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October 29, 2012

Mr. Steven L. Renninger
On-Scene Coordinator
Emergency Response Branch
U.S. Environmental Protection Agency Region V
26 West Martin Luther King Drive
Cincinnati, OH 45268

Subject: **South Dayton Landfill Site Assessment Report**
Moraine, Montgomery County, Ohio
Technical Direction Document No.: S05-0008-1206-002
WESTON START Contract No.: EP-S5-06-04
Document Control No.: 1868-2A-AYCA

Dear Mr. Renninger:

The Weston Solutions, Inc. (WESTON®), Superfund Technical Assessment and Response Team (START) is submitting the enclosed site assessment report for the South Dayton Landfill Site in Moraine, Montgomery County, Ohio. If you have any questions or comments regarding the report or require additional copies, please contact me at (513) 703-3092.

Sincerely,
WESTON SOLUTIONS, INC.

John Sherrard
WESTON START Project Manager

Enclosure

cc: WESTON START DCN File

SITE ASSESSMENT REPORT
FOR THE
SOUTH DAYTON LANDFILL SITE
MORAINE, MONTGOMERY COUNTY, OHIO
SITE ID NO. B52B

NPL STATUS: NON-NPL

Prepared for:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region V
Emergency Response Branch
26 West Martin Luther King Drive
Cincinnati, OH 45268

Prepared by:

WESTON SOLUTIONS, INC.
4710-A Interstate Drive
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WESTON START Project Manager:	John Sherrard
Telephone No.:	(513) 703-3092
U.S. EPA On-Scene Coordinator:	Steven L. Renninger

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John Sherrard
WESTON START Project Manager

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LIST OF ACRONYMS AND ABBREVIATIONS

bgs	Below ground surface
CFR	*Code of Federal Regulations*
CRA	Conestoga-Rovers & Associates
DCA	Dichloroethane
DCE	Dichloroethene
ft	Foot
LEL	Lower explosive limit
MCHD	Montgomery County Health Department
MCL	Maximum Contaminant Level
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
ODH	Ohio Department of Health
Ohio EPA	Ohio Environmental Protection Agency
PCE	Tetrachloroethylene
PID	Photoionization detector
ppb	Part per billion
ppbv	Part per billion by volume
ppm	Part per million
PRP	Potentially responsible party
RCRA	Resource Conservation and Recovery Act
RI/FS	Remedial investigation/feasibility study
RPM	Remedial Project Manager
START	Superfund Technical Assessment and Response Team
TCE	Trichloroethylene
TDD	Technical Direction Document
U.S. EPA	United States Environmental Protection Agency
VOC	Volatile organic compound
WESTON	Weston Solutions, Inc.

1. INTRODUCTION

The United States Environmental Protection Agency (U.S. EPA) tasked the Weston Solutions, Inc. (WESTON®), Superfund Technical Assessment and Response Team (START) to assist U.S. EPA in performing a site assessment at the South Dayton Landfill (SDL) Site in Moraine, Montgomery County, Ohio (the Site). Specifically, under Technical Direction Document (TDD) No. S05-0008-1206-002, WESTON START was directed to perform the following activities:

- Review historical Site sampling information
- Develop site-specific safety and field sampling plans
- Provide photographic documentation of the Site (see **Appendix A**)
- Procure a Geoprobe® contractor to install 19 nested soil gas probes at seven locations
- Field screen soil gas probes for volatile organic compounds (VOC) and methane
- Collect soil gas and sub-slab air samples
- Procure analytical laboratory services
- Validate laboratory analytical data (see **Appendix B**)
- Evaluate potential threats of vapor intrusion posed by the Site to the public health or welfare of the United States or the environment
- Prepare and deliver this site assessment report

The site assessment was performed to evaluate Site conditions and the potential for imminent and substantial threats to the public health or welfare of the United States or the environment in accordance with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), Title 40 of the *Code of Federal Regulations* (CFR), Part 300.415(b)(2).

This site assessment report is organized into the following sections:

- **Introduction** – Provides a brief description of the objective and scope of the site assessment
- **Site Background** – Discusses the Site description and history
- **Site Assessment Activities** – Discusses sampling and field screening methods used during the site assessment
- **Analytical Results** – Discusses analytical results for samples collected during the site assessment

- **Threats to Human Health and the Environment** – Identifies conditions at the Site that warrant a removal action under the NCP
- **Conclusions** – Summarizes the site assessment findings and presents conclusions based on these findings

Figures and tables are presented after the conclusions section. **Appendix A** provides photographic documentation of Site conditions and activities during the site assessment. **Appendix B** provides the data validation report and validated analytical results for samples collected during the site assessment. **Appendix C** provides a copy of a letter dated July 6, 2012, from the Ohio Department of Health (ODH).

2. SITE BACKGROUND

This section discusses the Site description and history.

2.1 SITE DESCRIPTION

The Site is located at 1901 through 2153 Dryden Road and 2225 East River Road in Moraine, Montgomery County, Ohio. The Site's geographic coordinates (based on the address of 1975 Dryden Road) are 39° 43' 42.6354" North latitude and 84° 12' 59.8278" West longitude. **Figure 2-1** shows the Site location. The Site is bounded to the north and west by the Miami Conservancy District floodway, with the Great Miami River Recreational Trail and the Great Miami River beyond; to the east by Dryden Road, with light industrial facilities beyond; to the southeast by residential and commercial properties along East River Road, with a residential trailer park beyond; and to the south by undeveloped land, with industrial facilities beyond. The closest residences are located within 100 feet of the southeastern Site perimeter.

2.2 SITE HISTORY

Disposal of waste materials began at the Site in the early 1940s. Materials dumped at the Site included drummed wastes. Known hazardous substances were disposed at the Site, including drums containing hazardous wastes from nearby facilities. Some drums contained cleaning solvents (1,1,1-trichloroethane; methyl ethyl ketone; and xylene); cutting oils; paint; Stoddard solvents; and machine-tool, water-based coolants. The Site previously accepted materials including oils, paint residues, brake fluids, chemicals for cleaning metals, solvents, and other

materials. Large quantities of foundry sand and fly ash also were dumped at the Site.

A timeline of the Site history is presented below.

- According to aerial photographs of the Site, during the 1930s, excavation activities began.
- In 1936, Cyril Grillot and Horace Boesch acquired interest in portions of the approximately 40-acre central portion of the Site.
- In 1940, Alcine Grillot (Cyril Grillot's brother) began a landfill operation at the Site.
- After 1955, the Site ceased accepting municipal wastes.
- In the mid-1950s, buildings were constructed on the portions of the Site adjoining Dryden Road.
- In approximately 1956, Valley Asphalt began operations on the northern part of the Site.
- In 1969, the Montgomery County Health Department (MCHD) first licensed the Site as a solid waste disposal facility permitted to accept commercial and industrial wastes.
- A 1969 MCHD inspection report found the Site in violation for smoke control, indicating that combustible waste was being burned at this time. Inspection reports for 1969 and 1970 state that open burning was not permitted at the Site.
- In 1970, Alcine Grillot formed Moraine Recycling, Inc., and developed, permitted, and constructed an air curtain destructor along the west side of the Site to burn combustible materials.
- In 1974, the Ohio Environmental Protection Agency (Ohio EPA) took over the authority for annual licensing of the Site. However, the licenses continued to be issued and overseen by the MCHD on behalf of the Ohio EPA. The last license granted by the Ohio EPA was issued in 1986.
- 1976, GM Delco Moraine instructed its employees to stop sending asbestos waste to the Site.
- As of 1987, the Site's permit limited materials for disposal as construction and demolition debris.
- In 1990, the Site stopped accepting and disposing of fly ash.
- In early 1996, the Site closed.

The U.S. EPA conducted a screening inspection of the Site in 1991 and a focused site inspection prioritization evaluation in 1995. The Ohio EPA conducted a site team evaluation prioritization of the Site in 1996.

In 2000, Valley Asphalt removed several drums and 2,217 tons of contaminated soil from its

property (the northern area of the Site) that was uncovered when a sewer line was excavated. The U.S. EPA proposed the Site for inclusion on the National Priorities List in 2004.

In 2006, several potentially responsible parties (PRP) for the Site agreed to conduct further studies and evaluate cleanup options at the Site under a remedial investigation/feasibility study (RI/FS). The RI/FS is being conducted under an Administrative Settlement Agreement and Order on Consent with the U.S. EPA. The PRPs' initial RI/FS work plans were deficient, and U.S. EPA did not approve them. In 2008, the PRPs agreed to conduct a streamlined RI/FS at the Site, and the U.S. EPA approved the work plans for the streamlined RI/FS. The PRPs conducted several investigations at the Site from 2008 through 2010.

The sections below discuss pre-2008 groundwater sampling at the Site, followed by a discussion of activities and guidance associated with the Site from 2008 through 2012.

2.2.1 Pre-2008 Groundwater Sampling

From 1996 to 2005, samples from MW-202 contained trichloroethylene (TCE) at 8.1 to 41 parts per billion (ppb). These results exceed the Maximum Contaminant Level (MCL) for TCE of 5 ppb. MW-202 is located along Dryden Road on the eastern Site perimeter. **Figure 2-2** shows the location of MW-202, and **Table 2-1** summarizes groundwater sampling result for MW-202 exceeding the MCL of 5 ppb.

2.2.2 Groundwater Sampling

The 2008 through 2010 investigations conducted by the PRPs included geophysical surveys, test pit and test trench sampling, vertical aquifer sampling, landfill gas sampling, and groundwater monitoring well installation and sampling. Contaminants in groundwater exceeding the MCLs along the eastern Site boundary (Dryden Road) included TCE; vinyl chloride; cis-1,2-dichloroethene (DCE); benzene; arsenic; and lead.

In 2008 and 2009, MW-210 contained TCE at 260 and 180 ppb, respectively, exceeding the TCE MCL of 5 ppb. MW-210 is located at the southeastern corner of the Site. In 2010, MW-229 contained TCE at 70 ppb, exceeding the TCE MCL. **Figure 2-2** shows the locations of MW-210 and MW-229, and **Table 2-1** summarizes groundwater sampling results for MW-210 and MW-

229 exceeding the MCL of 5 ppb.

Preliminary groundwater elevation monitoring and mapping conducted by the PRPs in 2008 and 2009 indicated that the groundwater flow direction in the Site area was variable. During the July through December 2008 monitoring events, groundwater appeared to flow generally west, with occasional flow components to the northwest and southwest. During the January 2009 monitoring event, groundwater appeared to flow primarily southwest. During the February 2009 monitoring event, groundwater appeared to flow primarily southeast.

2.2.3 Soil Gas Sampling

In 2009 and 2010, the PRPs conducted soil gas sampling at nine on-site soil gas probes. TCE results exceeded the ODH sub-slab screening level for non-residential locations of 20 parts per billion by volume (ppbv) in five soil gas probes, with a high TCE concentration of 10,420 ppbv in GP20-09. **Figure 2-2** shows the locations of the five soil gas probes with results exceeding the TCE screening level, and **Table 2-2** summarizes the soil gas sampling results exceeding the TCE screening level of 20 ppbv.

Based on the investigations, the PRPs agreed to divide the Site work into two parts. Operable Unit 1 covers cleanup alternatives that address 55 acres of the landfill while allowing on-site businesses to continue safely operating at the Site.

The PRPs submitted draft RI/FS reports for the Site in May 2010 and January 2011. The U.S. EPA found the reports inadequate and did not approve them. The PRPs submitted a revised report for Operable Unit 1 in June 2011, but the U.S. EPA Remedial Project Manager (RPM) again found the report inadequate. In June 2012, the U.S. EPA, in consultation with the Ohio EPA, determined that additional data required collection for groundwater and potential hot spots before a remedy could be selected for Operable Unit 1. The U.S. EPA anticipates oversight of additional RI/FS field work at Operable Unit 1, with a proposed cleanup plan and final remedy selection by March 2015. After the U.S. EPA selects a final cleanup plan, the U.S. EPA will begin negotiating with the PRPs about legal agreements for designing, constructing, and monitoring this part of the remedy.

Operable Unit 2 will involve more detailed investigations of landfill materials in remaining Site areas including surface water and sediment in the on-site quarry pond and the Great Miami River, floodplain soil, and off-site groundwater. The Operable Unit 2 boundary has yet to be defined. The U.S. EPA expects to start working with the PRPs on the data quality objectives process for Operable Unit 2 and to have a work plan for Operable Unit 2 in 2013.

2.2.4 Sub-Slab and Indoor Air Vapor Intrusion Sampling

In January and March 2012, the PRPs conducted a vapor intrusion study to evaluate if landfill chemicals are posing immediate threats to businesses at and near the Site. Sampling results indicate TCE and methane levels exceeding the ODH sub-slab and indoor air screening levels in four on-Site, non-residential buildings along Dryden and East River Roads. **Figure 2-3** shows the vapor intrusion sampling locations, and **Table 2-3** summarizes sub-slab and indoor air sampling TCE and methane results for the four non-residential, on-Site buildings where TCE and methane concentrations exceeded the sub-slab and indoor air screening levels. The analytical results are summarized below.

- The sub-slab sample for the non-residential building at 2003 Dryden Road, Building 2, contained 1,1-dichloroethane (DCA) at concentrations exceeding the ODH screening level of 160 ppbv, with a high 1,1-DCA concentration of 963 ppbv.
- The sub-slab samples for two non-residential buildings at 1903 Dryden Road, Building 2, and 2031 Dryden Road, Building 1, contained benzene at concentrations exceeding the ODH screening level of 20 ppbv, with a high benzene concentration of 313 ppbv (at 2031 Dryden Road, Building 1).
- The sub-slab samples for two non-residential buildings at 2015 Dryden Road, Building 1, and 2031 Dryden Road, Building 1, contained cis-1,2-DCE at concentrations exceeding the ODH screening level of 370 ppbv, with a high cis-1,2-DCE concentration of 10,341 ppbv (at 2031 Dryden Road, Building 1).
- The sub-slab samples for three non-residential buildings at 1903 Dryden Road, Building 2; 2003 Dryden Road, Building 2; and 2031 Dryden Road, Building 1 contained vinyl chloride at concentrations exceeding the ODH screening level of 20 ppbv, with a high vinyl chloride concentration of 1,721 ppbv.
- The sub-slab samples for 13 non-residential buildings contained TCE at concentrations exceeding the ODH screening level of 20 ppbv, with a high TCE concentration of 5,582 ppbv (**Table 2-3**). In addition, indoor air samples for 3 of the 13 non-residential buildings (1951 Dryden Road, 2015/2019 Dryden Road, and 2031 Dryden Road) contained TCE at concentrations exceeding the ODH screening level of 2 ppbv, with a

high TCE concentration of 13 ppbv. These results document a completed exposure pathway for vapor intrusion.

- The sub-slab samples for 1903 Dryden Road, Building 2, and 2031 Dryden Road, Building 1, contained methane at 6.6 and 0.97 percent, respectively, which exceed the ODH screening level of 0.5 percent (**Table 2-3**). Methane is explosive between 5 and 15 percent.

