Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

# Department of Environmental Protection

Southeast Regional Office • 20 Riverside Drive, Lakeville MA 02347 • 508-946-2700

Charles D. Baker
Governor

Karyn E. Polito
Lieutenant Governor

Matthew A. Beaton
Secretary

Martin Suuberg
Commissioner

June 12, 2018

Town of Hanover
Department of Public Works
550 Hanover Street
Hanover, Massachusetts 02339
ATTN: Victor Diniak, DPW Director

RE: **HANOVER**
Release Tracking Number 4-0000090
Former National Fireworks Facility, King St.
Forge Pond Industrial Park
**ANALYTICAL RESULTS**
**229 AMES WAY AND 219 WINTER STREET**

Dear Mr. Diniak,

The Massachusetts Department of Environmental Protection (MassDEP or the Department) Bureau of Waste Site Cleanup is tasked with ensuring the cleanup of oil and hazardous material releases pursuant to the Massachusetts Oil and Hazardous Material Release Prevention and Response Act (M.G.L. Chapter 21E). This law is implemented through regulations known as the Massachusetts Contingency Plan (310 CMR 40.0000 et seq. – the MCP). Both M.G.L. c. 21E and the MCP require the performance of response actions to provide for the protection of harm to health, safety, public welfare and the environment which may result from releases and/or threats of releases of oil and/or hazardous material (OHM) at disposal sites.

MassDEP is currently overseeing the assessment of a release of the chemical trichloroethylene (TCE) to the soil and groundwater from the Former National Fireworks Site located in Hanover, Massachusetts. The Site was assigned Release Tracking Number (RTN) 4-0000090 under the MassDEP's Waste Site Cleanup program. On March 27, 2018, MassDEP issued a letter to you (as used in this Letter, you refers to "Town of Hanover DPW") requesting access to the Town of Hanover DPW properties located at 229 Ames Way and 219 Winter Street in Hanover, Massachusetts ("the Hanover DPW Properties") to conduct sampling to evaluate whether the release of TCE has resulted in an impact to indoor air at your buildings.

On April 25, 2018, MassDEP collected indoor air samples from the first floor work space at your property at 229 Ames Way and 219 Winter Street. An outdoor air sample was also collected adjacent to your building at 229 Ames Way. The samples were transported to a MassDEP certified laboratory and analyzed for volatile organic compounds (VOCs) using Environmental Protection Agency (EPA) Method

TO-15, which includes TCE. This analytical method also includes many other VOCs, and as noted on the attached analytical results, many other VOCs were detected in the indoor air from your buildings and the outdoor air near your buildings.

**ANALYTICAL RESULTS**

The laboratory results indicate that TCE was not detected in any of the indoor air samples collected from your buildings nor was TCE detected in the outdoor air sample.

As required by the MCP, MassDEP is providing you, the owner of the properties where the sampling was conducted, with the results of the analysis performed on the samples. The analytical results are attached to this letter.

Many VOCs are commonly detected in indoor and outdoor air and the sources of these VOCs can be from both outdoor sources (e.g. auto exhaust) and indoor sources (e.g. consumer products, construction material, cleaning supplies, outdoor air). To evaluate the concentrations of VOCs in the indoor air, MassDEP has established Commercial/Industrial Threshold Values based, in part, on indoor air data collected from buildings not affected by nearby hazardous waste disposal sites. Therefore, VOCs at and below the Threshold Values are what you would typically expect to find in the indoor air of commercial/industrial buildings. Laboratory analysis of the indoor and outdoor air samples from the Hanover DPW Properties did not detect any concentrations of Site-related VOCs above the Commercial/Industrial Threshold Values.

It should be noted that laboratory analysis did detect concentrations of the VOC 1,4-Dichlorobenze (p-DCB) in the indoor air of the first floor work space at 219 Winter Street above the Commercial/Industrial Threshold Value of 1.70 micrograms per cubic meter ($ug/m^3$). The compound p-DCB was detected at a concentration of 1.85 $ug/m^3$. However, p-DCB has not been identified as a Site-related compound. Therefore, its presence is likely the result of indoor sources. The compound p-DCB is commonly used as a disinfectant and is also used to control moths, mold, and mildew.

