LiRo Engineers, Inc.
A LiRo Group Company
690 Delaware Avenue, Buffalo, NY 14209 Telephone 716.882.5476 Facsimile 716.882.9640

July 13, 2015

David A. Stebbins, AICP
Buffalo Urban Development Corporation
95 Perry Street, Suite 404
Buffalo, New York, 14203

**Re: 537 East Delavan, Passive Soil Gas Survey Results**

Dear Mr. Stebbins,

LiRo Engineers Inc. has received results from the passive soil gas survey conducted at the 537 East Delavan property. The passive soil gas survey field work was conducted in May 2015, and included the placement/collection and analysis of 100 field samples. Sample locations are shown on Figure 1 in the attached Beacon Environmental Services, Inc. (Beacon) report. The sample locations generally conformed to the proposed sample locations, however, due to the soil pile and associated loadout activities that were ongoing at the time of the survey, several of the points in the east-central portion of the Site were not completed.

Beacon analyzed the samples for Volatile Organic Compounds (VOCs) and prepared color isopleth maps (attached to their report) for selected compounds of concern including:

- Trichloroethene (TCE) and its breakdown products 1,1-dichloroethene (DCE) and vinyl chloride
- 1,1,1-Trichloroethane (1,1,1-TCA)
- Total Petroleum Hydrocarbons (TPH) C10 – C15

Based on groundwater sampling conducted by NYSDEC in October 2014, high levels of chlorinated volatile organic compound (VOC) contamination persists in groundwater at the site. NYSDEC has expressed concern with identifying the source of the groundwater chlorinated VOCs and possible offsite migration of the groundwater contamination. This soil gas survey was conducted in order to support that objective.

Chlorinated VOCs

Previous site investigations results had suggested that the most likely chlorinated source areas are in the east-central portion of the building complex in the area of a former degreasing room. However, the isopleth maps for TCE and DCE (Figure 5 and Figure 3 in attached Beacon report) indicate that the highest concentrations for these compounds are located at sample location D6 beneath the west-central portion of the main plant floor. Location D6 is a short distance east of a "basement" wall for the lower level which occupies the western edge of the main plant building. Similar contaminant maxima were observed for vinyl chloride and 1,1,1-TCA at location D6 and adjacent points D5/E6 (for vinyl chloride) or basement level point C5 (for 1,1,1-TCA).

Based on the elevated chlorinated concentrations, LiRo conducted additional inspection of the area and discovered a relatively small-diameter (approximately 9 inches) floor opening in a corner of the basement level approximately 20 feet east of location C5. Two iron pipes were present in the opening (see photo below) and fluid was present at a depth of approximately 8 to 10 feet below the basement floor level.

The pipes had been cut at the basement wall, but formerly passed through to the main plant floor level. LiRo returned with bailer and weighted 100-ft tape to identify the depth of the pit. The weighted tape did not reach bottom and there was an oil layer (estimated oil thickness approximately one foot) which appeared characteristic of a lubricating oil. LiRo collected samples of the oil and water and are shipping the samples for fingerprint analysis (oil) and VOC analysis (water). Based on the depth and configuration, the hole and piping likely comprise a former well/pumping system – possibly outfitted with a jet pump.

LiRo also reviewed the results of the site Phase II Environmental Site Investigation completed by GZA GeoEnvironmental of New York in November 2014. Based on the mapping provided in the GZA report, it appears that GZA boring SP-5 was likely located within 30 feet of location D6. Although boring SP-5 reported the highest levels of field screening for organic vapors recorded by GZA, the soil analytical results reported relatively low concentrations of 1,2-dichloroethene and vinyl chloride and

no detections of TCE or 1,1,1-TCA in soil at a depth of 4 feet below grade. GZA boring SP-5 was advance to a depth of 8.7 feet where refusal was encountered. The relatively low soil contaminant levels at SP-5 suggest that the relatively high contaminant levels observed in passive soil gas samples from this area are a result of groundwater contamination, likely in fractured bedrock.

Based on the soil gas results for TCE, DCE, vinyl chloride and 1,1,1-TCA, and the limited historical data that is available, a reasonable working hypothesis would suggest that the soil gas maxima in the area of soil gas location D6 is reflective of a groundwater condition rather than a soil condition. Furthermore, the distribution of TCE and 1,1,1-TCA are suggestive of contaminant concentration along a northeast-southwest trend line that is consistent with joint patterns reported for bedrock in Erie County. Contaminant migration toward that particular portion of the site may have been influenced by historical use of the well that was discovered. The results from the oil and groundwater samples collected from the well will be reported when they become available.

Depending on those results, bedrock groundwater monitoring wells may be warranted in the area of D6/D5/C5 to evaluate potential groundwater impairment in the area. The main floor area is currently accessible to a smaller drilling apparatus (i.e., low clearance drill rig). There is no evidence in the recent historical data of high VOC levels remaining in soil at the site.

Petroleum Compounds

The TPH results (Beacon Figure 6) indicate the highest TPH concentrations in the northeastern portion of the site. Historical records indicate that some petroleum storage tanks were present in this portion of the facility and the 2014 GZA report indicated that soil in this area had elevated concentrations of TPH as well. The October 2014 sample from NYSDEC groundwater monitoring well MW-4-10, which is located outside of the building east of soil gas location J2, did not report detectable levels of petroleum VOCs. However, an additional groundwater monitoring well inside the building (which is easily accessible) should be considered.

LiRo recommends that you forward this letter and report to NYSDEC and request a meeting to discuss the next steps for advancing the site investigation under the NYSDEC superfund program.

Please feel free to call me or Robert Kreuzer at 716-882-5476 if you have any questions or require further information.

Sincerely,
**LiRo Engineers, Inc.**

Stephen Frank
Environmental Project Manager

Attachments

**The LiRo Group**
**690 Delaware Avenue**
**Buffalo, NY 14209**
**Attn: Mr. Steve Frank**

**Passive Soil Gas Survey – Analytical Report**
**Date: July 13, 2015**

**Beacon Project No. 2997, Rev 2**

| | |
|---|---|
| **Project Reference:** | 537 East Delavan Avenue, Buffalo, NY |

**EPA Method 8260C**
All samples were successfully analyzed using thermal desorption-gas chromatography/mass spectrometry (TD-GC/MS) instrumentation to target a custom compound list following EPA Method 8260C. Laboratory results are reported in nanograms (ng) of specific compound per sample.

Laboratory QA/QC procedures included internal standards, surrogates, and blanks based on EPA Method 8260C. Analyses and reporting were in accordance with BEACON's Quality Assurance Project Plan.

**Reporting limits**
The reporting limit (RL) is 10 nanograms (ng) for vinyl chloride, 1,1-dichloroethene, trans-1,2-dichloroethene, cis-1,2-dichloroethene, trichloroethene, and tetrachloroethene; 25 ng for the remaining individual compounds; and 5,000 ng for Total Petroleum Hydrocarbons (TPH). **Table 1** provides survey results in nanograms per sampler by sample-point number and compound name. For the six (6) compounds listed above, measurements below the limit of quantitation (10 ng) but above the limit of detection (5 ng) are flagged with a "J." The RLs represent a baseline above which results exceed laboratory-determined limits of precision and accuracy. Any field sample measurements above the upper calibration standard are estimated; however, these values are reported without qualifiers because all reported measurements are relative to each other and are appropriate to meet the survey objectives of locating source areas and vapor intrusion pathways and defining the lateral extent of contamination.

**Calibration Verification**
The continuing calibration verification (CCV) values for the calibration check compounds were all within ±20% of the true values as defined by the initial five-point calibration and met the requirements specified in Beacon Environmental's Quality Assurance Project Plan.

**Method Blanks/Trip Blanks**
Laboratory method blanks are run with each sample batch to identify contamination present in the laboratory. If contamination is detected on a method blank, measurements of identical compounds in that sample batch are flagged in the laboratory report. The laboratory method blanks analyzed in connection with the present samples revealed no contamination.

The trip blank is a sampler prepared, transported, and analyzed with other samples but intentionally not exposed. Any target compounds identified on the trip blanks are reported in the laboratory data. The analysis of the trip blanks (labeled Trip-1 through Trip 4 in **Table 1**) reported vinyl chloride

(12 ng); 1,1-Dichloroethene (8 ng), cis-1,2-dichloroethene (20 ng) and 1,1,1-trichloroethane (28 ng) on Trip 1. No other compounds were identified on the trip blanks, which suggests that except for the lower level measurements of these compounds, the survey site itself is the source of detected compounds.

**Passive Soil-Gas Survey Notes**
When sample locations are covered with or near the edge of an artificial surface (*e.g.*, asphalt or concrete), the concentrations of compounds in soil gas are often significantly higher than the concentrations would be if the surfacing were not present. Thus, a reading taken below or near an impermeable surface is much higher than it would be in the absence of such a cap. Therefore, the sample location conditions should be evaluated when comparing results between locations.

Survey findings are exclusive to this project and when the spatial relationships are compared with results of other BEACON Surveys it is necessary to incorporate survey and site information from both investigations (*e.g.*, depth to sources, soil types, porosity, soil moisture, presence of impervious surfacing, sample collection times). BEACON recommends the guidelines stated in **Attachment 1** to establish a relationship between reported soil-gas measurements and actual subsurface contaminant concentrations, which will indicate those measurements representing significant subsurface contamination.

**Project Details**
Samplers were deployed on May 7, 8, and 12, 2015, and were retrieved on May 21, 2015. **Attachment 2** describes standard field procedures. Individual deployment and retrieval times will be found in the Chain of Custody Form (**Attachment 3**).

One-hundred (100) field samples and four (4) trip blanks were received by BEACON on May 27, 2015. Adsorbent cartridges from the passive samplers were thermally desorbed, then analyzed using gas chromatography/mass spectrometry (GC/MS) equipment, in accordance with EPA Method 8260C, as described in **Attachment 4**. BEACON's laboratory analyzed each sample for the targeted compounds; analyses were completed on May 29, 2015. Following a laboratory review, results were provided to The LiRo Group on June 3, 2015.

Sample locations are shown on **Figure 1**. The following table lists frequency of detections based on the number of field samples analyzed, the reporting limit, and the maximum value for each mapped compound. The table also includes the transformation and interpolation method for the compound distribution maps provided.

| **Figure No.** | Compound | Frequency | Reporting Limit (nanograms) | Max Value (nanograms) | Transformation Method | Interpolation Method |
|---|---|---|---|---|---|---|
| **2** | Vinyl Chloride | 71 | 10 | 31,584 | Log | Kriging |
| **3** | 1,1-Dichloroethene | 72 | 10 | 32,046 | Log | Kriging |
| **4** | 1,1,1-Trichloroethane | 73 | 25 | 58,634 | Log | Kriging |
| **5** | Trichloroethene | 93 | 10 | 253,181 | Log | Kriging |
| **6** | TPH $C_{10}$-$C_{15}$ | 78 | 5,000 | 1,029,850 | Log | Kriging |

**Attachments:**

- **-1-** Applying Results From Passive Soil-Gas Surveys
- **-2-** Field Procedures
- **-3-** Chain-of-Custody Form
- **-4-** Laboratory Procedures

ALL DATA MEET REQUIREMENTS AS SPECIFIED IN THE BEACON ENVIRONMENTAL SERVICES, INC. QUALITY ASSURANCE PROJECT PLAN AND THE RESULTS RELATE ONLY TO THE SAMPLES REPORTED. BEACON ENVIRONMENTAL SERVICES IS ACCREDITED TO ISO/IEC 17025:2005, AND THE WORK PERFORMED WAS IN ACCORDANCE WITH ISO/IEC 17025:2005 REQUIREMENTS, WITH THE EXCEPTION THAT SAMPLES WERE ANALYZED WITHIN A 24-HOUR TUNE WINDOW AND FREON 113, 2-METHYLNAPHTHALENE AND TPH $C_4$-$C_9$ AND TPH $C_{10}$-$C_{15}$ ARE NOT INCLUDED IN BEACON'S SCOPE OF ACCREDITION. THIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF THE LABORATORY. RELEASE OF THE DATA CONTAINED IN THIS HARDCOPY DATA PACKAGE HAS BEEN AUTHORIZED BY THE LABORATORY DIRECTOR OR HIS SIGNEE, AS VERIFIED BY THE FOLLOWING SIGNATURES:

Steven C. Thornley
Laboratory Director

Patti J. Riggs
Quality Manager

**Table 1**

**Beacon Environmental Services, Inc.**
**2203A Commerce Road, Suite 1**
**Forest Hill, MD 21050 USA**

**Analysis by EPA Method 8260C**

| Client Sample ID: | mb150528c | Trip-1 | Trip-2 | Trip-3 | Trip-4 | A1 |
|---|---|---|---|---|---|---|
| Project Number: | | 2997 | 2997 | 2997 | 2997 | 2997 |
| Lab File ID: | C15052803 | C15052815 | C15052816 | C15052817 | C15052818 | C15052819 |
| Received Date: | | 5/27/2015 | 5/27/2015 | 5/27/2015 | 5/27/2015 | 5/27/2015 |
| Analysis Date: | 5/28/2015 | 5/28/2015 | 5/28/2015 | 5/28/2015 | 5/28/2015 | 5/28/2015 |
| Analysis Time: | 9:37 | 13:16 | 13:39 | 14:01 | 14:22 | 14:43 |
| Matrix: | | | | | | Soil Gas |
| Units: | ng | ng | ng | ng | ng | ng |
| COMPOUNDS | | | | | | |
| Vinyl Chloride | <10 | **12** | <10 | <10 | <10 | <10 |
| Trichlorofluoromethane (Freon 11) | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1-Dichloroethene | <10 | **8 J** | <10 | <10 | <10 | <10 |
| 1,1,2-Trichlorotrifluoroethane (Fr.113) | <25 | <25 | <25 | <25 | <25 | <25 |
| trans-1,2-Dichloroethene | <10 | <10 | <10 | <10 | <10 | <10 |
| Methyl-t-butyl ether | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1-Dichloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| cis-1,2-Dichloroethene | <10 | **20** | <10 | <10 | <10 | <10 |
| Chloroform | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,2-Dichloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1,1-Trichloroethane | <25 | **28** | <25 | <25 | <25 | <25 |
| Carbon Tetrachloride | <25 | <25 | <25 | <25 | <25 | <25 |
| Benzene | <25 | <25 | <25 | <25 | <25 | <25 |
| Trichloroethene | <10 | <10 | <10 | <10 | <10 | <10 |
| 1,4-Dioxane | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1,2-Trichloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| Toluene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,2-Dibromoethane (EDB) | <25 | <25 | <25 | <25 | <25 | <25 |
| Tetrachloroethene | <10 | <10 | <10 | <10 | <10 | <10 |
| 1,1,1,2-Tetrachloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| Chlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| Ethylbenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| p & m-Xylene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1,2,2-Tetrachloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| o-Xylene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,2,3-Trichloropropane | <25 | <25 | <25 | <25 | <25 | <25 |
| Isopropylbenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,3,5-Trimethylbenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,2,4-Trimethylbenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,3-Dichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,4-Dichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,2-Dichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,2,4-Trichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| Naphthalene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,2,3-Trichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 2-Methylnaphthalene | <25 | <25 | <25 | <25 | <25 | <25 |
| TPH $C_4$-$C_9$ | <5,000 | <5,000 | <5,000 | <5,000 | <5,000 | <5,000 |
| TPH $C_{10}$-$C_{15}$ | <5,000 | <5,000 | <5,000 | <5,000 | <5,000 | <5,000 |

Results in nanograms (ng). J = Values below limit of quantitation (LOQ) but above limit of detection (LOD). B = Detected in method blank.

**Table 1**

**Beacon Environmental Services, Inc.**
**2203A Commerce Road, Suite 1**
**Forest Hill, MD 21050 USA**

**Analysis by EPA Method 8260C**

| Client Sample ID: | A2 | A3 | A4 | B2 | B3 | B4 |
|---|---|---|---|---|---|---|
| Project Number: | 2997 | 2997 | 2997 | 2997 | 2997 | 2997 |
| Lab File ID: | C15052820 | C15052821 | C15052822 | C15052823 | C15052824 | C15052825 |
| Received Date: | 5/27/2015 | 5/27/2015 | 5/27/2015 | 5/27/2015 | 5/27/2015 | 5/27/2015 |
| Analysis Date: | 5/28/2015 | 5/28/2015 | 5/28/2015 | 5/28/2015 | 5/28/2015 | 5/28/2015 |
| Analysis Time: | 15:05 | 15:27 | 15:49 | 16:11 | 16:33 | 16:55 |
| Matrix: | Soil Gas | Soil Gas | Soil Gas | Soil Gas | Soil Gas | Soil Gas |
| Units: | ng | ng | ng | ng | ng | ng |
| COMPOUNDS | | | | | | |
| Vinyl Chloride | <10 | <10 | <10 | <10 | **9 J** | <10 |
| Trichlorofluoromethane (Freon 11) | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1-Dichloroethene | <10 | **7 J** | <10 | <10 | **188** | **8 J** |
| 1,1,2-Trichlorotrifluoroethane (Fr.113) | <25 | <25 | <25 | <25 | <25 | <25 |
| trans-1,2-Dichloroethene | <10 | <10 | <10 | <10 | <10 | <10 |
| Methyl-t-butyl ether | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1-Dichloroethane | <25 | <25 | <25 | <25 | <25 | **29** |
| cis-1,2-Dichloroethene | <10 | **7 J** | <10 | **6 J** | **6 J** | **97** |
| Chloroform | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,2-Dichloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1,1-Trichloroethane | <25 | **35** | <25 | <25 | **1,616** | **95** |
| Carbon Tetrachloride | <25 | <25 | <25 | <25 | <25 | <25 |
| Benzene | <25 | <25 | <25 | <25 | <25 | **63** |
| Trichloroethene | <10 | **109** | **9 J** | **9 J** | **1,224** | **636** |
| 1,4-Dioxane | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1,2-Trichloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| Toluene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,2-Dibromoethane (EDB) | <25 | <25 | <25 | <25 | <25 | <25 |
| Tetrachloroethene | <10 | <10 | <10 | <10 | **12** | <10 |
| 1,1,1,2-Tetrachloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| Chlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| Ethylbenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| p & m-Xylene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1,2,2-Tetrachloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| o-Xylene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,2,3-Trichloropropane | <25 | <25 | <25 | <25 | <25 | <25 |
| Isopropylbenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,3,5-Trimethylbenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,2,4-Trimethylbenzene | <25 | <25 | <25 | <25 | **35** | <25 |
| 1,3-Dichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,4-Dichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,2-Dichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,2,4-Trichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| Naphthalene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,2,3-Trichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 2-Methylnaphthalene | <25 | <25 | <25 | <25 | <25 | <25 |
| TPH $C_4$-$C_9$ | <5,000 | <5,000 | <5,000 | <5,000 | <5,000 | **5,616** |
| TPH $C_{10}$-$C_{15}$ | <5,000 | <5,000 | <5,000 | <5,000 | **6,129** | **8,312** |

Results in nanograms (ng). J = Values below limit of quantitation (LOQ) but above limit of detection (LOD). B = Detected in method blank.

