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April 15, 2014

Mr. Joseph Kelly
Project Manager
USEPA, Region 5
77 West Jackson Boulevard
LU-9J
Chicago, IL 60604-3590

Subject: **RCRA 3008(h) Administrative Order on Consent (RCRA-05-2010-0012) – Tecumseh Products Company**
First Quarter 2014 Progress Report – MID 005-049-440

Dear Mr. Kelly:

Pursuant to Section VI of the above referenced Administrative Order on Consent (Consent Order) effective March 29, 2010, TRC Environmental Corporation (TRC), on behalf of the Respondent Tecumseh Products Company (TPC), submits this First Quarter 2014 Progress Report. This report describes activities related to the Consent Order completed by TPC during the first quarter 2014 and planned for completion in the near future. The organization of this document includes, as major headings, the items required under Sections V through VIII of the Consent Order.

V. Project Manager

- The TPC Project Manager is Graham Crockford of TRC.
- The USEPA Project Manager is Joseph Kelly.

VI. Work to be Performed – Remedial Investigation Report and Environmental Indicators Reports

1. A description of activities related to the completion of the Remedial Investigation (RI) Report and the Environmental Indicator (EI) Reports:
   - **Investigation Activities**
     - **Characterize Releases at or from the Facility –** The findings of source area investigation activities completed through August 2012 are documented in the September 2012

Remedial Investigation and Groundwater Environmental Indicator Report (2012 RI/EI Report). A Supplemental Groundwater Investigation Workplan was submitted and implemented during the first quarter 2013. A technical memorandum documenting the findings of those investigation activities was submitted as an attachment to the Second Quarter 2013 Progress Report. A passive soil gas survey was completed through the central and southern portion of the former TPC building during the third quarter 2013 to support development of a corrective measures proposal and mitigation system design; a Technical Memorandum which summaries the findings of the 2013 passive soil gas survey is included as Appendix A.

– **Define Appropriate Screening Criteria –** Screening criteria are described in detail in the 2012 RI/EI Report and the 2013 Supplement to the Current Human Exposures Under Control Environmental Indicator Report. Screening criteria include:

  - Generic Michigan Department of Environmental Quality (MDEQ) Part 201 Cleanup Criteria;
  - MDEQ Screening levels for the volatilization to indoor air migration pathway, as documented in the 2013 MDEQ *Guidance Document for the Vapor Intrusion Pathway*;
  - MDEQ Rule 57 Surface Water Quality Values; and
  - A site-specific groundwater contact criterion for trichloroethene (TCE) which reflects the 2011 revisions to TCE toxicity data.

– **Define Any Unacceptable Risks to Human Health –** As described in the 2011 Current Human Exposures Under Control Environmental Indicator Report (2011 EI Report), current human exposures to affected media are under control. In September 2013 the Supplement to the Current Human Exposures Under Control Environmental Indicator Report (2013 HE EI) was prepared and submitted to address USEPA comments (provided between December 2011 and October 2012) and to provide additional data and documentation verifying the 2011 EI Report. USEPA provided comments on the 2013 HE EI on January 31, 2014. TPC is in the process of evaluating those comments.

– **Define Any Unacceptable Risks to the Environment –** The potential for unacceptable risk to the environment related to the discharge of affected groundwater to nearby surface water and wetlands was evaluated in the 2012 RI/EI Report. This evaluation includes the use of site-specific mixing zone-based GSI criteria. Data collected to date do not indicate an unacceptable risk to the environment. This evaluation may be updated, as appropriate, prior to submittal of the Supplement to the Groundwater Stabilized Environmental Indicator Report due in July 2015.

- **Determine the Stability of Contaminated Groundwater –** An evaluation of the stability of contaminated groundwater was included in the 2012 RI/EI Report. As additional groundwater data become available, groundwater stability will be reviewed as appropriate. A Supplement to the Groundwater Stabilized Environmental Indicator Report will be provided by the agreed July 2015 due date.

- **Response and Mitigation Measures –** Response and mitigation measures conducted through 2013 are documented in the 2011 EI Report, the 2012 RI/EI Report and the 2013 Supplement to the Current Human Exposures Under Control Environmental Indicator Report. These measures include:
  - A local groundwater use ordinance;
  - The decommissioning of private wells in the vicinity of affected groundwater;
  - A Declaration of Restrictive Covenant and License Agreement Regarding Environmental Work for the site;
  - Mitigation of on-site indoor air in areas that are occupied or are expected to be occupied in the future, including:
    - Installation of a sub-slab depressurization/ventilation (SSDV) system in S-Building (the office area for the site manager); and
    - Installation of a soil vapor extraction (SVE) system in P-Building. (A technical memorandum describing the operation, maintenance, and performance of the P-Building SVE system through 2013 is included as Appendix B).
  - Monitoring and mitigation of off-site indoor air including:
    - Installation of a SSDV system at one residential property east of the site;
    - Completion of crawlspace sampling activities at four residential properties east of the site;
    - Installation of a permeable reactive barrier (PRB) downgradient of the southern source area, to address the potential off-site vapor intrusion pathway, by treating shallow CVOC-affected groundwater before the groundwater migrates off-site; and
    - Installation of a perimeter SVE system as described in the November 2013 Workplan to Install a Perimeter Soil Vapor Extraction System.[1]

[1] Operation of the perimeter SVE system began on March 7, 2014, using a rental SVE blower unit. The permanent blower enclosure is under construction. A construction documentation report for the perimeter SVE system will be completed following installation of the permanent blower enclosure.

- **Reporting and Summary of Work Completed**
  - **Environmental Indicators Report: Current Human Exposures under Control –** TRC submitted the Current Human Exposures Under Control Environmental Indicators Report (2011 EI Report) to USEPA on September 29, 2011. USEPA provided TPC with comments regarding the 2011 EI Report on December 5, 2011. TPC responded to USEPA comments on December 19, 2011. On December 28, 2011, USEPA proposed an extension for USEPA to complete the CA-725 Form until December 12, 2012, so that confirmation indoor air/crawlspace sampling data from the residential properties east of the site (610 Mohawk, 704 Mohawk, 502 Mohawk, 505 South Maumee Street and 507 South Maumee Street) could be evaluated by USEPA. This work was completed as intended during the fourth quarter 2012. However during an October 29-30, 2012 project meeting, USEPA requested additional work, which TPC set forth in a Technical Memorandum dated December 5, 2012 and Revised December 19, 2012. Those action items included:
    - Table summaries related to the conceptual site model (included in the Fourth Quarter 2012 Quarterly Progress Report); and
    - Four consecutive soil gas sample events at soil gas monitoring locations north and west of the site after SVE system installation (through second quarter 2013), in order to further document the effectiveness of the SVE system.

    On March 6, 2013, USEPA extended the date for the Current Human Exposures Demonstration to September 30, 2013 to allow TPC to complete the above described work. Consistent with this extension, the Supplement to the Current Human Exposures EI Report was submitted to USEPA on September 30, 2013 (2013 HE EI). USEPA provided comments on the 2013 HE EI on January 31, 2014. TPC is in the process of evaluating those comments.
  - **Environmental Indicators Report: Groundwater Stabilized –** TRC submitted the 2012 RI/EI Report to USEPA on September 28, 2012. During the October 29-30, 2012 project meeting, USEPA requested the following:
    - Additional sample events at monitoring wells where VOC concentration data exhibit relatively high standard deviation.
    - Preparation of a workplan to address USEPA comments regarding groundwater stability and remedial investigation activities. The Supplemental Groundwater Investigation Workplan for the Former Tecumseh Products Company Site in Tecumseh, Michigan was submitted and implemented during the first quarter 2013.

- Installation of additional monitoring wells and subsequent monitoring at those locations in accordance with the Supplemental Groundwater Investigation Workplan.

On March 6, 2013, USEPA extended the date for the Remedial Investigation and Groundwater Environmental Indicator Determination to July 31, 2015. This extension will allow TPC to complete eight quarterly sample events at new monitoring locations prior to the submittal of a Supplement to the 2012 RI/EI Report.

– **Remedial Investigation Report –** TRC submitted the Remedial Investigation Report with the 2012 RI/EI Report to USEPA on September 28, 2012. As described above, USEPA extended the date for the Remedial Investigation and Groundwater Environmental Indicator Determination to July 31, 2015. TPC will provide USEPA with a Supplement to the 2012 RI/EI Report following completion of the additional investigation and monitoring activities described in the Supplemental Groundwater Investigation Workplan.

2. A Summary of Activities during the Reporting Period

- January 2014 – A technical memorandum documenting the fourth quarter 2013 groundwater and surface water monitoring event was prepared and submitted.
- January 2014 – Vacuum pressure and methane concentrations were measured at all PRB vent locations. The two downgradient soil gas sample points (SG-02 and SG-03) could not be monitored due to heavy snow and ice cover.
- January 2014 – Regular operation and maintenance of the P-Building SVE system was completed including field measurement of TCE concentrations to determine the appropriate timeline for carbon change out.
- January-February 2014 – Operation and maintenance of the SSDV at 704 Mohawk including system repairs following blockage of the exhaust stack by ice and snow.
- February 2014 – Vacuum pressure and methane concentrations were measured at all PRB vent locations. The two downgradient soil gas sample points (SG-02 and SG-03) could not be monitored due to heavy snow and ice cover.
- On March 3, 2014 – The DRAFT Preliminary Scope of Work to Address the USEPA Comment Letter Dated January 31, 2014 Regarding the Human Exposure Environmental Indicator Report was prepared and submitted to USEPA for review and comment.
- March 2014 – Operation and maintenance of the perimeter SVE system including installation of the carbon treatment system, installation of a temporary rental blower unit, system start-up, weekly maintenance of the rental blower, and collection of exhaust samples for VOCs analysis.

- March 2014 – Regular operation and maintenance of the P-Building SVE system was completed including flow and pressure measurements at each extraction well, field measurement of TCE concentrations to determine the appropriate timeline for carbon change out, variable frequency drive adjustment (from 84-percent to 100-percent), and collection of exhaust samples for VOCs analysis.
- March 2014 – Vacuum pressure and methane concentrations were measured at all PRB vent locations and two downgradient soil gas sample points (SG-02 and SG-03).
- March 2014 – The first quarter 2014 off-site soil gas sample event was substantially completed. A resample event has been scheduled for April 2014 for the three locations which could not be accessed due to heavy snow cover throughout the first quarter 2014 at those locations. Analytical data are pending.
- March 2014 – The first quarter groundwater sample event was completed, including collection of samples at locations which could not be sampled during the fourth quarter 2013 due to site access issues. Analytical data are pending.
- On March 27, 2014 – The Scope of Work to Accommodate the USEPA Comment Letter Dated January 31, 2014 Regarding the Human Exposure Environmental Indicator Report was prepared and submitted to USEPA. This document reflected feedback from USEPA provided on March 11, 2013 to the DRAFT Scope of Work.

3. A Summary of Contacts with Representatives of Local Community, Public Interest Groups, or State Government during the Reporting Period

- At the request of one property owner, TRC provided that owner with a copy of the Fourth Quarter 2013 Progress Report.
- TRC communicated with the Tecumseh District Library personnel in order to update the public repository at the Tecumseh District Library in January 2014.
- TRC communicated with the owner of a residential property east of the site regarding the operation and maintenance of the SSDV system.
- In March 2014, TRC communicated with the City of Tecumseh and the site owner's demolition contractor regarding the proposed addition of P-Building to the demolition plans for the facility.
- Throughout the first quarter 2014, TRC communicated with the City of Tecumseh Fire Department regarding the fire watch activities to help ensure safe access to the building, as required by the City of Tecumseh.

4. A Summary of Problems and Potential Problems Encountered During the Reporting Period

   - Prolonged cold and heavy snow cover through mid-March impeded field activities.

5. Action Taken to Rectify Problems Identified Above

   - TPC arranged for snow to be cleared from eastern site entrance and a pathway to the work area so that start-up of the perimeter SVE system could be completed.
   - The schedule for routine monitoring activities was adjusted:
     - The regular first quarter groundwater sampling event, originally scheduled for February 2014 was completed between March 26 and March 28, 2014 after the majority of snow had melted; and
     - The regular first quarter soil gas sample event, originally scheduled for early March was delayed until March 26, 2013. Persistent snow cover at three locations prevented sample collection at that time. A re-sample event has been scheduled for the week of April 14, 2014.

6. Changes in Personnel during Reporting Period

   - No TPC/TRC project personnel have changed.

7. Projected Work for the Next Reporting Period

   - Complete a soil gas resample event at the locations that could not be sampled during the first quarter 2014 due to snow cover;
   - Complete the design and installation of the perimeter SVE blower enclosure, including site restoration;
   - Begin implementation of the March 2014 Scope of Work, including completion of a supplemental passive soil gas survey;
   - Receive and evaluate data from the first quarter 2014 groundwater sampling event;
   - Receive and evaluate data from the first quarter 2014 soil gas sampling event;
   - Continue routine P-Building SVE system operation and maintenance, including completion of carbon change out as needed;
   - Continue to evaluate southern source area soil and groundwater treatment options;
   - Conduct a quarterly SSDV system performance evaluation at the residential property located at 704 Mohawk;
   - Conduct and evaluate the second quarter 2014 groundwater sampling event;

- Complete and evaluate the second quarter 2014 off-site soil gas sample event;
- Complete and evaluate the second quarter 2014 PRB groundwater sampling event; and
- Collect gas composition readings at vents installed along the length of the PRB.

VI. Work to be Performed – Final Corrective Measures Proposal

Preparation of the Final Corrective Measures Proposal will be initiated following completion of the Supplement to the RI and Groundwater EI Report.

VI. Work to be Performed – Final Corrective Measures Implementation

Work related to the Final Corrective Measures Implementation will be initiated following USEPA's Final Decision.

VI. Work to be Performed – Establish Public Repository of Information

TPC established a public repository in the City Clerk's office at City Hall in August 2010. To address USEPA comments, the public repository was relocated to the Tecumseh District Library in November 2011. A notice sheet has been posted on the bulletin board at the Tecumseh District Library which lists and briefly describes the documents included in the public repository. TPC updates the public repository as appropriate.

VII. Access

During the First Quarter 2014, a revised access agreement was signed with the owner of the properties located at 600 Mohawk Street, 611 Mohawk Street, 615 Mohawk Street and 704 Mohawk Street.

VIII. Cost Estimates and Assurances of Financial Responsibility

In accordance with the Consent Order, TPC submitted an annually updated cost estimate on January 30, 2014. Based on comments from USEPA, and additional work as outlined in the SOW, a revised cost estimate was submitted on April 8, 2014. This April 2014 Revised Cost Estimate includes the anticipated costs of additional work to be completed in response to USEPA's January 31, 2014 comment letter. In accordance with the March 25, 2014 letter from USEPA Re: Failure to Maintain Adequate Financial Assurance, TPC will provide USEPA with draft financial assurance documents in one of the forms provided in paragraphs 26(d)(i) – 26(d)(v) of the AOC no later than May 5, 2014, and the final financial assurance will be established no later than June 19, 2014.

If you have any questions regarding this progress report, or the attachments, please contact me at (734) 585-7813, or gcrockford@trcsolutions.com.

Sincerely,

TRC Environmental Corporation

Graham Crockford, C.P.G.
Project Manager

Attachments:

Appendix A: Summary of 2013 Passive Soil Gas Survey Activities
Appendix B: 2013 Annual Report for the P-Building Soil Vapor Extraction System

cc: Susan Perdomo, USEPA
Jose Cisneros, USEPA
Colleen Olsberg, USEPA
Bhomma Sundar, USEPA
David Petrovski, USEPA
Mario Mangino, USEPA
Daniel Mazur, USEPA
Chris DeWetter, Tecumseh Products Company
Jason Smith, Tecumseh Products Company
Douglas McClure, Conlin, McKenney & Philbrick, PC
Stacy Metz, TRC Environmental Corporation
Dave Roberts, Tecumseh Food, Machinery & Engineering, LLC
Tecumseh District Library – Public Repository
Mary Speer, Resident

Appendix A
Summary of 2013 Passive Soil Gas Survey Activities

Technical Memorandum

Date:	April 10, 2014
To:	Jason Smith Tecumseh Products Company
From:	Graham Crockford and Stacy Metz, TRC
cc:	Chris DeWetter, Tecumseh Products Company Douglas McClure, Conlin, McKenney & Philbrick, PC
Project No.:	203342.0001.0000, Phase 2
Subject:	Summary of 2013 Passive Soil Gas Survey Activities Former Tecumseh Products Company Site in Tecumseh, Michigan (RCRA-05-2010-0012)

Introduction

Between July 2013 and September 2013 a passive soil gas (PSG) survey was completed at the former Tecumseh Products Company (TPC) site in Tecumseh, Michigan. This supplemental source area investigation was designed to support the design of final corrective measures by further defining the lateral extent of impacted areas on the former TPC property (e.g., high resolution source characterization). This Technical Memorandum provides of summary of those investigation activities including a description of field activities and a summary of sampling data.

Background

TPC retained TRC Environmental Corporation (TRC) to investigate soil and groundwater conditions at the former TPC site located in Tecumseh, Michigan. TRC has been assisting TPC with investigative activities in accordance with the RCRA Agreed Order on Consent (RCRA 05-2010-0012) for the site. Based on these investigation activities, two general source areas were identified: the northern source area and the southern source area. A PSG survey was completed through the northern source area in 2010 to help locate potential source areas. By comparison, the southern source area was better defined with a likely source identified, i.e., a former solvent recovery system.

Since that time a soil vapor extraction (SVE) system has been installed in P-Building, located above the eastern portion of the northern PSG survey area. Extraction wells installed in areas which had elevated response during the 2010 PSG survey have been very effective in removing constituents of

concern (COCs) from the subsurface. Consequently, a PSG survey was proposed to support the design of a similar system in the southern source area, in order to optimizing the number and location of proposed extraction wells.

Summary of Field Activities

Source area investigation activities, which were conducted between July 2013 and September 2013, are described below[1]:

- Between July 1 and July 2, 2013, TRC personnel with the assistance of Beacon Environmental Services, Inc. (Beacon) installed a matrix of PSG samplers throughout the southern portion of the building footprint (i.e., the southern source area and vicinity).
  - A total of 142 PSG samplers were installed in holes, having a total depth of 30 inches, in the sub-slab.
  - Samplers were spaced approximately 40 feet apart and were labeled numerically (from 151 to 292) and by grid location (columns A through L from west to east and rows 19 through 39 from north to south). Figure 1 shows PSG sample locations.
  - Following installation, sample holes were covered with an aluminum foil plug and patched with concrete to limit the influence of ambient air on sample results.
  - Samplers, which contain an adsorbent media to collect VOCs from the soil gas, were left in place for approximately 1 week.
- On July 8, 2013, after the designated exposure period, TRC personnel removed the PSG samplers and submitted the samples to Beacon for analysis by EPA Method 8260C.
- Based on preliminary PSG data, an expansion of the PSG survey area was planned in August 2013.
- Between September 4 and September 5, 2013, TRC personnel installed a matrix of PSG samplers through the central area between the northern and southern PSG survey areas.
  - A total of 48 PSG samplers were installed in holes, having a total depth of 30 inches, in the sub-slab, including 5 locations which overlapped the northern PSG survey area and 5 locations which overlapped the southern PSG survey area to help account for temporal variability in soil gas concentrations.
  - Samplers were spaced approximately 40 feet apart and were labeled numerically (from 293 to 341) and by grid location (columns A through I from west to east and rows 14 through 26 from north to south). Figure 1 shows PSG sample locations.

[1] The northern PSG survey was competed in 2010. This survey area included 150 PSG samplers installed in a 40-foot grid. (Sample locations 001 through 150 on Figure 1). The 2010 survey area extends from the office/engineering area in the west through the original footprint of Building Area P in the east.

  - Following installation, sample holes were covered with an aluminum foil plug and patched with concrete to limit the influence of ambient air on sample results.
  - Samplers, which contain an adsorbent media to collect VOCs from the soil gas, were left in place for approximately 1 week.
- On September 11, 2013, after the designated exposure period, TRC personnel removed the PSG samplers and submitted the samples to Beacon for analysis by EPA Method 8260C.

Results and Data Analysis

PSG samplers have been installed throughout the building footprint with two exceptions (Figure 1)[2]:

- The former TPC engineering area (located in the northwest portion of the facility) which was used by TPC as office and research space, and therefore was not considered a likely potential source area.
- The eastern portion of P-Building (Building Areas H and J located in the northeast portion of the facility) which was constructed in the 1994, well after use of trichloroethene (TCE), the primary COC in the northern source area, was discontinued on-site. The eastern portion of P-Building was employee parking prior to the new construction, and therefore is not considered a likely source area.

During the PSG sample collection period, VOCs present in the soil gas were absorbed by the media inside the sampler (each sampler contains two media cartridges). Following sample retrieval, one media cartridge (two at duplicate locations) from each sample location was analyzed by Beacon. Analytical results are provided in micrograms (per cartridge). Because results cannot be correlated directly to a soil gas concentration, data are considered semi-quantitative. Analytical results from 2013 can be found in the Beacon Passive Soil Gas Survey – Analytical Report dated February 4, 2014 (Attachment 1). In addition to providing analytical data, Beacon provided compound distribution maps for select constituents. Figure 2 illustrates the distribution of TCE; Figure 3 illustrates the distribution of a combination of TCE and its breakdown products (1,1-dichloroethene [1,1-DCE], 1,2-cis-dichloroethene [cis-DCE], 1,2-trans-dichloroethene [trans -DCE], and vinyl chloride), and Figure 4 illustrates the distribution of 1,1,1-trichoroethane (TCA).

These distribution maps provide an additional tool in defining the lateral distribution of potential source areas. However, it is important to recall that these maps include PSG data collected from each of the three sample events. Therefore, direct comparison of data from different sample events should consider the normal (and anticipated) temporal variability in soil gas concentrations. As illustrated

[2] In accordance with the March 28, 2014 Scope of Work, the PSG survey area will be expanded to include the former TPC engineering area, the former underground tank area, the outbuildings and vicinity east of the main facility building, and the exterior of the building in the vicinity of the southern source area.

on Figure 1, samples were collected at 10 "duplicate" grid locations E16, E17, E18, F17, F18, B22, B25, B26, C24 and C25. Data from these grid locations were compared to assess the temporal variability between the three sample events (Attachment 2). A comparison of the July 2010 data (north) and the September 2013 data (central) indicates that the data collected in September 2013 are on average 56 percent higher than those data collected in July 2010. Similarly, a comparison of the July 2013 data (south) and the September 2013 data (central) indicates that the data collected in September 2013 are on average 44 percent higher than those collected in July 2013. Overall these data indicate that there was little temporal variability between the two July sample events (north and south). However data from the September 2013 (central) sample event are biased high (by approximately 50 percent) when compared to the July (north and south) sample events.

Areas with higher TCE concentrations relative to other areas are highlighted yellow to red on Figure 2. These areas include the following locations:

- A single sample location (080) in the northeast corner of Building Area B;
- Three areas within or near the footprint of Building Area P prior to the building expansion completed in the 1990s (soil vapor extraction wells SVE-05, SVE-06 and SVE-07 have been installed at these locations);
- The corridor between the southern portion of Building Area B (samples 084 and 087) and south through Building Area D (samples 100 and 101);[3]
- A single sample location (144) in the southwest corner of Building Area K;[4]
- The area near sub-slab sample location SV-11 in Building Area E and the northern portion of Building Area F (from sample 107 in the north to 309, 310, 313 and 314 in the south);
- The area between Building Areas F and G (samples 299 and 300);
- The central portion of Building Area G between sample locations 206 and 207;

[3] A former chemical stockroom was located in Building Area D. Communications with former on-site TPC staff indicate that plant workers may have transported small quantities of degreasing solvents from the stockroom to their work stations to clean machining equipment. Historically, small amounts of these solvents may have spilled as they were transported by hand from the stockroom. PSG survey results, which indicate the presence of elevated concentrations of TCE throughout the corridor north and south of the stockroom, support this explanation.

[4] Above ground chemical piping to and from the stockroom in Building Area D was traced to the point of termination. Piping extended to the north into Building Area B. Two chemical lines extended to the south to the approximate location of sub-slab sample point SV-06. From there, the piping turned to the west and followed the corridor into Building Area K. One of the pipes terminated near sample location 144; the end was cut but not capped. The other pipe turned to the south and entered Building Area TD where several empty above ground chemical storage tanks remain.

- The southeast corner of Building Area G (samples 289 and 215) and the area downgradient (214, 160, 175, 174, and 162); and
- The area in the vicinity of the former solvent recovery unit and the area downgradient (from sample 220 to 275 in the west to samples 165 to 171 in the east).

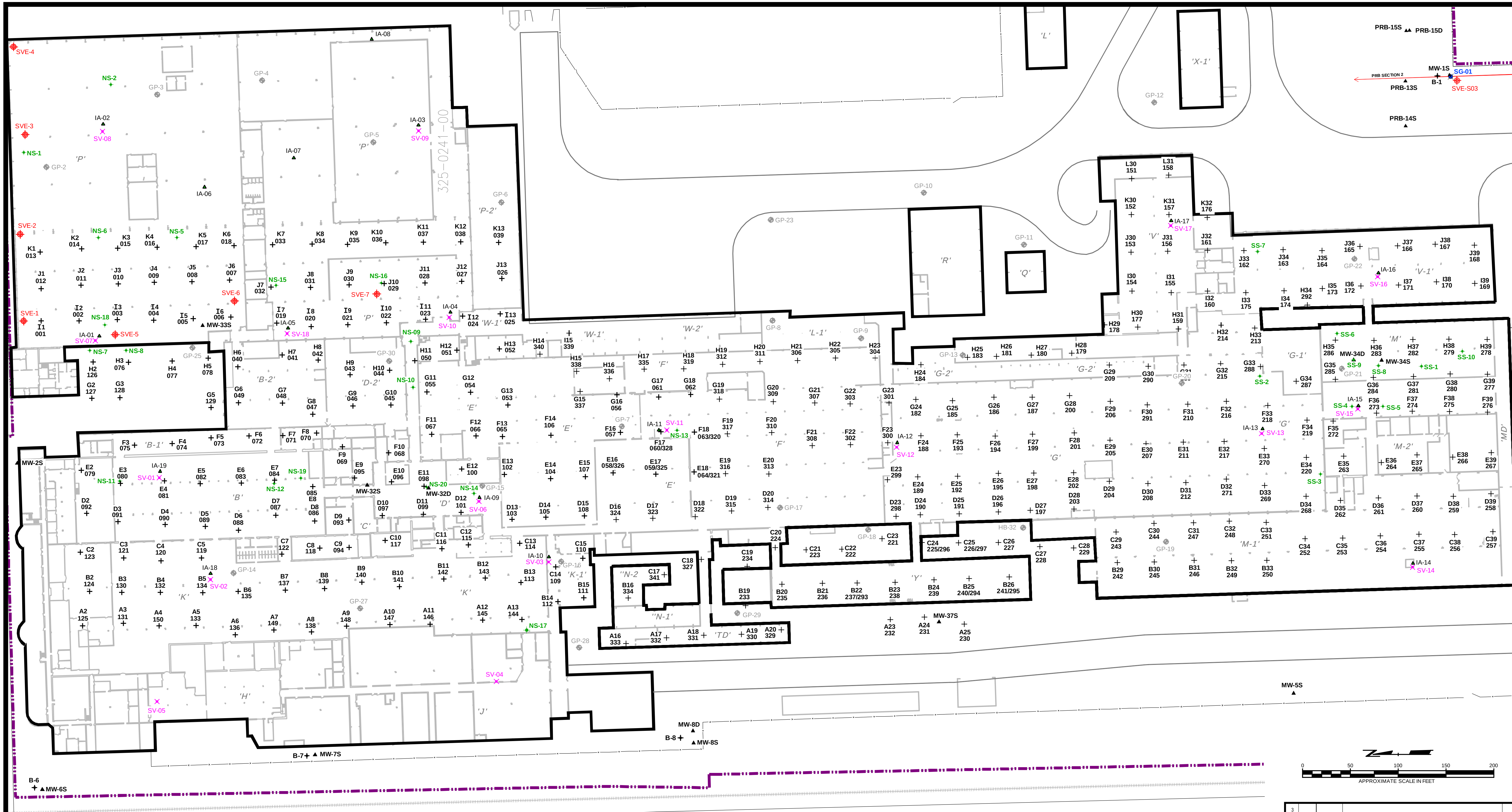
The distribution of TCE with its breakdown products (Figure 3) is similar to the distribution of TCE (Figure 2).

Overall the concentrations of TCA were lower than the concentrations of TCE, particularly in the north. (Note the color scale on Figure 4 [maximum 175 ug] relative to the color scale on Figures 2 and 3 [maximum 375 ug and 450 ug respectively]). In the central and southern portions of the former TPC building footprint, the areas with relatively high response for TCA are found in two large areas:

- From Building Area F south through the northern portion of Building Area G (from sample locations 310, 313, and 314 in the north to 299, 188 and 185 in the south); and
- From the central portion of Building Area G through the area in the vicinity of the former solvent recovery unit (from sample 187 in the north to samples 275, 280 and 279 in the south).

A membrane interface probe investigation and confirmation sampling, as described in the March 27, 2014 Scope of Work, will be completed to further define the vertical distribution of COC within these areas of relatively high COC concentrations.

Figures



LEGEND

J13 026 +	PASSIVE SOIL GAS SURVEY SAMPLE LOCATION AND NUMBER
B-8	PERIMETER/OFF-SITE INVESTIGATION BORING LOCATION AND NUMBER
MW-8D	MONITORING WELL LOCATION AND NUMBER
NS/SS-10	SOURCE AREA INVESTIGATION BORING LOCATION AND NUMBER
GP-23	ATC PHASE II ESA BORING LOCATION AND NUMBER
SVE-7	SOIL VAPOR EXTRACTION WELL LOCATION AND NUMBER
SG-01	SOIL GAS SAMPLE LOCATION AND NUMBER
SV-08	SUB-SLAB SOIL GAS SAMPLE LOCATION AND NUMBER
IA-03	INDOOR AIR SAMPLE LOCATION AND NUMBER

NOTES

1. PASSIVE SOIL GAS SURVEY COMPLETED IN PHASES;
   - SAMPLE LOCATIONS 001 THROUGH 150 COMPLETED JUNE-JULY 2010.
   - SAMPLE LOCATIONS 151 THROUGH 292 COMPLETED JULY 2013.
   - SAMPLE LOCATIONS 293 THROUGH 341 COMPLETED SEPTEMBER 2013.

NO.	BY	DATE	REVISION	APP'D
3				
2				
1				

PROJ: **FORMER TECUMSEH PRODUCTS SITE**
TECUMSEH, MICHIGAN

TITLE: **PSG SURVEY LOCATIONS**

DRAWN BY: DGS	SCALE: AS INDICATED	PROJ. NO. 203342.0001.02
CHECKED BY: SEM		FILE NO. 203342.0001.02.01.dwg
APPROVED BY: -	DATE PRINTED:	**FIGURE 1**
DATE: APRIL 2014		

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1540 Eisenhower Place
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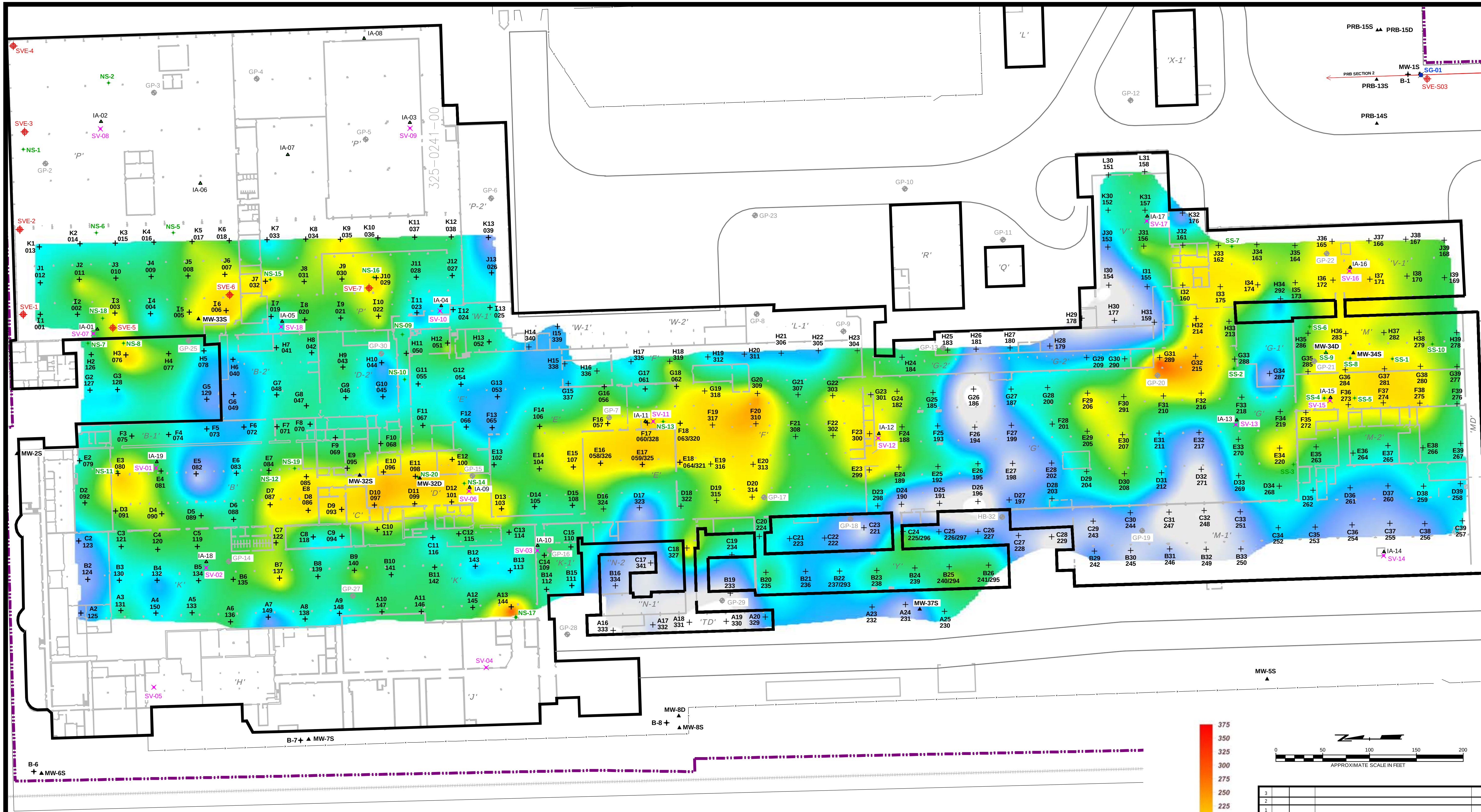

LEGEND

J13 026 +	PASSIVE SOIL GAS SURVEY SAMPLE LOCATION AND NUMBER
B-8 +	PERIMETER/OFF-SITE INVESTIGATION BORING LOCATION AND NUMBER
MW-8D ▲	MONITORING WELL LOCATION AND NUMBER
NS/SS-10	SOURCE AREA INVESTIGATION BORING LOCATION AND NUMBER
GP-23	ATC PHASE II ESA BORING LOCATION AND NUMBER
SVE-7	SOIL VAPOR EXTRACTION WELL LOCATION AND NUMBER
SG-01	SOIL GAS SAMPLE LOCATION AND NUMBER
SV-08	SUB-SLAB SOIL GAS SAMPLE LOCATION AND NUMBER
IA-03 ▲	INDOOR AIR SAMPLE LOCATION AND NUMBER

NOTES

1. PASSIVE SOIL GAS SURVEY COMPLETED IN PHASES;
   - SAMPLE LOCATIONS 001 THROUGH 150 COMPLETED JUNE-JULY 2010.
   - SAMPLE LOCATIONS 151 THROUGH 292 COMPLETED JULY 2013.
   - SAMPLE LOCATIONS 293 THROUGH 341 COMPLETED SEPTEMBER 2013.

NO.	BY	DATE	REVISION	APP'D
3				
2				
1				

PROJ: **FORMER TECUMSEH PRODUCTS SITE TECUMSEH, MICHIGAN**

TITLE: **PASSIVE SOIL GAS SURVEY TCE DISTRIBUTION MAP**

DRAWN BY: DGS	SCALE: AS INDICATED	PROJ. NO. 203342.0001.02
CHECKED BY: SEM		FILE NO. 203342.0001.02.02.dwg
APPROVED BY: -	DATE PRINTED:	**FIGURE 2**
DATE: APRIL 2014		

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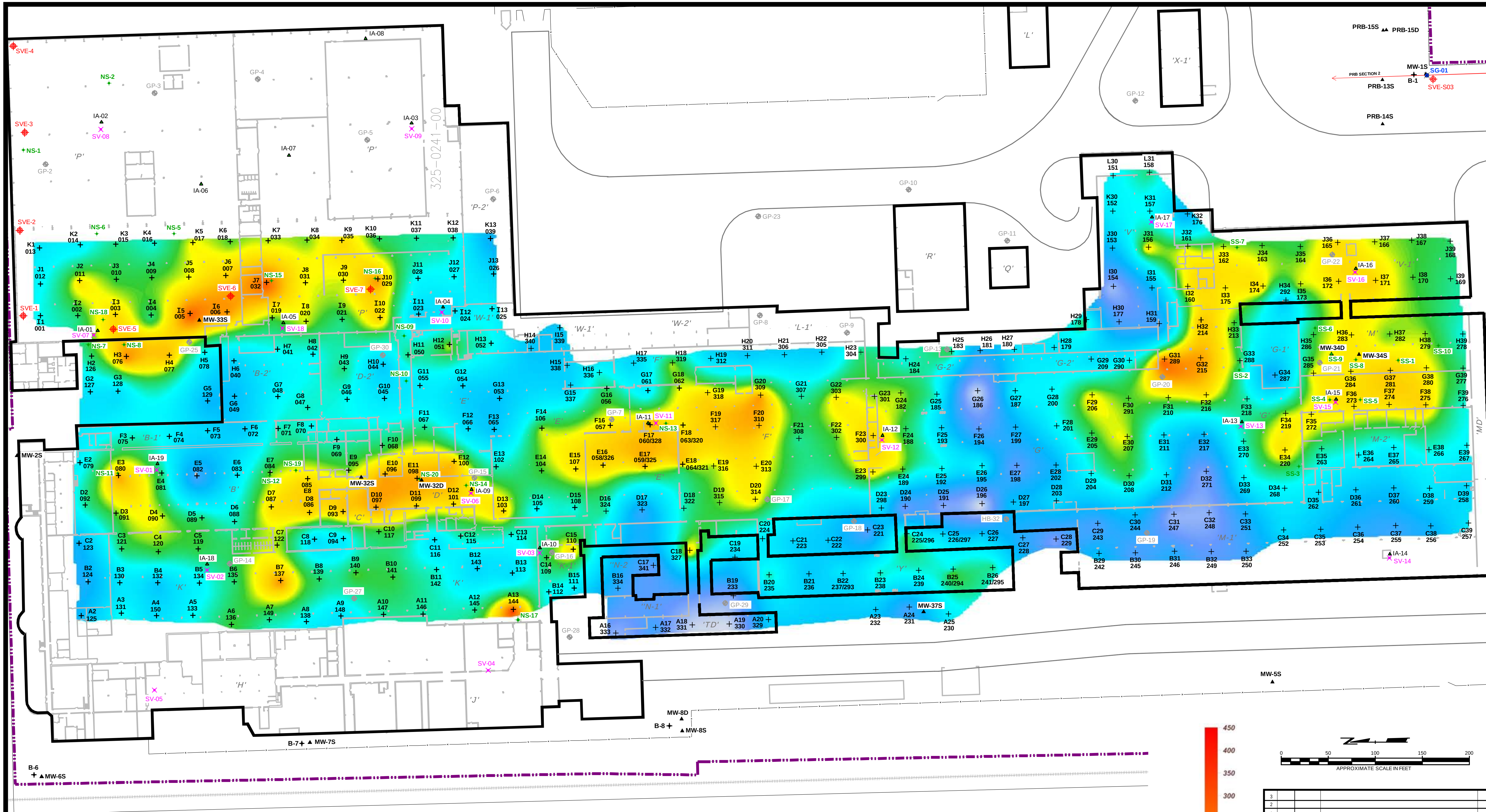
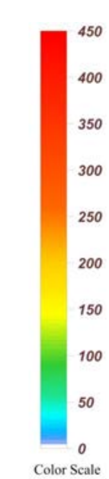
Fax: 734.971.9022





LEGEND

J13 026 +	PASSIVE SOIL GAS SURVEY SAMPLE LOCATION AND NUMBER
B-8 +	PERIMETER/OFF-SITE INVESTIGATION BORING LOCATION AND NUMBER
MW-8D ▲	MONITORING WELL LOCATION AND NUMBER
NS/SS-10	SOURCE AREA INVESTIGATION BORING LOCATION AND NUMBER
GP-23	ATC PHASE II ESA BORING LOCATION AND NUMBER
SVE-7	SOIL VAPOR EXTRACTION WELL LOCATION AND NUMBER
SG-01	SOIL GAS SAMPLE LOCATION AND NUMBER
SV-08	SUB-SLAB SOIL GAS SAMPLE LOCATION AND NUMBER
IA-03 ▲	INDOOR AIR SAMPLE LOCATION AND NUMBER

NOTES

1. PASSIVE SOIL GAS SURVEY COMPLETED IN PHASES;
   - SAMPLE LOCATIONS 001 THROUGH 150 COMPLETED JUNE-JULY 2010.
   - SAMPLE LOCATIONS 151 THROUGH 292 COMPLETED JULY 2013.
   - SAMPLE LOCATIONS 293 THROUGH 341 COMPLETED SEPTEMBER 2013.

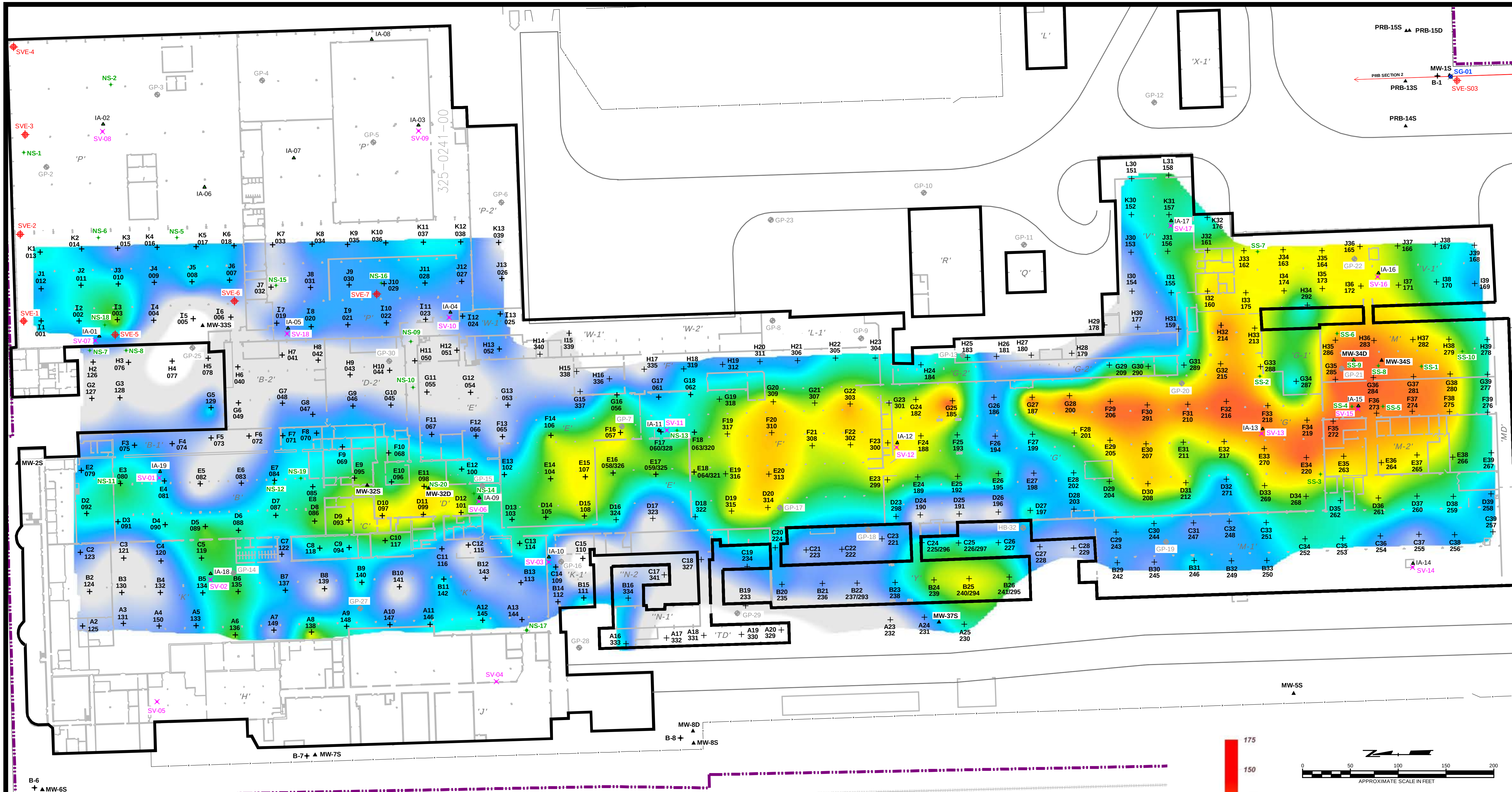
NO.	BY	DATE	REVISION	APP'D
3				
2				
1				

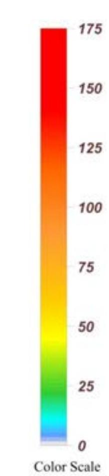
PROJ: **FORMER TECUMSEH PRODUCTS SITE**
TECUMSEH, MICHIGAN

TITLE: **PASSIVE SOIL GAS SURVEY**
TCE AND BREAKDOWN PRODUCTS DISTRIBUTION MAP

DRAWN BY: DGS	SCALE: AS INDICATED	PROJ. NO.	203342.0001.02
CHECKED BY: SEM		FILE NO.	203342.0001.02.03.dwg
APPROVED BY: -	DATE PRINTED:	**FIGURE 3**	
DATE: APRIL 2014			

TRC
1540 Eisenhower Place
Ann Arbor, MI 48108
Phone: 734.971.7080
Fax: 734.971.9022





LEGEND

J13 026 +	PASSIVE SOIL GAS SURVEY SAMPLE LOCATION AND NUMBER
B-8 +	PERIMETER/OFF-SITE INVESTIGATION BORING LOCATION AND NUMBER
MW-8D ▲	MONITORING WELL LOCATION AND NUMBER
NS/SS-10 +	SOURCE AREA INVESTIGATION BORING LOCATION AND NUMBER
GP-23 ⊕	ATC PHASE II ESA BORING LOCATION AND NUMBER
SVE-7 ⊕	SOIL VAPOR EXTRACTION WELL LOCATION AND NUMBER
SG-01 ▣	SOIL GAS SAMPLE LOCATION AND NUMBER
SV-08 ×	SUB-SLAB SOIL GAS SAMPLE LOCATION AND NUMBER
IA-03 ▲	INDOOR AIR SAMPLE LOCATION AND NUMBER

NOTES

1. PASSIVE SOIL GAS SURVEY COMPLETED IN PHASES;
   - SAMPLE LOCATIONS 001 THROUGH 150 COMPLETED JUNE-JULY 2010.
   - SAMPLE LOCATIONS 151 THROUGH 292 COMPLETED JULY 2013.
   - SAMPLE LOCATIONS 293 THROUGH 341 COMPLETED SEPTEMBER 2013.