If you have any questions regarding the enclosed analytical results, please contact Kendall Walker at the letterhead address, by telephone at (508) 946-2846, or by email at kendall.walker@state.ma.us. Please reference RTN 4-0000090 in any written correspondence regarding the Site.

Sincerely,

Gerard M. R. Martin
Deputy Regional Director
Bureau of Waste Site Cleanup

GW/KW

Enclosed: Analytical Results for 229 Ames Way and 219 Winter Street, Hanover, Massachusetts

Ec: Hanover Chief Municipal Officer
Hanover Board of Health

DEP-SERO
Attn: Deborah A. Marshall-Hewlitt, Chief, BWSC Audit Section
Attn: Andrew Fowler, Regional Counsel

**Project Name:** FIREWORKS SITE
**Project Number:** 101879

**Lab Number:** L1814729
**Report Date:** 05/07/18

## SAMPLE RESULTS

Lab ID: L1814729-01
Client ID: 219 WINTER-AS-1
Sample Location: HANOVER, MA

Date Collected: 04/25/18 14:48
Date Received: 04/26/18
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 101,TO15-SIM
Analytical Date: 05/05/18 17:08
Analyst: MB

| | ppbV | | | ug/m3 | | | | |
|---|---|---|---|---|---|---|---|---|
| Parameter | Results | RL | MDL | Results | RL | MDL | Qualifier | Dilution Factor |
| MCP Volatile Organics in Air by SIM - Mansfield Lab | | | | | | | | |
| Vinyl chloride | ND | 0.020 | -- | ND | 0.051 | -- | | 1 |
| Bromomethane | ND | 0.020 | -- | ND | 0.078 | -- | | 1 |
| Acetone | 79.3 | 1.00 | -- | 188 | 2.38 | -- | | 1 |
| 1,1-Dichloroethene | ND | 0.020 | -- | ND | 0.079 | -- | | 1 |
| Methylene chloride | ND | 0.500 | -- | ND | 1.74 | -- | | 1 |
| trans-1,2-Dichloroethene | ND | 0.020 | -- | ND | 0.079 | -- | | 1 |
| 1,1-Dichloroethane | ND | 0.020 | -- | ND | 0.081 | -- | | 1 |
| Methyl tert butyl ether | ND | 0.200 | -- | ND | 0.721 | -- | | 1 |
| 2-Butanone | 1.56 | 0.500 | -- | 4.60 | 1.47 | -- | | 1 |
| cis-1,2-Dichloroethene | ND | 0.020 | -- | ND | 0.079 | -- | | 1 |
| Chloroform | 0.030 | 0.020 | -- | 0.147 | 0.098 | -- | | 1 |
| 1,2-Dichloroethane | ND | 0.020 | -- | ND | 0.081 | -- | | 1 |
| 1,1,1-Trichloroethane | ND | 0.020 | -- | ND | 0.109 | -- | | 1 |
| Benzene | 0.705 | 0.100 | -- | 2.25 | 0.319 | -- | | 1 |
| Carbon tetrachloride | 0.084 | 0.020 | -- | 0.528 | 0.126 | -- | | 1 |
| 1,2-Dichloropropane | ND | 0.020 | -- | ND | 0.092 | -- | | 1 |
| Bromodichloromethane | ND | 0.020 | -- | ND | 0.134 | -- | | 1 |
| 1,4-Dioxane | ND | 0.100 | -- | ND | 0.360 | -- | | 1 |
| Trichloroethene | ND | 0.020 | -- | ND | 0.107 | -- | | 1 |
| cis-1,3-Dichloropropene | ND | 0.020 | -- | ND | 0.091 | -- | | 1 |
| 4-Methyl-2-pentanone | 0.857 | 0.500 | -- | 3.51 | 2.05 | -- | | 1 |
| trans-1,3-Dichloropropene | ND | 0.020 | -- | ND | 0.091 | -- | | 1 |
| 1,1,2-Trichloroethane | ND | 0.020 | -- | ND | 0.109 | -- | | 1 |

