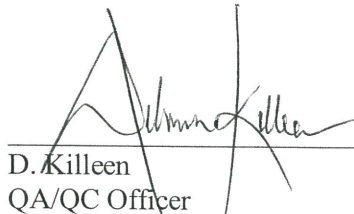
Prepared by
LOCKHEED MARTIN

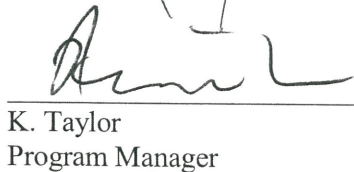
Meadowbrook Avenue Site
Hatboro, Pennsylvania

March 2016

EPA Work Assignment No. SERAS-262
LOCKHEED MARTIN Work Order No. SER00262
EPA Contract No. EP-W-09-031

Submitted to
M. Hoppe
EPA/ERT
2890 Woodbridge Avenue
Edison, NJ 08837


D. Killeen
QA/QC Officer
3/17/16
Date


K. Taylor
Program Manager
3/18/16
Date

Analysis by:
ERT/SERAS Laboratory

Prepared by:/Reviewed by:
R. Varsolona/S. Capil



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| Results of the Analysis for VOC ($\mu\text{g}/\text{m}^3$) in Air | Table 1.1b |

Section II

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| Results of the LCS Analysis for VOC in Air | Table 2.1 |
| Results of the Duplicate Analysis for VOC in Air | Table 2.2 |

Section III

Chains of Custody

Appendices

| | |
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| Appendix A Data for VOC in Air | AB021 |
|--------------------------------|-------|

Appendix A will be furnished on request.





TESTING LABORATORIES INFORMATION

Analysis of Volatile Organic Compounds in Air by SERAS Method #1814 “*Analysis of Volatile Organic Compounds (VOCs) in SUMMA Canister Air Samples by Gas Chromatography/Mass Spectrometry (GC/MS)*”

ERT/SERAS Laboratory
2890 Woodbridge Avenue
Edison, NJ 08837

All analyses were performed according to our NELAP-approved quality assurance program. The test results meet the requirements of the current NELAP standards, where applicable, except as noted in the laboratory case narrative provided. Results are intended to be considered in their entirety and apply only to those analyzed and reported herein.

ERT/SERAS Laboratory is certified by the New Jersey Department of Environmental Protection, NELAP Laboratory Certification ID # 12023 for VOC analysis in air.





Detailed Sample Information

| <u>Laboratory Sample #</u> | <u>Field Sample #</u> |
|----------------------------|-----------------------|
| R602004-01 | 262-0038 |
| R602004-02 | 262-0039 |
| R602004-03 | 262-0040 |
| R602004-04 | 262-0041 |
| R602004-05 | 262-0042 |
| R602004-06 | 262-0043 |
| R602004-07 | 262-0044 |
| R602004-08 | 262-0045 |
| R602004-09 | 262-0046 |
| R602004-10 | 262-0047 |
| R602004-11 | 262-0048 |
| R602004-12 | 262-0049 |
| R602004-13 | 262-0050 |
| R602004-14 | 262-0051 |
| R602004-15 | 262-0052 |
| R602004-16 | 262-0053 |
| R602004-17 | 262-0054 |
| R602004-18 | 262-0055 |
| R602004-19 | 262-0056 |
| R602004-20 | 262-0057 |
| R602004-21 | 262-0058 |
| R602004-22 | 262-0059 |
| R602004-23 | 262-0060 |
| R602004-24 | 262-0061 |
| R602004-25 | 262-0062 |
| R602004-26 | 262-0063 |
| R602004-27 | 262-0064 |
| R602004-28 | 262-0065 |
| R602004-29 | 262-0066 |
| R602004-30 | 262-0067 |
| R602004-31 | 262-0068 |
| R602004-32 | 262-0069 |
| R602004-33 | 262-0070 |
| R602004-34 | 262-0071 |
| R602004-35 | 262-0072 |
| R602004-36 | 262-0073 |





Introduction

SERAS personnel, in response to WA# SERAS-262, provided analytical support for environmental samples collected from the Meadowbrook Avenue site located in Hatboro, Pennsylvania as described in the following table. The support also included QA/QC, data review and preparation of an analytical report containing analytical and QA/QC results.

The samples analyzed at SERAS were treated with procedures consistent with those specified in SERAS SOP #1008, *Sample Receiving, Handling and Storage*.

| Chain of Custody # | Number of Samples | Sampling Date | Date Received | Date Analyzed | Matrix | Analysis/ Method | Laboratory | Data Package |
|----------------------|-------------------|---------------|---------------|--------------------|------------|---------------------|------------|--------------|
| 3-022216-103240-0002 | 27 | 2/21/16 | 2/22/16 | 02/24 - 02/26/2016 | Air | VOC/SERAS SOP# 1814 | ERT/SERAS | AB021 |
| | 8 | | | | Soil Gas | | | |
| | 1 | | | | Trip Blank | | | |

Case Narrative

Sampling was conducted as per the site-specific Quality Assurance Project Plan (QAPP) and analyzed by the analytical methods as stated in the QAPP. The laboratory reported the data to three significant figures. Any other representation of the data is the responsibility of the user. Data were validated using a Stage 4 validation done manually (S4VM) in accordance with the "Guidance for Labeling Externally Validated Data for Superfund Use." All data validation flags have been inserted into the results tables.

VOCs in Air Package AB 021

The data package was examined and found to be acceptable.

The results presented in this report only relate to the samples analyzed. All results are intended to be considered in their entirety. The Environmental Response Team/Scientific, Engineering, Response and Analytical Services laboratory is not responsible for utilization of less than the complete report.



Summary of Abbreviations

| | |
|-------------|---|
| BFB | Bromofluorobenzene |
| BS | Blank Spike |
| BSD | Blank Spike Duplicate |
| °C | Degree Centigrade |
| COC | Chain of Custody |
| conc | concentration |
| cont. | continued |
| PCDD/PCDF | Polychlorinated dibenzo-p-dioxins (PCDD) and Polychlorinated dibenzofurans (PCDF) |
| DFTPP | Decafluorotriphenylphosphine |
| EMPC | Estimated maximum possible concentration |
| GC/ECD | Gas Chromatography/Electron Capture Detector |
| GC/MS | Gas Chromatography/ Mass Spectrometry |
| Hg-CVAA | Mercury-Cold Vapor Atomic Absorption |
| ICP-AES | Inductively Coupled Plasma- Atomic Emission Spectroscopy |
| ID | Identification |
| IS | Internal Standard |
| LCS | Laboratory Control Sample |
| LCSD | Laboratory Control Sample Duplicate |
| MDA | Minimum Detectable Activity |
| MDL | Method Detection Limit |
| MS | Matrix Spike |
| MSD | Matrix Spike Duplicate |
| MW | Molecular Weight |
| NA | Not Applicable or Not Available |
| NAD | Normalized Absolute Difference |
| NC | Not Calculated |
| NR | Not Requested/Not Reported |
| % D | Percent Difference |
| % R | Percent Recovery |
| SOP | Standard Operating Procedure |
| PCB | Polychlorinated Biphenyl |
| PDS | Post Digestion Spike |
| Percent RSD | Percent Relative Standard Deviation |
| ppbv | parts per billion by volume |
| ppm | parts per million |
| pptv | parts per trillion by volume |
| QA/QC | Quality Assurance/Quality Control |
| QAPP | Quality Assurance Project Plan |
| RL | Reporting Limit |
| RPD | Relative Percent Difference |
| S4VM | Stage 4 validation done manually |
| SIM | Selected Ion Monitoring |
| SERAS | Scientific Engineering Response and Analytical Services |
| TIC | Tentatively Identified Compound |
| TCLP | Toxicity Characteristic Leaching Procedure |
| SVOC | Semi Volatile Organic Compound |
| VOC | Volatile Organic Compound |
| * | Value exceeds the acceptable QC limits |

| | | | | | | | |
|----------------|-------------|----|------------|-----|-----------|----|------------|
| m ³ | cubic meter | g | gram | kg | kilogram | L | liter |
| µg | microgram | µL | microliter | mg | milligram | mL | milliliter |
| ng | nanogram | pg | picogram | pCi | picocurie | σ | sigma |

Data Validation Flags

| | | | |
|----|-------------------------|----|----------------------------------|
| J | Value is estimated | R | Rejected or Value is unusable |
| J+ | Value is estimated high | U | Not detected |
| J- | Value is estimated low | UJ | Not detected and RL is estimated |

Rev. 01/01/15, YRM





Table 1.1a Results of the Analysis for VOC (ppbv) in Air
WA# SERAS-262 Meadowbrook Avenue Site

Method SERAS SOP# 1814

Page 1 of 5

| | | | | |
|---------------------|--------------------------|------------|------------|------------|
| SERAS Sample Number | PS-Methodblank 022416-01 | R602004-36 | R602004-34 | R602004-35 |
| Sample Number | Method Blank | 262-0073 | 262-0071 | 262-0072 |
| Sample Location | 2/24/2016 | Trip Blank | CBES-AA1 | CBES-AA2 |

| Analyte | Result ppbv | RL ppbv | Result ppbv | RL ppbv | Result ppbv | RL ppbv | Result ppbv | RL ppbv |
|--------------------------|----------------|------------|----------------|------------|----------------|------------|----------------|------------|
| Chloromethane | U | 0.0200 | U | 0.0200 | 0.534 | 0.0200 | 0.563 | 0.0200 |
| Vinyl Chloride | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.0200 |
| Chloroethane | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.0200 |
| 1,1-Dichloroethene | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.0200 |
| Methylene Chloride | U | 0.0200 | U | 0.0200 | 0.0895 | 0.0200 | 0.0844 | 0.0200 |
| trans-1,2-Dichloroethene | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.0200 |
| 1,1-Dichloroethane | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.0200 |
| cis-1,2-Dichloroethene | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.0200 |
| Chloroform | U | 0.0200 | U | 0.0200 | 0.0215 | 0.0200 | 0.0202 | 0.0200 |
| 1,2-Dichloroethane | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.0200 |
| 1,1,1-Trichloroethane | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.0200 |
| Benzene | U | 0.0200 | U | 0.0200 | 0.222 | 0.0200 | 0.220 | 0.0200 |
| Carbon Tetrachloride | U | 0.0200 | U | 0.0200 | 0.0795 | 0.0200 | 0.0839 | 0.0200 |
| Trichloroethene | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.0200 |
| Toluene | U | 0.0200 | U | 0.0200 | 0.364 | 0.0200 | 0.426 | 0.0200 |
| Tetrachloroethene | U | 0.0200 | U | 0.0200 | 0.0367 | 0.0200 | 0.0477 | 0.0200 |
| Ethylbenzene | U | 0.0200 | U | 0.0200 | 0.0348 | 0.0200 | 0.0382 | 0.0200 |
| m&p-Xylene | U | 0.0200 | U | 0.0200 | 0.127 | 0.0200 | 0.133 | 0.0200 |
| o-Xylene | U | 0.0200 | U | 0.0200 | 0.0500 | 0.0200 | 0.0506 | 0.0200 |