**Table 1**

**Beacon Environmental Services, Inc.**
**2203A Commerce Road, Suite 1**
**Forest Hill, MD 21050 USA**

**Analysis by EPA Method 8260C**

| Client Sample ID: | B5 | C1 | C2 | C3 | C4 | C5 |
|---|---|---|---|---|---|---|
| Project Number: | 2997 | 2997 | 2997 | 2997 | 2997 | 2997 |
| Lab File ID: | C15052826 | C15052827 | C15052828 | C15052829 | C15052830 | C15052831 |
| Received Date: | 5/27/2015 | 5/27/2015 | 5/27/2015 | 5/27/2015 | 5/27/2015 | 5/27/2015 |
| Analysis Date: | 5/28/2015 | 5/28/2015 | 5/28/2015 | 5/28/2015 | 5/28/2015 | 5/28/2015 |
| Analysis Time: | 17:17 | 17:39 | 18:01 | 18:23 | 18:45 | 19:07 |
| Matrix: | Soil Gas | Soil Gas | Soil Gas | Soil Gas | Soil Gas | Soil Gas |
| Units: | ng | ng | ng | ng | ng | ng |
| COMPOUNDS | | | | | | |
| Vinyl Chloride | <10 | **36** | **27** | <10 | **17** | **340** |
| Trichlorofluoromethane (Freon 11) | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1-Dichloroethene | **45** | **38** | **24** | <10 | **99** | **6,064** |
| 1,1,2-Trichlorotrifluoroethane (Fr.113) | <25 | <25 | <25 | <25 | <25 | <25 |
| trans-1,2-Dichloroethene | <10 | **19** | <10 | **63** | **8 J** | **75** |
| Methyl-t-butyl ether | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1-Dichloroethane | <25 | **318** | <25 | <25 | **81** | **10,705** |
| cis-1,2-Dichloroethene | **7 J** | **467** | **42** | **651** | **382** | **1,392** |
| Chloroform | <25 | <25 | <25 | <25 | **36** | <25 |
| 1,2-Dichloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1,1-Trichloroethane | **576** | **193** | **106** | <25 | **864** | **58,634** |
| Carbon Tetrachloride | <25 | <25 | <25 | <25 | **31** | <25 |
| Benzene | <25 | **584** | <25 | **309** | <25 | **39** |
| Trichloroethene | **273** | **766** | **278** | **614** | **2,204** | **5,172** |
| 1,4-Dioxane | <25 | <25 | <25 | <25 | <25 | **55** |
| 1,1,2-Trichloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| Toluene | <25 | **454** | <25 | **345** | **71** | <25 |
| 1,2-Dibromoethane (EDB) | <25 | <25 | <25 | <25 | <25 | <25 |
| Tetrachloroethene | <10 | <10 | **10** | **2,950** | **485** | **20** |
| 1,1,1,2-Tetrachloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| Chlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| Ethylbenzene | <25 | **141** | <25 | **71** | **67** | <25 |
| p & m-Xylene | <25 | **437** | <25 | **244** | **408** | **61** |
| 1,1,2,2-Tetrachloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| o-Xylene | <25 | **633** | <25 | **229** | **248** | **26** |
| 1,2,3-Trichloropropane | <25 | <25 | <25 | <25 | <25 | <25 |
| Isopropylbenzene | <25 | **197** | <25 | **140** | **109** | <25 |
| 1,3,5-Trimethylbenzene | <25 | **338** | <25 | **343** | **319** | **34** |
| 1,2,4-Trimethylbenzene | <25 | **248** | <25 | **536** | **620** | **46** |
| 1,3-Dichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,4-Dichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,2-Dichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,2,4-Trichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| Naphthalene | <25 | <25 | **87** | **42** | <25 | <25 |
| 1,2,3-Trichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 2-Methylnaphthalene | <25 | **50** | **35** | **118** | <25 | <25 |
| TPH $C_4$-$C_9$ | <5,000 | **198,479** | <5,000 | **110,713** | **13,607** | <5,000 |
| TPH $C_{10}$-$C_{15}$ | <5,000 | **34,280** | <5,000 | **24,173** | **10,632** | **7,338** |

Results in nanograms (ng). J = Values below limit of quantitation (LOQ) but above limit of detection (LOD). B = Detected in method blank.

**Table 1**

**Beacon Environmental Services, Inc.**
**2203A Commerce Road, Suite 1**
**Forest Hill, MD 21050 USA**

**Analysis by EPA Method 8260C**

| Client Sample ID: | C6 | C7 | C8 | C9 | C10 | D1 |
|---|---|---|---|---|---|---|
| Project Number: | 2997 | 2997 | 2997 | 2997 | 2997 | 2997 |
| Lab File ID: | C15052832 | C15052833 | C15052834 | C15052835 | C15052836 | C15052837 |
| Received Date: | 5/27/2015 | 5/27/2015 | 5/27/2015 | 5/27/2015 | 5/27/2015 | 5/27/2015 |
| Analysis Date: | 5/28/2015 | 5/28/2015 | 5/28/2015 | 5/28/2015 | 5/28/2015 | 5/28/2015 |
| Analysis Time: | 19:29 | 19:52 | 20:14 | 20:36 | 20:58 | 21:20 |
| Matrix: | Soil Gas | Soil Gas | Soil Gas | Soil Gas | Soil Gas | Soil Gas |
| Units: | ng | ng | ng | ng | ng | ng |
| COMPOUNDS | | | | | | |
| Vinyl Chloride | **12** | **18** | **111** | **17** | **23** | **7 J** |
| Trichlorofluoromethane (Freon 11) | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1-Dichloroethene | **22** | **70** | **7 J** | <10 | **82** | <10 |
| 1,1,2-Trichlorotrifluoroethane (Fr.113) | <25 | <25 | <25 | <25 | <25 | <25 |
| trans-1,2-Dichloroethene | <10 | **46** | **547** | <10 | <10 | <10 |
| Methyl-t-butyl ether | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1-Dichloroethane | **41** | **247** | <25 | <25 | <25 | <25 |
| cis-1,2-Dichloroethene | **47** | **3,980** | **102** | **17** | **24** | **8 J** |
| Chloroform | <25 | **42** | <25 | **64** | <25 | <25 |
| 1,2-Dichloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1,1-Trichloroethane | **421** | **2,135** | **48** | **56** | **741** | <25 |
| Carbon Tetrachloride | <25 | **40** | <25 | <25 | <25 | <25 |
| Benzene | **138** | **102** | <25 | **62** | **71** | <25 |
| Trichloroethene | **415** | **10,177** | **577** | **35** | **923** | **22** |
| 1,4-Dioxane | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1,2-Trichloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| Toluene | **123** | **66** | <25 | **29** | **72** | <25 |
| 1,2-Dibromoethane (EDB) | <25 | <25 | <25 | <25 | <25 | <25 |
| Tetrachloroethene | **5 J** | **82** | **9 J** | <10 | **19** | <10 |
| 1,1,1,2-Tetrachloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| Chlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| Ethylbenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| p & m-Xylene | **80** | **67** | <25 | <25 | **47** | <25 |
| 1,1,2,2-Tetrachloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| o-Xylene | **37** | **51** | <25 | <25 | **31** | <25 |
| 1,2,3-Trichloropropane | <25 | <25 | <25 | <25 | <25 | <25 |
| Isopropylbenzene | **61** | <25 | <25 | <25 | <25 | <25 |
| 1,3,5-Trimethylbenzene | **79** | **144** | <25 | <25 | **56** | <25 |
| 1,2,4-Trimethylbenzene | **86** | **253** | <25 | <25 | **71** | **30** |
| 1,3-Dichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,4-Dichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,2-Dichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,2,4-Trichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| Naphthalene | **427** | **512** | <25 | <25 | <25 | **31** |
| 1,2,3-Trichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 2-Methylnaphthalene | **268** | **507** | **36** | <25 | <25 | <25 |
| TPH $C_4$-$C_9$ | **81,017** | **45,220** | <5,000 | **39,529** | **13,594** | <5,000 |
| TPH $C_{10}$-$C_{15}$ | **20,508** | **37,397** | **35,176** | **19,655** | **13,492** | <5,000 |

Results in nanograms (ng). J = Values below limit of quantitation (LOQ) but above limit of detection (LOD). B = Detected in method blank.

**Table 1**

**Beacon Environmental Services, Inc.**
**2203A Commerce Road, Suite 1**
**Forest Hill, MD 21050 USA**

**Analysis by EPA Method 8260C**

| Client Sample ID: | D2 | D3 | D4 | D5 | D6 | D7 |
|---|---|---|---|---|---|---|
| Project Number: | 2997 | 2997 | 2997 | 2997 | 2997 | 2997 |
| Lab File ID: | C15052838 | C15052839 | C15052840 | C15052841 | C15052842 | C15052843 |
| Received Date: | 5/27/2015 | 5/27/2015 | 5/27/2015 | 5/27/2015 | 5/27/2015 | 5/27/2015 |
| Analysis Date: | 5/28/2015 | 5/28/2015 | 5/28/2015 | 5/28/2015 | 5/28/2015 | 5/28/2015 |
| Analysis Time: | 21:42 | 22:03 | 22:25 | 22:47 | 23:09 | 23:32 |
| Matrix: | Soil Gas | Soil Gas | Soil Gas | Soil Gas | Soil Gas | Soil Gas |
| Units: | ng | ng | ng | ng | ng | ng |
| COMPOUNDS | | | | | | |
| Vinyl Chloride | **25** | <10 | **34** | **31,584** | **23,468** | **527** |
| Trichlorofluoromethane (Freon 11) | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1-Dichloroethene | **14** | <10 | **49** | **2,989** | **32,046** | **850** |
| 1,1,2-Trichlorotrifluoroethane (Fr.113) | <25 | <25 | <25 | <25 | <25 | <25 |
| trans-1,2-Dichloroethene | <10 | <10 | <10 | **9,285** | **42,605** | **1,268** |
| Methyl-t-butyl ether | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1-Dichloroethane | <25 | <25 | **114** | **6,943** | **4,063** | **1,663** |
| cis-1,2-Dichloroethene | **32** | **11** | **47** | **56,301** | **403,430** | **10,558** |
| Chloroform | <25 | <25 | <25 | **33** | **113** | <25 |
| 1,2-Dichloroethane | <25 | <25 | <25 | <25 | **115** | <25 |
| 1,1,1-Trichloroethane | **184** | <25 | **192** | **5,047** | **36,968** | **102** |
| Carbon Tetrachloride | <25 | <25 | <25 | <25 | <25 | <25 |
| Benzene | <25 | <25 | <25 | **526** | **1,258** | **145** |
| Trichloroethene | **236** | <10 | **294** | **20,359** | **253,181** | **1,896** |
| 1,4-Dioxane | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1,2-Trichloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| Toluene | **26** | <25 | <25 | <25 | **423** | **88** |
| 1,2-Dibromoethane (EDB) | <25 | <25 | <25 | <25 | <25 | <25 |
| Tetrachloroethene | **12** | <10 | <10 | <10 | **85** | **36** |
| 1,1,1,2-Tetrachloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| Chlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| Ethylbenzene | <25 | <25 | <25 | <25 | **46** | <25 |
| p & m-Xylene | **26** | <25 | <25 | <25 | **77** | **108** |
| 1,1,2,2-Tetrachloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| o-Xylene | <25 | <25 | <25 | <25 | **113** | **129** |
| 1,2,3-Trichloropropane | <25 | <25 | <25 | <25 | <25 | <25 |
| Isopropylbenzene | <25 | <25 | <25 | <25 | **212** | **42** |
| 1,3,5-Trimethylbenzene | <25 | <25 | <25 | **55** | **75** | **119** |
| 1,2,4-Trimethylbenzene | <25 | <25 | <25 | **105** | **60** | **79** |
| 1,3-Dichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,4-Dichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,2-Dichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,2,4-Trichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| Naphthalene | **84** | <25 | <25 | **48** | <25 | **29** |
| 1,2,3-Trichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 2-Methylnaphthalene | **77** | <25 | <25 | **54** | **50** | **90** |
| TPH $C_4$-$C_9$ | <5,000 | <5,000 | <5,000 | <5,000 | <5,000 | <5,000 |
| TPH $C_{10}$-$C_{15}$ | **9,626** | <5,000 | <5,000 | **152,953** | **66,788** | **446,113** |

Results in nanograms (ng). J = Values below limit of quantitation (LOQ) but above limit of detection (LOD). B = Detected in method blank.

**Table 1**

**Beacon Environmental Services, Inc.**
**2203A Commerce Road, Suite 1**
**Forest Hill, MD 21050 USA**

**Analysis by EPA Method 8260C**

| Client Sample ID: | D8 | D9 | D10 | D11 | D12 | E1 |
|---|---|---|---|---|---|---|
| Project Number: | 2997 | 2997 | 2997 | 2997 | 2997 | 2997 |
| Lab File ID: | C15052844 | C15052845 | C15052846 | C15052847 | C15052848 | C15052849 |
| Received Date: | 5/27/2015 | 5/27/2015 | 5/27/2015 | 5/27/2015 | 5/27/2015 | 5/27/2015 |
| Analysis Date: | 5/28/2015 | 5/29/2015 | 5/29/2015 | 5/29/2015 | 5/29/2015 | 5/29/2015 |
| Analysis Time: | 23:54 | 0:16 | 0:38 | 1:01 | 1:23 | 1:45 |
| Matrix: | Soil Gas | Soil Gas | Soil Gas | Soil Gas | Soil Gas | Soil Gas |
| Units: | ng | ng | ng | ng | ng | ng |
| COMPOUNDS | | | | | | |
| Vinyl Chloride | **29** | **18** | **17** | **11** | <10 | **65** |
| Trichlorofluoromethane (Freon 11) | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1-Dichloroethene | **15** | **43** | **143** | <10 | <10 | **42** |
| 1,1,2-Trichlorotrifluoroethane (Fr.113) | <25 | <25 | <25 | <25 | <25 | <25 |
| trans-1,2-Dichloroethene | **28** | **15** | **53** | <10 | <10 | <10 |
| Methyl-t-butyl ether | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1-Dichloroethane | **26** | <25 | **129** | <25 | <25 | **25** |
| cis-1,2-Dichloroethene | **1,986** | **929** | **4,083** | **123** | **70** | **153** |
| Chloroform | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,2-Dichloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1,1-Trichloroethane | **42** | **146** | **1,347** | <25 | <25 | **668** |
| Carbon Tetrachloride | <25 | <25 | <25 | <25 | <25 | <25 |
| Benzene | **300** | **693** | <25 | <25 | <25 | <25 |
| Trichloroethene | **4,482** | **1,598** | **11,173** | **69** | **38** | **1,484** |
| 1,4-Dioxane | <25 | <25 | <25 | <25 | <25 | **70** |
| 1,1,2-Trichloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| Toluene | **119** | **1,052** | <25 | <25 | <25 | <25 |
| 1,2-Dibromoethane (EDB) | <25 | <25 | <25 | <25 | <25 | <25 |
| Tetrachloroethene | **5 J** | **7 J** | **19** | <10 | <10 | **9 J** |
| 1,1,1,2-Tetrachloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| Chlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| Ethylbenzene | **43** | **143** | <25 | <25 | <25 | <25 |
| p & m-Xylene | **76** | **976** | <25 | **42** | <25 | <25 |
| 1,1,2,2-Tetrachloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| o-Xylene | **103** | **563** | <25 | <25 | <25 | <25 |
| 1,2,3-Trichloropropane | <25 | <25 | <25 | <25 | <25 | <25 |
| Isopropylbenzene | **149** | **128** | <25 | <25 | <25 | <25 |
| 1,3,5-Trimethylbenzene | **177** | **470** | <25 | **105** | <25 | **66** |
| 1,2,4-Trimethylbenzene | **138** | **554** | <25 | **192** | <25 | **56** |
| 1,3-Dichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,4-Dichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,2-Dichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,2,4-Trichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| Naphthalene | **191** | **30** | <25 | <25 | <25 | **3,698** |
| 1,2,3-Trichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 2-Methylnaphthalene | **521** | **81** | <25 | <25 | <25 | **5,207** |
| TPH $C_4$-$C_9$ | **55,386** | **95,048** | <5,000 | **22,001** | <5,000 | **10,559** |
| TPH $C_{10}$-$C_{15}$ | **282,577** | **39,819** | <5,000 | **14,727** | <5,000 | **87,355** |

Results in nanograms (ng). J = Values below limit of quantitation (LOQ) but above limit of detection (LOD). B = Detected in method blank.