**Project Name:** FIREWORKS SITE
**Project Number:** 101879

**Lab Number:** L1814729
**Report Date:** 05/07/18

## SAMPLE RESULTS

Lab ID: L1814729-01
Client ID: 219 WINTER-AS-1
Sample Location: HANOVER, MA

Date Collected: 04/25/18 14:48
Date Received: 04/26/18
Field Prep: Not Specified

Sample Depth:

| Parameter | ppbV Results | ppbV RL | ppbV MDL | ug/m3 Results | ug/m3 RL | ug/m3 MDL | Qualifier | Dilution Factor |
|---|---|---|---|---|---|---|---|---|
| MCP Volatile Organics in Air by SIM - Mansfield Lab | | | | | | | | |
| Toluene | 5.13 | 0.050 | -- | 19.3 | 0.188 | -- | | 1 |
| Dibromochloromethane | ND | 0.020 | -- | ND | 0.170 | -- | | 1 |
| 1,2-Dibromoethane | ND | 0.020 | -- | ND | 0.154 | -- | | 1 |
| Tetrachloroethene | 0.054 | 0.020 | -- | 0.366 | 0.136 | -- | | 1 |
| Chlorobenzene | ND | 0.100 | -- | ND | 0.461 | -- | | 1 |
| Ethylbenzene | 0.474 | 0.020 | -- | 2.06 | 0.087 | -- | | 1 |
| p/m-Xylene | 1.97 | 0.040 | -- | 8.56 | 0.174 | -- | | 1 |
| Bromoform | ND | 0.020 | -- | ND | 0.207 | -- | | 1 |
| Styrene | 0.085 | 0.020 | -- | 0.362 | 0.085 | -- | | 1 |
| 1,1,2,2-Tetrachloroethane | ND | 0.020 | -- | ND | 0.137 | -- | | 1 |
| o-Xylene | 0.647 | 0.020 | -- | 2.81 | 0.087 | -- | | 1 |
| 1,3-Dichlorobenzene | ND | 0.020 | -- | ND | 0.120 | -- | | 1 |
| 1,4-Dichlorobenzene | 0.308 | 0.020 | -- | 1.85 | 0.120 | -- | | 1 |
| 1,2-Dichlorobenzene | ND | 0.020 | -- | ND | 0.120 | -- | | 1 |
| 1,2,4-Trichlorobenzene | ND | 0.050 | -- | ND | 0.371 | -- | | 1 |
| Naphthalene | 0.173 | 0.050 | -- | 0.907 | 0.262 | -- | | 1 |
| Hexachlorobutadiene | ND | 0.050 | -- | ND | 0.533 | -- | | 1 |

| Internal Standard | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| 1,4-difluorobenzene | 87 | | 60-140 |
| bromochloromethane | 86 | | 60-140 |
| chlorobenzene-d5 | 83 | | 60-140 |

**Project Name:** FIREWORKS SITE
**Project Number:** 101879

**Lab Number:** L1814729
**Report Date:** 05/07/18

## SAMPLE RESULTS

Lab ID: L1814729-02
Client ID: 229 AMES-AS-2
Sample Location: HANOVER, MA

Date Collected: 04/25/18 14:54
Date Received: 04/26/18
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 101,TO15-SIM
Analytical Date: 05/05/18 17:40
Analyst: MB