2.2.5 U.S. EPA RPM Request for Assistance

In a letter dated June 5, 2012, U.S. EPA RPM Karen Cibulskis requested U.S. EPA Emergency Response Branch assistance to determine if the Site met the criteria for a time-critical removal action. The letter requested removal assistance in evaluating U.S. EPA's options for addressing current and potential vapor intrusion risks at the Site, including whether removal authority could be appropriately used to implement mitigation measures to address all or some of the current and threatened risks posed by VOCs (primarily TCE) in sub-slab soil gas at 12 commercial/industrial buildings built over the landfill and at an adjacent commercial/industrial building.

As discussed in Section 2.2.4, PRP vapor intrusion sampling in January and March 2012 showed TCE sub-slab vapor concentrations as high as 5,582 ppbv and TCE indoor air vapor concentrations as high as 13 ppbv, documenting a completed exposure pathway. A laboratory sub-slab sample from the occupied building at 2031 Dryden Road contained methane at 0.97 percent, which exceeds the ODH sub-slab methane screening level of 0.5 percent. At 1903 Dryden Road, Building 2, which is used for storage, methane was detected in a laboratory sub-slab sample above 100 percent of the lower explosive limit (LEL) (sample concentration of 6.6 percent methane by volume). Based on field data, methane was not detected greater than ODH screening levels in indoor air at any of the buildings sampled in January and March 2012. Building 2 is currently closed to access.

2.2.6 ODH Screening Levels

On July 6, 2012, the ODH provided health-based guidance to evaluate the results of vapor intrusion sub-slab and indoor air sampling for contaminants of concern at the Site. The ODH letter in **Appendix C** documents the ODH screening levels for residential and non-residential sub-slab and indoor air samples. The screening levels are based on a 10^{-5} cancer risk or a hazard index of 1.0 and generally are used at remedial sites. The ODH also provided 10^{-4} screening

levels for time-critical removal action evaluation.

2.2.7 Ohio EPA Request for Assistance

In a letter dated July 17, 2012, the Ohio EPA expressed concerns about the risk to human health from indoor air exposure to VOCs and the risk of explosive conditions from landfill gas. The Ohio EPA views the Site as a threat to businesses and residences at and near the Site and supports the Remedial Branch's request for assistance from the Removal Branch in evaluating options for addressing current and potential vapor intrusion risks at the Site.

2.2.8 Additional PRP Sub-Slab and Indoor Air Sampling

To obtain seasonal vapor intrusion data, in July and August 2012, the PRPs conducted additional sub-slab and indoor air sampling at commercial and residential properties located at the Site and along Dryden and East River Roads. **Figure 2-3** shows the locations of non-residential, on-site buildings where vapor intrusion is occurring and the locations where sub-slab and indoor air sample results exceed the screening levels. The analytical results are summarized below.

- The sub-slab sample for the non-residential building at 2003 Dryden Road, Building 2, contained 1,1-DCA at 4,100 ppbv, which exceeds the ODH screening level of 160 ppbv.
- The sub-slab sample for the non-residential building at 2003 Dryden Road, Building 2, contained vinyl chloride at 5,500 ppbv, which exceeds the ODH screening level of 20 ppbv.
- The sub-slab samples for seven non-residential buildings contained TCE at concentrations exceeding the ODH screening level of 20 ppbv, with a high TCE concentration of 2,700 ppbv. Indoor air samples from two of the seven buildings (1901 Dryden Road and 2045 Dryden Road) also contained TCE at concentrations exceeding the ODH screening level of 2 ppbv, with a high TCE concentration of 50 ppbv. **Table 2-4** summarizes the results for two non-residential on-site buildings where TCE sub-slab and indoor air screening levels were exceeded. These results document a completed exposure pathway for vapor intrusion.
- One indoor air sample from the crawl space of the structure on the Valley Asphalt property (1901 Dryden Road, the Murphy's Plumbing structure) contained tetrachloroethylene (PCE) at 38 ppbv, which exceeds the ODH screening level of 25 ppbv. **Table 2-5** summarizes the results for the non-residential on-site building where the PCE indoor air screening level was exceeded.
- The sub-slab and indoor air samples for the non-residential building at 2003 Dryden Road, Building 2, contained benzene at concentrations exceeding the ODH benzene

screening levels. **Table 2-6** summarizes the results for the non-residential on-site building where the benzene sub-slab and indoor air screening levels were exceeded. The sub-slab sample (Probe A) contained benzene at 50 ppbv, which exceeds the ODH screening level of 20 ppbv. The indoor air sample contained benzene at 2.4 ppbv, which exceeds the ODH screening level of 2 ppbv. The sub-slab and indoor air sampling results document a completed exposure pathway for vapor intrusion.

3. SITE ASSESSMENT ACTIVITIES

Between July 12 and August 8, 2012, WESTON START conducted a removal site assessment at the Site that included residential and non-residential sub-slab sampling and the installation and sampling of soil gas vapor probes along the Site's eastern perimeter. The WESTON START soil gas screening and sampling and sub-slab sampling activities are discussed below. **Appendix A** provides photographic documentation of Site conditions and activities during the site assessment.

3.1 SOIL GAS SCREENING AND SAMPLING

U.S. EPA tasked WESTON START to conduct soil gas sampling to determine if VOCs or methane are present at or beyond the Site perimeter. Before installation of the soil gas probes, WESTON START notified the Ohio Utilities Protection Services and contracted Blood Hound, Inc., a private underground electromagnetic utility marking company, to mark the locations of underground utilities before Geoprobe® installation of the nested soil gas probes.

On July 19, 2012, WESTON START procured the services of a Geoprobe® contractor to install 16 soil gas probes at six locations (GP-1 through GP-6) on the eastern perimeter of the Site (**Figure 3-1**). All 16 soil gas probes were converted to permanent soil gas monitoring wells and screened at 8, 12, or 16 feet (ft) below ground surface (bgs) using stainless-steel soil vapor implants and Teflon® tubing. A granular filter pack of silica sand was placed around each well screen, and a bentonite seal was placed above the filter sand pack. A bentonite-cement grout was used to fill the remainder of the annular space.

During the week of July 20, 2012, WESTON START used a MultiRAE photoionization detector (PID) and a Landtec GEM-2000 methane meter to field screen each soil gas probe for VOCs and percent methane. Four rounds of field screening were conducted. **Table 3-1** summarizes the field screening results. PID VOC readings were highest at GP-2 and ranged from 15.8 to 76.4

parts per million (ppm). Methane levels also were highest at GP-2 and ranged from 14.7 to 24.1 percent. None of the remaining five soil gas probes showed detectable percent methane levels.

On July 30, 2012, WESTON START collected grab air samples from the following five soil gas probes (**Figure 3-2**):

- GP-1 (8 ft bgs) – Sample number SDL-GP1-8-073012
- GP-2 (16 ft bgs) – Sample number SDL-GP2-16-073012
- GP-3 (8 ft bgs) – Sample number SDL-GP3-8-073012
- GP-4 (16 ft bgs) – Sample number SDL-GP4-073012
- GP-6 (12 ft bgs) – Sample number SDL-GP6-073012

The grab air samples were collected in 6-liter, stainless-steel SUMMA canisters and submitted under chain of custody to Air Toxics Ltd. in Folsom, California, under analytical TDD No. S05-0008-1206-003. The samples were analyzed for VOCs and percent methane. WESTON START requested a turnaround time of 5 business days. **Section 4** discusses the analytical results.

On August 15, 2012, WESTON START used a Landtec GEM-2000 methane meter to field screen methane levels at GP-2 (**Table 3-1**). Methane levels ranged from 2.2 to 6.5 percent.

On August 30, 2012, WESTON START re-mobilized the Geoprobe® contractor to install three additional soil gas probes at one soil gas probe location (GP-7) (see **Figure 3-1**). The three soil gas probes were converted to permanent soil gas monitoring wells and screened at 8, 12, and 16 ft bgs, respectively, using stainless-steel soil vapor implants and Teflon® tubing. A granular filter pack of silica sand was placed around the well screen, and a bentonite seal was placed above the filter sand pack. A bentonite-cement grout was used to fill the remainder of the annular space.

On September 1, 2012, WESTON START used a Landtec GEM-2000 methane meter to field screen methane at GP-7. In addition, on September 7, 2012, WESTON START used a Landtec GEM-2000 methane meter to field screen methane at GP-2 and GP-7. **Table 3-1** summarizes the field screening results. The soil gas probes at GP-2 yielded methane levels ranging from 1.7 to 3.1 percent, and none of the three soil gas probes at GP-7 yielded detectable methane levels.

3.2 SUB-SLAB SAMPLING

To evaluate if the Site poses imminent and substantial threats to the public health or welfare of the United States or the environment, WESTON START collected sub-slab samples. **Figure 3-2** shows the sub-slab sampling locations. On July 12, 2012, WESTON START installed sub-slab probes at the following two non-residential locations:

- 2230 Dryden Road – Sample number 2230Dryden-SS-071212
- 2205 Dryden Road (two sub-slab probes) – Sample number 2205ADryden-SS-071212 and 2205BDryden-SS-071212

The sub-slab probes were installed and the samples collected in accordance with the "Standard Operating Procedures for the Construction and Installation of Permanent Sub-Slab Soil Gas Wells, #2082," (SOP No. 2082) dated March 29, 2007, under the U.S. EPA Response Engineering and Analytical Contract. Helium leak-testing was conducted before and after sample collection to ensure that the integrity of the sub-slab samples was not compromised.

The sub-slab samples were collected using pre-cleaned, laboratory-supplied, 6-liter SUMMA canisters. The SUMMA canisters were fitted with flow regulators to allow sample collection over an 8-hour period and were connected to the stainless-steel probes with Teflon® tubing.

On August 1, 2012, WESTON START collected sub-slab samples from the following three residential properties:

- 2391 East River Road – Sample number 2391RIVER-SS-080112
- 2232 East River Road – Sample number 2232RIVER-SS-080112
- 2373 East River Road – Sample number 2373RIVER-SS-080112

The sub-slab samples were collected at each property simultaneously (split sampling) while the PRP's environmental consultant, Conestoga-Rovers and Associates (CRA), collected its sub-slab samples. CRA provided a stainless-steel splitter to connect both the WESTON START and CRA SUMMA canisters to allow simultaneous sampling over the same interval. The three sub-

slab samples were collected using pre-cleaned, laboratory-supplied, 6-liter SUMMA canisters. The SUMMA canisters were fitted with flow regulators to allow sample collection over a 24-hour period.

On August 7, 2012, WESTON START collected sub-slab samples from the following two non-residential properties:

- 1951 Dryden Road – Probe D in Building 1 – Sample number 1951Dryden-SS-080712
- 2031 Dryden Road – Probe C – Sample number 2031Dryden-SS-080712

The sub-slab samples were collected from pre-existing sub-slab probes installed by CRA. The samples were collected to verify elevated TCE and methane levels previously detected by the PRP. The two sub-slab samples were collected using pre-cleaned, laboratory-supplied, 6-liter SUMMA canisters. The SUMMA canisters were fitted with flow regulators to allow sample collection over an 8-hour period and were connected to the stainless-steel probes with Teflon® tubing.

On August 8, 2012, WESTON START collected a sub-slab sample from the following non-residential property:

- 2015 Dryden Road – Probe B in the S&J Building – Sample number 2015Dryden-SS-080812

The sub-slab sample was collected from a pre-existing sub-slab probe installed by CRA. The sample was collected to verify elevated TCE levels in the sub-slab probe previously detected by the PRP. The sub-slab sample was collected using a pre-cleaned, laboratory-supplied, 6-liter SUMMA canister. The SUMMA canister was fitted with a flow regulator to allow sample collection over an 8-hour period and was connected to the stainless-steel probe with Teflon tubing.

All sub-slab samples were submitted under chain of custody to Air Toxics Ltd. in Folsom, California, under analytical TDD No. S05-0008-1206-003. The samples were analyzed for VOCs and percent methane. WESTON START requested a turnaround time of 5 business days. Section 4 discusses the analytical results.

4. ANALYTICAL RESULTS

WESTON START collected five soil gas and nine sub-slab samples from the Site for analysis by Air Toxics Ltd. in Folsom, California. All 14 air samples were analyzed for VOCs using U.S. EPA Method TO-15 and for percent methane using ASTM International Method D-1946. **Tables 4-1** through **4-3** and **Figure 3-2** summarize the soil gas and sub-slab sample analytical results. **Appendix B** provides the data validation report and validated laboratory analytical results for the samples.

Analytical results were compared to the vapor intrusion screening levels established by the ODH in its letter dated July 6, 2012, to U.S. EPA (**Appendix C**). Laboratory analytical results exceeding the ODH screening levels are summarized below.

4.1 SOIL GAS SAMPLES

Table 4-1 summarizes the soil gas sample analytical results. Soil gas samples SDL-GP3-8-073012, SDL-GP4-16-073012, and SDL-GP6-12-073012 contained TCE at 120, 49, and 41 ppbv, respectively. These concentrations exceed the ODH TCE sub-slab screening level of 20 ppbv. In addition, soil gas sample SDL-GP2-16-073012 contained methane at 2.5 percent, which exceeds the ODH methane sub-slab screening level of 0.5 percent. Finally, on July 16, 2012, WESTON START observed a high methane reading of 24.1 percent in GP-2 at the nested depth of 16 ft bgs using the Landtec GEM-2000 methane meter (**Table 3-1**).

4.2 SUB-SLAB SAMPLES – RESIDENTIAL PROPERTIES

Table 4-2 summarizes the sub-slab sample analytical results for the residential properties. The three sub-slab samples collected from the residential properties did not contain VOCs at concentrations exceeding the ODH sub-slab screening levels.

4.3 SUB-SLAB SAMPLES – NON-RESIDENTIAL PROPERTIES

Table 4-3 summarizes the sub-slab sample analytical results for the non-residential properties. The sub-slab sample (1951Dryden-SS-080712) collected from 1951 Dryden Road (Building 1,

Probe D) contained TCE at 2,900 ppbv, which exceeds the ODH TCE sub-slab screening level of 20 ppbv.

The sub-slab sample (2031Dryden-SS-080712) collected from 2031 Dryden Road (Probe C) contained the following at concentrations exceeding the screening levels:

- Cis-1,2-DCE at 27,000 ppbv, which exceeds the ODH sub-slab screening level of 370 ppbv
- Benzene at 540 ppbv, which exceeds the ODH sub-slab screening level of 20 ppbv
- TCE at 460 ppbv, which exceeds the ODH sub-slab screening level of 20 ppbv
- m,p-Xylene at 2,100 ppbv, which exceeds the ODH sub-slab screening level of 2,000 ppbv
- o-Xylene at 2,000 ppbv, which equals the ODH sub-slab screening level of 2,000 ppbv
- Vinyl chloride at 2,600 ppbv, which exceeds the ODH sub-slab screening level of 20 ppbv
- Methane at 2.2 percent, which exceeds the ODH sub-slab screening level of 0.5 percent

The sub-slab sample (2015Dryden-SS-080812) collected from 2015 Dryden Road (S&J Building, Probe B) contained the following at concentrations exceeding the screening levels:

- Cis-1,2-DCE at 1,400 ppbv, which exceeds the ODH sub-slab screening level of 370 ppbv
- TCE at 17,000 ppbv, which exceeds the ODH sub-slab screening level of 20 ppbv

5. THREATS TO HUMAN HEALTH AND THE ENVIRONMENT

Factors to be considered when determining the appropriateness of a potential removal action at a site are delineated in the NCP at 40 CFR 300.415(b)(2). The factors applicable to the Site are summarized below.