Table 1.1a (cont.) Results of the Analysis for VOC (ppbv) in Air
WA# SERAS-262 Meadowbrook Avenue Site

Method SERAS SOP# 1814

| | | | | |
|---------------------|------------|------------|--------------|------------|
| SERAS Sample Number | R602004-02 | R602004-04 | R602004-05 | R602004-07 |
| Sample Number | 262-0039 | 262-0041 | 262-0042 | 262-0044 |
| Sample Location | CBES-IA16 | CBES-IA15 | CBES-IA15 CO | CBES-IA14 |

| Analyte | Result ppbv | RL ppbv | Result ppbv | RL ppbv | Result ppbv | RL ppbv | Result ppbv | RL ppbv |
|--------------------------|----------------|------------|----------------|------------|----------------|------------|----------------|------------|
| Chloromethane | 0.528 | 0.0200 | 0.544 | 0.0200 | 0.511 | 0.0200 | 0.549 | 0.0200 |
| Vinyl Chloride | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.0200 |
| Chloroethane | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.0200 |
| 1,1-Dichloroethene | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.0200 |
| Methylene Chloride | 0.0864 | 0.0200 | 0.0865 | 0.0200 | 0.0934 | 0.0200 | 0.0900 | 0.0200 |
| trans-1,2-Dichloroethene | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.0200 |
| 1,1-Dichloroethane | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.0200 |
| cis-1,2-Dichloroethene | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.0200 |
| Chloroform | U | 0.0200 | U | 0.0200 | 0.0208 | 0.0200 | 0.0213 | 0.0200 |
| 1,2-Dichloroethane | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.0200 |
| 1,1,1-Trichloroethane | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.0200 |
| Benzene | 0.228 | 0.0200 | 0.218 | 0.0200 | 0.225 | 0.0200 | 0.230 | 0.0200 |
| Carbon Tetrachloride | 0.0844 | 0.0200 | 0.0812 | 0.0200 | 0.0800 | 0.0200 | 0.0819 | 0.0200 |
| Trichloroethene | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.0200 |
| Toluene | 0.395 | 0.0200 | 0.431 | 0.0200 | 0.407 | 0.0200 | 0.389 | 0.0200 |
| Tetrachloroethene | 0.0389 | 0.0200 | 0.0428 | 0.0200 | 0.0406 | 0.0200 | 0.0427 | 0.0200 |
| Ethylbenzene | 0.0359 | 0.0200 | 0.0378 | 0.0200 | 0.0355 | 0.0200 | 0.0380 | 0.0200 |
| m&p-Xylene | 0.121 | 0.0200 | 0.126 | 0.0200 | 0.120 | 0.0200 | 0.128 | 0.0200 |
| o-Xylene | 0.0492 | 0.0200 | 0.0485 | 0.0200 | 0.0483 | 0.0200 | 0.0510 | 0.0200 |

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Table 1.1a (cont.) Results of the Analysis for VOC (ppbv) in Air
WA# SERAS-262 Meadowbrook Avenue Site

Method SERAS SOP# 1814

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| SERAS Sample Number | R602004-08 | R602004-10 | R602004-12 | R602004-13 |
|---------------------|--------------|------------|------------|------------|
| Sample Number | 262-0045 | 262-0047 | 262-0049 | 262-0050 |
| Sample Location | CBES-IA14 CO | CBES-IA13 | CBES-IA12 | CBES-IA10 |

| Analyte | Results ppbv | RL ppbv | Results ppbv | RL ppbv | Results ppbv | RL ppbv | Results ppbv | RL ppbv |
|--------------------------|-----------------|------------|-----------------|------------|-----------------|------------|-----------------|------------|
| Chloromethane | 0.540 | 0.0200 | 0.526 | 0.0200 | 0.519 | 0.0200 | 0.559 | 0.0200 |
| Vinyl Chloride | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.0200 |
| Chloroethane | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.0200 |
| 1,1-Dichloroethene | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.0200 |
| Methylene Chloride | 0.0874 | 0.0200 | 0.0892 | 0.0200 | 0.0808 | 0.0200 | 0.0915 | 0.0200 |
| trans-1,2-Dichloroethene | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.0200 |
| 1,1-Dichloroethane | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.0200 |
| cis-1,2-Dichloroethene | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.0200 |
| Chloroform | 0.0214 | 0.0200 | U | 0.0200 | 0.0218 | 0.0200 | 0.0209 | 0.0200 |
| 1,2-Dichloroethane | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.0200 |
| 1,1,1-Trichloroethane | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.0200 |
| Benzene | 0.225 | 0.0200 | 0.231 | 0.0200 | 0.203 | 0.0200 | 0.217 | 0.0200 |
| Carbon Tetrachloride | 0.0817 | 0.0200 | 0.0815 | 0.0200 | 0.0815 | 0.0200 | 0.0808 | 0.0200 |
| Trichloroethene | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.0200 |
| Toluene | 0.398 | 0.0200 | 0.430 | 0.0200 | 0.365 | 0.0200 | 0.409 | 0.0200 |
| Tetrachloroethene | 0.0428 | 0.0200 | 0.0393 | 0.0200 | 0.0342 | 0.0200 | 0.0398 | 0.0200 |
| Ethylbenzene | 0.0387 | 0.0200 | 0.0483 | 0.0200 | 0.0340 | 0.0200 | 0.0412 | 0.0200 |
| m&p-Xylene | 0.131 | 0.0200 | 0.158 | 0.0200 | 0.113 | 0.0200 | 0.137 | 0.0200 |
| o-Xylene | 0.0514 | 0.0200 | 0.0573 | 0.0200 | 0.0456 | 0.0200 | 0.0511 | 0.0200 |

Table 1.1a (cont.) Results of the Analysis for VOC (ppbv) in Air
WA# SERAS-262 Meadowbrook Avenue Site

Method SERAS SOP# 1814

| SERAS Sample Number | R602004-14 | R602004-15 | R602004-16 | R602004-17 |
|---------------------|------------|-------------|------------|------------|
| Sample Number | 262-0051 | 262-0052 | 262-0053 | 262-0054 |
| Sample Location | CBES-IA9 | CBES-IA9 CO | CBES-IA8 | CBES-IA7 |

| Analyte | Results ppbv | RL ppbv | Results ppbv | RL ppbv | Results ppbv | RL ppbv | Results ppbv | RL ppbv |
|--------------------------|-----------------|------------|-----------------|------------|-----------------|------------|-----------------|------------|
| Chloromethane | 0.487 | 0.0200 | 0.463 | 0.0200 | 0.565 | 0.0200 | 0.569 | 0.0200 |
| Vinyl Chloride | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.0200 |
| Chloroethane | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.0200 |
| 1,1-Dichloroethene | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.0200 |
| Methylene Chloride | 0.0866 | 0.0200 | 0.0786 | 0.0200 | 0.0937 | 0.0200 | 0.0871 | 0.0200 |
| trans-1,2-Dichloroethene | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.0200 |
| 1,1-Dichloroethane | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.0200 |
| cis-1,2-Dichloroethene | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.0200 |
| Chloroform | 0.0215 | 0.0200 | U | 0.0200 | 0.0234 | 0.0200 | 0.0230 | 0.0200 |
| 1,2-Dichloroethane | U | 0.0200 | U | 0.0200 | 0.0502 | 0.0200 | U | 0.0200 |
| 1,1,1-Trichloroethane | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.0200 |
| Benzene | 0.220 | 0.0200 | 0.197 | 0.0200 | 0.228 | 0.0200 | 0.213 | 0.0200 |
| Carbon Tetrachloride | 0.0787 | 0.0200 | 0.0741 | 0.0200 | 0.0843 | 0.0200 | 0.0780 | 0.0200 |
| Trichloroethene | 0.0208 | 0.0200 | 0.0207 | 0.0200 | 0.0238 | 0.0200 | 0.0222 | 0.0200 |
| Toluene | 0.375 | 0.0200 | 0.357 | 0.0200 | 0.408 | 0.0200 | 0.368 | 0.0200 |
| Tetrachloroethene | 0.0361 | 0.0200 | 0.0341 | 0.0200 | 0.0397 | 0.0200 | 0.0426 | 0.0200 |
| Ethylbenzene | 0.0347 | 0.0200 | 0.0366 | 0.0200 | 0.0385 | 0.0200 | 0.0355 | 0.0200 |
| m&p-Xylene | 0.116 | 0.0200 | 0.128 | 0.0200 | 0.126 | 0.0200 | 0.121 | 0.0200 |
| o-Xylene | 0.0451 | 0.0200 | 0.0449 | 0.0200 | 0.0483 | 0.0200 | 0.0411 | 0.0200 |

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Table 1.1a (cont.) Results of the Analysis for VOC (ppbv) in Air
WA# SERAS-262 Meadowbrook Avenue Site

Method SERAS SOP# 1814

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| SERAS Sample Number | R602004-19 | R602004-20 | R602004-21 | R602004-22 |
|---------------------|------------|------------|------------|------------|
| Sample Number | 262-0056 | 262-0057 | 262-0058 | 262-0059 |
| Sample Location | CBES-CS5 | CBES-IA6 | CBES-CS4 | CBES-IA3 |

| Analyte | Results ppbv | RL ppbv | Results ppbv | RL ppbv | Results ppbv | RL ppbv | Results ppbv | RL ppbv |
|--------------------------|-----------------|------------|-----------------|------------|-----------------|------------|-----------------|------------|
| Chloromethane | 0.496 | 0.0200 | 0.565 | 0.0200 | 0.0736 | 0.0200 | 0.562 | 0.0200 |
| Vinyl Chloride | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.0200 |
| Chloroethane | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.0200 |
| 1,1-Dichloroethene | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.0200 |
| Methylene Chloride | 0.0880 | 0.0200 | 0.0976 | 0.0200 | 0.0321 | 0.0200 | 0.0874 | 0.0200 |
| trans-1,2-Dichloroethene | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.0200 |
| 1,1-Dichloroethane | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.0200 |
| cis-1,2-Dichloroethene | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.0200 |
| Chloroform | 0.0205 | 0.0200 | 0.0245 | 0.0200 | U | 0.0200 | 0.0232 | 0.0200 |
| 1,2-Dichloroethane | U | 0.0200 | 0.0276 | 0.0200 | U | 0.0200 | 0.0241 | 0.0200 |
| 1,1,1-Trichloroethane | U | 0.0200 | U | 0.0200 | 0.783 | 0.0200 | 0.573 | 0.0200 |
| Benzene | 0.202 | 0.0200 | 0.237 | 0.0200 | 0.0492 | 0.0200 | 0.216 | 0.0200 |
| Carbon Tetrachloride | 0.0742 | 0.0200 | 0.0866 | 0.0200 | 0.0764 | 0.0200 | 0.0876 | 0.0200 |
| Trichloroethene | U | 0.0200 | 0.0232 | 0.0200 | U | 0.0200 | 0.0370 | 0.0200 |
| Toluene | 0.364 | 0.0200 | 0.398 | 0.0200 | 0.0641 | 0.0200 | 0.419 | 0.0200 |
| Tetrachloroethene | 0.0407 | 0.0200 | 0.0492 | 0.0200 | 0.0335 | 0.0200 | 0.0417 | 0.0200 |
| Ethylbenzene | 0.0346 | 0.0200 | 0.0422 | 0.0200 | U | 0.0200 | 0.0635 | 0.0200 |
| m&p-Xylene | 0.119 | 0.0200 | 0.144 | 0.0200 | 0.0589 | 0.0200 | 0.210 | 0.0200 |
| o-Xylene | 0.0474 | 0.0200 | 0.0522 | 0.0200 | 0.0209 | 0.0200 | 0.0821 | 0.0200 |