**Table 1**

**Beacon Environmental Services, Inc.**
**2203A Commerce Road, Suite 1**
**Forest Hill, MD 21050 USA**

**Analysis by EPA Method 8260C**

| Client Sample ID: | E2 | E3 | E4 | E5 | E6 | E7 |
|---|---|---|---|---|---|---|
| Project Number: | 2997 | 2997 | 2997 | 2997 | 2997 | 2997 |
| Lab File ID: | C15052850 | C15052851 | C15052852 | C15052853 | C15052854 | C15052855 |
| Received Date: | 5/27/2015 | 5/27/2015 | 5/27/2015 | 5/27/2015 | 5/27/2015 | 5/27/2015 |
| Analysis Date: | 5/29/2015 | 5/29/2015 | 5/29/2015 | 5/29/2015 | 5/29/2015 | 5/29/2015 |
| Analysis Time: | 2:07 | 2:28 | 2:51 | 3:13 | 3:35 | 3:57 |
| Matrix: | Soil Gas | Soil Gas | Soil Gas | Soil Gas | Soil Gas | Soil Gas |
| Units: | ng | ng | ng | ng | ng | ng |
| COMPOUNDS | | | | | | |
| Vinyl Chloride | **104** | **49** | **68** | **1,556** | **16,728** | **443** |
| Trichlorofluoromethane (Freon 11) | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1-Dichloroethene | **75** | **81** | **1,540** | **57** | **1,901** | **29** |
| 1,1,2-Trichlorotrifluoroethane (Fr.113) | <25 | <25 | <25 | <25 | <25 | <25 |
| trans-1,2-Dichloroethene | <10 | <10 | **113** | **154** | **882** | **317** |
| Methyl-t-butyl ether | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1-Dichloroethane | <25 | **63** | **402** | **187** | **1,801** | **40** |
| cis-1,2-Dichloroethene | **211** | **134** | **2,049** | **3,194** | **16,503** | **2,516** |
| Chloroform | <25 | <25 | **269** | <25 | <25 | <25 |
| 1,2-Dichloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1,1-Trichloroethane | **263** | **621** | **26,303** | **398** | **7,638** | **63** |
| Carbon Tetrachloride | <25 | <25 | **191** | <25 | <25 | <25 |
| Benzene | <25 | <25 | <25 | **37** | **40** | <25 |
| Trichloroethene | **70** | **2,111** | **27,709** | **5,458** | **37,984** | **1,102** |
| 1,4-Dioxane | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1,2-Trichloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| Toluene | <25 | <25 | <25 | **158** | <25 | <25 |
| 1,2-Dibromoethane (EDB) | <25 | <25 | <25 | <25 | <25 | <25 |
| Tetrachloroethene | **8 J** | **79** | **70** | **7 J** | **12** | **17** |
| 1,1,1,2-Tetrachloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| Chlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| Ethylbenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| p & m-Xylene | <25 | <25 | <25 | **56** | <25 | <25 |
| 1,1,2,2-Tetrachloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| o-Xylene | <25 | <25 | <25 | **131** | **28** | <25 |
| 1,2,3-Trichloropropane | <25 | <25 | <25 | <25 | <25 | <25 |
| Isopropylbenzene | <25 | <25 | <25 | **180** | **31** | <25 |
| 1,3,5-Trimethylbenzene | <25 | <25 | <25 | **1,042** | **298** | <25 |
| 1,2,4-Trimethylbenzene | <25 | **33** | **29** | **731** | **290** | <25 |
| 1,3-Dichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,4-Dichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,2-Dichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,2,4-Trichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| Naphthalene | **323** | **1,526** | **1,076** | **48** | **43** | **168** |
| 1,2,3-Trichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 2-Methylnaphthalene | **281** | **1,166** | **560** | **56** | **51** | **79** |
| TPH $C_4$-$C_9$ | <5,000 | <5,000 | <5,000 | **171,633** | <5,000 | <5,000 |
| TPH $C_{10}$-$C_{15}$ | **11,583** | **22,239** | **14,947** | **265,832** | **77,636** | **11,743** |

Results in nanograms (ng). J = Values below limit of quantitation (LOQ) but above limit of detection (LOD). B = Detected in method blank.

**Table 1**

**Beacon Environmental Services, Inc.**
**2203A Commerce Road, Suite 1**
**Forest Hill, MD 21050 USA**

**Analysis by EPA Method 8260C**

| Client Sample ID: | E8 | E9 | E10 | E11 | E12 | F1 |
|---|---|---|---|---|---|---|
| Project Number: | 2997 | 2997 | 2997 | 2997 | 2997 | 2997 |
| Lab File ID: | C15052856 | C15052857 | C15052858 | C15052859 | C15052860 | C15052861 |
| Received Date: | 5/27/2015 | 5/27/2015 | 5/27/2015 | 5/27/2015 | 5/27/2015 | 5/27/2015 |
| Analysis Date: | 5/29/2015 | 5/29/2015 | 5/29/2015 | 5/29/2015 | 5/29/2015 | 5/29/2015 |
| Analysis Time: | 4:19 | 4:42 | 5:04 | 5:26 | 5:47 | 6:09 |
| Matrix: | Soil Gas | Soil Gas | Soil Gas | Soil Gas | Soil Gas | Soil Gas |
| Units: | ng | ng | ng | ng | ng | ng |
| COMPOUNDS | | | | | | |
| Vinyl Chloride | **375** | **17** | **12** | <10 | <10 | **19** |
| Trichlorofluoromethane (Freon 11) | <25 | <25 | <25 | <25 | <25 | **26** |
| 1,1-Dichloroethene | **80** | <10 | **9 J** | <10 | <10 | **37** |
| 1,1,2-Trichlorotrifluoroethane (Fr.113) | <25 | <25 | <25 | <25 | <25 | <25 |
| trans-1,2-Dichloroethene | **299** | <10 | **35** | <10 | <10 | <10 |
| Methyl-t-butyl ether | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1-Dichloroethane | **469** | <25 | **81** | <25 | <25 | <25 |
| cis-1,2-Dichloroethene | **1,967** | **43** | **547** | **13** | **10** | **30** |
| Chloroform | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,2-Dichloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1,1-Trichloroethane | **620** | <25 | **63** | <25 | <25 | **133** |
| Carbon Tetrachloride | <25 | <25 | <25 | <25 | <25 | <25 |
| Benzene | <25 | <25 | **153** | <25 | <25 | <25 |
| Trichloroethene | **4,237** | **57** | **2,085** | **15** | **64** | **25** |
| 1,4-Dioxane | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1,2-Trichloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| Toluene | <25 | <25 | **167** | <25 | <25 | <25 |
| 1,2-Dibromoethane (EDB) | <25 | <25 | <25 | <25 | <25 | <25 |
| Tetrachloroethene | <10 | <10 | **8 J** | <10 | **11** | <10 |
| 1,1,1,2-Tetrachloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| Chlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| Ethylbenzene | <25 | <25 | **32** | <25 | <25 | <25 |
| p & m-Xylene | <25 | <25 | **202** | **25** | <25 | <25 |
| 1,1,2,2-Tetrachloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| o-Xylene | <25 | <25 | **105** | <25 | <25 | <25 |
| 1,2,3-Trichloropropane | <25 | <25 | <25 | <25 | <25 | <25 |
| Isopropylbenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,3,5-Trimethylbenzene | <25 | <25 | **115** | <25 | <25 | <25 |
| 1,2,4-Trimethylbenzene | <25 | <25 | **174** | **41** | <25 | **31** |
| 1,3-Dichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,4-Dichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,2-Dichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,2,4-Trichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| Naphthalene | **587** | <25 | <25 | <25 | **48** | **284** |
| 1,2,3-Trichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 2-Methylnaphthalene | **122** | <25 | <25 | <25 | <25 | **208** |
| TPH $C_4$-$C_9$ | <5,000 | <5,000 | **19,829** | <5,000 | <5,000 | <5,000 |
| TPH $C_{10}$-$C_{15}$ | **16,581** | **10,739** | **32,430** | **14,831** | <5,000 | **11,711** |

Results in nanograms (ng). J = Values below limit of quantitation (LOQ) but above limit of detection (LOD). B = Detected in method blank.

**Table 1**

**Beacon Environmental Services, Inc.**
**2203A Commerce Road, Suite 1**
**Forest Hill, MD 21050 USA**

**Analysis by EPA Method 8260C**

| Client Sample ID: | F2 | mb150528s | F3 | F4 | F5 | F6 |
|---|---|---|---|---|---|---|
| Project Number: | 2997 | | 2997 | 2997 | 2997 | 2997 |
| Lab File ID: | C15052862 | S15052803 | S15052819 | S15052820 | S15052821 | S15052822 |
| Received Date: | 5/27/2015 | | 5/27/2015 | 5/27/2015 | 5/27/2015 | 5/27/2015 |
| Analysis Date: | 5/29/2015 | 5/28/2015 | 5/28/2015 | 5/28/2015 | 5/28/2015 | 5/28/2015 |
| Analysis Time: | 6:31 | 9:48 | 15:38 | 16:00 | 16:22 | 16:43 |
| Matrix: | Soil Gas | | Soil Gas | Soil Gas | Soil Gas | Soil Gas |
| Units: | ng | ng | ng | ng | ng | ng |
| COMPOUNDS | | | | | | |
| Vinyl Chloride | **39** | <10 | **45** | **82** | **71** | **29** |
| Trichlorofluoromethane (Freon 11) | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1-Dichloroethene | **14** | <10 | **830** | **750** | **100** | **40** |
| 1,1,2-Trichlorotrifluoroethane (Fr.113) | <25 | <25 | <25 | <25 | <25 | <25 |
| trans-1,2-Dichloroethene | <10 | <10 | <10 | **37** | **13** | **19** |
| Methyl-t-butyl ether | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1-Dichloroethane | <25 | <25 | **44** | **191** | **118** | **94** |
| cis-1,2-Dichloroethene | **34** | <10 | **127** | **1,002** | **128** | **666** |
| Chloroform | <25 | <25 | **82** | **72** | <25 | <25 |
| 1,2-Dichloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1,1-Trichloroethane | **40** | <25 | **1,911** | **6,728** | **250** | **628** |
| Carbon Tetrachloride | <25 | <25 | <25 | **26** | <25 | <25 |
| Benzene | <25 | <25 | <25 | <25 | <25 | <25 |
| Trichloroethene | **161** | <10 | **10,158** | **13,239** | **1,348** | **12,135** |
| 1,4-Dioxane | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1,2-Trichloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| Toluene | <25 | <25 | <25 | **28** | <25 | <25 |
| 1,2-Dibromoethane (EDB) | <25 | <25 | <25 | <25 | <25 | <25 |
| Tetrachloroethene | <10 | <10 | **9 J** | **22** | <10 | **18** |
| 1,1,1,2-Tetrachloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| Chlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| Ethylbenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| p & m-Xylene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1,2,2-Tetrachloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| o-Xylene | <25 | <25 | <25 | **28** | <25 | <25 |
| 1,2,3-Trichloropropane | <25 | <25 | <25 | <25 | <25 | <25 |
| Isopropylbenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,3,5-Trimethylbenzene | **31** | <25 | <25 | <25 | <25 | <25 |
| 1,2,4-Trimethylbenzene | **85** | <25 | <25 | **25** | <25 | **34** |
| 1,3-Dichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,4-Dichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,2-Dichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,2,4-Trichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| Naphthalene | **894** | <25 | **63** | **384** | **36** | <25 |
| 1,2,3-Trichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 2-Methylnaphthalene | **471** | <25 | **33** | **58** | <25 | <25 |
| TPH $C_4$-$C_9$ | <5,000 | <5,000 | <5,000 | <5,000 | <5,000 | <5,000 |
| TPH $C_{10}$-$C_{15}$ | **24,335** | <5,000 | <5,000 | **5,335** | **6,744** | **9,520** |

Results in nanograms (ng). J = Values below limit of quantitation (LOQ) but above limit of detection (LOD). B = Detected in method blank.

**Table 1**

**Beacon Environmental Services, Inc.**
**2203A Commerce Road, Suite 1**
**Forest Hill, MD 21050 USA**

**Analysis by EPA Method 8260C**

| Client Sample ID: | F7 | F8 | F9 | F10 | F11 | F12 |
|---|---|---|---|---|---|---|
| Project Number: | 2997 | 2997 | 2997 | 2997 | 2997 | 2997 |
| Lab File ID: | S15052823 | S15052824 | S15052825 | S15052826 | S15052827 | S15052828 |
| Received Date: | 5/27/2015 | 5/27/2015 | 5/27/2015 | 5/27/2015 | 5/27/2015 | 5/27/2015 |
| Analysis Date: | 5/28/2015 | 5/28/2015 | 5/28/2015 | 5/28/2015 | 5/28/2015 | 5/28/2015 |
| Analysis Time: | 17:05 | 17:26 | 17:48 | 18:10 | 18:32 | 18:54 |
| Matrix: | Soil Gas | Soil Gas | Soil Gas | Soil Gas | Soil Gas | Soil Gas |
| Units: | ng | ng | ng | ng | ng | ng |
| COMPOUNDS | | | | | | |
| Vinyl Chloride | **1,071** | **1,284** | **86** | **424** | **7 J** | <10 |
| Trichlorofluoromethane (Freon 11) | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1-Dichloroethene | **82** | **39** | <10 | **14** | **207** | **265** |
| 1,1,2-Trichlorotrifluoroethane (Fr.113) | <25 | <25 | <25 | <25 | <25 | <25 |
| trans-1,2-Dichloroethene | **92** | **21** | <10 | **42** | <10 | <10 |
| Methyl-t-butyl ether | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1-Dichloroethane | **582** | **31** | <25 | **65** | **118** | **170** |
| cis-1,2-Dichloroethene | **932** | **598** | **206** | **444** | **122** | **139** |
| Chloroform | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,2-Dichloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1,1-Trichloroethane | **1,718** | **152** | **37** | <25 | **3,256** | **4,696** |
| Carbon Tetrachloride | <25 | <25 | <25 | <25 | <25 | <25 |
| Benzene | **61** | **26** | **501** | **358** | <25 | <25 |
| Trichloroethene | **4,493** | **1,921** | **349** | **860** | **3,327** | **1,307** |
| 1,4-Dioxane | **68** | <25 | <25 | <25 | <25 | <25 |
| 1,1,2-Trichloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| Toluene | **55** | <25 | **883** | **276** | <25 | <25 |
| 1,2-Dibromoethane (EDB) | <25 | <25 | <25 | <25 | <25 | <25 |
| Tetrachloroethene | **10 J** | <10 | <10 | <10 | **54** | **306** |
| 1,1,1,2-Tetrachloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| Chlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| Ethylbenzene | <25 | <25 | **277** | **37** | <25 | <25 |
| p & m-Xylene | **69** | <25 | **1,370** | **188** | <25 | <25 |
| 1,1,2,2-Tetrachloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| o-Xylene | **71** | <25 | **893** | **112** | <25 | <25 |
| 1,2,3-Trichloropropane | <25 | <25 | <25 | <25 | <25 | <25 |
| Isopropylbenzene | **41** | <25 | **379** | **50** | <25 | <25 |
| 1,3,5-Trimethylbenzene | **147** | <25 | **917** | **243** | <25 | <25 |
| 1,2,4-Trimethylbenzene | **211** | <25 | **895** | **256** | <25 | <25 |
| 1,3-Dichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,4-Dichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,2-Dichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,2,4-Trichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| Naphthalene | **423** | **102** | <25 | **58** | <25 | <25 |
| 1,2,3-Trichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 2-Methylnaphthalene | **131** | **26** | <25 | **118** | <25 | <25 |
| TPH $C_4$-$C_9$ | **60,881** | **17,438** | **208,569** | **175,224** | <5,000 | <5,000 |
| TPH $C_{10}$-$C_{15}$ | **20,723** | **24,470** | **71,145** | **138,204** | <5,000 | <5,000 |

Results in nanograms (ng). J = Values below limit of quantitation (LOQ) but above limit of detection (LOD). B = Detected in method blank.