| Parameter | ppbV Results | ppbV RL | ppbV MDL | ug/m3 Results | ug/m3 RL | ug/m3 MDL | Qualifier | Dilution Factor |
|---|---|---|---|---|---|---|---|---|
| **MCP Volatile Organics in Air by SIM - Mansfield Lab** | | | | | | | | |
| Vinyl chloride | ND | 0.020 | -- | ND | 0.051 | -- | | 1 |
| Bromomethane | ND | 0.020 | -- | ND | 0.078 | -- | | 1 |
| Acetone | 19.2 | 1.00 | -- | 45.6 | 2.38 | -- | | 1 |
| 1,1-Dichloroethene | ND | 0.020 | -- | ND | 0.079 | -- | | 1 |
| Methylene chloride | ND | 0.500 | -- | ND | 1.74 | -- | | 1 |
| trans-1,2-Dichloroethene | ND | 0.020 | -- | ND | 0.079 | -- | | 1 |
| 1,1-Dichloroethane | ND | 0.020 | -- | ND | 0.081 | -- | | 1 |
| Methyl tert butyl ether | ND | 0.200 | -- | ND | 0.721 | -- | | 1 |
| 2-Butanone | 1.54 | 0.500 | -- | 4.54 | 1.47 | -- | | 1 |
| cis-1,2-Dichloroethene | ND | 0.020 | -- | ND | 0.079 | -- | | 1 |
| Chloroform | 0.036 | 0.020 | -- | 0.176 | 0.098 | -- | | 1 |
| 1,2-Dichloroethane | ND | 0.020 | -- | ND | 0.081 | -- | | 1 |
| 1,1,1-Trichloroethane | 1.33 | 0.020 | -- | 7.26 | 0.109 | -- | | 1 |
| Benzene | 0.621 | 0.100 | -- | 1.98 | 0.319 | -- | | 1 |
| Carbon tetrachloride | 0.081 | 0.020 | -- | 0.510 | 0.126 | -- | | 1 |
| 1,2-Dichloropropane | ND | 0.020 | -- | ND | 0.092 | -- | | 1 |
| Bromodichloromethane | ND | 0.020 | -- | ND | 0.134 | -- | | 1 |
| 1,4-Dioxane | ND | 0.100 | -- | ND | 0.360 | -- | | 1 |
| Trichloroethene | ND | 0.020 | -- | ND | 0.107 | -- | | 1 |
| cis-1,3-Dichloropropene | ND | 0.020 | -- | ND | 0.091 | -- | | 1 |
| 4-Methyl-2-pentanone | 0.996 | 0.500 | -- | 4.08 | 2.05 | -- | | 1 |
| trans-1,3-Dichloropropene | ND | 0.020 | -- | ND | 0.091 | -- | | 1 |
| 1,1,2-Trichloroethane | ND | 0.020 | -- | ND | 0.109 | -- | | 1 |

**Project Name:** FIREWORKS SITE
**Project Number:** 101879

**Lab Number:** L1814729
**Report Date:** 05/07/18

## SAMPLE RESULTS

Lab ID: L1814729-02
Client ID: 229 AMES-AS-2
Sample Location: HANOVER, MA

Date Collected: 04/25/18 14:54
Date Received: 04/26/18
Field Prep: Not Specified

Sample Depth:

| Parameter | ppbV Results | ppbV RL | ppbV MDL | ug/m3 Results | ug/m3 RL | ug/m3 MDL | Qualifier | Dilution Factor |
|---|---|---|---|---|---|---|---|---|
| **MCP Volatile Organics in Air by SIM - Mansfield Lab** | | | | | | | | |
| Toluene | 5.27 | 0.050 | -- | 19.9 | 0.188 | -- | | 1 |
| Dibromochloromethane | ND | 0.020 | -- | ND | 0.170 | -- | | 1 |
| 1,2-Dibromoethane | ND | 0.020 | -- | ND | 0.154 | -- | | 1 |
| Tetrachloroethene | 0.309 | 0.020 | -- | 2.10 | 0.136 | -- | | 1 |
| Chlorobenzene | ND | 0.100 | -- | ND | 0.461 | -- | | 1 |
| Ethylbenzene | 1.16 | 0.020 | -- | 5.04 | 0.087 | -- | | 1 |
| p/m-Xylene | 5.15 | 0.040 | -- | 22.4 | 0.174 | -- | | 1 |
| Bromoform | ND | 0.020 | -- | ND | 0.207 | -- | | 1 |
| Styrene | 0.072 | 0.020 | -- | 0.307 | 0.085 | -- | | 1 |
| 1,1,2,2-Tetrachloroethane | ND | 0.020 | -- | ND | 0.137 | -- | | 1 |
| o-Xylene | 1.65 | 0.020 | -- | 7.17 | 0.087 | -- | | 1 |
| 1,3-Dichlorobenzene | ND | 0.020 | -- | ND | 0.120 | -- | | 1 |
| 1,4-Dichlorobenzene | ND | 0.020 | -- | ND | 0.120 | -- | | 1 |
| 1,2-Dichlorobenzene | ND | 0.020 | -- | ND | 0.120 | -- | | 1 |
| 1,2,4-Trichlorobenzene | ND | 0.050 | -- | ND | 0.371 | -- | | 1 |
| Naphthalene | 0.354 | 0.050 | -- | 1.86 | 0.262 | -- | | 1 |
| Hexachlorobutadiene | ND | 0.050 | -- | ND | 0.533 | -- | | 1 |

| Internal Standard | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| 1,4-difluorobenzene | 91 | | 60-140 |
| bromochloromethane | 91 | | 60-140 |
| chlorobenzene-d5 | 99 | | 60-140 |