Table 1.1a (cont.) Results of the Analysis for VOC (ppbv) in Air
WA# SERAS-262 Meadowbrook Avenue Site

Method SERAS SOP# 1814

| SERAS Sample Number | PS-Methodblank 022516-01 | R602004-18 | R602004-23 | R602004-24 |
|---------------------|--------------------------|------------|------------|------------|
| Sample Number | Method Blank | 262-0055 | 262-0060 | 262-0061 |
| Sample Location | 2/25/2016 | CBES-IA5 | CBES-IA4 | CBES-IA17 |

| Analyte | Results ppbv | RL ppbv | Results ppbv | RL ppbv | Results ppbv | RL ppbv | Results ppbv | RL ppbv |
|--------------------------|-----------------|------------|-----------------|------------|-----------------|------------|-----------------|------------|
| Chloromethane | U | 0.0200 | 0.543 | 0.0200 | 0.507 | 0.0200 | 0.495 | 0.0200 |
| Vinyl Chloride | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.0200 |
| Chloroethane | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.0200 |
| 1,1-Dichloroethene | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.0200 |
| Methylene Chloride | U | 0.0200 | 0.0970 | 0.0200 | 0.0896 | 0.0200 | 0.0823 | 0.0200 |
| trans-1,2-Dichloroethene | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.0200 |
| 1,1-Dichloroethane | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.0200 |
| cis-1,2-Dichloroethene | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.0200 |
| Chloroform | U | 0.0200 | 0.0276 | 0.0200 | 0.0218 | 0.0200 | 0.0210 | 0.0200 |
| 1,2-Dichloroethane | U | 0.0200 | 0.0260 | 0.0200 | U | 0.0200 | 0.0364 | 0.0200 |
| 1,1,1-Trichloroethane | U | 0.0200 | U | 0.0200 | 0.0406 | 0.0200 | U | 0.0200 |
| Benzene | U | 0.0200 | 0.215 | 0.0200 | 0.228 | 0.0200 | 0.192 | 0.0200 |
| Carbon Tetrachloride | U | 0.0200 | 0.0805 | 0.0200 | 0.0769 | 0.0200 | 0.0793 | 0.0200 |
| Trichloroethene | U | 0.0200 | 0.0256 | 0.0200 | 0.0257 | 0.0200 | 0.0220 | 0.0200 |
| Toluene | U | 0.0200 | 0.326 | 0.0200 | 0.378 | 0.0200 | 0.353 | 0.0200 |
| Tetrachloroethene | U | 0.0200 | 0.0407 | 0.0200 | 0.0434 | 0.0200 | 0.0356 | 0.0200 |
| Ethylbenzene | U | 0.0200 | 0.0366 | 0.0200 | 0.0402 | 0.0200 | 0.0352 | 0.0200 |
| m&p-Xylene | U | 0.0200 | 0.134 | 0.0200 | 0.137 | 0.0200 | 0.116 | 0.0200 |
| o-Xylene | U | 0.0200 | 0.0562 | 0.0200 | 0.0548 | 0.0200 | 0.0449 | 0.0200 |

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Table 1.1a (cont.) Results of the Analysis for VOC (ppbv) in Air
WA# SERAS-262 Meadowbrook Avenue Site

Method SERAS SOP# 1814

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| | | | | |
|---------------------|------------|------------|------------|------------|
| SERAS Sample Number | R602004-25 | R602004-26 | R602004-27 | R602004-01 |
| Sample Number | 262-0062 | 262-0063 | 262-0064 | 262-0038 |
| Sample Location | CBES-CS3 | CBES-IA1 | CBES-CS2 | CBES-SS8 |

| Analyte | Results ppbv | RL ppbv | Results ppbv | RL ppbv | Results ppbv | RL ppbv | Results ppbv | RL ppbv |
|--------------------------|-----------------|------------|-----------------|------------|-----------------|------------|-----------------|------------|
| Chloromethane | 0.293 | 0.0200 | 0.269 | 0.0200 | U | 0.0200 | U | 0.100 |
| Vinyl Chloride | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.100 |
| Chloroethane | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.100 |
| 1,1-Dichloroethene | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.100 |
| Methylene Chloride | 0.0810 | 0.0200 | 0.0600 | 0.0200 | 0.0611 | 0.0200 | U | 0.100 |
| trans-1,2-Dichloroethene | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.100 |
| 1,1-Dichloroethane | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.100 |
| cis-1,2-Dichloroethene | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.100 |
| Chloroform | 0.0243 | 0.0200 | U | 0.0200 | 0.0215 | 0.0200 | U | 0.100 |
| 1,2-Dichloroethane | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.100 |
| 1,1,1-Trichloroethane | U | 0.0200 | 0.0307 | 0.0200 | 0.0473 | 0.0200 | U | 0.100 |
| Benzene | 0.165 | 0.0200 | 0.151 | 0.0200 | 0.111 | 0.0200 | U | 0.100 |
| Carbon Tetrachloride | 0.0848 | 0.0200 | 0.0819 | 0.0200 | 0.0856 | 0.0200 | U | 0.100 |
| Trichloroethene | 0.0326 | 0.0200 | 0.0342 | 0.0200 | 0.0354 | 0.0200 | U | 0.100 |
| Toluene | 0.323 | 0.0200 | 0.286 | 0.0200 | 0.200 | 0.0200 | U | 0.100 |
| Tetrachloroethene | 0.0443 | 0.0200 | 0.0509 | 0.0200 | 0.0668 | 0.0200 | 0.303 | 0.100 |
| Ethylbenzene | 0.0333 | 0.0200 | 0.0277 | 0.0200 | 0.0212 | 0.0200 | U | 0.100 |
| m&p-Xylene | 0.106 | 0.0200 | 0.0839 | 0.0200 | 0.0608 | 0.0200 | U | 0.100 |
| o-Xylene | 0.0403 | 0.0200 | 0.0342 | 0.0200 | 0.0255 | 0.0200 | U | 0.100 |

Table 1.1a (cont.) Results of the Analysis for VOC (ppbv) in Air
WA# SERAS-262 Meadowbrook Avenue Site

Method SERAS SOP# 1814

| | | | | |
|---------------------|------------|------------|------------|------------|
| SERAS Sample Number | R602004-03 | R602004-06 | R602004-09 | R602004-11 |
| Sample Number | 262-0040 | 262-0043 | 262-0046 | 262-0048 |
| Sample Location | CBES-SS7 | CBES-SS6 | CBES-SS5 | CBES-SS4 |

| Analyte | Results ppbv | RL ppbv | Results ppbv | RL ppbv | Results ppbv | RL ppbv | Results ppbv | RL ppbv |
|--------------------------|-----------------|------------|-----------------|------------|-----------------|------------|-----------------|------------|
| Chloromethane | U | 0.100 | U | 0.100 | U | 0.100 | U | 0.100 |
| Vinyl Chloride | U | 0.100 | U | 0.100 | U | 0.100 | U | 0.100 |
| Chloroethane | U | 0.100 | U | 0.100 | U | 0.100 | U | 0.100 |
| 1,1-Dichloroethene | U | 0.100 | U | 0.100 | U | 0.100 | U | 0.100 |
| Methylene Chloride | U | 0.100 | U | 0.100 | U | 0.100 | U | 0.100 |
| trans-1,2-Dichloroethene | U | 0.100 | U | 0.100 | U | 0.100 | U | 0.100 |
| 1,1-Dichloroethane | U | 0.100 | U | 0.100 | U | 0.100 | U | 0.100 |
| cis-1,2-Dichloroethene | U | 0.100 | U | 0.100 | U | 0.100 | U | 0.100 |
| Chloroform | U | 0.100 | 0.596 | 0.100 | U | 0.100 | U | 0.100 |
| 1,2-Dichloroethane | U | 0.100 | U | 0.100 | U | 0.100 | U | 0.100 |
| 1,1,1-Trichloroethane | U | 0.100 | U | 0.100 | U | 0.100 | U | 0.100 |
| Benzene | U | 0.100 | U | 0.100 | U | 0.100 | U | 0.100 |
| Carbon Tetrachloride | U | 0.100 | U | 0.100 | U | 0.100 | U | 0.100 |
| Trichloroethene | U | 0.100 | 1.88 | 0.100 | U | 0.100 | U | 0.100 |
| Toluene | U | 0.100 | U | 0.100 | U | 0.100 | U | 0.100 |
| Tetrachloroethene | 1.86 | 0.100 | 15.6 | 0.100 | 0.612 | 0.100 | 0.308 | 0.100 |
| Ethylbenzene | U | 0.100 | U | 0.100 | U | 0.100 | U | 0.100 |
| m&p-Xylene | U | 0.100 | U | 0.100 | U | 0.100 | U | 0.100 |
| o-Xylene | U | 0.100 | U | 0.100 | U | 0.100 | U | 0.100 |

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Table 1.1a (cont.) Results of the Analysis for VOC (ppbv) in Air
WA# SERAS-262 Meadowbrook Avenue Site