**Table 1**

**Beacon Environmental Services, Inc.**
**2203A Commerce Road, Suite 1**
**Forest Hill, MD 21050 USA**

**Analysis by EPA Method 8260C**

| Client Sample ID: | G0 | G1 | G2 | G3 | G4 | G5 |
|---|---|---|---|---|---|---|
| Project Number: | 2997 | 2997 | 2997 | 2997 | 2997 | 2997 |
| Lab File ID: | S15052829 | S15052830 | S15052831 | S15052832 | S15052833 | S15052834 |
| Received Date: | 5/27/2015 | 5/27/2015 | 5/27/2015 | 5/27/2015 | 5/27/2015 | 5/27/2015 |
| Analysis Date: | 5/28/2015 | 5/28/2015 | 5/28/2015 | 5/28/2015 | 5/28/2015 | 5/29/2015 |
| Analysis Time: | 19:16 | 19:37 | 19:59 | 20:20 | 20:43 | 7:28 |
| Matrix: | Soil Gas | Soil Gas | Soil Gas | Soil Gas | Soil Gas | Soil Gas |
| Units: | ng | ng | ng | ng | ng | ng |
| COMPOUNDS | | | | | | |
| Vinyl Chloride | <10 | <10 | <10 | **8 J** | **67** | **37** |
| Trichlorofluoromethane (Freon 11) | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1-Dichloroethene | **115** | <10 | **41** | **265** | **130** | **10 J** |
| 1,1,2-Trichlorotrifluoroethane (Fr.113) | <25 | <25 | <25 | <25 | <25 | <25 |
| trans-1,2-Dichloroethene | <10 | <10 | <10 | <10 | <10 | <10 |
| Methyl-t-butyl ether | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1-Dichloroethane | **28** | <25 | <25 | <25 | **31** | **63** |
| cis-1,2-Dichloroethene | <10 | **13** | **7 J** | **14** | **80** | **39** |
| Chloroform | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,2-Dichloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1,1-Trichloroethane | **691** | **36** | **88** | **1,095** | **2,121** | **37** |
| Carbon Tetrachloride | <25 | <25 | <25 | <25 | <25 | <25 |
| Benzene | <25 | <25 | <25 | <25 | <25 | **289** |
| Trichloroethene | **337** | **115** | **2,191** | **5,142** | **1,339** | <10 |
| 1,4-Dioxane | <25 | **27** | <25 | <25 | <25 | <25 |
| 1,1,2-Trichloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| Toluene | <25 | <25 | <25 | <25 | <25 | **34** |
| 1,2-Dibromoethane (EDB) | <25 | <25 | <25 | <25 | <25 | <25 |
| Tetrachloroethene | <10 | <10 | <10 | <10 | **19** | <10 |
| 1,1,1,2-Tetrachloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| Chlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| Ethylbenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| p & m-Xylene | <25 | <25 | **38** | <25 | <25 | <25 |
| 1,1,2,2-Tetrachloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| o-Xylene | <25 | <25 | <25 | <25 | <25 | **47** |
| 1,2,3-Trichloropropane | <25 | <25 | <25 | <25 | <25 | <25 |
| Isopropylbenzene | <25 | <25 | <25 | <25 | <25 | **29** |
| 1,3,5-Trimethylbenzene | <25 | <25 | <25 | <25 | <25 | **38** |
| 1,2,4-Trimethylbenzene | <25 | <25 | <25 | <25 | <25 | **27** |
| 1,3-Dichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,4-Dichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,2-Dichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,2,4-Trichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| Naphthalene | **146** | **198** | **26** | **60** | <25 | **45** |
| 1,2,3-Trichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 2-Methylnaphthalene | **53** | **117** | <25 | **56** | <25 | <25 |
| TPH $C_4$-$C_9$ | <5,000 | <5,000 | <5,000 | <5,000 | <5,000 | **107,095** |
| TPH $C_{10}$-$C_{15}$ | **17,940** | **44,870** | **13,784** | **10,104** | **24,811** | **35,872** |

Results in nanograms (ng). J = Values below limit of quantitation (LOQ) but above limit of detection (LOD). B = Detected in method blank.

**Table 1**

**Beacon Environmental Services, Inc.**
**2203A Commerce Road, Suite 1**
**Forest Hill, MD 21050 USA**

**Analysis by EPA Method 8260C**

| Client Sample ID: | G6 | G7 | G8 | G9 | G10 | G11 |
|---|---|---|---|---|---|---|
| Project Number: | 2997 | 2997 | 2997 | 2997 | 2997 | 2997 |
| Lab File ID: | S15052835 | S15052836 | S15052837 | S15052838 | A15052837 | A15052838 |
| Received Date: | 5/27/2015 | 5/27/2015 | 5/27/2015 | 5/27/2015 | 5/27/2015 | 5/27/2015 |
| Analysis Date: | 5/29/2015 | 5/29/2015 | 5/29/2015 | 5/29/2015 | 5/29/2015 | 5/29/2015 |
| Analysis Time: | 7:51 | 8:13 | 8:35 | 8:56 | 8:17 | 8:45 |
| Matrix: | Soil Gas | Soil Gas | Soil Gas | Soil Gas | Soil Gas | Soil Gas |
| Units: | ng | ng | ng | ng | ng | ng |
| COMPOUNDS | | | | | | |
| Vinyl Chloride | **129** | **131** | **82** | **74** | **76** | <10 |
| Trichlorofluoromethane (Freon 11) | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1-Dichloroethene | **32** | **445** | **280** | **145** | <10 | **42** |
| 1,1,2-Trichlorotrifluoroethane (Fr.113) | <25 | <25 | <25 | <25 | <25 | <25 |
| trans-1,2-Dichloroethene | <10 | **6 J** | <10 | **12** | <10 | **152** |
| Methyl-t-butyl ether | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1-Dichloroethane | **126** | **78** | <25 | **694** | <25 | **4,177** |
| cis-1,2-Dichloroethene | **69** | **84** | **83** | **677** | **7 J** | **986** |
| Chloroform | <25 | **38** | <25 | **49** | <25 | <25 |
| 1,2-Dichloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1,1-Trichloroethane | **113** | **3,083** | **3,599** | **1,090** | <25 | **317** |
| Carbon Tetrachloride | <25 | <25 | <25 | **60** | <25 | <25 |
| Benzene | **46** | <25 | <25 | <25 | <25 | **48** |
| Trichloroethene | <10 | **4,860** | **12,178** | **463** | **171** | **10,879** |
| 1,4-Dioxane | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1,2-Trichloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| Toluene | <25 | <25 | <25 | <25 | **254** | **36** |
| 1,2-Dibromoethane (EDB) | <25 | <25 | <25 | <25 | <25 | <25 |
| Tetrachloroethene | <10 | **9 J** | **9 J** | <10 | <10 | <10 |
| 1,1,1,2-Tetrachloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| Chlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| Ethylbenzene | <25 | <25 | <25 | <25 | **214** | <25 |
| p & m-Xylene | <25 | <25 | <25 | <25 | **367** | **59** |
| 1,1,2,2-Tetrachloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| o-Xylene | <25 | <25 | <25 | <25 | **35** | **89** |
| 1,2,3-Trichloropropane | <25 | <25 | <25 | <25 | <25 | <25 |
| Isopropylbenzene | <25 | <25 | <25 | <25 | <25 | **92** |
| 1,3,5-Trimethylbenzene | <25 | <25 | <25 | <25 | **93** | **164** |
| 1,2,4-Trimethylbenzene | <25 | <25 | <25 | <25 | **88** | **395** |
| 1,3-Dichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,4-Dichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,2-Dichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,2,4-Trichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| Naphthalene | **99** | **55** | **7,171** | **71** | <25 | **41** |
| 1,2,3-Trichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 2-Methylnaphthalene | <25 | <25 | **2,716** | **55** | <25 | <25 |
| TPH $C_4$-$C_9$ | **17,547** | **12,015** | <5,000 | <5,000 | **42,788** | **61,242** |
| TPH $C_{10}$-$C_{15}$ | **31,195** | **7,630** | **39,739** | **9,474** | **41,703** | **186,802** |

Results in nanograms (ng). J = Values below limit of quantitation (LOQ) but above limit of detection (LOD). B = Detected in method blank.

**Table 1**

**Beacon Environmental Services, Inc.**
**2203A Commerce Road, Suite 1**
**Forest Hill, MD 21050 USA**

**Analysis by EPA Method 8260C**

| Client Sample ID: | G12 | mb150528a | H0 | H1 | H2 | H3 |
|---|---|---|---|---|---|---|
| Project Number: | 2997 | | 2997 | 2997 | 2997 | 2997 |
| Lab File ID: | A15052839 | A15052803 | A15052840 | A15052841 | A15052842 | A15052805 |
| Received Date: | 5/27/2015 | | 5/27/2015 | 5/27/2015 | 5/27/2015 | 5/27/2015 |
| Analysis Date: | 5/29/2015 | 5/28/2015 | 5/29/2015 | 5/29/2015 | 5/29/2015 | 5/28/2015 |
| Analysis Time: | 9:17 | 14:59 | 9:50 | 10:23 | 10:56 | 16:06 |
| Matrix: | Soil Gas | | Soil Gas | Soil Gas | Soil Gas | Soil Gas |
| Units: | ng | ng | ng | ng | ng | ng |
| COMPOUNDS | | | | | | |
| Vinyl Chloride | **281** | <10 | **20** | **21** | **6 J** | <10 |
| Trichlorofluoromethane (Freon 11) | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1-Dichloroethene | **8 J** | <10 | **103** | **31** | **155** | **280** |
| 1,1,2-Trichlorotrifluoroethane (Fr.113) | <25 | <25 | <25 | <25 | <25 | <25 |
| trans-1,2-Dichloroethene | **46** | <10 | <10 | **14** | **37** | <10 |
| Methyl-t-butyl ether | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1-Dichloroethane | **28** | <25 | <25 | **489** | **53** | **27** |
| cis-1,2-Dichloroethene | **1,392** | <10 | **6 J** | **83** | **139** | **16** |
| Chloroform | <25 | <25 | <25 | <25 | **86** | **61** |
| 1,2-Dichloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1,1-Trichloroethane | <25 | <25 | **446** | **451** | **3,336** | **3,396** |
| Carbon Tetrachloride | <25 | <25 | <25 | <25 | <25 | <25 |
| Benzene | **64** | <25 | <25 | **32** | **25** | <25 |
| Trichloroethene | **442** | <10 | **181** | **2,645** | **24,957** | **5,686** |
| 1,4-Dioxane | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1,2-Trichloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| Toluene | **26** | <25 | <25 | **30** | <25 | <25 |
| 1,2-Dibromoethane (EDB) | <25 | <25 | <25 | <25 | <25 | <25 |
| Tetrachloroethene | **33** | <10 | <10 | <10 | **9 J** | **6 J** |
| 1,1,1,2-Tetrachloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| Chlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| Ethylbenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| p & m-Xylene | <25 | <25 | <25 | **38** | <25 | <25 |
| 1,1,2,2-Tetrachloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| o-Xylene | <25 | <25 | <25 | **49** | <25 | <25 |
| 1,2,3-Trichloropropane | <25 | <25 | <25 | <25 | <25 | <25 |
| Isopropylbenzene | <25 | <25 | <25 | **35** | <25 | <25 |
| 1,3,5-Trimethylbenzene | <25 | <25 | <25 | **55** | <25 | <25 |
| 1,2,4-Trimethylbenzene | <25 | <25 | **38** | **129** | **42** | **40** |
| 1,3-Dichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,4-Dichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,2-Dichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,2,4-Trichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| Naphthalene | <25 | <25 | **97** | **40** | **116** | **194** |
| 1,2,3-Trichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 2-Methylnaphthalene | <25 | <25 | **104** | **28** | **74** | **118** |
| TPH $C_4$-$C_9$ | **20,940** | <5,000 | **6,364** | **18,467** | <5,000 | <5,000 |
| TPH $C_{10}$-$C_{15}$ | **7,750** | <5,000 | **18,776** | **111,977** | **72,638** | **10,512** |

Results in nanograms (ng). J = Values below limit of quantitation (LOQ) but above limit of detection (LOD). B = Detected in method blank.

**Table 1**

**Beacon Environmental Services, Inc.**
**2203A Commerce Road, Suite 1**
**Forest Hill, MD 21050 USA**

**Analysis by EPA Method 8260C**

| Client Sample ID: | H4 | H5 | H6 | H8 | H9 | H10 |
|---|---|---|---|---|---|---|
| Project Number: | 2997 | 2997 | 2997 | 2997 | 2997 | 2997 |
| Lab File ID: | A15052806 | A15052807 | A15052808 | A15052809 | A15052810 | A15052811 |
| Received Date: | 5/27/2015 | 5/27/2015 | 5/27/2015 | 5/27/2015 | 5/27/2015 | 5/27/2015 |
| Analysis Date: | 5/28/2015 | 5/28/2015 | 5/28/2015 | 5/28/2015 | 5/28/2015 | 5/28/2015 |
| Analysis Time: | 16:38 | 17:09 | 17:40 | 18:11 | 18:40 | 19:13 |
| Matrix: | Soil Gas | Soil Gas | Soil Gas | Soil Gas | Soil Gas | Soil Gas |
| Units: | ng | ng | ng | ng | ng | ng |
| COMPOUNDS | | | | | | |
| Vinyl Chloride | **19** | **18** | <10 | **20** | <10 | **17,581** |
| Trichlorofluoromethane (Freon 11) | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1-Dichloroethene | **133** | **277** | <10 | **345** | <10 | **338** |
| 1,1,2-Trichlorotrifluoroethane (Fr.113) | <25 | <25 | <25 | <25 | <25 | <25 |
| trans-1,2-Dichloroethene | <10 | **51** | <10 | <10 | <10 | **633** |
| Methyl-t-butyl ether | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1-Dichloroethane | <25 | **268** | <25 | **69** | <25 | **12,290** |
| cis-1,2-Dichloroethene | <10 | **372** | <10 | **32** | <10 | **8,938** |
| Chloroform | **43** | **79** | <25 | **29** | <25 | <25 |
| 1,2-Dichloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1,1-Trichloroethane | **1,012** | **16,904** | <25 | **18,818** | **69** | <25 |
| Carbon Tetrachloride | <25 | <25 | <25 | <25 | <25 | <25 |
| Benzene | <25 | <25 | <25 | **53** | <25 | **67** |
| Trichloroethene | **2,628** | **34,943** | **16** | **12,790** | **25** | **2,479** |
| 1,4-Dioxane | <25 | **30** | <25 | <25 | <25 | <25 |
| 1,1,2-Trichloroethane | <25 | **158** | <25 | <25 | <25 | <25 |
| Toluene | <25 | <25 | <25 | <25 | <25 | **28** |
| 1,2-Dibromoethane (EDB) | <25 | <25 | <25 | <25 | <25 | <25 |
| Tetrachloroethene | <10 | **51** | <10 | **31** | <10 | <10 |
| 1,1,1,2-Tetrachloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| Chlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| Ethylbenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| p & m-Xylene | <25 | <25 | <25 | **54** | <25 | <25 |
| 1,1,2,2-Tetrachloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| o-Xylene | <25 | <25 | <25 | **29** | <25 | <25 |
| 1,2,3-Trichloropropane | <25 | <25 | <25 | <25 | <25 | <25 |
| Isopropylbenzene | <25 | <25 | <25 | **30** | <25 | <25 |
| 1,3,5-Trimethylbenzene | <25 | <25 | <25 | **115** | <25 | <25 |
| 1,2,4-Trimethylbenzene | <25 | <25 | **29** | **144** | <25 | <25 |
| 1,3-Dichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,4-Dichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,2-Dichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,2,4-Trichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| Naphthalene | <25 | <25 | **32** | <25 | <25 | <25 |
| 1,2,3-Trichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 2-Methylnaphthalene | <25 | <25 | <25 | <25 | <25 | **31** |
| TPH $C_4$-$C_9$ | **21,621** | <5,000 | **83,945** | <5,000 | <5,000 | **69,993** |
| TPH $C_{10}$-$C_{15}$ | **8,693** | **11,052** | **17,409** | **19,521** | <5,000 | **139,299** |

Results in nanograms (ng). J = Values below limit of quantitation (LOQ) but above limit of detection (LOD). B = Detected in method blank.