NO.	BY	DATE	REVISION	APP'D
3				
2				
1				

PROJ: **FORMER TECUMSEH PRODUCTS SITE TECUMSEH, MICHIGAN**

TITLE: **PASSIVE SOIL GAS SURVEY TCA DISTRIBUTION MAP**

DRAWN BY:	DGS	SCALE:	PROJ. NO. 203342.0001.02
CHECKED BY:	SEM	AS INDICATED	FILE NO. 203342.0001.02.04.dwg
APPROVED BY:		DATE PRINTED:	
DATE:	APRIL 2014		**FIGURE 4**

TRC
1540 Eisenhower Place
Ann Arbor, MI 48108
Phone: 734.971.7080
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Attachment 1
Analytical Report

BEACON ENVIRONMENTAL SERVICES, INC.

The Leaders in Soil Gas Surveys and Vapor Intrusion Monitoring

TRC
1504 Eisenhower Place
Ann Arbor, MI 48108
Attn: Ms. Stacy Metz

Passive Soil Gas Survey – Analytical Report
Date: February 4, 2014

Beacon Project No. 2704

Project Reference:	Former Tecumseh Products, Tecumseh, MI
Samplers Installed:	July 1 and 2, and September 4 and 5, 2013
Samplers Retrieved:	July 8, and September 11, 2013
Samples Received:	July 10, and September 13, 2013
Analyses Completed:	July 20, and September 18, 2013
Laboratory Data Issued:	July 30, and September 26, 2013

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 micrograms (µg) 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 0.010 micrograms (µg) for vinyl chloride, 1,1-dichloroethene, trans-1,2-dichloroethene, cis-1,2-dichloroethene, trichloroethene, and tetrachloroethene; and 0.025 µg for the remaining individual compounds. **Table 1** provides survey results in micrograms per sampler by sample-point number and compound name for the July analytical results and **Table 2** for the September analytical results. For the six (6) compounds listed above, measurements below the limit of quantitation (0.010 µg) but above the limit of detection (0.005 µg) 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 with the following exceptions. In the July analytical results, Freon 113 failed high in ccal/lcs 130718a; however, Freon 113 was not detected in the samples following that CCV. In addition, methylene chloride failed low in ccal/lcs 130718c1, which may result in under reporting of methylene chloride; otherwise, all data is reported with high confidence.

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 analyses of the trip blanks (labeled Trip-1 through Trip-5 in **Table 1** and Trip-1 and Trip-2 in **Table 2**) reported 1,1,1-trichloroethane in Trip-1 (0.134 µg), Trip-3 (0.028 µg), and Trip-5 (0.050 µg) from the July analytical results (**Table 1**).

No other compounds were identified on the trip blanks, which suggests that except for the lower level measurements of these 1,1,1-trichloroethane from the July analytical results, 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.

BEACON's passive soil-gas samplers are prepared with two sets of adsorbent cartridges for subsequent duplicate or confirmatory sample analysis. At TRC's request, duplicate analysis was performed for eleven (11) field samples. The field sample duplicates were designated with a "Dup" following the sample number. When comparing quantitative results, a duplicate correspondence should be considered when the relative percent difference (RPD) between the two samples is less than or equal to 100%. For the purpose of calculating correspondences, all non-detections should be assigned, as a baseline value, the CRQL for the specific contaminant. Based on these assumptions, a 100% correlation was found between the field sample duplicates and their base samples.

Project Details

Samplers were deployed on July 1 and 2, and September 4 and 5, 2013, and were retrieved on July 8, and September 11, 2013. **Attachment 2** describes standard field procedures. Individual deployment and retrieval times will be found in the Field Deployment Report (**Attachment 3**).

One hundred forty-one (141) field samples, eight (8) field sample duplicates, and five (5) trip blanks were received by BEACON on July 10, 2013; forty-nine (49) field samples, three (3) field sample duplicates and two (2) trip blanks were received on September 13, 2013. 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 July 20, and September 18, 2013. Following a laboratory review, results were provided to TRC on July 30 (**Table 1**), and September 26, 2013 (**Table 2**). The Chain-of-Custody forms, which were shipped with the samples for these surveys, are supplied as **Attachment 5**.

Sample locations are shown on **Figure 1**. The following table lists frequency of detections based on the number of field samples analyzed in the 2013 investigations, 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. The figures include results from an earlier PSG investigation ((Beacon Project 2333, report issued August 26, 2010) at this site, as well as the investigations in July 2013 and September 2013 (which are the subject of this report).

Figure No.	**2**	**3**	**4**
Compound	1,1,1-Trichloroethane	Trichloroethene	Trichloroethene and breakdown products
Frequency	186	190	190
Reporting Limit (micrograms)	0.025	0.010	0.010
Max Value (micrograms)	155.558	358.115	365.280
Transformation Method	Log	Log	Log
Interpolation Method	Kriging	Kriging	Kriging

Attachments:

- **-1-** Applying Results From Passive Soil-Gas Surveys
- **-2-** Field Procedures
- **-3-** Field Deployment Report
- **-4-** Laboratory Procedures
- **-5-** Chain-of-Custody Form

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 17025:2005, AND THE WORK PERFORMED WAS IN ACCORDANCE WITH ISO 17025 REQUIREMENTS, WITH THE EXCEPTION THAT SAMPLES WERE ANALYZED WITHIN A 24-HOUR TUNE WINDOW AND FREON 113 IS NOT INCLUDED IN BEACON'S SCOPE OF ACCREDITATION. 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:	mb130718a	Trip-1	Trip-2	Trip-3	Trip-4	Trip-5
Project Number:		2704	2704	2704	2704	2704
Lab File ID:	A13071803	A13071806	A13071807	A13071808	A13071809	A13071810
Received Date:		7/10/2013	7/10/2013	7/10/2013	7/10/2013	7/10/2013
Analysis Date:	7/18/2013	7/18/2013	7/18/2013	7/18/2013	7/18/2013	7/18/2013
Analysis Time:	9:01	10:06	10:28	10:50	11:12	11:33
Matrix:						
Units:	ug	ug	ug	ug	ug	ug
COMPOUNDS						
Vinyl Chloride	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Trichlorofluoromethane (Freon 11)	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1-Dichloroethene	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Methylene Chloride	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2-Trichlorotrifluoroethane (Fr.113)	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
trans-1,2-Dichloroethene	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
1,1-Dichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
cis-1,2-Dichloroethene	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Chloroform	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,2-Dichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,1-Trichloroethane	<0.025	**0.134**	<0.025	**0.028**	<0.025	**0.050**
Carbon Tetrachloride	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Trichloroethene	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
1,1,2-Trichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Tetrachloroethene	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
1,1,1,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Chlorobenzene	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025

Results in micrograms (ug). 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:	151	152	153	154	155	155 DUP
Project Number:	2704	2704	2704	2704	2704	2704
Lab File ID:	A13071811	A13071812	A13071813	A13071814	A13071815	A13071816
Received Date:	7/10/2013	7/10/2013	7/10/2013	7/10/2013	7/10/2013	7/10/2013
Analysis Date:	7/18/2013	7/18/2013	7/18/2013	7/18/2013	7/18/2013	7/18/2013
Analysis Time:	11:55	12:17	12:38	13:00	13:22	13:44
Matrix:	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas
Units:	ug	ug	ug	ug	ug	ug
COMPOUNDS						
Vinyl Chloride	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Trichlorofluoromethane (Freon 11)	**0.506**	**0.577**	**0.383**	**0.795**	**0.049**	**0.081**
1,1-Dichloroethene	**0.059**	**0.454**	**0.027**	**0.015**	**0.231**	**0.053**
Methylene Chloride	**0.038**	<0.025	<0.025	<0.025	**0.028**	**0.037**
1,1,2-Trichlorotrifluoroethane (Fr.113)	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
trans-1,2-Dichloroethene	**0.020**	<0.010	<0.010	<0.010	**0.007 J**	**0.008 J**
1,1-Dichloroethane	**0.027**	**0.027**	<0.025	<0.025	**0.032**	**0.044**
cis-1,2-Dichloroethene	**0.091**	**0.018**	<0.010	<0.010	**0.016**	**0.020**
Chloroform	**0.035**	**0.043**	<0.025	<0.025	<0.025	<0.025
1,2-Dichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,1-Trichloroethane	**6.439**	**5.937**	**1.161**	**0.373**	**3.264**	**5.801**
Carbon Tetrachloride	**0.095**	**0.068**	<0.025	<0.025	<0.025	<0.025
Trichloroethene	**23.680**	**19.590**	**4.497**	**0.266**	**3.563**	**5.197**
1,1,2-Trichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Tetrachloroethene	**0.093**	**0.110**	**0.090**	**0.008 J**	**0.006 J**	**0.008 J**
1,1,1,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Chlorobenzene	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025

Results in micrograms (ug). 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:	156	157	158	159	160	160 DUP
Project Number:	2704	2704	2704	2704	2704	2704
Lab File ID:	A13071817	A13071818	A13071819	A13071820	A13071821	A13071822
Received Date:	7/10/2013	7/10/2013	7/10/2013	7/10/2013	7/10/2013	7/10/2013
Analysis Date:	7/18/2013	7/18/2013	7/18/2013	7/18/2013	7/18/2013	7/18/2013
Analysis Time:	14:06	14:28	14:50	15:12	15:34	15:56
Matrix:	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas
Units:	ug	ug	ug	ug	ug	ug
COMPOUNDS						
Vinyl Chloride	**8.143**	<0.010	<0.010	<0.010	<0.010	<0.010
Trichlorofluoromethane (Freon 11)	**0.069**	**0.064**	**1.128**	**0.085**	<0.025	<0.025
1,1-Dichloroethene	**2.920**	**0.186**	**1.619**	**0.052**	**1.170**	**1.024**
Methylene Chloride	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2-Trichlorotrifluoroethane (Fr.113)	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
trans-1,2-Dichloroethene	**2.458**	**0.030**	**0.041**	**0.015**	**0.274**	**0.260**
1,1-Dichloroethane	**0.135**	**0.043**	**0.088**	<0.025	**0.150**	**0.230**
cis-1,2-Dichloroethene	**34.234**	**0.219**	**0.188**	**0.044**	**1.461**	**1.360**
Chloroform	**0.174**	**0.078**	**0.138**	<0.025	**0.139**	**0.196**
1,2-Dichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,1-Trichloroethane	**15.381**	**13.021**	**18.985**	**1.135**	**51.994**	**57.959**
Carbon Tetrachloride	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Trichloroethene	**86.153**	**30.169**	**54.132**	**1.398**	**120.015**	**137.673**
1,1,2-Trichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Tetrachloroethene	**0.114**	**0.244**	**0.179**	**0.010 J**	**0.228**	**0.336**
1,1,1,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Chlorobenzene	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025

Results in micrograms (ug). 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:	161	162	163	164	165	166
Project Number:	2704	2704	2704	2704	2704	2704
Lab File ID:	A13071823	A13071824	A13071825	A13071906	A13071827	A13071828
Received Date:	7/10/2013	7/10/2013	7/10/2013	7/10/2013	7/10/2013	7/10/2013
Analysis Date:	7/18/2013	7/18/2013	7/18/2013	7/19/2013	7/18/2013	7/18/2013
Analysis Time:	16:18	16:40	17:02	12:09	17:46	18:08
Matrix:	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas
Units:	ug	ug	ug	ug	ug	ug
COMPOUNDS						
Vinyl Chloride	<0.010	<0.010	**0.018**	<0.010	<0.010	<0.010
Trichlorofluoromethane (Freon 11)	**0.028**	<0.025	<0.025	<0.025	<0.025	<0.025
1,1-Dichloroethene	**1.433**	**1.405**	**0.972**	**0.649**	**2.265**	**0.638**
Methylene Chloride	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2-Trichlorotrifluoroethane (Fr.113)	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
trans-1,2-Dichloroethene	**0.117**	**0.171**	**1.041**	**0.957**	**2.009**	**0.854**
1,1-Dichloroethane	**0.074**	**0.066**	**0.466**	**0.992**	**1.053**	**0.192**
cis-1,2-Dichloroethene	**0.659**	**1.088**	**6.448**	**3.926**	**6.805**	**2.526**
Chloroform	**0.147**	**0.099**	**0.112**	**0.127**	**0.205**	**0.081**
1,2-Dichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,1-Trichloroethane	**38.989**	**43.141**	**45.451**	**42.820**	**55.455**	**30.890**
Carbon Tetrachloride	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Trichloroethene	**107.756**	**105.620**	**76.244**	**66.261**	**145.368**	**98.354**
1,1,2-Trichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Tetrachloroethene	**0.647**	**0.135**	**0.089**	**0.075**	**0.304**	**0.222**
1,1,1,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Chlorobenzene	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025

Results in micrograms (ug). 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:	167	168	169	170	171	172
Project Number:	2704	2704	2704	2704	2704	2704
Lab File ID:	A13071829	A13071830	A13071831	A13071832	A13071833	A13071834
Received Date:	7/10/2013	7/10/2013	7/10/2013	7/10/2013	7/10/2013	7/10/2013
Analysis Date:	7/18/2013	7/18/2013	7/18/2013	7/18/2013	7/18/2013	7/18/2013
Analysis Time:	18:30	18:52	19:14	19:36	19:57	20:19
Matrix:	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas
Units:	ug	ug	ug	ug	ug	ug
COMPOUNDS						
Vinyl Chloride	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Trichlorofluoromethane (Freon 11)	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1-Dichloroethene	**1.029**	**0.152**	**0.291**	**0.281**	**0.600**	**0.862**
Methylene Chloride	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2-Trichlorotrifluoroethane (Fr.113)	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
trans-1,2-Dichloroethene	**0.742**	**0.228**	**0.092**	**0.383**	**1.182**	**2.402**
1,1-Dichloroethane	**0.107**	<0.025	<0.025	**0.138**	**0.182**	**0.342**
cis-1,2-Dichloroethene	**2.577**	**0.555**	**0.269**	**2.200**	**3.714**	**7.423**
Chloroform	**0.112**	**0.077**	**0.033**	**0.097**	**0.130**	**0.074**
1,2-Dichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,1-Trichloroethane	**11.639**	**4.956**	**3.166**	**11.555**	**37.010**	**42.600**
Carbon Tetrachloride	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Trichloroethene	**76.455**	**63.179**	**55.205**	**79.549**	**161.949**	**132.952**
1,1,2-Trichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Tetrachloroethene	**0.056**	**0.092**	**0.163**	**0.170**	**0.457**	**0.579**
1,1,1,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Chlorobenzene	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025

Results in micrograms (ug). 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:	173	174	175	176	177	178
Project Number:	2704	2704	2704	2704	2704	2704
Lab File ID:	A13071835	A13071836	A13071837	A13071838	A13071839	A13071907
Received Date:	7/10/2013	7/10/2013	7/10/2013	7/10/2013	7/10/2013	7/10/2013
Analysis Date:	7/18/2013	7/18/2013	7/18/2013	7/18/2013	7/18/2013	7/19/2013
Analysis Time:	20:41	21:03	21:25	21:47	22:08	12:31
Matrix:	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas
Units:	ug	ug	ug	ug	ug	ug
COMPOUNDS						
Vinyl Chloride	<0.010	<0.010	<0.010	<0.010	<0.010	**52.056**
Trichlorofluoromethane (Freon 11)	<0.025	<0.025	<0.025	**1.027**	**0.954**	<0.025
1,1-Dichloroethene	**2.015**	**0.994**	**3.450**	**0.093**	**0.051**	**0.280**
Methylene Chloride	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2-Trichlorotrifluoroethane (Fr.113)	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
trans-1,2-Dichloroethene	**1.082**	**0.908**	**0.158**	<0.010	**0.016**	**3.446**
1,1-Dichloroethane	**0.925**	**0.381**	**0.098**	<0.025	**0.203**	**0.101**
cis-1,2-Dichloroethene	**5.001**	**4.463**	**0.718**	<0.010	**0.114**	**4.775**
Chloroform	**0.129**	**0.140**	**0.132**	<0.025	<0.025	<0.025
1,2-Dichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,1-Trichloroethane	**41.741**	**45.117**	**41.844**	**6.900**	**0.879**	**0.050**
Carbon Tetrachloride	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Trichloroethene	**89.403**	**141.536**	**128.749**	**4.186**	**1.420**	**0.524**
1,1,2-Trichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Tetrachloroethene	**0.156**	**0.284**	**0.224**	**0.048**	**0.015**	<0.010
1,1,1,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Chlorobenzene	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025

Results in micrograms (ug). 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:	179	180	181	182	183	183 DUP
Project Number:	2704	2704	2704	2704	2704	2704
Lab File ID:	A13071908	A13071842	A13071843	A13071844	A13071845	A13071846
Received Date:	7/10/2013	7/10/2013	7/10/2013	7/10/2013	7/10/2013	7/10/2013
Analysis Date:	7/19/2013	7/18/2013	7/18/2013	7/18/2013	7/19/2013	7/19/2013
Analysis Time:	12:53	23:12	23:34	23:56	0:17	0:40
Matrix:	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas
Units:	ug	ug	ug	ug	ug	ug
COMPOUNDS						
Vinyl Chloride	**2.509**	**0.019**	<0.010	<0.010	**0.038**	**0.018**
Trichlorofluoromethane (Freon 11)	<0.025	**0.060**	**0.051**	<0.025	**0.171**	**0.138**
1,1-Dichloroethene	**0.103**	**0.029**	**0.051**	**0.520**	**0.667**	**0.948**
Methylene Chloride	<0.025	<0.025	<0.025	**0.060**	<0.025	<0.025
1,1,2-Trichlorotrifluoroethane (Fr.113)	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
trans-1,2-Dichloroethene	**2.064**	**0.962**	**0.029**	**0.362**	**0.195**	**0.207**
1,1-Dichloroethane	**0.037**	<0.025	**0.045**	**0.054**	**1.335**	**0.915**
cis-1,2-Dichloroethene	**7.515**	**1.759**	**0.156**	**1.425**	**1.182**	**1.172**
Chloroform	<0.025	<0.025	<0.025	**0.267**	**0.102**	**0.071**
1,2-Dichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,1-Trichloroethane	**0.043**	**0.263**	**0.852**	**38.923**	**16.279**	**15.210**
Carbon Tetrachloride	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Trichloroethene	**5.312**	**11.215**	**2.246**	**95.407**	**65.089**	**48.665**
1,1,2-Trichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Tetrachloroethene	<0.010	**0.931**	**0.031**	**0.800**	**0.368**	**0.313**
1,1,1,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Chlorobenzene	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025

Results in micrograms (ug). 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:	184	185	185 DUP	186	187	188
Project Number:	2704	2704	2704	2704	2704	2704
Lab File ID:	A13071847	A13071848	A13071849	A13071850	A13071851	A13071852
Received Date:	7/10/2013	7/10/2013	7/10/2013	7/10/2013	7/10/2013	7/10/2013
Analysis Date:	7/19/2013	7/19/2013	7/19/2013	7/19/2013	7/19/2013	7/19/2013
Analysis Time:	1:01	1:23	1:45	2:06	2:28	2:49
Matrix:	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas
Units:	ug	ug	ug	ug	ug	ug
COMPOUNDS						
Vinyl Chloride	<0.010	<0.010	**0.081**	<0.010	**0.043**	<0.010
Trichlorofluoromethane (Freon 11)	**0.433**	**0.028**	**0.027**	**0.059**	<0.025	<0.025
1,1-Dichloroethene	**0.328**	**9.995**	**10.235**	**0.032**	**3.861**	**0.694**
Methylene Chloride	<0.025	**0.055**	**0.056**	<0.025	<0.025	<0.025
1,1,2-Trichlorotrifluoroethane (Fr.113)	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
trans-1,2-Dichloroethene	**0.228**	**0.065**	**0.059**	<0.010	<0.010	**0.042**
1,1-Dichloroethane	**0.069**	**3.919**	**3.682**	**0.143**	**0.625**	**0.054**
cis-1,2-Dichloroethene	**0.540**	**0.103**	**0.111**	<0.010	**0.021**	**0.053**
Chloroform	**0.042**	**0.217**	**0.190**	<0.025	**0.207**	**0.729**
1,2-Dichloroethane	<0.025	**0.038**	**0.025**	<0.025	<0.025	<0.025
1,1,1-Trichloroethane	**5.361**	**143.408**	**132.153**	**1.359**	**122.529**	**43.273**
Carbon Tetrachloride	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Trichloroethene	**34.838**	**32.927**	**28.324**	**0.084**	**20.544**	**64.200**
1,1,2-Trichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Tetrachloroethene	**0.599**	**0.127**	**0.168**	<0.010	**0.016**	**0.167**
1,1,1,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Chlorobenzene	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025

Results in micrograms (ug). 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:	189	190	191	192	193	194
Project Number:	2704	2704	2704	2704	2704	2704
Lab File ID:	A13071853	A13071854	A13071855	A13071856	A13071857	A13071858
Received Date:	7/10/2013	7/10/2013	7/10/2013	7/10/2013	7/10/2013	7/10/2013
Analysis Date:	7/19/2013	7/19/2013	7/19/2013	7/19/2013	7/19/2013	7/19/2013
Analysis Time:	3:11	3:32	3:54	4:16	4:38	5:00
Matrix:	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas
Units:	ug	ug	ug	ug	ug	ug
COMPOUNDS						
Vinyl Chloride	<0.010	<0.010	<0.010	**0.062**	<0.010	<0.010
Trichlorofluoromethane (Freon 11)	<0.025	**0.073**	<0.025	<0.025	<0.025	<0.025
1,1-Dichloroethene	**0.884**	<0.010	**0.010 J**	**0.420**	**0.170**	**0.031**
Methylene Chloride	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2-Trichlorotrifluoroethane (Fr.113)	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
trans-1,2-Dichloroethene	**0.027**	<0.010	<0.010	<0.010	**0.007 J**	<0.010
1,1-Dichloroethane	<0.025	<0.025	<0.025	**0.056**	**0.055**	<0.025
cis-1,2-Dichloroethene	**0.053**	<0.010	<0.010	**0.016**	**0.006 J**	<0.010
Chloroform	<0.025	<0.025	<0.025	**0.239**	**0.586**	<0.025
1,2-Dichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,1-Trichloroethane	**23.224**	**0.173**	**0.190**	**25.251**	**14.977**	**1.450**
Carbon Tetrachloride	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Trichloroethene	**84.138**	**0.662**	**0.426**	**35.330**	**13.424**	**1.156**
1,1,2-Trichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Tetrachloroethene	**0.992**	**0.018**	**0.013**	**0.234**	**0.041**	<0.010
1,1,1,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Chlorobenzene	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025

Results in micrograms (ug). 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:	195	mb130718c1	196	197	198	199
Project Number:	2704		2704	2704	2704	2704
Lab File ID:	A13071859	C13071803	C13071807	C13071808	C13071809	C13071810
Received Date:	7/10/2013		7/10/2013	7/10/2013	7/10/2013	7/10/2013
Analysis Date:	7/19/2013	7/18/2013	7/18/2013	7/18/2013	7/18/2013	7/18/2013
Analysis Time:	5:22	11:35	13:04	13:27	13:49	14:11
Matrix:	Soil Gas		Soil Gas	Soil Gas	Soil Gas	Soil Gas
Units:	ug	ug	ug	ug	ug	ug
COMPOUNDS						
Vinyl Chloride	<0.010	<0.010	**0.013**	**0.008 J**	<0.010	**0.011**
Trichlorofluoromethane (Freon 11)	<0.025	<0.025	**0.040**	**0.052**	**0.045**	<0.025
1,1-Dichloroethene	**0.225**	<0.010	**0.007 J**	**0.345**	**0.012**	**0.220**
Methylene Chloride	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2-Trichlorotrifluoroethane (Fr.113)	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
trans-1,2-Dichloroethene	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
1,1-Dichloroethane	**0.036**	<0.025	<0.025	<0.025	<0.025	<0.025
cis-1,2-Dichloroethene	**0.008 J**	<0.010	<0.010	<0.010	<0.010	<0.010
Chloroform	**0.786**	<0.025	<0.025	<0.025	<0.025	**0.103**
1,2-Dichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,1-Trichloroethane	**23.121**	<0.025	**0.149**	**11.858**	**1.189**	**7.875**
Carbon Tetrachloride	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Trichloroethene	**31.666**	<0.010	**0.076**	**7.401**	**0.924**	**3.671**
1,1,2-Trichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Tetrachloroethene	**0.036**	<0.010	<0.010	**0.034**	<0.010	<0.010
1,1,1,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Chlorobenzene	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025

Results in micrograms (ug). 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:	200	201	202	203	204	204 DUP
Project Number:	2704	2704	2704	2704	2704	2704
Lab File ID:	C13071811	C13071812	C13071813	C13071814	C13071815	C13071816
Received Date:	7/10/2013	7/10/2013	7/10/2013	7/10/2013	7/10/2013	7/10/2013
Analysis Date:	7/18/2013	7/18/2013	7/18/2013	7/18/2013	7/18/2013	7/18/2013
Analysis Time:	14:33	14:55	15:17	15:40	16:03	16:25
Matrix:	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas
Units:	ug	ug	ug	ug	ug	ug
COMPOUNDS						
Vinyl Chloride	**0.079**	<0.010	<0.010	**0.036**	<0.010	<0.010
Trichlorofluoromethane (Freon 11)	<0.025	**0.027**	**0.168**	<0.025	**0.027**	<0.025
1,1-Dichloroethene	**4.343**	**0.590**	**0.067**	**0.332**	**0.308**	**0.193**
Methylene Chloride	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2-Trichlorotrifluoroethane (Fr.113)	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
trans-1,2-Dichloroethene	**0.037**	<0.010	<0.010	<0.010	<0.010	<0.010
1,1-Dichloroethane	**1.405**	**0.049**	**0.047**	<0.025	**0.028**	<0.025
cis-1,2-Dichloroethene	**0.055**	<0.010	<0.010	<0.010	<0.010	**0.006 J**
Chloroform	**0.207**	**0.443**	<0.025	<0.025	**0.424**	**0.193**
1,2-Dichloroethane	**0.361**	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,1-Trichloroethane	**120.343**	**26.584**	**6.058**	**2.691**	**17.334**	**12.556**
Carbon Tetrachloride	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Trichloroethene	**21.661**	**23.771**	**3.988**	**13.581**	**28.224**	**23.193**
1,1,2-Trichloroethane	**0.078**	<0.025	<0.025	<0.025	<0.025	<0.025
Tetrachloroethene	**0.739**	**0.014**	<0.010	**0.040**	**0.082**	**0.089**
1,1,1,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Chlorobenzene	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025

Results in micrograms (ug). 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:	205	206	207	208	209	210
Project Number:	2704	2704	2704	2704	2704	2704
Lab File ID:	C13071817	C13071818	C13071819	C13071820	C13071821	C13071822
Received Date:	7/10/2013	7/10/2013	7/10/2013	7/10/2013	7/10/2013	7/10/2013
Analysis Date:	7/18/2013	7/18/2013	7/18/2013	7/18/2013	7/18/2013	7/18/2013
Analysis Time:	16:47	17:10	17:32	17:54	18:17	18:39
Matrix:	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas
Units:	ug	ug	ug	ug	ug	ug
COMPOUNDS						
Vinyl Chloride	<0.010	<0.010	**0.113**	**0.036**	<0.010	**0.094**
Trichlorofluoromethane (Freon 11)	**0.027**	<0.025	**0.029**	**0.130**	**0.180**	**0.026**
1,1-Dichloroethene	**0.375**	**2.495**	**4.371**	**1.160**	**0.139**	**7.526**
Methylene Chloride	<0.025	<0.025	<0.025	<0.025	<0.025	**0.035**
1,1,2-Trichlorotrifluoroethane (Fr.113)	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
trans-1,2-Dichloroethene	<0.010	<0.010	**0.022**	<0.010	**0.006 J**	**0.039**
1,1-Dichloroethane	**0.089**	**0.116**	**0.270**	**0.132**	**0.068**	**1.422**
cis-1,2-Dichloroethene	**0.023**	**0.128**	**0.050**	**0.019**	**0.060**	**0.172**
Chloroform	**0.436**	**0.578**	**1.236**	**0.966**	**0.109**	**0.231**
1,2-Dichloroethane	<0.025	**1.416**	<0.025	<0.025	<0.025	**0.068**
1,1,1-Trichloroethane	**55.861**	**123.712**	**75.201**	**69.938**	**13.839**	**131.297**
Carbon Tetrachloride	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Trichloroethene	**63.539**	**127.144**	**104.745**	**68.796**	**13.917**	**80.820**
1,1,2-Trichloroethane	**0.036**	**0.159**	**0.276**	**0.141**	<0.025	**0.051**
Tetrachloroethene	**0.061**	**0.128**	**0.324**	**0.259**	**0.019**	**0.107**
1,1,1,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Chlorobenzene	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025

Results in micrograms (ug). 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:	211	212	213	214	215	216
Project Number:	2704	2704	2704	2704	2704	2704
Lab File ID:	C13071823	C13071824	C13071825	C13071826	C13071827	C13071828
Received Date:	7/10/2013	7/10/2013	7/10/2013	7/10/2013	7/10/2013	7/10/2013
Analysis Date:	7/18/2013	7/18/2013	7/18/2013	7/18/2013	7/18/2013	7/18/2013
Analysis Time:	19:01	19:23	19:46	20:08	20:30	20:52
Matrix:	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas
Units:	ug	ug	ug	ug	ug	ug
COMPOUNDS						
Vinyl Chloride	<0.010	**0.062**	**0.070**	**0.136**	**0.131**	**0.141**
Trichlorofluoromethane (Freon 11)	**0.031**	<0.025	**0.395**	**0.093**	**0.038**	<0.025
1,1-Dichloroethene	**0.323**	**1.349**	**0.507**	**0.771**	**0.307**	**19.262**
Methylene Chloride	<0.025	<0.025	**0.029**	**0.044**	<0.025	**0.099**
1,1,2-Trichlorotrifluoroethane (Fr.113)	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
trans-1,2-Dichloroethene	<0.010	**0.018**	**2.209**	**9.063**	**4.130**	**1.030**
1,1-Dichloroethane	<0.025	**0.053**	**0.629**	**1.416**	**1.216**	**18.685**
cis-1,2-Dichloroethene	<0.010	<0.010	**5.443**	**18.520**	**20.903**	**4.332**
Chloroform	**0.061**	**0.200**	**0.102**	**0.783**	**0.544**	**0.455**
1,2-Dichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	**1.101**
1,1,1-Trichloroethane	**24.449**	**52.662**	**58.560**	**111.926**	**78.342**	**155.558**
Carbon Tetrachloride	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Trichloroethene	**12.340**	**20.045**	**73.803**	**165.520**	**228.935**	**113.041**
1,1,2-Trichloroethane	<0.025	<0.025	<0.025	**0.027**	<0.025	**0.059**
Tetrachloroethene	**0.058**	**0.211**	**1.047**	**0.606**	**0.608**	**0.793**
1,1,1,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Chlorobenzene	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025

Results in micrograms (ug). 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:	217	218	219	220	221	223
Project Number:	2704	2704	2704	2704	2704	2704
Lab File ID:	C13071829	C13071830	C13071831	C13071832	C13071833	C13071834
Received Date:	7/10/2013	7/10/2013	7/10/2013	7/10/2013	7/10/2013	7/10/2013
Analysis Date:	7/18/2013	7/18/2013	7/18/2013	7/18/2013	7/18/2013	7/18/2013
Analysis Time:	21:14	21:37	21:59	22:21	22:43	23:05
Matrix:	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas
Units:	ug	ug	ug	ug	ug	ug
COMPOUNDS						
Vinyl Chloride	**0.083**	**0.037**	**0.131**	**0.050**	<0.010	<0.010
Trichlorofluoromethane (Freon 11)	**0.365**	**0.054**	<0.025	<0.025	**0.096**	**0.179**
1,1-Dichloroethene	**0.746**	**6.072**	**3.453**	**4.648**	<0.010	<0.010
Methylene Chloride	**0.086**	**0.048**	<0.025	<0.025	<0.025	<0.025
1,1,2-Trichlorotrifluoroethane (Fr.113)	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
trans-1,2-Dichloroethene	<0.010	**0.140**	**4.689**	**0.099**	<0.010	<0.010
1,1-Dichloroethane	**0.189**	**4.234**	**3.941**	**0.210**	<0.025	<0.025
cis-1,2-Dichloroethene	**0.026**	**1.257**	**44.926**	**0.931**	**0.044**	**0.019**
Chloroform	**0.029**	**0.125**	**0.102**	**0.125**	<0.025	<0.025
1,2-Dichloroethane	<0.025	**0.416**	<0.025	**0.028**	<0.025	<0.025
1,1,1-Trichloroethane	**56.740**	**123.937**	**96.788**	**133.441**	**0.556**	**0.683**
Carbon Tetrachloride	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Trichloroethene	**3.211**	**42.558**	**50.101**	**142.982**	**1.070**	**10.102**
1,1,2-Trichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Tetrachloroethene	**0.020**	**0.904**	**4.530**	**35.418**	**0.040**	**0.015**
1,1,1,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Chlorobenzene	<0.025	<0.025	<0.025	**0.040**	<0.025	<0.025
1,1,2,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025

Results in micrograms (ug). 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:	224	225	226	227	228	229
Project Number:	2704	2704	2704	2704	2704	2704
Lab File ID:	C13071835	C13071836	C13071837	C13071838	C13071839	C13071840
Received Date:	7/10/2013	7/10/2013	7/10/2013	7/10/2013	7/10/2013	7/10/2013
Analysis Date:	7/18/2013	7/18/2013	7/19/2013	7/19/2013	7/19/2013	7/19/2013
Analysis Time:	23:28	23:50	0:12	0:35	0:59	1:22
Matrix:	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas
Units:	ug	ug	ug	ug	ug	ug
COMPOUNDS						
Vinyl Chloride	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Trichlorofluoromethane (Freon 11)	**0.119**	**0.100**	**0.057**	**0.046**	**0.051**	**0.039**
1,1-Dichloroethene	**0.105**	**0.363**	<0.010	**0.126**	<0.010	<0.010
Methylene Chloride	**0.032**	<0.025	<0.025	**0.029**	**0.034**	<0.025
1,1,2-Trichlorotrifluoroethane (Fr.113)	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
trans-1,2-Dichloroethene	**0.020**	**0.131**	<0.010	<0.010	<0.010	<0.010
1,1-Dichloroethane	**0.060**	**0.135**	<0.025	**0.028**	<0.025	<0.025
cis-1,2-Dichloroethene	**0.179**	**0.988**	<0.010	**0.024**	**0.035**	<0.010
Chloroform	<0.025	**0.160**	<0.025	<0.025	<0.025	<0.025
1,2-Dichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,1-Trichloroethane	**4.444**	**15.154**	**13.071**	**11.276**	**0.727**	**0.421**
Carbon Tetrachloride	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Trichloroethene	**18.674**	**62.343**	**15.151**	**9.670**	**2.556**	**0.594**
1,1,2-Trichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Tetrachloroethene	**0.073**	**1.330**	**2.898**	**0.115**	**0.056**	**0.087**
1,1,1,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Chlorobenzene	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025

Results in micrograms (ug). 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:	230	231	232	233	234	235
Project Number:	2704	2704	2704	2704	2704	2704
Lab File ID:	C13071841	C13071842	C13071843	C13071844	C13071845	C13071846
Received Date:	7/10/2013	7/10/2013	7/10/2013	7/10/2013	7/10/2013	7/10/2013
Analysis Date:	7/19/2013	7/19/2013	7/19/2013	7/19/2013	7/19/2013	7/19/2013
Analysis Time:	1:44	2:06	2:28	2:50	3:13	3:35
Matrix:	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas
Units:	ug	ug	ug	ug	ug	ug
COMPOUNDS						
Vinyl Chloride	<0.010	<0.010	**0.510**	**0.020**	<0.010	<0.010
Trichlorofluoromethane (Freon 11)	**0.026**	**0.048**	<0.025	**0.038**	**0.100**	**0.111**
1,1-Dichloroethene	**0.229**	<0.010	<0.010	<0.010	**0.051**	<0.010
Methylene Chloride	<0.025	<0.025	<0.025	<0.025	**0.052**	<0.025
1,1,2-Trichlorotrifluoroethane (Fr.113)	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
trans-1,2-Dichloroethene	**0.010**	<0.010	**0.049**	<0.010	<0.010	**0.350**
1,1-Dichloroethane	<0.025	<0.025	<0.025	**0.080**	<0.025	**0.025**
cis-1,2-Dichloroethene	**0.016**	<0.010	**1.118**	**0.125**	**0.029**	**1.189**
Chloroform	<0.025	<0.025	<0.025	<0.025	**0.036**	**0.351**
1,2-Dichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,1-Trichloroethane	**10.198**	**1.213**	**0.119**	**0.087**	**1.655**	**2.404**
Carbon Tetrachloride	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Trichloroethene	**20.124**	**1.466**	**7.036**	**0.343**	**8.687**	**46.909**
1,1,2-Trichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Tetrachloroethene	**2.397**	**0.073**	<0.010	**0.010 J**	**0.322**	**0.169**
1,1,1,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Chlorobenzene	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025

Results in micrograms (ug). 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:	236	237	238	239	240	241
Project Number:	2704	2704	2704	2704	2704	2704
Lab File ID:	C13071847	C13071848	C13071849	C13071850	C13071851	C13071852
Received Date:	7/10/2013	7/10/2013	7/10/2013	7/10/2013	7/10/2013	7/10/2013
Analysis Date:	7/19/2013	7/19/2013	7/19/2013	7/19/2013	7/19/2013	7/19/2013
Analysis Time:	3:58	4:20	4:42	5:04	5:26	5:48
Matrix:	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas
Units:	ug	ug	ug	ug	ug	ug
COMPOUNDS						
Vinyl Chloride	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Trichlorofluoromethane (Freon 11)	**0.069**	**0.076**	**0.064**	**0.052**	**0.033**	<0.025
1,1-Dichloroethene	**0.041**	<0.010	**0.109**	**0.238**	**0.546**	**0.643**
Methylene Chloride	<0.025	**0.035**	<0.025	<0.025	<0.025	<0.025
1,1,2-Trichlorotrifluoroethane (Fr.113)	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
trans-1,2-Dichloroethene	**0.079**	**0.026**	**0.427**	**0.029**	**0.026**	**0.035**
1,1-Dichloroethane	<0.025	<0.025	<0.025	**0.124**	**0.859**	**0.104**
cis-1,2-Dichloroethene	**0.237**	**0.039**	**0.572**	**0.118**	**0.128**	**0.179**
Chloroform	**0.033**	**0.084**	**0.110**	**0.102**	**0.043**	**0.054**
1,2-Dichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,1-Trichloroethane	**1.441**	**0.773**	**3.966**	**31.398**	**41.433**	**29.281**
Carbon Tetrachloride	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Trichloroethene	**7.713**	**9.994**	**43.771**	**35.768**	**34.445**	**65.914**
1,1,2-Trichloroethane	**0.087**	<0.025	<0.025	<0.025	<0.025	<0.025
Tetrachloroethene	**0.088**	**0.093**	**0.483**	**3.189**	**8.122**	**1.177**
1,1,1,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Chlorobenzene	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025

Results in micrograms (ug). 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:	242	243	mb130719a	244	245	246
Project Number:	2704	2704		2704	2704	2704
Lab File ID:	C13071853	C13071854	A13071904	A13071909	A13071910	A13071911
Received Date:	7/10/2013	7/10/2013		7/10/2013	7/10/2013	7/10/2013
Analysis Date:	7/19/2013	7/19/2013	7/19/2013	7/19/2013	7/19/2013	7/19/2013
Analysis Time:	6:11	6:33	11:25	13:14	13:36	13:58
Matrix:	Soil Gas	Soil Gas		Soil Gas	Soil Gas	Soil Gas
Units:	ug	ug	ug	ug	ug	ug
COMPOUNDS						
Vinyl Chloride	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Trichlorofluoromethane (Freon 11)	**0.035**	**0.063**	<0.025	<0.025	<0.025	<0.025
1,1-Dichloroethene	<0.010	<0.010	<0.010	**0.034**	**0.016**	**0.033**
Methylene Chloride	<0.025	**0.076**	<0.025	<0.025	<0.025	<0.025
1,1,2-Trichlorotrifluoroethane (Fr.113)	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
trans-1,2-Dichloroethene	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
1,1-Dichloroethane	**0.035**	<0.025	<0.025	<0.025	<0.025	<0.025
cis-1,2-Dichloroethene	<0.010	<0.010	<0.010	**0.006 J**	<0.010	<0.010
Chloroform	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,2-Dichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,1-Trichloroethane	**2.418**	**2.380**	<0.025	**3.931**	**1.059**	**6.097**
Carbon Tetrachloride	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Trichloroethene	**7.467**	**1.218**	<0.010	**5.545**	**1.263**	**2.896**
1,1,2-Trichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Tetrachloroethene	**0.033**	**0.014**	<0.010	**0.058**	**0.016**	**0.027**
1,1,1,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Chlorobenzene	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025

Results in micrograms (ug). 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:	247	248	249	250	251	252
Project Number:	2704	2704	2704	2704	2704	2704
Lab File ID:	A13071912	A13071913	A13071914	A13071915	A13071916	A13071917
Received Date:	7/10/2013	7/10/2013	7/10/2013	7/10/2013	7/10/2013	7/10/2013
Analysis Date:	7/19/2013	7/19/2013	7/19/2013	7/19/2013	7/19/2013	7/19/2013
Analysis Time:	14:20	14:42	15:04	15:26	15:48	16:10
Matrix:	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas
Units:	ug	ug	ug	ug	ug	ug
COMPOUNDS						
Vinyl Chloride	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Trichlorofluoromethane (Freon 11)	<0.025	**0.025**	<0.025	<0.025	<0.025	**0.025**
1,1-Dichloroethene	**0.016**	**0.057**	**0.027**	**0.183**	**0.024**	**0.159**
Methylene Chloride	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2-Trichlorotrifluoroethane (Fr.113)	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
trans-1,2-Dichloroethene	<0.010	<0.010	<0.010	<0.010	<0.010	**0.040**
1,1-Dichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	**0.658**
cis-1,2-Dichloroethene	<0.010	<0.010	<0.010	<0.010	<0.010	**0.260**
Chloroform	<0.025	<0.025	<0.025	<0.025	<0.025	**0.126**
1,2-Dichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,1-Trichloroethane	**1.292**	**1.908**	**2.613**	**2.957**	**4.873**	**10.877**
Carbon Tetrachloride	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Trichloroethene	**0.343**	**0.335**	**0.983**	**1.456**	**2.747**	**12.036**
1,1,2-Trichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Tetrachloroethene	**0.007 J**	**0.029**	**0.020**	**0.035**	**0.041**	**0.098**
1,1,1,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Chlorobenzene	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025

Results in micrograms (ug). 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:	253	254	255	256	257	258
Project Number:	2704	2704	2704	2704	2704	2704
Lab File ID:	A13071918	A13071919	A13071920	A13071921	A13071922	A13071923
Received Date:	7/10/2013	7/10/2013	7/10/2013	7/10/2013	7/10/2013	7/10/2013
Analysis Date:	7/19/2013	7/19/2013	7/19/2013	7/19/2013	7/19/2013	7/19/2013
Analysis Time:	16:32	16:54	17:16	17:38	18:00	18:22
Matrix:	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas
Units:	ug	ug	ug	ug	ug	ug
COMPOUNDS						
Vinyl Chloride	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Trichlorofluoromethane (Freon 11)	**0.051**	**0.154**	**0.040**	<0.025	<0.025	<0.025
1,1-Dichloroethene	**0.097**	**0.101**	**0.009 J**	**0.044**	**0.143**	**0.083**
Methylene Chloride	<0.025	<0.025	**0.038**	<0.025	<0.025	<0.025
1,1,2-Trichlorotrifluoroethane (Fr.113)	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
trans-1,2-Dichloroethene	<0.010	<0.010	**0.009 J**	**0.006 J**	<0.010	<0.010
1,1-Dichloroethane	**0.166**	<0.025	<0.025	<0.025	<0.025	<0.025
cis-1,2-Dichloroethene	**0.014**	<0.010	**0.037**	**0.008 J**	**0.006 J**	<0.010
Chloroform	**0.230**	**0.058**	<0.025	<0.025	<0.025	<0.025
1,2-Dichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,1-Trichloroethane	**8.986**	**2.392**	**0.626**	**2.927**	**4.881**	**2.937**
Carbon Tetrachloride	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Trichloroethene	**6.323**	**2.652**	**1.971**	**3.731**	**15.603**	**11.210**
1,1,2-Trichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Tetrachloroethene	**0.130**	**0.141**	**0.084**	**0.088**	**0.053**	**0.013**
1,1,1,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Chlorobenzene	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025