Method SERAS SOP# 1814

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| | | | |
|---------------------|------------|------------|--------------------------|
| SERAS Sample Number | R602004-28 | R602004-29 | PS-Methodblank 022616-01 |
| Sample Number | 262-0065 | 262-0066 | Method Blank |
| Sample Location | CBES-SS1 | CBES-SS2 | 2/26/2016 |

| Analyte | Results ppbv | RL ppbv | Results ppbv | RL ppbv | Results ppbv | RL ppbv |
|--------------------------|-----------------|------------|-----------------|------------|-----------------|------------|
| Chloromethane | 0.227 | 0.100 | 0.108 | 0.100 | U | 0.0200 |
| Vinyl Chloride | U | 0.100 | U | 0.100 | U | 0.0200 |
| Chloroethane | U | 0.100 | U | 0.100 | U | 0.0200 |
| 1,1-Dichloroethene | U | 0.100 | U | 0.100 | U | 0.0200 |
| Methylene Chloride | U | 0.100 | U | 0.100 | U | 0.0200 |
| trans-1,2-Dichloroethene | U | 0.100 | U | 0.100 | U | 0.0200 |
| 1,1-Dichloroethane | U | 0.100 | U | 0.100 | U | 0.0200 |
| cis-1,2-Dichloroethene | U | 0.100 | U | 0.100 | U | 0.0200 |
| Chloroform | 0.247 | 0.100 | U | 0.100 | U | 0.0200 |
| 1,2-Dichloroethane | U | 0.100 | U | 0.100 | U | 0.0200 |
| 1,1,1-Trichloroethane | U | 0.100 | U | 0.100 | U | 0.0200 |
| Benzene | 0.119 | 0.100 | U | 0.100 | U | 0.0200 |
| Carbon Tetrachloride | U | 0.100 | U | 0.100 | U | 0.0200 |
| Trichloroethene | 1.28 | 0.100 | 0.806 | 0.100 | U | 0.0200 |
| Toluene | 0.158 | 0.100 | U | 0.100 | U | 0.0200 |
| Tetrachloroethene | 0.891 | 0.100 | 1.18 | 0.100 | U | 0.0200 |
| Ethylbenzene | U | 0.100 | U | 0.100 | U | 0.0200 |
| m&p-Xylene | U | 0.100 | U | 0.100 | U | 0.0200 |
| o-Xylene | U | 0.100 | U | 0.100 | U | 0.0200 |

Table 1.1a (cont.) Results of the Analysis for VOC (ppbv) in Air
WA# SERAS-00262 Meadowbrook Avenue Site

Method SERAS SOP# 1814

| | | | | |
|---------------------|------------|------------|------------|------------|
| SERAS Sample Number | R602004-30 | R602004-31 | R602004-33 | R602004-32 |
| Sample Number | 262-0067 | 262-0068 | 262-0070 | 262-0069 |
| Sample Location | CBES-IA2 | CBES-CS1 | CBES-IA11 | CBES-SS3 |

| Analyte | Results ppbv | RL ppbv | Results ppbv | RL ppbv | Results ppbv | RL ppbv | Results ppbv | RL ppbv |
|--------------------------|-----------------|------------|-----------------|------------|-----------------|------------|-----------------|------------|
| Chloromethane | 0.705 | 0.0200 | 0.452 | 0.0200 | 0.550 | 0.0200 | U | 0.100 |
| Vinyl Chloride | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.100 |
| Chloroethane | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.100 |
| 1,1-Dichloroethene | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.100 |
| Methylene Chloride | 0.118 | 0.0200 | 0.0859 | 0.0200 | 0.0922 | 0.0200 | U | 0.100 |
| trans-1,2-Dichloroethene | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.100 |
| 1,1-Dichloroethane | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.100 |
| cis-1,2-Dichloroethene | U | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.100 |
| Chloroform | 0.0573 | 0.0200 | 0.0229 | 0.0200 | 0.0269 | 0.0200 | U | 0.100 |
| 1,2-Dichloroethane | 0.0217 | 0.0200 | U | 0.0200 | U | 0.0200 | U | 0.100 |
| 1,1,1-Trichloroethane | U | 0.0200 | 0.0272 | 0.0200 | U | 0.0200 | U | 0.100 |
| Benzene | 0.237 | 0.0200 | 0.216 | 0.0200 | 0.248 | 0.0200 | U | 0.100 |
| Carbon Tetrachloride | 0.106 | 0.0200 | 0.0866 | 0.0200 | 0.0823 | 0.0200 | U | 0.100 |
| Trichloroethene | 0.0232 | 0.0200 | 0.0271 | 0.0200 | 0.0212 | 0.0200 | U | 0.100 |
| Toluene | 0.385 | 0.0200 | 0.390 | 0.0200 | 0.495 | 0.0200 | U | 0.100 |
| Tetrachloroethene | 0.0412 | 0.0200 | 0.0486 | 0.0200 | 0.0442 | 0.0200 | U | 0.100 |
| Ethylbenzene | 0.0405 | 0.0200 | 0.0387 | 0.0200 | 0.0519 | 0.0200 | U | 0.100 |
| m&p-Xylene | 0.143 | 0.0200 | 0.126 | 0.0200 | 0.164 | 0.0200 | U | 0.100 |
| o-Xylene | 0.0621 | 0.0200 | 0.0510 | 0.0200 | 0.0609 | 0.0200 | U | 0.100 |

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Table 1.1b Results of the Analysis for VOC (ug/m3) in Air
WA# SERAS-262 Meadowbrook Avenue Site

Method SERAS SOP# 1814

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| | | | | |
|---------------------|--------------------------|------------|------------|------------|
| SERAS Sample Number | PS-Methodblank 022416-01 | R602004-36 | R602004-34 | R602004-35 |
| Sample Number | Method Blank | 262-0073 | 262-0071 | 262-0072 |
| Sample Location | 2/24/2016 | Trip Blank | CBES-AA1 | CBES-AA2 |

| Analyte | Result ug/m3 | RL ug/m3 | Result ug/m3 | RL ug/m3 | Result ug/m3 | RL ug/m3 | Result ug/m3 | RL ug/m3 |
|--------------------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|
| Chloromethane | U | 0.0413 | U | 0.0413 | 1.10 | 0.0413 | 1.16 | 0.0413 |
| Vinyl Chloride | U | 0.0511 | U | 0.0511 | U | 0.0511 | U | 0.0511 |
| Chloroethane | U | 0.0528 | U | 0.0528 | U | 0.0528 | U | 0.0528 |
| 1,1-Dichloroethene | U | 0.0793 | U | 0.0793 | U | 0.0793 | U | 0.0793 |
| Methylene Chloride | U | 0.0695 | U | 0.0695 | 0.311 | 0.0695 | 0.293 | 0.0695 |
| trans-1,2-Dichloroethene | U | 0.0793 | U | 0.0793 | U | 0.0793 | U | 0.0793 |
| 1,1-Dichloroethane | U | 0.0809 | U | 0.0809 | U | 0.0809 | U | 0.0809 |
| cis-1,2-Dichloroethene | U | 0.0793 | U | 0.0793 | U | 0.0793 | U | 0.0793 |
| Chloroform | U | 0.0977 | U | 0.0977 | 0.105 | 0.0977 | 0.0988 | 0.0977 |
| 1,2-Dichloroethane | U | 0.0809 | U | 0.0809 | U | 0.0809 | U | 0.0809 |
| 1,1,1-Trichloroethane | U | 0.109 | U | 0.109 | U | 0.109 | U | 0.109 |
| Benzene | U | 0.0639 | U | 0.0639 | 0.710 | 0.0639 | 0.702 | 0.0639 |
| Carbon Tetrachloride | U | 0.126 | U | 0.126 | 0.500 | 0.126 | 0.528 | 0.126 |
| Trichloroethene | U | 0.107 | U | 0.107 | U | 0.107 | U | 0.107 |
| Toluene | U | 0.0754 | U | 0.0754 | 1.37 | 0.0754 | 1.61 | 0.0754 |
| Tetrachloroethene | U | 0.136 | U | 0.136 | 0.249 | 0.136 | 0.323 | 0.136 |
| Ethylbenzene | U | 0.0868 | U | 0.0868 | 0.151 | 0.0868 | 0.166 | 0.0868 |
| m&p-Xylene | U | 0.0868 | U | 0.0868 | 0.549 | 0.0868 | 0.578 | 0.0868 |
| o-Xylene | U | 0.0868 | U | 0.0868 | 0.217 | 0.0868 | 0.220 | 0.0868 |

Table 1.1b (cont.) Results of the Analysis for VOC (ug/m3) in Air
WA# SERAS-262 Meadowbrook Avenue Site

Method SERAS SOP# 1814

| | | | | |
|---------------------|------------|------------|--------------|------------|
| SERAS Sample Number | R602004-02 | R602004-04 | R602004-05 | R602004-07 |
| Sample Number | 262-0039 | 262-0041 | 262-0042 | 262-0044 |
| Sample Location | CBES-IA16 | CBES-IA15 | CBES-IA15 CO | CBES-IA14 |

| Analyte | Result ug/m3 | RL ug/m3 | Result ug/m3 | RL ug/m3 | Result ug/m3 | RL ug/m3 | Result ug/m3 | RL ug/m3 |
|--------------------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|
| Chloromethane | 1.09 | 0.0413 | 1.12 | 0.0413 | 1.06 | 0.0413 | 1.13 | 0.0413 |
| Vinyl Chloride | U | 0.0511 | U | 0.0511 | U | 0.0511 | U | 0.0511 |
| Chloroethane | U | 0.0528 | U | 0.0528 | U | 0.0528 | U | 0.0528 |
| 1,1-Dichloroethene | U | 0.0793 | U | 0.0793 | U | 0.0793 | U | 0.0793 |
| Methylene Chloride | 0.300 | 0.0695 | 0.300 | 0.0695 | 0.324 | 0.0695 | 0.313 | 0.0695 |
| trans-1,2-Dichloroethene | U | 0.0793 | U | 0.0793 | U | 0.0793 | U | 0.0793 |
| 1,1-Dichloroethane | U | 0.0809 | U | 0.0809 | U | 0.0809 | U | 0.0809 |
| cis-1,2-Dichloroethene | U | 0.0793 | U | 0.0793 | U | 0.0793 | U | 0.0793 |
| Chloroform | U | 0.0977 | U | 0.0977 | 0.102 | 0.0977 | 0.104 | 0.0977 |
| 1,2-Dichloroethane | U | 0.0809 | U | 0.0809 | U | 0.0809 | U | 0.0809 |
| 1,1,1-Trichloroethane | U | 0.109 | U | 0.109 | U | 0.109 | U | 0.109 |
| Benzene | 0.730 | 0.0639 | 0.696 | 0.0639 | 0.720 | 0.0639 | 0.735 | 0.0639 |
| Carbon Tetrachloride | 0.531 | 0.126 | 0.511 | 0.126 | 0.503 | 0.126 | 0.515 | 0.126 |
| Trichloroethene | U | 0.107 | U | 0.107 | U | 0.107 | U | 0.107 |
| Toluene | 1.49 | 0.0754 | 1.62 | 0.0754 | 1.53 | 0.0754 | 1.47 | 0.0754 |
| Tetrachloroethene | 0.264 | 0.136 | 0.291 | 0.136 | 0.276 | 0.136 | 0.290 | 0.136 |
| Ethylbenzene | 0.156 | 0.0868 | 0.164 | 0.0868 | 0.154 | 0.0868 | 0.165 | 0.0868 |
| m&p-Xylene | 0.524 | 0.0868 | 0.546 | 0.0868 | 0.519 | 0.0868 | 0.558 | 0.0868 |
| o-Xylene | 0.214 | 0.0868 | 0.210 | 0.0868 | 0.210 | 0.0868 | 0.222 | 0.0868 |