**Table 1**

**Beacon Environmental Services, Inc.**
**2203A Commerce Road, Suite 1**
**Forest Hill, MD 21050 USA**

**Analysis by EPA Method 8260C**

| Client Sample ID: | H11 | H12 | I0 | I1 | I3 | I4 |
|---|---|---|---|---|---|---|
| Project Number: | 2997 | 2997 | 2997 | 2997 | 2997 | 2997 |
| Lab File ID: | A15052812 | A15052813 | A15052814 | A15052815 | A15052816 | A15052817 |
| Received Date: | 5/27/2015 | 5/27/2015 | 5/27/2015 | 5/27/2015 | 5/27/2015 | 5/27/2015 |
| Analysis Date: | 5/28/2015 | 5/28/2015 | 5/28/2015 | 5/28/2015 | 5/28/2015 | 5/28/2015 |
| Analysis Time: | 19:41 | 20:14 | 20:42 | 21:11 | 21:40 | 22:11 |
| Matrix: | Soil Gas | Soil Gas | Soil Gas | Soil Gas | Soil Gas | Soil Gas |
| Units: | ng | ng | ng | ng | ng | ng |
| COMPOUNDS | | | | | | |
| Vinyl Chloride | **370** | **17** | <10 | **89** | <10 | **6 J** |
| Trichlorofluoromethane (Freon 11) | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1-Dichloroethene | <10 | <10 | **9 J** | **42** | <10 | **13** |
| 1,1,2-Trichlorotrifluoroethane (Fr.113) | <25 | <25 | <25 | <25 | <25 | <25 |
| trans-1,2-Dichloroethene | **7 J** | <10 | <10 | **48** | <10 | **20** |
| Methyl-t-butyl ether | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1-Dichloroethane | **39** | <25 | <25 | **67** | **61** | <25 |
| cis-1,2-Dichloroethene | **53** | **5 J** | **6 J** | **1,521** | <10 | **213** |
| Chloroform | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,2-Dichloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1,1-Trichloroethane | <25 | <25 | **110** | <25 | **31** | **71** |
| Carbon Tetrachloride | <25 | <25 | <25 | <25 | <25 | <25 |
| Benzene | **27** | <25 | <25 | **215** | <25 | <25 |
| Trichloroethene | **168** | **8 J** | **31** | **416** | **34** | **254** |
| 1,4-Dioxane | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1,2-Trichloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| Toluene | <25 | <25 | <25 | **40** | <25 | <25 |
| 1,2-Dibromoethane (EDB) | <25 | <25 | <25 | <25 | <25 | <25 |
| Tetrachloroethene | <10 | <10 | <10 | **7 J** | <10 | <10 |
| 1,1,1,2-Tetrachloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| Chlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| Ethylbenzene | <25 | <25 | <25 | **188** | <25 | <25 |
| p & m-Xylene | <25 | <25 | <25 | **335** | **46** | <25 |
| 1,1,2,2-Tetrachloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| o-Xylene | <25 | <25 | <25 | **201** | **26** | <25 |
| 1,2,3-Trichloropropane | <25 | <25 | <25 | <25 | <25 | <25 |
| Isopropylbenzene | <25 | <25 | <25 | **568** | <25 | <25 |
| 1,3,5-Trimethylbenzene | **25** | <25 | <25 | **12,806** | **39** | <25 |
| 1,2,4-Trimethylbenzene | **39** | <25 | **35** | **5,569** | **80** | **28** |
| 1,3-Dichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,4-Dichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,2-Dichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,2,4-Trichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| Naphthalene | <25 | <25 | **94** | **100** | **60** | **110** |
| 1,2,3-Trichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 2-Methylnaphthalene | <25 | <25 | **74** | **71** | <25 | **33** |
| TPH $C_4$-$C_9$ | **33,648** | **5,964** | **8,277** | **126,096** | **23,076** | **11,734** |
| TPH $C_{10}$-$C_{15}$ | **36,441** | **7,936** | **42,537** | **1,029,850** | **14,341** | **14,268** |

Results in nanograms (ng). J = Values below limit of quantitation (LOQ) but above limit of detection (LOD). B = Detected in method blank.

**Table 1**

**Beacon Environmental Services, Inc.**
**2203A Commerce Road, Suite 1**
**Forest Hill, MD 21050 USA**

**Analysis by EPA Method 8260C**

| Client Sample ID: | I8 | I9 | I10 | I11 | I12 | J0 |
|---|---|---|---|---|---|---|
| Project Number: | 2997 | 2997 | 2997 | 2997 | 2997 | 2997 |
| Lab File ID: | A15052818 | A15052819 | A15052820 | A15052821 | A15052822 | A15052823 |
| Received Date: | 5/27/2015 | 5/27/2015 | 5/27/2015 | 5/27/2015 | 5/27/2015 | 5/27/2015 |
| Analysis Date: | 5/28/2015 | 5/28/2015 | 5/28/2015 | 5/29/2015 | 5/29/2015 | 5/29/2015 |
| Analysis Time: | 22:42 | 23:12 | 23:44 | 0:13 | 0:44 | 1:16 |
| Matrix: | Soil Gas | Soil Gas | Soil Gas | Soil Gas | Soil Gas | Soil Gas |
| Units: | ng | ng | ng | ng | ng | ng |
| COMPOUNDS | | | | | | |
| Vinyl Chloride | **6 J** | <10 | <10 | **72** | <10 | **73** |
| Trichlorofluoromethane (Freon 11) | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1-Dichloroethene | **24** | **6 J** | <10 | **71** | <10 | **92** |
| 1,1,2-Trichlorotrifluoroethane (Fr.113) | <25 | <25 | <25 | <25 | <25 | <25 |
| trans-1,2-Dichloroethene | <10 | <10 | <10 | <10 | <10 | <10 |
| Methyl-t-butyl ether | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1-Dichloroethane | <25 | <25 | <25 | **190** | <25 | **53** |
| cis-1,2-Dichloroethene | <10 | <10 | <10 | **34** | <10 | **8 J** |
| Chloroform | <25 | <25 | <25 | <25 | <25 | **32** |
| 1,2-Dichloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1,1-Trichloroethane | **376** | **47** | <25 | **1,017** | <25 | **814** |
| Carbon Tetrachloride | <25 | <25 | <25 | <25 | <25 | <25 |
| Benzene | <25 | **26** | <25 | **31** | <25 | **30** |
| Trichloroethene | **47** | **18** | **14** | **254** | <10 | **502** |
| 1,4-Dioxane | <25 | <25 | <25 | <25 | <25 | **28** |
| 1,1,2-Trichloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| Toluene | <25 | <25 | <25 | <25 | <25 | **28** |
| 1,2-Dibromoethane (EDB) | <25 | <25 | <25 | <25 | <25 | <25 |
| Tetrachloroethene | <10 | **7 J** | <10 | **10** | <10 | **108** |
| 1,1,1,2-Tetrachloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| Chlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| Ethylbenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| p & m-Xylene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1,2,2-Tetrachloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| o-Xylene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,2,3-Trichloropropane | <25 | <25 | <25 | <25 | <25 | <25 |
| Isopropylbenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,3,5-Trimethylbenzene | <25 | <25 | <25 | <25 | <25 | **47** |
| 1,2,4-Trimethylbenzene | **25** | **29** | <25 | <25 | <25 | **81** |
| 1,3-Dichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,4-Dichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,2-Dichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,2,4-Trichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| Naphthalene | <25 | <25 | <25 | <25 | <25 | **2,361** |
| 1,2,3-Trichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 2-Methylnaphthalene | <25 | <25 | <25 | <25 | <25 | **746** |
| TPH $C_4$-$C_9$ | **7,750** | **30,093** | **8,237** | **20,431** | <5,000 | **13,251** |
| TPH $C_{10}$-$C_{15}$ | **8,069** | **12,064** | **5,561** | <5,000 | <5,000 | **88,850** |

Results in nanograms (ng). J = Values below limit of quantitation (LOQ) but above limit of detection (LOD). B = Detected in method blank.

**Table 1**

**Beacon Environmental Services, Inc.**
**2203A Commerce Road, Suite 1**
**Forest Hill, MD 21050 USA**

**Analysis by EPA Method 8260C**

| Client Sample ID: | J1 | J2 | J3 | J8 | J9 | J10 |
|---|---|---|---|---|---|---|
| Project Number: | 2997 | 2997 | 2997 | 2997 | 2997 | 2997 |
| Lab File ID: | A15052824 | A15052825 | A15052826 | A15052827 | A15052828 | A15052829 |
| Received Date: | 5/27/2015 | 5/27/2015 | 5/27/2015 | 5/27/2015 | 5/27/2015 | 5/27/2015 |
| Analysis Date: | 5/29/2015 | 5/29/2015 | 5/29/2015 | 5/29/2015 | 5/29/2015 | 5/29/2015 |
| Analysis Time: | 1:45 | 2:14 | 2:42 | 3:11 | 3:39 | 4:11 |
| Matrix: | Soil Gas | Soil Gas | Soil Gas | Soil Gas | Soil Gas | Soil Gas |
| Units: | ng | ng | ng | ng | ng | ng |
| COMPOUNDS | | | | | | |
| Vinyl Chloride | **110** | <10 | <10 | <10 | **5 J** | **8 J** |
| Trichlorofluoromethane (Freon 11) | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1-Dichloroethene | **497** | **25** | <10 | <10 | <10 | <10 |
| 1,1,2-Trichlorotrifluoroethane (Fr.113) | <25 | <25 | <25 | <25 | <25 | <25 |
| trans-1,2-Dichloroethene | <10 | **36** | <10 | <10 | <10 | <10 |
| Methyl-t-butyl ether | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1-Dichloroethane | **86** | **44** | <25 | <25 | <25 | <25 |
| cis-1,2-Dichloroethene | **17** | **976** | **10** | <10 | <10 | <10 |
| Chloroform | **357** | **42** | <25 | <25 | <25 | <25 |
| 1,2-Dichloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1,1-Trichloroethane | **6,008** | **268** | <25 | <25 | <25 | <25 |
| Carbon Tetrachloride | <25 | <25 | <25 | <25 | <25 | <25 |
| Benzene | <25 | **29** | **161** | <25 | **29** | <25 |
| Trichloroethene | **1,897** | **25,601** | **139** | **16** | **14** | <10 |
| 1,4-Dioxane | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,1,2-Trichloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| Toluene | <25 | <25 | **78** | <25 | <25 | <25 |
| 1,2-Dibromoethane (EDB) | <25 | <25 | <25 | <25 | <25 | <25 |
| Tetrachloroethene | <10 | **75** | <10 | <10 | <10 | <10 |
| 1,1,1,2-Tetrachloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| Chlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| Ethylbenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| p & m-Xylene | <25 | **55** | **40** | <25 | <25 | <25 |
| 1,1,2,2-Tetrachloroethane | <25 | <25 | <25 | <25 | <25 | <25 |
| o-Xylene | <25 | **61** | **29** | <25 | <25 | <25 |
| 1,2,3-Trichloropropane | <25 | <25 | <25 | <25 | <25 | <25 |
| Isopropylbenzene | <25 | **283** | <25 | <25 | <25 | <25 |
| 1,3,5-Trimethylbenzene | <25 | **2,164** | **59** | <25 | <25 | <25 |
| 1,2,4-Trimethylbenzene | <25 | **1,424** | **76** | **29** | <25 | <25 |
| 1,3-Dichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,4-Dichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,2-Dichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 1,2,4-Trichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| Naphthalene | **172** | **1,694** | <25 | <25 | **30** | **135** |
| 1,2,3-Trichlorobenzene | <25 | <25 | <25 | <25 | <25 | <25 |
| 2-Methylnaphthalene | **178** | **1,491** | **48** | <25 | <25 | **50** |
| TPH $C_4$-$C_9$ | <5,000 | <5,000 | **272,701** | **10,119** | **8,126** | **7,925** |
| TPH $C_{10}$-$C_{15}$ | **140,754** | **943,354** | **51,776** | **8,741** | <5,000 | **14,231** |

Results in nanograms (ng). J = Values below limit of quantitation (LOQ) but above limit of detection (LOD). B = Detected in method blank.

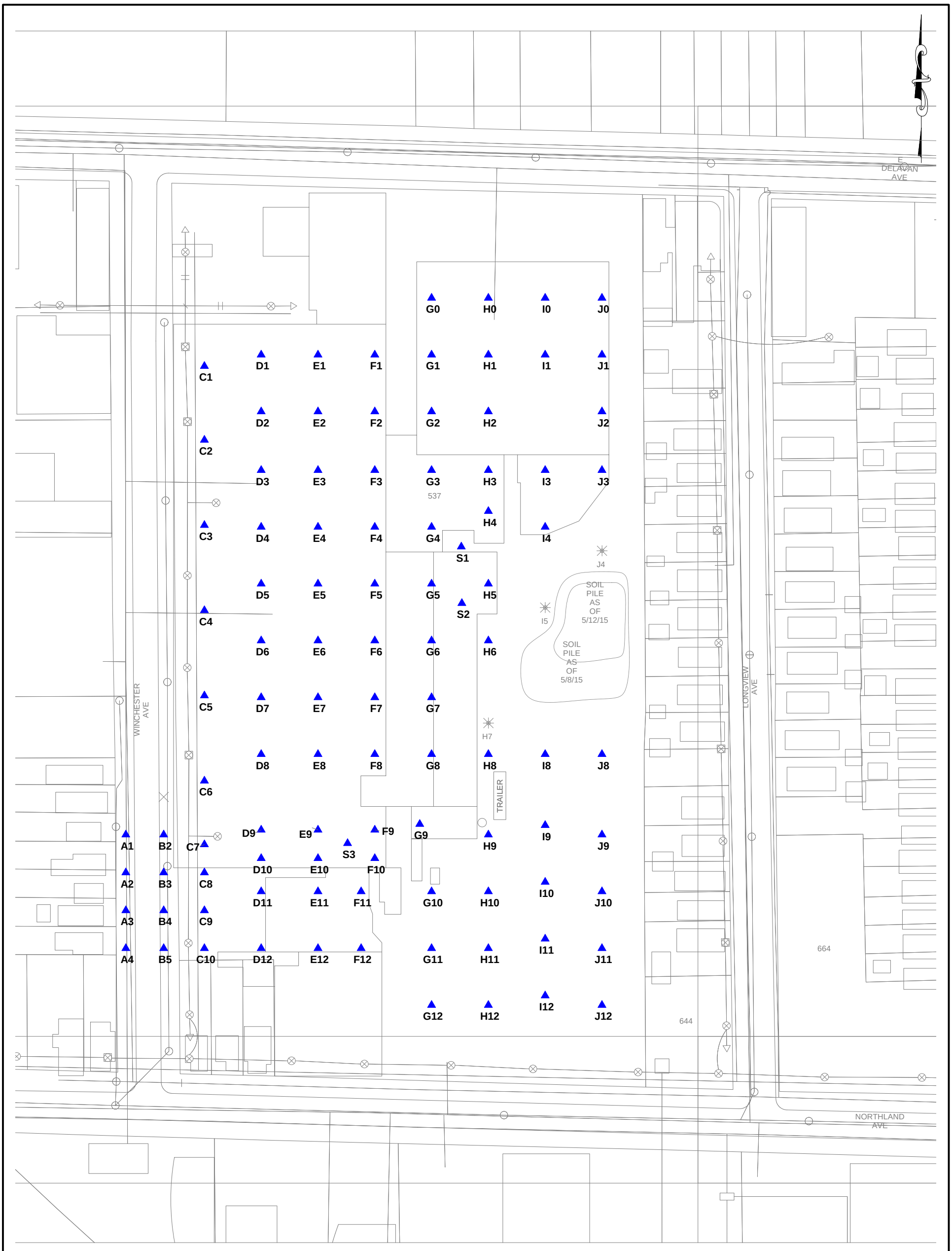
**Table 1**

**Beacon Environmental Services, Inc.**
**2203A Commerce Road, Suite 1**
**Forest Hill, MD 21050 USA**

**Analysis by EPA Method 8260C**

| Client Sample ID: | J11 | J12 | S1 | S2 | S3 |
|---|---|---|---|---|---|
| Project Number: | 2997 | 2997 | 2997 | 2997 | 2997 |
| Lab File ID: | A15052830 | A15052831 | A15052832 | A15052833 | A15052834 |
| Received Date: | 5/27/2015 | 5/27/2015 | 5/27/2015 | 5/27/2015 | 5/27/2015 |
| Analysis Date: | 5/29/2015 | 5/29/2015 | 5/29/2015 | 5/29/2015 | 5/29/2015 |
| Analysis Time: | 4:39 | 5:12 | 5:44 | 6:14 | 6:43 |
| Matrix: | Soil Gas | Soil Gas | Soil Gas | Soil Gas | Soil Gas |
| Units: | ng | ng | ng | ng | ng |
| COMPOUNDS | | | | | |
| Vinyl Chloride | **9 J** | **23** | **465** | <10 | **37** |
| Trichlorofluoromethane (Freon 11) | <25 | <25 | <25 | <25 | <25 |
| 1,1-Dichloroethene | **16** | <10 | **513** | **117** | **49** |
| 1,1,2-Trichlorotrifluoroethane (Fr.113) | <25 | <25 | <25 | <25 | <25 |
| trans-1,2-Dichloroethene | <10 | <10 | **53** | <10 | **58** |
| Methyl-t-butyl ether | <25 | <25 | <25 | <25 | <25 |
| 1,1-Dichloroethane | **96** | <25 | **7,347** | **148** | **60** |
| cis-1,2-Dichloroethene | **7 J** | **28** | **297** | <10 | **2,469** |
| Chloroform | <25 | <25 | **135** | <25 | <25 |
| 1,2-Dichloroethane | <25 | <25 | <25 | <25 | <25 |
| 1,1,1-Trichloroethane | **108** | <25 | **2,706** | **2,125** | **1,418** |
| Carbon Tetrachloride | <25 | <25 | <25 | <25 | <25 |
| Benzene | <25 | <25 | **95** | <25 | **210** |
| Trichloroethene | **50** | **7 J** | **4,966** | **107** | **8,024** |
| 1,4-Dioxane | <25 | <25 | **252** | **64** | <25 |
| 1,1,2-Trichloroethane | <25 | <25 | <25 | <25 | <25 |
| Toluene | <25 | <25 | <25 | <25 | **129** |
| 1,2-Dibromoethane (EDB) | <25 | <25 | <25 | <25 | <25 |
| Tetrachloroethene | <10 | <10 | **46** | <10 | **15** |
| 1,1,1,2-Tetrachloroethane | <25 | <25 | <25 | <25 | <25 |
| Chlorobenzene | <25 | <25 | <25 | <25 | <25 |
| Ethylbenzene | <25 | <25 | **741** | **37** | **566** |
| p & m-Xylene | <25 | <25 | **3,565** | **198** | **2,387** |
| 1,1,2,2-Tetrachloroethane | <25 | <25 | <25 | <25 | <25 |
| o-Xylene | <25 | <25 | **2,031** | **119** | **2,402** |
| 1,2,3-Trichloropropane | <25 | <25 | <25 | <25 | <25 |
| Isopropylbenzene | <25 | <25 | **102** | <25 | **80** |
| 1,3,5-Trimethylbenzene | <25 | <25 | **41** | <25 | **99** |
| 1,2,4-Trimethylbenzene | <25 | <25 | **76** | **25** | **71** |
| 1,3-Dichlorobenzene | <25 | <25 | <25 | <25 | <25 |
| 1,4-Dichlorobenzene | <25 | <25 | <25 | <25 | <25 |
| 1,2-Dichlorobenzene | <25 | <25 | <25 | <25 | <25 |
| 1,2,4-Trichlorobenzene | <25 | <25 | <25 | <25 | <25 |
| Naphthalene | <25 | <25 | **181** | **222** | **83** |
| 1,2,3-Trichlorobenzene | <25 | <25 | <25 | <25 | <25 |
| 2-Methylnaphthalene | <25 | <25 | <25 | **28** | <25 |
| TPH $C_4$-$C_9$ | <5,000 | **6,705** | **239,658** | **10,864** | **246,585** |
| TPH $C_{10}$-$C_{15}$ | <5,000 | <5,000 | **52,848** | **13,033** | **81,834** |

Results in nanograms (ng). J = Values below limit of quantitation (LOQ) but above limit of detection (LOD). B = Detected in method blank.