- **Actual or potential exposure of nearby human populations, animals, or the food chain to hazardous substances or pollutants or contaminants**

  Soil gas and sub-slab samples collected during the site assessment, historical PRP groundwater and soil gas sampling results, and 2012 PRP sub-slab and indoor air sampling results document vapor intrusion at properties located at the Site.

  Vapor intrusion occurs when vapors produced by a chemical spill or groundwater contamination plume migrate through soil into the foundations of structures and into

indoor air. When chemicals are spilled on the ground, they seep into soil and migrate to groundwater. VOCs, including TCE, produce vapors that travel through soil. These vapors can enter a residence or building through cracks in the foundation or into a basement with a dirt floor or concrete slab.

To date, vapor intrusion sampling has documented the VOC and methane exceedances at the Site summarized below.

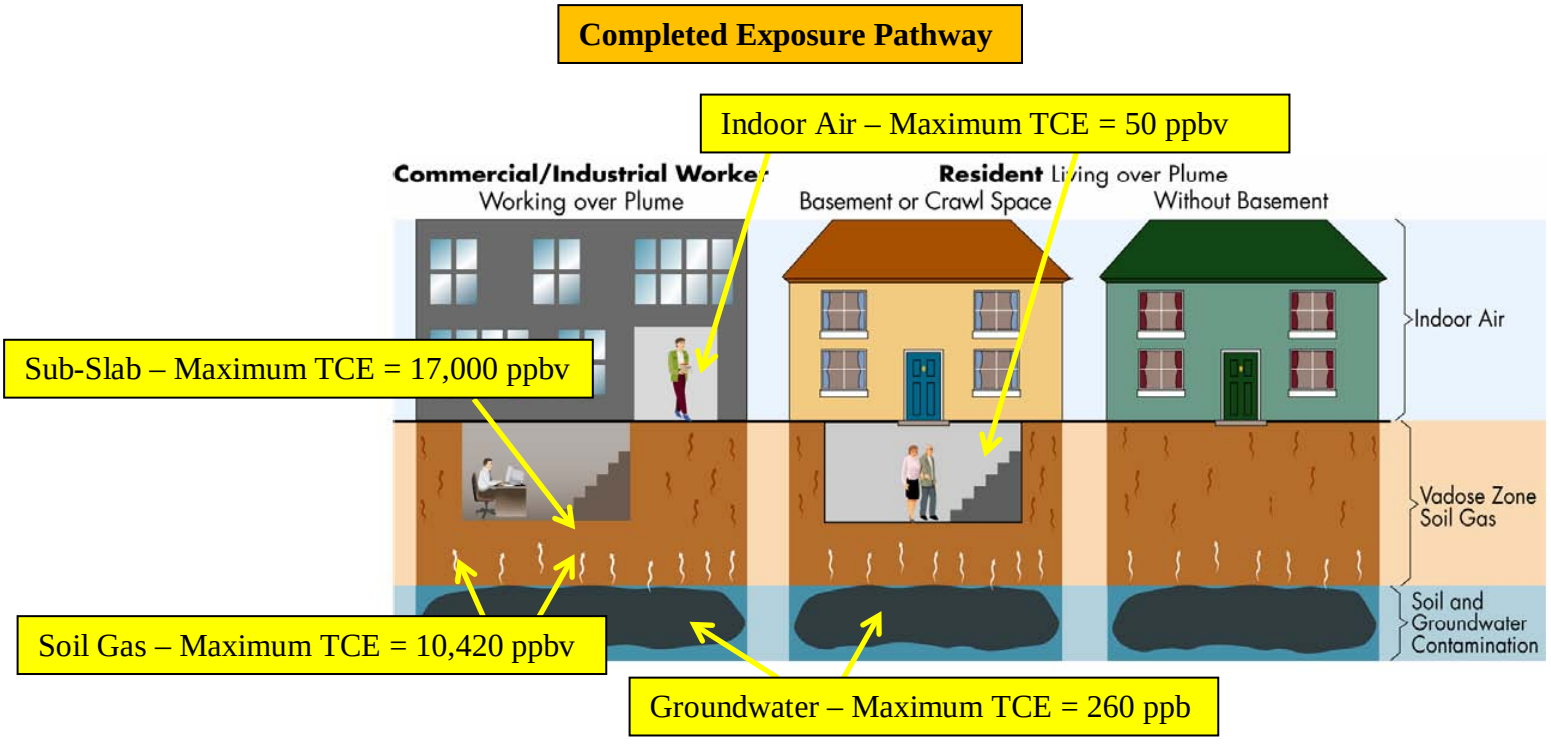
- **1,1-DCA:** The sub-slab sample for the non-residential building at 2003 Dryden Road, Building 2, contained 1,1-DCA at 4,100 ppbv, which exceeds the ODH screening level of 160 ppbv.
- **Benzene:** The sub-slab samples for three non-residential buildings (1903 Dryden Road, Building 2; 2003 Dryden Road, Building 2; and 2031 Dryden Road, Building 1) contained benzene at concentrations exceeding the ODH screening level of 20 ppbv, with a high benzene concentration of 540 ppbv at 2031 Dryden Road. An indoor air sample collected from 2003 Dryden Road, Building 2, contained benzene at 2.4 ppbv, which exceeds the ODH screening level of 2 ppbv. These results document a completed exposure pathway for vapor intrusion.
- **Cis-1,2-DCE:** The sub-slab samples for two non-residential buildings (2015 Dryden Road, Building 1, and 2031 Dryden Road, Building 1) contained cis-1,2-DCE at concentrations exceeding the ODH screening level of 370 ppbv, with a high cis-1,2-DCE concentration of 27,000 ppbv at 2031 Dryden Road, Building 1.
- **Vinyl Chloride:** The sub-slab samples for three non-residential buildings (1903 Dryden Road, Building 2; 2003 Dryden Road, Building 2; and 2031 Dryden Road, Building 1) contained vinyl chloride at concentrations exceeding the ODH screening level of 20 ppbv, with a high vinyl chloride concentration of 5,500 ppbv.
- **TCE:** The sub-slab samples for 13 non-residential buildings contained TCE at concentrations exceeding the ODH screening level of 20 ppbv, with a high TCE concentration of 17,000 ppbv. The indoor air samples for 5 of the 13 non-residential buildings contained TCE at concentrations exceeding the ODH screening level of 2 ppbv, with a high TCE concentration of 50 ppbv. These results document a completed exposure pathway.

  Three soil gas samples contained TCE at 120, 49, and 41 ppbv, respectively. These concentrations exceed the ODH TCE sub-slab screening level of 20 ppbv.
- **PCE:** One indoor air sample from the crawl space of the structure on the Valley Asphalt property (1901 Dryden Road, the Murphy's Plumbing structure) contained PCE at 38 ppbv, which exceeds the ODH screening level of 25 ppbv.
- **Xylenes:** The sub-slab sample for the non-residential building at 2031 Dryden Road, Building 1, contained m,p-xylene at 2,100 ppbv, which exceeds the ODH screening level of 2,000 ppbv, and o-xylene at 2,000 ppbv, which equals the ODH screening level of 2,000 ppbv.

- **Methane:** The sub-slab sample from 2031 Dryden Road, Building 1, contained methane at 2.2 percent, and the sub-slab sample from 1903 Dryden Road, Building 2, contained methane at 6.6 percent. Both results exceed the ODH screening level of 0.5 percent. Methane is explosive between 5 and 15 percent.

  In addition, one soil gas sample contained methane at 2.5 percent, which exceeds the ODH screening level of 0.5 percent. Finally, on July 16, 2012, WESTON START observed a high methane reading of 24.1 percent in GP-2 at the nested depth of 16 ft bgs using the Landtec GEM-2000 methane meter. GP-2 contains nested soil gas sampling depths of 12 and 16 ft bgs. The GP-2 soil gas probe at 12 ft bgs contained methane at 14.7 to 17.6 percent. The GP-2 soil gas probe at 16 ft bgs contained methane at 22.2 to 24.1 percent. GP-2 is located off site on the eastern side of Dryden Road (**Figure 3-1**).

A completed exposure pathway exists for vapor intrusion. TCE has been documented in groundwater samples (as high as 260 ppb), soil gas samples (as high as 10,420 ppbv), sub-slab samples (as high as 17,000 ppbv), and indoor air samples (as high as 50 ppbv). In addition, a sub-slab sample from one non-residential building contained benzene at 50 ppbv, and an indoor air sample contained benzene at 2.4 ppbv. These results exceed the ODH screening levels for sub-slab and indoor air of 20 and 2 ppbv, respectively. Vapor intrusion is occurring at the Site. Finally, one non-residential sub-slab sample contained methane at 6.6 percent, which by definition is in the explosive range for methane of 5 to 15 percent. The SDL Site Vapor Intrusion Conceptual Site Model presented below illustrates the completed exposure pathway for TCE.



Actual vapor intrusion exposure is occurring, and additional vapor intrusion could occur at the Site.

TCE is a hazardous substance according to Section 101 (14) of the Comprehensive Environmental Response, Compensation, and Liability Act and is listed at 40 CFR Section 302.4. Historical groundwater sampling and PRP and WESTON START sub-slab and indoor air sampling results indicate that TCE vapors are migrating into non-residential buildings at chronic levels that ODH considers harmful to human health.

TCE is a man-made chemical widely used as a cleaner to remove grease from metal parts. TCE is a nonflammable, colorless liquid with a sweet odor. Exposure to TCE at very high concentrations (especially in closed, poorly ventilated areas) may cause headaches, lung irritation, dizziness, poor coordination (clumsiness), and difficulty speaking. According to the ODH, the evidence that TCE is a human carcinogen has been under review by health organizations since 2001. The U.S. Department of Health and Human Services considers that TCE is "reasonably anticipated to be a human carcinogen" based on limited evidence of carcinogenicity from studies of humans and sufficient evidence of carcinogenicity from studies of laboratory animals. A report recently released by the National Academies of Science National Research Council (2006) states that "evidence on cancer and other health risks from TCE exposure has strengthened since 2001" and points to studies of human populations that support "the conclusion that TCE is a potential cause of kidney cancer." Other ecological studies of communities exposed to TCE in drinking water in Massachusetts, New Jersey, and North Carolina have suggested an association between these exposures and elevated levels of leukemia in the exposed population.

- **Threat of fire or explosion**

  The PRPs conducted vapor intrusion sampling in January and March 2012. Sub-slab sample results showed methane at levels exceeding the ODH sub-slab screening level of 0.5 percent at the following non-residential properties:

  - 1901 Dryden Road, Building 2 – Probe A (January 2012): Methane = 2.9 percent
  - 1901 Dryden Road, Building 2 – Probe A (March 2012): Methane = 6.6 percent
  - 2031 Dryden Road, Building 1 – Probe C (March 2012): Methane = 0.97 percent

  In July 2012, WESTON START documented methane at 2.5 percent at 16 ft bgs in soil gas probe GP-2. In August 2012, WESTON START documented methane at 2.2 percent in a sub-slab sample collected from 2031 Dryden Road. These results exceed the ODH sub-slab screening level of 0.5 percent.

  WESTON START has documented methane levels in GP-2 (at 12 and 16 ft bgs) ranging from 14.7 to 24.1 percent. These results exceed the ODH screening level of 0.5 percent and the Ohio EPA's perimeter regulatory level of 5 percent (LEL). GP-2 is located off site on the eastern side of Dryden Road. Methane is flammable between 5 and 15 percent.

At the Site, methane was detected in four laboratory sub-slab soil gas samples above 10 percent of the LEL (greater than 0.5 percent methane) at non-residential buildings. At another building, methane was detected at 6.6 percent in a laboratory sub-slab soil gas sample, which exceeds 100 percent of the LEL (greater than 5 percent). This building has the potential for an explosion or fire hazard if a spark or ignition source is present.

Because methane is extremely flammable in the presence of oxygen and an ignition source (such as an open flame or pilot light), the main public health threat posed by methane is the physical explosion hazard posed by methane at levels between 5 and 15 percent by volume in air.

- **The availability of other appropriate federal or state response mechanisms to respond to the release**

  The Ohio EPA does not have the resources to respond to the Site. In a letter dated July 17, 2012, the Ohio EPA expressed concerns about the risk to human health from indoor air exposure to VOCs and the risk of explosive conditions from landfill gas. The Ohio EPA views the Site as a threat businesses and residences at and near the Site and supports the Remedial Branch's request for assistance from the Removal Branch in evaluating options for addressing current and potential vapor intrusion risks at the Site.

6. CONCLUSIONS

Between July 12 and August 8, 2012, WESTON START conducted a removal site assessment at the Site that included the review of historical PRP vapor intrusion sampling data, residential and non-residential sub-slab sampling, and the installation and sampling of soil gas vapor probes along the Site's eastern perimeter. The purpose of the site assessment was to determine if vapor intrusion was occurring at the Site and to evaluate the Site for a potential time-critical removal action. During the site assessment, WESTON START conducted the following activities:

- Reviewed historical PRP groundwater, soil gas, sub-slab, and indoor air sample data to determine if vapor intrusion was occurring at the Site
- Subcontracted the services of a Geoprobe® contractor to install 19 soil gas probes at seven locations at 8 to 16 ft bgs
- Documented methane in soil gas probe location GP-2 at 2.5 to 24.1 percent (methane is explosive at 5 to 15 percent)
- Collected three sub-slab samples from residential properties and six sub-slab samples from non-residential properties

TCE was not detected in the residential property sub-slab samples but was documented as high

as 17,000 ppbv in the non-residential property sub-slab samples.

A completed exposure pathway exists for vapor intrusion at the Site. TCE has been documented in groundwater samples (as high as 260 ppb), soil gas samples (as high as 10,420 ppbv), sub-slab samples (as high as 17,000 ppbv), and indoor air samples (as high as 50 ppbv). In addition, a sub-slab sample from one non-residential building contained benzene at 50 ppbv, and an indoor air sample contained benzene at 2.4 ppbv. These results exceed the ODH screening levels for sub-slab and indoor air of 20 and 2 ppbv, respectively. Vapor intrusion is occurring at the Site. Finally, one non-residential sub-slab sample contained methane at 6.6 percent, which by definition is in the explosive range for methane of 5 to 15 percent. TCE has been documented in groundwater samples (as high as 260 ppb), soil gas samples (as high as 10,420 ppbv), sub-slab samples (as high as 17,000 ppbv), and indoor air samples (as high as 50 ppbv).