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Table 1.1b (cont.) Results of the Analysis for VOC (ug/m3) in Air
WA# SERAS-262 Meadowbrook Avenue Site

Method SERAS SOP# 1814

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| | | | | |
|---------------------|--------------|------------|------------|------------|
| SERAS Sample Number | R602004-08 | R602004-10 | R602004-12 | R602004-13 |
| Sample Number | 262-0045 | 262-0047 | 262-0049 | 262-0050 |
| Sample Location | CBES-IA14 CO | CBES-IA13 | CBES-IA12 | CBES-IA10 |

| Analyte | Results ug/m3 | RL ug/m3 | Results ug/m3 | RL ug/m3 | Results ug/m3 | RL ug/m3 | Results ug/m3 | RL ug/m3 |
|--------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|
| Chloromethane | 1.12 | 0.0413 | 1.09 | 0.0413 | 1.07 | 0.0413 | 1.16 | 0.0414 |
| Vinyl Chloride | U | 0.0511 | U | 0.0511 | U | 0.0511 | U | 0.0512 |
| Chloroethane | U | 0.0528 | U | 0.0528 | U | 0.0528 | U | 0.0529 |
| 1,1-Dichloroethene | U | 0.0793 | U | 0.0793 | U | 0.0793 | U | 0.0794 |
| Methylene Chloride | 0.303 | 0.0695 | 0.310 | 0.0695 | 0.281 | 0.0695 | 0.318 | 0.0696 |
| trans-1,2-Dichloroethene | U | 0.0793 | U | 0.0793 | U | 0.0793 | U | 0.0794 |
| 1,1-Dichloroethane | U | 0.0809 | U | 0.0809 | U | 0.0809 | U | 0.0811 |
| cis-1,2-Dichloroethene | U | 0.0793 | U | 0.0793 | U | 0.0793 | U | 0.0794 |
| Chloroform | 0.105 | 0.0977 | U | 0.0977 | 0.107 | 0.0977 | 0.102 | 0.0978 |
| 1,2-Dichloroethane | U | 0.0809 | U | 0.0809 | U | 0.0809 | U | 0.0811 |
| 1,1,1-Trichloroethane | U | 0.109 | U | 0.109 | U | 0.109 | U | 0.109 |
| Benzene | 0.717 | 0.0639 | 0.738 | 0.0639 | 0.648 | 0.0639 | 0.692 | 0.0640 |
| Carbon Tetrachloride | 0.514 | 0.126 | 0.513 | 0.126 | 0.512 | 0.126 | 0.508 | 0.126 |
| Trichloroethene | U | 0.107 | U | 0.107 | U | 0.107 | U | 0.108 |
| Toluene | 1.50 | 0.0754 | 1.62 | 0.0754 | 1.38 | 0.0754 | 1.54 | 0.0755 |
| Tetrachloroethene | 0.290 | 0.136 | 0.267 | 0.136 | 0.232 | 0.136 | 0.270 | 0.136 |
| Ethylbenzene | 0.168 | 0.0868 | 0.210 | 0.0868 | 0.148 | 0.0868 | 0.179 | 0.0870 |
| m&p-Xylene | 0.568 | 0.0868 | 0.686 | 0.0868 | 0.490 | 0.0868 | 0.596 | 0.0870 |
| o-Xylene | 0.223 | 0.0868 | 0.249 | 0.0868 | 0.198 | 0.0868 | 0.222 | 0.0870 |

Table 1.1b (cont.) Results of the Analysis for VOC (ug/m3) in Air
WA# SERAS-262 Meadowbrook Avenue Site

Method SERAS SOP# 1814

| | | | | |
|---------------------|------------|-------------|------------|------------|
| SERAS Sample Number | R602004-14 | R602004-15 | R602004-16 | R602004-17 |
| Sample Number | 262-0051 | 262-0052 | 262-0053 | 262-0054 |
| Sample Location | CBES-IA9 | CBES-IA9 CO | CBES-IA8 | CBES-IA7 |

| Analyte | Results ug/m3 | RL ug/m3 | Results ug/m3 | RL ug/m3 | Results ug/m3 | RL ug/m3 | Results ug/m3 | RL ug/m3 |
|--------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|
| Chloromethane | 1.01 | 0.0413 | 0.957 | 0.0413 | 1.17 | 0.0413 | 1.17 | 0.0413 |
| Vinyl Chloride | U | 0.0511 | U | 0.0511 | U | 0.0511 | U | 0.0511 |
| Chloroethane | U | 0.0528 | U | 0.0528 | U | 0.0528 | U | 0.0528 |
| 1,1-Dichloroethene | U | 0.0793 | U | 0.0793 | U | 0.0793 | U | 0.0793 |
| Methylene Chloride | 0.301 | 0.0695 | 0.273 | 0.0695 | 0.325 | 0.0695 | 0.303 | 0.0695 |
| trans-1,2-Dichloroethene | U | 0.0793 | U | 0.0793 | U | 0.0793 | U | 0.0793 |
| 1,1-Dichloroethane | U | 0.0809 | U | 0.0809 | U | 0.0809 | U | 0.0809 |
| cis-1,2-Dichloroethene | U | 0.0793 | U | 0.0793 | U | 0.0793 | U | 0.0793 |
| Chloroform | 0.105 | 0.0977 | U | 0.0977 | 0.114 | 0.0977 | 0.112 | 0.0977 |
| 1,2-Dichloroethane | U | 0.0809 | U | 0.0809 | 0.203 | 0.0809 | U | 0.0809 |
| 1,1,1-Trichloroethane | U | 0.109 | U | 0.109 | U | 0.109 | U | 0.109 |
| Benzene | 0.703 | 0.0639 | 0.629 | 0.0639 | 0.727 | 0.0639 | 0.682 | 0.0639 |
| Carbon Tetrachloride | 0.495 | 0.126 | 0.466 | 0.126 | 0.530 | 0.126 | 0.491 | 0.126 |
| Trichloroethene | 0.112 | 0.107 | 0.111 | 0.107 | 0.128 | 0.107 | 0.119 | 0.107 |
| Toluene | 1.41 | 0.0754 | 1.34 | 0.0754 | 1.54 | 0.0754 | 1.39 | 0.0754 |
| Tetrachloroethene | 0.245 | 0.136 | 0.231 | 0.136 | 0.270 | 0.136 | 0.289 | 0.136 |
| Ethylbenzene | 0.151 | 0.0868 | 0.159 | 0.0868 | 0.167 | 0.0868 | 0.154 | 0.0868 |
| m&p-Xylene | 0.504 | 0.0868 | 0.556 | 0.0868 | 0.546 | 0.0868 | 0.524 | 0.0868 |
| o-Xylene | 0.196 | 0.0868 | 0.195 | 0.0868 | 0.210 | 0.0868 | 0.179 | 0.0868 |

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Table 1.1b (cont.) Results of the Analysis for VOC (ug/m3) in Air
WA# SERAS-262 Meadowbrook Avenue Site

Method SERAS SOP# 1814

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| | | | | |
|---------------------|------------|------------|------------|------------|
| SERAS Sample Number | R602004-19 | R602004-20 | R602004-21 | R602004-22 |
| Sample Number | 262-0056 | 262-0057 | 262-0058 | 262-0059 |
| Sample Location | CBES-CS5 | CBES-IA6 | CBES-CS4 | CBES-IA3 |

| Analyte | Results ug/m3 | RL ug/m3 | Results ug/m3 | RL ug/m3 | Results ug/m3 | RL ug/m3 | Results ug/m3 | RL ug/m3 |
|--------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|
| Chloromethane | 1.02 | 0.0413 | 1.17 | 0.0413 | 0.152 | 0.0413 | 1.16 | 0.0413 |
| Vinyl Chloride | U | 0.0511 | U | 0.0511 | U | 0.0511 | U | 0.0511 |
| Chloroethane | U | 0.0528 | U | 0.0528 | U | 0.0528 | U | 0.0528 |
| 1,1-Dichloroethene | U | 0.0793 | U | 0.0793 | U | 0.0793 | U | 0.0793 |
| Methylene Chloride | 0.306 | 0.0695 | 0.339 | 0.0695 | 0.111 | 0.0695 | 0.304 | 0.0695 |
| trans-1,2-Dichloroethene | U | 0.0793 | U | 0.0793 | U | 0.0793 | U | 0.0793 |
| 1,1-Dichloroethane | U | 0.0809 | U | 0.0809 | U | 0.0809 | U | 0.0809 |
| cis-1,2-Dichloroethene | U | 0.0793 | U | 0.0793 | U | 0.0793 | U | 0.0793 |
| Chloroform | 0.100 | 0.0977 | 0.120 | 0.0977 | U | 0.0977 | 0.113 | 0.0977 |
| 1,2-Dichloroethane | U | 0.0809 | 0.112 | 0.0809 | U | 0.0809 | 0.0975 | 0.0809 |
| 1,1,1-Trichloroethane | U | 0.109 | U | 0.109 | 4.27 | 0.109 | 3.13 | 0.109 |
| Benzene | 0.645 | 0.0639 | 0.757 | 0.0639 | 0.157 | 0.0639 | 0.690 | 0.0639 |
| Carbon Tetrachloride | 0.467 | 0.126 | 0.545 | 0.126 | 0.481 | 0.126 | 0.551 | 0.126 |
| Trichloroethene | U | 0.107 | 0.125 | 0.107 | U | 0.107 | 0.199 | 0.107 |
| Toluene | 1.37 | 0.0754 | 1.50 | 0.0754 | 0.242 | 0.0754 | 1.58 | 0.0754 |
| Tetrachloroethene | 0.276 | 0.136 | 0.334 | 0.136 | 0.227 | 0.136 | 0.283 | 0.136 |
| Ethylbenzene | 0.150 | 0.0868 | 0.183 | 0.0868 | U | 0.0868 | 0.276 | 0.0868 |
| m&p-Xylene | 0.516 | 0.0868 | 0.626 | 0.0868 | 0.256 | 0.0868 | 0.910 | 0.0868 |
| o-Xylene | 0.206 | 0.0868 | 0.227 | 0.0868 | 0.0909 | 0.0868 | 0.357 | 0.0868 |

Table 1.1b (cont.) Results of the Analysis for VOC (ug/m3) in Air
WA# SERAS-262 Meadowbrook Avenue Site