## LEGEND

▲ A4 PASSIVE SOIL-GAS SAMPLE LOCATION

Scale in Feet

0 100 200

BEACON ENVIRONMENTAL SERVICES, INC.
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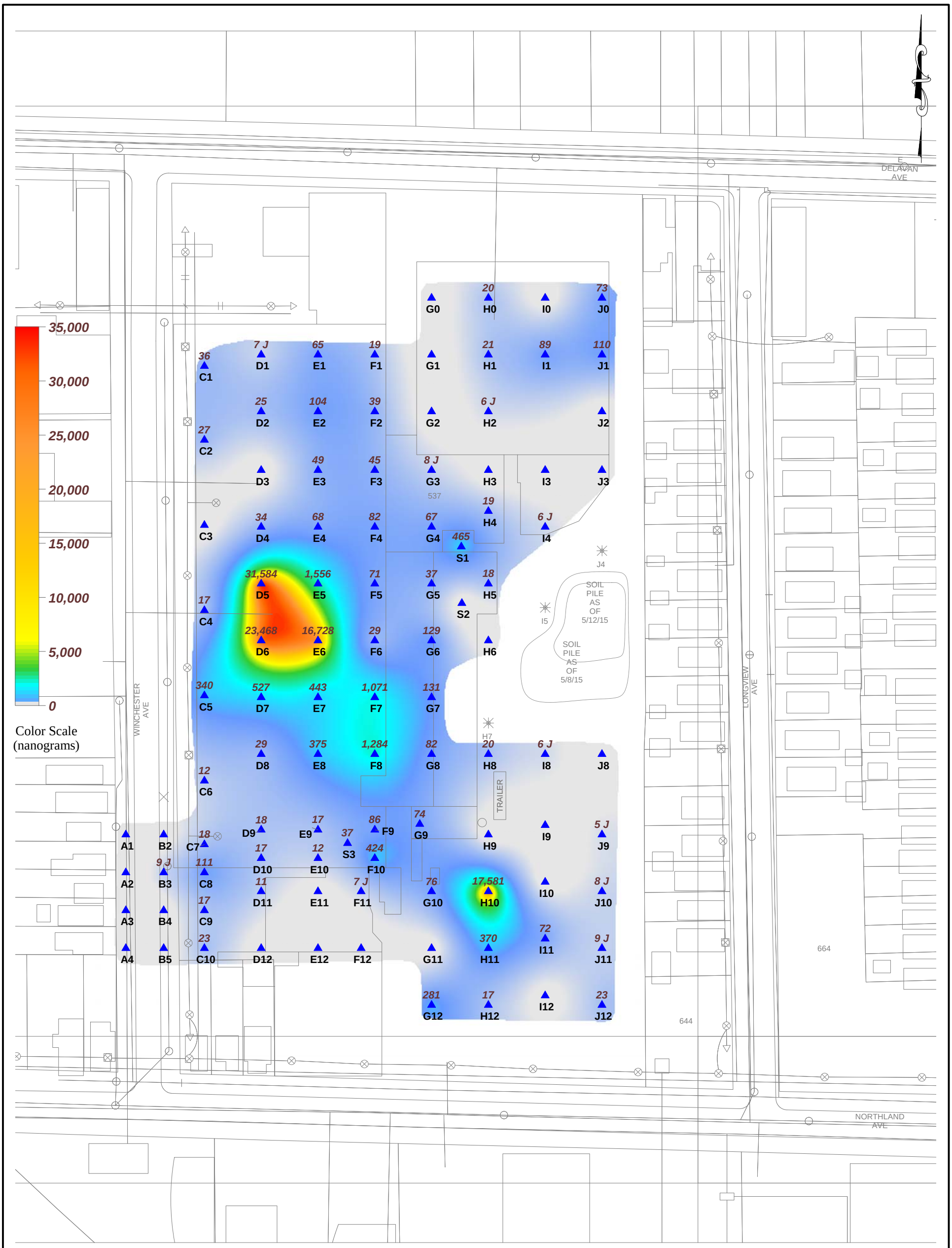
Beacon Project No. 2997, June 2015

**Figure 1**
**Passive Soil-Gas Survey**
**Sample Locations**

**537 East Delavan Avenue**
**Buffalo, NY**




## LEGEND

*8 J* NANOGRAMS/SAMPLER (J = Estimated Value)

▲ A4 PASSIVE SOIL-GAS SAMPLE LOCATION

Scale in Feet

0 100 200

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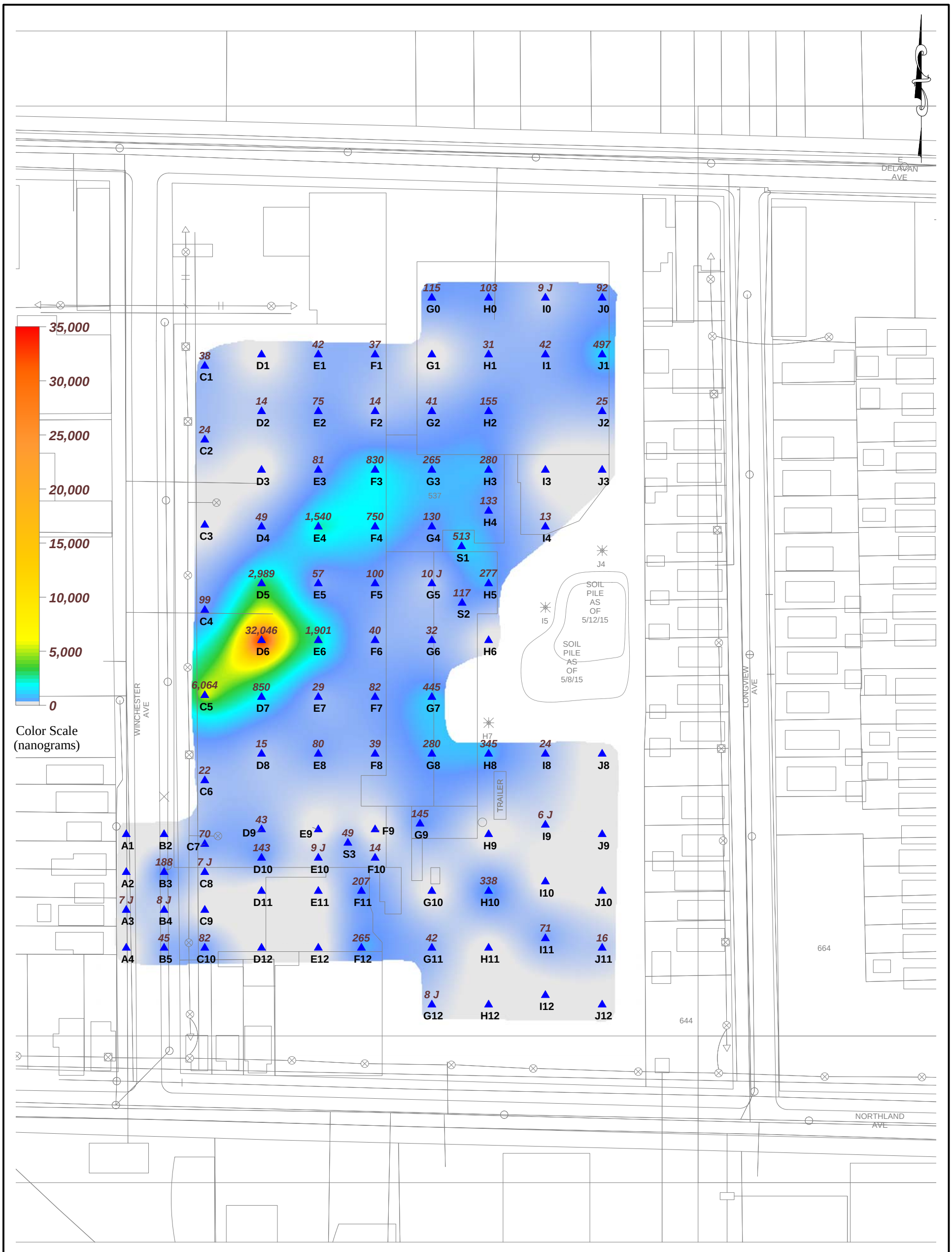
Beacon Project No. 2997, June 2015

**Figure 2**
**Passive Soil-Gas Survey**
**Vinyl Chloride**

**537 East Delavan Avenue**
**Buffalo, NY**




## LEGEND

**8 J** NANOGRAMS/SAMPLER (J = Estimated Value)

**A4** PASSIVE SOIL-GAS SAMPLE LOCATION

Scale in Feet

0 100 200

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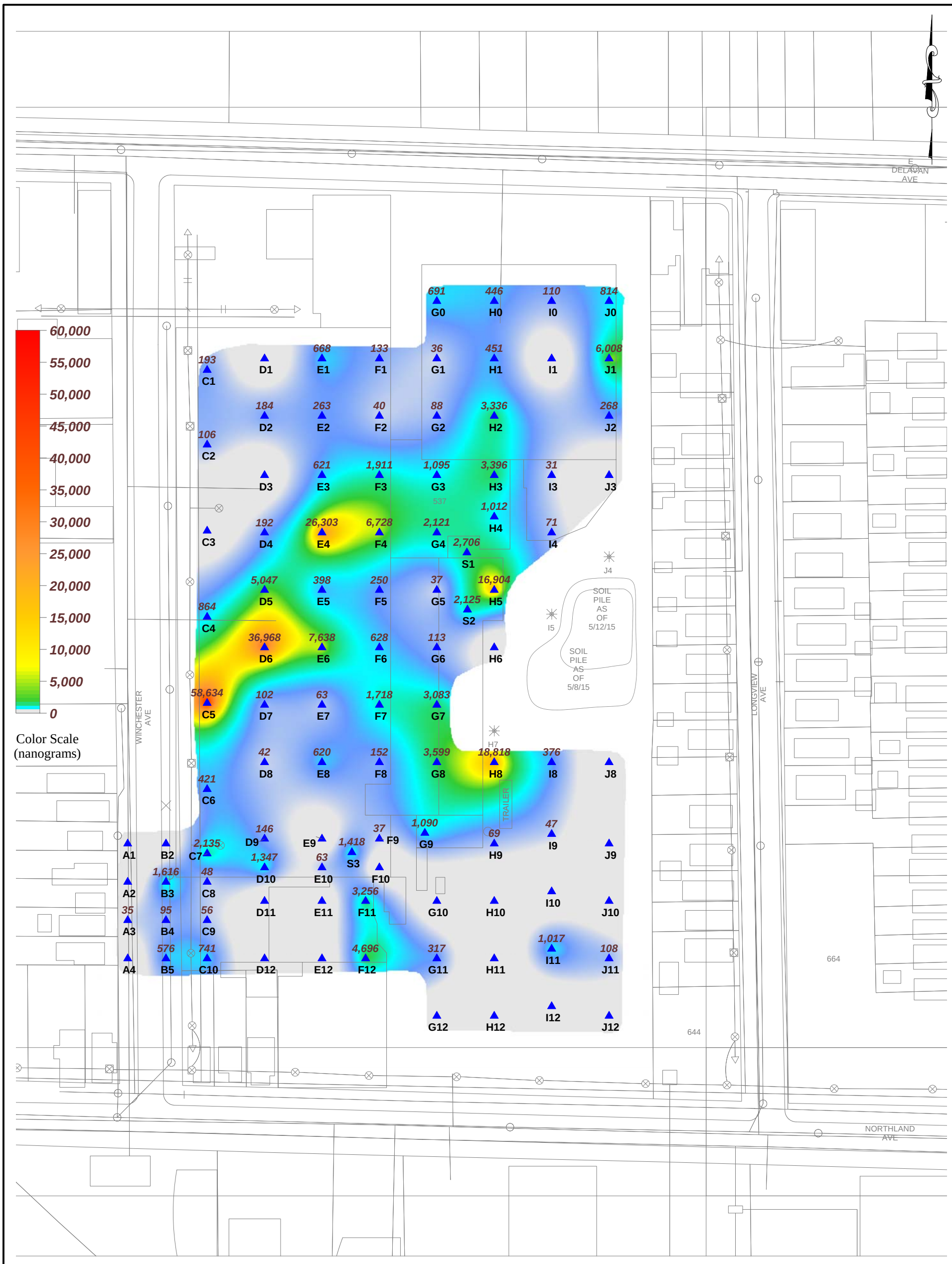
**Figure 3**
**Passive Soil-Gas Survey**
**1,1-Dichloroethene**

**537 East Delavan Avenue**
**Buffalo, NY**




## LEGEND

*1,000* NANOGRAMS/SAMPLER

▲ A4 PASSIVE SOIL-GAS SAMPLE LOCATION

Scale in Feet

0 100 200

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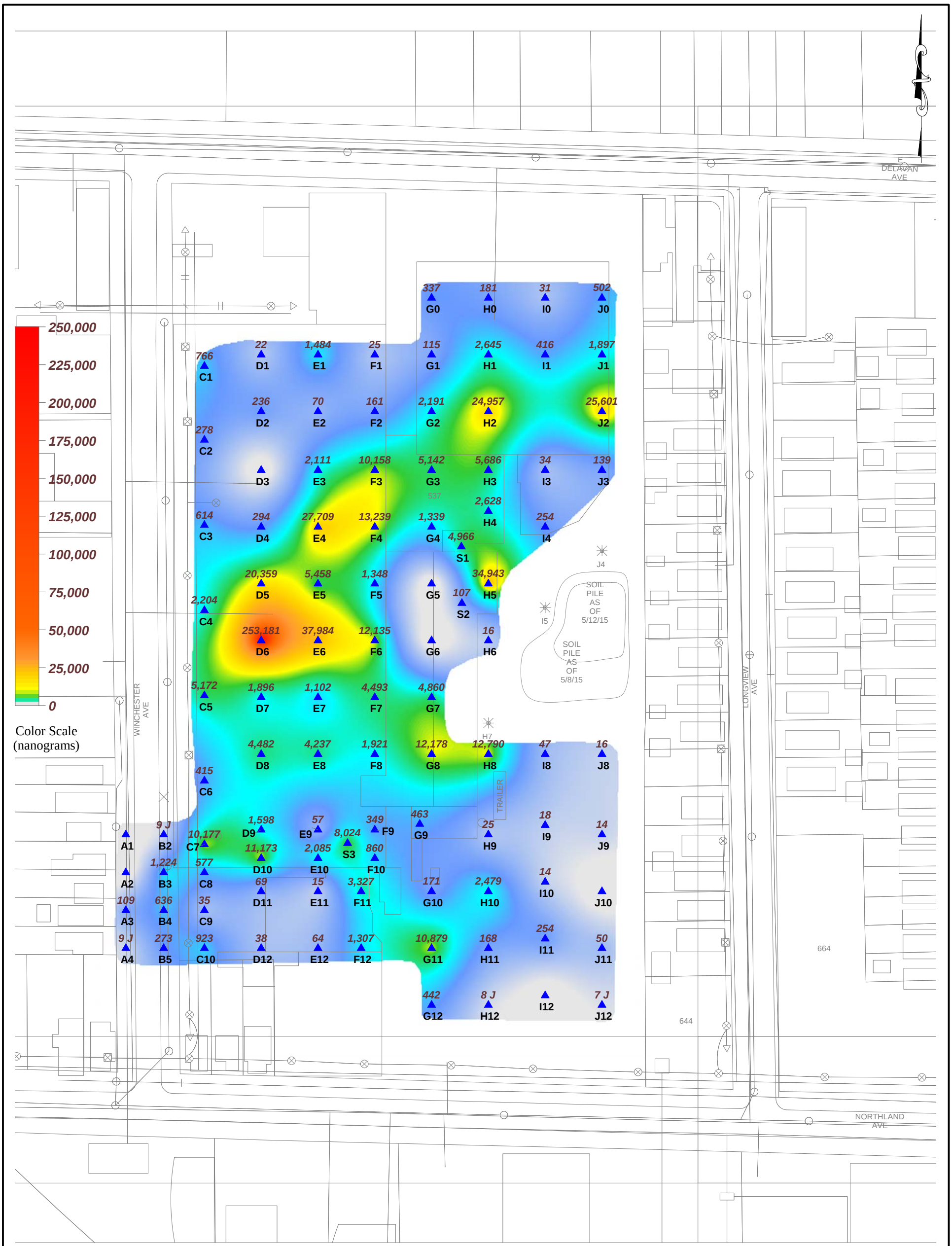
**Figure 4**
**Passive Soil-Gas Survey**
**1,1,1-Trichloroethane**