**Project Name:** FIREWORKS SITE
**Project Number:** 101879

**Lab Number:** L1814729
**Report Date:** 05/07/18

## SAMPLE RESULTS

Lab ID: L1814729-03
Client ID: 229 AMES-AS-3
Sample Location: HANOVER, MA

Date Collected: 04/25/18 14:55
Date Received: 04/26/18
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 101,TO15-SIM
Analytical Date: 05/05/18 18:13
Analyst: MB

| Parameter | ppbV Results | ppbV RL | ppbV MDL | ug/m3 Results | ug/m3 RL | ug/m3 MDL | Qualifier | Dilution Factor |
|---|---|---|---|---|---|---|---|---|
| MCP Volatile Organics in Air by SIM - Mansfield Lab | | | | | | | | |
| Vinyl chloride | ND | 0.020 | -- | ND | 0.051 | -- | | 1 |
| Bromomethane | ND | 0.020 | -- | ND | 0.078 | -- | | 1 |
| Acetone | 14.7 | 1.00 | -- | 34.9 | 2.38 | -- | | 1 |
| 1,1-Dichloroethene | ND | 0.020 | -- | ND | 0.079 | -- | | 1 |
| Methylene chloride | 0.718 | 0.500 | -- | 2.49 | 1.74 | -- | | 1 |
| trans-1,2-Dichloroethene | ND | 0.020 | -- | ND | 0.079 | -- | | 1 |
| 1,1-Dichloroethane | ND | 0.020 | -- | ND | 0.081 | -- | | 1 |
| Methyl tert butyl ether | ND | 0.200 | -- | ND | 0.721 | -- | | 1 |
| 2-Butanone | 1.23 | 0.500 | -- | 3.63 | 1.47 | -- | | 1 |
| cis-1,2-Dichloroethene | ND | 0.020 | -- | ND | 0.079 | -- | | 1 |
| Chloroform | 0.039 | 0.020 | -- | 0.190 | 0.098 | -- | | 1 |
| 1,2-Dichloroethane | ND | 0.020 | -- | ND | 0.081 | -- | | 1 |
| 1,1,1-Trichloroethane | 1.15 | 0.020 | -- | 6.27 | 0.109 | -- | | 1 |
| Benzene | 0.533 | 0.100 | -- | 1.70 | 0.319 | -- | | 1 |
| Carbon tetrachloride | 0.081 | 0.020 | -- | 0.510 | 0.126 | -- | | 1 |
| 1,2-Dichloropropane | ND | 0.020 | -- | ND | 0.092 | -- | | 1 |
| Bromodichloromethane | ND | 0.020 | -- | ND | 0.134 | -- | | 1 |
| 1,4-Dioxane | ND | 0.100 | -- | ND | 0.360 | -- | | 1 |
| Trichloroethene | 0.024 | 0.020 | -- | 0.129 | 0.107 | -- | | 1 |
| cis-1,3-Dichloropropene | ND | 0.020 | -- | ND | 0.091 | -- | | 1 |
| 4-Methyl-2-pentanone | 0.755 | 0.500 | -- | 3.09 | 2.05 | -- | | 1 |
| trans-1,3-Dichloropropene | ND | 0.020 | -- | ND | 0.091 | -- | | 1 |
| 1,1,2-Trichloroethane | ND | 0.020 | -- | ND | 0.109 | -- | | 1 |