Based on the analytical results and Site conditions observed during the site assessment, the Site meets three of the criteria for a removal action pursuant to 40 CFR 300.415(b)(2). Therefore, the Site poses imminent and substantial threats to the public health or welfare of the United States or the environment.

FIGURES

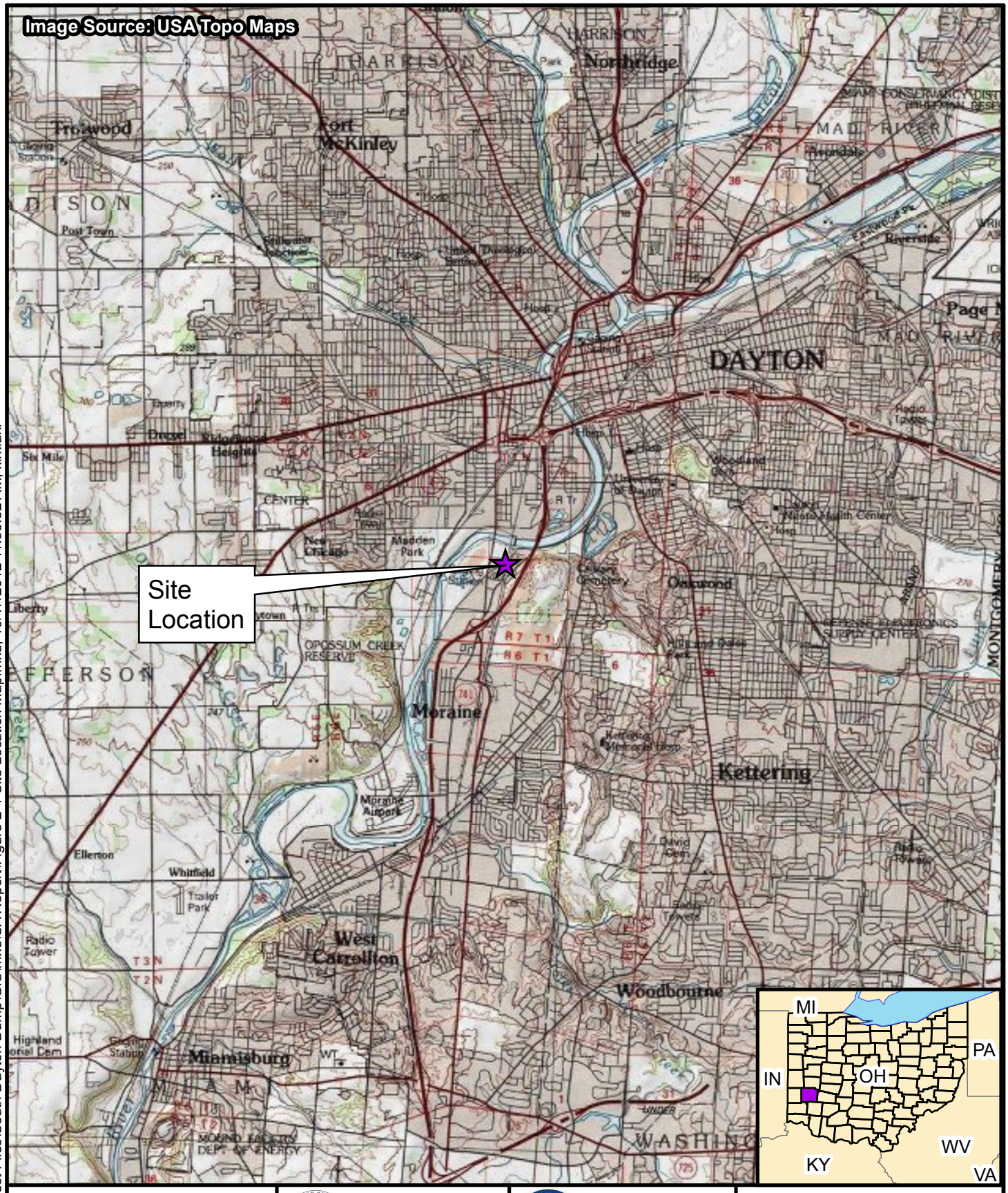


Image Source: USA Topo Maps
Site Location
DAYTON
Moraine
Kettering
Oakwood
Miamisburg
West Carrollton
Woodbourne
Northridge
Fort McKinley
Trotwood
Riverside
Ridgeway Heights
New Chicago
Madden Park
Oppossum Creek Reserve
Moraine Airport
Ellerson
Whitfield
Trailer Park
Radio Tower
Highland Memorial Cem
Mound Facility Dept. of Energy
MI
PA
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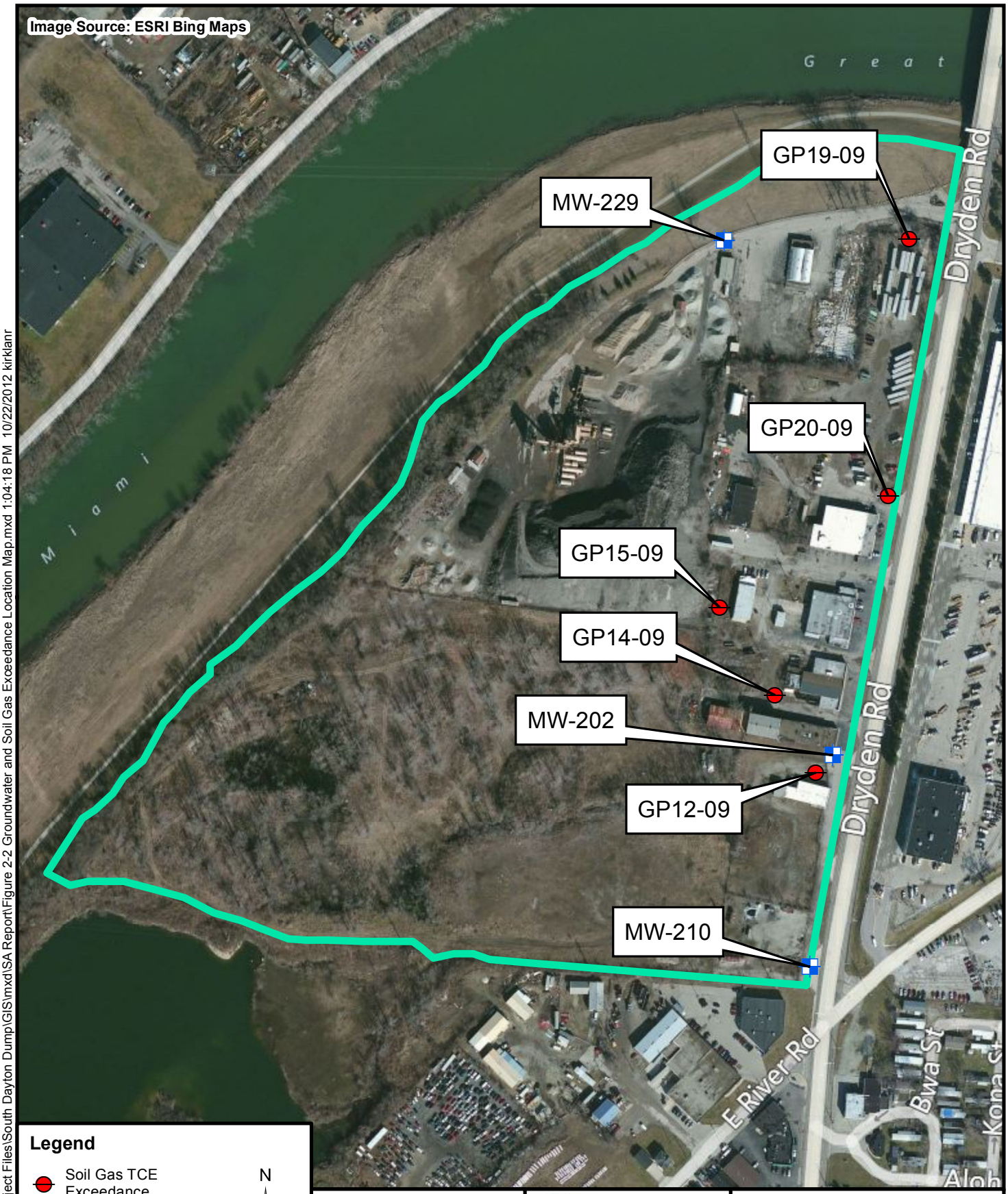
Prepared For:
U.S. EPA REGION V
Contract No: EP-S5-06-04
TDD No.: S05-0008-1206-002
DCN: 1868-2A-AYCA
Prepared By:
WESTON SOLUTIONS, INC.
4710-A Interstate Drive
Cincinnati, Ohio 45246
Figure 2-1
Site Location Map
South Dayton Landfill Site
Moraine, Montgomery County, Ohio
Path: C:\START Project Files\South Dayton Dump\GIS\mxd\SA Report\Figure 2-1 Site Location Map.mxd, 10/17/2012 11:53:32 AM, kirklanr



FILE: C:\START Project Files\South Dayton Dump\GIS\mxd\SA Report\Figure 2-2 Groundwater and Soil Gas Exceedance Location Map.mxd 1:04:18 PM 10/22/2012 kirklanr

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U.S. EPA REGION V
Contract No.: EP-S5-06-04
TDD: S05-0008-1206-002
DCN: 1868-2A-AYCA

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Figure 2-2
Groundwater and Soil Gas TCE Exceedance Location Map
South Dayton Landfill Site
Moraine, Montgomery County, Ohio

FILE: C:\START Project Files\South Dayton Dump\GIS\mxd\SA Report\Figure 2-3 2012 PRP SS & IA Sampling Summary Map.mxd 12:28:15 PM 10/17/2012 kirklanr

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TDD: S05-0008-1206-002
DCN: 1868-2A-AYCA

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Figure 2-3
2012 PRP Sub-Slab and Indoor Air Sampling Summary Map
South Dayton Landfill Site
Moraine, Montgomery County, Ohio

Legend

Soil Gas Sampling Location

0 400 Feet

N

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Contract No.: EP-S5-06-04
TDD: S05-0008-1206-002
DCN: 1868-2A-AYCA

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Cincinnati, Ohio 45246

Figure 3-1
U.S. EPA Soil Gas Sampling Probe Location Map
South Dayton Landfill Site
Moraine, Montgomery County, Ohio

FILE: C:\START Project Files\South Dayton Dump\GIS\mxd\SA Report\Figure 3-1 USEPA Soil Gas Sampling Location Map.mxd 12:55:34 PM 10/17/2012 kirklanr

FILE: C:\START Project Files\South Dayton Dump\GIS\mxd\SA Report\Figure 3-2 USEPA Soil Gas and SS Sampling Location Map.mxd 1:04:15 PM 10/17/2012 kirklanr

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Contract No.: EP-S5-06-04
TDD: S05-0008-1206-002
DCN: 1868-2A-AYCA

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Figure 3-2
U.S. EPA Soil Gas and Sub-Slab Sampling Location Map
South Dayton Landfill Site
Moraine, Montgomery County, Ohio

TABLES

Table 2-1
Groundwater Sample Results Exceeding the MCL for TCE
South Dayton Landfill Site
Moraine, Montgomery County, Ohio

Groundwater Monitoring Well	Sampling Date(s)	TCE MCL (ppb)	TCE Concentration (ppb)
MW-202	1996 to 2005	5	**8.1 to 41**
MW-210	2008	5	**260**
MW-210	2009	5	**180**
MW-229	2010	5	**70**

Notes:
Bolded and highlighted results exceed the MCL for TCE.
MCL = Maximum Contaminant Level
ppb = Part per billion
TCE = Trichloroethylene

Table 2-2
Summary of PRP Soil Gas Sampling Results for TCE - 2009 through 2010
South Dayton Landfill Site
Moraine, Montgomery County, Ohio

Compound	Sub-Slab Screening Level (10^{-4} Risk Level for Non-Residential Locations)	Sub-Slab Screening Level (10^{-5} Risk Level for Non-Residential Locations)	Gas Probe Identification No.				
			GP12-09	GP20-09	GP19-09	GP15-09	GP14-09
			Result (ppbv)				
TCE	200	20	**223**	**10,420**	**67**	**147**	**117**

Notes:

Bolded and highlighted results exceed the sub-slab screening level at the 10^{-5} risk level.

Bolded and highlighted results exceed the sub-slab screening level at both the 10^{-4} and 10^{-5} risk levels. The 10^{-4} risk levels (HI = 10) are 10 times greater than the 10^{-5} risk levels. The 10^{-4} risk level is used for determining removal actions.

Table 2-3
Summary of PRP Vapor Intrusion Sampling Results Exceeding TCE and Methane Screening Levels -
January and March 2012
South Dayton Landfill Site
Moraine, Montgomery County, Ohio

Address	Methane Sub-Slab Screening Level	TCE Screening Levels (10^{-4} Risk Level)		TCE Screening Levels (10^{-5} Risk Level)		Max Methane in Sub-Slab	Max TCE in Sub-Slab (ppbv)	Max TCE in Indoor Air (ppbv)
		Sub-Slab (ppbv)	Indoor Air (ppbv)	Sub-Slab (ppbv)	Indoor Air (ppbv)			
1903 Dryden Road Building 2, Probes A and B	0.5%	200	20	20	2	**6.60%**	**32**	ND
1951 Dryden Road Building 2, Probe A	0.5%	200	20	20	2	ND	**2,977**	**13**
2015 and 2019 Dryden Road Building 1, Probe B	0.5%	200	20	20	2	NA	**5,396**	**5.6**
	0.5%	200	20	20	2	ND	**5,582**	**3**
2031 Dryden Road Building 1, Probes B and C	0.5%	200	20	20	2	**0.97%**	**688**	**5.2**

Notes:

Bolded and highlighted results exceed the sub-slab screening level at the 10^{-5} risk level (HI = 1.0).

Bolded and highlighted results exceed the sub-slab screening level at both the 10^{-4} and 10^{-5} risk levels. The 10^{-4} risk levels (HI = 10) are 10 times greater than the 10^{-5} risk levels. The 10^{-4} risk level is used for determining removal actions.

% = Percent

HI = Hazard index

Max = Maximum

NA = Not analyzed

ND = Not detected

ppbv = Part per billion by volume

PRP = Potentially responsible party

TCE = Trichloroethylene

Table 2-4
Summary of PRP Vapor Intrusion Sampling Results Exceeding TCE Screening Levels -
July and August 2012
South Dayton Landfill Site
Moraine, Montgomery County, Ohio

Address	TCE Screening Levels (10^{-4} Risk Level)		TCE Screening Levels (10^{-5} Risk Level)		Max TCE in Sub-Slab (ppbv)	Max TCE in Indoor Air (ppbv)
	Sub-Slab (ppbv)	Indoor Air (ppbv)	Sub-Slab (ppbv)	Indoor Air (ppbv)		
1901 Dryden Road Building 1, Probe A	200	20	20	2	**2,700**	**8.2**
2045 Dryden Road Building 1, Probe C	200	20	20	2	**1,500**	**50**

Notes:

Bolded and highlighted results exceed the sub-slab screening level at the 10^{-5} risk level (HI = 1.0).