**537 East Delavan Avenue**
**Buffalo, NY**




## LEGEND

**8 J** NANOGRAMS/SAMPLER (J = Estimated Value)

▲ **A4** PASSIVE SOIL-GAS SAMPLE LOCATION

Scale in Feet

0 100 200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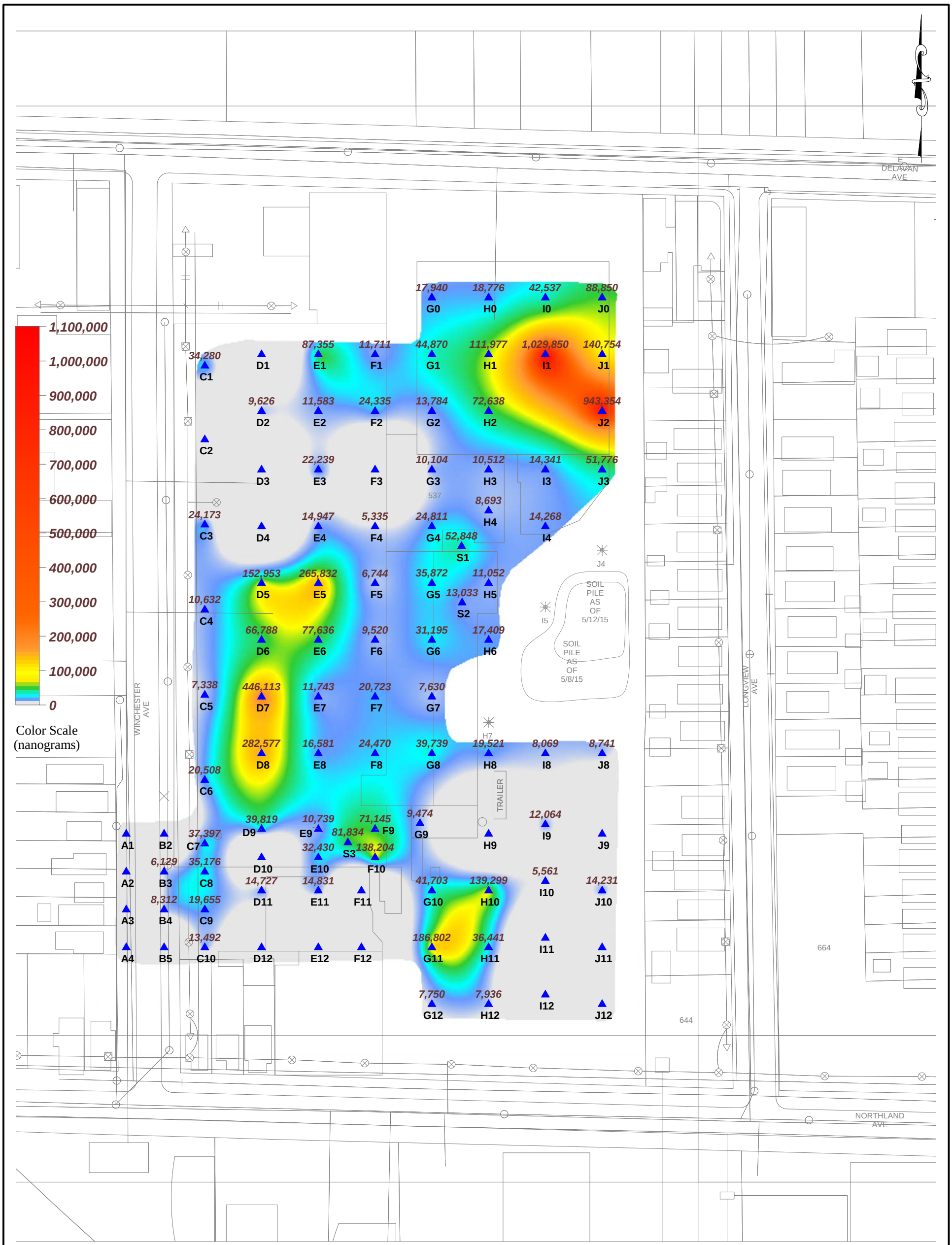
Beacon Project No. 2997, June 2015


**Figure 5**
**Passive Soil-Gas Survey**
**Trichloroethene**

**537 East Delavan Avenue**
**Buffalo, NY**




## LEGEND

1,000 NANOGRAMS/SAMPLER

▲ A4 PASSIVE SOIL-GAS SAMPLE LOCATION

Scale in Feet

0 100 200

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**Figure 6**
**Passive Soil-Gas Survey**
**TPH C10-C15**

**537 East Delavan Avenue**
**Buffalo, NY**

## Attachments

**Attachment 1**

## APPLYING RESULTS FROM PASSIVE SOIL-GAS SURVEYS

The utility of soil-gas surveys is directly proportional to their accuracy in reflecting and representing changes in the subsurface concentrations of source compounds. Passive soil-gas survey results are the mass collected from the vapor-phase emanating from the source(s). The vapor-phase is merely a fractional trace of the source(s) and, as a matter of convenience, the units used in reporting detection values from passive soil-gas surveys are smaller than those employed for source-compound concentrations.

Passive soil gas data are reported in mass of compounds identified per sample location (e.g., nanograms (ng) or micrograms (µg) per sampler). Results from a passive soil gas survey typically are then used to guide where follow-on intrusive samples should be collected to obtain corresponding concentrations of the contaminants in soil, soil gas, and/or groundwater, as well as eliminate those areas where intrusive samples are not required. It is not practical to report passive soil gas data as concentration because the sampler's uptake rates of the compounds are often greater than the replenishment rates of the compounds around the sampler, which results in low bias measurements, and the replenishment rates will be dependent on several factors that include, at a minimum, soil gas concentrations, soil porosity and permeability, and soil moisture level.

Whatever the relative concentrations of source and associated soil gas, best results are realized when the ratio of soil-gas measurements to actual subsurface concentrations remains as close to constant as the real world permits. It is the reliability and consistency of this ratio, not the particular units of mass (*e.g.*, nanograms) that determine usefulness. Thus, BEACON emphasizes the necessity of conducting — at minimum — follow-on intrusive sampling in areas that show relatively high soil-gas measurements to obtain corresponding concentrations of soil and groundwater contaminants. These correspondent values furnish the basis for approximating a relationship. For extrapolating passive soil gas results to vapor intrusion evaluations, we recommend a minimum of three passive soil gas locations be converted to a shallow vapor well then sampled using an active soil gas method. Once a relationship is established, it can be used in conjunction with the remaining soil-gas measurements to estimate subsurface contaminant concentrations across the survey field. (See www.beacon-usa.com/passivesoilgas.html, Publication 1: *Mass to Concentration Tie-In for PSG Surveys* and Publication 4: *Groundwater and PSG Correlation*.) It is important to keep in mind, however, that specific conditions at individual sample points, including soil porosity and permeability, depth to contamination, and perched ground water, can have an impact on soil-gas measurements at those locations.

When passive soil-gas surveys are utilized as described above, the data provide information that can yield substantial savings in drilling costs and in time. They furnish, among other things, a checklist of compounds expected at each survey location and help to determine how and where drilling budgets can most effectively be spent. Passive soil-gas surveys can also be used as a remediation or general site monitoring tool that can be implemented on a quarterly, semi-annual or annual basis.

**Attachment 2**

## FIELD PROCEDURES FOR PASSIVE SOIL-GAS SURVEYS

The following field procedures are routinely used during a BEACON Passive Soil-Gas Survey. Modifications can be and are incorporated from time to time in response to individual project requirements. In all instances, BEACON adheres to EPA-approved Quality Assurance and Quality Control practices.

A. Field personnel carry a BESURE Sample Collection Kit™ and support equipment to the site and deploy the passive samplers in a prearranged survey pattern. A passive sampler consists of a borosilicate glass vial containing hydrophobic adsorbent cartridges with a length of wire attached to the vial for retrieval. Although samplers require only one person for emplacement and retrieval, the specific number of field personnel required depends upon the scope and schedule of the project. Each Sampler emplacement generally takes less than two minutes.

B. At each survey point a field technician clears vegetation as needed and, using a hammer drill with a 1″- to 1½″-diameter bit, creates a hole 12 to 14 inches deep. [Note: For locations covered with asphalt, concrete, or gravel surfacing, the field technician drills a 1″- to 1½″-diameter hole through the surfacing to the soils beneath]. The technician then, using a hammer drill with a ½″ diameter bit, creates a hole three-feet deep. The hole is then sleeved with a 1″-diameter metal sleeve.

C. The technician then removes the solid plastic cap from a sampler and replaces it with a Sampling Cap (a plastic cap with a hole covered by screen meshing). The technician inserts the sampler, with the Sampling Cap end facing down, into the hole (**see attached figure**). The sampler is then covered with an aluminum foil plug and soils for uncapped locations or, for capped locations, an aluminum foil plug and a concrete patch. The sampler's location, time and date of emplacement, and other relevant information are recorded on the Field Deployment Form.

D. One or more trip blanks are included as part of the quality-control procedures.

E. Once all the samplers have been deployed, field personnel schedule sampler recovery and depart, taking all other equipment and materials with them.

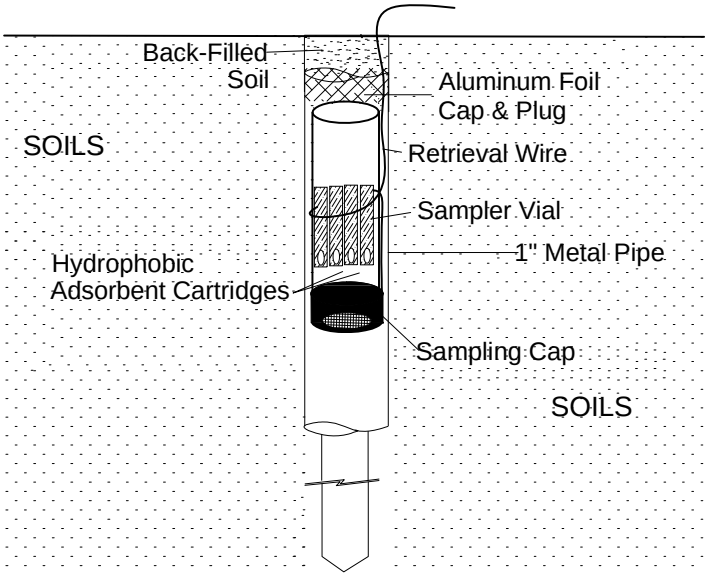
F. Field personnel retrieve the samplers at the end of the exposure period. At each location, a field technician withdraws the sampler from its hole, removes the retrieval wire, and wipes the outside of the vial clean using gauze cloth; following removal of the Sampling Cap, the threads of the vial are also cleaned. A solid plastic cap is screwed onto the vial and the sample location number is written on the label. The technician then records sample-point location, date, time, etc. on the Field Deployment Form.

G. Sampling holes are refilled with soil, sand, or other suitable material. If samplers have been installed through asphalt or concrete, the hole is filled to grade with a plug of cold patch or cement.

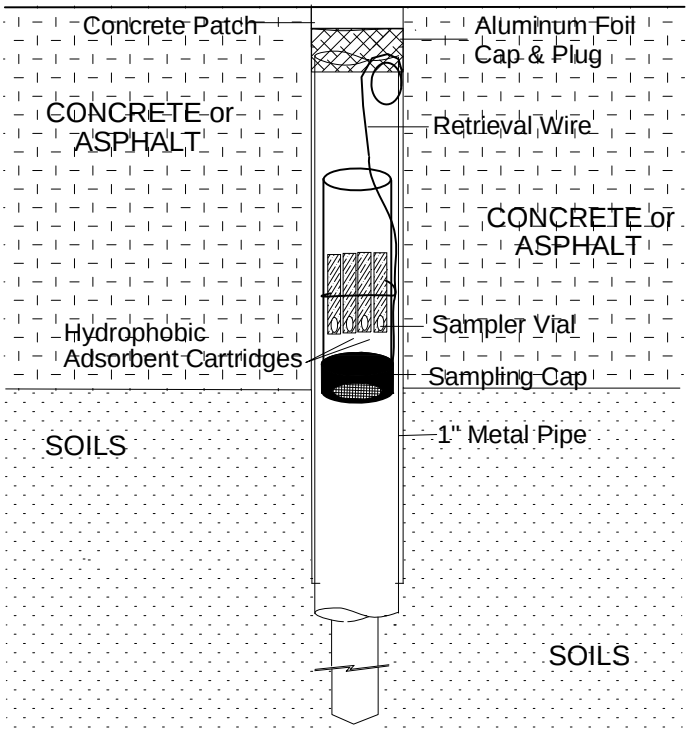
H. Following retrieval, field personnel ship or transport the passive samplers to BEACON's laboratory.

# BEACON'S PASSIVE SOIL-GAS SAMPLER

## DEPLOYMENT THROUGH SOILS




## DEPLOYMENT THROUGH AN ASPHALT/CONCRETE CAP



## Attachment 3

## Chain of Custody Form

BEACON ENVIRONMENTAL SERVICES, INC.

# CHAIN-OF-CUSTODY
## PASSIVE SOIL-GAS SAMPLES

2203A Commerce Road, Suite 1
Forest Hill, MD 21050 USA
P: 1-410-838-8780 | F: 1-410-838-8740

| Project Information | | Client Information | | |
|---|---|---|---|---|
| Beacon Project No.: | 2997 | Company Name: | L.R.C. ENGINEERS | Client PO No.: |
| Site Name: | 537 EAST DELEVAN AVE | Office Location: | BUFFALO NY | |
| Site Location: | BUFFALO NY | Samples Submitted By: | CRAIG TAYLOR | Expedited Turnaround Time |
| Analytical Method: | U.S. EPA Method 8260C | Contact Phone No.: | 716-882-5476 (239) | ☐ Rush (Specify): ___ days |
| Target Compounds: | | | | |

| Field Sample ID | Date Emplaced / Time Emplaced | Date Retrieved / Time Retrieved | Sampling Hole Depth (inches) | Type of Surface (Soil/Asphalt/ Concrete/Gravel) | Optional Sample Information (e.g., Description of Sample Location, Sample Condition, PID/FID Readings) |
|---|---|---|---|---|---|
| | 7 MAY 2015 / Time Emplaced | 21 MAY 2015 / Time Retrieved | | | |
| C1 | 10:15 | 8:25 | 36 | CONCRETE | LIKELY INTO BASEMENT |
| C2 | 10:21 | 8:30 | 34 | CONCRETE | |
| D1 | 10:25 | 8:31 | 36 | CONCRETE | |
| D2 | 10:28 | 8:32 | 36 | CONCRETE | |
| E1 | 10:31 | 8:51 | 36 | CONCRETE | |
| E2 | 10:32 | 8:50 | 36 | CONCRETE | |
| F1 | 10:36 | 8:53 | 36 | CONCRETE | |
| F2 | 10:39 | 8:54 | 36 | CONCRETE | |
| F3 | 10:41 | ~~8:58~~ 8:56 | 36 | CONCRETE | |
| F4 | 10:44 | 8:58 | 36 | CONCRETE | |
| F5 | 10:47 | 8:59 | 36 | CONCRETE | |
| F6 | 10:50 | 9:00 | 36 | CONCRETE | |
| F7 | 10:53 | ~~8:59~~ 9:01 | 36 | CONCRETE | |
| E7 | 10:56 | 8:44 | 36 | CONCRETE | |
| E6 | 10:58 | 8:45 | 36 | CONCRETE | |

**Special Notes/Instructions:**

**Shipment of Field Kit to Laboratory — Custody Seal #** 3850993 **Intact?** (Y) N

| Relinquished by: | Date/Time | Courier | Received by: | Date/Time |
|---|---|---|---|---|
| [signature] | 26 MAY 2015 10:20 AM | FED EX | Steven Thornley | 5.27.15 / 1120 |
| | | | | |

BEACON ENVIRONMENTAL SERVICES, INC.

# CHAIN-OF-CUSTODY
## PASSIVE SOIL-GAS SAMPLES

2203A Commerce Road, Suite 1
Forest Hill, MD 21050 USA
P: 1-410-838-8780 | F: 1-410-838-8740

| Project Information | | Client Information | | |
|---|---|---|---|---|
| Beacon Project No.: | 2997 | Company Name: | LiRo Engineers | Client PO No.: |
| Site Name: | 537 East Delevan Ave | Office Location: | Buffalo NY | |
| Site Location: | Buffalo NY | Samples Submitted By: | Craig Taylor | Expedited Turnaround Time |
| Analytical Method: | U.S. EPA Method 8260C | Contact Phone No.: | 716-882-5476 (239) | ☐ Rush (Specify): ___ days |
| Target Compounds: | | | | |

| Field Sample ID | Date Emplaced / Time Emplaced | Date Retrieved / Time Retrieved | Sampling Hole Depth (inches) | Type of Surface (Soil/Asphalt/ Concrete/Gravel) | Optional Sample Information (e.g., Description of Sample Location, Sample Condition, PID/FID Readings) |
|---|---|---|---|---|---|
| | 7 May 2015 / Time Emplaced | 21 May 2015 / Time Retrieved | | | |
| E5 | 11:01 | 8:47 | 36 | Concrete | |
| E4 | 11:04 | 8:48 | 36 | Concrete | |
| E3 | 11:06 | 8:49 | 36 | Concrete | |
| E8 | 11:44 | 8:43 | 36 | Concrete | |
| F8 | 11:47 | 9:02 | 36 | Concrete | |
| G8 | 11:50 | 9:05 | 36 | Concrete | |
| G7 | 11:52 | 9:06 | 36 | Concrete | |
| G6 | 11:55 | 9:07 | 36 | Concrete | |
| G5 | 11:58 | 9:09 | 36 | Concrete | |
| G4 | 12:01 | 9:10 | 36 | Concrete | |
| H5 | 12:07 | 10:26 | 36 | Concrete | |
| D4 | 12:10 | 8:34 | 36 | Concrete | |
| D5 | 12:14 | 8:36 | 36 | Concrete | |
| D6 | 12:18 | 8:37 | 36 | Concrete | |
| D7 | 12:22 | 8:38 | 36 | Concrete | |

**Special Notes/Instructions:**

**Shipment of Field Kit to Laboratory — Custody Seal #** 3850993 **Intact?** (Y) N

| Relinquished by: | Date/Time | Courier | Received by: | Date/Time |
|---|---|---|---|---|
| [signature] | 26 May 2015 10:20AM | Fedex | Steven Thomley | 5.27.15 / 1120 |
| | | | | |

BEACON ENVIRONMENTAL SERVICES, INC.