**Project Name:** FIREWORKS SITE
**Project Number:** 101879

**Lab Number:** L1814729
**Report Date:** 05/07/18

## SAMPLE RESULTS

Lab ID: L1814729-03
Client ID: 229 AMES-AS-3
Sample Location: HANOVER, MA

Date Collected: 04/25/18 14:55
Date Received: 04/26/18
Field Prep: Not Specified

Sample Depth:

| Parameter | ppbV Results | ppbV RL | ppbV MDL | ug/m3 Results | ug/m3 RL | ug/m3 MDL | Qualifier | Dilution Factor |
|---|---|---|---|---|---|---|---|---|
| **MCP Volatile Organics in Air by SIM - Mansfield Lab** | | | | | | | | |
| Toluene | 5.13 | 0.050 | -- | 19.3 | 0.188 | -- | | 1 |
| Dibromochloromethane | ND | 0.020 | -- | ND | 0.170 | -- | | 1 |
| 1,2-Dibromoethane | ND | 0.020 | -- | ND | 0.154 | -- | | 1 |
| Tetrachloroethene | 0.313 | 0.020 | -- | 2.12 | 0.136 | -- | | 1 |
| Chlorobenzene | ND | 0.100 | -- | ND | 0.461 | -- | | 1 |
| Ethylbenzene | 1.13 | 0.020 | -- | 4.91 | 0.087 | -- | | 1 |
| p/m-Xylene | 5.08 | 0.040 | -- | 22.1 | 0.174 | -- | | 1 |
| Bromoform | ND | 0.020 | -- | ND | 0.207 | -- | | 1 |
| Styrene | 0.068 | 0.020 | -- | 0.290 | 0.085 | -- | | 1 |
| 1,1,2,2-Tetrachloroethane | ND | 0.020 | -- | ND | 0.137 | -- | | 1 |
| o-Xylene | 1.68 | 0.020 | -- | 7.30 | 0.087 | -- | | 1 |
| 1,3-Dichlorobenzene | ND | 0.020 | -- | ND | 0.120 | -- | | 1 |
| 1,4-Dichlorobenzene | ND | 0.020 | -- | ND | 0.120 | -- | | 1 |
| 1,2-Dichlorobenzene | ND | 0.020 | -- | ND | 0.120 | -- | | 1 |
| 1,2,4-Trichlorobenzene | ND | 0.050 | -- | ND | 0.371 | -- | | 1 |
| Naphthalene | 0.326 | 0.050 | -- | 1.71 | 0.262 | -- | | 1 |
| Hexachlorobutadiene | ND | 0.050 | -- | ND | 0.533 | -- | | 1 |

| Internal Standard | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| 1,4-difluorobenzene | 99 | | 60-140 |
| bromochloromethane | 82 | | 60-140 |
| chlorobenzene-d5 | 96 | | 60-140 |

**Project Name:** FIREWORKS SITE
**Project Number:** 101879

**Lab Number:** L1814729
**Report Date:** 05/07/18

## SAMPLE RESULTS

Lab ID: L1814729-07
Client ID: 229 AMES-AA-1
Sample Location: HANOVER, MA

Date Collected: 04/25/18 14:58
Date Received: 04/26/18
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 101,TO15-SIM
Analytical Date: 05/05/18 16:03
Analyst: MB