Results in micrograms (ug). 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:	258 DUP	259	260	261	261 DUP	262
Project Number:	2704	2704	2704	2704	2704	2704
Lab File ID:	A13071924	A13071925	A13071926	A13071927	A13071928	A13071929
Received Date:	7/10/2013	7/10/2013	7/10/2013	7/10/2013	7/10/2013	7/10/2013
Analysis Date:	7/19/2013	7/19/2013	7/19/2013	7/19/2013	7/19/2013	7/19/2013
Analysis Time:	18:44	19:06	19:28	19:50	20:11	20:33
Matrix:	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas
Units:	ug	ug	ug	ug	ug	ug
COMPOUNDS						
Vinyl Chloride	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Trichlorofluoromethane (Freon 11)	<0.025	**0.035**	**0.027**	**0.033**	**0.041**	**0.030**
1,1-Dichloroethene	**0.110**	**0.275**	**0.179**	**0.987**	**0.812**	**0.377**
Methylene Chloride	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2-Trichlorotrifluoroethane (Fr.113)	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
trans-1,2-Dichloroethene	<0.010	**0.010 J**	<0.010	**0.012**	**0.013**	**0.013**
1,1-Dichloroethane	<0.025	**0.280**	**0.298**	**0.519**	**0.755**	**0.044**
cis-1,2-Dichloroethene	<0.010	**0.022**	**0.026**	**0.023**	**0.024**	**0.037**
Chloroform	<0.025	**0.056**	**0.041**	**0.176**	**0.235**	**0.072**
1,2-Dichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,1-Trichloroethane	**3.159**	**10.877**	**13.223**	**39.413**	**50.701**	**8.554**
Carbon Tetrachloride	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Trichloroethene	**9.964**	**17.340**	**6.392**	**7.066**	**8.424**	**14.930**
1,1,2-Trichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Tetrachloroethene	**0.013**	**0.192**	**0.740**	**0.671**	**0.613**	**0.362**
1,1,1,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Chlorobenzene	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025

Results in micrograms (ug). 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:	263	264	265	266	267	268
Project Number:	2704	2704	2704	2704	2704	2704
Lab File ID:	A13071930	A13071931	A13071932	A13071933	A13071934	A13071935
Received Date:	7/10/2013	7/10/2013	7/10/2013	7/10/2013	7/10/2013	7/10/2013
Analysis Date:	7/19/2013	7/19/2013	7/19/2013	7/19/2013	7/19/2013	7/19/2013
Analysis Time:	20:55	21:16	21:38	22:00	22:21	22:43
Matrix:	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas
Units:	ug	ug	ug	ug	ug	ug
COMPOUNDS						
Vinyl Chloride	<0.010	<0.010	<0.010	<0.010	<0.010	**0.054**
Trichlorofluoromethane (Freon 11)	<0.025	<0.025	**0.028**	<0.025	<0.025	<0.025
1,1-Dichloroethene	**2.643**	**1.311**	**0.712**	**0.828**	**0.552**	**0.674**
Methylene Chloride	**0.097**	<0.025	<0.025	<0.025	**0.083**	<0.025
1,1,2-Trichlorotrifluoroethane (Fr.113)	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
trans-1,2-Dichloroethene	**0.021**	**0.018**	**0.009 J**	**0.013**	**0.006 J**	**0.013**
1,1-Dichloroethane	**0.193**	**0.105**	**0.093**	**0.106**	**0.046**	**0.368**
cis-1,2-Dichloroethene	**0.174**	**0.074**	**0.096**	**0.077**	**0.020**	**0.031**
Chloroform	**0.091**	**0.061**	**0.039**	**0.048**	**0.043**	**0.060**
1,2-Dichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,1-Trichloroethane	**72.728**	**61.903**	**46.898**	**29.747**	**10.495**	**24.127**
Carbon Tetrachloride	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Trichloroethene	**44.639**	**26.414**	**20.346**	**36.033**	**26.563**	**25.064**
1,1,2-Trichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Tetrachloroethene	**8.521**	**2.465**	**0.825**	**0.267**	**0.038**	**2.273**
1,1,1,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Chlorobenzene	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025

Results in micrograms (ug). 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:	269	270	270 DUP	271	272	273
Project Number:	2704	2704	2704	2704	2704	2704
Lab File ID:	A13071936	A13071937	A13071938	A13071939	A13071940	A13071941
Received Date:	7/10/2013	7/10/2013	7/10/2013	7/10/2013	7/10/2013	7/10/2013
Analysis Date:	7/19/2013	7/19/2013	7/19/2013	7/20/2013	7/20/2013	7/20/2013
Analysis Time:	23:05	23:27	23:49	0:11	0:33	0:54
Matrix:	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas
Units:	ug	ug	ug	ug	ug	ug
COMPOUNDS						
Vinyl Chloride	**0.048**	**0.028**	**0.099**	**0.044**	<0.010	**0.036**
Trichlorofluoromethane (Freon 11)	**0.038**	**0.029**	<0.025	**0.036**	<0.025	**0.039**
1,1-Dichloroethene	**0.901**	**1.769**	**1.375**	**0.037**	**6.435**	**5.481**
Methylene Chloride	<0.025	**0.036**	**0.035**	**0.034**	<0.025	<0.025
1,1,2-Trichlorotrifluoroethane (Fr.113)	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
trans-1,2-Dichloroethene	**0.016**	**0.060**	**0.055**	<0.010	**0.129**	**0.096**
1,1-Dichloroethane	**0.172**	**0.801**	**0.458**	<0.025	**0.602**	**0.270**
cis-1,2-Dichloroethene	**0.042**	**0.445**	**0.420**	<0.010	**1.368**	**1.398**
Chloroform	**0.052**	**0.126**	**0.077**	<0.025	**0.259**	**0.263**
1,2-Dichloroethane	<0.025	<0.025	<0.025	<0.025	**0.070**	**0.055**
1,1,1-Trichloroethane	**35.927**	**73.118**	**70.236**	**2.715**	**136.517**	**104.451**
Carbon Tetrachloride	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Trichloroethene	**22.138**	**36.264**	**31.106**	**0.427**	**119.123**	**133.631**
1,1,2-Trichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Tetrachloroethene	**2.752**	**3.811**	**3.642**	**0.014**	**17.498**	**3.681**
1,1,1,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Chlorobenzene	<0.025	<0.025	<0.025	<0.025	**0.054**	<0.025
1,1,2,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025

Results in micrograms (ug). 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:	274	275	276	277	278	279
Project Number:	2704	2704	2704	2704	2704	2704
Lab File ID:	A13071942	A13071943	A13071944	A13071945	A13071946	A13071947
Received Date:	7/10/2013	7/10/2013	7/10/2013	7/10/2013	7/10/2013	7/10/2013
Analysis Date:	7/20/2013	7/20/2013	7/20/2013	7/20/2013	7/20/2013	7/20/2013
Analysis Time:	1:16	1:38	2:00	2:22	2:44	3:06
Matrix:	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas
Units:	ug	ug	ug	ug	ug	ug
COMPOUNDS						
Vinyl Chloride	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Trichlorofluoromethane (Freon 11)	**0.030**	**0.028**	**0.026**	<0.025	<0.025	<0.025
1,1-Dichloroethene	**5.651**	**1.963**	**0.419**	**0.179**	**0.430**	**1.681**
Methylene Chloride	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2-Trichlorotrifluoroethane (Fr.113)	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
trans-1,2-Dichloroethene	**0.069**	**0.105**	**0.022**	**0.021**	**0.013**	**0.026**
1,1-Dichloroethane	**0.272**	**0.091**	**0.095**	**0.080**	**0.063**	**0.074**
cis-1,2-Dichloroethene	**1.124**	**1.442**	**0.178**	**0.209**	**0.074**	**0.147**
Chloroform	**0.253**	**0.122**	**0.048**	**0.086**	**0.056**	**0.101**
1,2-Dichloroethane	**0.064**	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,1-Trichloroethane	**114.683**	**91.061**	**9.702**	**12.319**	**9.601**	**47.285**
Carbon Tetrachloride	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Trichloroethene	**134.087**	**167.614**	**38.289**	**60.403**	**37.316**	**95.755**
1,1,2-Trichloroethane	<0.025	**0.385**	**0.083**	**0.197**	<0.025	<0.025
Tetrachloroethene	**1.064**	**0.726**	**0.184**	**0.085**	**0.054**	**0.123**
1,1,1,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Chlorobenzene	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025

Results in micrograms (ug). 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:	280	281	282	283	284	285
Project Number:	2704	2704	2704	2704	2704	2704
Lab File ID:	A13071948	A13071949	A13071950	A13071951	A13071952	A13071953
Received Date:	7/10/2013	7/10/2013	7/10/2013	7/10/2013	7/10/2013	7/10/2013
Analysis Date:	7/20/2013	7/20/2013	7/20/2013	7/20/2013	7/20/2013	7/20/2013
Analysis Time:	3:28	3:49	4:11	4:33	4:55	5:16
Matrix:	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas
Units:	ug	ug	ug	ug	ug	ug
COMPOUNDS						
Vinyl Chloride	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Trichlorofluoromethane (Freon 11)	<0.025	**0.041**	<0.025	<0.025	<0.025	<0.025
1,1-Dichloroethene	**1.726**	**3.907**	**1.418**	**3.514**	**4.711**	**4.436**
Methylene Chloride	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2-Trichlorotrifluoroethane (Fr.113)	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
trans-1,2-Dichloroethene	**0.035**	**0.101**	**0.042**	**0.143**	**0.085**	**0.098**
1,1-Dichloroethane	**0.191**	**0.126**	**0.089**	**0.309**	**0.336**	**0.453**
cis-1,2-Dichloroethene	**0.491**	**1.155**	**0.319**	**1.881**	**0.942**	**0.643**
Chloroform	**0.262**	**0.215**	**0.092**	**0.295**	**0.395**	**0.590**
1,2-Dichloroethane	<0.025	**0.074**	<0.025	**0.060**	**0.050**	<0.025
1,1,1-Trichloroethane	**92.232**	**108.366**	**71.303**	**118.667**	**132.814**	**133.142**
Carbon Tetrachloride	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Trichloroethene	**129.502**	**176.616**	**81.939**	**126.339**	**127.608**	**110.193**
1,1,2-Trichloroethane	**0.302**	<0.025	<0.025	**0.546**	<0.025	**0.257**
Tetrachloroethene	**0.135**	**0.954**	**0.379**	**1.800**	**1.179**	**1.632**
1,1,1,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Chlorobenzene	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025

Results in micrograms (ug). 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:	286	287	288	289	290	291
Project Number:	2704	2704	2704	2704	2704	2704
Lab File ID:	A13071954	A13071955	A13071956	A13071957	A13071958	A13071959
Received Date:	7/10/2013	7/10/2013	7/10/2013	7/10/2013	7/10/2013	7/10/2013
Analysis Date:	7/20/2013	7/20/2013	7/20/2013	7/20/2013	7/20/2013	7/20/2013
Analysis Time:	5:38	6:00	6:22	6:44	7:06	7:28
Matrix:	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas
Units:	ug	ug	ug	ug	ug	ug
COMPOUNDS						
Vinyl Chloride	<0.010	**0.074**	**0.113**	<0.010	<0.010	**0.121**
Trichlorofluoromethane (Freon 11)	**0.027**	**0.026**	**0.047**	**0.035**	**0.042**	**0.039**
1,1-Dichloroethene	**2.025**	**0.424**	**1.193**	**0.217**	**0.151**	**1.158**
Methylene Chloride	**0.063**	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2-Trichlorotrifluoroethane (Fr.113)	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
trans-1,2-Dichloroethene	**0.106**	<0.010	**0.208**	**1.090**	**0.157**	**0.034**
1,1-Dichloroethane	**0.480**	**0.232**	**0.450**	**0.025**	**0.135**	**0.679**
cis-1,2-Dichloroethene	**0.527**	**0.019**	**0.900**	**5.857**	**0.495**	**0.053**
Chloroform	**0.430**	<0.025	**0.283**	**0.144**	**0.243**	**0.437**
1,2-Dichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	**0.071**
1,1,1-Trichloroethane	**101.571**	**5.392**	**60.440**	**10.334**	**25.172**	**128.934**
Carbon Tetrachloride	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Trichloroethene	**68.055**	**2.271**	**78.309**	**358.115**	**31.150**	**78.194**
1,1,2-Trichloroethane	**0.328**	<0.025	<0.025	<0.025	<0.025	<0.025
Tetrachloroethene	**1.787**	**0.100**	**0.406**	**0.075**	**0.018**	**0.366**
1,1,1,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Chlorobenzene	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025

Results in micrograms (ug). 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:	292
Project Number:	2704
Lab File ID:	A13071960
Received Date:	7/10/2013
Analysis Date:	7/20/2013
Analysis Time:	7:50
Matrix:	Soil Gas
Units:	ug

COMPOUNDS	
Vinyl Chloride	<0.010
Trichlorofluoromethane (Freon 11)	<0.025
1,1-Dichloroethene	**0.323**
Methylene Chloride	<0.025
1,1,2-Trichlorotrifluoroethane (Fr.113)	<0.025
trans-1,2-Dichloroethene	**0.022**
1,1-Dichloroethane	**0.046**
cis-1,2-Dichloroethene	**0.107**
Chloroform	<0.025
1,2-Dichloroethane	<0.025
1,1,1-Trichloroethane	**6.815**
Carbon Tetrachloride	<0.025
Trichloroethene	**7.965**
1,1,2-Trichloroethane	<0.025
Tetrachloroethene	**0.010 J**
1,1,1,2-Tetrachloroethane	<0.025
Chlorobenzene	<0.025
1,1,2,2-Tetrachloroethane	<0.025

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

Table 2

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

Analysis by EPA Method 8260C

Client Sample ID:	mb130917c	Trip-1	Trip-2	293	294	295
Project Number:		2704.2	2704.2	2704.2	2704.2	2704.2
Lab File ID:	C13091703	C13091718	C13091719	C13091720	C13091721	C13091722
Received Date:		9/13/2013	9/13/2013	9/13/2013	9/13/2013	9/13/2013
Analysis Date:	9/17/2013	9/17/2013	9/17/2013	9/17/2013	9/17/2013	9/17/2013
Analysis Time:	11:07	16:42	17:04	17:26	17:49	18:11
Matrix:				Soil Gas	Soil Gas	Soil Gas
Units:	ug	ug	ug	ug	ug	ug
COMPOUNDS						
Vinyl Chloride	<0.010	<0.010	<0.010	<0.010	**0.024**	**0.018**
Trichlorofluoromethane (Freon 11)	<0.025	<0.025	<0.025	**0.068**	<0.025	<0.025
1,1-Dichloroethene	<0.010	<0.010	<0.010	**0.051**	**1.980**	**1.450**
Methylene Chloride	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2-Trichlorotrifluoroethane (Fr.113)	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
trans-1,2-Dichloroethene	<0.010	<0.010	<0.010	**0.050**	**0.063**	**0.036**
1,1-Dichloroethane	<0.025	<0.025	<0.025	<0.025	**0.751**	**0.136**
cis-1,2-Dichloroethene	<0.010	<0.010	<0.010	**0.062**	**0.384**	**0.150**
Chloroform	<0.025	<0.025	<0.025	**0.110**	**0.051**	**0.049**
1,2-Dichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,1-Trichloroethane	<0.025	<0.025	<0.025	**0.967**	**48.363**	**27.574**
Carbon Tetrachloride	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Trichloroethene	<0.010	<0.010	<0.010	**21.159**	**88.267**	**45.395**
1,1,2-Trichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Tetrachloroethene	<0.010	<0.010	<0.010	**0.154**	**25.979**	**0.875**
1,1,1,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Chlorobenzene	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025

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

Table 2

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

Analysis by EPA Method 8260C

Client Sample ID:	296	297	298	299	300	301
Project Number:	2704.2	2704.2	2704.2	2704.2	2704.2	2704.2
Lab File ID:	C13091723	C13091724	C13091725	C13091726	C13091727	C13091728
Received Date:	9/13/2013	9/13/2013	9/13/2013	9/13/2013	9/13/2013	9/13/2013
Analysis Date:	9/17/2013	9/17/2013	9/17/2013	9/17/2013	9/17/2013	9/17/2013
Analysis Time:	18:33	18:56	19:22	19:44	20:06	20:28
Matrix:	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas
Units:	ug	ug	ug	ug	ug	ug
COMPOUNDS						
Vinyl Chloride	**0.011**	**0.021**	<0.010	**0.032**	**0.044**	**0.011**
Trichlorofluoromethane (Freon 11)	<0.025	**0.038**	<0.025	<0.025	<0.025	<0.025
1,1-Dichloroethene	**1.159**	**1.506**	**0.693**	**2.434**	**5.526**	**1.416**
Methylene Chloride	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2-Trichlorotrifluoroethane (Fr.113)	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
trans-1,2-Dichloroethene	**0.202**	<0.010	<0.010	**0.026**	**0.092**	**0.125**
1,1-Dichloroethane	**0.063**	**0.047**	**0.124**	**0.083**	**0.120**	**0.059**
cis-1,2-Dichloroethene	**1.274**	**0.008 J**	**0.012**	**0.151**	**0.246**	**0.632**
Chloroform	**0.048**	<0.025	**0.028**	**0.086**	**0.154**	**0.079**
1,2-Dichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,1-Trichloroethane	**9.950**	**20.814**	**6.562**	**41.935**	**49.701**	**34.209**
Carbon Tetrachloride	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Trichloroethene	**78.995**	**16.917**	**13.470**	**126.830**	**162.315**	**90.107**
1,1,2-Trichloroethane	<0.025	<0.025	<0.025	**0.131**	**0.092**	**0.050**
Tetrachloroethene	**3.995**	**3.468**	**0.261**	**0.904**	**0.334**	**0.739**
1,1,1,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Chlorobenzene	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025

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

Table 2

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

Analysis by EPA Method 8260C

Client Sample ID:	302	303	304	305	306	307
Project Number:	2704.2	2704.2	2704.2	2704.2	2704.2	2704.2
Lab File ID:	C13091729	C13091730	C13091731	C13091732	C13091733	C13091734
Received Date:	9/13/2013	9/13/2013	9/13/2013	9/13/2013	9/13/2013	9/13/2013
Analysis Date:	9/17/2013	9/17/2013	9/17/2013	9/17/2013	9/17/2013	9/17/2013
Analysis Time:	20:51	21:14	21:36	21:58	22:20	22:43
Matrix:	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas
Units:	ug	ug	ug	ug	ug	ug
COMPOUNDS						
Vinyl Chloride	**0.067**	**0.068**	**0.126**	**0.074**	**0.034**	**0.092**
Trichlorofluoromethane (Freon 11)	<0.025	<0.025	**0.037**	**0.100**	**0.055**	**0.027**
1,1-Dichloroethene	**4.259**	**4.612**	**1.668**	**0.949**	**0.366**	**3.989**
Methylene Chloride	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2-Trichlorotrifluoroethane (Fr.113)	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
trans-1,2-Dichloroethene	**0.168**	**0.217**	**0.185**	<0.010	**0.012**	**0.089**
1,1-Dichloroethane	**0.585**	**1.553**	**0.207**	**0.069**	**0.030**	**2.591**
cis-1,2-Dichloroethene	**0.371**	**1.148**	**1.005**	<0.010	<0.010	**0.238**
Chloroform	**0.146**	**0.393**	**0.040**	**0.025**	<0.025	**0.200**
1,2-Dichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,1-Trichloroethane	**42.943**	**92.073**	**9.449**	**8.306**	**2.471**	**33.780**
Carbon Tetrachloride	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Trichloroethene	**74.346**	**125.734**	**57.548**	**8.001**	**10.859**	**44.474**
1,1,2-Trichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Tetrachloroethene	**0.055**	**0.380**	**1.124**	**0.016**	**0.020**	**0.043**
1,1,1,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Chlorobenzene	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025

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

Table 2

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

Analysis by EPA Method 8260C

Client Sample ID:	308	309	310	311	312	312 DUP
Project Number:	2704.2	2704.2	2704.2	2704.2	2704.2	2704.2
Lab File ID:	C13091735	C13091736	C13091737	C13091738	C13091739	C13091740
Received Date:	9/13/2013	9/13/2013	9/13/2013	9/13/2013	9/13/2013	9/13/2013
Analysis Date:	9/17/2013	9/17/2013	9/17/2013	9/18/2013	9/18/2013	9/18/2013
Analysis Time:	23:06	23:28	23:50	0:12	0:35	0:57
Matrix:	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas
Units:	ug	ug	ug	ug	ug	ug
COMPOUNDS						
Vinyl Chloride	**0.019**	**0.031**	**0.075**	**0.009 J**	<0.010	<0.010
Trichlorofluoromethane (Freon 11)	<0.025	<0.025	<0.025	**0.082**	**0.029**	**0.036**
1,1-Dichloroethene	**2.165**	**0.977**	**2.438**	**0.249**	**0.258**	**0.247**
Methylene Chloride	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2-Trichlorotrifluoroethane (Fr.113)	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
trans-1,2-Dichloroethene	**0.092**	**1.301**	**0.424**	**0.009 J**	<0.010	<0.010
1,1-Dichloroethane	**0.721**	**5.261**	**2.136**	<0.025	<0.025	<0.025
cis-1,2-Dichloroethene	**0.147**	**3.892**	**1.549**	<0.010	<0.010	<0.010
Chloroform	**0.089**	**0.340**	**0.153**	<0.025	<0.025	<0.025
1,2-Dichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,1-Trichloroethane	**36.284**	**72.118**	**81.498**	**2.887**	**2.375**	**2.723**
Carbon Tetrachloride	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Trichloroethene	**48.499**	**247.031**	**205.482**	**8.539**	**15.132**	**12.689**
1,1,2-Trichloroethane	<0.025	**0.028**	<0.025	<0.025	<0.025	<0.025
Tetrachloroethene	**0.092**	**0.188**	**0.094**	**0.016**	**0.256**	**0.114**
1,1,1,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Chlorobenzene	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025

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

Table 2

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

Analysis by EPA Method 8260C

Client Sample ID:	313	314	315	316	317	318
Project Number:	2704.2	2704.2	2704.2	2704.2	2704.2	2704.2
Lab File ID:	C13091741	C13091742	C13091743	C13091744	C13091745	C13091746
Received Date:	9/13/2013	9/13/2013	9/13/2013	9/13/2013	9/13/2013	9/13/2013
Analysis Date:	9/18/2013	9/18/2013	9/18/2013	9/18/2013	9/18/2013	9/18/2013
Analysis Time:	1:19	1:41	2:04	2:26	2:48	3:11
Matrix:	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas
Units:	ug	ug	ug	ug	ug	ug
COMPOUNDS						
Vinyl Chloride	**0.020**	**0.021**	**0.029**	<0.010	**0.010 J**	**0.008 J**
Trichlorofluoromethane (Freon 11)	<0.025	<0.025	**0.058**	<0.025	<0.025	<0.025
1,1-Dichloroethene	**1.017**	**1.969**	**1.743**	**0.269**	**0.541**	**0.578**
Methylene Chloride	**0.037**	<0.025	<0.025	<0.025	**0.054**	**0.091**
1,1,2-Trichlorotrifluoroethane (Fr.113)	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
trans-1,2-Dichloroethene	**0.087**	**0.041**	**0.030**	**0.052**	**0.363**	**0.323**
1,1-Dichloroethane	**0.529**	**0.056**	**0.047**	**0.037**	**0.215**	**0.150**
cis-1,2-Dichloroethene	**0.215**	**0.018**	**0.009 J**	**0.441**	**3.164**	**0.900**
Chloroform	**0.264**	**0.112**	**0.051**	**0.051**	**0.107**	**0.065**
1,2-Dichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,1-Trichloroethane	**80.716**	**53.119**	**38.801**	**21.139**	**37.489**	**20.438**
Carbon Tetrachloride	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Trichloroethene	**136.079**	**128.433**	**80.106**	**91.431**	**178.667**	**160.301**
1,1,2-Trichloroethane	<0.025	<0.025	<0.025	**0.037**	<0.025	<0.025
Tetrachloroethene	**0.164**	**0.354**	**0.178**	**0.192**	**0.091**	**0.157**
1,1,1,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Chlorobenzene	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025

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

Table 2

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

Analysis by EPA Method 8260C

Client Sample ID:	319	320	321	322	323	324
Project Number:	2704.2	2704.2	2704.2	2704.2	2704.2	2704.2
Lab File ID:	C13091747	C13091748	C13091749	C13091750	C13091751	C13091752
Received Date:	9/13/2013	9/13/2013	9/13/2013	9/13/2013	9/13/2013	9/13/2013
Analysis Date:	9/18/2013	9/18/2013	9/18/2013	9/18/2013	9/18/2013	9/18/2013
Analysis Time:	3:33	3:55	4:17	4:39	5:02	5:24
Matrix:	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas
Units:	ug	ug	ug	ug	ug	ug
COMPOUNDS						
Vinyl Chloride	<0.010	**0.105**	<0.010	**0.015**	<0.010	**0.021**
Trichlorofluoromethane (Freon 11)	<0.025	<0.025	<0.025	**0.055**	**0.053**	**0.038**
1,1-Dichloroethene	**0.459**	**1.537**	**0.643**	**0.341**	<0.010	**0.644**
Methylene Chloride	<0.025	<0.025	**0.078**	<0.025	<0.025	<0.025
1,1,2-Trichlorotrifluoroethane (Fr.113)	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
trans-1,2-Dichloroethene	**0.152**	**0.168**	**0.177**	**0.024**	<0.010	**0.025**
1,1-Dichloroethane	**0.186**	**0.154**	**0.146**	**0.025**	<0.025	**0.662**
cis-1,2-Dichloroethene	**1.049**	**1.918**	**6.614**	**0.055**	**0.031**	**0.388**
Chloroform	**0.124**	**0.055**	**0.146**	**0.029**	<0.025	**0.077**
1,2-Dichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,1-Trichloroethane	**4.597**	**10.164**	**36.068**	**3.938**	**0.146**	**9.848**
Carbon Tetrachloride	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Trichloroethene	**97.417**	**130.581**	**176.594**	**42.266**	**2.023**	**48.102**
1,1,2-Trichloroethane	<0.025	<0.025	**0.361**	<0.025	<0.025	<0.025
Tetrachloroethene	**0.194**	**0.080**	**0.491**	**0.834**	**0.044**	**0.296**
1,1,1,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Chlorobenzene	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025

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

Table 2

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

Analysis by EPA Method 8260C

Client Sample ID:	325	326	mb130917a	327	327 DUP	328
Project Number:	2704.2	2704.2		2704.2	2704.2	2704.2
Lab File ID:	C13091753	C13091754	A13091703	A13091705	A13091706	A13091707
Received Date:	9/13/2013	9/13/2013		9/13/2013	9/13/2013	9/13/2013
Analysis Date:	9/18/2013	9/18/2013	9/17/2013	9/17/2013	9/17/2013	9/17/2013
Analysis Time:	5:46	6:09	11:27	12:20	12:47	13:14
Matrix:	Soil Gas	Soil Gas		Soil Gas	Soil Gas	Soil Gas
Units:	ug	ug	ug	ug	ug	ug
COMPOUNDS						
Vinyl Chloride	**0.024**	**0.038**	<0.010	**0.015**	**0.012**	**0.013**
Trichlorofluoromethane (Freon 11)	<0.025	<0.025	<0.025	<0.025	**0.030**	<0.025
1,1-Dichloroethene	**0.914**	**0.995**	<0.010	**0.063**	**0.057**	**0.165**
Methylene Chloride	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2-Trichlorotrifluoroethane (Fr.113)	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
trans-1,2-Dichloroethene	**0.091**	**0.079**	<0.010	**0.589**	**0.510**	**0.208**
1,1-Dichloroethane	**0.084**	**0.322**	<0.025	<0.025	<0.025	**0.028**
cis-1,2-Dichloroethene	**1.330**	**1.471**	<0.010	**2.919**	**2.846**	**4.358**
Chloroform	**0.075**	**0.126**	<0.025	**0.051**	**0.109**	**0.041**
1,2-Dichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,1-Trichloroethane	**25.164**	**22.005**	<0.025	**0.589**	**0.990**	**7.009**
Carbon Tetrachloride	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Trichloroethene	**191.636**	**156.760**	<0.010	**153.962**	**205.888**	**245.348**
1,1,2-Trichloroethane	<0.025	**0.081**	<0.025	<0.025	<0.025	<0.025
Tetrachloroethene	**2.407**	**0.945**	<0.010	**62.525**	**64.200**	**1.543**
1,1,1,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Chlorobenzene	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025

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

Table 2

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

Analysis by EPA Method 8260C

Client Sample ID:	329	330	331	332	333	334
Project Number:	2704.2	2704.2	2704.2	2704.2	2704.2	2704.2
Lab File ID:	A13091708	A13091709	A13091710	A13091711	A13091712	A13091713
Received Date:	9/13/2013	9/13/2013	9/13/2013	9/13/2013	9/13/2013	9/13/2013
Analysis Date:	9/17/2013	9/17/2013	9/17/2013	9/17/2013	9/17/2013	9/17/2013
Analysis Time:	13:40	14:07	14:33	15:00	15:26	15:53
Matrix:	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas
Units:	ug	ug	ug	ug	ug	ug
COMPOUNDS						
Vinyl Chloride	<0.010	<0.010	<0.010	<0.010	**0.021**	**0.010**
Trichlorofluoromethane (Freon 11)	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1-Dichloroethene	**0.008 J**	<0.010	<0.010	<0.010	**0.168**	**0.078**
Methylene Chloride	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2-Trichlorotrifluoroethane (Fr.113)	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
trans-1,2-Dichloroethene	**0.008 J**	<0.010	<0.010	<0.010	<0.010	<0.010
1,1-Dichloroethane	<0.025	<0.025	<0.025	<0.025	**1.762**	**0.283**
cis-1,2-Dichloroethene	**0.062**	<0.010	<0.010	<0.010	<0.010	**0.025**
Chloroform	<0.025	<0.025	<0.025	<0.025	<0.025	**0.057**
1,2-Dichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,1-Trichloroethane	<0.025	<0.025	<0.025	<0.025	**5.857**	**4.356**
Carbon Tetrachloride	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Trichloroethene	**9.195**	**0.120**	**0.149**	**1.823**	**0.189**	**2.046**
1,1,2-Trichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Tetrachloroethene	**1.427**	**0.042**	**0.026**	**0.091**	**0.075**	**1.014**
1,1,1,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	**0.031**
Chlorobenzene	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025

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

Table 2

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

Analysis by EPA Method 8260C

Client Sample ID:	335	336	337	338	339	339 DUP
Project Number:	2704.2	2704.2	2704.2	2704.2	2704.2	2704.2
Lab File ID:	A13091714	A13091715	A13091716	A13091717	A13091718	A13091719
Received Date:	9/13/2013	9/13/2013	9/13/2013	9/13/2013	9/13/2013	9/13/2013
Analysis Date:	9/17/2013	9/17/2013	9/17/2013	9/17/2013	9/17/2013	9/17/2013
Analysis Time:	16:20	16:47	17:13	17:40	18:06	18:33
Matrix:	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas
Units:	ug	ug	ug	ug	ug	ug
COMPOUNDS						
Vinyl Chloride	<0.010	**0.059**	<0.010	<0.010	<0.010	<0.010
Trichlorofluoromethane (Freon 11)	<0.025	<0.025	<0.025	<0.025	**0.027**	<0.025
1,1-Dichloroethene	**0.023**	**0.134**	**0.027**	**0.042**	**0.012**	**0.011**
Methylene Chloride	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2-Trichlorotrifluoroethane (Fr.113)	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
trans-1,2-Dichloroethene	**0.008 J**	**0.072**	**0.011**	**0.027**	**0.033**	**0.025**
1,1-Dichloroethane	<0.025	**0.029**	<0.025	<0.025	<0.025	<0.025
cis-1,2-Dichloroethene	**0.011**	**0.529**	**0.057**	**0.167**	**0.263**	**0.233**
Chloroform	<0.025	**0.044**	<0.025	<0.025	<0.025	<0.025
1,2-Dichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,1-Trichloroethane	**0.280**	**1.474**	**0.509**	**0.423**	**0.056**	**0.043**
Carbon Tetrachloride	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Trichloroethene	**11.911**	**37.456**	**10.192**	**10.042**	**7.316**	**5.574**
1,1,2-Trichloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Tetrachloroethene	**0.878**	**0.215**	**0.114**	**0.066**	**0.044**	**0.021**
1,1,1,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Chlorobenzene	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2,2-Tetrachloroethane	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025

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

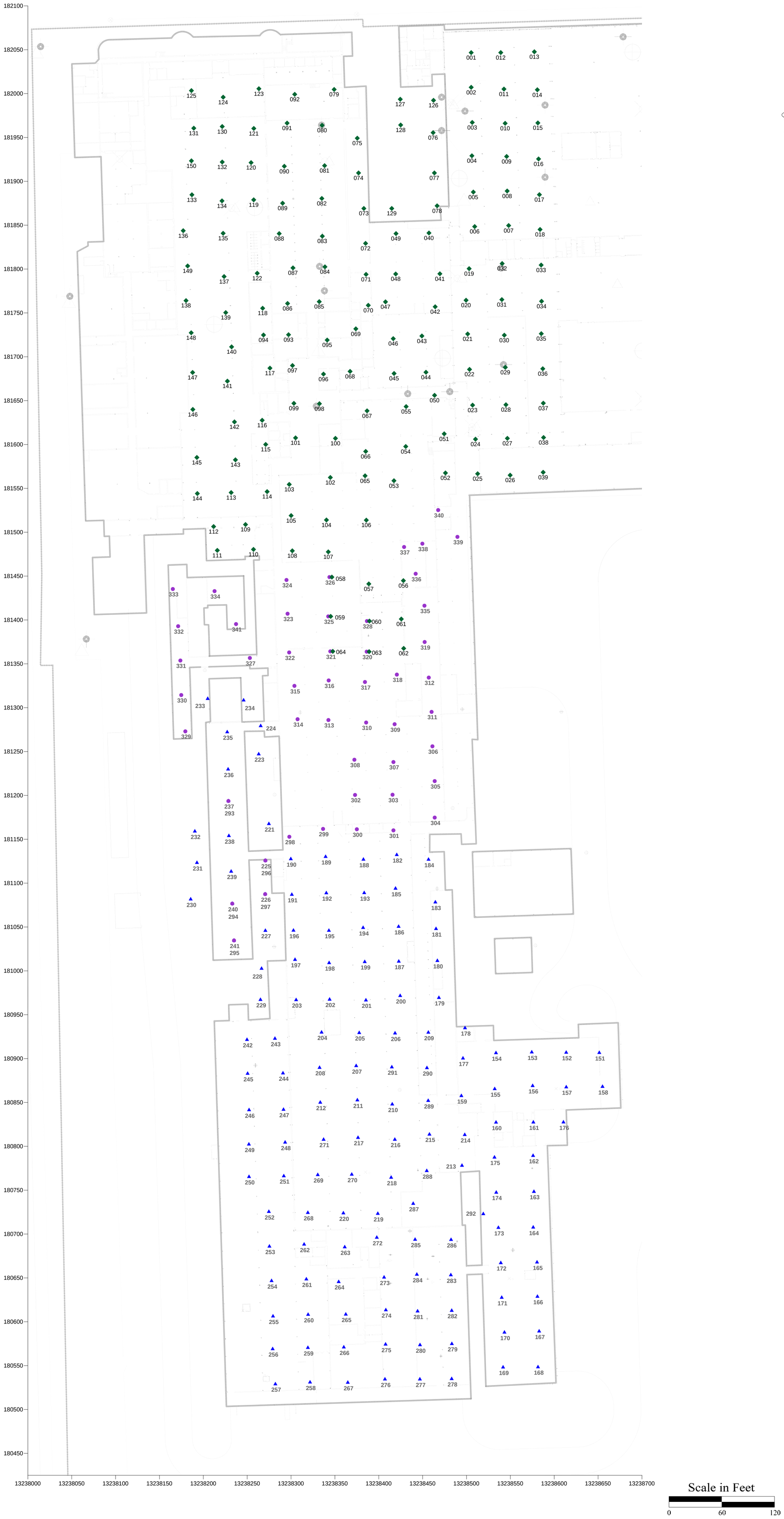
Table 2

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

Analysis by EPA Method 8260C

Client Sample ID:	340	341
Project Number:	2704.2	2704.2
Lab File ID:	A13091720	A13091721
Received Date:	9/13/2013	9/13/2013
Analysis Date:	9/17/2013	9/17/2013
Analysis Time:	19:00	19:26
Matrix:	Soil Gas	Soil Gas
Units:	ug	ug
COMPOUNDS		
Vinyl Chloride	<0.010	<0.010
Trichlorofluoromethane (Freon 11)	<0.025	<0.025
1,1-Dichloroethene	**0.019**	**0.051**
Methylene Chloride	<0.025	<0.025
1,1,2-Trichlorotrifluoroethane (Fr.113)	<0.025	<0.025
trans-1,2-Dichloroethene	**0.007 J**	<0.010
1,1-Dichloroethane	<0.025	<0.025
cis-1,2-Dichloroethene	**0.024**	<0.010
Chloroform	<0.025	<0.025
1,2-Dichloroethane	<0.025	<0.025
1,1,1-Trichloroethane	**0.170**	**0.384**
Carbon Tetrachloride	<0.025	<0.025
Trichloroethene	**7.035**	**0.930**
1,1,2-Trichloroethane	<0.025	<0.025
Tetrachloroethene	**0.221**	**0.350**
1,1,1,2-Tetrachloroethane	<0.025	<0.025
Chlorobenzene	<0.025	<0.025
1,1,2,2-Tetrachloroethane	<0.025	<0.025

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



Scale in Feet

0 60 120

BEACON ENVIRONMENTAL SERVICES, INC.
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Beacon Project No. 2704, October 2013

LEGEND

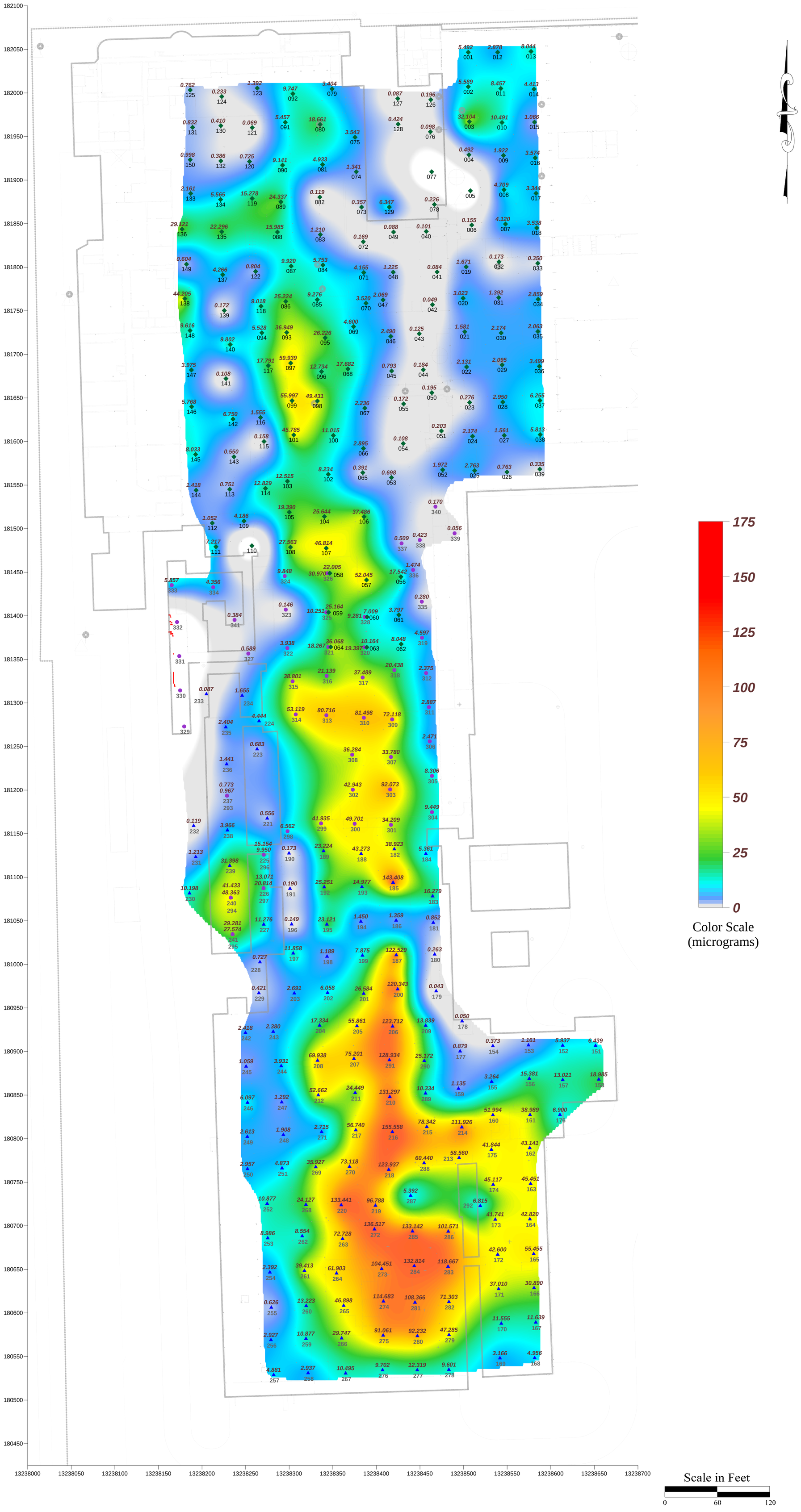
001 PASSIVE SOIL-GAS SAMPLE LOCATION (July 2010)

267 PASSIVE SOIL-GAS SAMPLE LOCATION (July 2013)

311 PASSIVE SOIL-GAS SAMPLE LOCATION (September 2013)

Figure 1
Passive Soil-Gas Survey
Sample Locations

Former Tecumseh Products
Tecumseh, MI



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LEGEND

1,000 MICROGRAMS/SAMPLER

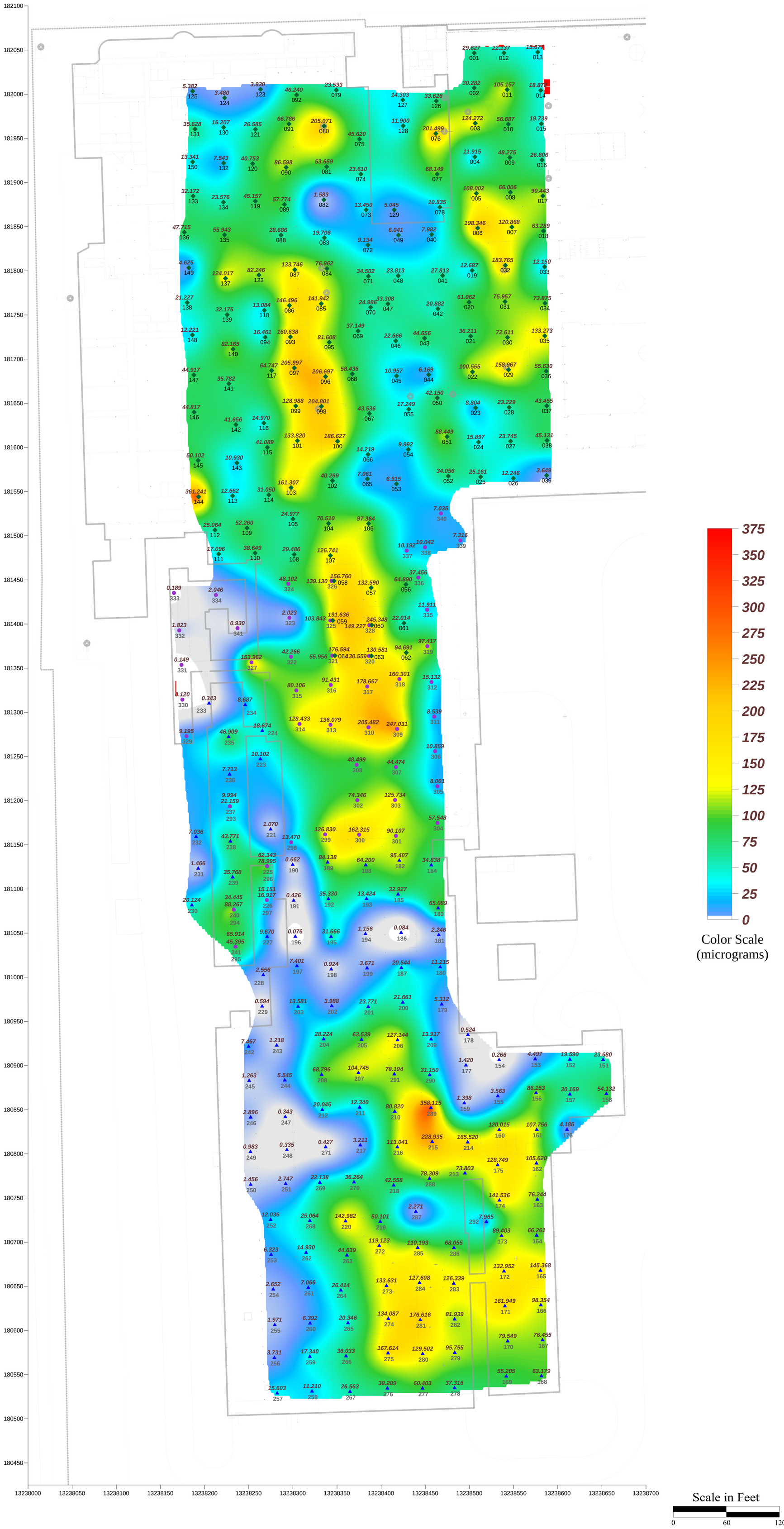
001 PASSIVE SOIL-GAS SAMPLE LOCATION (July 2010)

267 PASSIVE SOIL-GAS SAMPLE LOCATION (July 2013)

311 PASSIVE SOIL-GAS SAMPLE LOCATION (September 2013)

Figure 2
Passive Soil-Gas Survey
1,1,1-Trichloroethane

Former Tecumseh Products
Tecumseh, MI



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LEGEND

1,000 MICROGRAMS/SAMPLER

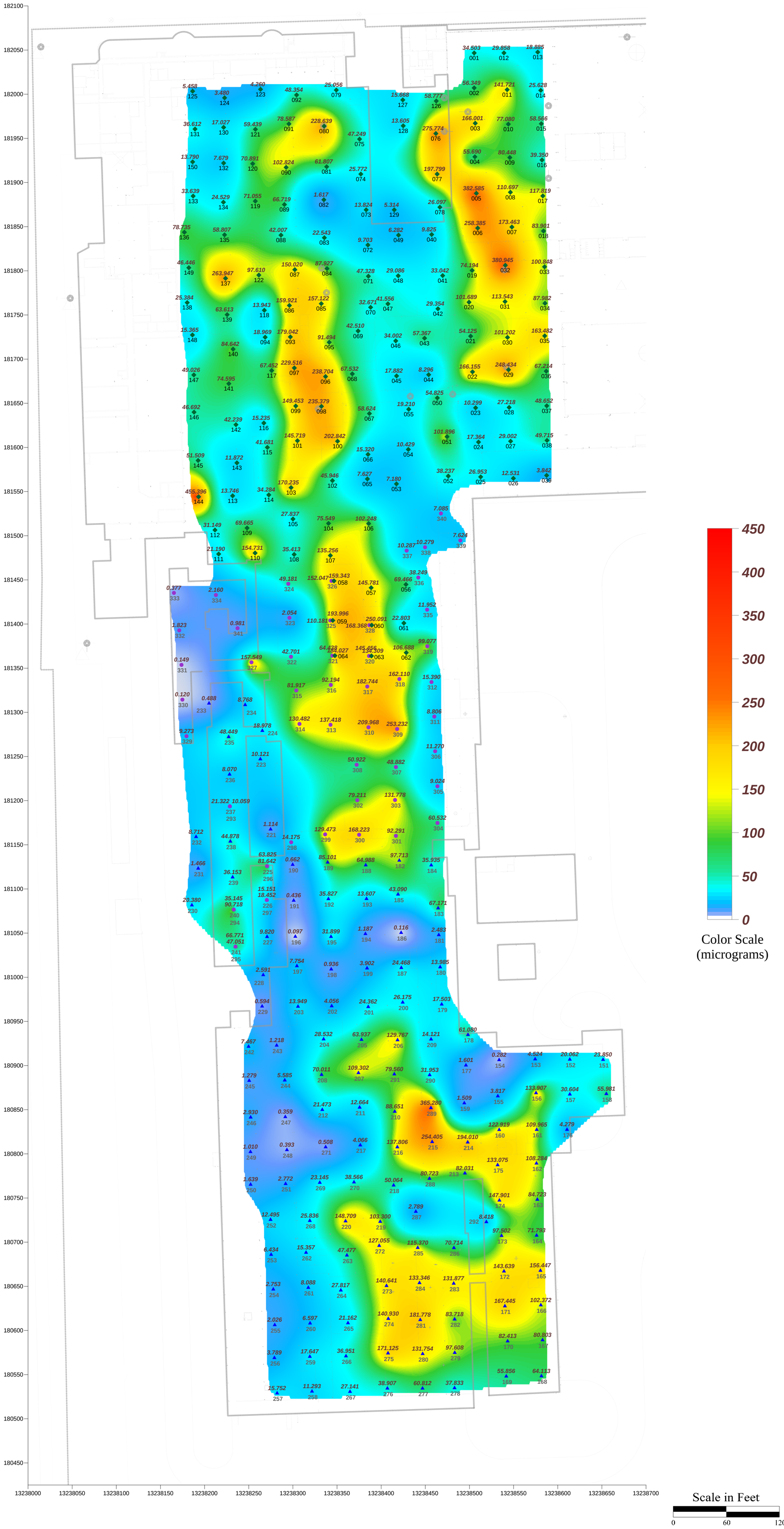
001 PASSIVE SOIL-GAS SAMPLE LOCATION (July 2010)

267 PASSIVE SOIL-GAS SAMPLE LOCATION (July 2013)

311 PASSIVE SOIL-GAS SAMPLE LOCATION (September 2013)

Figure 3
Passive Soil-Gas Survey
Trichloroethene

Former Tecumseh Products
Tecumseh, MI



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Beacon Project No. 2704, October 2013

LEGEND

1,000 MICROGRAMS/SAMPLER

001 PASSIVE SOIL-GAS SAMPLE LOCATION (July 2010)

267 PASSIVE SOIL-GAS SAMPLE LOCATION (July 2013)

311 PASSIVE SOIL-GAS SAMPLE LOCATION (September 2013)

Figure 4
Passive Soil-Gas Survey
TCE and Breakdown Products

Former Tecumseh Products
Tecumseh, MI

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.*, micrograms) 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.