Bolded and highlighted results exceed the sub-slab screening level at both the 10^{-4} and 10^{-5} risk levels. The 10^{-4} risk levels (HI = 10) are 10 times greater than the 10^{-5} risk levels. The 10^{-4} risk level is used for determining removal actions.

HI = Hazard index

Max = Maximum

ppbv = Part per billion by volume

PRP = Potentially responsible party

TCE = Trichloroethylene

Table 2-5
Summary of PRP Vapor Intrusion Sampling Results Exceeding PCE Screening Level - July and August 2012
South Dayton Landfill Site
Moraine, Montgomery County, Ohio

Address	PCE Screening Level (10^{-5} Risk Level) for Indoor Air (ppbv)	Max PCE Indoor Air (ppbv)
1901 Dryden Road, Murphy's Plumbing structure (crawl space air sample)	25	**38**

Notes:

Bolded and highlighted results exceed the sub-slab screening level at the 10^{-5} risk level (HI = 1.0).

HI = Hazard index

Max = Maximum

ppbv = Part per billion by volume

PCE = Tetrachloroethylene

PRP = Potentially responsible party

Table 2-6
Summary of PRP Vapor Intrusion Sampling Results Exceeding Benzene Screening Levels -
July and August 2012
South Dayton Landfill Site
Moraine, Montgomery County, Ohio

Address	Benzene Screening Levels (10^{-5} Risk Level)		Max Benzene in Sub-Slab (ppbv)	Max Benzene in Indoor Air (ppbv)
	Sub-Slab (ppbv)	Indoor Air (ppbv)		
2003 Dryden Road, Building 2, Probe A	20	2	**50**	**2.4**

Notes:

Bolded and highlighted results exceed the sub-slab screening level at the 10^{-5} risk level (HI = 1.0).

HI = Hazard index

Max = Maximum

ppbv = Part per billion by volume

PRP = Potentially responsible party

Table 3-1
Summary of U.S. EPA Soil Gas Field Screening Results
South Dayton Dump and Landfill
Moraine, Montgomery County, Ohio

Gas Probe No.	Screen Depth (ft bgs)	Date: July 24, 2012			Date: July 25, 2012			Date: July 26, 2012			Date: July 27, 2012			Date: August 15, 2012		
		Oxygen (%)	PID (ppm)	Methane (%)	Oxygen (%)	PID (ppm)	Methane (%)	Oxygen (%)	PID (ppm)	Methane (%)	Oxygen (%)	PID (ppm)	Methane (%)	Oxygen (%)	PID (ppm)	Methane (%)
GP-1	8	20.4	1.1	0	16.7	0	0	18.4	1.1	0	16.8	0	0	NA	NA	NA
	12	20.5	0.9	0	16.9	0	0	18.5	1.6	0	16.8	Pump Fail	0	NA	NA	NA
	16	20.4	Pump Fail	0	17.1	Pump Fail	0	18.4	Pump Fail	0	16.8	0	0	NA	NA	NA
GP-2	12	0.5	76.4	**17.6**	0.5	23.6	**14.7**	0.5	15.8	**16.6**	0.5	20	**16.4**	NA	NA	**2.2**
	16	0.3	49.1	**22.3**	0.5	24.3	**22.2**	0.4	18.3	**24.1**	0.3	24.3	**22.6**	NA	NA	**6.5**
GP-3	8	11.3	0.6	0	10	0	0	9.8	2.3	0	9.8	0	0	NA	NA	NA
	12	11.1	0	0	10	0	0	10.1	1.8	0	10	0	0	NA	NA	NA
	16	12.5	0	0	11.9	0	0	11.7	0.1	0	11.2	0	0	NA	NA	NA
GP-4	8	5.1	1.2	0	4.2	0	0	4.2	0	0	4.5	0	0	NA	NA	NA
	12	2.5	0.9	0	1.8	0	0	1.7	0	0	1.9	0	0	NA	NA	NA
	16	1.8	1	0	1.2	0	0	1.2	0.4	0	1.2	0	0	NA	NA	NA
GP-5	12	14.4	0	0	13.3	0.6	0	12.9	0	0	13.2	0	0	NA	NA	NA
	16	14.2	0	0	13.4	0.2	0	12.9	0	0	13.1	0	0	NA	NA	NA
GP-6	8	13.7	0	0	12.8	0	0	11.6	0	0	11.8	0.3	0	NA	NA	NA
	12	11.5	0	0	11.1	0.6	0	9.3	0	0	9.7	0.2	0	NA	NA	NA
	16	10.3	0	0	9.7	0	0	8.7	0	0	8.5	0.6	0	NA	NA	NA
GP-7	8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Gas Probe No.	Screen Depth (ft bgs)	Date: September 1, 2012			Date: September 7, 2012		
		Oxygen (%)	PID (ppm)	Methane (%)	Oxygen (%)	PID (ppm)	Methane (%)
GP-1	8	NA	NA	NA	NA	NA	NA
	12	NA	NA	NA	NA	NA	NA
	16	NA	NA	NA	NA	NA	NA
GP-2	12	NA	NA	NA	0.1	NA	**1.7**
	16	NA	NA	NA	0.2	NA	**3.1**
GP-3	8	NA	NA	NA	NA	NA	NA
	12	NA	NA	NA	NA	NA	NA
	16	NA	NA	NA	NA	NA	NA
GP-4	8	NA	NA	NA	NA	NA	NA
	12	NA	NA	NA	NA	NA	NA
	16	NA	NA	NA	NA	NA	NA
GP-5	12	NA	NA	NA	NA	NA	NA
	16	NA	NA	NA	NA	NA	NA
GP-6	8	NA	NA	NA	NA	NA	NA
	12	NA	NA	NA	NA	NA	NA
	16	NA	NA	NA	NA	NA	NA
GP-7	8	NA	NA	0	10.3	NA	0
	12	NA	NA	0	7.6	NA	0
	16	NA	NA	0	6.2	NA	0

Notes:

Bolded and highlighted results exceed the methane sub-slab screening level of 0.5%.

% = Percent
bgs = Below ground surface
ft = Foot
NA = Not analyzed
PID = Photoionization detector
ppm = Part per million
U.S. EPA = United States Environmental Protection Agency

Table 4-1
Summary of U.S. EPA Soil Gas Sampling Results -
July 2012
South Dayton Landfill Site
Moraine, Montgomery County, Ohio

Compound	Sub-Slab Screening Level (10^{-5} Risk Level for Non-Residential Locations)	Sample ID No.	SDL-GP2-16-073012	SDL-GP3-8-073012	SDL-GP4-16-073012	SDL-GP6-12-073012
		Sampling Depth	16 ft bgs	8 ft bgs	16 ft bgs	12 ft bgs
		Unit	Result			
Hexane	None Provided	ppbv	12,000	ND (0.78)	ND (0.76)	ND (0.74)
Heptane	None Provided	ppbv	860	ND (0.78)	ND (0.76)	ND (0.74)
2,2,4-Trimethylpentane	None Provided	ppbv	14,000	ND (0.78)	ND (0.76)	ND (0.74)
TCE	20	ppbv	ND (370)	**120**	**49**	**41**
Percent Methane	0.5	%	**2.50**	ND (0.00018)	ND (0.00018)	ND (0.00018)

Notes:

Bolded and highlighted results exceed the sub-slab screening level at the 10^{-5} risk level (HI = 1.0).

% = Percent

bgs = Below ground surface

ft = Foot

HI = Hazard index

ID = Identification

ND = Not detected at method reporting limit

TCE = Trichloroethylene

U.S. EPA = United States Environmental Protection Agency

Table 4-2
Summary of U.S. EPA Sub-Slab Sampling Results for Residential Properties -
August 2012
South Dayton Landfill Site
Moraine, Montgomery County, Ohio

Compound	Sub-Slab Screening Level (10^{-5} Risk level)	Sample ID No.	2391RIVER-SS-080112	2232RIVER-SS-080112	2373RIVER-SS-080112
		Sampling Date	8/1/2012	8/1/2012	8/1/2012
		Unit	Result		
PCE	60	ppbv	20	7.7	8.8
Percent Methane	0.5	%	ND (0.00018)	ND (0.00018)	0.00028

Notes:

% = Percent

ID = Identification

ND = Not detected at method reporting limit

PCE = Tetrachloroethylene

U.S. EPA = United States Environmental Protection Agency

Table 4-3
Summary of U.S. EPA Sub-Slab Sampling Results for Non-Residential Properties -
July and August 2012
South Dayton Landfill Site
Moraine, Montgomery County, Ohio

Compound	Sub-Slab Screening Level (10^{-5} Risk level)	Sample ID No.	2230Dryden-SS-071212	2205ADryden-SS-071212	2205BDryden-SS-071212
		Address	2230 Dryden Road	2205 Dryden Road	2205 Dryden Road
		Sampling Date	7/12/2012	7/12/2012	7/12/2012
		Unit	Result		
cis-1,2-DCE	370	ppbv	ND (0.90)	ND (0.88)	ND (0.86)
Benzene	20	ppbv	ND (0.90)	ND (0.88)	ND (0.86)
Chloroform	800	ppbv	ND (0.90)	ND (0.88)	ND (0.86)
PCE	250	ppbv	ND (0.90)	ND (0.88)	110
TCE	20	ppbv	ND (0.90)	ND (0.88)	ND (0.86)
m,p-Xylene	2000	ppbv	ND (0.90)	ND (0.88)	ND (0.86)
o-Xylene	2000	ppbv	ND (0.90)	ND (0.88)	ND (0.86)
Vinyl Chloride	20	ppbv	ND (0.90)	ND (0.88)	ND (0.86)
Percent Methane	0.5	%	0.00022	ND (0.00018)	ND (0.00018)

Compound	Sub-Slab Screening Level (10^{-5} Risk level)	Sample ID No.	1951Dryden-SS-080712	2031Dryden-SS-080712	2015Dryden-SS-080812
		Address	1951 Dryden Road	2031 Dryden Road	2015 Dryden Road
		Sampling Date	8/7/2012	8/7/2012	8/8/2012
		Unit	Result		
cis-1,2-DCE	370	ppbv	52	**27,000**	**1,400**
Benzene	20	ppbv	ND (11)	**540**	ND (28)
Chloroform	800	ppbv	30	ND (35)	ND (28)
PCE	250	ppbv	18	ND (35)	ND (28)
TCE	20	ppbv	**2,900**	**460**	**17,000**
m,p-Xylene	2000	ppbv	ND (11)	**2,100**	ND (28)
o-Xylene	2000	ppbv	ND (11)	**2,000**	ND (28)
Vinyl Chloride	20	ppbv	ND (11)	**2,600**	ND (28)
Percent Methane	0.5	%	0.00037	**2.2**	0.00045

Notes:

Bolded and highlighted results exceed the sub-slab screening level at the 10^{-5} risk level (HI = 1.0).

% = Percent

DCE = Dichloroethylene

HI = Hazard index

ID = Identification

ND = Not detected at method reporting limit

PCE = Tetrachloroethylene

TCE = Trichloroethylene

U.S. EPA = United States Environmental Protection Agency

APPENDIX A
PHOTOGRAPHIC DOCUMENTATION

Site: South Dayton Landfill Site
Photograph No.: 1 **Date:** 7/19/12
Direction: South **Photographer:** John Sherrard
Subject: Geoprobe® subcontractor installing soil gas probes at GP-2

Site: South Dayton Landfill Site
Photograph No.: 2 **Date:** 7/19/12
Direction: East **Photographer:** John Sherrard
Subject: Geoprobe subcontractor installing soil gas probes at GP-2

Site: South Dayton Landfill Site
Photograph No.: 3 **Date:** 7/19/12
Direction: South **Photographer:** John Sherrard
Subject: Soil gas probe with Teflon tubing

Site: South Dayton Landfill Site
Photograph No.: 4 **Date:** 7/19/12
Direction: Down **Photographer:** John Sherrard
Subject: Two soil gas probes in GP-2

Site: South Dayton Landfill Site
Photograph No.: 5 **Date:** 7/19/12
Direction: West **Photographer:** John Sherrard
Subject: Soil gas probe installation at GP-3 (2031 Dryden Road)

Site: South Dayton Landfill Site
Photograph No.: 6 **Date:** 7/19/12
Direction: Southwest **Photographer:** John Sherrard
Subject: Soil gas probe installation at GP-1

Site: South Dayton Landfill Site
Photograph No.: 7 **Date:** 8/30/12
Direction: East **Photographer:** John Sherrard
Subject: Soil gas probe installation at GP-7

Site: South Dayton Landfill Site
Photograph No.: 8 **Date:** 7/30/12
Direction: Southwest **Photographer:** John Sherrard
Subject: Soil gas sample collection at GP-1

Site: South Dayton Landfill Site
Photograph No.: 9 **Date:** 7/30/12
Direction: Down **Photographer:** John Sherrard
Subject: Soil gas sample collection at GP-6

Site: South Dayton Landfill Site
Photograph No.: 10 **Date:** 8/1/12
Direction: Down **Photographer:** John Sherrard
Subject: Split sub-slab sampling at 2373 East River Road

Site: South Dayton Landfill Site
Photograph No.: 11 **Date:** 7/11/12
Direction: Down **Photographer:** Randy Kirkland
Subject: Leak-check testing at 2230 Dryden Road

Site: South Dayton Landfill Site
Photograph No.: 12 **Date:** 7/12/12
Direction: Down **Photographer:** John Sherrard
Subject: Sub-slab sample collection at 2230 Dryden Road

APPENDIX B
DATA VALIDATION REPORT AND VALIDATED ANALYTICAL RESULTS

SOUTH DAYTON LANDFILL
MORAINE, MONTGOMERY COUNTY, OHIO
DATA VALIDATION REPORT

Date: July 26, 2012
Laboratory: Air Toxics Ltd. (Air Toxics), Folsom, California
Laboratory Project #: 1207251
Data Validation Performed By: Lisa Graczyk, Weston Solutions, Inc. (WESTON®) Superfund Technical Assessment and Response Team (START)
Weston Analytical Work Order #/TDD #: 20405.016.008.1869.00/S05-0008-1206-003

This data validation report has been prepared by WESTON START under the START III Region V contract. This report documents the data validation for 3 air sample collected for the South Dayton Landfill Site that were analyzed for the following parameters and methods.

- Volatile Organic Compounds (VOC) by TO-15
- Methane by ASTM Method D-1946

A level II data package was requested from Air Toxics. The data validation was conducted in general accordance with the U.S. EPA "Contract Laboratory Program National Functional Guidance for Superfund Organic Methods Data Review" dated June 2008. The Attachment contains the results summary sheets with the hand-written qualifiers applied during data validation.