| | ppbV | | | ug/m3 | | | | |
|---|---|---|---|---|---|---|---|---|
| Parameter | Results | RL | MDL | Results | RL | MDL | Qualifier | Dilution Factor |
| MCP Volatile Organics in Air by SIM - Mansfield Lab | | | | | | | | |
| Vinyl chloride | ND | 0.020 | -- | ND | 0.051 | -- | | 1 |
| Bromomethane | ND | 0.020 | -- | ND | 0.078 | -- | | 1 |
| Acetone | 2.71 | 1.00 | -- | 6.44 | 2.38 | -- | | 1 |
| 1,1-Dichloroethene | ND | 0.020 | -- | ND | 0.079 | -- | | 1 |
| Methylene chloride | ND | 0.500 | -- | ND | 1.74 | -- | | 1 |
| trans-1,2-Dichloroethene | ND | 0.020 | -- | ND | 0.079 | -- | | 1 |
| 1,1-Dichloroethane | ND | 0.020 | -- | ND | 0.081 | -- | | 1 |
| Methyl tert butyl ether | ND | 0.200 | -- | ND | 0.721 | -- | | 1 |
| 2-Butanone | ND | 0.500 | -- | ND | 1.47 | -- | | 1 |
| cis-1,2-Dichloroethene | ND | 0.020 | -- | ND | 0.079 | -- | | 1 |
| Chloroform | 0.020 | 0.020 | -- | 0.098 | 0.098 | -- | | 1 |
| 1,2-Dichloroethane | ND | 0.020 | -- | ND | 0.081 | -- | | 1 |
| 1,1,1-Trichloroethane | ND | 0.020 | -- | ND | 0.109 | -- | | 1 |
| Benzene | ND | 0.100 | -- | ND | 0.319 | -- | | 1 |
| Carbon tetrachloride | 0.081 | 0.020 | -- | 0.510 | 0.126 | -- | | 1 |
| 1,2-Dichloropropane | ND | 0.020 | -- | ND | 0.092 | -- | | 1 |
| Bromodichloromethane | ND | 0.020 | -- | ND | 0.134 | -- | | 1 |
| 1,4-Dioxane | ND | 0.100 | -- | ND | 0.360 | -- | | 1 |
| Trichloroethene | 0.021 | 0.020 | -- | 0.113 | 0.107 | -- | | 1 |
| cis-1,3-Dichloropropene | ND | 0.020 | -- | ND | 0.091 | -- | | 1 |
| 4-Methyl-2-pentanone | ND | 0.500 | -- | ND | 2.05 | -- | | 1 |
| trans-1,3-Dichloropropene | ND | 0.020 | -- | ND | 0.091 | -- | | 1 |
| 1,1,2-Trichloroethane | ND | 0.020 | -- | ND | 0.109 | -- | | 1 |

**Project Name:** FIREWORKS SITE
**Project Number:** 101879

**Lab Number:** L1814729
**Report Date:** 05/07/18

## SAMPLE RESULTS

Lab ID: L1814729-07
Client ID: 229 AMES-AA-1
Sample Location: HANOVER, MA

Date Collected: 04/25/18 14:58
Date Received: 04/26/18
Field Prep: Not Specified

Sample Depth:

| Parameter | ppbV Results | ppbV RL | ppbV MDL | ug/m3 Results | ug/m3 RL | ug/m3 MDL | Qualifier | Dilution Factor |
|---|---|---|---|---|---|---|---|---|
| **MCP Volatile Organics in Air by SIM - Mansfield Lab** | | | | | | | | |
| Toluene | 0.087 | 0.050 | -- | 0.328 | 0.188 | -- | | 1 |
| Dibromochloromethane | ND | 0.020 | -- | ND | 0.170 | -- | | 1 |
| 1,2-Dibromoethane | ND | 0.020 | -- | ND | 0.154 | -- | | 1 |
| Tetrachloroethene | 0.023 | 0.020 | -- | 0.156 | 0.136 | -- | | 1 |
| Chlorobenzene | ND | 0.100 | -- | ND | 0.461 | -- | | 1 |
| Ethylbenzene | ND | 0.020 | -- | ND | 0.087 | -- | | 1 |
| p/m-Xylene | ND | 0.040 | -- | ND | 0.174 | -- | | 1 |
| Bromoform | ND | 0.020 | -- | ND | 0.207 | -- | | 1 |
| Styrene | ND | 0.020 | -- | ND | 0.085 | -- | | 1 |
| 1,1,2,2-Tetrachloroethane | ND | 0.020 | -- | ND | 0.137 | -- | | 1 |
| o-Xylene | ND | 0.020 | -- | ND | 0.087 | -- | | 1 |
| 1,3-Dichlorobenzene | ND | 0.020 | -- | ND | 0.120 | -- | | 1 |
| 1,4-Dichlorobenzene | ND | 0.020 | -- | ND | 0.120 | -- | | 1 |
| 1,2-Dichlorobenzene | ND | 0.020 | -- | ND | 0.120 | -- | | 1 |
| 1,2,4-Trichlorobenzene | ND | 0.050 | -- | ND | 0.371 | -- | | 1 |
| Naphthalene | ND | 0.050 | -- | ND | 0.262 | -- | | 1 |
| Hexachlorobutadiene | ND | 0.050 | -- | ND | 0.533 | -- | | 1 |

| Internal Standard | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| 1,4-difluorobenzene | 91 | | 60-140 |
| bromochloromethane | 96 | | 60-140 |
| chlorobenzene-d5 | 85 | | 60-140 |