Method SERAS SOP# 1814

| | | | | |
|---------------------|--------------------------|------------|------------|------------|
| SERAS Sample Number | PS-Methodblank 022516-01 | R602004-18 | R602004-23 | R602004-24 |
| Sample Number | Method Blank | 262-0055 | 262-0060 | 262-0061 |
| Sample Location | 2/25/2016 | CBES-IA5 | CBES-IA4 | CBES-IA17 |

| Analyte | Results ug/m3 | RL ug/m3 | Results ug/m3 | RL ug/m3 | Results ug/m3 | RL ug/m3 | Results ug/m3 | RL ug/m3 |
|--------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|
| Chloromethane | U | 0.0413 | 1.12 | 0.0413 | 1.05 | 0.0413 | 1.02 | 0.0413 |
| Vinyl Chloride | U | 0.0511 | U | 0.0511 | U | 0.0511 | U | 0.0511 |
| Chloroethane | U | 0.0528 | U | 0.0528 | U | 0.0528 | U | 0.0528 |
| 1,1-Dichloroethene | U | 0.0793 | U | 0.0793 | U | 0.0793 | U | 0.0793 |
| Methylene Chloride | U | 0.0695 | 0.337 | 0.0695 | 0.311 | 0.0695 | 0.286 | 0.0695 |
| trans-1,2-Dichloroethene | U | 0.0793 | U | 0.0793 | U | 0.0793 | U | 0.0793 |
| 1,1-Dichloroethane | U | 0.0809 | U | 0.0809 | U | 0.0809 | U | 0.0809 |
| cis-1,2-Dichloroethene | U | 0.0793 | U | 0.0793 | U | 0.0793 | U | 0.0793 |
| Chloroform | U | 0.0977 | 0.135 | 0.0977 | 0.107 | 0.0977 | 0.102 | 0.0977 |
| 1,2-Dichloroethane | U | 0.0809 | 0.105 | 0.0809 | U | 0.0809 | 0.147 | 0.0809 |
| 1,1,1-Trichloroethane | U | 0.109 | U | 0.109 | 0.222 | 0.109 | U | 0.109 |
| Benzene | U | 0.0639 | 0.687 | 0.0639 | 0.728 | 0.0639 | 0.612 | 0.0639 |
| Carbon Tetrachloride | U | 0.126 | 0.506 | 0.126 | 0.484 | 0.126 | 0.499 | 0.126 |
| Trichloroethene | U | 0.107 | 0.137 | 0.107 | 0.138 | 0.107 | 0.118 | 0.107 |
| Toluene | U | 0.0754 | 1.23 | 0.0754 | 1.42 | 0.0754 | 1.33 | 0.0754 |
| Tetrachloroethene | U | 0.136 | 0.276 | 0.136 | 0.294 | 0.136 | 0.241 | 0.136 |
| Ethylbenzene | U | 0.0868 | 0.159 | 0.0868 | 0.175 | 0.0868 | 0.153 | 0.0868 |
| m&p-Xylene | U | 0.0868 | 0.584 | 0.0868 | 0.597 | 0.0868 | 0.502 | 0.0868 |
| o-Xylene | U | 0.0868 | 0.244 | 0.0868 | 0.238 | 0.0868 | 0.195 | 0.0868 |

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Table 1.1b (cont.) Results of the Analysis for VOC (ug/m3) in Air
WA# SERAS-262 Meadowbrook Avenue Site

Method SERAS SOP# 1814

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| | | | | |
|---------------------|------------|------------|------------|------------|
| SERAS Sample Number | R602004-25 | R602004-26 | R602004-27 | R602004-01 |
| Sample Number | 262-0062 | 262-0063 | 262-0064 | 262-0038 |
| Sample Location | CBES-CS3 | CBES-IA1 | CBES-CS2 | CBES-SS8 |

| Analyte | Results ug/m3 | RL ug/m3 | Results ug/m3 | RL ug/m3 | Results ug/m3 | RL ug/m3 | Results ug/m3 | RL ug/m3 |
|--------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|
| Chloromethane | 0.605 | 0.0413 | 0.556 | 0.0413 | U | 0.0413 | U | 0.207 |
| Vinyl Chloride | U | 0.0511 | U | 0.0511 | U | 0.0511 | U | 0.256 |
| Chloroethane | U | 0.0528 | U | 0.0528 | U | 0.0528 | U | 0.264 |
| 1,1-Dichloroethene | U | 0.0793 | U | 0.0793 | U | 0.0793 | U | 0.396 |
| Methylene Chloride | 0.281 | 0.0695 | 0.208 | 0.0695 | 0.212 | 0.0695 | U | 0.347 |
| trans-1,2-Dichloroethene | U | 0.0793 | U | 0.0793 | U | 0.0793 | U | 0.396 |
| 1,1-Dichloroethane | U | 0.0809 | U | 0.0809 | U | 0.0809 | U | 0.405 |
| cis-1,2-Dichloroethene | U | 0.0793 | U | 0.0793 | U | 0.0793 | U | 0.396 |
| Chloroform | 0.119 | 0.0977 | U | 0.0977 | 0.105 | 0.0977 | U | 0.488 |
| 1,2-Dichloroethane | U | 0.0809 | U | 0.0809 | U | 0.0809 | U | 0.405 |
| 1,1,1-Trichloroethane | U | 0.109 | 0.168 | 0.109 | 0.258 | 0.109 | U | 0.546 |
| Benzene | 0.528 | 0.0639 | 0.483 | 0.0639 | 0.353 | 0.0639 | U | 0.319 |
| Carbon Tetrachloride | 0.534 | 0.126 | 0.515 | 0.126 | 0.538 | 0.126 | U | 0.629 |
| Trichloroethene | 0.175 | 0.107 | 0.184 | 0.107 | 0.190 | 0.107 | U | 0.537 |
| Toluene | 1.22 | 0.0754 | 1.08 | 0.0754 | 0.754 | 0.0754 | U | 0.377 |
| Tetrachloroethene | 0.300 | 0.136 | 0.345 | 0.136 | 0.453 | 0.136 | 2.05 | 0.678 |
| Ethylbenzene | 0.145 | 0.0868 | 0.120 | 0.0868 | 0.0919 | 0.0868 | U | 0.434 |
| m&p-Xylene | 0.460 | 0.0868 | 0.364 | 0.0868 | 0.264 | 0.0868 | U | 0.434 |
| o-Xylene | 0.175 | 0.0868 | 0.149 | 0.0868 | 0.111 | 0.0868 | U | 0.434 |

Table 1.1b (cont.) Results of the Analysis for VOC (ug/m3) in Air
WA# SERAS-262 Meadowbrook Avenue Site

Method SERAS SOP# 1814

| | | | | |
|---------------------|------------|------------|------------|------------|
| SERAS Sample Number | R602004-03 | R602004-06 | R602004-09 | R602004-11 |
| Sample Number | 262-0040 | 262-0043 | 262-0046 | 262-0048 |
| Sample Location | CBES-SS7 | CBES-SS6 | CBES-SS5 | CBES-SS4 |

| Analyte | Results ug/m3 | RL ug/m3 | Results ug/m3 | RL ug/m3 | Results ug/m3 | RL ug/m3 | Results ug/m3 | RL ug/m3 |
|--------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|
| Chloromethane | U | 0.207 | U | 0.207 | U | 0.207 | U | 0.207 |
| Vinyl Chloride | U | 0.256 | U | 0.256 | U | 0.256 | U | 0.256 |
| Chloroethane | U | 0.264 | U | 0.264 | U | 0.264 | U | 0.264 |
| 1,1-Dichloroethene | U | 0.396 | U | 0.396 | U | 0.396 | U | 0.396 |
| Methylene Chloride | U | 0.347 | U | 0.347 | U | 0.347 | U | 0.347 |
| trans-1,2-Dichloroethene | U | 0.396 | U | 0.396 | U | 0.396 | U | 0.396 |
| 1,1-Dichloroethane | U | 0.405 | U | 0.405 | U | 0.405 | U | 0.405 |
| cis-1,2-Dichloroethene | U | 0.396 | U | 0.396 | U | 0.396 | U | 0.396 |
| Chloroform | U | 0.488 | 2.91 | 0.488 | U | 0.488 | U | 0.488 |
| 1,2-Dichloroethane | U | 0.405 | U | 0.405 | U | 0.405 | U | 0.405 |
| 1,1,1-Trichloroethane | U | 0.546 | U | 0.546 | U | 0.546 | U | 0.546 |
| Benzene | U | 0.319 | U | 0.319 | U | 0.319 | U | 0.319 |
| Carbon Tetrachloride | U | 0.629 | U | 0.629 | U | 0.629 | U | 0.629 |
| Trichloroethene | U | 0.537 | 10.1 | 0.537 | U | 0.537 | U | 0.537 |
| Toluene | U | 0.377 | U | 0.377 | U | 0.377 | U | 0.377 |
| Tetrachloroethene | 12.6 | 0.678 | 106 | 0.678 | 4.15 | 0.678 | 2.09 | 0.678 |
| Ethylbenzene | U | 0.434 | U | 0.434 | U | 0.434 | U | 0.434 |
| m&p-Xylene | U | 0.434 | U | 0.434 | U | 0.434 | U | 0.434 |
| o-Xylene | U | 0.434 | U | 0.434 | U | 0.434 | U | 0.434 |

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Table 1.1b (cont.) Results of the Analysis for VOC (ug/m3) in Air
WA# SERAS-262 Meadowbrook Avenue Site

Method SERAS SOP# 1814

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| | | | |
|---------------------|------------|------------|--------------------------|
| SERAS Sample Number | R602004-28 | R602004-29 | PS-Methodblank 022616-01 |
| Sample Number | 262-0065 | 262-0066 | Method Blank |
| Sample Location | CBES-SS1 | CBES-SS2 | 2/26/2016 |

| Analyte | Results ug/m3 | RL ug/m3 | Results ug/m3 | RL ug/m3 | Results ug/m3 | RL ug/m3 |
|--------------------------|------------------|-------------|------------------|-------------|------------------|-------------|
| Chloromethane | 0.469 | 0.207 | 0.224 | 0.207 | U | 0.0413 |
| Vinyl Chloride | U | 0.256 | U | 0.256 | U | 0.0511 |
| Chloroethane | U | 0.264 | U | 0.264 | U | 0.0528 |
| 1,1-Dichloroethene | U | 0.396 | U | 0.396 | U | 0.0793 |
| Methylene Chloride | U | 0.347 | U | 0.347 | U | 0.0695 |
| trans-1,2-Dichloroethene | U | 0.396 | U | 0.396 | U | 0.0793 |
| 1,1-Dichloroethane | U | 0.405 | U | 0.405 | U | 0.0809 |
| cis-1,2-Dichloroethene | U | 0.396 | U | 0.396 | U | 0.0793 |
| Chloroform | 1.21 | 0.488 | U | 0.488 | U | 0.0977 |
| 1,2-Dichloroethane | U | 0.405 | U | 0.405 | U | 0.0809 |
| 1,1,1-Trichloroethane | U | 0.546 | U | 0.546 | U | 0.109 |
| Benzene | 0.380 | 0.319 | U | 0.319 | U | 0.0639 |
| Carbon Tetrachloride | U | 0.629 | U | 0.629 | U | 0.126 |
| Trichloroethene | 6.87 | 0.537 | 4.33 | 0.537 | U | 0.107 |
| Toluene | 0.595 | 0.377 | U | 0.377 | U | 0.0754 |
| Tetrachloroethene | 6.05 | 0.678 | 8.00 | 0.678 | U | 0.136 |
| Ethylbenzene | U | 0.434 | U | 0.434 | U | 0.0868 |
| m&p-Xylene | U | 0.434 | U | 0.434 | U | 0.0868 |
| o-Xylene | U | 0.434 | U | 0.434 | U | 0.0868 |