VOCs BY U.S. EPA METHOD TO-15

1. Samples

The following table summarizes the samples for which this data validation is being conducted.

Samples	Lab ID	Matrix	Date Collected	Date Analyzed
2230Dryden-SS-071212	1207251A-01A	Air	7/12/2012	7/17/2012
2205ADryden-SS-071212	1207251A-02A	Air	7/12/2012	7/17/2012
2205BDryden-SS-071212	1207251A-03A	Air	7/12/2012	7/17/2012

2. Holding Times

The samples were analyzed within the required holding time limit of 30 days from sample collection.

3. Blanks

A method blank was analyzed with the VOC analysis and was free of target compound contamination above the reporting limit.

4. Surrogate Results

The surrogate recovery results were within the laboratory-established quality control (QC) limits.

5. Continuing Calibration Results

The continuing calibration results were within the QC limits for percent recovery except for chloromethane which had a recovery above the QC limit. Because chloromethane was not detected in the samples, no qualification was required.

6. Laboratory Control Sample (LCS) Results

The LCS and LCS duplicate (LCSD) recoveries were within laboratory QC limits except for as follows. In the LCS and LCSD, carbon disulfide was detected slightly above the QC limit. Because carbon disulfide was not detected in the samples qualifications were not requiered.

7. Overall Assessment

The VOC data are acceptable for use based on the information received.

Data Validation Report
South Dayton Landfill Site
Air Toxics Ltd.
Laboratory Project #: 1207251

METHANE BY ASTM D-1946

1. Samples

The following table summarizes the samples for which this data validation is being conducted.

Samples	Lab ID	Matrix	Date Collected	Date Analyzed
2230Dryden-SS-071212	1207251B-01A	Air	7/12/2012	7/17/2012
2205ADryden-SS-071212	1207251B-02A	Air	7/12/2012	7/17/2012
2205BDryden-SS-071212	1207251B-03A	Air	7/12/2012	7/17/2012

2. Holding Times

The sample was analyzed within the required holding time limit of 30 days from sample collection.

3. Blanks

A method blank was analyzed with the methane analyses and was free of target compound contamination above the reporting limit.

4. LCS Results

The LCS and LCSD recoveries were within laboratory QC limits.

5. Overall Assessment

The methane data are acceptable for use based on the information received.

ATTACHMENT

AIR TOXICS LTD.
RESULTS SUMMARY

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Client Sample ID: 2230Dryden-SS-071212

Lab ID#: 1207251A-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j071725**	**Date of Collection: 7/12/12 10:08:00 AM**	
Dil. Factor:	**1.79**	**Date of Analysis: 7/17/12 10:14 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.90	Not Detected	4.4	Not Detected
Freon 114	0.90	Not Detected	6.2	Not Detected
Chloromethane	9.0	Not Detected	18	Not Detected
Vinyl Chloride	0.90	Not Detected	2.3	Not Detected
1,3-Butadiene	0.90	Not Detected	2.0	Not Detected
Bromomethane	9.0	Not Detected	35	Not Detected
Chloroethane	3.6	Not Detected	9.4	Not Detected
Freon 11	0.90	Not Detected	5.0	Not Detected
Ethanol	3.6	Not Detected	6.7	Not Detected
Freon 113	0.90	Not Detected	6.8	Not Detected
1,1-Dichloroethene	0.90	Not Detected	3.5	Not Detected
Acetone	9.0	Not Detected	21	Not Detected
2-Propanol	3.6	6.1	8.8	15
Carbon Disulfide	3.6	Not Detected	11	Not Detected
3-Chloropropene	3.6	Not Detected	11	Not Detected
Methylene Chloride	9.0	Not Detected	31	Not Detected
Methyl tert-butyl ether	0.90	Not Detected	3.2	Not Detected
trans-1,2-Dichloroethene	0.90	Not Detected	3.5	Not Detected
Hexane	0.90	Not Detected	3.2	Not Detected
1,1-Dichloroethane	0.90	Not Detected	3.6	Not Detected
2-Butanone (Methyl Ethyl Ketone)	3.6	Not Detected	10	Not Detected
cis-1,2-Dichloroethene	0.90	Not Detected	3.5	Not Detected
Tetrahydrofuran	0.90	Not Detected	2.6	Not Detected
Chloroform	0.90	Not Detected	4.4	Not Detected
1,1,1-Trichloroethane	0.90	Not Detected	4.9	Not Detected
Cyclohexane	0.90	Not Detected	3.1	Not Detected
Carbon Tetrachloride	0.90	Not Detected	5.6	Not Detected
2,2,4-Trimethylpentane	0.90	Not Detected	4.2	Not Detected
Benzene	0.90	Not Detected	2.8	Not Detected
1,2-Dichloroethane	0.90	Not Detected	3.6	Not Detected
Heptane	0.90	Not Detected	3.7	Not Detected
Trichloroethene	0.90	Not Detected	4.8	Not Detected
1,2-Dichloropropane	0.90	Not Detected	4.1	Not Detected
1,4-Dioxane	3.6	Not Detected	13	Not Detected
Bromodichloromethane	0.90	Not Detected	6.0	Not Detected
cis-1,3-Dichloropropene	0.90	Not Detected	4.1	Not Detected
4-Methyl-2-pentanone	0.90	Not Detected	3.7	Not Detected
Toluene	0.90	1.0	3.4	3.8
trans-1,3-Dichloropropene	0.90	Not Detected	4.1	Not Detected
1,1,2-Trichloroethane	0.90	Not Detected	4.9	Not Detected
Tetrachloroethene	0.90	Not Detected	6.1	Not Detected
2-Hexanone	3.6	Not Detected	15	Not Detected

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Client Sample ID: 2230Dryden-SS-071212

Lab ID#: 1207251A-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j071725**	**Date of Collection: 7/12/12 10:08:00 AM**	
Dil. Factor:	**1.79**	**Date of Analysis: 7/17/12 10:14 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.90	Not Detected	7.6	Not Detected
1,2-Dibromoethane (EDB)	0.90	Not Detected	6.9	Not Detected
Chlorobenzene	0.90	Not Detected	4.1	Not Detected
Ethyl Benzene	0.90	Not Detected	3.9	Not Detected
m,p-Xylene	0.90	Not Detected	3.9	Not Detected
o-Xylene	0.90	Not Detected	3.9	Not Detected
Styrene	0.90	Not Detected	3.8	Not Detected
Bromoform	0.90	Not Detected	9.2	Not Detected
Cumene	0.90	Not Detected	4.4	Not Detected
1,1,2,2-Tetrachloroethane	0.90	Not Detected	6.1	Not Detected
Propylbenzene	0.90	Not Detected	4.4	Not Detected
4-Ethyltoluene	0.90	Not Detected	4.4	Not Detected
1,3,5-Trimethylbenzene	0.90	Not Detected	4.4	Not Detected
1,2,4-Trimethylbenzene	0.90	Not Detected	4.4	Not Detected
1,3-Dichlorobenzene	0.90	Not Detected	5.4	Not Detected
1,4-Dichlorobenzene	0.90	Not Detected	5.4	Not Detected
alpha-Chlorotoluene	0.90	Not Detected	4.6	Not Detected
1,2-Dichlorobenzene	0.90	Not Detected	5.4	Not Detected
1,2,4-Trichlorobenzene	3.6	Not Detected	26	Not Detected
Hexachlorobutadiene	3.6	Not Detected	38	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	92	70-130
1,2-Dichloroethane-d4	103	70-130
4-Bromofluorobenzene	94	70-130

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Client Sample ID: 2205ADryden-SS-071212

Lab ID#: 1207251A-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j071726**	**Date of Collection: 7/12/12 9:25:00 AM**	
Dil. Factor:	**1.75**	**Date of Analysis: 7/17/12 10:33 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.88	1.6	4.3	7.9
Freon 114	0.88	Not Detected	6.1	Not Detected
Chloromethane	8.8	Not Detected	18	Not Detected
Vinyl Chloride	0.88	Not Detected	2.2	Not Detected
1,3-Butadiene	0.88	Not Detected	1.9	Not Detected
Bromomethane	8.8	Not Detected	34	Not Detected
Chloroethane	3.5	Not Detected	9.2	Not Detected
Freon 11	0.88	2.6	4.9	14
Ethanol	3.5	Not Detected	6.6	Not Detected
Freon 113	0.88	Not Detected	6.7	Not Detected
1,1-Dichloroethene	0.88	Not Detected	3.5	Not Detected
Acetone	8.8	Not Detected	21	Not Detected
2-Propanol	3.5	Not Detected	8.6	Not Detected
Carbon Disulfide	3.5	Not Detected	11	Not Detected
3-Chloropropene	3.5	Not Detected	11	Not Detected
Methylene Chloride	8.8	Not Detected	30	Not Detected
Methyl tert-butyl ether	0.88	Not Detected	3.2	Not Detected
trans-1,2-Dichloroethene	0.88	Not Detected	3.5	Not Detected
Hexane	0.88	Not Detected	3.1	Not Detected
1,1-Dichloroethane	0.88	Not Detected	3.5	Not Detected
2-Butanone (Methyl Ethyl Ketone)	3.5	Not Detected	10	Not Detected
cis-1,2-Dichloroethene	0.88	Not Detected	3.5	Not Detected
Tetrahydrofuran	0.88	Not Detected	2.6	Not Detected
Chloroform	0.88	Not Detected	4.3	Not Detected
1,1,1-Trichloroethane	0.88	34	4.8	180
Cyclohexane	0.88	Not Detected	3.0	Not Detected
Carbon Tetrachloride	0.88	Not Detected	5.5	Not Detected
2,2,4-Trimethylpentane	0.88	Not Detected	4.1	Not Detected
Benzene	0.88	Not Detected	2.8	Not Detected
1,2-Dichloroethane	0.88	Not Detected	3.5	Not Detected
Heptane	0.88	Not Detected	3.6	Not Detected
Trichloroethene	0.88	Not Detected	4.7	Not Detected
1,2-Dichloropropane	0.88	Not Detected	4.0	Not Detected
1,4-Dioxane	3.5	Not Detected	13	Not Detected
Bromodichloromethane	0.88	Not Detected	5.9	Not Detected
cis-1,3-Dichloropropene	0.88	Not Detected	4.0	Not Detected
4-Methyl-2-pentanone	0.88	Not Detected	3.6	Not Detected
Toluene	0.88	Not Detected	3.3	Not Detected
trans-1,3-Dichloropropene	0.88	Not Detected	4.0	Not Detected
1,1,2-Trichloroethane	0.88	Not Detected	4.8	Not Detected
Tetrachloroethene	0.88	Not Detected	5.9	Not Detected
2-Hexanone	3.5	Not Detected	14	Not Detected

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Client Sample ID: 2205ADryden-SS-071212

Lab ID#: 1207251A-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j071726**	**Date of Collection: 7/12/12 9:25:00 AM**	
Dil. Factor:	**1.75**	**Date of Analysis: 7/17/12 10:33 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.88	Not Detected	7.4	Not Detected
1,2-Dibromoethane (EDB)	0.88	Not Detected	6.7	Not Detected
Chlorobenzene	0.88	Not Detected	4.0	Not Detected
Ethyl Benzene	0.88	Not Detected	3.8	Not Detected
m,p-Xylene	0.88	Not Detected	3.8	Not Detected
o-Xylene	0.88	Not Detected	3.8	Not Detected
Styrene	0.88	Not Detected	3.7	Not Detected
Bromoform	0.88	Not Detected	9.0	Not Detected
Cumene	0.88	Not Detected	4.3	Not Detected
1,1,2,2-Tetrachloroethane	0.88	Not Detected	6.0	Not Detected
Propylbenzene	0.88	Not Detected	4.3	Not Detected
4-Ethyltoluene	0.88	Not Detected	4.3	Not Detected
1,3,5-Trimethylbenzene	0.88	Not Detected	4.3	Not Detected
1,2,4-Trimethylbenzene	0.88	Not Detected	4.3	Not Detected
1,3-Dichlorobenzene	0.88	Not Detected	5.3	Not Detected
1,4-Dichlorobenzene	0.88	Not Detected	5.3	Not Detected
alpha-Chlorotoluene	0.88	Not Detected	4.5	Not Detected
1,2-Dichlorobenzene	0.88	Not Detected	5.3	Not Detected
1,2,4-Trichlorobenzene	3.5	Not Detected	26	Not Detected
Hexachlorobutadiene	3.5	Not Detected	37	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	88	70-130
1,2-Dichloroethane-d4	110	70-130
4-Bromofluorobenzene	94	70-130

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Client Sample ID: 2205BDryden-SS-071212

Lab ID#: 1207251A-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j071727**	**Date of Collection: 7/12/12 9:37:00 AM**	
Dil. Factor:	**1.71**	**Date of Analysis: 7/17/12 10:51 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.86	Not Detected	4.2	Not Detected
Freon 114	0.86	Not Detected	6.0	Not Detected
Chloromethane	8.6	Not Detected	18	Not Detected
Vinyl Chloride	0.86	Not Detected	2.2	Not Detected
1,3-Butadiene	0.86	Not Detected	1.9	Not Detected
Bromomethane	8.6	Not Detected	33	Not Detected
Chloroethane	3.4	Not Detected	9.0	Not Detected
Freon 11	0.86	Not Detected	4.8	Not Detected
Ethanol	3.4	Not Detected	6.4	Not Detected
Freon 113	0.86	Not Detected	6.6	Not Detected
1,1-Dichloroethene	0.86	Not Detected	3.4	Not Detected
Acetone	8.6	Not Detected	20	Not Detected
2-Propanol	3.4	Not Detected	8.4	Not Detected
Carbon Disulfide	3.4	Not Detected	11	Not Detected
3-Chloropropene	3.4	Not Detected	11	Not Detected
Methylene Chloride	8.6	Not Detected	30	Not Detected
Methyl tert-butyl ether	0.86	Not Detected	3.1	Not Detected
trans-1,2-Dichloroethene	0.86	Not Detected	3.4	Not Detected
Hexane	0.86	Not Detected	3.0	Not Detected
1,1-Dichloroethane	0.86	Not Detected	3.5	Not Detected
2-Butanone (Methyl Ethyl Ketone)	3.4	Not Detected	10	Not Detected
cis-1,2-Dichloroethene	0.86	Not Detected	3.4	Not Detected
Tetrahydrofuran	0.86	Not Detected	2.5	Not Detected
Chloroform	0.86	Not Detected	4.2	Not Detected
1,1,1-Trichloroethane	0.86	7.3	4.7	40
Cyclohexane	0.86	Not Detected	2.9	Not Detected
Carbon Tetrachloride	0.86	Not Detected	5.4	Not Detected
2,2,4-Trimethylpentane	0.86	Not Detected	4.0	Not Detected
Benzene	0.86	Not Detected	2.7	Not Detected
1,2-Dichloroethane	0.86	Not Detected	3.5	Not Detected
Heptane	0.86	Not Detected	3.5	Not Detected
Trichloroethene	0.86	Not Detected	4.6	Not Detected
1,2-Dichloropropane	0.86	Not Detected	4.0	Not Detected
1,4-Dioxane	3.4	Not Detected	12	Not Detected
Bromodichloromethane	0.86	Not Detected	5.7	Not Detected
cis-1,3-Dichloropropene	0.86	Not Detected	3.9	Not Detected
4-Methyl-2-pentanone	0.86	Not Detected	3.5	Not Detected
Toluene	0.86	Not Detected	3.2	Not Detected
trans-1,3-Dichloropropene	0.86	Not Detected	3.9	Not Detected
1,1,2-Trichloroethane	0.86	Not Detected	4.7	Not Detected
Tetrachloroethene	0.86	110	5.8	750
2-Hexanone	3.4	Not Detected	14	Not Detected