# CHAIN-OF-CUSTODY
## PASSIVE SOIL-GAS SAMPLES

2203A Commerce Road, Suite 1
Forest Hill, MD 21050 USA
P: 1-410-838-8780 | F: 1-410-838-8740

| Project Information | | Client Information | | |
|---|---|---|---|---|
| Beacon Project No.: | 2997 | Company Name: | LiRo Engineers | Client PO No.: |
| Site Name: | 537 Delevan Ave | Office Location: | Buffalo NY | |
| Site Location: | Buffalo NY | Samples Submitted By: | Craig Taylor | Expedited Turnaround Time |
| Analytical Method: | U.S. EPA Method 8260C | Contact Phone No.: | 716-882-5476 (239) | ☐ Rush (Specify): ___ days |
| Target Compounds: | | | | |

| Field Sample ID | Date Emplaced / Time Emplaced | Date Retrieved / Time Retrieved | Sampling Hole Depth (inches) | Type of Surface (Soil/Asphalt/ Concrete/Gravel) | Optional Sample Information (e.g., Description of Sample Location, Sample Condition, PID/FID Readings) |
|---|---|---|---|---|---|
| | 7 MAY 2015 | 21 MAY 2015 | | | |
| ~~D8~~ | 12:25 | 8:39 | 36 | Concrete | |
| D3 | 12:31 | 8:33 | 36 | Concrete | |
| G3 | 12:38 | 9:12 | 36 | Concrete | |
| H3 | 12:45 | 10:32 | 36 | Concrete | |
| H2 | 12:57 | 9:21 | 36 | Soil | |
| G2 | 12:59 | 9:13 | 36 | Soil | |
| G1 | 13:05 | 9:14 | 36 | Soil | |
| H1 | 13:12 | 9:19 | 36 | Soil | |
| HØ | 14:13 | 9:18 | 36 | Soil | |
| GØ | 14:21 | 9:15 | 36 | Soil | |
| IØ | 14:26 | 9:30 | 36 | Soil | |
| I1 | 14:29 | 9:29 | 36 | Soil | |
| J1 | 14:38 | 9:32 | 36 | Soil | |
| JØ | 14:48 | 9:32 | 36 | Soil | |
| J2 | 14:55 | 9:33 | 36 | Soil | |

**Special Notes/Instructions:**

**Shipment of Field Kit to Laboratory — Custody Seal #** 3850993 **Intact?** (Y) N

| Relinquished by: | Date/Time | Courier | Received by: | Date/Time |
|---|---|---|---|---|
| [signature] | 26 MAY 2015 10:20AM | Fedex | Steven Thomas | 5.27.15 / 1120 |
| | | | | |

BEACON ENVIRONMENTAL SERVICES, INC.

# CHAIN-OF-CUSTODY
## PASSIVE SOIL-GAS SAMPLES

2203A Commerce Road, Suite 1
Forest Hill, MD 21050 USA
P: 1-410-838-8780 | F: 1-410-838-8740

| Project Information | | Client Information | | |
|---|---|---|---|---|
| Beacon Project No.: | 2997 | Company Name: | LiRO Engineers | Client PO No.: |
| Site Name: | 537 Delevan Ave | Office Location: | Buffalo NY | |
| Site Location: | Buffalo NY | Samples Submitted By: | Craig Taylor | Expedited Turnaround Time |
| Analytical Method: | U.S. EPA Method 8260C | Contact Phone No.: | 716-882-5476 (239) | ☐ Rush (Specify): ___ days |
| Target Compounds: | | | | |

| Field Sample ID | Date Emplaced / Time Emplaced | Date Retrieved / Time Retrieved | Sampling Hole Depth (inches) | Type of Surface (Soil/Asphalt/ Concrete/Gravel) | Optional Sample Information (e.g., Description of Sample Location, Sample Condition, PID/FID Readings) |
|---|---|---|---|---|---|
| | 7 May 2015 | 21 May 2015 | | | |
| J3 | 15:05 | 9:34 | 36 | Conc / Asphalt | |
| I3 | 15:15 | 9:49 | 36 | Asphalt | |
| I4 | 15:19 | 9:51 | 36 | Asphalt | |
| H6 | 15:44 | 9:53 | 36 | Asphalt | |
| H8 | 15:48 | 9:55 | 36 | Asphalt | |
| I8 | 15:54 | 10:07 | 36 | Asphalt | |
| | | | | | |
| Trip 1 | | | | | |
| Trip 2 | | | | | |
| Trip 3 | | | | | |
| Trip 4 | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

**Special Notes/Instructions:**

**Shipment of Field Kit to Laboratory — Custody Seal #** 3850993 **Intact?** (Y) N

| Relinquished by: | Date/Time | Courier | Received by: | Date/Time |
|---|---|---|---|---|
| [signature] | 26 May 2015 10:20am | Fedex | Steven Thornly | 5.27.15 / 1120 |
| | | | | |

BEACON ENVIRONMENTAL SERVICES, INC.

# CHAIN-OF-CUSTODY
## PASSIVE SOIL-GAS SAMPLES

2203A Commerce Road, Suite 1
Forest Hill, MD 21050 USA
P: 1-410-838-8780 | F: 1-410-838-8740

| Project Information | | Client Information | | |
|---|---|---|---|---|
| Beacon Project No.: | 2997 | Company Name: | LiRo Engineers | Client PO No.: |
| Site Name: | 537 Delevan Ave | Office Location: | Buffalo NY | |
| Site Location: | Buffalo NY | Samples Submitted By: | Craig Taylor | Expedited Turnaround Time |
| Analytical Method: | U.S. EPA Method 8260C | Contact Phone No.: | 716 882 5476 (239) | ☐ Rush (Specify): ___ days |
| Target Compounds: | | | | |

| Field Sample ID | Date Emplaced / Time Emplaced | Date Retrieved / Time Retrieved | Sampling Hole Depth (inches) | Type of Surface (Soil/Asphalt/ Concrete/Gravel) | Optional Sample Information (e.g., Description of Sample Location, Sample Condition, PID/FID Readings) |
|---|---|---|---|---|---|
| | 8 May 2015 | 21 May 2015 | | | |
| H9 | 8:33 | 9:57 | 36 | Soil | |
| I9 | 8:36 | 10:05 | 36 | Asphalt | |
| I10 | 8:39 | 10:04 | 36 | Asphalt | |
| H10 | 8:43 | 9:58 | 36 | Asphalt | |
| H11 | 8:48 | 9:59 | 36 | Asphalt | |
| H12 | ~~10~~ 8:53 | 10:00 | 36 | Asphalt | Fluid in Vial (will not drain thru marsh) |
| I12 | 8:58 | 10:01 | 36 | Asphalt | |
| J12 | 9:04 | 10:13 | 36 | Asphalt | |
| J11 | 9:09 | 10:12 | 36 | Asphalt | |
| J10 | 9:15 | 10:12 | 36 | Asphalt | |
| J9 | 9:20 | 10:11 | 36 | Asphalt | Stain on Asphalt near sampler |
| J8 | 9:25 | 10:09 | 36 | Asphalt | |
| G10 | 9:33 | 9:05 | 36 | Concrete | |
| G11 | 9:47 | 10:18 | 36 | Asphalt | |
| G12 | 9:49 | 10:16 | 36 | Asphalt | |

**Special Notes/Instructions:**

**Shipment of Field Kit to Laboratory — Custody Seal #** 3850993 **Intact?** (Y) N

| Relinquished by: | Date/Time | Courier | Received by: | Date/Time |
|---|---|---|---|---|
| [signature] | 26 May 2015 10:20am | Fedex | Steven Thornley | 5.27.15 / 1120 |
| | | | | |

BEACON ENVIRONMENTAL SERVICES, INC.

# CHAIN-OF-CUSTODY
## PASSIVE SOIL-GAS SAMPLES

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P: 1-410-838-8780 | F: 1-410-838-8740

| Project Information | | Client Information | | | |
|---|---|---|---|---|---|
| Beacon Project No.: | 2997 | Company Name: | LiRo Engineers | Client PO No.: | |
| Site Name: | 537 Delevan Ave | Office Location: | Buffalo NY | | |
| Site Location: | Buffalo NY | Samples Submitted By: | Craig Taylor | Expedited Turnaround Time | |
| Analytical Method: | U.S. EPA Method 8260C | Contact Phone No.: | 716 882 5476 (239) | ☐ Rush (Specify): ___ days | |
| Target Compounds: | | | | | |

| Field Sample ID | Date Emplaced / Time Emplaced | Date Retrieved / Time Retrieved | Sampling Hole Depth (inches) | Type of Surface (Soil/Asphalt/ Concrete/Gravel) | Optional Sample Information (e.g., Description of Sample Location, Sample Condition, PID/FID Readings) |
|---|---|---|---|---|---|
| | 8 May 2015 | 21 May 2015 | | | |
| G9 | 9:58 | 10:21 | 36 | Concrete | |
| D11 | 10:26 | 10:56 | 36 | Asphalt | |
| C10 | 10:30 | 10:55 | 36 | Asphalt | |
| C9 | 10:34 | 10:53 | 36 | Asphalt | |
| E11 | 11:02 | 11:00 | 36 | Concrete | |
| E12 | 11:06 | 11:02 | 36 | Concrete | |
| D12 | 11:12 | 10:56 | 36 | Asphalt | |
| F12 | 11:22 | 11:04 | 36 | Concrete | |
| F11 | 11:27 | 11:05 | 36 | Concrete | |
| C8 | 11:48 | 10:52 | 36 | Concrete | |
| D9 | 11:58 | 10:44 | 36 | Concrete | |
| D10 | 12:00 | 10:45 | 36 | Concrete | |
| E9 | 12:05 | 10:48 | 36 | Concrete | Wet |
| E10 | 12:09 | 10:46 | 36 | Concrete | |
| F10 | 12:18 | 10:49 | 36 | Concrete | |

**Special Notes/Instructions:**

**Shipment of Field Kit to Laboratory — Custody Seal #** 3850993 **Intact?** (Y) N

| Relinquished by: | Date/Time | Courier | Received by: | Date/Time |
|---|---|---|---|---|
| [signature] | 26 May 2015 10:20 AM | Fedex | Steven Thornley | 5.27.15 / 1120 |
| | | | | |

BEACON ENVIRONMENTAL SERVICES, INC.

# CHAIN-OF-CUSTODY
## PASSIVE SOIL-GAS SAMPLES

2203A Commerce Road, Suite 1
Forest Hill, MD 21050 USA
P: 1-410-838-8780 | F: 1-410-838-8740

| Project Information | | Client Information | | |
|---|---|---|---|---|
| Beacon Project No.: | 2997 | Company Name: | LiRo Engineers | Client PO No.: |
| Site Name: | 537 Delevan Ave | Office Location: | Buffalo NY | |
| Site Location: | Buffalo NY | Samples Submitted By: | Craig Taylor | Expedited Turnaround Time |
| Analytical Method: | U.S. EPA Method 8260C | Contact Phone No.: | 716 882 5476 (239) | ☐ Rush (Specify): ___ days |
| Target Compounds: | | | | |

| Field Sample ID | Date Emplaced / Time Emplaced | Date Retrieved / Time Retrieved | Sampling Hole Depth (inches) | Type of Surface (Soil/Asphalt/ Concrete/Gravel) | Optional Sample Information (e.g., Description of Sample Location, Sample Condition, PID/FID Readings) |
|---|---|---|---|---|---|
| | 8 May 2015 | 21 May 2015 | | | |
| F9 | 12:29 | 10:50 | 36 | Concrete | |
| C7 | 14:20 | 10:36 | 36 | Concrete | |
| C6 | 14:25 | 10:37 | 36 | Concrete | |
| C5 | 14:29 | 10:38 | 36 | Concrete | |
| C4 | 14:34 | 10:40 | 36 | Concrete | |
| C3 | 14:39 | 10:42 | 36 | Concrete | |
| I11 | 14:58 | 10:03 | 36 | Asphalt | |
| H4 | 15:32 | 10:30 | 36 | Concrete | |
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**Special Notes/Instructions:**

**Shipment of Field Kit to Laboratory — Custody Seal #** 3850993 **Intact?** (Y) N

| Relinquished by: | Date/Time | Courier | Received by: | Date/Time |
|---|---|---|---|---|
| [signature] | 26 May 2015 10:20AM | Fedex | Steven Thomley | 5.27.15 / 1120 |
| | | | | |

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# CHAIN-OF-CUSTODY
## PASSIVE SOIL-GAS SAMPLES

| Project Information | | Client Information | | |
|---|---|---|---|---|
| Beacon Project No.: | 2997 | Company Name: | L.R.O. ENGINEERS | Client PO No.: |
| Site Name: | 537 DELAWAN AVE | Office Location: | BUFFALO NY | |
| Site Location: | BUFFALO NY | Samples Submitted By: | CRAIG TAYLOR | Expedited Turnaround Time |
| Analytical Method: | U.S. EPA Method 8260C | Contact Phone No.: | 716 852 5476 (239) | ☐ Rush (Specify): ____ days |
| Target Compounds: | | | | |

| Field Sample ID | Date Emplaced / Time Emplaced | Date Retrieved / Time Retrieved | Sampling Hole Depth (inches) | Type of Surface (Soil/Asphalt/ Concrete/Gravel) | Optional Sample Information (e.g., Description of Sample Location, Sample Condition, PID/FID Readings) |
|---|---|---|---|---|---|
| | 12 MAY 2015 | 21 MAY 2015 | | | |
| B5 | 9:23 | 11:15 | 36 | CONCRETE | |
| B4 | 9:27 | 11:16 | 36 | CONCRETE | |
| B3 | 9:31 | 11:19 | 36 | CONCRETE | |
| B2 | 9:34 | 11:20 | 36 | SOIL | |
| A1 | 9:41 | 11:30 | 36 | SOIL | |
| A2 | 9:44 | 11:31 | 36 | SOIL | |
| A3 | 9:47 | 11:32 | 36 | SOIL | |
| A4 | 9:51 | 11:33 | 36 | SOIL | |
| S1 | 15:20 | 10:22 | 36 | CONCRETE | |
| S2 | 15:24 | 10:24 | 36 | CONCRETE | |
| S3 | 15:30 | 11:10 | 36 | CONCRETE | |
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**Special Notes/Instructions:**

**Shipment of Field Kit to Laboratory — Custody Seal #** 3850993 **Intact?** (Y) N

| Relinquished by: | Date/Time | Courier | Received by: | Date/Time |
|---|---|---|---|---|
| [signature] | 26 MAY 2015 10:20AM | Fedex | Steven Thomley | 5.27.15 / 1120 |
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## Attachment 4

## LABORATORY PROCEDURES FOR PASSIVE SOIL-GAS SAMPLES

Following are laboratory procedures used with BEACON Passive Soil-Gas Surveys, a screening technology for expedited site investigation. After exposure, adsorbent cartridges from the passive samplers are analyzed using U.S. EPA Method 8260C as a guidance document, a capillary gas chromatographic/mass spectrometric method, modified to accommodate high temperature thermal desorption of the adsorbent cartridges and to meet the objectives of reporting semi-quantitative data. This procedure is summarized as follows:

A. The adsorbent cartridges are loaded with internal standards and surrogates prior to loading the autosampler with the cartridges. The loaded cartridges are purged in a helium flow. Then the cartridges are thermally desorbed in a helium flow onto a focusing trap. Any analytes in the helium stream are adsorbed onto a focusing trap.

B. Following trap focusing, the trap is thermally desorbed onto a Rxi-624Sil MS 20m, 0.18 mm ID, 1.00 micron filament thickness capillary column.

C. The GC/MS is scanned between 35 and 270 Atomic Mass Units (AMU) at 3.12 scans per second.

D. BFB tuning criteria and the initial five-point calibration procedures are those stated in method SW846-8260C. System performance and calibration check criteria are met prior to analysis of samples. A laboratory method blank is analyzed after the daily standard to determine that the system is contaminant-free.

E. The instrumentation used for these analyses includes:

- Agilent 6890-5973a Gas Chromatograph/Mass Spectrometer;
- Markes Unity thermal desorber;
- Markes UltrA autosampler; and
- Markes Mass Flow Controller Modules

- Agilent 7890-5975c Gas Chromatograph/Mass Spectrometer;
- Markes Unity2 thermal desorber;
- Markes UltrA2 autosampler; and
- Markes Mass Flow Controller Modules.

- Agilent 7890-5975c Gas Chromatograph/Mass Spectrometer; and
- Markes TD100 thermal desorption system.