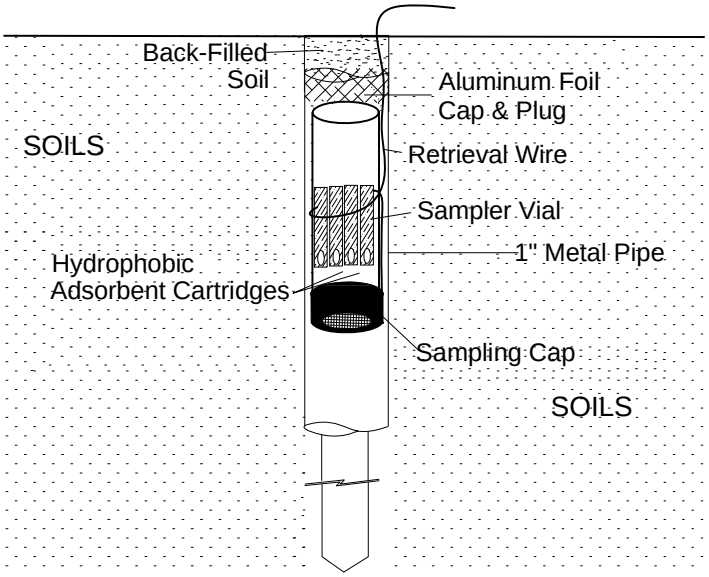
F. Field personnel retrieve the samplers at the end of the exposure period. At each location, a field technician withdraws the sampler from its hole, removes the retrieval wire, and wipes the outside of the vial clean using gauze cloth; following removal of the Sampling Cap, the threads of the vial are 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.

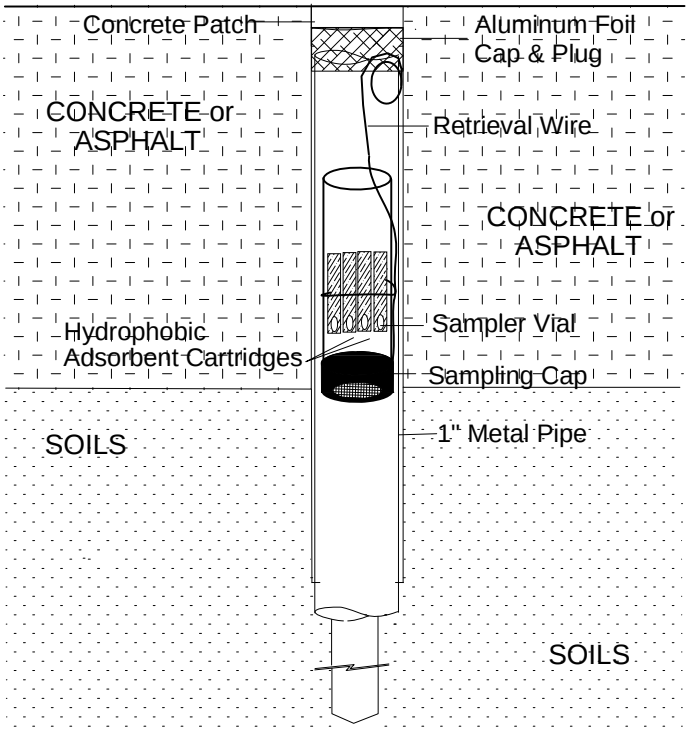
H. Following retrieval, field personnel ship or transport the passive samplers to BEACON's laboratory.

BEACON'S PASSIVE SOIL-GAS SAMPLER

DEPLOYMENT THROUGH SOILS



DEPLOYMENT THROUGH AN ASPHALT/CONCRETE CAP



Attachment 3

Field Deployment Report

Passive Soil Gas Survey
Tecumseh Products
Tecumseh, MI
July 2013

Sample ID	Grid Location	Boring Depth (inches)	PID Reading (ppm)	Installation		Removal		Additional Notes
				Date	Time	Date	Time	
151	L30	36	22.8	7/1/13	1040	7/9/13	1050	
152	K30		30.5		1102		1052	
153	J30		31.9		1111		1054	
154	I30		101.2		1130		1055	2 holes - sample in furthest East
155	I31		16.6		1150		1103	DUP-02
156	J31		76.5		1224		1104	
157	K31		84.4		1228		1107	
158	L31		120.8		1235		1111	
159	H31		147.6		1241		1059	
160	I32		37.6		1246		1233	DUP-03
161	J32		18.9		1251		1230	
162	J33		12.2		1257		1237	
163	J34		8.3		1311		1240	
164	J35		0.0		1319		1245	
165	J36		24.3		1414		1251	
166	J37		21.2		1417		1301	
167	J38		56.7		1422		1307	
168	J39		40.2		1426		1318	
169	I39		21.3		1429		1316	
170	I38		24.4		1434		1311	
171	I37		24.3		1438		1257	
172	I36		30.0		1440		1255	
173	I35		44.9		1445		1249	
174	I34		48.1		1452		1241	
175	I33		-		1454	✓	1236	Started raining, couldn't use PID

Chris Saiyer 8/3/13

Passive Soil Gas Survey
Tecumseh Products
Tecumseh, MI
July 2013

Sample ID	Grid Location	Boring Depth (inches)	PID Reading (ppm)	Installation Date	Installation Time	Removal Date	Removal Time	Additional Notes
176	K32	36	—	7/1/13	1457	7/8/13	1220	No PID due to rain
177	H30				1459		1056	
178	H29				1503		0933	
179	H28				1506		0923	
180	H27				1509		0906	
181	H26				1511		0904	
182	G24				1516		0835	
183	H25				1518		0902	DUP-08
184	H24				1520		0900	
185	G25				1522		0840	DUP-03
186	G26				1525		0844	UNDER H_2O
187	G27				1527		0908	
188	F24				1529	↓	0830	
189	E24				1531	7/8/13	0825	
190	D24				1533	7/8/13	0820	
191	D25				1534		0849	
192	E25				1535		0846	
193	F25				1536		0842	
194	F26				1537		0858	
195	E26				1538		0855	
196	D26				1539		0853	
197	D27				1540		0915	
198	E27				1555		0911	UNDER H_2O
199	F27				1557		0851	UNDER H_2O
200	G28				1559	↓	0921	

Chris Saiyer 7/3/13

Passive Soil Gas Survey
Tecumseh Products
Tecumseh, MI
July 2013

Sample ID	Grid Location	Boring Depth (inches)	PID Reading (ppm)	Installation Date	Installation Time	Removal Date	Removal Time	Additional Notes
201	F28	36	DNM	7/1/13	1604	7/8/13	0920	NO PID due to rain
202	E28				1606		0919	
203	D28				1607		0917	
204	D29				1610		0931	DUP-01
205	E29				1614		0929	
206	F29				1616		0927	
207	E30				1620		0942	
208	D30				1624		0937	
209	G~~X~~29				1629		0925	
210	F31				1630		0951	
211	E31				1634		0944	
212	D31				1635		0953	
213	H33				1639		1009	UNDER H_2O
214	H32				1642		1005	
215	G32				1705		1002	
216	F32				1707		1000	
217	E32				1710		0957	
218	F33				1720		1014	
219	F34				1723		1033	
220	E34				1730		1023	
221	C23			7/2/13	0827		1017	
222	~~E22~~C22				0829		NO SAMPLE	Raccoon stole vial
223	C21				0831		1013	
224	C20				0834		1011	
225	C24				0839		1023	

Chris Lange 7/3/13

Passive Soil Gas Survey
Tecumseh Products
Tecumseh, MI
July 2013

Sample ID	Grid Location	Boring Depth (inches)	PID Reading (ppm)	Installation Date	Installation Time	Removal Date	Removal Time	Label	Additional Notes
226	C25	36	DNM	7/2/13	0843	7/8/13	1025	✓	
227	C26				0845		1027		
228	C27				0847		~~1002~~ 1029		
229	C28				0857		1526		
230	A25				0857		1531		
231	A24				0905		1630		moved ~7ft east to avoid proximity to MW-3.
232	A23				0907		1632		
233	B19				0911		1634		saturated
234	C19				0916		1636		
235	B20				0924		1609		
236	B21				0929		1607		
237	B22				0942		1605		
238	B23				0947		1602		
239	B24				0950		1600		
240	B25				0954		1558		
241	B26				0957		1556		
242	B29				1037		1521		
243	C29				1039		1524		
244	C30				1043		1518		
245	B30				1045		1519		
246	B31				1049		1514		
247	C31				1052		1517		
248	C32				1055		1510		
249	B32	30"			1103		1512		Hit Rock while drilling
250	B33				1108	↓	1506		

Chris Steiger 7/3/13

Passive Soil Gas Survey
Tecumseh Products
Tecumseh, MI
July 2013

Sample ID	Grid Location	Boring Depth (inches)	PID Reading (ppm)	Installation Date	Installation Time	Removal Date	Removal Time	Label	Additional Notes
251	C33	36	DNH	7/2/13	1111	7/8/13	1508	✓	
252	C34				1116		1505		
253	C35				1130		1503		
254	C36				1137		1501		
255	C37				1142		1457		
256	C38				1145		1455		
257	C39				1149		1453		
258	D39				1153		1449		DUP-05
259	D38				1156		1447		
260	D37				1159		1445		
261	D36				1201		1443		DUP-04
262	D35				1204		1442		
263	E35				1323		1437		
264	E36				1326		1439		
265	E37				1328		1434		
266	E38				1331		1431		
267	E39				1333		1429		
268	D34				1349		1021		
269	D33				1352		1019		
270	E33				1355		1017		DUP-~~03~~ 06
271	D32				1359		0954		
272	F35				1406		1420		
273	F36				1418		1421		
274	F37				1419		1424		
275	F38				1421	↓	1425		

Chris Lange 7/3/13

Passive Soil Gas Survey
Tecumseh Products
Tecumseh, MI
July 2013

Sample ID	Grid Location	Boring Depth (inches)	PID Reading (ppm)	Installation		Removal		Label	Additional Notes
				Date	Time	Date	Time		
276	~~F~~39	36	DNM	7/8/13	1422	7/8/13	1427	✓	
277	G39				1425		1410		
278	H39				1426		1407		
279	H38				1428		1406		
280	G38				1430		1411		
281	G37				1437		1414		
282	H37				1438		1403		
283	H36				1439		1401		
284	G36				1442		~~1414~~ END	1416	
285	G35				1444		1418		
286	H35				1447		1359		
287	G34	24			1457		1035		
288	G33	36			1503		1016		
289	G31				1509		0949		
290	G30				1511		0947		
291	F30				1514		0940		
292	H34				1520	↓	1245		void space
293									
294									
295									
296									
297									
298									
299									
300									

Chris Teeuwen 7/2/13

Passive Soil Gas Survey
Tecumseh Products
Tecumseh, MI
September 2013

Sample ID	Grid Location	Boring Depth (inches)	Installation		Removal		Label	Additional Notes
			Date	Time	Date	Time		
293	B22	32	9/4/13	0900	9/11/13	0904	✓	Drilled all holes to 32" depth
294	B25			0926		0910	✓	
295	B26			0937		0913	✓	
296	C24			0955		1222	✓	
297	C25			1002		1220	✓	
298	D23			1018		1224	✓	
299	E23			1029		1227	✓	
300	F23			1033		1230	✓	
301	G23			1037		1233	✓	
302	F22			1050		0954	✓	
303	G22			1055		0957	✓	
304	H23			1103		1107	✓	
305	H22			1109		1101	✓	
306	H21			1112		1058	✓	
307	G21			1118		1000	✓	
308	F21			1132		0951	✓	
309	G20			1136		1003	✓	
310	F20			1150		0947	✓	
311	H20			1156		1055	✓	
312	H19			1325		1052	✓	DUP

Passive Soil Gas Survey
Tecumseh Products
Tecumseh, MI
September 2013

Sample ID	Grid Location	Boring Depth (inches)	Installation Date	Installation Time	Removal Date	Removal Time	Label	Additional Notes
313	E20	32	9/4/13	1330	9/11/13	0927	✓	
314	D20			1339		0922	✓	
315	D19			1345		0919	✓	
316	E19			1350		0931	✓	
317	F19			1421		0945	✓	
318	G19			1432		1006	✓	
319	H18			1438		1049	✓	
320	~~G18~~ F18 NR			1445		0942	✓	
321	E18			1454		0933	✓	
322	D18			1505		0938	✓	
323	D17			1515		1016	✓	
324	D16			1520		1149	✓	
325	E17			1526		1012	✓	
326	E16			1534		1152	✓	
327	C18			1550		1020	✓	DUP
328	F17			1545		1009	✓	
329	A20			1618		1156	✓	
330	A19			1626		1200	✓	cap loose - pieces fell out. Only 2 retrieved.
331	A18			1630		1203	✓	had to be moved slightly west due to rebar
332	A17			1637		1205		

Passive Soil Gas Survey
Tecumseh Products
Tecumseh, MI
September 2013

Sample ID	Grid Location	Boring Depth (inches)	Installation		Removal		Label	Additional Notes
			Date	Time	Date	Time		
333	A16	32	9/4/13	~~1646~~	~~9/4/13~~ RWS	1207	✓	
334	B16		↓	1657	9/11/13	1210	✓	
335	H17		MR 9/5/13	0912		1046	✓	
336	H16			0922		1040	✓	
337	G15			0926		1036	✓	~15% full of water
338	H15			0940		1032	✓	H_2O in vial ~~DUP~~ RWS
339	I15			1000		1024	✓	DUP
340	H14			1007		1029	✓	H_2O droplets in vial when retrieved
341	C17		9/4/13	~1650		1213	✓	forgot to record installation order
342								
343								
344								
345								
346								
347								
348								
349								
350								
351								
352								

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 objecitves 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

and

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

Attachment 5

Chain-of-Custody Form

CHAIN-OF-CUSTODY
PASSIVE SOIL-GAS SAMPLES

Project Information	
Beacon Project No.:	2704
Site Name:	Former Tecumseh Products
Site Location:	Tecumseh, MI
Analytical Method:	EPA Method 8260C
Target Compounds:	Beacon Project Number 2704 Target Compound List

BEACON ENVIRONMENTAL SERVICES, INC.
2203A Commerce Road | Suite 1
Forest Hill, MD 21050 USA
800-878-5510 | 1-410-838-8780

Client Information	
Company Name:	TRC
Office Location:	Ann Arbor, MI
Samples Submitted By:	Chris Scieszka
Contact Phone No.:	(760) 504-1171

Field Sample ID	Comments (only necessary if problem or discrepancy)			
	Notes	Date	Time	Initial
151				
152				
153				
154				
155				
155 - D				
156				
157				
158				
159				
160				
160 - D				
161				
162				
163				
164				
165				
166				
167				
168				

Shipment of Field Kit to Site — Custody Seal # 3014073 **Intact?** (Y) N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
	06-26-2013 / 1700 Hours	FedEx	Rachel M. Sattler	7/1/13 / 0700

Shipment of Field Kit to Laboratory — Custody Seal # 3014074 **Intact?** (Y) N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Chris Scieszka	7/9/13/1200	Fed Ex	Steven Thornley	7.10.13/ 1230

CHAIN-OF-CUSTODY
PASSIVE SOIL-GAS SAMPLES

Project Information	
Beacon Project No.:	2704
Site Name:	Former Tecumseh Products
Site Location:	Tecumseh, MI
Analytical Method:	EPA Method 8260C
Target Compounds:	Beacon Project Number 2704 Target Compound List

BEACON ENVIRONMENTAL SERVICES, INC.
2203A Commerce Road | Suite 1
Forest Hill, MD 21050 USA
800-878-5510 | 1-410-838-8780

Client Information	
Company Name:	TRC
Office Location:	Ann Arbor, MI
Samples Submitted By:	Chris Scieszka
Contact Phone No.:	760-504-1171

Field Sample ID	Comments (only necessary if problem or discrepancy)			
	Notes	Date	Time	Initial
169				
170				
171				
172				
173				
174				
175				
176				
177				
178				
179				
180				
181				
182				
183				
183-D				
184				
185				
185-D				
186				

Shipment of Field Kit to Site — Custody Seal # 3014073 **Intact?** (Y) N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
	06-26-2013 / 1700 Hours	FedEx	Rachel T. Sutter	7/1/13 10700

Shipment of Field Kit to Laboratory — Custody Seal # 3014074 **Intact?** (Y) N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Chris Sciesza	7/9/13 / 1200	Fed Ex	Steven Thomley	7.10.2013 / 1230

Page ____ of ____

CHAIN-OF-CUSTODY
PASSIVE SOIL-GAS SAMPLES

Project Information	
Beacon Project No.:	2704
Site Name:	Former Tecumseh Products
Site Location:	Tecumseh, MI
Analytical Method:	EPA Method 8260C
Target Compounds:	Beacon Project Number 2704 Target Compound List

BEACON ENVIRONMENTAL SERVICES, INC.
2203A Commerce Road | Suite 1
Forest Hill, MD 21050 USA
800-878-5510 | 1-410-838-8780

Client Information	
Company Name:	TRC
Office Location:	Ann Arbor, MI
Samples Submitted By:	Chris Sciesz ka
Contact Phone No.:	760-504-1171

Field Sample ID	Comments (only necessary if problem or discrepancy)			
	Notes	Date	Time	Initial
187				
188				
189				
190				
191				
192				
193				
194				
195				
196				
197				
198				
199				
200				
201				
202				
203				
204				
204-D				
205				

Shipment of Field Kit to Site — Custody Seal # 3014073 **Intact?** (Y) N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
	06-26-2013 / 1700 Hours	FedEx	Rachel M-Sosa	7/1/13 / 0700

Shipment of Field Kit to Laboratory — Custody Seal # 3014074 **Intact?** (Y) N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Chris Sciesz	7/9/13 / 1200	Fed Ex	Steven Twomey	7.10.13 / 1230

CHAIN-OF-CUSTODY
PASSIVE SOIL-GAS SAMPLES

Project Information	
Beacon Project No.:	2704
Site Name:	Former Tecumseh Products
Site Location:	Tecumseh, MI
Analytical Method:	EPA Method 8260C
Target Compounds:	Beacon Project Number 2704 Target Compound List

BEACON ENVIRONMENTAL SERVICES, INC.
2203A Commerce Road | Suite 1
Forest Hill, MD 21050 USA
800-878-5510 | 1-410-838-8780

Client Information	
Company Name:	TRC
Office Location:	Ann Arbor, MI
Samples Submitted By:	Chris Scieszka
Contact Phone No.:	760-504-1171

Field Sample ID	Comments (only necessary if problem or discrepancy) Notes	Date	Time	Initial
206				
207				
208				
209				
210				
211				
212				
213				
214				
215				
216				
217				
218				
219				
220				
221				
222	No sample, Animal took vial	7/8/13	1615	CS
223				
224				
225				

Shipment of Field Kit to Site — Custody Seal # 3014073 **Intact?** (Y) N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
	06-26-2013 / 1700 Hours	FedEx	Rachel M. Soter	7/1/13 / 0700

Shipment of Field Kit to Laboratory — Custody Seal # 3014074 **Intact?** (Y) N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Chris Scieszka	7/9/13 / 1200	FedEx	Steven Thornley	7.10.13 / 1230

CHAIN-OF-CUSTODY
PASSIVE SOIL-GAS SAMPLES

Project Information	
Beacon Project No.:	2704
Site Name:	Former Tecumseh Products
Site Location:	Tecumseh, MI
Analytical Method:	EPA Method 8260C
Target Compounds:	Beacon Project Number 2704 Target Compound List

BEACON ENVIRONMENTAL SERVICES, INC.
2203A Commerce Road | Suite 1
Forest Hill, MD 21050 USA
800-878-5510 | 1-410-838-8780

Client Information	
Company Name:	TRC
Office Location:	Ann Arbor, MI
Samples Submitted By:	Chris Sciesz k m
Contact Phone No.:	760-504-1171

Field Sample ID	Comments (only necessary if problem or discrepancy)			
	Notes	Date	Time	Initial
226				
227				
228				
229				
230				
231				
232				
233				
234				
235				
236				
237				
238				
239				
240				
241				
242				
243				
244				
245				

Shipment of Field Kit to Site — Custody Seal # 3014073 **Intact?** (Y) N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
	06-26-2013 / 1700 Hours	FedEx	Rachelle Scott	7/1/13 1070

Shipment of Field Kit to Laboratory — Custody Seal # 3014074 **Intact?** (Y) N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Chris Sciesz k m	7/9/13 / 1200	FedEx	Steven Townley	7.10.13 / 1230

CHAIN-OF-CUSTODY
PASSIVE SOIL-GAS SAMPLES

Project Information	
Beacon Project No.:	2704
Site Name:	Former Tecumseh Products
Site Location:	Tecumseh, MI
Analytical Method:	EPA Method 8260C
Target Compounds:	Beacon Project Number 2704 Target Compound List

BEACON ENVIRONMENTAL SERVICES, INC.
2203A Commerce Road | Suite 1
Forest Hill, MD 21050 USA
800-878-5510 | 1-410-838-8780

Client Information	
Company Name:	TRC
Office Location:	Ann Arbor, MI
Samples Submitted By:	Chris Sieszka
Contact Phone No.:	760-504-1171

Field Sample ID	Comments (only necessary if problem or discrepancy)			
	Notes	Date	Time	Initial
246				
247				
248				
249				
250				
251				
252				
253				
254				
255				
256				
257				
258				
258-D				
259				
260				
261-D				
(25) ~~262~~ 261				
(26) ~~263~~ 262				
(27) ~~264~~ 263				

Shipment of Field Kit to Site — Custody Seal # 3014073 **Intact?** (Y) N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
	06-26-2013 / 1700 Hours	FedEx	Rachel Stacy	7/1/13 / 0700

Shipment of Field Kit to Laboratory — Custody Seal # 3014074 **Intact?** (Y) N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Christie Lange	7/9/13 / 1200	Fed Ex	Steven Thornley	7.10.13 / 1230

CHAIN-OF-CUSTODY
PASSIVE SOIL-GAS SAMPLES

Project Information	
Beacon Project No.:	2704
Site Name:	Former Tecumseh Products
Site Location:	Tecumseh, MI
Analytical Method:	EPA Method 8260C
Target Compounds:	Beacon Project Number 2704 Target Compound List

BEACON ENVIRONMENTAL SERVICES, INC.
2203A Commerce Road | Suite 1
Forest Hill, MD 21050 USA
800-878-5510 | 1-410-838-8780

Client Information	
Company Name:	TRC
Office Location:	Ann Arbor, MI
Samples Submitted By:	Chris Sieszka
Contact Phone No.:	760-504-1171

Field Sample ID	Comments (only necessary if problem or discrepancy) Notes	Date	Time	Initial
264				
265				
266				
267				
268				
269				
270				
270-D				
271				
272				
273				
274				
275				
276				
278				
278				
279				
280				
281				
282				

Shipment of Field Kit to Site — Custody Seal # 3014073 **Intact?** (Y) N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
	06-26-2013 / 1700 Hours	FedEx	Rachel T-Sosa	7/1/13/0700

Shipment of Field Kit to Laboratory — Custody Seal # 3014074 **Intact?** (Y) N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Chris Sieszka	7/9/13 / 1200	FedEx	Steven Thornley	7/10/13 / 1230

CHAIN-OF-CUSTODY
PASSIVE SOIL-GAS SAMPLES

Project Information	
Beacon Project No.:	2704
Site Name:	Former Tecumseh Products
Site Location:	Tecumseh, MI
Analytical Method:	EPA Method 8260C
Target Compounds:	Beacon Project Number 2704 Target Compound List

BEACON ENVIRONMENTAL SERVICES, INC.
2203A Commerce Road | Suite 1
Forest Hill, MD 21050 USA
800-878-5510 | 1-410-838-8780

Client Information	
Company Name:	TRC
Office Location:	Ann Arbor, MI
Samples Submitted By:	Chris Sieszka
Contact Phone No.:	760-504-1171

Field Sample ID	Comments (only necessary if problem or discrepancy) Notes	Date	Time	Initial
283				
284				
285				
286				
287				
288				
289				
290				
291				
292				
Trip.1				
Trip.2				
Trip.3				
Trip.4				
Trip.5				

Shipment of Field Kit to Site — Custody Seal # 3014073 **Intact?** (Y) N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
	06-26-2013 / 1700 Hours	FedEx	Rachel T. Sotta	7/11/13/0700

Shipment of Field Kit to Laboratory — Custody Seal # 3014074 **Intact?** (Y) N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Chris Sieszka	7/9/13 / 1200	Fed Ex	Steven Thornley	7.10.13 / 1230

CHAIN-OF-CUSTODY
PASSIVE SOIL-GAS SAMPLES

Project Information	
Beacon Project No.:	2704.2
Site Name:	Former Tecumseh Products
Site Location:	Tecumseh, MI
Analytical Method:	EPA Method 8260C
Target Compounds:	Beacon Project Number 2704 Target Compound List

BEACON ENVIRONMENTAL SERVICES, INC.
2203A Commerce Road | Suite 1
Forest Hill, MD 21050 USA
800-878-5510 | 1-410-838-8780

Client Information	
Company Name:	TRC
Office Location:	Ann Arbor, MI
Samples Submitted By:	Stacy Metz
Contact Phone No.:	734-585-7825

Field Sample ID	Comments (only necessary if problem or discrepancy) Notes	Date	Time	Initial
Trip 1		—	—	SEM
Trip 2		—	—	
~~B22~~ 293	B22 → ~~Sample~~ Same location as sample 237	9/11/13	0904	
~~B~~ 294	B25 → Same location as sample 240		0910	
295	B26 → Same location as sample 241		0913	
296	C24 → Same location as sample 225		1222	
297	C25 → Same location as sample 226		1220	
298	D23		1224	
299	E23		1227	
300	F23		1230	
301	G23		1233	
302	F22		0954	
303	G22		0957	
304	H23		1107	
305	H22		1101	
306	H21		1058	
307	G21		1000	
308	F21		0951	
309	G20		1003	
310	F20		0947	

Shipment of Field Kit to Site — Custody Seal # 3014090 **Intact?** (Y) N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Kenny Ipeachu	08-29-2013 / 1700 Hours	FedEx	Rachel T. Soltz	9/3/13

Shipment of Field Kit to Laboratory — Custody Seal # 3014108 **Intact?** (Y) N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Rachel T. Soltz	9/12/13 1345	Fed Ex	[illegible]	9.13.13 / 1230

CHAIN-OF-CUSTODY
PASSIVE SOIL-GAS SAMPLES

Project Information	
Beacon Project No.:	2704.2
Site Name:	Former Tecumseh Products
Site Location:	Tecumseh, MI
Analytical Method:	EPA Method 8260C
Target Compounds:	Beacon Project Number 2704 Target Compound List

BEACON ENVIRONMENTAL SERVICES, INC.
2203A Commerce Road | Suite 1
Forest Hill, MD 21050 USA
800-878-5510 | 1-410-838-8780

Client Information	
Company Name:	TRC
Office Location:	Ann Arbor, MI
Samples Submitted By:	Stacy Metz
Contact Phone No.:	734-585-7825

Field Sample ID	Comments (only necessary if problem or discrepancy) Notes	Date	Time	Initial
311	H20	9/11/13	1055	SEM
312	H19		1052	
312-D	H19		1052	
313	E20		0927	
314	D20		0922	
315	D19		0919	
316	E19		0931	
317	F19		0945	
318	G19		1006	
319	H18		1049	
320	F18 Same location as sample 063		0942	
321	E18 Same location as sample 064		0933	
322	D18		0938	
323	D17		1016	
324	D16		1149	
325	E17 Same location as sample 059		1012	
326	E16 Same location as sample 058		1152	
327	C18		1020	
327-D	C18		1020	
328	F17 Same location as 060		1009	

Shipment of Field Kit to Site — Custody Seal # 3014090 **Intact?** (Y) N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Kenny Ifeacho	08-29-2013 / 1700 Hours	FedEx	Rachel T. Sartor	9/3/13

Shipment of Field Kit to Laboratory — Custody Seal # 3014108 **Intact?** (Y) N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Rachel T. Sartor	9/12/13 1345	Fed Ex	Stephen Thornley	9.13.13/1230

CHAIN-OF-CUSTODY
PASSIVE SOIL-GAS SAMPLES

Project Information	
Beacon Project No.:	2704.2
Site Name:	Former Tecumseh Products
Site Location:	Tecumseh, MI
Analytical Method:	EPA Method 8260C
Target Compounds:	Beacon Project Number 2704 Target Compound List

BEACON ENVIRONMENTAL SERVICES, INC.
2203A Commerce Road | Suite 1
Forest Hill, MD 21050 USA
800-878-5510 | 1-410-838-8780

Client Information	
Company Name:	TRC
Office Location:	Ann Arbor, MI
Samples Submitted By:	Stacy Metz
Contact Phone No.:	734-585-7825

Field Sample ID	Comments (only necessary if problem or discrepancy) Notes	Date	Time	Initial
329	A20	9/11/13	1156	SEM
330	A19 black cap loose when retrieved. ~~Each~~ Cartridges fell out, only two recovered.		1200	
331	A18		1203	
332	A17		1205	
333	A16		1207	
334	B16		1210	
335	H17		1046	
336	H16		1040	
337	G15		1036	
338	water droplets in vial upon retrieval; H15		1032	
~~338-D~~ 339	I15		SEM ~~1032~~ 1024	
339-D	I15		1024	
340	~15% full of water upon retrieval; H14		1029	
341	C17		1213	

Shipment of Field Kit to Site — Custody Seal # 3014090 **Intact?** (Y) N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Kenny Ipacho	08-29-2013 / 1700 Hours	FedEx	Rachel M. Sortez	9/3/13

Shipment of Field Kit to Laboratory — Custody Seal # 3014108 **Intact?** (Y) N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Rachel M. Sortez	9/12/13 1345	FedEx	Stel Thomley	9.13.13/1230

Attachment 2
Assessment of Temporal Variability

Table A2-1
Evaluation of Temporal Variability in Passive Soil Gas Survey Data
Former Tecumseh Products Site
Tecumseh, Michigan

Grid Location	Sample Number	Sample Date	Trichloroethene	TCE + Breakdown Products	1,1,1-Trichloroethane	TCE + Breakdown Products and TCA
			ug	ug	ug	ug
North/Central Comparison						
E16	058	7/8/2010	139.130	152.046	30.970	183.016
	326	9/11/2013	156.760	159.343	22.005	181.348
	Central:North Ratio		1.13	1.05	0.71	0.99
E17	059	7/8/2010	103.843	110.181	10.251	120.432
	325	9/11/2013	191.636	193.995	25.164	219.159
	Central:North Ratio		1.85	1.76	2.45	1.82
E18	064	7/8/2010	55.956	64.439	18.267	82.706
	321	9/11/2013	176.594	184.028	36.068	220.096
	Central:North Ratio		3.16	2.86	1.97	2.66
F17	060	7/8/2010	149.227	168.368	9.281	177.649
	328	9/11/2013	245.348	250.092	7.009	257.101
	Central:North Ratio		1.64	1.49	0.76	1.45
F18	063	7/8/2010	130.559	145.455	19.397	164.852
	320	9/11/2013	130.581	134.309	10.164	144.473
	Central:North Ratio		1.00	0.92	0.52	0.88
Average			**1.75**	**1.61**	**1.28**	**1.56**
South/Central Comparison						
B22	237	7/8/2013	9.994	10.059	0.773	10.832
	293	9/11/2013	21.159	21.322	0.967	22.289
	Central:South Ratio		2.12	2.12	1.25	2.06
B25	240	7/8/2013	34.445	35.145	41.433	76.578
	294	9/11/2013	88.267	90.718	48.363	139.081
	Central:South Ratio		2.56	2.58	1.17	1.82
B26	241	7/8/2013	65.914	66.771	29.281	96.052
	295	9/11/2013	45.395	47.049	27.574	74.623
	Central:South Ratio		0.69	0.70	0.94	0.78
C24	225	7/8/2013	62.343	63.825	15.154	78.979
	296	9/11/2013	78.995	81.641	9.950	91.591
	Central:South Ratio		1.27	1.28	0.66	1.16
C25	226	7/8/2013	15.151	15.151	13.071	28.222
	297	9/11/2013	16.917	18.452	20.814	39.266
	Central:South Ratio		1.12	1.22	1.59	1.39
Average			**1.55**	**1.58**	**1.12**	**1.44**

Notes:
ug - micrograms

Appendix B
2013 Annual Report for the P-Building Soil Vapor Extraction System

Technical Memorandum

Date:	April 14, 2014
To:	Jason Smith Tecumseh Products Company
From:	Graham Crockford and Stacy Metz, TRC
cc:	Chris DeWetter, Tecumseh Products Company Douglas McClure, Conlin, McKenney & Philbrick, PC
Project No.:	187156.0001.0000, Phase 2
Subject:	2013 Annual Report for the P-Building Soil Vapor Extraction System Former Tecumseh Products Company Site in Tecumseh, Michigan (RCRA-05-2010-0012)

Introduction and Background

Tecumseh Products Company (TPC) retained TRC Environmental Corporation (TRC), to investigate and mitigate soil and groundwater conditions at the former TPC site located in Tecumseh, Michigan. TRC is assisting TPC with the environmental work for the site in accordance with the RCRA Administrative Order on Consent ("AOC")(RCRA 05-2010-0012).

In 2012 a soil vapor extraction (SVE) system was installed in P-Building as documented in the February 2013 *Full-Scale Soil Vapor Extraction System Construction Documentation Report: P-Building at 100 East Patterson Street; Tecumseh, Michigan* (SVE System CDR). The system layout including extraction well locations and system piping is illustrated on Figure 1. This SVE system was designed for the following purposes:

- To render the potential vapor intrusion exposure pathway incomplete for the area most likely to be occupied in the future;
- To reduce or eliminate the potential for lateral migration of affected soil gas from the site; and
- To extract residual chlorinated volatile organic compounds (CVOCs) from the on-site soil matrix reducing the long-term potential for migration of CVOCs into soil gas and groundwater, i.e., source control.

Summary of System Monitoring and Maintenance Activities

System Monitoring through Remote Telemetry

The SVE system is equipped with remote sensing devises that transmit data (flow, pressure, and temperature) to the system's programmable logic controller (PLC) within the system control panel. The PLC records the data and triggers alarm conditions if data falls outside of the accepted "normal" limits of the system. Alarm conditions are displayed locally at the control panel. Additionally the system is equipped with remote telemetry which functions via a cellular modem. System telemetry is programed to notify designated project personnel via email if an alarm condition is triggered.

In addition to alarm conditions, the PLC records the following data at 10-minute intervals:

- Flow rate for each of the three 4-inch diameter header pipes as they enter the SVE blower enclosure (inlet lines);
- Total system flow rate (measured between the knock out tank and blower);
- Differential pressure across the air filter; and
- Blower exhaust temperature.

These data are automatically emailed to project personnel daily. Additionally project personnel may log into the system remotely to view data in real time, and/or to extract logged data. These data are compiled and reviewed regularly. Charts 1 through 4 illustrate quarterly flow data for 2013, Chart 5 illustrates differential pressure across of the air filter over time, Chart 6 illustrates the blower exhaust temperature over time, and Chart 7 illustrates cumulative system flow over time. These charts are used to monitor overall system performance, and help identify system anomalies that may require attention. In summary:

- As noted on Charts 1 through 4, several apparent anomalies in system flow are evident. However these anomalies can be explained by changes in ambient conditions and/or on-site system maintenance activities. Evaluation of remote flow data did not find any unexplained anomalies requiring further evaluation or repair activities.
- As illustrated on Chart 5, the initial differential pressure across the air filter ranged from approximately 3.5 to 3.8 inches of water. An increase in differential pressure of approximately 50 percent (resulting in a total differential pressure of 5.3 to 5.7 inches of water) will trigger replacement of the air filter. Differential pressure remained below 5 inches of water throughout 2013; therefore the air filter was not changed.
- As illustrated on Chart 6, the exhaust temperature varies seasonally with ambient air conditions. Exhaust temperatures ranged from approximately 85 degrees Fahrenheit to 135 degrees Fahrenheit.

– A illustrated on Chart 7, approximately 350 million cubic feet (cu ft) of soil gas was extracted with the SVE system in 2013, including 168 million cubic feet from the northern perimeter wells (SVE-01 through SVE-04) and 174 million cu ft from the areas where passive soil gas sampling exhibited relatively higher responses (SVE-05 through SVE-07).

In addition to the ability to monitor routine system data remotely, the system notifies designated staff via email if deactivation of the blower occurs due to any of the following alarm conditions:

– Motor overload
– High temperature at the exhaust stack
– High or low vacuum
– High or high-high water level reached in the knock out tank
– High differential pressure across the inlet air filter

None of these system alarms were triggered in 2013.

Quarterly SVE System Inspections

Quarterly on-site system inspections were conducted to verify the system was operating as expected. Quarterly on-site inspections were conducted on January 24, 2013, May 23, 2013, August 15, 2013 and November 4, 2013. An operation and maintenance checklist is completed by the field technician during the inspections. At a minimum quarterly inspections included the following:

– Flow and pressure readings at each extraction well;
– Differential pressure between the air filter inlet and outlet;
– Pressure and temperature at the blower;
– Pressure through the carbon treatment system;
– Visual inspection of the volume of liquids in the knock out tank;
– Visual and auditory inspection of the blower and motor; and
– Visual inspection of system piping, fittings and supports.

Field activities completed, data collected and problems noted are documented on an Operation and Maintenance Log for the P-Building SVE system. A copy of this log is provided as Attachment 1. Existing problems and potential problems identified during system inspections are corrected as soon as reasonable.

System Repairs

During the first quarter 2013 system inspection, the field technician noted that the riser pipe at extraction well SVE-06 had been damaged. The damage appeared to be the result of impact; likely it was run into by a fork lift or similar piece of equipment. The valve at the well head was closed immediately and the system was rebalanced. On February 11, 2013 the damaged portion of the riser pipe was removed and replaced. Additionally bollards were installed at both of the extraction wells (SVE-06 and SVE-07) which are located in the interior portion of the building to help prevent similar damage in the future. See Attachment 1 for additional details.

No other significant problems requiring system repair were identified during 2013.

Operation and Maintenance of the Carbon Treatment System

The carbon treatment system is designed to ensure that carcinogenic VOC emissions remain below 10 pounds per month, as required by Michigan Department of Environmental Quality (MDEQ) Permit-to-Install (PTI) exemption requirements.[1] In order to meet these requirements, operation and maintenance of the carbon treatment system requires that the carbon in the carbon vessels be removed and replaced (i.e., carbon change out) once its absorptive capacity has been reached. To help ensure compliance, the carbon vessels are operated in series. Typically carbon change out is arranged after breakthrough is observed on the lead vessel. As such, the lag vessel is used to maintain acceptable emissions throughout the carbon loading cycle, providing a margin of safety for the time lag between breakthrough on the lead vessel and carbon change out.

Trichloroethene (TCE) is the dominant constituent of concern (COC) removed with the carbon treatment system. Therefore the timing of carbon change out is determined through regular field measurement of TCE concentrations, and verified through the periodic collection of samples for laboratory analysis. A Draeger® pump equipped with TCE-specific Draeger® tubes for field measurement of TCE is used to monitor TCE concentrations through the treatment process. TCE concentrations are measured at three locations: treatment system influent (sample port after the blower in the SVE skid), between the lead and lag carbon vessels (lead vessel sample port), and system exhaust (lag vessel sample port). The frequency of these field measurements is determined based on historical carbon usage rates for the system. The dates and findings of these measurements are documented in the operation and maintenance log (Attachment 1). As expected the necessary frequency of these measurements has decreased as TCE concentrations entering the system decreased.

[1] There are other MDEQ PTI exemption requirements. However even untreated SVE system emissions meet those requirements. As documented in the SVE System CDR, the carbon treatment system was installed to reduce carcinogenic VOC emissions to less than 10 pound per month, and is monitored ensure that effect.

Carbon change out was arranged if the TCE concentration between the lead and lag carbon vessel was greater than or equal to 50-percent of the concentration at the influent of the carbon treatment system. Carbon change outs were completed in January, February, March, August/September and December 2013. As expected the necessary frequency of these change outs decreased over time. See Attachment 1 for further details.