Table 1.1b (cont.) Results of the Analysis for VOC (ug/m3) in Air
WA# SERAS-262 Meadowbrook Avenue Site

Method SERAS SOP# 1814

| | | | | |
|---------------------|------------|------------|------------|------------|
| SERAS Sample Number | R602004-30 | R602004-31 | R602004-33 | R602004-32 |
| Sample Number | 262-0067 | 262-0068 | 262-0070 | 262-0069 |
| Sample Location | CBES-IA2 | CBES-CS1 | CBES-IA11 | CBES-SS3 |

| Analyte | Results ug/m3 | RL ug/m3 | Results ug/m3 | RL ug/m3 | Results ug/m3 | RL ug/m3 | Results ug/m3 | RL ug/m3 |
|--------------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|
| Chloromethane | 1.46 | 0.0413 | 0.933 | 0.0413 | 1.14 | 0.0413 | U | 0.207 |
| Vinyl Chloride | U | 0.0511 | U | 0.0511 | U | 0.0511 | U | 0.256 |
| Chloroethane | U | 0.0528 | U | 0.0528 | U | 0.0528 | U | 0.264 |
| 1,1-Dichloroethene | U | 0.0793 | U | 0.0793 | U | 0.0793 | U | 0.396 |
| Methylene Chloride | 0.411 | 0.0695 | 0.298 | 0.0695 | 0.320 | 0.0695 | U | 0.347 |
| trans-1,2-Dichloroethene | U | 0.0793 | U | 0.0793 | U | 0.0793 | U | 0.396 |
| 1,1-Dichloroethane | U | 0.0809 | U | 0.0809 | U | 0.0809 | U | 0.405 |
| cis-1,2-Dichloroethene | U | 0.0793 | U | 0.0793 | U | 0.0793 | U | 0.396 |
| Chloroform | 0.280 | 0.0977 | 0.112 | 0.0977 | 0.131 | 0.0977 | U | 0.488 |
| 1,2-Dichloroethane | 0.0879 | 0.0809 | U | 0.0809 | U | 0.0809 | U | 0.405 |
| 1,1,1-Trichloroethane | U | 0.109 | 0.148 | 0.109 | U | 0.109 | U | 0.546 |
| Benzene | 0.758 | 0.0639 | 0.691 | 0.0639 | 0.793 | 0.0639 | U | 0.319 |
| Carbon Tetrachloride | 0.665 | 0.126 | 0.545 | 0.126 | 0.518 | 0.126 | U | 0.629 |
| Trichloroethene | 0.125 | 0.107 | 0.146 | 0.107 | 0.114 | 0.107 | U | 0.537 |
| Toluene | 1.45 | 0.0754 | 1.47 | 0.0754 | 1.86 | 0.0754 | U | 0.377 |
| Tetrachloroethene | 0.279 | 0.136 | 0.330 | 0.136 | 0.300 | 0.136 | U | 0.678 |
| Ethylbenzene | 0.176 | 0.0868 | 0.168 | 0.0868 | 0.225 | 0.0868 | U | 0.434 |
| m&p-Xylene | 0.622 | 0.0868 | 0.549 | 0.0868 | 0.711 | 0.0868 | U | 0.434 |
| o-Xylene | 0.269 | 0.0868 | 0.222 | 0.0868 | 0.264 | 0.0868 | U | 0.434 |

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Table 2.1 Results of the LCS Analysis for VOC in Air
WA# SERAS-262 Meadowbrook Avenue Site

Page 1 of 1

Sample ID: LCS 022416

| Analyte | LCS Spike Amount ppbv | LCS Recovered ppbv | % Recovery | QC Limits % Recovery |
|--------------------------|-----------------------------|--------------------------|------------|-------------------------|
| Chloromethane | 1.00 | 0.984 | 98 | 72 - 137 |
| Vinyl Chloride | 1.00 | 1.13 | 113 | 75 - 150 |
| Chloroethane | 1.00 | 0.934 | 93 | 69 - 146 |
| 1,1-Dichloroethene | 1.00 | 0.918 | 92 | 73 - 141 |
| Methylene Chloride | 1.00 | 0.902 | 90 | 71 - 127 |
| trans-1,2-Dichloroethene | 1.00 | 0.921 | 92 | 74 - 141 |
| 1,1-Dichloroethane | 1.00 | 0.985 | 99 | 76 - 145 |
| cis-1,2-Dichloroethene | 1.00 | 0.870 | 87 | 72 - 139 |
| Chloroform | 1.00 | 1.07 | 107 | 76 - 159 |
| 1,2-Dichloroethane | 1.00 | 1.04 | 104 | 69 - 154 |
| 1,1,1-Trichloroethane | 1.00 | 1.12 | 112 | 84 - 145 |
| Benzene | 1.00 | 0.913 | 91 | 82 - 127 |
| Carbon Tetrachloride | 1.00 | 1.13 | 113 | 78 - 146 |
| Trichloroethene | 1.00 | 1.11 | 111 | 79 - 151 |
| Toluene | 1.00 | 1.01 | 101 | 61 - 129 |
| Tetrachloroethene | 1.00 | 1.06 | 106 | 52 - 146 |
| Ethylbenzene | 1.00 | 1.02 | 102 | 65 - 130 |
| m&p-Xylene | 2.00 | 2.09 | 105 | 63 - 144 |
| o-Xylene | 1.00 | 1.11 | 111 | 70 - 133 |

*Indicates out of the criteria

Sample ID: LCS 022516

| Analyte | LCS Spike Amount ppbv | LCS Recovered ppbv | % Recovery | QC Limits % Recovery |
|--------------------------|-----------------------------|--------------------------|------------|-------------------------|
| Chloromethane | 1.00 | 1.01 | 101 | 72 - 137 |
| Vinyl Chloride | 1.00 | 1.05 | 105 | 75 - 150 |
| Chloroethane | 1.00 | 0.950 | 95 | 69 - 146 |
| 1,1-Dichloroethene | 1.00 | 0.941 | 94 | 73 - 141 |
| Methylene Chloride | 1.00 | 0.929 | 93 | 71 - 127 |
| trans-1,2-Dichloroethene | 1.00 | 1.01 | 101 | 74 - 141 |
| 1,1-Dichloroethane | 1.00 | 1.04 | 104 | 76 - 145 |
| cis-1,2-Dichloroethene | 1.00 | 0.946 | 95 | 72 - 139 |
| Chloroform | 1.00 | 1.09 | 109 | 76 - 159 |
| 1,2-Dichloroethane | 1.00 | 1.04 | 104 | 69 - 154 |
| 1,1,1-Trichloroethane | 1.00 | 1.09 | 109 | 84 - 145 |
| Benzene | 1.00 | 0.923 | 92 | 82 - 127 |
| Carbon Tetrachloride | 1.00 | 1.11 | 111 | 78 - 146 |
| Trichloroethene | 1.00 | 1.16 | 116 | 79 - 151 |
| Toluene | 1.00 | 0.988 | 99 | 61 - 129 |
| Tetrachloroethene | 1.00 | 1.05 | 105 | 52 - 146 |
| Ethylbenzene | 1.00 | 1.00 | 100 | 65 - 130 |
| m&p-Xylene | 2.00 | 1.99 | 100 | 63 - 144 |
| o-Xylene | 1.00 | 1.06 | 106 | 70 - 133 |

*Indicates out of the criteria

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Table 2.2 Results of the Duplicate Analysis for VOC in Air
WA# SERAS-262 Meadowbrook Avenue

Page 1 of 2

Sample ID: 262-0039

| Analyte | Initial Analysis ppbv | Duplicate Analysis ppbv | RPD | QC Limits RPD |
|--------------------------|--------------------------|----------------------------|-----|------------------|
| Chloromethane | 0.528 | 0.528 | 0 | ≤25 |
| Vinyl Chloride | U | U | NC | ≤25 |
| Chloroethane | U | U | NC | ≤25 |
| 1,1-Dichloroethene | U | U | NC | ≤25 |
| Methylene Chloride | 0.0864 | 0.0891 | 3 | ≤25 |
| trans-1,2-Dichloroethene | U | U | NC | ≤25 |
| 1,1-Dichloroethane | U | U | NC | ≤25 |
| cis-1,2-Dichloroethene | U | U | NC | ≤25 |
| Chloroform | U | 0.0226 | NC | ≤25 |
| 1,2-Dichloroethane | U | U | NC | ≤25 |
| 1,1,1-Trichloroethane | U | U | NC | ≤25 |
| Benzene | 0.228 | 0.227 | 0.4 | ≤25 |
| Carbon Tetrachloride | 0.0844 | 0.0810 | 4 | ≤25 |
| Trichloroethene | U | U | NC | ≤25 |
| Toluene | 0.395 | 0.398 | 0.8 | ≤25 |
| Tetrachloroethene | 0.0389 | 0.0368 | 6 | ≤25 |
| Ethylbenzene | 0.0359 | 0.0364 | 1 | ≤25 |
| m&p-Xylene | 0.121 | 0.124 | 2 | ≤25 |
| o-Xylene | 0.0492 | 0.0492 | 0 | ≤25 |