# AIR ANALYSIS

PAGE 1 OF 1

**CHAIN OF CUSTODY**

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

Date Rec'd in Lab: 4/26/18

ALPHA Job #: L1814729

## Client Information

Client: MassDEP SERO
Address: 20 Riverside Drive
Lakeville, MA 02347
Phone: (508) 946-2888
Fax: (508) 946-2865
Email: Deborah.Marshall-Hewlitt@state.ma.us

☐ These samples have been previously analyzed by Alpha

## Project Information

Project Name: Fireworks Site
Project Location: Hanover, MA
Project #: 1018879
Project Manager: Debbie Marshall-Hewlitt
ALPHA Quote #:

## Turn-Around Time

☑ Standard ☐ RUSH (only confirmed if pre-approved)

Date Due: Time:

## Report Information - Data Deliverables

☐ FAX
☐ ADEx
Criteria Checker:
(Default based on Regulatory Criteria Indicated)
Other Formats:
☑ EMAIL (standard pdf report)
☐ Additional Deliverables:

Report to: (if different than Project Manager)
PM
kendall.walker@state.ma.us

## Billing Information

☐ Same as Client info PO #:

## Regulatory Requirements/Report Limits

| State/Fed | Program | Res / Comm |
|---|---|---|
| | | |
| | | |
| | | |

Other Project Specific Requirements/Comments:

Project-Specific Target Compound List: ☐

## ANALYSIS

All Columns Below Must Be Filled Out

| ALPHA Lab ID (Lab Use Only) | Sample ID | COLLECTION End Date | Start Time | End Time | Initial Vacuum | Final Vacuum | Sample Matrix* | Sampler's Initials | Can Size | I D Can | I D - Flow Controller | TO-15 | TO-15 SIM | APH (Subset Non-petroleum HCs) | Fixed Gases | Sulfides & Mercaptans by TO-15 | ☐ | Sample Comments (i.e. PID) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 14729 01 | 219WINTER-AS-1 | 4/25/18 | 2:37 PM | 2:48 PM | -29.54 | -5.81 | AA | KW | 6L | 991 | 0300 | X | | | | | | |
| 02 | 229AMES-AS-2 | 4/25/18 | 2:55 PM | 2:54 PM | -31.57 | -3.51 | AA | KW | 6L | 1701 | 0085 | X | | | | | | |
| 03 | 229AMES-AS-3 | 4/25/18 | 2:56 PM | 2:55 PM | -28.54 | -4.07 | AA | KW | 6L | 2005 | 0204 | X | | | | | | |
| 04 | 6INDUST-AS-4 | 4/25/18 | 3:58 PM | 4:04 PM | -30.39 | -7.50 | AA | KW | 6L | 2573 | 0984 | X | | | | | | |
| 05 | 6INDUST-AS-5 | 4/25/18 | 3:59 PM | 4:05 PM | -30.07 | -5.10 | AA | KW | 6L | 2440 | 0255 | X | | | | | | |
| 06 | 6INDUST-AS-6 | 4/25/18 | 4:00 PM | 4:06 PM | -30.36 | -6.86 | AA | KW | 6L | 2103 | 0129 | X | | | | | | |
| 07 | 229AMES-AA-1 | 4/25/18 | 3:01 PM | 2:58 PM | -30.37 | -5.39 | AA | KW | 6L | 1996 | 0870 | X | | | | | | |
| 08 | 2INDUST-AA-2 | 4/25/18 | 4:04 PM | 4:10 PM | -27.58 | -1.45 | AA | KW | 6L | 2483 | 0237 | X | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |

*SAMPLE MATRIX CODES

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

Container Type

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

| Relinquished By: | Date/Time | Received By: | Date/Time: |
|---|---|---|---|
| Kendall Walker MCM | 4/26/18 9:50 AM<br>4/26/18 1020 | MCM AAL | 4/26/18 950<br>4/26/18 1020 |