In addition to field measurement of TCE concentrations, samples were collected for laboratory analysis to confirm field measurements and more accurately quantify the mass of chlorinated compounds removed from the subsurface. Sample events were conducted on January 2, 2013, May 23, 2013 and November 14, 2013. During each sample event, samples were collected at the same three locations used for the field measurement of TCE concentrations. As described in the SVE system CDR, grab samples were each collected in a laboratory-supplied certified-clean 1-liter SUMMA® sample canister equipped with a barbed fitting. Data from these sample events are summarized in Table 1, and laboratory analytical data are provided in Attachment 2.

Field and laboratory data collected during operation and maintenance of the carbon treatment system were used to evaluate system performance as described below.

SVE System Performance Evaluation

As described above the SVE system was designed for three purposes:

- To render incomplete the potential vapor intrusion exposure pathway for P-Building;
- To reduce or eliminate the potential for lateral migration of affected soil gas from the site; and
- To extract residual CVOCs from the on-site soil matrix reducing the long-term potential for migration of CVOCS into soil gas and groundwater, i.e., source control.

Additionally the SVE system must be operated in a manner consistent with air permit requirements.

Documentation of Compliance with Air Permit Regulations

The SVE system has the potential to emit volatile air contaminants, including carcinogenic volatile organic compounds (VOCs) and hazardous air pollutants (HAPs) into the atmosphere, and therefore may be subject to state and federal air permitting requirements. As documented in the April 2012 *Workplan to Conduct a Pilot Study to Facilitate the Design and Installation of a Full-Scale Soil Vapor Extraction System* (Pilot Workplan), TRC performed an evaluation, to assess whether the SVE system would require an air emission permit. Based on this assessment:

– The total potential to emit, is not greater than 10 tons per year of any HAP or 25 tons per year of any combination of HAPs, and therefore does not meet the definition and requirements of a "Major Source" as defined in 40 CFR 63.2 National Emission Standards

for Hazardous Air Pollutants for Source Categories, and therefore is not subject to the federal Site Remediation MACT rules (40 CFR 63 Subpart GGGGG).

– At the state level, the SVE system is subject to Michigan R336.1201 "Permits to Install (PTI)" (Michigan Rule 201). An evaluation of air emission permit requirements completed in accordance with R226.1278a(1)c (Michigan Rule 278a), found that the SVE system is exempt from PTI requirements, as defined in R336.1290 "Permit to Install Exemptions; Emission Units with Limited Emissions" (Michigan Rule 290) as long as the following emission limits are maintained:
    - Controlled emissions of air contaminants are not more than 500 pounds per month.
    - Controlled carcinogenic VOC emissions may not exceed 10 pounds per month.

Upon evaluating the emission concentrations from the SVE system, TCE, a carcinogenic VOC, has by far the highest concentrations of the applicable air contaminants. Since emission limits for carcinogenic VOCs are much lower than those for HAPs and total air contaminants, compliance with PTI exemption requirements is maintained so long as controlled carcinogenic VOC emissions remain below 10 pound per month.

As documented above, the carbon vessels are operated in series to ensure continual compliance the PTI exemption requirements. Field measurements of TCE were completed immediately prior to each carbon change out event. At no point during 2013 did the field measurement of TCE concentrations indicate breakthrough at the lag vessel. These field measurements were verified with laboratory data. As documented in Table 1, the total carcinogenic VOC emissions from the system (measured at the SVE System Exhaust) were less than 1 pound per month.

Evaluation of Source Control and Mass Removal

Measured TCE concentrations prior to carbon treatment were used in combination with cumulative flow volumes to calculate mass removal. As illustrated in Chart 8, the cumulative mass of TCE removed is estimated to be 355 kilograms (200 kilograms in 2013). The SVE system is an efficient and effective means of treating subsurface source areas in the vadose zone. Removal of TCE from the vadose zone prevents those contaminants from migrating off-site laterally in the soil gas or from mixing with the groundwater, and migrating off-site in the dissolved phase.

Evaluation of Lateral Migration Control

Soil gas sample points located north and west of the site in areas with no known TCE contamination in shallow groundwater may be used to evaluate the effectiveness of the SVE system in controlling lateral migration from the site. Off-site soil gas concentrations are

monitored quarterly. Table 2 provides a summary of off-site soil gas data collected through the fourth quarter of 2013, and Figure 2 illustrates the location of the soil gas sample points.

Soil gas data exhibit significant temporal variation; therefore data trends rather than individual data points should be used to evaluate system effectiveness. Additionally, since the SVE system was designed and installed, MDEQ has issued final vapor intrusion guidance, which includes both sub-slab soil gas screening levels (SGSLs) and deep SGSLs. Deep SGSLs are applicable to samples collected 5 feet or more below ground surface, as is the case for all off-site soil gas sample locations. In 2013 SVE system performance, and decisions related to system operation were made with the understanding that MDEQ deep SGSLs were the applicable SGSLs for off-site soil gas sample locations.

There are 3 soil gas sample points located in the right-of-way along the northern perimeter of the former TPC site (SG-06, SG-07, and TVP-02s) in the vicinity of the SVE system. The data from these sample points are summarized below:

- The average concentration of TCE in soil gas at sample point SG-06 prior to system installation (4/5/2010 through 1/30/2012) was 77 ppbv. Since full-scale system start-up on October 31, 2012, the average concentration is 3.9 ppbv. These data indicate that the SVE system has controlled lateral migration from the site in the vicinity of SG-06.
- Soil gas concentrations at TVP-02s have remained below even the most restrictive residential soil gas screening levels. These data indicate that the SVE system has controlled lateral migration from the site in the vicinity of TVP-02s.
- The average soil gas concentration of TCE at sample point SG-07 prior to system installation (4/5/2010 through 1/30/2012) was 134 ppbv. Since full-scale system start-up on October 31, 2012, the average concentration has been 203 ppbv. However TCE concentrations remain below final MDEQ non-residential SGSL for TCE (2,100 ppbv).

Additionally there are 5 soil gas sample points (SG-10, SG-11, SG-16, SG-17 and SG-18) located in or adjacent to the residential areas located one block north of the site (up to 500 feet from the site) and two soil gas sample points (SG-20 and SG-21) located adjacent to the residential area west of the site. Soil gas concentrations in residential areas north and west of the site have exceeded residential deep SGSLs at one location (SG-10) during one sample event (June 2012). As documented in the September 2013, Supplement to the Current Human Exposures Under Control Environmental Indicator Report, concentrations in residential areas north and west of the site have been below deep SGSLs since the third quarter of 2012. Therefore soil gas data did not prompt further evaluation or SVE system modifications/improvements. As a result of the system's effectiveness, its variable frequency drive was adjusted to reduce energy usage in August 2013.

On January 31, 2014, USEPA provided comments on the Supplement to the Current Human Exposures Under Control Environmental Indicator Report. The letter provided on January 31, 2014 was the first notice from USEPA that TRC's application of MDEQ's 2013 VI Guidance was not in alignment with USEPA's apparent interpretation of that guidance. TPC has requested a meeting with USEPA to discuss the January 31, 2014 letter, pursuant to the semi-annual meeting requirement of the AOC. In the interim, TPC is comparing soil gas data collected from residential areas to MDEQ sub-slab SGSLs, and will evaluate data in that additional context:

- Since full scale system start-up on October 31, 2012, soil gas data from soil gas sample points SG-11, SG-17, SG-18, and SG-21 have remained below even the more restrictive sub-slab SGSLs.
- No constituents of concern were detected at soil gas sample points SG-10 and SG-16 during four of the five sample events conducted since full scale system start-up on October 31, 2012. However, during one sampling event (August 2013) the TCE concentration exceeded the residential sub-slab SGSL at both SG-10 (53 ppbv) and SG-16 (13 ppbv). The average concentrations at both of these locations are below the residential sub-slab SGSL (12 ppbv). The following preliminary response actions are planned:
    - On-site high resolution site characterization (HRSC) via a combination of passive soil gas survey, membrane interface probe (MIP) investigation, and confirmation sampling will be completed as described in the March 27, 2014 Scope of Work (SOW). These data may be used to select appropriate locations for additional extraction wells, if appropriate, to further control lateral migration, particularly in the vicinity of soil gas sample point SG-07.
    - Off-site HRSC will be completed in transects along the right-of-way north of the site as described in the SOW. Data collected will be used to further evaluate the potential for TCE in shallow off-site groundwater to be a significant source to soil gas at these locations.
- During four of the five sample events conducted since full scale system start-up on October 31, 2012, no constituents of concern were detected above sub-slab SGSLs at soil gas sample point SG-20. However, during the fifth sample event (November 2013) the TCE concentration at soil gas sample point SG-20 (23 ppbv) exceeded the residential sub-slab SGSL (12 ppbv). As noted previously soil gas sample data exhibit temporal variability. At the large majority of soil gas sample points with one or more constituent detected, the concentration was higher during the August 2013 sample event than the November 2013 sample event. This apparent data anomaly at soil gas sample point SG-20 may be explained by SVE system modifications. As noted above, the SVE system's variable frequency drive was reduced from 100-percent to 84-percent in mid-August 2013. The resulting in a reduction in flow rate at extraction wells SVE-05, SVE-06 and SVE-07.

On March 7, 2014, the variable frequency drive was adjusted back to 100-percent, to maximize the capacity of the current system for lateral capture to the west without compromising lateral capture to the north. Quarterly soil gas sampling will continue to confirm the effectiveness of this response measure.

Evaluation of the Potential Vapor Intrusion Pathway for P-Building

One of the performance criteria for the SVE system is the elimination of the volatilization to indoor air migration pathway for P-Building. This performance criteria is only relevant if/when P-Building is occupied. P-Building is not occupied nor is TPC aware of any plans to occupy the building in the near future. Demolition of other portions of the building began in 2013, but the demolition area did not include the portion of the facility that is connected to P-Building. Consequently, the results of indoor air sampling could be confounded by lateral migration of affected indoor air from other portions of the building.

As described in the SVE System CDR, indoor air sampling will be used to confirm that the volatilization to indoor air migration pathway is under control. However, indoor sampling is to be completed following one of the trigger events listed below, whichever occurs first:

- P-building is separated from the remainder of the facility (so that lateral migration from portions of the building targeted for demolition does not confound indoor air sample results); or
- Within 30 days of the start of regular building use by long-term, regular (approximately 40 hours per week) employees.

Neither of these triggering events have occurred; therefore indoor air sampling was not conducted. An evaluation of this performance criteria will be conducted if/when one of the triggering events occurs.

Continued Operation and Maintenance

System operation, maintenance and performance monitoring will continued to be conducted in general accordance with the SVE System CDR through 2015.

Tables

Table 1
Summary of Constituents of Concern in On-Site Mitigation System Exhaust Samples and Calculated Emission Rate
Former Tecumseh Products Site
Tecumseh, Michigan

Analyte		Approximate Flow Rate	1,1-Dichloroethane*	1,2-Dichloro-ethane*	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetra-chloroethene*	1,1,1-Trichloroethane	Tri-chloroethene*	Vinyl Chloride*	Carcinogenic VOC Flow Rate[1]
Units		**ACFM**	**ppbv**	**ppbv**	**ppbv**	**ppbv**	**ppbv**	**ppbv**	**ppbv**	**ppbv**	**ppbv**	**lb/mo**
Other On-Site Emission Sources												
S-Building SSDV System Exhaust	4/25/2012	43	**3.2**	<0.40	<0.40	**16**	**1.4**	**2.7**	**18**	**350**	<0.40	0.22
Methane Ventilation System Exhaust	4/25/2012	8	**15**	<0.40	**0.64**	**100**	**2.3**	<0.40	<0.40	**6.4**	**2.4**	0.002
Pilot SVE System												
Pilot SVE System Exhaust (Line 1) (48% Make-Up Air)[2]	4/25/2012	460	**0.95**	<0.40	<0.40	**9.7**	**1.1**	**3.2**	**6.9**	**160**	<0.40	1.1
	5/2/2012	444	**2.5**	<0.40	<0.40	**9.5**	**0.97**	**3.2**	**7.3**	**290**	<0.40	1.9
Calculated Pilot SVE System Exhaust (Line 1) (No Make-Up Air)[2]	4/25/2012	460	**1.8**	<0.77	<0.77	**19**	**2.1**	**6.2**	**13**	**310**	<0.77	2.1
	5/2/2012	444	**4.8**	<0.77	<0.77	**18**	**1.9**	**6.2**	**14**	**560**	<0.77	3.6
Full-Scale SVE System												
Line 1 - SVE System Influent	8/23/2012	401	<1.0	**2.3**	<1.0	<1.0	<2.0	<1.0	<1.0	**13**	<1.0	0.08
	11/2/2012	404	<240	<49	<250	<250	<250	**43**	<180	**3,900**	<39	23
	11/8/2012	361	<120	<24	<120	<120	<120	**17**	<91	**2,000**	<19	10
Line 2 - SVE System Influent	8/23/2012	0	**26**	<10	<10	**2,400**	**74**	**85**	**44**	**7,200**	**14**	--
	11/2/2012	415	<270	<54	<270	**5,400**	**270**	**190**	<200	**18,000**	**150**	108
	11/8/2012	384	**130**	<24	<120	**6,300**	**340**	**120**	**140**	**15,000**	**110**	83
SVE System Exhaust (No Treatment)	7/26/2012	422	**19**	**5.2**	<4.0	**1,600**	**48**	**84**	**35**	**7,900**	**20**	48
	8/8/2012	422	**48**	<2.4	**2.8**	**2,700**	**150**	**140**	**93**	**10,000**	**41**	61
Lead Carbon Vessel Influent (Pre-Treatment)	12/3/2012	730	<120	<24	<120	**3,700**	<120	**140**	<91	**12,000**	**26**	126
	1/3/2013	738	<120	<24	<120	**2,300**	<120	**85**	<91	**5,900**	<19	63
	5/23/2013	725	<120	<24	<120	**520**	<120	**33**	<91	**2,400**	<19	25
	11/14/2013	610	<120	<24	<120	**340**	<120	**100**	**330**	**5,000**	<19	44
Between Carbon Vessels (Lead Vessel Effluent / Lag Vessel Influent)	11/8/2012	745	**210**	<24	<120	**6,600**	<120	<15	**160**	**2,300**	**57**	26
	12/3/2012	730	<120	<24	<120	**3,700**	**140**	<15	<91	**12,000**	**28**	124
	1/3/2013	738	<120	<24	<120	**3,500**	<120	**24**	<91	**2,600**	<19	28
	5/23/2013	725	<120	<24	<120	**730**	<120	<15	<91	<18	<19	0.0
	11/14/2013	610	<120	<24	<120	**680**	<120	**15**	**340**	**3,500**	<19	30
SVE System Exhaust (Post Treatment)	11/2/2012	819	<2.0	<2.0	<2.0	**2.7**	<2.0	<2.0	<2.0	**30**	**29**	0.51
	11/8/2012	749	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	**55**	0.28
	1/3/2013	738	**33**	<1.0	**16.0**	**880**	**24**	<1.0	<1.0	**4.1**	**9.4**	0.35
	5/23/2013	725	<120	<24	<120	<120	<120	<15	<91	<18	<19	0.0
	11/14/2013	610	<120	<24	<120	**620**	<120	<15	<91	**29**	<19	0.25

Notes:
ACFM - actual cubic feet per minute
ppbv - parts per billion by volume
lb/mo - pounds per month
Asterisk * indicates compound is carcinogenic.
1) MDEQ Permit to Install exemption requirements include total hazardous air pollutants, total air contaminants and total carcinogenic volatile organic compounds (VOCs). Total carcinogenic VOC emissions are the limiting requirement for the SVE system. The limits for total carcinogenic VOC emissions are 20 lb/mo for uncontrolled emissions and 10 lb/mo for controlled emissions.
2) Pilot study exhaust samples collected on April 25, 2012 and May 2, 2012 were collected when system exhaust included approximately 48-percent make-up air. Sample results were used to calculate the exhaust concentration if the system was operated without make-up air.

Table 2
Summary of Chlorinated Volatile Organic Compounds at Off-Site Soil Gas Sample Locations
Tecumseh Products Company
Tecumseh, Michigan

Analyte		1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	1,1,1-Trichloroethane	Trichloroethene	Vinyl Chloride
MDEQ Residential Sub-Slab SGSL [1]		4,100	8.2	1,700	58	580	170	36,000	12	21
MDEQ Residential Deep SGSL [1]		41,000	82	17,000	580	5,800	1,700	360,000	120	210
MDEQ Non-Residential Deep SGSL [1]		690,000	1,600	280,000	9,800	98,000	33,000	6,100,000	2,100	15,000
Units		ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv
SG-01 (8-8.5')	4/5/2010	**5.7**	<2.3	**4.4**	**17.0**	<4.4	<2.3	**279**	**396**	<2.3
	5/20/2010 [2]	**52.4**	<4.4	**21.6**	**184**	<4.4	**52.1**	**1,690**	**2,800**	<4.4
	10/21/2010	**74.7**	<16.8	<16.8	**272**	**25.8**	**222**	**8,300**	**32,100**	<16.8
	12/9/2010	<709	<709	<709	<709	<709	<709	**6,440**	**17,800**	<709
	4/13/2011	**32.8**	**166**	**21.0**	**110**	**7.79**	**84.6**	**2,630**	**10,500**	<6.7
	6/27/2011	<180	<90	<180	<180	<180	**98.0**	**1,420**	**7,340**	<90
	9/28/2011	<100	<100	<100	**220**	<200	**150**	**4,300**	**19,000**	<100
	11/21/2011 [3]	--	--	--	--	--	--	--	--	--
	1/30/2012	**10**	<4.0	**6.2**	**17**	<8.0	<4.0	**610**	**700**	<4.0
	6/27/2012	**53**	<5.0	**13**	**170**	**19**	**190**	**4,700**	**23,000**	<5.0
	10/1/2012	**56**	<50	<50	**190**	<100	**310**	**5,100**	**16,000**	<50
	11/27/2012	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	**10**	**1.9**	<1.0
	3/14/2013	**4.7**	<1.0	**4.7**	**6.7**	<2.0	<1.0	**300**	**190**	<1.0
	5/30/2013 [4]	<120	<24	<120	<120	<120	**49**	**1,400**	**3,700**	<19
	6/24/2013 [3]	--	--	--	--	--	--	--	--	--
	8/8/2013	**110**	<1.0	**30**	**440**	**45**	**2200**	**12,000**	**110,000**	<1.0
	11/12/2013	**42**	<1.0	**13**	**160**	**15**	**950**	**6,000**	**51,000**	<1.0
SG-01 (DUP-01)	4/5/2010	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2
	5/20/2010 [2]	**63.2**	<4.4	**31.0**	**245**	**22.6**	**256**	**2,120**	**3,770**	<4.4
	9/28/2011	<100	<100	<100	**270**	<200	**200**	**5,800**	**28,000**	<100
	11/21/2011	**22** [7]	<5.0	**9.9**	**48**	<10	**25**	**1,700**	**8,500**	<5.0
	1/30/2012	**15**	<4.0	**9.3**	**26**	<8.0	**4.0**	**920**	**1,000**	<4.0
SG-02 (5.5-6')	4/5/2010	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	**19.6**	<4.0	<4.0
	10/21/2010	<12.5	<12.5	<12.5	<12.5	<12.5	**532**	**328**	**1,610**	<12.5
	12/9/2010 [5]	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3/31/2011 [5]	NS	NS	NS	NS	NS	NS	NS	NS	NS
	6/27/2011	**8.5**	<3.5	<7.0	**28.0**	**8.6**	**1,240**	**943**	**3,970**	<3.5
	9/28/2011	<5.0	<5.0	<5.0	**6.1**	<10	**1,100**	**230**	**550**	<5.0
	11/21/2011	**2.3**	<1.0	<1.0	**2.6**	**2.5**	**400**	**120**	**310**	**1.1**
	1/30/2012	<1.0	<1.0	**2.1**	<1.0	<2.0	<1.0	**8.6**	**2.3**	<1.0
	6/27/2012	**18**	<1.0	**4.2**	**1,300**	**52**	**780**	**430**	**2,200**	**3.3**
	10/2/2012	**11**	<5.0	<5.0	**260**	**33**	**280**	**510**	**1,900**	<5.0
	11/27/2012	**4.6**	<1.0	**2.4**	**44**	**7.3**	**3.4**	**80**	**120**	<1.0
	3/26/2013	<2.0	<2.0	**3.4**	**46**	**4.6**	**10**	**32**	**100**	**2.1**
	5/30/2013 [7]	**7.3**	<2.0	**4.5**	**200**	**22**	**350**	**380**	**1,900**	<2.0
	8/9/2013	**17.0**	<1.0	**12**	**220**	**46**	**4,800**	**990**	**9,100**	<1.0
	11/13/2013	**7.4**	<1.0	**2.0**	**51**	**10**	**950**	**270**	**1,800**	<1.0

Notes:

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2) Elevated concentrations of 2-propanol (tracer) detected; DUP-01 results from 5/20/10 reflect true soil gas concentrations. Tracer concentration from SG-01 and analytical data from DUP-01 suggests that sample was diluted with approximately 30-percent ambient air.
3) Elevated concentrations of tracer detected. Analytical data for other analytes are presumed to be invalid (--).
4) Elevated detection limit due to siloxane contamination in sample.
5) Water in sample point prevented sample collection.
6) Analyte was evaluated for detection to the method detection limit.
7) Quality control results are outside the established control limits, the result is approximate.
8) Sample port is screened in the low permeability zone. Available sample volume insufficient for analysis.

Bold font denotes concentrations detected above laboratory reporting limits.

Denotes concentrations above one or more soil gas screening level

ppbv - parts per billion by volume

NS - No Sample

Table 2
Summary of Chlorinated Volatile Organic Compounds at Off-Site Soil Gas Sample Locations
Tecumseh Products Company
Tecumseh, Michigan

Analyte		1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	1,1,1-Trichloroethane	Trichloroethene	Vinyl Chloride
MDEQ Residential Sub-Slab SGSL [1]		4,100	8.2	1,700	58	580	170	36,000	12	21
MDEQ Residential Deep SGSL [1]		41,000	82	17,000	580	5,800	1,700	360,000	120	210
MDEQ Non-Residential Deep SGSL [1]		690,000	1,600	280,000	9,800	98,000	33,000	6,100,000	2,100	15,000
Units		ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv
SG-03 (5-5.5')	4/5/2010	<2.6	<2.6	<2.6	<2.6	<5.1	<2.6	<2.6	<2.6	<2.6
	10/21/2010	**91.0**	<15.7	<15.7	**193**	**90.3**	<15.7	<15.7	<15.7	<15.7
	12/9/2010	**47.7**	<11.9	<11.9	**98.0**	**48.5**	<11.9	<11.9	<11.9	<11.9
	3/31/2011	<0.56	<0.56	<0.57	<0.57	<0.57	<0.57	<0.56	<0.57	<0.58
	6/27/2011	<0.36	<0.18	<0.37	<0.37	<0.37	**6.8**	**4.8**	**22.3**	<0.18
	9/28/2011	**3.0**	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	<2.0	<2.0
	11/21/2011	**3.5**	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	**1.8**
	1/30/2012 [5]	NS	NS	NS	NS	NS	NS	NS	NS	NS
	6/27/2012	<2.0	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	**12**	<2.0
	10/2/2012	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	11/27/2012	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	3/26/2013 [3]	--	--	--	--	--	--	--	--	--
	4/15/2013 [3]	--	--	--	--	--	--	--	--	--
SG-03R (5-5.5')	5/30/2013	<2.0	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	<2.0	<2.0
	8/9/2013	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	11/13/2013	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
SG-04 (5-5.5')	4/5/2010	<2.6	<1.3 [6]	<2.6	<2.6	<4.9	<2.6	<2.6	<2.6	<2.5
	9/23/2010	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5
	12/9/2010	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78
	3/31/2011	<1.6	<1.6	<1.6	<1.6	<1.6	**2.0**	<1.6	<1.6	<1.6
	6/7/2011	<1.0	<0.53	<1.1	<1.1	<1.1	<0.52	<1.0	<0.53	<0.54
	9/28/2011	<1.0	<1.0	<1.0	<1.0	<2.0	**1.7**	<1.0	<1.0	<1.0
	11/21/2011	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	**2.4**
	1/30/2012	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	6/27/2012	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	**1.0**	<1.0
	10/2/2012	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	11/27/2012	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	3/18/2013	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	5/24/2013 [4]	<2.0	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	<2.0	<2.0
	8/9/2013	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	**4.7**	<1.0
	11/13/2013	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0

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MDEQ Residential Sub-Slab SGSL [1]		4,100	8.2	1,700	58	580	170	36,000	12	21
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MDEQ Non-Residential Deep SGSL [1]		690,000	1,600	280,000	9,800	98,000	33,000	6,100,000	2,100	15,000
Units		ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv
SG-05 (7.5-8')	4/5/2010	<2.6	<2.6	<2.6	<2.6	<4.9	<2.6	**28.7**	**26.6**	<2.5
	10/21/2010	<16.8	<16.8	<16.8	<16.8	<16.8	<16.8	**708**	**1,320**	<16.8
	12/9/2010	<15.7	<15.7	<15.7	<15.7	<15.7	<15.7	**357**	**538**	<15.7
	3/31/2011 [5]	NS	NS	NS	NS	NS	NS	NS	NS	NS
	6/27/2011	<0.34	<0.17	<0.35	<0.35	<0.35	<0.17	**2.2**	**0.20**	<0.17
	9/28/2011	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	**2.1**	**1.1**	<1.0
	11/21/2011	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	1/30/2012 [5]	NS	NS	NS	NS	NS	NS	NS	NS	NS
	6/26/2012	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	**1.1**	<1.0	<1.0
	10/1/2012	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	**220**	**380**	<1.0
	11/27/2012	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	**54**	**22**	<1.0
	3/18/2013	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	5/23/2013 [4]	<2.0	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	<2.0	<2.0
	8/8/2013	<1.0	<1.0	<1.0	<1.0	<2	<1.0	**16**	**21**	<1.0
	11/12/2013	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	**170**	**260**	<1.0
SG-05 (DUP-01)	10/21/2010	<16.8	<16.8	<16.8	<16.8	<16.8	<16.8	**581**	**1,020**	<16.8
	12/9/2010	<211	<211	<211	<211	<211	<211	**772**	**849**	<211
	10/1/2012	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	**190**	**370**	<1.0
SG-06 (8-8.5')	4/5/2010	<2.6	<2.6	<2.6	<2.6	<4.9	<2.6	<2.6	**7.2**	<2.5
	5/20/2010	<4.6	<4.6	<4.6	<4.6	<4.6	**9.5**	**6.0**	**104**	<4.6
	9/21/2010	<29.2	<29.2	<29.2	<29.2	<29.2	**62.2**	<29.2	**263**	<29.2
	12/9/2010	<3.9	<3.9	<3.9	**6.1**	<3.9	**4.3**	**7.4**	**64.9**	<3.9
	3/31/2011	**0.73**	<0.17	<0.35	<0.35	**1.3**	<0.17	**1.7**	**14.1**	<0.17
	6/7/2011	**0.88**	<0.18	<0.37	**5.6**	**2.5**	**7.5**	**2.5**	**50.2**	<0.18
	9/28/2011	**3.6**	<2.0	<2.0	**35**	**6.4**	**16**	**7.7**	**150**	<2.0
	11/21/2011	**2.2**	<1.0	<1.0	**9.2**	**2.6**	<1.0	**5.1**	**29**	**1.1**
	1/30/2012	**1.4**	<1.0	<1.0	**5.4**	<2.0	<1.0	**1.3**	**9.7**	<1.0
	6/27/2012	<1.0	<1.0	<1.0	**7.7**	<2.0	**9.1**	**3.4**	**68**	<1.0
	10/1/2012	<1.0	<1.0	<1.0	<1.0	<2.0	**2.3** [7]	<1.0	**12** [7]	<1.0
	11/28/2012	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	**2.1**	<1.0
	3/18/2013	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	5/23/2013 [4]	<2.0	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	<2.0	<2.0
	8/8/2013	<1.0	<1.0	<1.0	<1.0	<2.0	**20**	<1.0	**10**	<1.0
	11/12/2013	<1.0	<1.0	<1.0	<1.0	<2.0	**8.9**	<1.0	**6.0**	<1.0

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MDEQ Non-Residential Deep SGSL [1]		690,000	1,600	280,000	9,800	98,000	33,000	6,100,000	2,100	15,000
Units		ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv
SG-07 (8-8.5')	4/5/2010	<75.2	<75.2	<75.2	<75.2	<75.2	<75.2	<75.2	<75.2	<75.2
	5/20/2010	<5.0	<5.0	<5.0	<5.0	<5.0	**13.8**	**6.8**	**145**	<5.0
	9/21/2010	<69.6	<69.6	<69.6	<69.6	<69.6	**140**	<69.6	**403**	<69.6
	12/9/2010	<22.2	<22.2	<22.2	<22.2	<22.2	**24.4**	<22.2	**139**	<22.2
	3/31/2011	<0.34	<0.17	<0.35	<0.35	<0.35	**5.9**	**4.3**	**47.2** [7]	<0.17
	6/7/2011	<0.36	<0.18	<0.37	<0.37	<0.37	**23.6**	**4.4** [7]	**171** [7]	<0.18
	9/28/2011	<1.0	<1.0	<1.0	<1.0	<2.0	**76**	**16**	**260**	<1.0
	11/21/2011	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	**2.7**	**3.1**	**1.5**
	1/30/2012	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	**2.4**	<1.0
	6/26/2012	<1.0	<1.0	<1.0	<1.0	<2.0	**67**	**9.0**	**250**	<1.0
	10/1/2012	<1.0	<1.0	<1.0	<1.0	<2.0	**16**	**8.8**	**130**	<1.0
	11/28/2012	<1.0	<1.0	<1.0	<1.0	<2.0	**1.7**	**3.4**	**34**	<1.0
	3/18/2013	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	**1.4**	**13**	<1.0
	5/23/2013	<1.0	<1.0	<1.0	<1.0	<2.0	**27**	**4.0**	**120**	<1.0
	8/8/2013	<1.0	<1.0	<1.0	<1.0	<2.0	**260**	**13**	**510**	<1.0
	11/12/2013	<1.0	<1.0	<1.0	<1.0	<2.0	**160**	**7.7**	**340**	<1.0
SG-07 (DUP-01)	3/31/2011	<0.56	<0.56	<0.57	<0.57	<0.57	**7.9**	**5.0**	**90.6** [7]	<0.58
	6/7/2011	<0.36	<0.18	<0.37	<0.37	<0.37	**28.4** [7]	**9.5** [7]	**97.2** [7]	<0.18
	6/26/2012	<1.0	<1.0	<1.0	<1.0	<2.0	**66**	**9.3**	**250**	<1.0
	11/28/2012	<1.0	<1.0	<1.0	<1.0	<2.0	**1.5**	**3.1**	**33**	<1.0
	5/23/2013 [4]	<4,900	<970	<5,000	<5,000	<5,000	<580	<3,600	<730	<770
	8/8/2013	<1.0	<1.0	<1.0	<1.0	<2.0	**220**	**12**	**420**	<1.0
	11/12/2013	<1.0	<1.0	<1.0	<1.0	<2.0	**160**	**7.6**	**350**	<1.0
SG-07 (DUP-02)	3/18/2013	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	**1.4**	**12**	<1.0

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Table 2
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Tecumseh Products Company
Tecumseh, Michigan

Analyte		1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	1,1,1-Trichloroethane	Trichloroethene	Vinyl Chloride
MDEQ Residential Sub-Slab SGSL [1]		4,100	8.2	1,700	58	580	170	36,000	12	21
MDEQ Residential Deep SGSL [1]		41,000	82	17,000	580	5,800	1,700	360,000	120	210
MDEQ Non-Residential Deep SGSL [1]		690,000	1,600	280,000	9,800	98,000	33,000	6,100,000	2,100	15,000
Units		ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv
SG-08 (6.5-7')	4/5/2010	<2.6	<1.3 [6]	<2.6	<2.6	<5.1	<2.6	<2.6	<2.6	<2.6
	9/23/2010	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	**4.5**	**3.5**	<2.0
	12/9/2010 [5]	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3/31/2011	<0.34	<0.17	<0.35	<0.35	<0.35	**0.29**	**3.4**	<0.17	<0.17
	6/27/2011	<0.34	<0.17	<0.35	<0.35	<0.35	<0.17	**0.97**	<0.18	<0.17
	9/28/2011	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	**1.9**	<1.0	<1.0
	11/21/2011	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	**6.9**	**1.3**	**1.0**
	1/30/2012	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	6/29/2012	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	**1.8**	**2.0**	<1.0
	10/2/2012	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	**1.7**	<1.0	<1.0
	11/27/2012	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	3/18/2013	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	5/24/2013 [4]	<2.0	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	<2.0	<2.0
	8/9/2013	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	**5.4**	**8.6**	<1.0
	11/14/2013	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	**2.6**	**3.2**	<1.0
SG-08 (DUP-02)	5/24/2013 [4]	<2.0	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	<2.0	<2.0
	8/9/2013	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	**4.8**	**7.1**	<1.0
	11/14/2013	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	**2.5**	**3.7**	<1.0
SG-09 (5.5-6')	4/5/2010 [3]	--	--	--	--	--	--	--	--	--
	5/20/2010	**10.6**	<4.4	<4.4	<4.4	<4.4	<4.4	**123**	**176**	<4.4
	9/23/2010	<23.4	<23.4	<23.4	<23.4	<23.4	<23.4	**142**	**436**	<23.4
	12/9/2010	<13.2	<13.2	<13.2	<13.2	<13.2	<13.2	**61.8**	**51.7**	<13.2
	3/31/2011	**4.3**	<0.17	<0.35	**1.3**	<0.35	<0.17	**52.5**	**13.9**	<0.17
	6/27/2011	**5.4**	<0.17	<0.35	**1.4**	<0.35	<0.17	**52.8**	**45.8**	<0.17
	9/28/2011	**1.7**	<1.0	<1.0	<1.0	<2.0	<1.0	**13**	**7.9**	<1.0
	11/21/2011	**3.8**	<1.0	<1.0	<1.0	<2.0	<1.0	**32**	**9.1**	<1.0
	1/30/2012	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	**7.2**	**1.3**	<1.0
	6/29/2012	<1.0	<1.0	<1.0	**1.0**	<2.0	<1.0	**89**	**190**	<1.0
	10/2/2012	**1.0**	<1.0	<1.0	<1.0	<2.0	<1.0	**56**	**74**	<1.0
	11/27/2012	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	**4.3**	**1.9**	<1.0
	3/18/2013	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	**5.4**	**4.0**	<1.0
	5/24/2013 [4]	<2.0	<2.0	<2.0	<2.0	<4.0	<2.0	**18**	**27**	<2.0
	8/9/2013	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	**67**	**270**	<1.0
	11/14/2013	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	**35**	**170**	<1.0
SG-09 (DUP-02)	6/29/2012	<1.0	<1.0	<1.0	**1.2**	<2.0	<1.0	**93**	**200**	<1.0

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MDEQ Non-Residential Deep SGSL [1]		690,000	1,600	280,000	9,800	98,000	33,000	6,100,000	2,100	15,000
Units		ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv
SG-10 (5-5.5')	4/5/2010	<40.3 [6]	<40.3 [6]	<80.6	<80.6	<80.6	<40.3 [6]	<80.6	<40.3 [6]	<40.3 [6]
	9/21/2010	<4.4	<2.2 [6]	<4.4	<4.4	<4.4	<4.4	<4.4	**11.5**	<4.4
	12/9/2010	<8.7	<4.4 [6]	<8.7	<8.7	<8.7	<4.4 [6]	<8.7	<8.7	<8.7
	3/31/2011	<0.61	<0.61	<0.62	<0.62	<0.62	<0.61	<0.59	<0.60	<0.62
	6/27/2011 [5]	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/28/2011	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	**1.4**	**19**	<1.0
	11/21/2011	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	**19**	**56**	<1.0
	1/30/2012	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	6/27/2012	<1.0	<1.0	<1.0	**4.8**	<2.0	**1.9**	**46**	**210**	<1.0
	10/1/2012	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	11/29/2012	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	3/18/2013	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	5/23/2013 [3]	--	--	--	--	--	--	--	--	--
	6/24/2013	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	8/8/2013	<1.0	<1.0	<1.0	**1.6**	<2.0	**29**	**6.9**	**53**	<1.0
	11/13/2013	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
SG-11 (7.5-6')	4/5/2010	<2.8	<1.4 [6]	<2.8	<2.8	<5.4	<2.8	<2.8	<2.8	<2.8
	9/23/2010	<2.4	<2.4	<2.4	<2.4	<2.4	<2.4	<2.4	<2.4	<2.4
	12/9/2010	<0.84	<0.84	<0.84	<0.84	<0.84	<0.84	<0.84	<0.84	<0.84
	3/31/2011	<0.56	<0.56	<0.57	<0.57	<0.57	<0.57	<0.56	<0.57	<0.58
	6/7/2011	<0.39	<0.19	<0.40	<0.40	<0.40	**0.89**	**0.54**	**1.2**	<0.19
	9/28/2011	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	11/21/2011	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	**6.8**	**18**	<1.0
	1/30/2012	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	6/27/2012	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	10/1/2012	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	11/29/2012	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	3/18/2013	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	5/23/2013	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	8/8/2013	<1.0	<1.0	<1.0	<1.0	<2.0	**1.2**	<1.0	**3.0**	<1.0
	11/14/2013	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0

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MDEQ Residential Sub-Slab SGSL [1]		4,100	8.2	1,700	58	580	170	36,000	12	21
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MDEQ Non-Residential Deep SGSL [1]		690,000	1,600	280,000	9,800	98,000	33,000	6,100,000	2,100	15,000
Units		ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv
SG-12 (5-5.5')	4/5/2010 [5]	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/20/2020 [5]	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/21/2010 [5]	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/9/2010	<2.5	<1.3 [6]	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
	3/31/2011 [5]	NS	NS	NS	NS	NS	NS	NS	NS	NS
	6/27/2011 [5]	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/28/2011 [5]	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/21/2011	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	1/30/2012 [5]	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/28/2012	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	3/26/2013 [5]	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/24/2013 [5]	NS	NS	NS	NS	NS	NS	NS	NS	NS
SG-12R (7-7.5')	6/26/2012	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	10/3/2012	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	11/28/2012 [8]	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3/26/2013 [8]	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/24/2013 [8]	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/9/2013	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	11/13/2013	<1.0	<1.0	<1.0	**1.9**	<2.0	<1.0	<1.0	**5.6**	<1.0
SG-13 (5.5-6')	4/5/2010	<2.5	<1.3 [6]	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
	5/20/2010	<4.5	<2.2 [6]	<4.5	<4.5	<4.5	<4.5	<4.5	**6.1**	<4.5
	9/23/2010	<1.5	<1.5	<1.5	**2.5**	**5.6**	<1.5	<1.5	<1.5	<1.5
	12/9/2010	<1.6	<1.6	<1.6	<1.6	**2.9**	<1.6	<1.6	<1.6	<1.6
	3/31/2011	<0.56	<0.56	<0.57	<0.57	<0.57	<0.57	<0.56	<0.57	<0.58
	6/7/2011	**1.5**	<0.19	<0.40	**4.8**	**10.8**	**0.77**	**0.81**	**1.6**	<0.19
	9/28/2011	**1.1**	<1.0	<1.0	**6.2**	**10**	<1.0	<1.0	<1.0	<1.0
	11/21/2011	**1.9**	<1.0	<1.0	**2.0**	**4.0**	<1.0	<1.0	<1.0	<1.0
	1/30/2012	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	6/26/2012	<1.0	<1.0	<1.0	**4.9**	**7.7**	<1.0	<1.0	<1.0	<1.0
	10/2/2012	<1.0	<1.0	<1.0	**3.4** [7]	**5.9** [7]	<1.0	<1.0	<1.0	<1.0
	11/28/2012	<1.0	<1.0	<1.0	**1.7**	**2.7**	<1.0	<1.0	<1.0	<1.0
	3/14/2013	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	5/23/2013	<1.0	<1.0	<1.0	<1.0	**3.4**	<1.0	<1.0	<1.0	<1.0
	8/8/2013	<1.0	<1.0	<1.0	**1.3**	**8.8**	<1.0	<1.0	<1.0	<1.0
	11/14/2013	<1.0	<1.0	<1.0	<1.0	**4.5**	<1.0	<1.0	<1.0	<1.0

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Units		ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv
SG-14 (6.5-7') [5]	4/5/2010	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/20/2010	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/21/2010	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/9/2010	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3/31/2011	NS	NS	NS	NS	NS	NS	NS	NS	NS
	6/27/2011	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/28/2011	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/21/2011	NS	NS	NS	NS	NS	NS	NS	NS	NS
	1/30/2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
SG-14R (6.5-7')	6/26/2012	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	**1.3**	<1.0
	10/3/2012[8]	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/28/2012[8]	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3/14/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/24/2013 [3]	--	--	--	--	--	--	--	--	--
	8/9/2013	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	**1.6**	<1.0
	11/13/2013	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
SG-15 (11-11.5')	9/23/2010 [5]	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/15/2010 [5]	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3/31/2011 [5]	NS	NS	NS	NS	NS	NS	NS	NS	NS
	6/27/2011 [5]	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/28/2011 [5]	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/21/2011	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	**10**	**30**	<1.0
	1/30/2012 [5]	NS	NS	NS	NS	NS	NS	NS	NS	NS
SG-15R (8.75-9.25')	6/26/2012	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	10/3/2012	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	11/28/2012	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	3/18/2013	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	5/24/2013 [4,6]	<1.6	<1.6	<1.9	<1.6	<1.2	<1.0	<1.0	<1.2	<1.8
	8/8/2013	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	11/13/2013	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0

Notes:

1) As recommended by USEPA in an email dated August 1, 2013, deep soil gas screening levels (SGSLs) are taken from the May 2013 Michigan Department of Environmental Quality (MDEQ) Final Guidance Document for the Vapor Intrusion Pathway.
2) Elevated concentrations of 2-propanol (tracer) detected; DUP-01 results from 5/20/10 reflect true soil gas concentrations. Tracer concentration from SG-01 and analytical data from DUP-01 suggests that sample was diluted with approximately 30-percent ambient air.
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Bold font denotes concentrations detected above laboratory reporting limits.