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Client Sample ID: 2205BDryden-SS-071212

Lab ID#: 1207251A-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j071727**	**Date of Collection: 7/12/12 9:37:00 AM**	
Dil. Factor:	**1.71**	**Date of Analysis: 7/17/12 10:51 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.86	Not Detected	7.3	Not Detected
1,2-Dibromoethane (EDB)	0.86	Not Detected	6.6	Not Detected
Chlorobenzene	0.86	Not Detected	3.9	Not Detected
Ethyl Benzene	0.86	Not Detected	3.7	Not Detected
m,p-Xylene	0.86	Not Detected	3.7	Not Detected
o-Xylene	0.86	Not Detected	3.7	Not Detected
Styrene	0.86	Not Detected	3.6	Not Detected
Bromoform	0.86	Not Detected	8.8	Not Detected
Cumene	0.86	Not Detected	4.2	Not Detected
1,1,2,2-Tetrachloroethane	0.86	Not Detected	5.9	Not Detected
Propylbenzene	0.86	Not Detected	4.2	Not Detected
4-Ethyltoluene	0.86	Not Detected	4.2	Not Detected
1,3,5-Trimethylbenzene	0.86	Not Detected	4.2	Not Detected
1,2,4-Trimethylbenzene	0.86	Not Detected	4.2	Not Detected
1,3-Dichlorobenzene	0.86	Not Detected	5.1	Not Detected
1,4-Dichlorobenzene	0.86	Not Detected	5.1	Not Detected
alpha-Chlorotoluene	0.86	Not Detected	4.4	Not Detected
1,2-Dichlorobenzene	0.86	Not Detected	5.1	Not Detected
1,2,4-Trichlorobenzene	3.4	Not Detected	25	Not Detected
Hexachlorobutadiene	3.4	Not Detected	36	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	92	70-130
1,2-Dichloroethane-d4	104	70-130
4-Bromofluorobenzene	91	70-130

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Client Sample ID: 2230Dryden-SS-071212

Lab ID#: 1207251B-01A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9071710**	**Date of Collection: 7/12/12 10:08:00 AM**	
Dil. Factor:	**1.79**	**Date of Analysis: 7/17/12 02:48 PM**	

Compound	**Rpt. Limit (%)**	**Amount (%)**
Methane	0.00018	0.00022

Container Type: 6 Liter Summa Canister

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Client Sample ID: 2205ADryden-SS-071212

Lab ID#: 1207251B-02A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9071711**	**Date of Collection: 7/12/12 9:25:00 AM**	
Dil. Factor:	**1.75**	**Date of Analysis: 7/17/12 03:29 PM**	

Compound	**Rpt. Limit (%)**	**Amount (%)**
Methane	0.00018	Not Detected

Container Type: 6 Liter Summa Canister

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Client Sample ID: 2205BDryden-SS-071212

Lab ID#: 1207251B-03A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9071712**	**Date of Collection: 7/12/12 9:37:00 AM**	
Dil. Factor:	**1.71**	**Date of Analysis: 7/17/12 03:58 PM**	

Compound	**Rpt. Limit (%)**	**Amount (%)**
Methane	0.00017	Not Detected

Container Type: 6 Liter Summa Canister

SOUTH DAYTON LANDFILL
MORAINE, MONTGOMERY COUNTY, OHIO
DATA VALIDATION REPORT

Date: August 15, 2012
Laboratory: Air Toxics Ltd. (Air Toxics), Folsom, California
Laboratory Project #: 1208004
Data Validation Performed By: Lisa Graczyk, Weston Solutions, Inc. (WESTON®) Superfund Technical Assessment and Response Team (START)
Weston Analytical Work Order #/TDD #: 20405.016.008.1869.00/S05-0008-1206-003

This data validation report has been prepared by WESTON START under the START III Region V contract. This report documents the data validation for four air sample collected for the South Dayton Landfill Site that were analyzed for the following parameters and methods.

- Volatile Organic Compounds (VOC) by TO-15
- Methane by ASTM Method D-1946

A level II data package was requested from Air Toxics. The data validation was conducted in general accordance with the U.S. EPA "Contract Laboratory Program National Functional Guidance for Superfund Organic Methods Data Review" dated June 2008. The Attachment contains the results summary sheets with the hand-written qualifiers applied during data validation.

VOCs BY U.S. EPA METHOD TO-15

1. Samples

The following table summarizes the samples for which this data validation is being conducted.

Samples	Lab ID	Matrix	Date Collected	Date Analyzed
SDL-GP1-8-073012	1208004A-01A	Air	7/30/2012	8/2/2012
SDL-GP3-8-073012	1208004A-02A	Air	7/30/2012	8/2/2012
SDL-GP4-16-073012	1208004A-03A	Air	7/30/2012	8/2/2012
SDL-GP6-12-073012	1208004A-04A	Air	7/30/2012	8/2/2012

2. Holding Times

The samples were analyzed within the required holding time limit of 30 days from sample collection.

3. Blanks

A method blank was analyzed with the VOC analysis and was free of target compound contamination above the reporting limit.

4. Surrogate Results

The surrogate recovery results were within the laboratory-established quality control (QC) limits.

5. Continuing Calibration Results

The continuing calibration results were within the QC limits for percent recovery except for bromomethane which had a recovery above the QC limit. Because bromomethane was not detected in the samples, no qualification was required.

6. Laboratory Control Sample (LCS) Results

The LCS and LCS duplicate (LCSD) recoveries were within laboratory QC limits except for as follows. In the LCS and LCSD, bromomethane was detected slightly above the QC limit. Because bromomethane was not detected in the samples qualifications were not required.

7. Overall Assessment

The VOC data are acceptable for use based on the information received.

Data Validation Report
South Dayton Landfill Site
Air Toxics Ltd.
Laboratory Project #: 1208004

METHANE BY ASTM D-1946

1. Samples

The following table summarizes the samples for which this data validation is being conducted.

Samples	Lab ID	Matrix	Date Collected	Date Analyzed
SDL-GP1-8-073012	1208004B-01A	Air	7/30/2012	8/7/2012
SDL-GP3-8-073012	1208004B-02A	Air	7/30/2012	8/7/2012
SDL-GP4-16-073012	1208004B-03A	Air	7/30/2012	8/7/2012
SDL-GP6-12-073012	1208004B-04A	Air	7/30/2012	8/7/2012

2. Holding Times

The sample was analyzed within the required holding time limit of 30 days from sample collection.

3. Blanks

A method blank was analyzed with the methane analyses and was free of target compound contamination above the reporting limit.

4. LCS Results

The LCS and LCSD recoveries were within laboratory QC limits.

5. Overall Assessment

The methane data are acceptable for use based on the information received.

ATTACHMENT

AIR TOXICS LTD.
RESULTS SUMMARY

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Client Sample ID: SDL-GP1-8-073012

Lab ID#: 1208004A-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j080222**	**Date of Collection:**	**7/30/12 12:25:00 PM**
Dil. Factor:	**1.55**	**Date of Analysis:**	**8/2/12 09:01 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.78	Not Detected	3.8	Not Detected
Freon 114	0.78	Not Detected	5.4	Not Detected
Chloromethane	7.8	Not Detected	16	Not Detected
Vinyl Chloride	0.78	Not Detected	2.0	Not Detected
1,3-Butadiene	0.78	Not Detected	1.7	Not Detected
Bromomethane	7.8	Not Detected	30	Not Detected
Chloroethane	3.1	Not Detected	8.2	Not Detected
Freon 11	0.78	Not Detected	4.4	Not Detected
Ethanol	3.1	Not Detected	5.8	Not Detected
Freon 113	0.78	Not Detected	5.9	Not Detected
1,1-Dichloroethene	0.78	Not Detected	3.1	Not Detected
Acetone	7.8	9.0	18	21
2-Propanol	3.1	Not Detected	7.6	Not Detected
Carbon Disulfide	3.1	Not Detected	9.6	Not Detected
3-Chloropropene	3.1	Not Detected	9.7	Not Detected
Methylene Chloride	7.8	Not Detected	27	Not Detected
Methyl tert-butyl ether	0.78	Not Detected	2.8	Not Detected
trans-1,2-Dichloroethene	0.78	Not Detected	3.1	Not Detected
Hexane	0.78	Not Detected	2.7	Not Detected
1,1-Dichloroethane	0.78	Not Detected	3.1	Not Detected
2-Butanone (Methyl Ethyl Ketone)	3.1	Not Detected	9.1	Not Detected
cis-1,2-Dichloroethene	0.78	Not Detected	3.1	Not Detected
Tetrahydrofuran	0.78	Not Detected	2.3	Not Detected
Chloroform	0.78	Not Detected	3.8	Not Detected
1,1,1-Trichloroethane	0.78	1.0	4.2	5.8
Cyclohexane	0.78	Not Detected	2.7	Not Detected
Carbon Tetrachloride	0.78	Not Detected	4.9	Not Detected
2,2,4-Trimethylpentane	0.78	Not Detected	3.6	Not Detected
Benzene	0.78	Not Detected	2.5	Not Detected
1,2-Dichloroethane	0.78	Not Detected	3.1	Not Detected
Heptane	0.78	Not Detected	3.2	Not Detected
Trichloroethene	0.78	Not Detected	4.2	Not Detected
1,2-Dichloropropane	0.78	Not Detected	3.6	Not Detected
1,4-Dioxane	3.1	Not Detected	11	Not Detected
Bromodichloromethane	0.78	Not Detected	5.2	Not Detected
cis-1,3-Dichloropropene	0.78	Not Detected	3.5	Not Detected
4-Methyl-2-pentanone	0.78	Not Detected	3.2	Not Detected
Toluene	0.78	Not Detected	2.9	Not Detected
trans-1,3-Dichloropropene	0.78	Not Detected	3.5	Not Detected
1,1,2-Trichloroethane	0.78	Not Detected	4.2	Not Detected
Tetrachloroethene	0.78	0.88	5.2	6.0
2-Hexanone	3.1	Not Detected	13	Not Detected

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Client Sample ID: SDL-GP1-8-073012

Lab ID#: 1208004A-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j080222**	**Date of Collection:**	**7/30/12 12:25:00 PM**
Dil. Factor:	**1.55**	**Date of Analysis:**	**8/2/12 09:01 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.78	Not Detected	6.6	Not Detected
1,2-Dibromoethane (EDB)	0.78	Not Detected	6.0	Not Detected
Chlorobenzene	0.78	Not Detected	3.6	Not Detected
Ethyl Benzene	0.78	Not Detected	3.4	Not Detected
m,p-Xylene	0.78	1.1	3.4	4.9
o-Xylene	0.78	Not Detected	3.4	Not Detected
Styrene	0.78	Not Detected	3.3	Not Detected
Bromoform	0.78	Not Detected	8.0	Not Detected
Cumene	0.78	Not Detected	3.8	Not Detected
1,1,2,2-Tetrachloroethane	0.78	Not Detected	5.3	Not Detected
Propylbenzene	0.78	Not Detected	3.8	Not Detected
4-Ethyltoluene	0.78	Not Detected	3.8	Not Detected
1,3,5-Trimethylbenzene	0.78	Not Detected	3.8	Not Detected
1,2,4-Trimethylbenzene	0.78	1.8	3.8	8.7
1,3-Dichlorobenzene	0.78	Not Detected	4.6	Not Detected
1,4-Dichlorobenzene	0.78	Not Detected	4.6	Not Detected
alpha-Chlorotoluene	0.78	Not Detected	4.0	Not Detected
1,2-Dichlorobenzene	0.78	Not Detected	4.6	Not Detected
1,2,4-Trichlorobenzene	3.1	Not Detected	23	Not Detected
Hexachlorobutadiene	3.1	Not Detected	33	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	93	70-130
1,2-Dichloroethane-d4	105	70-130
4-Bromofluorobenzene	103	70-130

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Client Sample ID: SDL-GP3-8-073012

Lab ID#: 1208004A-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j080223**	**Date of Collection: 7/30/12 1:10:00 PM**	
Dil. Factor:	**1.55**	**Date of Analysis: 8/2/12 09:24 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.78	0.88	3.8	4.3
Freon 114	0.78	Not Detected	5.4	Not Detected
Chloromethane	7.8	Not Detected	16	Not Detected
Vinyl Chloride	0.78	Not Detected	2.0	Not Detected
1,3-Butadiene	0.78	Not Detected	1.7	Not Detected
Bromomethane	7.8	Not Detected	30	Not Detected
Chloroethane	3.1	Not Detected	8.2	Not Detected
Freon 11	0.78	Not Detected	4.4	Not Detected
Ethanol	3.1	Not Detected	5.8	Not Detected
Freon 113	0.78	Not Detected	5.9	Not Detected
1,1-Dichloroethene	0.78	Not Detected	3.1	Not Detected
Acetone	7.8	Not Detected	18	Not Detected
2-Propanol	3.1	Not Detected	7.6	Not Detected
Carbon Disulfide	3.1	Not Detected	9.6	Not Detected
3-Chloropropene	3.1	Not Detected	9.7	Not Detected
Methylene Chloride	7.8	Not Detected	27	Not Detected
Methyl tert-butyl ether	0.78	Not Detected	2.8	Not Detected
trans-1,2-Dichloroethene	0.78	Not Detected	3.1	Not Detected
Hexane	0.78	Not Detected	2.7	Not Detected
1,1-Dichloroethane	0.78	Not Detected	3.1	Not Detected
2-Butanone (Methyl Ethyl Ketone)	3.1	Not Detected	9.1	Not Detected
cis-1,2-Dichloroethene	0.78	0.83	3.1	3.3
Tetrahydrofuran	0.78	Not Detected	2.3	Not Detected
Chloroform	0.78	Not Detected	3.8	Not Detected
1,1,1-Trichloroethane	0.78	3.1	4.2	17
Cyclohexane	0.78	Not Detected	2.7	Not Detected
Carbon Tetrachloride	0.78	Not Detected	4.9	Not Detected
2,2,4-Trimethylpentane	0.78	Not Detected	3.6	Not Detected
Benzene	0.78	Not Detected	2.5	Not Detected
1,2-Dichloroethane	0.78	Not Detected	3.1	Not Detected
Heptane	0.78	Not Detected	3.2	Not Detected
Trichloroethene	0.78	120	4.2	670
1,2-Dichloropropane	0.78	Not Detected	3.6	Not Detected
1,4-Dioxane	3.1	Not Detected	11	Not Detected
Bromodichloromethane	0.78	Not Detected	5.2	Not Detected
cis-1,3-Dichloropropene	0.78	Not Detected	3.5	Not Detected
4-Methyl-2-pentanone	0.78	Not Detected	3.2	Not Detected
Toluene	0.78	Not Detected	2.9	Not Detected
trans-1,3-Dichloropropene	0.78	Not Detected	3.5	Not Detected
1,1,2-Trichloroethane	0.78	Not Detected	4.2	Not Detected
Tetrachloroethene	0.78	3.2	5.2	22
2-Hexanone	3.1	Not Detected	13	Not Detected