Sample ID: 262-0060

| Analyte | Initial Analysis ppbv | Duplicate Analysis ppbv | RPD | QC Limits RPD |
|--------------------------|--------------------------|----------------------------|-----|------------------|
| Chloromethane | 0.507 | 0.522 | 3 | ≤25 |
| Vinyl Chloride | U | U | NC | ≤25 |
| Chloroethane | U | U | NC | ≤25 |
| 1,1-Dichloroethene | U | U | NC | ≤25 |
| Methylene Chloride | 0.0896 | 0.0869 | 3 | ≤25 |
| trans-1,2-Dichloroethene | U | U | NC | ≤25 |
| 1,1-Dichloroethane | U | U | NC | ≤25 |
| cis-1,2-Dichloroethene | U | U | NC | ≤25 |
| Chloroform | 0.0218 | 0.0221 | 1 | ≤25 |
| 1,2-Dichloroethane | U | U | NC | ≤25 |
| 1,1,1-Trichloroethane | 0.0406 | 0.0394 | 3 | ≤25 |
| Benzene | 0.228 | 0.207 | 10 | ≤25 |
| Carbon Tetrachloride | 0.0769 | 0.0770 | 0.1 | ≤25 |
| Trichloroethene | 0.0257 | 0.0213 | 19 | ≤25 |
| Toluene | 0.378 | 0.373 | 1 | ≤25 |
| Tetrachloroethene | 0.0434 | 0.0403 | 7 | ≤25 |
| Ethylbenzene | 0.0402 | 0.0412 | 2 | ≤25 |
| m&p-Xylene | 0.137 | 0.135 | 1 | ≤25 |
| o-Xylene | 0.0548 | 0.0543 | 0.9 | ≤25 |

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Table 2.2 (cont.) Results of the Duplicate Analysis for VOC in Air
WA# SERAS-262 Meadowbrook Avenue

Page 2 of 2

Sample ID: 262-0038

| Analyte | Initial Analysis ppbv | Duplicate Analysis ppbv | RPD | QC Limits RPD |
|--------------------------|--------------------------|----------------------------|-----|------------------|
| Chloromethane | U | U | NC | ≤25 |
| Vinyl Chloride | U | U | NC | ≤25 |
| Chloroethane | U | U | NC | ≤25 |
| 1,1-Dichloroethene | U | U | NC | ≤25 |
| Methylene Chloride | U | U | NC | ≤25 |
| trans-1,2-Dichloroethene | U | U | NC | ≤25 |
| 1,1-Dichloroethane | U | U | NC | ≤25 |
| cis-1,2-Dichloroethene | U | U | NC | ≤25 |
| Chloroform | U | U | NC | ≤25 |
| 1,2-Dichloroethane | U | U | NC | ≤25 |
| 1,1,1-Trichloroethane | U | U | NC | ≤25 |
| Benzene | U | U | NC | ≤25 |
| Carbon Tetrachloride | U | U | NC | ≤25 |
| Trichloroethene | U | U | NC | ≤25 |
| Toluene | U | U | NC | ≤25 |
| Tetrachloroethene | 0.303 | 0.306 | 1 | ≤25 |
| Ethylbenzene | U | U | NC | ≤25 |
| m&p-Xylene | U | U | NC | ≤25 |
| o-Xylene | U | U | NC | ≤25 |

Sample ID: 262-0048

| Analyte | Initial Analysis ppbv | Duplicate Analysis ppbv | RPD | QC Limits RPD |
|--------------------------|--------------------------|----------------------------|-----|------------------|
| Chloromethane | U | U | NC | ≤25 |
| Vinyl Chloride | U | U | NC | ≤25 |
| Chloroethane | U | U | NC | ≤25 |
| 1,1-Dichloroethene | U | U | NC | ≤25 |
| Methylene Chloride | U | U | NC | ≤25 |
| trans-1,2-Dichloroethene | U | U | NC | ≤25 |
| 1,1-Dichloroethane | U | U | NC | ≤25 |
| cis-1,2-Dichloroethene | U | U | NC | ≤25 |
| Chloroform | U | U | NC | ≤25 |
| 1,2-Dichloroethane | U | U | NC | ≤25 |
| 1,1,1-Trichloroethane | U | U | NC | ≤25 |
| Benzene | U | U | NC | ≤25 |
| Carbon Tetrachloride | U | U | NC | ≤25 |
| Trichloroethene | U | U | NC | ≤25 |
| Toluene | U | U | NC | ≤25 |
| Tetrachloroethene | 0.308 | 0.302 | 2 | ≤25 |
| Ethylbenzene | U | U | NC | ≤25 |
| m&p-Xylene | U | U | NC | ≤25 |
| o-Xylene | U | U | NC | ≤25 |

USEPA

DateShipped: 2/22/2016

CarrierName:

AirbillNo:

WO# R602004

CHAIN OF CUSTODY RECORD

Meadowbrook Ave

Contact Name: David Adams

Contact Phone: 732-494-4008

No: 3-022216-103240-0002

Cooler #:

Lab: ERT/SERAS

Lab Phone: 732-321-4200

| Lab # | Sample # | Location | Analyses | Matrix | Numb Cont | Container | Pump # | OrificeID | Lab QC |
|-------|----------|--------------|----------|--------|-----------|-----------|--------|-----------|--------|
| 01 | 262-0038 | CBES-SS8 | TO-15 | SG | 1 | SUMMA | 10620 | 13959 | |
| 02 | 262-0039 | CBES-IA16 | TO-15 | IA | 1 | SUMMA | 10602 | 13908 | |
| 03 | 262-0040 | CBES-SS7 | TO-15 | SG | 1 | SUMMA | 10572 | 14035 | |
| 04 | 262-0041 | CBES-IA15 | TO-15 | IA | 1 | SUMMA | 195 | 13941 | |
| 05 | 262-0042 | CBES-IA15 CO | TO-15 | IA | 1 | SUMMA | 163 | 13781 | |
| 06 | 262-0043 | CBES-SS6 | TO-15 | SG | 1 | SUMMA | 10611 | 223011 | |
| 07 | 262-0044 | CBES-IA14 | TO-15 | IA | 1 | SUMMA | 10587 | 14043 | |
| 08 | 262-0045 | CBES-IA14 CO | TO-15 | IA | 1 | SUMMA | 13743 | 14021 | |
| 09 | 262-0046 | CBES-SS5 | TO-15 | SG | 1 | SUMMA | 10599 | 223037 | |
| 10 | 262-0047 | CBES-IA13 | TO-15 | IA | 1 | SUMMA | 14070 | 13769 | |
| 11 | 262-0048 | CBES-SS4 | TO-15 | SG | 1 | SUMMA | 10569 | 223015 | |
| 12 | 262-0049 | CBES-IA12 | TO-15 | IA | 1 | SUMMA | 156 | 13938 | |
| 13 | 262-0050 | CBES-IA10 | TO-15 | IA | 1 | SUMMA | 14401 | 223053 | |
| 14 | 262-0051 | CBES-IA9 | TO-15 | IA | 1 | SUMMA | 14221 | 13789 | |
| 15 | 262-0052 | CBES-IA9 CO | TO-15 | IA | 1 | SUMMA | 10608 | 13924 | |
| 16 | 262-0053 | CBES-IA8 | TO-15 | IA | 1 | SUMMA | 10555 | 13928 | |
| 17 | 262-0054 | CBES-IA7 | TO-15 | IA | 1 | SUMMA | 178 | 13801 | |
| 18 | 262-0055 | CBES-IA5 | TO-15 | IA | 1 | SUMMA | 10578 | 223054 | |
| 19 | 262-0056 | CBES-CS5 | TO-15 | IA | 1 | SUMMA | 101 | 13907 | |

| | |
|--|--------------------------|
| Special Instructions: ★ Starting date of sampling 2/20/16. <i>DA</i> | 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 |
|--------------|--|---------------|--|---------------|-------------------------------|
| all/analysis | <i>[Signature]</i> | 2/22/16 | <i>[Signature]</i> / SERAS | 2/22/16 10:00 | Intact |
| All/Analysis | <i>[Signature]</i> / SERAS | 2/24/16 12:00 | <i>[Signature]</i> / SERAS | 2/24/16 10:00 | Intact |
| | | | | | |
| | | | | | |

SERAS-262-DAR-031716

016

SERAS-262-DAR-031716

USEPA

DateShipped: 2/22/2016

CarrierName:

AirbillNo:

WO# R602004

CHAIN OF CUSTODY RECORD

Meadowbrook Ave

Contact Name: David Adams

Contact Phone: 732-494-4008

No: 3-022216-103240-0002

Cooler #:

Lab: ERT/SERAS

Lab Phone: 732-321-4200

| Lab # | Sample # | Location | Analyses | Matrix | Numb Cont | Container | Pump # | OrificeID | Lab QC |
|-------|----------|------------|----------|--------|-----------|-----------|-----------|-------------|--------|
| 20 | 262-0057 | CBES-IA6 | TO-15 | IA | 1 | SUMMA | 10598 | 13911 | |
| 21 | 262-0058 | CBES-CS4 | TO-15 | IA | 1 | SUMMA | 10556 | 223014 (AP) | |
| 22 | 262-0059 | CBES-IA3 | TO-15 | IA | 1 | SUMMA | 266 | 14038 | |
| 23 | 262-0060 | CBES-IA4 | TO-15 | IA | 1 | SUMMA | 166 | 13788 | |
| 24 | 262-0061 | CBES-IA17 | TO-15 | IA | 1 | SUMMA | 10615 | 13906 | |
| 25 | 262-0062 | CBES-CS3 | TO-15 | IA | 1 | SUMMA | 10549 | 13935 | |
| 26 | 262-0063 | CBES-IA1 | TO-15 | IA | 1 | SUMMA | 10585 | 223012 | |
| 27 | 262-0064 | CBES-CS2 | TO-15 | IA | 1 | SUMMA | 10554 | 14039 | |
| 28 | 262-0065 | CBES-SS1 | TO-15 | SG | 1 | SUMMA | 10605 | 14023 | |
| 29 | 262-0066 | CBES-SS2 | TO-15 | SG | 1 | SUMMA | 175 | 13931 | |
| 30 | 262-0067 | CBES-IA2 | TO-15 | IA | 1 | SUMMA | 209 | 14013 | |
| 31 | 262-0068 | CBES-CS1 | TO-15 | IA | 1 | SUMMA | 10622 | 13961 | |
| 32 | 262-0069 | CBES-SS3 | TO-15 | SG | 1 | SUMMA | 10534 | 223049 | |
| 33 | 262-0070 | CBES-IA11 | TO-15 | IA | 1 | SUMMA | 10564 | 223039 | |
| 34 | 262-0071 | CBES-AA1 | TO-15 | AA | 1 | SUMMA | 13813 196 | 13933 | |
| 35 | 262-0072 | CBES-AA2 | TO-15 | AA | 1 | SUMMA | 10621 | 13998 | |
| 36 | 262-0073 | Trip Blank | TO-15 | TB | 1 | SUMMA | 14256 | 13963 | |
| | | | | | | | | | |

Special Instructions:

★ Starting date of sampling 2/20/16. (AP)

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 |
|--------------|--|---------------|--|---------------|-------------------------------|
| all/analyses | (Signature) | 2/22/16 | Jerry Martin / SERAS | 2/22/16 10:00 | Intact + |
| All/Analyses | Jerry Martin / SERAS | 2/24/16 12:00 | Jerry Martin / SERAS | 2/24/16 12:00 | Intact + |
| | | | | | |

017