Denotes concentrations above one or more soil gas screening level

ppbv - parts per billion by volume

NS - No Sample

Table 2
Summary of Chlorinated Volatile Organic Compounds at Off-Site Soil Gas Sample Locations
Tecumseh Products Company
Tecumseh, Michigan

Analyte		1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	1,1,1-Trichloroethane	Trichloroethene	Vinyl Chloride
MDEQ Residential Sub-Slab SGSL [1]		4,100	8.2	1,700	58	580	170	36,000	12	21
MDEQ Residential Deep SGSL [1]		41,000	82	17,000	580	5,800	1,700	360,000	120	210
MDEQ Non-Residential Deep SGSL [1]		690,000	1,600	280,000	9,800	98,000	33,000	6,100,000	2,100	15,000
Units		ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv
SG-16 (7.5-8')	9/23/2010	<2.5	<2.5	<2.5	<2.5	<2.5	**2.6**	<2.5	<2.5	<2.5
	12/9/2010	<15.7	<7.8 [6]	<15.7	<15.7	<15.7	<7.8 [6]	<15.7	<15.7	<7.8 [6]
	3/31/2011	<0.61	<0.61	<0.60	<0.60	<0.60	<0.61	<0.59	<0.60	<0.62
	6/7/2011	<1.1	<0.53	<1.1	<1.1	<1.1	<0.54	<1.1	**0.62**	<0.54
	9/28/2011	<1.0	<1.0	<1.0	**3.3**	<2.0	**7.4**	<1.0	**28**	<1.0
	11/21/2011	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	**1.1**
	1/30/2012	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	6/27/2012	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	10/2/2012	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	11/28/2012	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	3/18/2013	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	5/23/2013 [4]	<4,900	<970	<5,000	<5,000	<5,000	<580	<3,600	<730	<770
	6/24/2013	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	8/8/2013	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	**13**	<1.0
	11/13/2013	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
SG-16 (DUP-02)	10/2/2012	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	6/24/2013	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
SG-17 (8-8.5')	6/27/2012	<1.0	<1.0	<1.0	<1.0	<2.0	**1.8**	**330**	**5.7**	<1.0
	10/1/2012	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	**250**	<1.0	<1.0
	11/28/2012	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	**42**	<1.0	<1.0
	3/14/2013	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	**42**	<1.0	<1.0
	5/23/2013	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	**83**	<1.0	<1.0
	8/8/2013	<2.0	<2.0	<2.0	<2.0	<4.0	**6.0**	**550**	<2.0	<2.0
	11/12/2013	<1.0	<1.0	<1.0	<1.0	<2.0	**5.1**	**300**	**6.2**	<1.0

Notes:

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MDEQ Residential Sub-Slab SGSL [1]		4,100	8.2	1,700	58	580	170	36,000	12	21
MDEQ Residential Deep SGSL [1]		41,000	82	17,000	580	5,800	1,700	360,000	120	210
MDEQ Non-Residential Deep SGSL [1]		690,000	1,600	280,000	9,800	98,000	33,000	6,100,000	2,100	15,000
Units		ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv
SG-18 (8-8.5')	6/27/2012	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	**1.1**	**2.3**	<1.0
	10/1/2012	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	11/29/2012	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	3/14/2013	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	5/23/2013	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	8/8/2013	<1.0	<1.0	<1.0	<1.0	<2.0	**2.1**	<1.0	**6.4**	<1.0
	11/13/2013	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
SG-19 (8-8.5')	6/26/2012	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	10/2/2012	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	11/27/2012	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	3/14/2013	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	5/24/2013 [4]	<2.0	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	<2.0	<2.0
	8/8/2013	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	11/14/2013	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
SG-20 (8-8.5')	6/27/2012	<1.0	<1.0	<1.0	<1.0	<2.0	**5.4**	**1.5**	**17**	<1.0
	10/2/2012	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	**1.9**	<1.0
	11/27/2012	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	3/14/2013	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	**1.3**	<1.0
	5/24/2013 [4]	<2.0	<2.0	<2.0	<2.0	<4.0	**3.6**	<2.0	<2.0	<2.0
	8/8/2013	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	**3.1**	**1.0**	<1.0
	11/12/2013	<1.0	<1.0	<1.0	<1.0	<2.0	**13**	**1.4**	**23**	<1.0
SG-21 (8-8.5')	6/27/2012	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	10/2/2012	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	11/29/2012	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	3/14/2013	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	5/24/2013 [4]	<120	<24	<120	<120	<120	<15	<91	<18	<19
	6/24/2013	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	8/8/2013	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	11/12/2013	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
SG-21 (DUP-01)	3/14/2013	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
SG-21 (DUP-02)	11/29/2012	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
TVP-02s (10-10.5')	6/27/2012	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	**1.2**	**8.8**	<1.0
	10/1/2012	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	**1.2**	<1.0
	11/28/2012	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	3/18/2013	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	5/23/2013 [4]	<2.0	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	<2.0	<2.0
	8/8/2013	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	11/12/2013	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0

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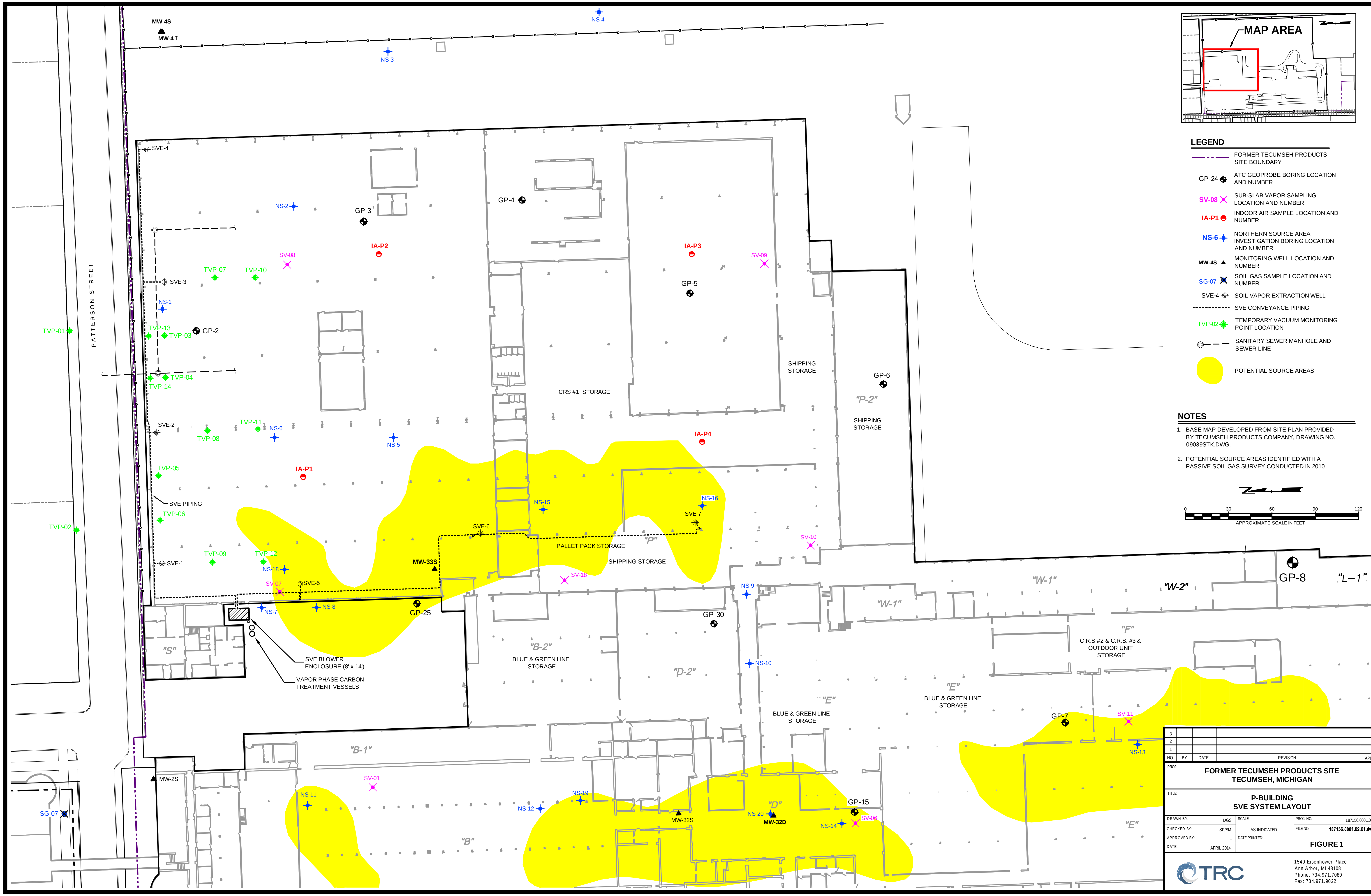
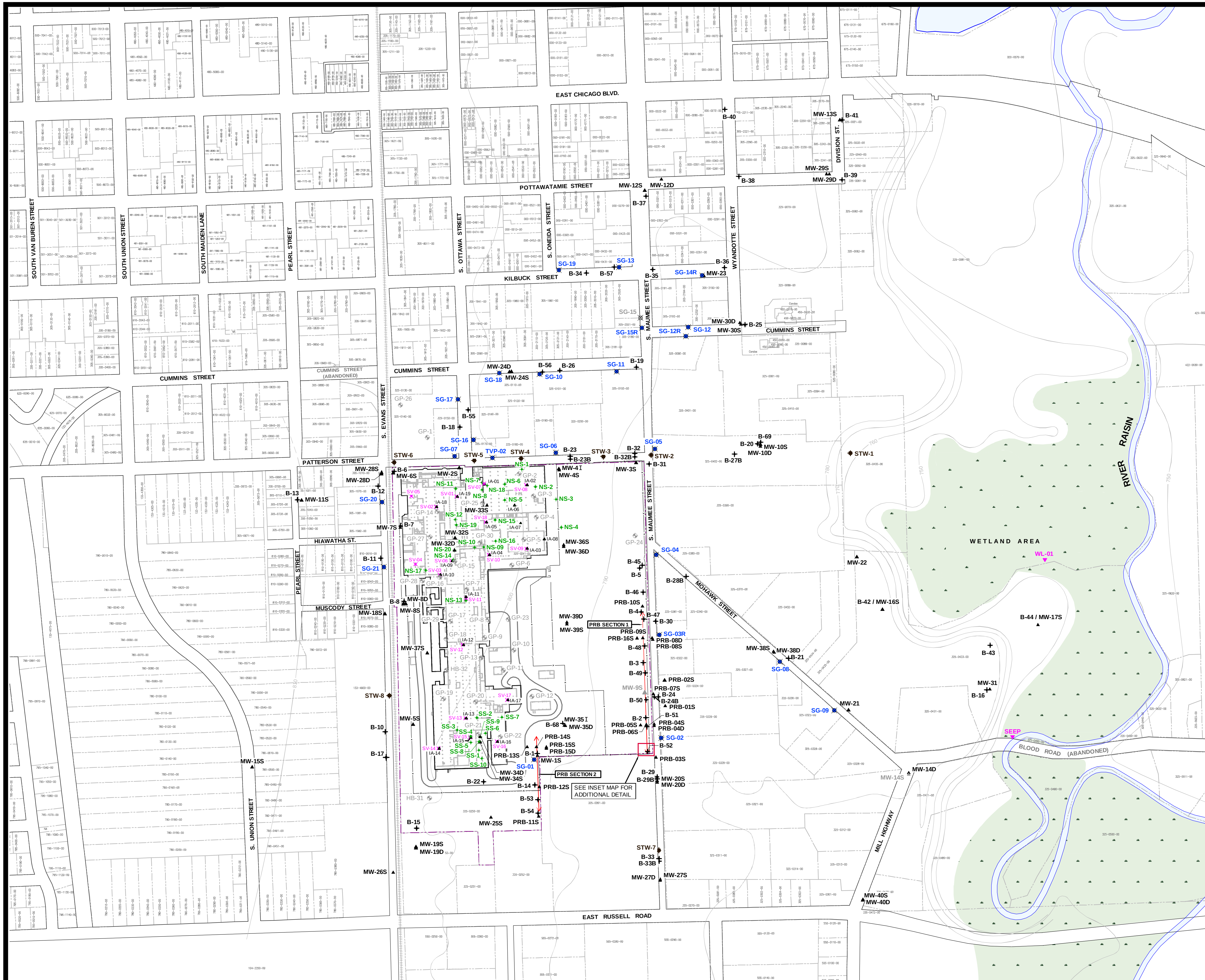
NS - No Sample

Figures


MAP AREA
LEGEND
FORMER TECUMSEH PRODUCTS SITE BOUNDARY
GP-24 ATC GEOPROBE BORING LOCATION AND NUMBER
SV-08 SUB-SLAB VAPOR SAMPLING LOCATION AND NUMBER
IA-P1 INDOOR AIR SAMPLE LOCATION AND NUMBER
NS-6 NORTHERN SOURCE AREA INVESTIGATION BORING LOCATION AND NUMBER
MW-4S MONITORING WELL LOCATION AND NUMBER
SG-07 SOIL GAS SAMPLE LOCATION AND NUMBER
SVE-4 SOIL VAPOR EXTRACTION WELL
SVE CONVEYANCE PIPING
TVP-02 TEMPORARY VACUUM MONITORING POINT LOCATION
SANITARY SEWER MANHOLE AND SEWER LINE
POTENTIAL SOURCE AREAS
NOTES
1. BASE MAP DEVELOPED FROM SITE PLAN PROVIDED BY TECUMSEH PRODUCTS COMPANY, DRAWING NO. 09039STK.DWG.
2. POTENTIAL SOURCE AREAS IDENTIFIED WITH A PASSIVE SOIL GAS SURVEY CONDUCTED IN 2010.
0 30 60 90 120
APPROXIMATE SCALE IN FEET
PATTERSON STREET
SHIPPING STORAGE
CRS #1 STORAGE
PALLET PACK STORAGE
SHIPPING STORAGE
SVE PIPING
SVE BLOWER ENCLOSURE (8' x 14')
VAPOR PHASE CARBON TREATMENT VESSELS
BLUE & GREEN LINE STORAGE
C.R.S #2 & C.R.S. #3 & OUTDOOR UNIT STORAGE
"P-2" "P" "W-1" "W-2" "L-1" "F" "E" "D" "D-2" "B-2" "B-1" "B" "S"
FORMER TECUMSEH PRODUCTS SITE
TECUMSEH, MICHIGAN
P-BUILDING
SVE SYSTEM LAYOUT
DRAWN BY: DGS
CHECKED BY: SP/SM
SCALE: AS INDICATED
PROJ. NO. 187156.0001.02
FILE NO. 187156.0001.02.01.dwg
DATE: APRIL 2014
FIGURE 1
TRC
1540 Eisenhower Place
Ann Arbor, MI 48108
Phone: 734.971.7080
Fax: 734.971.9022



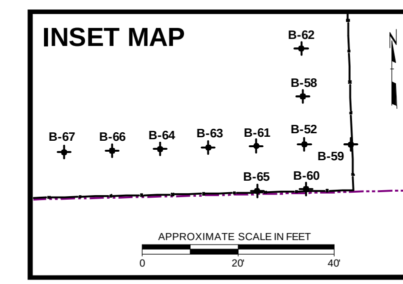
LEGEND

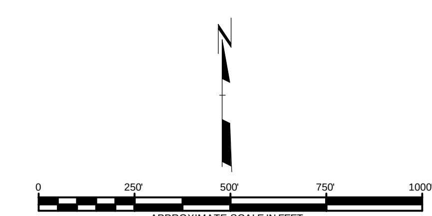
- FORMER TECUMSEH PRODUCTS SITE BOUNDARY
- PARCEL BOUNDARY
- RAILROAD TRACKS (APPROXIMATE LOCATION)
- 750 — APPROXIMATE GROUND TOPOGRAPHY BASED OFF 7.5 MINUTE U.S.G.S. TOPOGRAPHIC QUADRANGLE MAP
- B-2 — PERIMETER / OFF-SITE INVESTIGATION SOIL BORING LOCATION AND NUMBER
- MW-4S — MONITORING WELL LOCATION AND NUMBER
- MW-9S — DECOMMISSIONED MONITORING WELL LOCATION AND NUMBER
- SS-2 — SOURCE AREA INVESTIGATION BORING LOCATION AND NUMBER
- SG-02 — SOIL GAS SAMPLE LOCATION AND NUMBER
- SG-15 — DECOMMISSIONED SOIL GAS SAMPLE LOCATION AND NUMBER
- STW-2 — STORM WATER SEWER SAMPLE LOCATION AND NUMBER
- WL-01 — APPROXIMATE SURFACE WATER SAMPLE LOCATION
- GP-2 — ATC PHASE II ESA BORING LOCATION AND NUMBER
- SV-10 — SUB-SLAB SOIL GAS SAMPLE NUMBER AND LOCATION
- IA-16 — INDOOR AIR SAMPLE NUMBER AND LOCATION
- FLOODPLAIN / WOODED WETLAND AREA
- PRB LOCATION
- FENCE LINE

NOTES

1. BASE MAP DEVELOPED FROM SITE PLAN PROVIDED BY THE CITY OF TECUMSEH, DRAWING NO. CITY.DWG, MARCH 2009.
2. GROUND TOPOGRAPHY BASED OFF 7.5 MINUTE U.S.G.S TOPOGRAPHIC QUADRANGLE MAP AND GROUND SURVEY DATA.

INSET MAP





NO.	BY	DATE	REVISION	APP'D
3				
2				
1	DGS	02/19/13	REVISED INVESTIGATION LOCATIONS	SEM

PROJ: FORMER TECUMSEH PRODUCTS SITE
TECUMSEH, MICHIGAN

TITLE: SITE LAYOUT AND SAMPLE LOCATIONS

DRAWN BY: DGS	SCALE:	PROJ NO.	187156.0001.02
CHECKED BY: SEM	AS INDICATED	FILE NO.	187156.0001.02.02.dwg
APPROVED BY: -	DATE PRINTED:		
DATE: APRIL 2014		FIGURE 2	

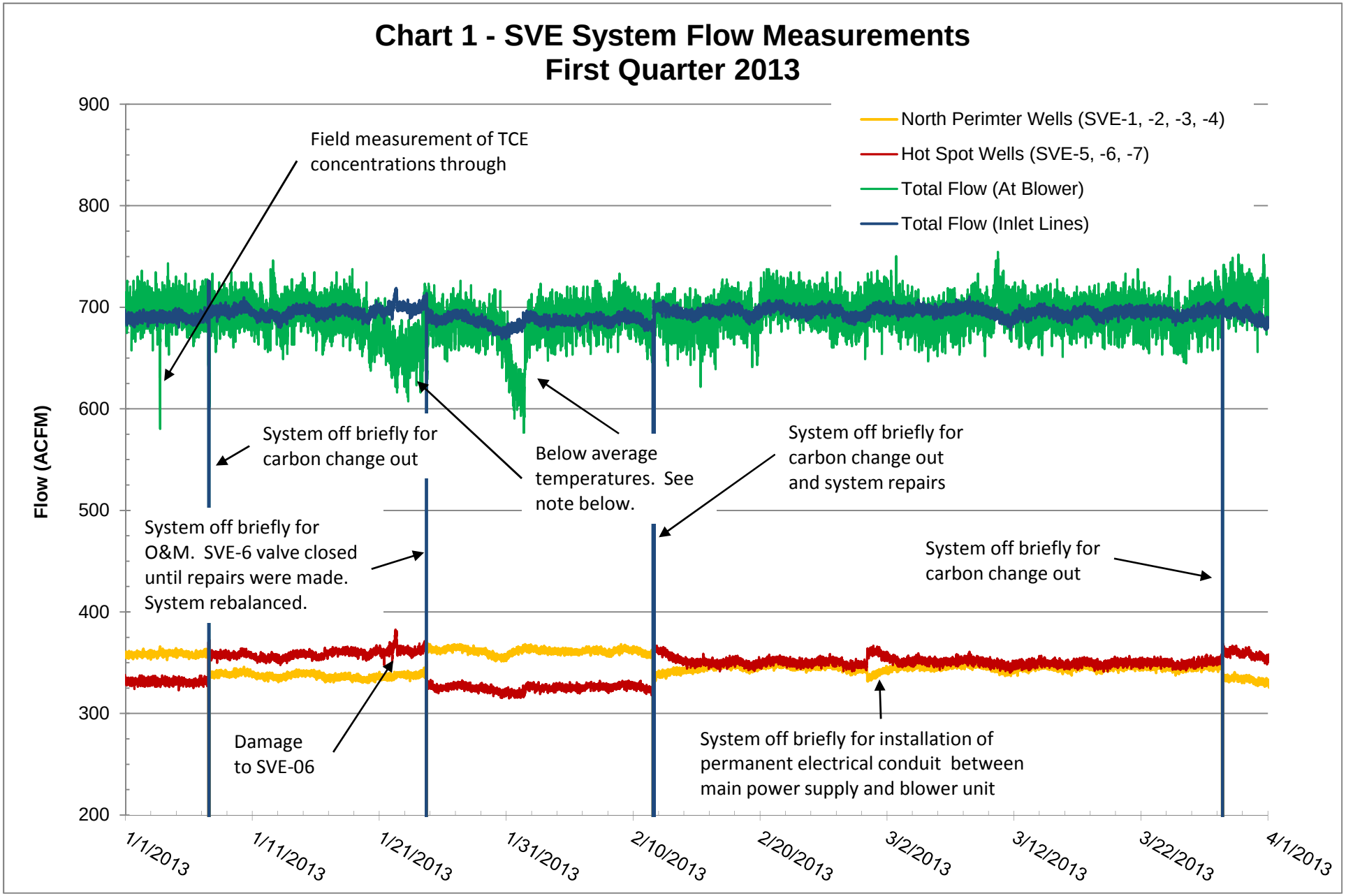
TRC

1540 Eisenhower Place
Ann Arbor, MI 48108
Phone: 734.971.7080
Fax: 734.971.9022

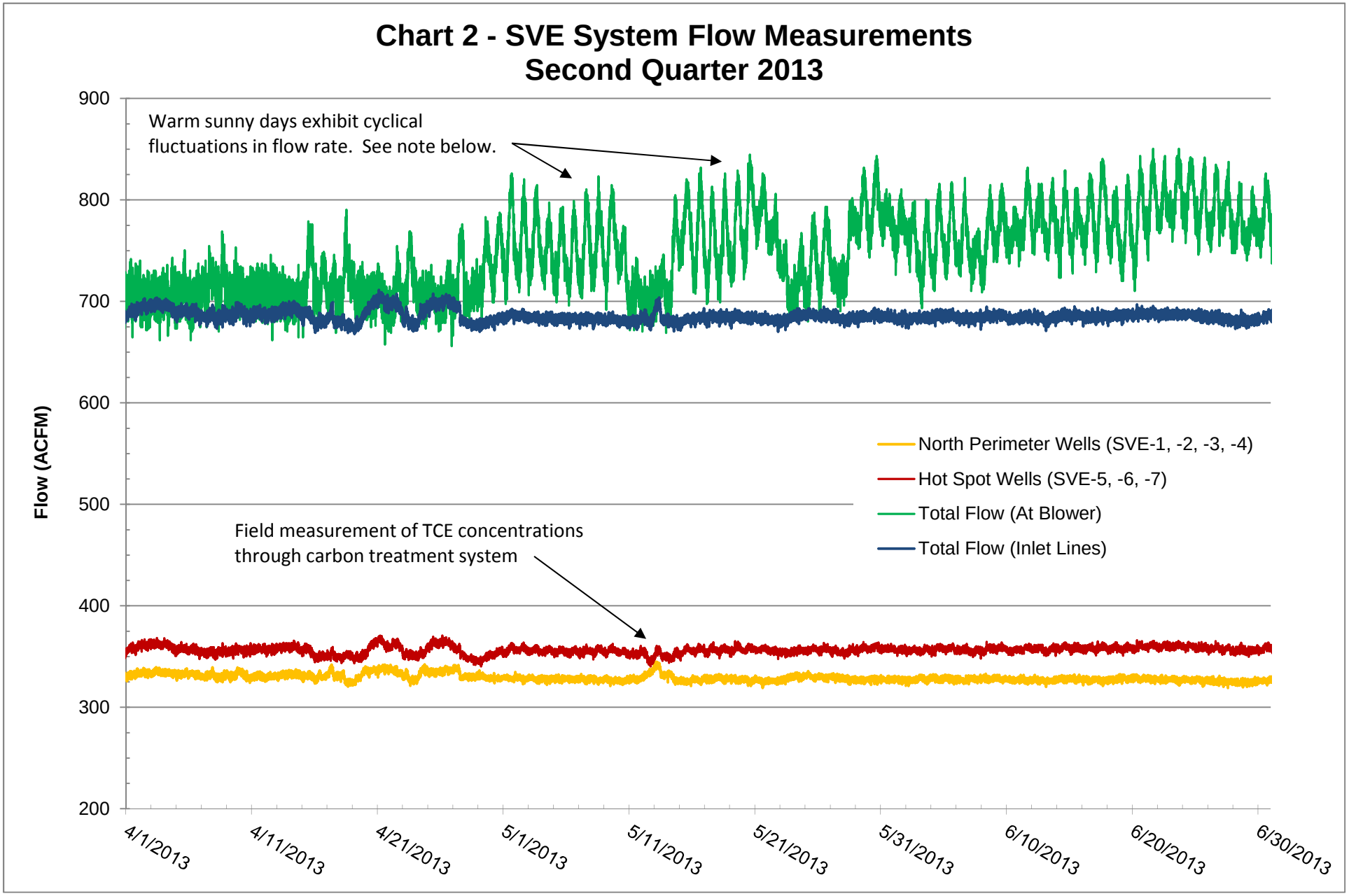
PLOT DATA
Drawing Name: J:\...\Tecumseh Products\Tecumseh MI\187156\0001\02_2013 Annual O&M Rpt\187156.0001.02.02.dwg
Operator Name: STEHLE, DANAH
Drawing Plot Scale: 0.386863
Dwg Size: 1.73 Mb
Plot Date: April 8, 2014
Plot Time: 11:07 AM
Attached Xrefs: bm100110 (Filed)
Attached Images:
Layout: FIG01 Site LO & Samples

Charts

Chart 1 - SVE System Flow Measurements
First Quarter 2013

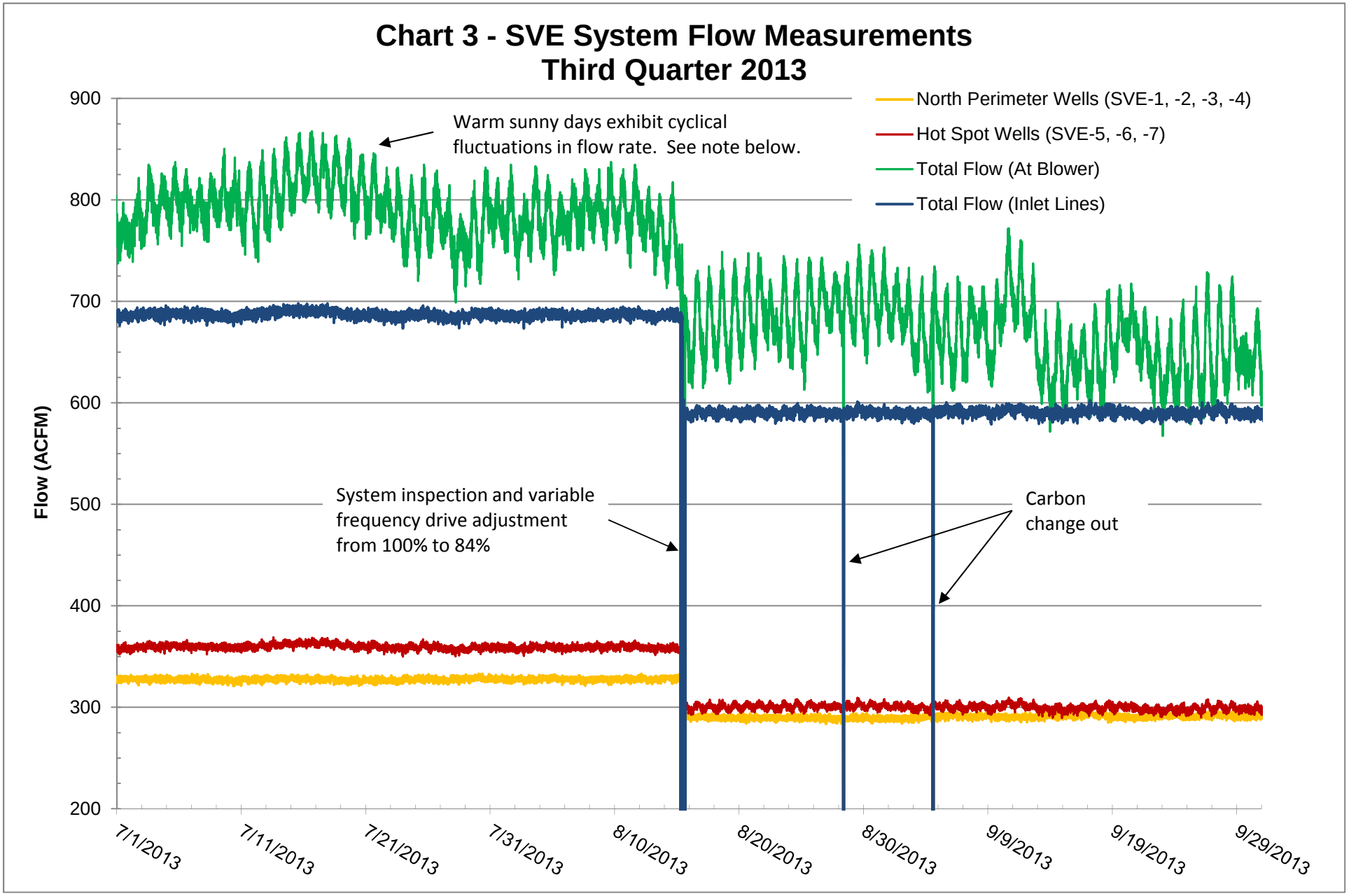


Note: System flow rate measurements do not account for changes in air density with changes in temperature. Constant subsurface temperatures result in stable inlet flow rates, but flow rates at the blower reflect changes in ambient air temperature.

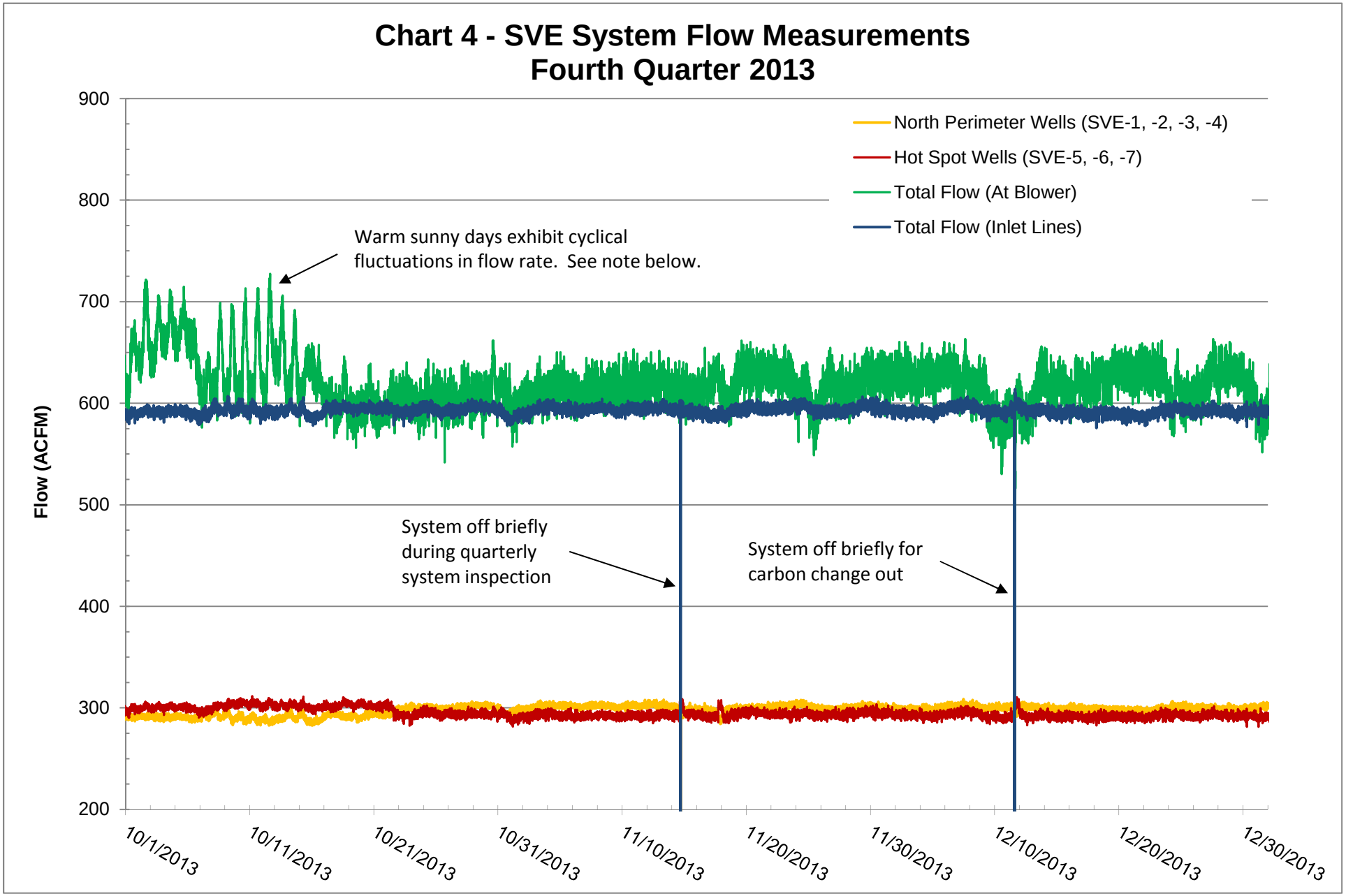


Note: System flow rate measurements do not account for changes in air density with changes in temperature. Constant subsurface temperatures result in stable inlet flow rates, but flow rates at the blower reflect changes in ambient air temperature.

Chart 3 - SVE System Flow Measurements
Third Quarter 2013



Note: System flow rate measurements do not account for changes in air density with changes in temperature. Constant subsurface temperatures result in stable inlet flow rates, but flow rates at the blower reflect changes in ambient air temperature.



Note: System flow rate measurements do not account for changes in air density with changes in temperature. Constant subsurface temperatures result in stable inlet flow rates, but flow rates at the blower reflect changes in ambient air temperature.

Chart 5 - Differential Pressure Across Air Filter
System Start-Up through December 2013

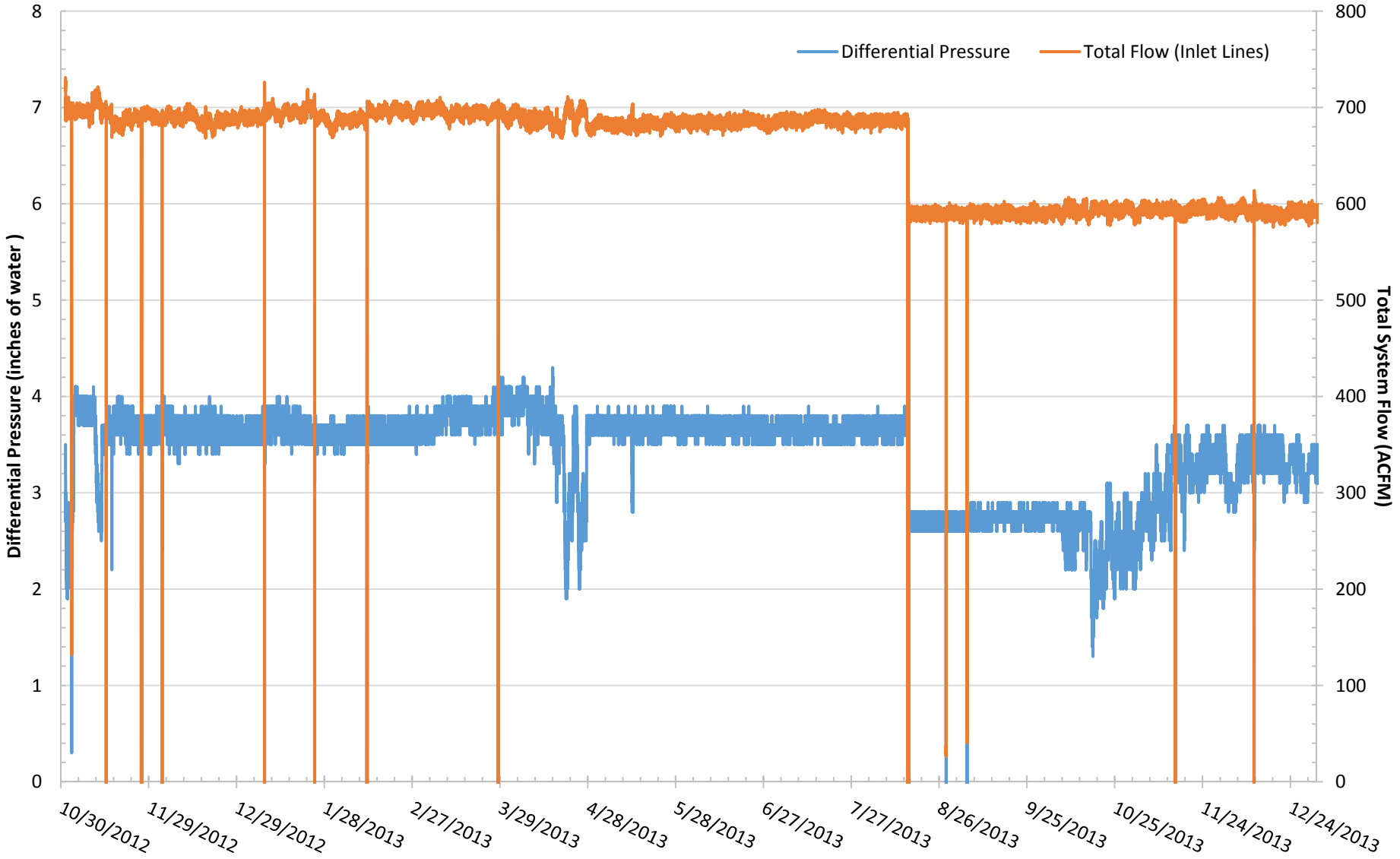
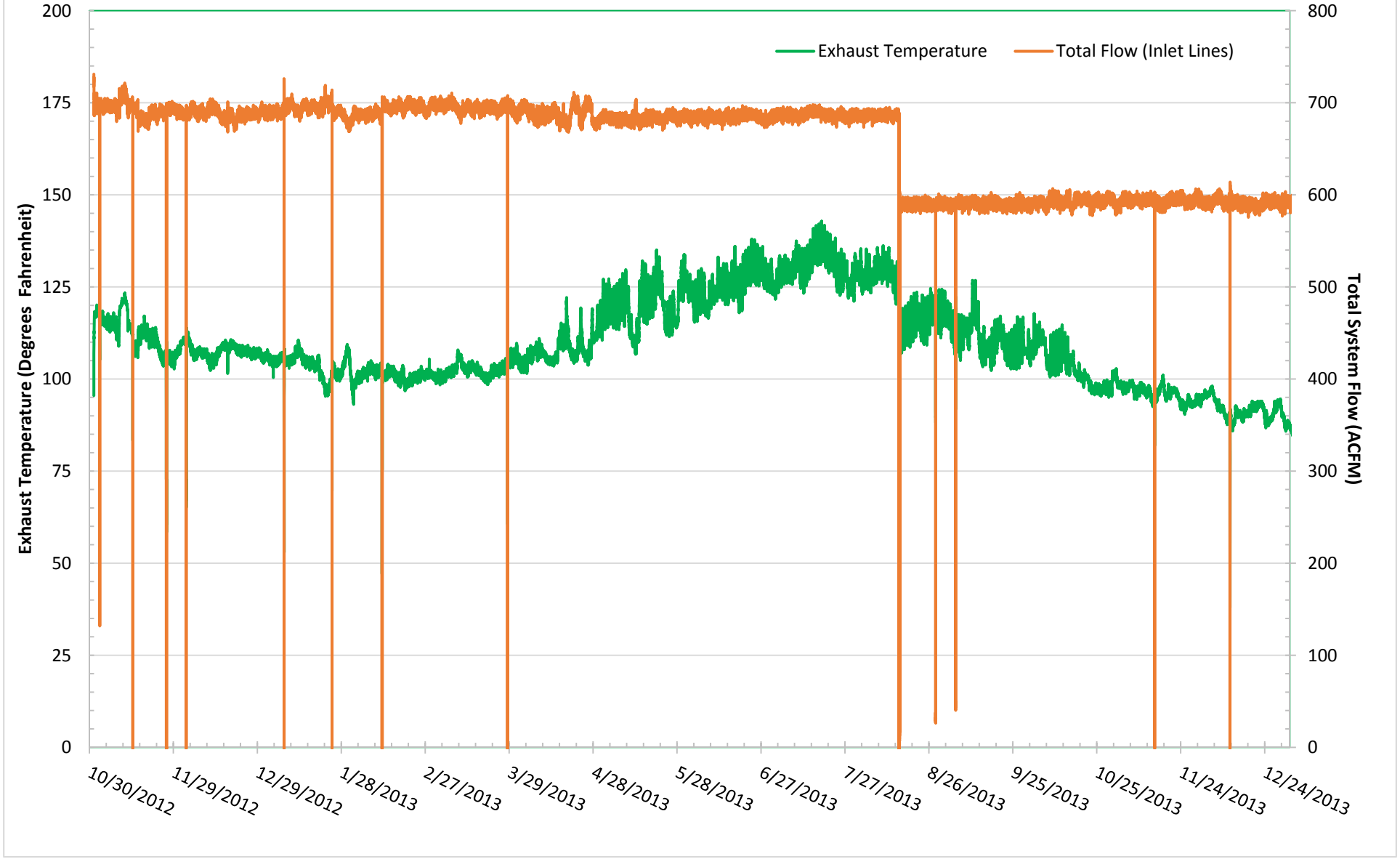
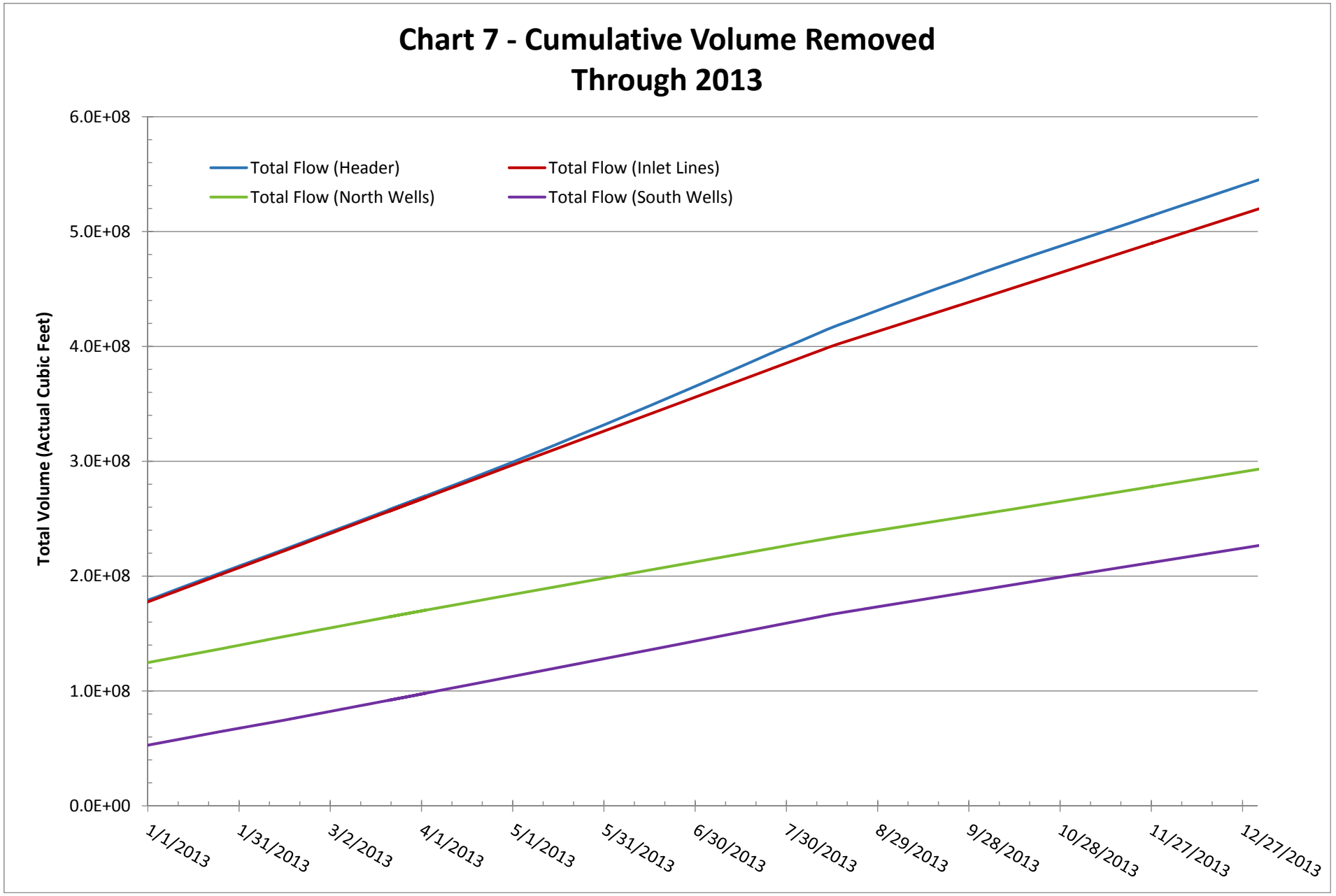


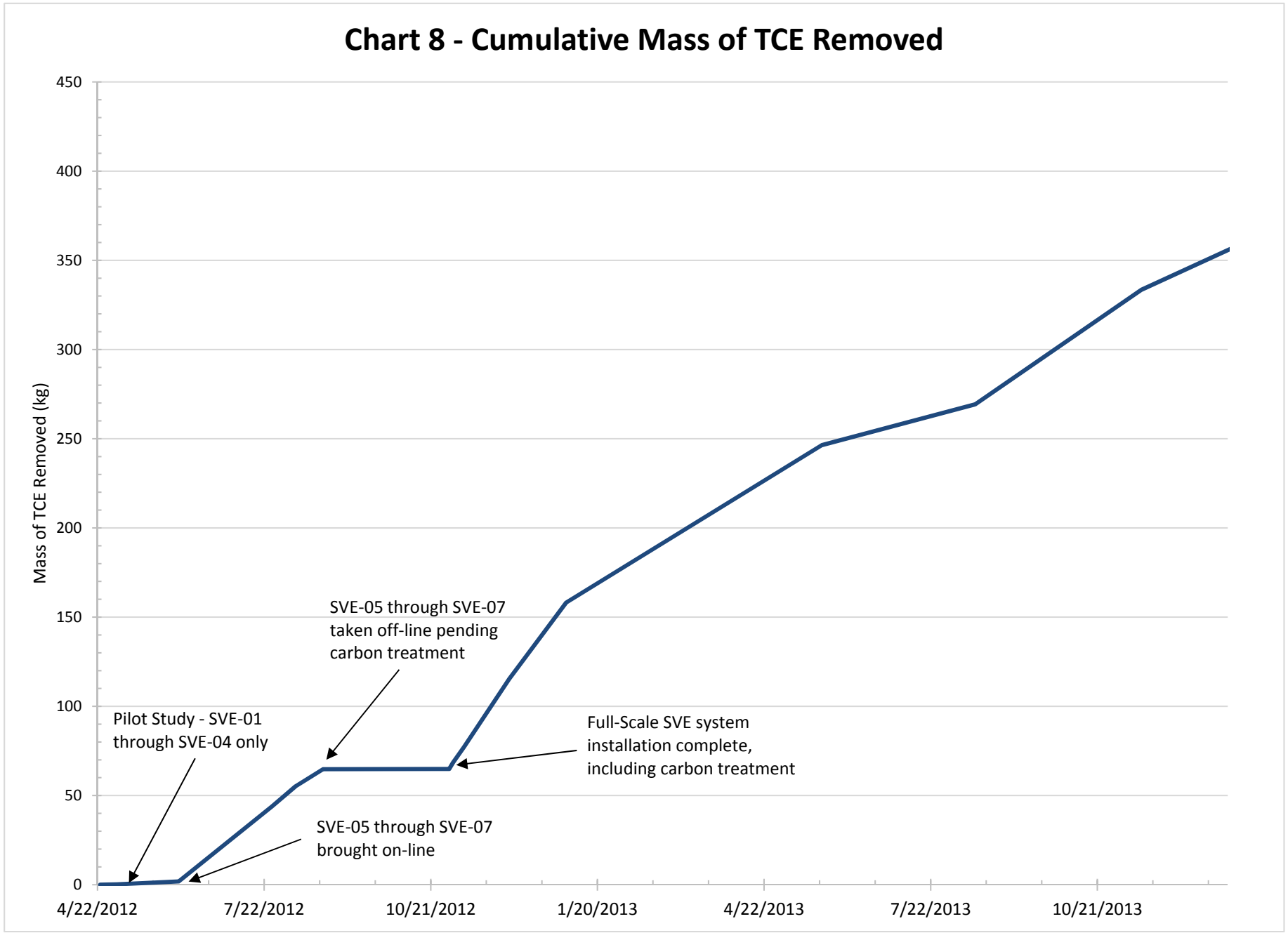
Chart 6 - Exhaust Temperature
System Start-Up through December 2013





Note: System flow rate measurements do not account for changes in air density with changes in temperature. The warming effect of the blower results in a slightly higher volume at the blower when compared to the inlet lines.

Chart 8 - Cumulative Mass of TCE Removed



Attachment 1
Operation and Maintenance Log

Soil Vapor Extraction System
Operation and Maintenance Log

Former Tecumseh Products Company Site
Tecumseh, Michigan

- **March 30, 2012 – April 10, 2012:**
  - Completed installation of soil vapor extraction wells SVE-1 through SVE-4, and
  - Completed installation of temporary vacuum pressure points.
- **April 9, 2012 – April 13, 2012:**
  - Completed installation of above grade piping at SVE-1 through SVE-4 and SVE header pipeline 1 (Line 1).
- **April 16, 2012 – April 23, 2012:**
  - Temporary SVE blower installed (powered with diesel generator);
  - Conducted stepped-rate tests at SVE-1 through SVE-4;
  - Balanced system flow (~60 ACFM at each extraction well); and
  - Collected vacuum and flow measurements at blower, extraction wells, and temporary vacuum pressure points.
- **April 25, 2012:**
  - Collected vacuum and flow measurements at blower, extraction wells, and temporary vacuum pressure points;
  - Blower maintenance (lubrication); and
  - Collected exhaust samples from SVE system and other on-site emission sources (S-Building SSDV system and PRB methane ventilation system).
- **May 2, 2012:**
  - Collected vacuum and flow measurements at blower, extraction wells, and temporary vacuum pressure points;
  - Blower maintenance (lubrication); and
  - Collected a 1-week post start-up SVE system exhaust sample.
- **May 10, 2012:**
  - Closed make-up air valves (evaluation of SVE system exhaust data indicates that make-up air is not needed to maintain MDEQ air permit exemption requirements by reducing total emissions);
  - Re-balance system (~115 ACFM at each extraction well);

  - Collected vacuum and flow measurements at blower, extraction wells, and temporary vacuum pressure points; and
  - Blower maintenance (lubrication).
- **May 16, 2012:**
  - Collected vacuum and flow measurements at blower, extraction wells, and temporary vacuum pressure points; and
  - Blower maintenance (lubrication).
- **May 24, 2012:**
  - Collected vacuum and flow measurements at blower and extraction wells; and
  - Blower maintenance (lubrication).
- **May 29, 2012:**
  - Collected vacuum and flow measurements at blower and extraction wells; and
  - Blower maintenance (lubrication).
- **May 29, 2012 – June 1, 2012**
  - Completed installation of soil vapor extraction wells SVE-5 through SVE-7;
  - Completed installation of above grade piping at SVE-5 through SVE-7 and SVE header pipeline 2 (Line 2); and
  - Completed connection of Line 2 to temporary blower skid.
- **June 4, 2012 – June 5, 2012:**
  - Conducted stepped-rate tests at SVE-5 through SVE-7;
  - Managed problems with diesel generator, and accepted delivery of replacement generator;
  - Balanced system flow (~65 ACFM at each well);
  - Collected vacuum and flow measurements at blower, extraction wells, and temporary vacuum pressure points; and
  - Blower maintenance (lubrication).
- **June 7, 2012**
  - Permanent power installed.

- **June 14, 2012:**
  - Collected vacuum and flow measurements at blower, extraction wells, and temporary vacuum pressure points; and
  - Blower maintenance (lubrication).
- **June 21, 2012:**
  - Collected vacuum and flow measurements at blower, extraction wells, and temporary vacuum pressure points; and
  - Blower maintenance (lubrication).
- **June 26, 2012:**
  - Blower maintenance (lubrication).
- **June 29, 2012:**
  - Blower maintenance (lubrication).
- **July 10, 2012:**
  - Blower maintenance (lubrication).
- **July 16, 2012:**
  - Collected vacuum and flow measurements at blower, extraction wells, and temporary vacuum pressure points; and
  - Blower maintenance (lubrication and oil change).
- **July 26, 2012:**
  - Blower maintenance (lubrication); and
  - Collected an SVE system exhaust sample.
- **August 2, 2012:**
  - Blower maintenance (lubrication).
- **August 8, 2012:**
  - Blower maintenance (lubrication); and
  - Collected an SVE system exhaust sample.
- **August 17, 2012:**
  - Blower maintenance (lubrication).
- **August 23, 2012:**
  - Blower maintenance (lubrication);
  - Collected SVE system influent samples from Line 1 and Line 2;

  - Closed flow from Line 2 (July 26, 2012 and August 8, 2012 sample events indicate TCE concentrations in Line 2 require treatment prior to emission);
  - Rebalanced SVE system (~115 ACFM at extraction wells SVE-1 through SVE-4); and
  - Collected vacuum and flow measurements at blower, extraction wells, and temporary vacuum pressure points.
- **August 30, 2012:**
  - Blower maintenance (lubrication).
- **September 7, 2012:**
  - Blower maintenance (lubrication).
- **September 14, 2012:**
  - Blower maintenance (lubrication).
- **September 26, 2012:**
  - Blower maintenance (lubrication).
- **October 3, 2012:**
  - Blower maintenance (lubrication).
- **October 11, 2012:**
  - Blower maintenance (lubrication and oil change).
- **October 17, 2012:**
  - Blower maintenance (lubrication).
- **October 25, 2012 – October 26, 2012 :**
  - Remove temporary SVE blower skid (including removal of ~47 gallons of condensate from the knock out tank for disposal);
  - Install permanent SVE blower skid;
  - Assemble exhaust stack and piping connections to SVE header pipelines (a tee is installed so that flow from Line 2 enters the blower skid through influent lines 2 and 3);
  - Power cannot be connected (permanent power source is 208v, buck-booster transformer needed to increase voltage to 240v); and
  - Install carbon treatment system (two 3000 lb vapor phase carbon vessels and associated plumbing).

- **October 31, 2012 :**
  - Generator delivery to supply power temporarily;
  - Full-scale system start up; and
  - Adjust system flow to maintain lateral control and maximize source removal (SVE-1 through SVE-5 ~90 ACFM, SVE-6 and SVE-7 ~150 ACFM).
- **November 2, 2012:**
  - Collected vacuum and flow measurements at blower, extraction wells, and temporary vacuum pressure points;
  - Field measurement of TCE concentration (with Draeger tube) at lead carbon vessel influent, lag carbon vessel influent and treatment system exhaust; and
  - Collected Line 1 influent sample, Line 2 influent sample and SVE system exhaust samples for laboratory analysis.
- **November 8 – November 9, 2012:**
  - Adjusted valves on SVE influent line 2 and 3 so that flow was within acceptable range for installed flow meters;
  - Rebalanced system (SVE-1 through SVE-5 ~90 ACFM, SVE-6 and SVE-7 ~140 ACFM);
  - Collected vacuum and flow measurements at blower, extraction wells, and temporary vacuum pressure points;
  - Field measurement of TCE concentration (with Draeger tube) at lead carbon vessel influent, lag carbon vessel influent and treatment system exhaust; and
  - Collected Line 1 influent sample, Line 2 influent sample, sample between vessels (lead effluent/lag influent), and SVE system exhaust samples for laboratory analysis.
- **November 12, 2012:**
  - Collected vacuum and flow measurements at blower; and
  - Field measurement of TCE concentration (with Draeger tube) at lead carbon vessel influent, lag carbon vessel influent, and treatment system exhaust.
- **November 14, 2012:**
  - Buck-booster transformer installed and permanent power connected;
  - Thermostat on ventilation fan repaired; and
  - SVE system re-started.

- **November 16, 2012:**
  - Collected vacuum and flow measurements at blower and extraction wells; and
  - Field measurement of TCE concentration (with Draeger tube) at lead carbon vessel influent, lag carbon vessel influent, treatment system exhaust, and individual extraction wells.
- **November 20, 2012:**
  - Collected vacuum and flow measurements at blower and extraction wells;
  - Water (condensate) had accumulated on valve at SVE-5 resulting in gurgling sound and low flow. Valve opened completely to allow water to drain then readjusted; and
  - Field measurement of TCE concentration (with Draeger tube) at lead carbon vessel influent, lag carbon vessel influent, and treatment system exhaust.
- **November 26, 2012:**
  - SVE system shut down due to remote modifications to system telemetry;
  - On-site to restart SVE system;
  - Collected vacuum and flow measurements at blower and extraction wells; and
  - Field measurement of TCE concentration (with Draeger tube) at lead carbon vessel influent, lag carbon vessel influent, and treatment system exhaust (breakthrough observed on lag vessel).
- **December 3, 2012:**
  - Prior to carbon change out:
    - Collected vacuum and flow measurements at blower;
    - Field measurement of TCE concentration (with Draeger tube) at lead carbon vessel influent, lag carbon vessel influent, and treatment system exhaust; and
    - Collected samples at lead vessel influent and between vessels (lead effluent/lag influent) for laboratory analysis.
  - Remove spent carbon from both vessels for regeneration/disposal;
  - Installed 2250 lbs of carbon in lead vessel and 1485 lbs of carbon in lag vessel; and
  - Post carbon change out:
    - Collected vacuum and flow measurements at blower and extraction wells.

- **December 18, 2012:**
  - Collected vacuum and flow measurements at blower, extraction wells and temporary vacuum pressure points; and
  - Field measurement of TCE concentration (with Draeger tube) at lead carbon vessel influent, lag carbon vessel influent, treatment system exhaust, and extraction wells SVE-5 through SVE-7.
- **January 3, 2013:**
  - Collected vacuum and flow measurements at blower;
  - Field measurement of TCE concentration (with Draeger tube) at lead carbon vessel influent, lag carbon vessel influent, and treatment system exhaust;
  - Breakthrough observed on lead vessel, arrange change out; and
  - Collected samples at lead vessel influent, between vessels (lead effluent/lag influent), and system exhaust for laboratory analysis.
- **January 7, 2013:**
  - Prior to carbon change out:
    - Collected vacuum and flow measurements at blower and extraction wells; and
    - Field measurement of TCE concentration (with Draeger tube) at lead carbon vessel influent, lag carbon vessel influent, and treatment system exhaust.
  - The following problems were noted during system inspection:
    - SVE-5 was gurgling due to water (condensate) on the butterfly valve;
  - The following corrective measures were taken:
    - Valve at SVE-5 opened completely to allow water (condensate) to drain during carbon change out. Valve was reset prior to post change out readings;
  - Collected a second round of vacuum and flow measurements once valve was readjusted and system was restated and rebalanced;
  - Remove spent carbon from lead vessel for regeneration/disposal;
  - Switch system piping so that lead vessel becomes lag vessel and vice versa;
  - Capped off former lag vessel with new carbon (990 lbs new carbon + 1485 lbs installed 12/3/12) for a total of 2475 lbs of carbon;
  - Re-filled former lead vessel with new carbon (1980 lbs);

- Post carbon change out:
  - Restarted SVE system; and
  - Collected vacuum and flow measurements at blower and extraction wells.

- **January 24, 2013:**
  - Collected vacuum and flow measurements at blower and extraction wells;
  - Field measurement of TCE concentrations (with Draeger tube) at lead carbon vessel influent, lag carbon vessel influent, and treatment system exhaust;
  - The following problems were noted during system inspection:
    - Riser pipe at SVE-6 damaged (likely run into with fork lift), ambient air is being pulled through the SVE-6 from the damaged area; and
    - SVE-2 was gurgling due to water (condensate) on the butterfly valve.
  - The following corrective measures were taken:
    - Subcontractor contacted to schedule system repairs;
    - Valve closed at SVE-6 to stop the flow of ambient air;
    - Rebalance flow (SVE-1 through SVE-4 ~95 ACFM, SVE-5 ~156 ACFM, and SVE-7 ~226 ACFM);
    - Valve at SVE-2 opened completely and system turned off briefly to allow water (condensate) to drain; and
    - Collected a second round of vacuum and flow measurements once valve was readjusted and system was restated and rebalanced.

- **February 11, 2013:**
  - Prior to carbon change out and system repairs:
    - Collected vacuum and flow measurements at blower and extraction wells;
    - Field measurement of TCE concentration (with Draeger tube) at lead carbon vessel influent, lag carbon vessel influent, and treatment system exhaust; and
  - Completed piping repairs at SVE-06
  - Installed bollards at locations not protected by perimeter guard rail (SVE-06 and SVE-07) to help prevent future piping damage.
  - No new problems were noted during system inspection.
  - Remove spent carbon (2475 lbs) from lead vessel for regeneration/disposal;
  - Switch system piping so that lead vessel becomes lag vessel and vice versa;

- Re-filled former lead vessel with new carbon (2530 lbs);
- Post carbon change out and repair:
  - Restarted SVE system; and
  - Collected vacuum and flow measurements at blower and extraction wells.

- **February 14, 2013:**
  - City of Tecumseh issued an order for no entry into the former TPC manufacturing building. Access for routine operation and maintenance inside the building restricted indefinitely.

- **February 28, 2013:**
  - Before electrical conduit installed:
    - Collected vacuum and flow measurements at blower (access to extraction wells restricted by a no entry order from City of Tecumseh as noted above); and
    - Field measurement of TCE concentrations (with Draeger tube) at lead carbon vessel influent, lag carbon vessel influent, and treatment system exhaust.
  - Installed electrical conduit along outside wall of P-Building from the main power drop to the main power supply box on the SVE skid.
  - Following electrical conduit installation:
    - Restarted SVE system; and
    - Collected vacuum and flow measurements at blower.

- **March 14, 2013:**
  - Collected vacuum and flow measurements at blower;
  - Field measurement of TCE concentration (with Draeger tube) at lead carbon vessel influent, lag carbon vessel influent, and treatment system exhaust; and
  - Breakthrough observed on lead vessel (TCE concentration just registered on Draeger tube, <2 ppm), arrange change out for week of March 25, 2013.

- **March 28, 2013:**
  - Prior to carbon change out:
    - Collected vacuum and flow measurements at blower; and
    - Field measurement of TCE concentration (with Draeger tube and Gastec tube [for comparison]) at lead carbon vessel influent, lag carbon vessel influent, and treatment system exhaust.

- During system inspection the following problem was noted:
  - The flexible hose fitting entering the vessel closest to the skid was beginning to slide off.
- The following corrective measures were taken:
  - The flexible hose was reseated in the correct position and tightened; and
  - A brick and scrap wood were used to support the hose to prevent future slipping.
- Remove spent carbon (1980 lbs) from lead vessel for regeneration/disposal;
- Switch system piping so that lead vessel becomes lag vessel and vice versa;
- Re-filled former lead vessel with new carbon (2,600 lbs);
- Post carbon change out and repair:
  - Restarted SVE system; and
  - Collected vacuum and flow measurements at blower and extraction wells.

- **May 13, 2013:**
  - Collected vacuum and flow measurements at blower;
  - Field measurement of TCE concentration (with Draeger tube) at lead carbon vessel influent, lag carbon vessel influent, and treatment system exhaust; and
  - Breakthrough not observed, influent concentration near detection limit for tubes, carbon change out not yet needed.
- **May 23, 2013:**
  - Completion of the second quarter 2013 SVE system inspection including:
    - Establishment of fire watch for interior activities;
    - Collection vacuum and flow measurements at extraction wells
    - Collection vacuum and flow measurements at blower;
    - Collection of samples for laboratory analysis at lead carbon vessel influent, lag carbon vessel influent, and treatment system exhaust;
    - Field measurement of TCE concentration (with Draeger tube) at lead carbon vessel influent, lag carbon vessel influent, and treatment system exhaust; and
    - Breakthrough not observed, influent concentration near detection limit for tubes, carbon change out not yet needed.

- **July 1, 2013:**
  - Collected vacuum and flow measurements at blower;
  - Field measurement of TCE concentration (with Draeger tube) at lead carbon vessel influent, lag carbon vessel influent, and treatment system exhaust; and
  - Breakthrough not observed, influent concentration near detection limit for tubes, carbon change out not yet needed.
  - During collection of vacuum and flow measurements the following problem was noted:
    - The reading at the differential pressure gage was not consistent with the calculated difference between the air filter inlet pressure and the air filter outlet pressure.
  - The following corrective measures were taken:
    - System telemetry was used to determine that the air filter outlet pressure gage was malfunctioning; and
    - A replacement gage was ordered.
- **August 15, 2013:**
  - Completion of the third quarter 2013 SVE system inspection including:
    - Establishment of fire watch for interior activities;
    - Collection vacuum and flow measurements at blower;
    - Collection vacuum and flow measurements at extraction wells;
    - Field measurement of TCE concentration (with Draeger tube) at SVE wells SVE-05, SVE-06, and SVE-07; lead carbon vessel influent; lag carbon vessel influent; and treatment system exhaust; and
    - Breakthrough observed, exhaust concentration at lead vessel ~50% of concentration at blower exhaust, lag vessel exhaust remains non-detect.
  - Performed variable frequency drive (VFD) adjustments to determine if energy costs could be reduced while maintaining system effectiveness:
    - Reduce blower frequency in increments of approximately 2 Hertz (Hz);
    - Monitor system flow and pressure to determine minimum allowable frequency (before deadheading blower) with carbon treatment;
    - Repeat/continue VFD adjustments with carbon treatment bypass open;
    - Determine optimal SVE blower frequency with carbon treatment (50.4 Hz [84%, approximate energy savings of 40%]), and adjust VFD to that frequency;

        - Check and confirm system balance (flow at lower concentration wells [SVE-01 through SVE-05] is approximately equal [75-85 CFM] and flow at highest concentration wells [SVE-06 and SVE-07] is higher [112-128 CFM]);
        - Collect pressure point readings to confirm radius of influence is maintained; and
        - Collect final vacuum and flow readings at the blower.

- **August 28, 2013:**
    - Prior to carbon change out:
        - Collected vacuum and flow measurements at blower; and
        - Field measurement of TCE concentration (with Draeger tube and Gastec tube [for comparison]) at lead carbon vessel influent, lag carbon vessel influent, and treatment system exhaust.
    - The following problems were noted during carbon change out:
        - Carbon (2,600 lbs) was inadvertently removed from incorrect (lag) carbon vessel and replaced with new (1000 lbs) carbon.
        - The rubber gasket sealing the top of that carbon vessel (western most) had deteriorated and needed replacement.
    - The following correction measures were taken:
        - Carbon change out for the lead vessel was re-scheduled;
        - Schrader agreed to save the carbon taken from the lag vessel for replacement during that carbon change out.
        - Schrader agreed to provide a replacement gasket during the next carbon change out.

- **September 4, 2013:**
    - Prior to carbon change out vacuum and flow measurements were collected at the blower;
    - The following problems were noted during carbon change out:
        - Schrader had not stockpiled carbon taken from lag vessel on August 28, 2013
        - The replacement rubber gasket was not the correct size.

- The following correction measures were taken:
  - New carbon was used rather than the carbon inadvertently removed from the lag vessel on August 28, 2013;
  - Caulk was used to seal the top of the westernmost carbon vessel; and
  - Schrader agreed to provide a replacement gasket during the next carbon change out.
- Spent carbon (2530 lbs) was removed from the lead vessel for regeneration/disposal;
- Switch system piping so that lead vessel becomes lag vessel and vice versa;
- Re-filled former lead vessel with new carbon (1,000 lbs);
- Added an addition 1,000 lbs of new carbon to the former lag vessel (2,000 lbs total);
- Post carbon change out and repair:
  - Restarted SVE system; and
  - Collected vacuum and flow measurements at blower and extraction wells.

- **November 5, 2013:**
  - Collection of vacuum and flow measurements at blower;
  - Field measurement of TCE concentration (with Draeger tube) at lead carbon vessel influent, lag carbon vessel influent, and treatment system exhaust; and
  - Breakthrough was not observed, carbon change out not yet needed.
  - During collection of vacuum and flow measurements no new problems were noted.
- **November 14, 2013:**
  - Completion of the fourth quarter 2013 SVE system inspection including:
    - Establishment of fire watch for interior activities;
    - Collection of vacuum and flow measurements at blower;
    - Collection of vacuum and flow measurements at extraction wells;
    - Field measurement of TCE concentration (with Draeger tube) at lead carbon vessel influent, lag carbon vessel influent, and treatment system exhaust;
    - Collection of samples for laboratory analysis at lead carbon vessel influent, lag carbon vessel influent, and treatment system exhaust; and
    - Influent concentration near detection limit for tubes, breakthrough indicated by laboratory analytical results.

- **December 11, 2013:**
  - Prior to carbon change out:
    - Collection of vacuum and flow measurements at blower; and
    - Field measurement of TCE concentration (with Draeger tube) at lead carbon vessel influent, lag carbon vessel influent, and treatment system exhaust.
  - Remove spent carbon (2000 lbs) from lead vessel for regeneration/disposal;
  - Switch system piping so that lead vessel becomes lag vessel and vice versa;
  - Added 1,300 lbs of additional carbon to fill the lead (former lag) vessel (2,300 lbs total in vessel);
  - Re-filled lag (former lead) vessel with new carbon (1,700 lbs); and
  - Post carbon change out:
    - Restarted SVE system; and
    - Collection of vacuum and flow measurements at blower and extraction wells.
- **January 28, 2014:**
  - Collection of vacuum and flow measurements at blower;
  - Field measurement of TCE concentration (with Draeger tube) at lead carbon vessel influent and lag carbon vessel influent (Note: measurement at treatment system exhaust not collected due to frozen sample port); and
  - Breakthrough was not observed, carbon change out not yet needed.
  - During collection of vacuum and flow measurements no new problems were noted.
- **March 5, 2014 – March 7, 2014:**
  - Completion of the first quarter 2014 SVE system inspection including:
    - Establishment of fire watch for interior activities;
    - Collection of vacuum and flow measurements at blower;
    - Collection of vacuum and flow measurements at extraction wells;
    - Collect pressure point readings at interior locations. (Note: Measurements were not collected at exterior locations due to heavy snow cover, e.g., greater than 2.5 feet of interbedded hard pack snow and ice);
    - Collection of samples for laboratory analysis at lead carbon vessel influent, lag carbon vessel influent, and treatment system exhaust (approximately 1 day after the variable frequency drive (VFD) adjustments described below);

    - Field measurement of TCE concentration (with Draeger tube) at lead carbon vessel influent, lag carbon vessel influent, and treatment system exhaust (before and after VFD adjustments); and
    - Breakthrough was not observed, carbon change out not yet needed
- Performed VFD adjustments to improve control of lateral migration from the site:
    - Increase vacuum alarm settings (Completed by Proact remotely. TRC could not connect locally on March 5, 2014 or remotely on March 6, 2014 to complete these adjustments.);
    - Adjust VFD setting locally from 84% (50.4 Hz) to 100% (60 Hz) increasing total system flow from approximately 600 standard cubic feet per minute (SCFM) to 700 SCFM;
    - Adjust well setting to optimize flow from westernmost SVE wells (SVE-01, SVE-05, SVE-05, and SVE-07) while maintaining lateral capture along northern perimeter (SVE-02, SVE-03, and SVE-04);
    - Collect pressure point readings to measure the pressure differential across the slab at interior locations. (Note: Measurements were not collected at exterior locations due to heavy snow cover as described above); and
    - Collect final vacuum and flow readings at the blower.
- During the system inspection no new problems were noted.

Attachment 2
Laboratory Data

Mobile Geochemistry Inc.

22 January 2013

Ms. Stacy Metz
TRC Environmental - MI
1540 Eisenhower Place
Ann Arbor, MI 48108

H&P Project: TRC010813-10
Client Project: 187156.0001.0000, Ph2 / Tecumseh, MI

Dear Ms. Stacy Metz:

Enclosed is the analytical report for the above referenced project. The data herein applies to samples as received by H&P Mobile Geochemistry, Inc. on 08-Jan-13 which were analyzed in accordance with the attached Chain of Custody record(s).

The results for all sample analyses and required QA/QC analyses are presented in the following sections and summarized in the documents:

- Sample Summary
- Case Narrative (if applicable)
- Sample Results
- Quality Control Summary
- Notes and Definitions / Appendix
- Chain of Custody

Unless otherwise noted, all analyses were performed and reviewed in compliance with our Quality Systems Manual and Standard Operating Procedures. This report shall not be reproduced, except in full, without the written approval of H&P Mobile Geochemistry, Inc.

We at H&P Mobile Geochemistry, Inc. sincerely appreciate the opportunity to provide analytical services to you on this project. If you have any questions or concerns regarding this analytical report, please contact me at your convenience at 760-804-9678.

Sincerely,

Janis Villarreal

Janis Villarreal
Laboratory Director

H&P Mobile Geochemistry, Inc. operates under CA Environmental Lab Accreditation Program Numbers 2579, 2740, 2741, 2742, 2743, 2745 and 2754. National Environmental Laboratory Accreditation Conference (NELAC) Standards Lab #11845

H&P Mobile
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760-804-9159 Fax

TRC Environmental - MI	Project: TRC010813-10	
1540 Eisenhower Place	Project Number: 187156.0001.0000, Ph2 / Tecumseh, MI	Reported:
Ann Arbor, MI 48108	Project Manager: Ms. Stacy Metz	22-Jan-13 11:44

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SVE - Vessel 1 Inlet	E301027-01	Vapor	03-Jan-13	08-Jan-13
SVE - Vessel 2 Inlet	E301027-02	Vapor	03-Jan-13	08-Jan-13
SVE - Exhaust	E301027-03	Vapor	03-Jan-13	08-Jan-13

Samples SVE-Vessel 1 Inlet and SVE-Vessel 2 Inlet were analyzed using H&P 8260SV. Sample SVE-Exhaust was analyzed using EPA Method TO-15.

The following EPA TO-15 analytes are not reported by H&P 8260SV:
Dichlorotetrafluoroethane (F114)
Carbon Disulfide
4-Ethyltoluene

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TRC Environmental - MI	Project: TRC010813-10	
1540 Eisenhower Place	Project Number: 187156.0001.0000, Ph2 / Tecumseh, MI	Reported:
Ann Arbor, MI 48108	Project Manager: Ms. Stacy Metz	22-Jan-13 11:44

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SVE - Exhaust (E301027-03) Vapor Sampled: 03-Jan-13 Received: 08-Jan-13									
Dichlorodifluoromethane (F12)	ND	1.0	ppbv	1	EA32106	21-Jan-13	22-Jan-13	EPA TO-15	
Chloromethane	ND	1.0	"	"	"	"	"	"	
Dichlorotetrafluoroethane (F114)	ND	1.0	"	"	"	"	"	"	
Vinyl chloride	**9.4**	1.0	"	"	"	"	"	"	
Bromomethane	ND	4.0	"	"	"	"	"	"	
Chloroethane	ND	3.0	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	**1.6**	1.0	"	"	"	"	"	"	
Acetone	ND	10	"	"	"	"	"	"	
1,1-Dichloroethene	**16**	1.0	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane (F113)	ND	1.0	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	1.0	"	"	"	"	"	"	
Carbon disulfide	ND	2.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	**24**	2.0	"	"	"	"	"	"	
1,1-Dichloroethane	**33**	1.0	"	"	"	"	"	"	
2-Butanone (MEK)	ND	10	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**880**	5.0	"	5	"	"	"	"	
Chloroform	**4.4**	1.0	"	1	"	"	"	"	
1,1,1-Trichloroethane	ND	1.0	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	1.0	"	"	"	"	"	"	
Benzene	ND	1.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	1.0	"	"	"	"	"	"	
Trichloroethene	**4.1**	1.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	2.0	"	"	"	"	"	"	
Bromodichloromethane	ND	1.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	1.0	"	"	"	"	"	"	
4-Methyl-2-pentanone (MIBK)	ND	2.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	1.0	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1.0	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	2.0	"	"	"	"	"	"	
Dibromochloromethane	ND	1.0	"	"	"	"	"	"	
Tetrachloroethene	ND	1.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	1.0	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	1.0	"	"	"	"	"	"	
Chlorobenzene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
m,p-Xylene	ND	2.0	"	"	"	"	"	"	
Styrene	ND	1.0	"	"	"	"	"	"	

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TRC Environmental - MI	Project: TRC010813-10	
1540 Eisenhower Place	Project Number: 187156.0001.0000, Ph2 / Tecumseh, MI	Reported:
Ann Arbor, MI 48108	Project Manager: Ms. Stacy Metz	22-Jan-13 11:44

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SVE - Exhaust (E301027-03) Vapor Sampled: 03-Jan-13 Received: 08-Jan-13									
o-Xylene	ND	1.0	ppbv	1	EA32106	21-Jan-13	22-Jan-13	EPA TO-15	
Bromoform	ND	1.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	2.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	2.0	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	2.0	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.0	"	"	"	"	"	"	
Hexachlorobutadiene	ND	1.0	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*113 %*		*76-134*	"	"	"	"	
Surrogate: Toluene-d8		*105 %*		*78-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*101 %*		*77-127*	"	"	"	"	

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1540 Eisenhower Place	Project Number: 187156.0001.0000, Ph2 / Tecumseh, MI	Reported:
Ann Arbor, MI 48108	Project Manager: Ms. Stacy Metz	22-Jan-13 11:44

Volatile Organic Compounds by 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SVE - Vessel 1 Inlet (E301027-01) Vapor Sampled: 03-Jan-13 Received: 08-Jan-13									
Acetone	ND	2100	ppbv	0.05	EA31106	10-Jan-13	10-Jan-13	H&P 8260 SV	
2-Butanone (MEK)	ND	840	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	600	"	"	"	"	"	"	
4-Methyl-2-pentanone (MIBK)	ND	600	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	100	"	"	"	"	"	"	
Chloromethane	ND	240	"	"	"	"	"	"	
Vinyl chloride	ND	19	"	"	"	"	"	"	
Bromomethane	ND	130	"	"	"	"	"	"	
Chloroethane	ND	190	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	89	"	"	"	"	"	"	
1,1-Dichloroethene	ND	120	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	ND	65	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	140	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	120	"	"	"	"	"	"	
1,1-Dichloroethane	ND	120	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**2300**	120	"	"	"	"	"	"	
Chloroform	ND	20	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	91	"	"	"	"	"	"	
Carbon tetrachloride	ND	16	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	24	"	"	"	"	"	"	
Tertiary-amyl methyl ether (TAME)	ND	240	"	"	"	"	"	"	
Benzene	ND	31	"	"	"	"	"	"	
Trichloroethene	**5900**	18	"	"	"	"	"	"	
1,2-Dichloropropane	ND	110	"	"	"	"	"	"	
Bromodichloromethane	ND	74	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	110	"	"	"	"	"	"	
Toluene	ND	260	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	110	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	91	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	64	"	"	"	"	"	"	
Tetrachloroethene	**85**	15	"	"	"	"	"	"	
Dibromochloromethane	ND	58	"	"	"	"	"	"	
Chlorobenzene	ND	21	"	"	"	"	"	"	
Ethylbenzene	ND	110	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	72	"	"	"	"	"	"	
m,p-Xylene	ND	110	"	"	"	"	"	"	
o-Xylene	ND	110	"	"	"	"	"	"	
Styrene	ND	120	"	"	"	"	"	"	

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TRC Environmental - MI	Project: TRC010813-10	
1540 Eisenhower Place	Project Number: 187156.0001.0000, Ph2 / Tecumseh, MI	Reported:
Ann Arbor, MI 48108	Project Manager: Ms. Stacy Metz	22-Jan-13 11:44

Volatile Organic Compounds by 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SVE - Vessel 1 Inlet (E301027-01) Vapor Sampled: 03-Jan-13 Received: 08-Jan-13									
Bromoform	ND	48	ppbv	0.05	EA31106	10-Jan-13	10-Jan-13	H&P 8260 SV	
1,1,2,2-Tetrachloroethane	ND	72	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	100	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	100	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	82	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	82	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	82	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	67	"	"	"	"	"	"	
Hexachlorobutadiene	ND	47	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*85.4 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*84.4 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*101 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*108 %*		*75-125*	"	"	"	"	
SVE - Vessel 2 Inlet (E301027-02) Vapor Sampled: 03-Jan-13 Received: 08-Jan-13									
Acetone	ND	2100	ppbv	0.05	EA31106	10-Jan-13	10-Jan-13	H&P 8260 SV	
2-Butanone (MEK)	ND	840	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	600	"	"	"	"	"	"	
4-Methyl-2-pentanone (MIBK)	ND	600	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	100	"	"	"	"	"	"	
Chloromethane	ND	240	"	"	"	"	"	"	
Vinyl chloride	ND	19	"	"	"	"	"	"	
Bromomethane	ND	130	"	"	"	"	"	"	
Chloroethane	ND	190	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	89	"	"	"	"	"	"	
1,1-Dichloroethene	ND	120	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	ND	65	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	140	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	120	"	"	"	"	"	"	
1,1-Dichloroethane	ND	120	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**3500**	120	"	"	"	"	"	"	
Chloroform	**27**	20	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	91	"	"	"	"	"	"	
Carbon tetrachloride	ND	16	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	24	"	"	"	"	"	"	
Tertiary-amyl methyl ether (TAME)	ND	240	"	"	"	"	"	"	
Benzene	ND	31	"	"	"	"	"	"	

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1540 Eisenhower Place	Project Number: 187156.0001.0000, Ph2 / Tecumseh, MI	Reported:
Ann Arbor, MI 48108	Project Manager: Ms. Stacy Metz	22-Jan-13 11:44

Volatile Organic Compounds by 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SVE - Vessel 2 Inlet (E301027-02) Vapor	**Sampled: 03-Jan-13**	**Received: 08-Jan-13**							
Trichloroethene	**2600**	18	ppbv	0.05	EA31106	10-Jan-13	10-Jan-13	H&P 8260 SV	
1,2-Dichloropropane	ND	110	"	"	"	"	"	"	
Bromodichloromethane	ND	74	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	110	"	"	"	"	"	"	
Toluene	ND	260	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	110	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	91	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	64	"	"	"	"	"	"	
Tetrachloroethene	**24**	15	"	"	"	"	"	"	
Dibromochloromethane	ND	58	"	"	"	"	"	"	
Chlorobenzene	ND	21	"	"	"	"	"	"	
Ethylbenzene	ND	110	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	72	"	"	"	"	"	"	
m,p-Xylene	ND	110	"	"	"	"	"	"	
o-Xylene	ND	110	"	"	"	"	"	"	
Styrene	ND	120	"	"	"	"	"	"	
Bromoform	ND	48	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	72	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	100	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	100	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	82	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	82	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	82	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	67	"	"	"	"	"	"	
Hexachlorobutadiene	ND	47	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*87.0 %*	*75-125*		"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*86.2 %*	*75-125*		"	"	"	"	
Surrogate: Toluene-d8		*98.3 %*	*75-125*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*108 %*	*75-125*		"	"	"	"	

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TRC Environmental - MI	Project: TRC010813-10	
1540 Eisenhower Place	Project Number: 187156.0001.0000, Ph2 / Tecumseh, MI	Reported:
Ann Arbor, MI 48108	Project Manager: Ms. Stacy Metz	22-Jan-13 11:44

Volatile Organic Compounds by 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SVE - Exhaust (E301027-03) Vapor Sampled: 03-Jan-13 Received: 08-Jan-13									
Acetone	ND	2100	ppbv	0.05	EA31106	10-Jan-13	10-Jan-13	H&P 8260 SV	
2-Butanone (MEK)	ND	840	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	600	"	"	"	"	"	"	
4-Methyl-2-pentanone (MIBK)	ND	600	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	100	"	"	"	"	"	"	
Chloromethane	ND	240	"	"	"	"	"	"	
Vinyl chloride	ND	19	"	"	"	"	"	"	
Bromomethane	ND	130	"	"	"	"	"	"	
Chloroethane	ND	190	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	89	"	"	"	"	"	"	
1,1-Dichloroethene	ND	120	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	ND	65	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	140	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	120	"	"	"	"	"	"	
1,1-Dichloroethane	ND	120	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**970**	120	"	"	"	"	"	"	
Chloroform	ND	20	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	91	"	"	"	"	"	"	
Carbon tetrachloride	ND	16	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	24	"	"	"	"	"	"	
Tertiary-amyl methyl ether (TAME)	ND	240	"	"	"	"	"	"	
Benzene	ND	31	"	"	"	"	"	"	
Trichloroethene	ND	18	"	"	"	"	"	"	
1,2-Dichloropropane	ND	110	"	"	"	"	"	"	
Bromodichloromethane	ND	74	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	110	"	"	"	"	"	"	
Toluene	ND	260	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	110	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	91	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	64	"	"	"	"	"	"	
Tetrachloroethene	**19**	15	"	"	"	"	"	"	
Dibromochloromethane	ND	58	"	"	"	"	"	"	
Chlorobenzene	ND	21	"	"	"	"	"	"	
Ethylbenzene	ND	110	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	72	"	"	"	"	"	"	
m,p-Xylene	ND	110	"	"	"	"	"	"	
o-Xylene	ND	110	"	"	"	"	"	"	
Styrene	ND	120	"	"	"	"	"	"	

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Volatile Organic Compounds by 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SVE - Exhaust (E301027-03) Vapor Sampled: 03-Jan-13 Received: 08-Jan-13									
Bromoform	ND	48	ppbv	0.05	EA31106	10-Jan-13	10-Jan-13	H&P 8260 SV	
1,1,2,2-Tetrachloroethane	ND	72	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	100	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	100	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	82	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	82	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	82	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	67	"	"	"	"	"	"	
Hexachlorobutadiene	ND	47	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*88.9 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*87.0 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*104 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*106 %*		*75-125*	"	"	"	"	

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Ann Arbor, MI 48108	Project Manager: Ms. Stacy Metz	22-Jan-13 11:44

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EA32106 - TO-15										
Blank (EA32106-BLK1)				Prepared & Analyzed: 21-Jan-13						
Dichlorodifluoromethane (F12)	ND	1.0	ppbv							
Chloromethane	ND	1.0	"							
Dichlorotetrafluoroethane (F114)	ND	1.0	"							
Vinyl chloride	ND	1.0	"							
Bromomethane	ND	4.0	"							
Chloroethane	ND	3.0	"							
Trichlorofluoromethane (F11)	ND	1.0	"							
Acetone	ND	10	"							
1,1-Dichloroethene	ND	1.0	"							
1,1,2-Trichlorotrifluoroethane (F113)	ND	1.0	"							
Methylene chloride (Dichloromethane)	ND	1.0	"							
Carbon disulfide	ND	2.0	"							
trans-1,2-Dichloroethene	ND	2.0	"							
1,1-Dichloroethane	ND	1.0	"							
2-Butanone (MEK)	ND	10	"							
cis-1,2-Dichloroethene	ND	1.0	"							
Chloroform	ND	1.0	"							
1,1,1-Trichloroethane	ND	1.0	"							
1,2-Dichloroethane (EDC)	ND	1.0	"							
Benzene	ND	1.0	"							
Carbon tetrachloride	ND	1.0	"							
Trichloroethene	ND	1.0	"							
1,2-Dichloropropane	ND	2.0	"							
Bromodichloromethane	ND	1.0	"							
cis-1,3-Dichloropropene	ND	1.0	"							
4-Methyl-2-pentanone (MIBK)	ND	2.0	"							
trans-1,3-Dichloropropene	ND	1.0	"							
Toluene	ND	1.0	"							
1,1,2-Trichloroethane	ND	1.0	"							
2-Hexanone (MBK)	ND	2.0	"							
Dibromochloromethane	ND	1.0	"							
Tetrachloroethene	ND	1.0	"							
1,2-Dibromoethane (EDB)	ND	1.0	"							
1,1,1,2-Tetrachloroethane	ND	1.0	"							

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TRC Environmental - MI	Project: TRC010813-10	
1540 Eisenhower Place	Project Number: 187156.0001.0000, Ph2 / Tecumseh, MI	Reported:
Ann Arbor, MI 48108	Project Manager: Ms. Stacy Metz	22-Jan-13 11:44

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EA32106 - TO-15										
Blank (EA32106-BLK1)				Prepared & Analyzed: 21-Jan-13						
Chlorobenzene	ND	1.0	ppbv							
Ethylbenzene	ND	1.0	"							
m,p-Xylene	ND	2.0	"							
Styrene	ND	1.0	"							
o-Xylene	ND	1.0	"							
Bromoform	ND	1.0	"							
1,1,2,2-Tetrachloroethane	ND	1.0	"							
4-Ethyltoluene	ND	1.0	"							
1,3,5-Trimethylbenzene	ND	1.0	"							
1,2,4-Trimethylbenzene	ND	1.0	"							
1,3-Dichlorobenzene	ND	2.0	"							
1,4-Dichlorobenzene	ND	2.0	"							
1,2-Dichlorobenzene	ND	2.0	"							
1,2,4-Trichlorobenzene	ND	1.0	"							
Hexachlorobutadiene	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	*57.5*		*"*	*50.2*		*115*	*76-134*			
Surrogate: Toluene-d8	*52.3*		*"*	*49.8*		*105*	*78-125*			
Surrogate: 4-Bromofluorobenzene	*49.8*		*"*	*50.2*		*99.1*	*77-127*			
LCS (EA32106-BS1)				Prepared & Analyzed: 21-Jan-13						
Dichlorodifluoromethane (F12)	12	1.0	ppbv	10.0		118	65-135			
Vinyl chloride	8.8	1.0	"	10.0		87.6	65-135			
Chloroethane	9.4	3.0	"	10.0		93.6	65-135			
Trichlorofluoromethane (F11)	11	1.0	"	10.0		112	65-135			
1,1-Dichloroethene	9.5	1.0	"	10.0		94.5	65-135			
1,1,2-Trichlorotrifluoroethane (F113)	9.3	1.0	"	10.1		92.7	65-135			
Methylene chloride (Dichloromethane)	8.3	1.0	"	10.0		82.5	65-135			
trans-1,2-Dichloroethene	8.8	2.0	"	10.0		87.4	65-135			
1,1-Dichloroethane	8.9	1.0	"	10.0		88.4	65-135			
cis-1,2-Dichloroethene	8.3	1.0	"	9.94		83.8	65-135			
Chloroform	9.5	1.0	"	10.0		94.5	65-135			
1,1,1-Trichloroethane	11	1.0	"	10.1		104	65-135			
1,2-Dichloroethane (EDC)	10	1.0	"	10.0		102	65-135			

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1540 Eisenhower Place	Project Number: 187156.0001.0000, Ph2 / Tecumseh, MI	Reported:
Ann Arbor, MI 48108	Project Manager: Ms. Stacy Metz	22-Jan-13 11:44

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EA32106 - TO-15										
LCS (EA32106-BS1)				Prepared & Analyzed: 21-Jan-13						
Benzene	8.0	1.0	ppbv	10.0		80.1	65-135			
Carbon tetrachloride	11	1.0	"	10.0		111	65-135			
Trichloroethene	8.5	1.0	"	10.1		84.7	65-135			
Toluene	8.4	1.0	"	10.1		83.0	65-135			
1,1,2-Trichloroethane	7.8	1.0	"	10.1		77.4	65-135			
Tetrachloroethene	8.6	1.0	"	10.1		85.1	65-135			
1,1,1,2-Tetrachloroethane	8.6	1.0	"	10.0		85.3	65-135			
Ethylbenzene	8.9	1.0	"	10.1		88.7	65-135			
m,p-Xylene	18	2.0	"	20.1		91.7	65-135			
o-Xylene	8.6	1.0	"	10.1		85.7	65-135			
1,1,2,2-Tetrachloroethane	7.2	1.0	"	10.0		71.3	65-135			
Surrogate: 1,2-Dichloroethane-d4	*58.1*		*"*	*50.2*		*116*	*76-134*			
Surrogate: Toluene-d8	*50.2*		*"*	*49.8*		*101*	*78-125*			
Surrogate: 4-Bromofluorobenzene	*54.7*		*"*	*50.2*		*109*	*77-127*			
LCS Dup (EA32106-BSD1)				Prepared & Analyzed: 21-Jan-13						
Dichlorodifluoromethane (F12)	12	1.0	ppbv	10.0		118	65-135	0.0843	35	
Vinyl chloride	8.9	1.0	"	10.0		89.1	65-135	1.64	35	
Chloroethane	9.2	3.0	"	10.0		91.5	65-135	2.31	35	
Trichlorofluoromethane (F11)	11	1.0	"	10.0		111	65-135	0.751	35	
1,1-Dichloroethene	9.3	1.0	"	10.0		92.2	65-135	2.43	35	
1,1,2-Trichlorotrifluoroethane (F113)	9.3	1.0	"	10.1		92.0	65-135	0.764	35	
Methylene chloride (Dichloromethane)	8.2	1.0	"	10.0		81.6	65-135	1.10	35	
trans-1,2-Dichloroethene	8.7	2.0	"	10.0		86.3	65-135	1.23	35	
1,1-Dichloroethane	9.3	1.0	"	10.0		92.3	65-135	4.39	35	
cis-1,2-Dichloroethene	8.5	1.0	"	9.94		85.3	65-135	1.71	35	
Chloroform	9.3	1.0	"	10.0		92.8	65-135	1.77	35	
1,1,1-Trichloroethane	10	1.0	"	10.1		103	65-135	1.24	35	
1,2-Dichloroethane (EDC)	9.7	1.0	"	10.0		96.3	65-135	5.56	35	
Benzene	7.9	1.0	"	10.0		79.0	65-135	1.37	35	
Carbon tetrachloride	11	1.0	"	10.0		109	65-135	1.91	35	
Trichloroethene	8.9	1.0	"	10.1		88.7	65-135	4.64	35	
Toluene	8.5	1.0	"	10.1		84.7	65-135	1.98	35	

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TRC Environmental - MI	Project: TRC010813-10	
1540 Eisenhower Place	Project Number: 187156.0001.0000, Ph2 / Tecumseh, MI	Reported:
Ann Arbor, MI 48108	Project Manager: Ms. Stacy Metz	22-Jan-13 11:44

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EA32106 - TO-15										
LCS Dup (EA32106-BSD1)				Prepared & Analyzed: 21-Jan-13						
1,1,2-Trichloroethane	8.0	1.0	ppbv	10.1		79.4	65-135	2.47	35	
Tetrachloroethene	8.9	1.0	"	10.1		88.8	65-135	4.22	35	
1,1,1,2-Tetrachloroethane	8.6	1.0	"	10.0		85.3	65-135	0.0233	35	
Ethylbenzene	8.8	1.0	"	10.1		87.7	65-135	1.21	35	
m,p-Xylene	18	2.0	"	20.1		91.0	65-135	0.746	35	
o-Xylene	8.6	1.0	"	10.1		85.6	65-135	0.209	35	
1,1,2,2-Tetrachloroethane	7.2	1.0	"	10.0		72.1	65-135	1.21	35	
Surrogate: 1,2-Dichloroethane-d4	*56.4*		*"*	*50.2*		*112*	*76-134*			
Surrogate: Toluene-d8	*51.1*		*"*	*49.8*		*103*	*78-125*			
Surrogate: 4-Bromofluorobenzene	*54.6*		*"*	*50.2*		*109*	*77-127*			

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TRC Environmental - MI	Project: TRC010813-10	
1540 Eisenhower Place	Project Number: 187156.0001.0000, Ph2 / Tecumseh, MI	Reported:
Ann Arbor, MI 48108	Project Manager: Ms. Stacy Metz	22-Jan-13 11:44

Volatile Organic Compounds by 8260SV - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EA31106 - EPA 5030										
Blank (EA31106-BLK1)				Prepared & Analyzed: 10-Jan-13						
Acetone	ND	2100	ppbv							
2-Butanone (MEK)	ND	840	"							
2-Hexanone (MBK)	ND	600	"							
4-Methyl-2-pentanone (MIBK)	ND	600	"							
Dichlorodifluoromethane (F12)	ND	100	"							
Chloromethane	ND	240	"							
Vinyl chloride	ND	19	"							
Bromomethane	ND	130	"							
Chloroethane	ND	190	"							
Trichlorofluoromethane (F11)	ND	89	"							
1,1-Dichloroethene	ND	120	"							
1,1,2 Trichlorotrifluoroethane (F113)	ND	65	"							
Methylene chloride (Dichloromethane)	ND	140	"							
trans-1,2-Dichloroethene	ND	120	"							
1,1-Dichloroethane	ND	120	"							
cis-1,2-Dichloroethene	ND	120	"							
Chloroform	ND	20	"							
1,1,1-Trichloroethane	ND	91	"							
Carbon tetrachloride	ND	16	"							
1,2-Dichloroethane (EDC)	ND	24	"							
Benzene	ND	31	"							
Trichloroethene	ND	18	"							
1,2-Dichloropropane	ND	110	"							
Bromodichloromethane	ND	74	"							
cis-1,3-Dichloropropene	ND	110	"							
Toluene	ND	260	"							
trans-1,3-Dichloropropene	ND	110	"							
1,1,2-Trichloroethane	ND	91	"							
1,2-Dibromoethane (EDB)	ND	64	"							
Tetrachloroethene	ND	15	"							
Dibromochloromethane	ND	58	"							
Chlorobenzene	ND	21	"							
Ethylbenzene	ND	110	"							
1,1,1,2-Tetrachloroethane	ND	72	"							

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1540 Eisenhower Place	Project Number: 187156.0001.0000, Ph2 / Tecumseh, MI	Reported:
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Volatile Organic Compounds by 8260SV - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EA31106 - EPA 5030										
Blank (EA31106-BLK1)				Prepared & Analyzed: 10-Jan-13						
m,p-Xylene	ND	110	ppbv							
o-Xylene	ND	110	"							
Styrene	ND	120	"							
Bromoform	ND	48	"							
1,1,2,2-Tetrachloroethane	ND	72	"							
1,3,5-Trimethylbenzene	ND	100	"							
1,2,4-Trimethylbenzene	ND	100	"							
1,3-Dichlorobenzene	ND	82	"							
1,4-Dichlorobenzene	ND	82	"							
1,2-Dichlorobenzene	ND	82	"							
1,2,4-Trichlorobenzene	ND	67	"							
Hexachlorobutadiene	ND	47	"							
Surrogate: Dibromofluoromethane	*569*		*"*	*539*		*106*	*75-125*			
Surrogate: 1,2-Dichloroethane-d4	*647*		*"*	*585*		*111*	*75-125*			
Surrogate: Toluene-d8	*620*		*"*	*602*		*103*	*75-125*			
Surrogate: 4-Bromofluorobenzene	*350*		*"*	*344*		*102*	*75-125*			
LCS (EA31106-BS1)				Prepared & Analyzed: 10-Jan-13						
Dichlorodifluoromethane (F12)	1100	100	ppbv	996		110	70-130			
Vinyl chloride	2160	19	"	1930		112	70-130			
Chloroethane	2120	190	"	1870		113	70-130			
Trichlorofluoromethane (F11)	986	89	"	886		111	70-130			
1,1-Dichloroethene	1520	120	"	1240		122	70-130			
1,1,2 Trichlorotrifluoroethane (F113)	782	65	"	648		121	70-130			
Methylene chloride (Dichloromethane)	1400	140	"	1420		98.4	70-130			
trans-1,2-Dichloroethene	1360	120	"	1240		110	70-130			
1,1-Dichloroethane	1220	120	"	1220		100	70-130			
cis-1,2-Dichloroethene	1260	120	"	1240		102	70-130			
Chloroform	1080	20	"	1010		107	70-130			
1,1,1-Trichloroethane	981	91	"	906		108	70-130			
Carbon tetrachloride	913	16	"	783		117	70-130			
1,2-Dichloroethane (EDC)	1330	24	"	1220		109	70-130			
Benzene	1500	31	"	1550		97.2	70-130			

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TRC Environmental - MI	Project: TRC010813-10	
1540 Eisenhower Place	Project Number: 187156.0001.0000, Ph2 / Tecumseh, MI	Reported:
Ann Arbor, MI 48108	Project Manager: Ms. Stacy Metz	22-Jan-13 11:44

Volatile Organic Compounds by 8260SV - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EA31106 - EPA 5030										
LCS (EA31106-BS1)				Prepared & Analyzed: 10-Jan-13						
Trichloroethene	920	18	ppbv	917		100	70-130			
Toluene	1300	260	"	1310		99.5	70-130			
1,1,2-Trichloroethane	949	91	"	906		105	70-130			
Tetrachloroethene	793	15	"	726		109	70-130			
Ethylbenzene	1200	110	"	1140		106	70-130			
1,1,1,2-Tetrachloroethane	782	72	"	718		109	70-130			
m,p-Xylene	2370	110	"	2270		104	70-130			
o-Xylene	1150	110	"	1140		101	70-130			
1,1,2,2-Tetrachloroethane	616	72	"	718		85.9	70-130			
Surrogate: Dibromofluoromethane	*600*		*"*	*539*		*111*	*75-125*			
Surrogate: 1,2-Dichloroethane-d4	*630*		*"*	*585*		*108*	*75-125*			
Surrogate: Toluene-d8	*664*		*"*	*602*		*110*	*75-125*			
Surrogate: 4-Bromofluorobenzene	*386*		*"*	*344*		*112*	*75-125*			

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1540 Eisenhower Place	Project Number: 187156.0001.0000, Ph2 / Tecumseh, MI	Reported:
Ann Arbor, MI 48108	Project Manager: Ms. Stacy Metz	22-Jan-13 11:44

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Appendix

H&P Mobile Geochemistry, Inc. is approved as an Environmental Laboratory in conformance with the Environmental Laboratory Accreditation Program (CA) for the category of Volatile and Semi-Volatile Organic Chemistry of Hazardous Waste for the following methods:

Certificate# 2741, 2743, 2579, 2754 & 2740 approved for EPA 8260 and LUFT GC/MS
Certificate# 2742, 2745, & 2741 approved for LUFT
Certificate# 2745 & 2742 approved for EPA 418.1

H&P Mobile Geochemistry, Inc. is approved as an Environmental Laboratory in conformance with the National Environmental Accreditation Conference Standards for the category Environmental Analysis Air and Emissions for the following analytes and methods:

1,2,4-Trichlorobenzene by EPA TO-15 & TO-14A
Hexachlorobutadiene by EPA TO-15 & TO-14A
1,2,4-Trimethylbenzene by EPA TO -14A
1,2-Dichlorobenzene by EPA TO-15 & TO-14A
1,3,5-Trimethylbenzene by EPA TO -14A
1,4-Dichlorobenzene by EPA TO-15 & TO-14A
Benzene by EPA TO-15 & TO-14A
Chlorobenzene by EPA TO-15 & TO-14A
Ethyl benzene by EPA TO-15 & TO-14A
Styrene by EPA TO-15 & TO-14A
Toluene by EPA TO-15 & TO-14A
Total Xylenes by EPA TO-15 & TO-14A
1,1,1-Trichloroethane by EPA TO-15 & TO-14A
1,1,2,2-Tetrachloroethane by EPA TO-15 & TO-14A
1,1,2-Trichloroethane by EPA TO-15 & TO-14A
1,1-Dichloroethane by EPA TO-15 & TO-14A
1,1-Dichloroethene by EPA TO-15 & TO-14A
1,2-Dichloroethane by EPA TO-15 & TO-14A
1,2-Dichloropropane by EPA TO-15 & TO-14A
Benzyl Chloride by EPA TO-15 & TO-14A
Bromoform by EPA TO-15
Bromomethane by EPA TO-15 & TO-14A
Carbon tetrachloride by EPA TO-15 & TO-14A
Chloroethane by EPA TO-15
Chloroform by EPA TO-15 & TO-14A
Chloromethane by EPA TO-15 & TO-14A
cis-1,2-Dichloroethene by EPA TO-15
cis-1,2-Dichloropropene by EPA TO-15 & TO-14A
Methylene chloride by EPA TO -15 & TO-14A
Tetrachloroethane by EPA TO-15 & TO-14A
trans-1,2-Dichloroethene by EPA TO-15
trans-1,2-Dichloropropene by EPA TO-15 & TO-14A
Trichloroethene by EPA TO-15 & TO-14A
Vinyl chloride by EPA TO -15 & TO-14A
2-Butanone by EPA TO-15
4-Methyl-2-Pentanone by EPA TO-15
Hexane by EPA TO-15
Methyl tert-butyl ether by EPA TO-15
Vinyl acetate by EPA TO-15

Dibromochloromethane by EPA TO-15
Dichlorodifluoromethane by EPA TO-15 & TO-14A
Trichlorofluoromethane by EPA TO-15 & TO-14A
Naphthalene by EPA TO-15 & TO-14A
m&p Xylenes by EPA TO-15
o-Xylene by EPA TO-15
1,3-Butadiene by EPA TO-15
1,1,2-Trichlorotrifluoroethane by EPA TO-15 & TO-14A
Carbon disulfide by EPA TO-15
1,4-Dioxane by EPA TO-15
Cyclohexane by EPA TO-15
tert-Butyl Alcohol by EPA TO-15
1,3-Dichlorobenzene by EPA TO-15 & TO-14A
Heptane by EPA TO-15
Bromodichloromethane by EPA TO-15 & TO-14A

This certification applies to samples analyzed in summa canisters.

Chain of Custody Record

Mobile Geochemistry Inc.
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☐ 1855 Coronado Ave., Signal Hill, CA 90755 • ph 800.834.9888

Date:
H&P Project # TRC010813-10
Outside Lab:

Client: TRC Environmental
Address: 1540 Eisenhower Place, Ann Arbor MI 49224
Email: smetz@trcsolutions.com
Collector: S.Metz
Client Project # 187156.0001.0000, Ph2
Location: Tecumseh, MI
Phone: 734-904-3325
Fax: 734-971-9022
Page: 1 of 1
Project Contact: Stacy Metz
Turn around time: Std

Geotracker EDF: Yes ☐ No ☐
Global ID:
Excel EDD: Yes ☒ No ☐

Sample Receipt
Intact: ☑ Yes ☐ No
Seal Intact: ☑ Yes ☐ No ☐ N/A
Cold: ☐ Yes ☐ No ☑ N/A
Temperature: RT

Special Instructions: Use project specific EDD PO 48596
Report in ppbv and ug/m3
Level II data package
Fedex Tracking # 7944 4423 8064
Lab Work Order # E301027

Sample Name	Field Point Name	Purge Vol	Time	Date	Sample Type	Container Type	Total # of containers	SOIL/GW: 8260B Full List	8260B ☐ BTEX/OXY ☐ TPH gas	8015M TPH ☐ g ☐ d ☐ ext	418.1 TRPH	SOIL VAPOR/AIR ANALYSIS: VOC's: Full List ☒ 8260B ☒ TO-15	VOC's: Short List/DTSC ☐ 8260B ☐ TO-15	VOC's: SAM, 8260B ☐ SAM A ☐ SAM B	Naphthalene ☐ 8260B ☐ TO-15	Oxygenates ☐ 8260B ☐ TO-15	TPHv gas ☐ 8260B ☐ TO-15	Ketones ☐ 8260B ☐ TO-15	Other ____ ☐ 8260B ☐ TO-15	Leak Check Compound ☐ 1,1 DFA ☐ OTHER	Methane	Fixed Gases ☐ CO_2 ☐ O_2 ☐ N_2	CAN# / VAC#	
SVE - Vessel 1 Inlet (8260 only)		–	1721	1/3/13	SG	1L Summa	1					X											411	.3
SVE - Vessel 2 Inlet (8260 only)		–	1723	↓	↓	↓	1					X											196	.5
SVE - Exhaust (Summa w/ 8260 then contact S.Metz prior to TO-15)		–	1727	↓	↓	↓	1					X											426	.5

Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:
[signature]	TRC Environmental		Fed Ex	1/4/13	1215
Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:
		[signature]	H&P	1/8/13	0925
Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:

*Signature constitutes authorization to proceed with analysis and acceptance of condition on back.

Sample disposal instruction: ☐ Disposal ☐ Return to client ☐ Pickup

Mobile
Geochemistry Inc.

06 June 2013

Ms. Stacy Metz
TRC Environmental - MI
1540 Eisenhower Place
Ann Arbor, MI 48108

H&P Project: TRC052913-11
Client Project: 187156.0001.0000 Ph 2 / Tecumseh

Dear Ms. Stacy Metz:

Enclosed is the analytical report for the above referenced project. The data herein applies to samples as received by H&P Mobile Geochemistry, Inc. on 29-May-13 which were analyzed in accordance with the attached Chain of Custody record(s).

The results for all sample analyses and required QA/QC analyses are presented in the following sections and summarized in the documents:

- Sample Summary
- Case Narrative (if applicable)
- Sample Results
- Quality Control Summary
- Notes and Definitions / Appendix
- Chain of Custody

Unless otherwise noted, all analyses were performed and reviewed in compliance with our Quality Systems Manual and Standard Operating Procedures. This report shall not be reproduced, except in full, without the written approval of H&P Mobile Geochemistry, Inc.

We at H&P Mobile Geochemistry, Inc. sincerely appreciate the opportunity to provide analytical services to you on this project. If you have any questions or concerns regarding this analytical report, please contact me at your convenience at 760-804-9678.

Sincerely,

Lisa D Ems for

Janis Villarreal
Laboratory Director

H&P Mobile Geochemistry, Inc. operates under CA Environmental Lab Accreditation Program Numbers 2579, 2740, 2741, 2742, 2743, 2745 and 2754. National Environmental Laboratory Accreditation Conference (NELAC) Standards Lab #11845

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

TRC Environmental - MI	Project: TRC052913-11	
1540 Eisenhower Place	Project Number: 187156.0001.0000 Ph 2 / Tecumseh	Reported:
Ann Arbor, MI 48108	Project Manager: Ms. Stacy Metz	06-Jun-13 10:03

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Lag Exhaust	E305107-01	Vapor	23-May-13	29-May-13
B/W Vessels	E305107-02	Vapor	23-May-13	29-May-13
At Blower	E305107-03	Vapor	23-May-13	29-May-13

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TRC Environmental - MI	Project: TRC052913-11	
1540 Eisenhower Place	Project Number: 187156.0001.0000 Ph 2 / Tecumseh	Reported:
Ann Arbor, MI 48108	Project Manager: Ms. Stacy Metz	06-Jun-13 10:03

Volatile Organic Compounds by 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
Lag Exhaust (E305107-01) Vapor Sampled: 23-May-13 Received: 29-May-13									
Vinyl chloride	ND	19	ppbv	0.05	EE33104	30-May-13	30-May-13	H&P 8260 SV	
trans-1,2-Dichloroethene	ND	120	"	"	"	"	"	"	
1,1-Dichloroethane	ND	120	"	"	"	"	"	"	
1,1-Dichloroethene	ND	120	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	120	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	91	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	24	"	"	"	"	"	"	
Trichloroethene	ND	18	"	"	"	"	"	"	
Tetrachloroethene	ND	15	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*93.0 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*106 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*101 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*91.3 %*		*75-125*	"	"	"	"	
B/W Vessels (E305107-02) Vapor Sampled: 23-May-13 Received: 29-May-13									
Vinyl chloride	ND	19	ppbv	0.05	EE33104	30-May-13	30-May-13	H&P 8260 SV	
trans-1,2-Dichloroethene	ND	120	"	"	"	"	"	"	
1,1-Dichloroethane	ND	120	"	"	"	"	"	"	
1,1-Dichloroethene	ND	120	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**730**	120	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	91	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	24	"	"	"	"	"	"	
Trichloroethene	ND	18	"	"	"	"	"	"	
Tetrachloroethene	ND	15	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*94.0 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*102 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*102 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*92.5 %*		*75-125*	"	"	"	"	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

TRC Environmental - MI	Project: TRC052913-11	
1540 Eisenhower Place	Project Number: 187156.0001.0000 Ph 2 / Tecumseh	Reported:
Ann Arbor, MI 48108	Project Manager: Ms. Stacy Metz	06-Jun-13 10:03

Volatile Organic Compounds by 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
At Blower (E305107-03) Vapor Sampled: 23-May-13 Received: 29-May-13									
Vinyl chloride	ND	19	ppbv	0.05	EE33104	30-May-13	30-May-13	H&P 8260 SV	
trans-1,2-Dichloroethene	ND	120	"	"	"	"	"	"	
1,1-Dichloroethane	ND	120	"	"	"	"	"	"	
1,1-Dichloroethene	ND	120	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**520**	120	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	91	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	24	"	"	"	"	"	"	
Trichloroethene	**2400**	18	"	"	"	"	"	"	
Tetrachloroethene	**33**	15	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*95.0 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*105 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*103 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*89.1 %*		*75-125*	"	"	"	"	

H&P Mobile
Geochemistry Inc.

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TRC Environmental - MI	Project: TRC052913-11	
1540 Eisenhower Place	Project Number: 187156.0001.0000 Ph 2 / Tecumseh	Reported:
Ann Arbor, MI 48108	Project Manager: Ms. Stacy Metz	06-Jun-13 10:03

Volatile Organic Compounds by 8260SV - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EE33104 - EPA 5030										
Blank (EE33104-BLK1)				Prepared & Analyzed: 30-May-13						
Vinyl chloride	ND	19	ppbv							
trans-1,2-Dichloroethene	ND	120	"							
1,1-Dichloroethane	ND	120	"							
1,1-Dichloroethene	ND	120	"							
cis-1,2-Dichloroethene	ND	120	"							
1,1,1-Trichloroethane	ND	91	"							
1,2-Dichloroethane (EDC)	ND	24	"							
Trichloroethene	ND	18	"							
Tetrachloroethene	ND	15	"							
Surrogate: Dibromofluoromethane	*476*		*"*	*539*		*88.4*	*75-125*			
Surrogate: 1,2-Dichloroethane-d4	*520*		*"*	*585*		*88.8*	*75-125*			
Surrogate: Toluene-d8	*598*		*"*	*602*		*99.3*	*75-125*			
Surrogate: 4-Bromofluorobenzene	*321*		*"*	*344*		*93.1*	*75-125*			
LCS (EE33104-BS1)				Prepared & Analyzed: 30-May-13						
Vinyl chloride	1840	19	ppbv	1930		95.6	70-130			
trans-1,2-Dichloroethene	1310	120	"	1240		106	70-130			
1,1-Dichloroethane	1210	120	"	1220		99.7	70-130			
1,1-Dichloroethene	1080	120	"	1240		86.8	70-130			
cis-1,2-Dichloroethene	1290	120	"	1240		104	70-130			
1,1,1-Trichloroethane	760	91	"	906		83.8	70-130			
1,2-Dichloroethane (EDC)	1060	24	"	1220		87.4	70-130			
Trichloroethene	844	18	"	917		92.0	70-130			
Tetrachloroethene	632	15	"	726		87.0	70-130			
Surrogate: Dibromofluoromethane	*480*		*"*	*539*		*89.0*	*75-125*			
Surrogate: 1,2-Dichloroethane-d4	*510*		*"*	*585*		*87.2*	*75-125*			
Surrogate: Toluene-d8	*619*		*"*	*602*		*103*	*75-125*			
Surrogate: 4-Bromofluorobenzene	*323*		*"*	*344*		*93.8*	*75-125*			

H&P Mobile
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760-804-9678 Phone
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TRC Environmental - MI	Project: TRC052913-11	
1540 Eisenhower Place	Project Number: 187156.0001.0000 Ph 2 / Tecumseh	Reported:
Ann Arbor, MI 48108	Project Manager: Ms. Stacy Metz	06-Jun-13 10:03

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Appendix

H&P Mobile Geochemistry, Inc. is approved as an Environmental Testing Laboratory (Certification # L11-175) in accordance with the DoD-ELAP program. H&P is approved as an Environmental Laboratory in conformance with the Environmental Laboratory Accreditation Program (CA) for the category of Volatile and Semi-Volatile Organic Chemistry of Hazardous Waste for the following methods:

Certificate# 2741, 2743, 2579, 2754 & 2740 approved for EPA 8260 and LUFT GC/MS
Certificate# 2742, 2745, & 2741 approved for LUFT
Certificate# 2745 & 2742 approved for EPA 418.1

H&P Mobile Geochemistry, Inc. is approved as an Environmental Laboratory in conformance with the National Environmental Accreditation Conference Standards for the category Environmental Analysis Air and Emissions for the following analytes and methods:

1,2,4-Trichlorobenzene by EPA TO-15 & TO-14A
Hexachlorobutadiene by EPA TO-15 & TO-14A
Bromodichloromethane by EPA TO-15 & TO-14A
1,2-Dichlorobenzene by EPA TO-15 & TO-14A
Dichlorotetrafluoroethane by EPA TO-14A
1,4-Dichlorobenzene by EPA TO-15 & TO-14A
Benzene by EPA TO-15 & TO-14A
Chlorobenzene by EPA TO-15 & TO-14A
Ethyl benzene by EPA TO-15 & TO-14A
Styrene by EPA TO-15 & TO-14A
Toluene by EPA TO-15 & TO-14A
Total Xylenes by EPA TO-15 & TO-14A
1,1,1-Trichloroethane by EPA TO-15 & TO-14A
1,1,2,2-Tetrachloroethane by EPA TO-15 & TO-14A
1,1,2-Trichloroethane by EPA TO-15 & TO-14A
1,1-Dichloroethane by EPA TO-15 & TO-14A
1,1-Dichloroethene by EPA TO-15 & TO-14A
1,2-Dichloroethane by EPA TO-15 & TO-14A
1,2-Dichloropropane by EPA TO-15 & TO-14A
Benzyl Chloride by EPA TO-15 & TO-14A
Bromoform by EPA TO-15
Bromomethane by EPA TO-15 & TO-14A
Carbon tetrachloride by EPA TO-15 & TO-14A
Chloroethane by EPA TO-15 & TO-14A
Chloroform by EPA TO-15 & TO-14A
Chloromethane by EPA TO-15 & TO-14A
cis-1,2-Dichloroethene by EPA TO-15 & TO-14A
cis-1,3-Dichloropropene by EPA TO-15 & TO-14A
Methylene chloride by EPA TO -15 & TO-14A
Tetrachloroethane by EPA TO-15 & TO-14A
trans-1,2-Dichloroethene by EPA TO-15
trans-1,3-Dichloropropene by EPA TO-15 & TO-14A
Trichloroethene by EPA TO-15 & TO-14A
Vinyl chloride by EPA TO -15 & TO-14A
2-Butanone by EPA TO-15
4-Methyl-2-Pentanone by EPA TO-15
Hexane by EPA TO-15
Methyl tert-butyl ether by EPA TO-15
Vinyl acetate by EPA TO-15
Dibromochloromethane by EPA TO-15
1,3-Dichlorobenzene by EPA TO-15 & TO-14A
Trichlorofluoromethane by EPA TO-14A
Naphthalene by H&P SOP TO-15/GC-MS
1,2-Dibromoethane (EDB) by EPA TO-15 & TO-14A
1,2-Dibromo-3-chloropropane by EPA TO-15
1,3-Butadiene by EPA TO-15
1,1,2-Trichlorotrifluoroethane by EPA TO-15 & TO-14A
Carbon disulfide by EPA TO-15
1,4-Dioxane by EPA TO-15

This certification applies to samples analyzed in summa canisters.

Chain of Custody Record

H&P Mobile Geochemistry, Inc.

☒ 2470 Impala Dr., Carlsbad, CA 92010 • ph 760.804.9678 • fax 760.804.9159
☐ 1855 Coronado Ave., Signal Hill, CA 90755 • ph 800.834.9888

Date: _____
H&P Project # TRC052913-11
Outside Lab: _____

Client: TRC Environmental | Collector: S. Metz | Page: 1 of 1
Address: 1540 Eisenhower Place, Ann Arbor MI 48105 | Client Project # 187156.0001.0000 Ph 2 | Project Contact: Stacy Metz
Location: Tecumseh MI
Email: smetz@trcsolutions.com | Phone: 734 904 3325 | Fax: 734 971 9672 | Turn around time: Standard

Geotracker EDF: Yes ☐ No ☐
Global ID: _____
Excel EDD: Yes ☒ No ☐

Sample Receipt
Intact: ☑ Yes ☐ No
Seal Intact: ☐ Yes ☐ No ☑ N/A
Cold: ☐ Yes ☐ No ☐ N/A
Temperature: RT

Special Instructions: Use Project Specific EDD Fed Ex 7998 4572 2227
PO 48546 ; Level II Data Package
Report results in ppbv and ug/m3
Lab Work Order # Priliminary 8260 Results before TO-15

Sample Name	Field Point Name	Purge Vol	Time	Date	Sample Type	Container Type	Total # of containers	8260B Full List	BTEX/OXY ☐ TPH gas	8260B	LUFT/8015M TPH ☐ g ☐ d ☐ ext	418.1 TRPH	VOC's: ☒ 8260B ☒ TO-15 SEE ATTACHED	VOC's: Short List/DTSC ☐ 8260B ☐ TO-15	VOC's: SAM, 8260B ☐ SAM A ☐ SAM B	Naphthalene ☐ 8260B ☐ TO-15	Oxygenates ☐ 8260B ☐ TO-15	TPHv gas ☐ 8260B ☐ TO-15	Ketones ☐ 8260B ☐ TO-15	Other ☐ 8260B ☐ TO-15	Leak Check Compound ☐ 1,1 DFA ☐ OTHER	Methane	Fixed Gases ☐ CO_2 ☐ O_2 ☐ N_2	CAN#	VAC#
								SOIL/GW					SOIL VAPOR/AIR ANALYSIS												
Lag Exhaust	–	–	1538	5/23/13	Grab	1L Summa	1						X											193	.3
B/w Vessels	–	–	1542	↓	↓	1L Summa	1						X											381	.0
At Blower	–	–	1546	↓	↓	1L Summa	1						X											440	.3

X } analyzed by H&P 8260 SV YBE

Approved/Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:
[signature]	TRC	Fed Ex		5/24/13	1230
[signature]		[signature]	H&P	5/29/13	0545

*Signature constitutes authorization to proceed with analysis and acceptance of condition on back.

Sample disposal instruction: ☐ Disposal ☐ Return to client ☐ Pickup

Suzie Nawikas

From: Metz, Stacy [SMetz@trcsolutions.com]
Sent: Thursday, May 30, 2013 8:43 AM
To: suzie.nawikas@handpmg.com
Subject: RE: TPC - Bottle Order for 2nd Quarter 2013 SVE system inspection

Follow Up Flag: Follow up
Flag Status: Flagged

Normal short list please, sorry for the confusion.

Stacy E. Metz
Environmental Scientist

1540 Eisenhower Place, Ann Arbor, MI 48108
T: 734.585.7825 | F: 734.971.9022 | C: 734.904.3325

LinkedIn | Twitter | Blog | Flickr | www.trcsolutions.com

From: Suzie Nawikas [mailto:suzie.nawikas@handpmg.com]
Sent: Thursday, May 30, 2013 11:39 AM
To: Metz, Stacy
Subject: RE: TPC - Bottle Order for 2nd Quarter 2013 SVE system inspection

Stacy,
We received these samples yesterday and the COC is marked for the full list, but I'm assuming that we can report just the normal compounds which you indicate below?

Suzie (Reed) Nawikas
H&P, Inc - Office: 760-804-9678 Cell: 858-401-3032

From: Metz, Stacy [mailto:SMetz@trcsolutions.com]
Sent: Wednesday, April 24, 2013 5:46 AM
To: suzie.nawikas@handpmg.com
Subject: TPC - Bottle Order for 2nd Quarter 2013 SVE system inspection

Suzie—

The 2nd quarter soil vapor extraction system inspection has been scheduled to conducted on Monday, May 20, 2013 Please arrange to have the following delivered to our office no later than Thursday, May 16, 2013:

- 3 x 1-liter batch certified canisters equipped with barbed fittings (excluding the extra can usually sent at no charge)
- We arrange for return shipment, so return shipping labels should NOT be included

The 2013 PO for SVE system inspection sampling is 48596; the project number is 187156.0001, Phase 2. For this project samples are analyzed using 8260 for PCE, TCE, 1,1-DCE, 1,2-cis-DCE, 1,2-trans-DCE, vinyl chloride, 1,1,1-TCA, 1,1-DCA, and 1,2-DCA. Results should be reported in both ppbv and ug/m3, and a Level 4 data package is NOT required.

Mobile
Geochemistry Inc.

27 November 2013

Ms. Stacy Metz
TRC Environmental - MI
1540 Eisenhower Place
Ann Arbor, MI 48108

H&P Project: TRC111913-12
Client Project: 187156.0001 / Tecumseh, MI

Dear Ms. Stacy Metz:

Enclosed is the analytical report for the above referenced project. The data herein applies to samples as received by H&P Mobile Geochemistry, Inc. on 19-Nov-13 which were analyzed in accordance with the attached Chain of Custody record(s).

The results for all sample analyses and required QA/QC analyses are presented in the following sections and summarized in the documents:

- Sample Summary
- Case Narrative (if applicable)
- Sample Results
- Quality Control Summary
- Notes and Definitions / Appendix
- Chain of Custody

Unless otherwise noted, all analyses were performed and reviewed in compliance with our Quality Systems Manual and Standard Operating Procedures. This report shall not be reproduced, except in full, without the written approval of H&P Mobile Geochemistry, Inc.

We at H&P Mobile Geochemistry, Inc. sincerely appreciate the opportunity to provide analytical services to you on this project. If you have any questions or concerns regarding this analytical report, please contact me at your convenience at 760-804-9678.

Sincerely,

Janis Villarreal

Janis Villarreal
Laboratory Director

H&P Mobile Geochemistry, Inc. operates under CA Environmental Lab Accreditation Program Numbers 2579, 2740, 2741, 2742, 2743, 2745 and 2754. National Environmental Laboratory Accreditation Conference (NELAC) Standards Lab #11845

H&P Mobile
Geochemistry Inc.

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760-804-9678 Phone
760-804-9159 Fax

TRC Environmental - MI	Project: TRC111913-12	
1540 Eisenhower Place	Project Number: 187156.0001 / Tecumseh, MI	Reported:
Ann Arbor, MI 48108	Project Manager: Ms. Stacy Metz	27-Nov-13 10:42

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SVE-Exhaust	E311078-01	Vapor	14-Nov-13	19-Nov-13
SVE-B/W Vessels	E311078-02	Vapor	14-Nov-13	19-Nov-13
SVE-Blower	E311078-03	Vapor	14-Nov-13	19-Nov-13

H&P Mobile
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2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

TRC Environmental - MI
1540 Eisenhower Place
Ann Arbor, MI 48108

Project: TRC111913-12
Project Number: 187156.0001 / Tecumseh, MI
Project Manager: Ms. Stacy Metz

Reported:
27-Nov-13 10:42

DETECTIONS SUMMARY

Sample ID: **SVE-Exhaust** Laboratory ID: **E311078-01**

Analyte	Result	Reporting Limit	Units	Method	Notes
cis-1,2-Dichloroethene	**620**	120	ppbv	H&P 8260 SV	
Trichloroethene	**29**	18	ppbv	H&P 8260 SV	

Sample ID: **SVE-B/W Vessels** Laboratory ID: **E311078-02**

Analyte	Result	Reporting Limit	Units	Method	Notes
cis-1,2-Dichloroethene	**680**	120	ppbv	H&P 8260 SV	
1,1,1-Trichloroethane	**340**	91	ppbv	H&P 8260 SV	
Trichloroethene	**3500**	18	ppbv	H&P 8260 SV	
Tetrachloroethene	**15**	15	ppbv	H&P 8260 SV	

Sample ID: **SVE-Blower** Laboratory ID: **E311078-03**

Analyte	Result	Reporting Limit	Units	Method	Notes
cis-1,2-Dichloroethene	**340**	120	ppbv	H&P 8260 SV	
1,1,1-Trichloroethane	**330**	91	ppbv	H&P 8260 SV	
Trichloroethene	**5000**	18	ppbv	H&P 8260 SV	
Tetrachloroethene	**100**	15	ppbv	H&P 8260 SV	

H&P Mobile
Geochemistry Inc.

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TRC Environmental - MI	Project: TRC111913-12	
1540 Eisenhower Place	Project Number: 187156.0001 / Tecumseh, MI	Reported:
Ann Arbor, MI 48108	Project Manager: Ms. Stacy Metz	27-Nov-13 10:42

Volatile Organic Compounds by 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SVE-Exhaust (E311078-01) Vapor Sampled: 14-Nov-13 Received: 19-Nov-13									
Vinyl chloride	ND	19	ppbv	0.05	EK32105	21-Nov-13	21-Nov-13	H&P 8260 SV	
trans-1,2-Dichloroethene	ND	120	"	"	"	"	"	"	
1,1-Dichloroethane	ND	120	"	"	"	"	"	"	
1,1-Dichloroethene	ND	120	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**620**	120	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	91	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	24	"	"	"	"	"	"	
Trichloroethene	**29**	18	"	"	"	"	"	"	
Tetrachloroethene	ND	15	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*109 %*		*75-125*		"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*109 %*		*75-125*		"	"	"	
Surrogate: Toluene-d8		*94.8 %*		*75-125*		"	"	"	
Surrogate: 4-Bromofluorobenzene		*106 %*		*75-125*		"	"	"	
SVE-B/W Vessels (E311078-02) Vapor Sampled: 14-Nov-13 Received: 19-Nov-13									
Vinyl chloride	ND	19	ppbv	0.05	EK32105	21-Nov-13	21-Nov-13	H&P 8260 SV	
trans-1,2-Dichloroethene	ND	120	"	"	"	"	"	"	
1,1-Dichloroethane	ND	120	"	"	"	"	"	"	
1,1-Dichloroethene	ND	120	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**680**	120	"	"	"	"	"	"	
1,1,1-Trichloroethane	**340**	91	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	24	"	"	"	"	"	"	
Trichloroethene	**3500**	18	"	"	"	"	"	"	
Tetrachloroethene	**15**	15	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*107 %*		*75-125*		"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*114 %*		*75-125*		"	"	"	
Surrogate: Toluene-d8		*93.6 %*		*75-125*		"	"	"	
Surrogate: 4-Bromofluorobenzene		*99.6 %*		*75-125*		"	"	"	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
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TRC Environmental - MI	Project: TRC111913-12	
1540 Eisenhower Place	Project Number: 187156.0001 / Tecumseh, MI	Reported:
Ann Arbor, MI 48108	Project Manager: Ms. Stacy Metz	27-Nov-13 10:42

Volatile Organic Compounds by 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SVE-Blower (E311078-03) Vapor Sampled: 14-Nov-13 Received: 19-Nov-13									
Vinyl chloride	ND	19	ppbv	0.05	EK32105	21-Nov-13	21-Nov-13	H&P 8260 SV	
trans-1,2-Dichloroethene	ND	120	"	"	"	"	"	"	
1,1-Dichloroethane	ND	120	"	"	"	"	"	"	
1,1-Dichloroethene	ND	120	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**340**	120	"	"	"	"	"	"	
1,1,1-Trichloroethane	**330**	91	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	24	"	"	"	"	"	"	
Trichloroethene	**5000**	18	"	"	"	"	"	"	
Tetrachloroethene	**100**	15	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*116 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*114 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*94.2 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*103 %*		*75-125*	"	"	"	"	

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TRC Environmental - MI	Project: TRC111913-12	
1540 Eisenhower Place	Project Number: 187156.0001 / Tecumseh, MI	Reported:
Ann Arbor, MI 48108	Project Manager: Ms. Stacy Metz	27-Nov-13 10:42

Volatile Organic Compounds by 8260SV - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EK32105 - EPA 5030										
Blank (EK32105-BLK1)				Prepared & Analyzed: 21-Nov-13						
Vinyl chloride	ND	19	ppbv							
trans-1,2-Dichloroethene	ND	120	"							
1,1-Dichloroethane	ND	120	"							
1,1-Dichloroethene	ND	120	"							
cis-1,2-Dichloroethene	ND	120	"							
1,1,1-Trichloroethane	ND	91	"							
1,2-Dichloroethane (EDC)	ND	24	"							
Trichloroethene	ND	18	"							
Tetrachloroethene	ND	15	"							
Surrogate: Dibromofluoromethane	*589*		*"*	*539*		*109*	*75-125*			
Surrogate: 1,2-Dichloroethane-d4	*642*		*"*	*585*		*110*	*75-125*			
Surrogate: Toluene-d8	*601*		*"*	*602*		*99.8*	*75-125*			
Surrogate: 4-Bromofluorobenzene	*354*		*"*	*344*		*103*	*75-125*			
LCS (EK32105-BS1)				Prepared & Analyzed: 21-Nov-13						
Vinyl chloride	1880	19	ppbv	1930		97.5	70-130			
trans-1,2-Dichloroethene	1390	120	"	1240		112	70-130			
1,1-Dichloroethane	1280	120	"	1220		105	70-130			
1,1-Dichloroethene	1190	120	"	1240		95.9	70-130			
cis-1,2-Dichloroethene	1330	120	"	1240		107	70-130			
1,1,1-Trichloroethane	896	91	"	906		98.8	70-130			
1,2-Dichloroethane (EDC)	1280	24	"	1220		105	70-130			
Trichloroethene	980	18	"	917		107	70-130			
Tetrachloroethene	774	15	"	726		107	70-130			
Surrogate: Dibromofluoromethane	*566*		*"*	*539*		*105*	*75-125*			
Surrogate: 1,2-Dichloroethane-d4	*578*		*"*	*585*		*98.8*	*75-125*			
Surrogate: Toluene-d8	*597*		*"*	*602*		*99.2*	*75-125*			
Surrogate: 4-Bromofluorobenzene	*360*		*"*	*344*		*105*	*75-125*			

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1540 Eisenhower Place	Project Number: 187156.0001 / Tecumseh, MI	Reported:
Ann Arbor, MI 48108	Project Manager: Ms. Stacy Metz	27-Nov-13 10:42

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Appendix

H&P Mobile Geochemistry, Inc. is approved as an Environmental Testing Laboratory (Certification # L11-175) in accordance with the DoD-ELAP program. H&P is approved by the State of Arizona under Certification Numbers AZM758 and AZ0779. H&P is approved as an Environmental Laboratory in conformance with the Environmental Laboratory Accreditation Program (CA) for the category of Volatile and Semi-Volatile Organic Chemistry of Hazardous Waste for the following methods:

Certificate# 2741, 2743, 2579, 2754 & 2740 approved for EPA 8260 and LUFT GC/MS
Certificate# 2742, 2745, & 2741 approved for LUFT
Certificate# 2745 & 2742 approved for EPA 418.1

H&P Mobile Geochemistry, Inc. is approved as an Environmental Laboratory in conformance with the National Environmental Accreditation Conference Standards for the category Environmental Analysis Air and Emissions for the following analytes and methods:

Hexachlorobutadiene by EPA TO-15 & TO-14A
1,2,4-Trichlorobenzene by EPA TO-15 & TO-14A
1,2-Dichlorobenzene by EPA TO-15 & TO-14A
Dichlorotetrafluoroethane by EPA TO-14A
1,4-Dichlorobenzene by EPA TO-15 & TO-14A
Benzene by EPA TO-15 & TO-14A
Chlorobenzene by EPA TO-15 & TO-14A
Ethyl benzene by EPA TO-15 & TO-14A
Styrene by EPA TO-15 & TO-14A
Toluene by EPA TO-15 & TO-14A
Total Xylenes by EPA TO-15
1,1,1-Trichloroethane by EPA TO-15 & TO-14A
1,1,2,2-Tetrachloroethane by EPA TO-15 & TO-14A
1,1,2-Trichloroethane by EPA TO-15 & TO-14A
1,1-Dichloroethane by EPA TO-15 & TO-14A
1,1-Dichloroethene by EPA TO-15 & TO-14A
1,2-Dichloroethane by EPA TO-15 & TO-14A
1,2-Dichloropropane by EPA TO-15 & TO-14A
Benzyl Chloride by EPA TO-15 & TO-14A
Bromoform by EPA TO-15
Bromomethane by EPA TO-15 & TO-14A
Carbon tetrachloride by EPA TO-15 & TO-14A
Chloroethane by EPA TO-15 & TO-14A
Chloroform by EPA TO-15 & TO-14A
Chloromethane by EPA TO-15 & TO-14A
cis-1,2-Dichloroethene by EPA TO-15 & TO-14A
cis-1,3-Dichloropropene by EPA TO-15 & TO-14A
Methylene chloride by EPA TO -15 & TO-14A
Tetrachloroethane by EPA TO-15 & TO-14A
trans-1,2-Dichloroethene by EPA TO-15
trans-1,3-Dichloropropene by EPA TO-15 & TO-14A
Trichloroethene by EPA TO-15 & TO-14A
Vinyl chloride by EPA TO -15
2-Butanone by EPA TO-15
4-Methyl-2-Pentanone by EPA TO-15
Hexane by EPA TO-15
Methyl tert-butyl ether by EPA TO-15
Vinyl acetate by EPA TO-15

1,3-Dichlorobenzene by EPA TO-15 & TO-14A
Trichlorofluoromethane by EPA TO-14A
Naphthalene by H&P SOP TO-15/GC-MS
1,2-Dibromoethane (EDB) by EPA TO-15 & TO-14A
1,2-Dibromo-3-chloropropane by EPA TO-15
1,3-Butadiene by EPA TO-15
1,1,2-Trichlorotrifluoroethane by EPA TO-14A
Carbon disulfide by EPA TO-15
1,4-Dioxane by EPA TO-15

This certification applies to samples analyzed in summa canisters.

Chain of Custody Record

H&P Mobile Geochemistry, Inc.

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1855 Coronado Ave., Signal Hill, CA 90755 • ph 800.834.9888

Date:
H&P Project # TRC111913-12
Outside Lab:

Client: TRC Environmental / TPC
Address: 1540 Eisenhower Place
Ann Arbor MI 48108
Email: smeltz@trcsolutions.com

Collector: S Meltz
Client Project # 187156.0001
Location: Tecumseh MI
Phone: 734 904 5315 Fax:

Page: 1 of 1
Project Contact: Stacy Meltz
Turn around time: STANDARD

Geotracker EDF: Yes ☐ No ☐
Global ID:
Excel EDD: Yes ☒ No ☐ STND REPORTS (SN)

Sample Receipt
Intact: ☑ Yes ☐ No
Seal Intact: ☐ Yes ☐ No ☑ N/A
Cold: ☐ Yes ☐ No ☑ N/A
Temperature: RT

Special Instructions: Please provide client specific EDD WO#: E311078
Short List – PCE; TCE; 1,1-DCE, cis-DCE, trans-DCE, vinyl chloride; 1,1,1-TCA, 1,1-DCA; 1,2-DCA
PO-48596? (SN) REPORT IN PPBV & ug/m3 (SN)
Lab Work Order # will email Fedex# 7971 6894 6843

Sample Name	Field Point Name	Purge Vol	Time	Date	Sample Type	Container Type	Total # of containers	8260B Full List	BTEX/OXY TPH gas	LUFT/8015M TPH g d ext	418.1 TRPH	VOC's: Full List 8260B TO-15	VOC's: Short List/DSC 8260B TO-15	VOC's: SAM, 8260B SAM A SAM B	Naphthalene 8260B TO-15	Oxygenates 8260B TO-15	TPHv gas 8260B TO-15	Ketones 8260B TO-15	Other 8260B TO-15	Leak Check Compound 1,1 DFA OTHER	Methane	Fixed Gases CO2 O2 N2	CAN#	VAC# Gauge# 11167
								SOIL/GW				SOIL VAPOR/AIR ANALYSIS												
SVE - Exhaust	NA	0	1638	11/14/13	Soil Gas	1L Summa	1						X										419.2	
SVE - B/W Vessel	↓	↓	1649	↓	↓	↓	1						X										172.8	
SVE - Blower	↓	↓	1652	↓	↓	↓	1						X										435.7	

Approved/Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date: 11/14/13	Time: 1710
Approved/Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date: 11/19/13	Time: 1435
Approved/Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:

TRC (company) — H&P (company)

*Signature constitutes authorization to proceed with analysis and acceptance of condition on back.

Sample disposal instruction: ☐ Disposal ☐ Return to client ☐ Pickup