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Client Sample ID: SDL-GP3-8-073012

Lab ID#: 1208004A-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j080223**	**Date of Collection:**	**7/30/12 1:10:00 PM**
Dil. Factor:	**1.55**	**Date of Analysis:**	**8/2/12 09:24 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.78	Not Detected	6.6	Not Detected
1,2-Dibromoethane (EDB)	0.78	Not Detected	6.0	Not Detected
Chlorobenzene	0.78	Not Detected	3.6	Not Detected
Ethyl Benzene	0.78	Not Detected	3.4	Not Detected
m,p-Xylene	0.78	Not Detected	3.4	Not Detected
o-Xylene	0.78	Not Detected	3.4	Not Detected
Styrene	0.78	Not Detected	3.3	Not Detected
Bromoform	0.78	Not Detected	8.0	Not Detected
Cumene	0.78	Not Detected	3.8	Not Detected
1,1,2,2-Tetrachloroethane	0.78	Not Detected	5.3	Not Detected
Propylbenzene	0.78	Not Detected	3.8	Not Detected
4-Ethyltoluene	0.78	Not Detected	3.8	Not Detected
1,3,5-Trimethylbenzene	0.78	Not Detected	3.8	Not Detected
1,2,4-Trimethylbenzene	0.78	0.83	3.8	4.1
1,3-Dichlorobenzene	0.78	Not Detected	4.6	Not Detected
1,4-Dichlorobenzene	0.78	Not Detected	4.6	Not Detected
alpha-Chlorotoluene	0.78	Not Detected	4.0	Not Detected
1,2-Dichlorobenzene	0.78	Not Detected	4.6	Not Detected
1,2,4-Trichlorobenzene	3.1	Not Detected	23	Not Detected
Hexachlorobutadiene	3.1	Not Detected	33	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	94	70-130
1,2-Dichloroethane-d4	108	70-130
4-Bromofluorobenzene	102	70-130

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Client Sample ID: SDL-GP4-16-073012

Lab ID#: 1208004A-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j080224**	**Date of Collection:**	**7/30/12 1:25:00 PM**
Dil. Factor:	**1.52**	**Date of Analysis:**	**8/2/12 09:45 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.76	Not Detected	3.8	Not Detected
Freon 114	0.76	Not Detected	5.3	Not Detected
Chloromethane	7.6	Not Detected	16	Not Detected
Vinyl Chloride	0.76	Not Detected	1.9	Not Detected
1,3-Butadiene	0.76	Not Detected	1.7	Not Detected
Bromomethane	7.6	Not Detected	30	Not Detected
Chloroethane	3.0	Not Detected	8.0	Not Detected
Freon 11	0.76	Not Detected	4.3	Not Detected
Ethanol	3.0	Not Detected	5.7	Not Detected
Freon 113	0.76	Not Detected	5.8	Not Detected
1,1-Dichloroethene	0.76	Not Detected	3.0	Not Detected
Acetone	7.6	Not Detected	18	Not Detected
2-Propanol	3.0	Not Detected	7.5	Not Detected
Carbon Disulfide	3.0	Not Detected	9.5	Not Detected
3-Chloropropene	3.0	Not Detected	9.5	Not Detected
Methylene Chloride	7.6	Not Detected	26	Not Detected
Methyl tert-butyl ether	0.76	Not Detected	2.7	Not Detected
trans-1,2-Dichloroethene	0.76	Not Detected	3.0	Not Detected
Hexane	0.76	0.96	2.7	3.4
1,1-Dichloroethane	0.76	Not Detected	3.1	Not Detected
2-Butanone (Methyl Ethyl Ketone)	3.0	Not Detected	9.0	Not Detected
cis-1,2-Dichloroethene	0.76	Not Detected	3.0	Not Detected
Tetrahydrofuran	0.76	Not Detected	2.2	Not Detected
Chloroform	0.76	1.2	3.7	5.8
1,1,1-Trichloroethane	0.76	Not Detected	4.1	Not Detected
Cyclohexane	0.76	1.4	2.6	4.9
Carbon Tetrachloride	0.76	Not Detected	4.8	Not Detected
2,2,4-Trimethylpentane	0.76	Not Detected	3.6	Not Detected
Benzene	0.76	1.7	2.4	5.5
1,2-Dichloroethane	0.76	Not Detected	3.1	Not Detected
Heptane	0.76	Not Detected	3.1	Not Detected
Trichloroethene	0.76	49	4.1	260
1,2-Dichloropropane	0.76	Not Detected	3.5	Not Detected
1,4-Dioxane	3.0	Not Detected	11	Not Detected
Bromodichloromethane	0.76	Not Detected	5.1	Not Detected
cis-1,3-Dichloropropene	0.76	Not Detected	3.4	Not Detected
4-Methyl-2-pentanone	0.76	Not Detected	3.1	Not Detected
Toluene	0.76	2.8	2.9	10
trans-1,3-Dichloropropene	0.76	Not Detected	3.4	Not Detected
1,1,2-Trichloroethane	0.76	Not Detected	4.1	Not Detected
Tetrachloroethene	0.76	1.0	5.2	7.1
2-Hexanone	3.0	Not Detected	12	Not Detected

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Client Sample ID: SDL-GP4-16-073012

Lab ID#: 1208004A-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j080224**	**Date of Collection:**	**7/30/12 1:25:00 PM**
Dil. Factor:	**1.52**	**Date of Analysis:**	**8/2/12 09:45 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.76	Not Detected	6.5	Not Detected
1,2-Dibromoethane (EDB)	0.76	Not Detected	5.8	Not Detected
Chlorobenzene	0.76	Not Detected	3.5	Not Detected
Ethyl Benzene	0.76	0.96	3.3	4.2
m,p-Xylene	0.76	1.1	3.3	4.6
o-Xylene	0.76	Not Detected	3.3	Not Detected
Styrene	0.76	Not Detected	3.2	Not Detected
Bromoform	0.76	Not Detected	7.8	Not Detected
Cumene	0.76	Not Detected	3.7	Not Detected
1,1,2,2-Tetrachloroethane	0.76	Not Detected	5.2	Not Detected
Propylbenzene	0.76	Not Detected	3.7	Not Detected
4-Ethyltoluene	0.76	Not Detected	3.7	Not Detected
1,3,5-Trimethylbenzene	0.76	Not Detected	3.7	Not Detected
1,2,4-Trimethylbenzene	0.76	Not Detected	3.7	Not Detected
1,3-Dichlorobenzene	0.76	Not Detected	4.6	Not Detected
1,4-Dichlorobenzene	0.76	Not Detected	4.6	Not Detected
alpha-Chlorotoluene	0.76	Not Detected	3.9	Not Detected
1,2-Dichlorobenzene	0.76	Not Detected	4.6	Not Detected
1,2,4-Trichlorobenzene	3.0	Not Detected	22	Not Detected
Hexachlorobutadiene	3.0	Not Detected	32	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	98	70-130
1,2-Dichloroethane-d4	108	70-130
4-Bromofluorobenzene	104	70-130

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Client Sample ID: SDL-GP6-12-073012

Lab ID#: 1208004A-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j080225**	**Date of Collection:**	**7/30/12 1:40:00 PM**
Dil. Factor:	**1.49**	**Date of Analysis:**	**8/2/12 10:03 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.74	0.77	3.7	3.8
Freon 114	0.74	Not Detected	5.2	Not Detected
Chloromethane	7.4	Not Detected	15	Not Detected
Vinyl Chloride	0.74	Not Detected	1.9	Not Detected
1,3-Butadiene	0.74	Not Detected	1.6	Not Detected
Bromomethane	7.4	Not Detected	29	Not Detected
Chloroethane	3.0	Not Detected	7.9	Not Detected
Freon 11	0.74	Not Detected	4.2	Not Detected
Ethanol	3.0	Not Detected	5.6	Not Detected
Freon 113	0.74	Not Detected	5.7	Not Detected
1,1-Dichloroethene	0.74	Not Detected	3.0	Not Detected
Acetone	7.4	9.0	18	21
2-Propanol	3.0	Not Detected	7.3	Not Detected
Carbon Disulfide	3.0	Not Detected	9.3	Not Detected
3-Chloropropene	3.0	Not Detected	9.3	Not Detected
Methylene Chloride	7.4	Not Detected	26	Not Detected
Methyl tert-butyl ether	0.74	Not Detected	2.7	Not Detected
trans-1,2-Dichloroethene	0.74	Not Detected	3.0	Not Detected
Hexane	0.74	Not Detected	2.6	Not Detected
1,1-Dichloroethane	0.74	Not Detected	3.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	3.0	3.2	8.8	9.6
cis-1,2-Dichloroethene	0.74	Not Detected	3.0	Not Detected
Tetrahydrofuran	0.74	Not Detected	2.2	Not Detected
Chloroform	0.74	Not Detected	3.6	Not Detected
1,1,1-Trichloroethane	0.74	Not Detected	4.1	Not Detected
Cyclohexane	0.74	Not Detected	2.6	Not Detected
Carbon Tetrachloride	0.74	Not Detected	4.7	Not Detected
2,2,4-Trimethylpentane	0.74	Not Detected	3.5	Not Detected
Benzene	0.74	Not Detected	2.4	Not Detected
1,2-Dichloroethane	0.74	Not Detected	3.0	Not Detected
Heptane	0.74	Not Detected	3.0	Not Detected
Trichloroethene	0.74	41	4.0	220
1,2-Dichloropropane	0.74	Not Detected	3.4	Not Detected
1,4-Dioxane	3.0	Not Detected	11	Not Detected
Bromodichloromethane	0.74	Not Detected	5.0	Not Detected
cis-1,3-Dichloropropene	0.74	Not Detected	3.4	Not Detected
4-Methyl-2-pentanone	0.74	Not Detected	3.0	Not Detected
Toluene	0.74	Not Detected	2.8	Not Detected
trans-1,3-Dichloropropene	0.74	Not Detected	3.4	Not Detected
1,1,2-Trichloroethane	0.74	Not Detected	4.1	Not Detected
Tetrachloroethene	0.74	10	5.0	69
2-Hexanone	3.0	Not Detected	12	Not Detected

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Client Sample ID: SDL-GP6-12-073012

Lab ID#: 1208004A-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j080225**	**Date of Collection:**	**7/30/12 1:40:00 PM**
Dil. Factor:	**1.49**	**Date of Analysis:**	**8/2/12 10:03 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.74	Not Detected	6.3	Not Detected
1,2-Dibromoethane (EDB)	0.74	Not Detected	5.7	Not Detected
Chlorobenzene	0.74	Not Detected	3.4	Not Detected
Ethyl Benzene	0.74	Not Detected	3.2	Not Detected
m,p-Xylene	0.74	Not Detected	3.2	Not Detected
o-Xylene	0.74	Not Detected	3.2	Not Detected
Styrene	0.74	Not Detected	3.2	Not Detected
Bromoform	0.74	Not Detected	7.7	Not Detected
Cumene	0.74	Not Detected	3.7	Not Detected
1,1,2,2-Tetrachloroethane	0.74	Not Detected	5.1	Not Detected
Propylbenzene	0.74	Not Detected	3.7	Not Detected
4-Ethyltoluene	0.74	Not Detected	3.7	Not Detected
1,3,5-Trimethylbenzene	0.74	Not Detected	3.7	Not Detected
1,2,4-Trimethylbenzene	0.74	Not Detected	3.7	Not Detected
1,3-Dichlorobenzene	0.74	Not Detected	4.5	Not Detected
1,4-Dichlorobenzene	0.74	Not Detected	4.5	Not Detected
alpha-Chlorotoluene	0.74	Not Detected	3.8	Not Detected
1,2-Dichlorobenzene	0.74	Not Detected	4.5	Not Detected
1,2,4-Trichlorobenzene	3.0	Not Detected	22	Not Detected
Hexachlorobutadiene	3.0	Not Detected	32	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	94	70-130
1,2-Dichloroethane-d4	110	70-130
4-Bromofluorobenzene	102	70-130

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Client Sample ID: SDL-GP1-8-073012

Lab ID#: 1208004B-01A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9080710**	**Date of Collection: 7/30/12 12:25:00 PM**	
Dil. Factor:	**1.55**	**Date of Analysis: 8/7/12 03:22 PM**	

Compound	**Rpt. Limit (%)**	**Amount (%)**
Methane	0.00016	Not Detected

Container Type: 6 Liter Summa Canister

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Client Sample ID: SDL-GP3-8-073012

Lab ID#: 1208004B-02A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9080711**	**Date of Collection: 7/30/12 1:10:00 PM**	
Dil. Factor:	**1.55**	**Date of Analysis: 8/7/12 03:49 PM**	

Compound	Rpt. Limit (%)	Amount (%)
Methane	0.00016	Not Detected

Container Type: 6 Liter Summa Canister

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Client Sample ID: SDL-GP4-16-073012

Lab ID#: 1208004B-03A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9080712**	**Date of Collection: 7/30/12 1:25:00 PM**	
Dil. Factor:	**1.52**	**Date of Analysis: 8/7/12 04:21 PM**	

Compound	**Rpt. Limit (%)**	**Amount (%)**
Methane	0.00015	Not Detected

Container Type: 6 Liter Summa Canister

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Client Sample ID: SDL-GP6-12-073012

Lab ID#: 1208004B-04A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9080713**	**Date of Collection: 7/30/12 1:40:00 PM**	
Dil. Factor:	**1.49**	**Date of Analysis: 8/7/12 04:43 PM**	

Compound	**Rpt. Limit (%)**	**Amount (%)**
Methane	0.00015	Not Detected

Container Type: 6 Liter Summa Canister

SOUTH DAYTON LANDFILL
MORAINE, MONTGOMERY COUNTY, OHIO
DATA VALIDATION REPORT

Date: August 15, 2012
Laboratory: Air Toxics Ltd. (Air Toxics), Folsom, California
Laboratory Project #: 1208065
Data Validation Performed By: Lisa Graczyk, Weston Solutions, Inc. (WESTON®) Superfund Technical Assessment and Response Team (START)
Weston Analytical Work Order #/TDD #: 20405.016.008.1869.00/S05-0008-1206-003

This data validation report has been prepared by WESTON START under the START III Region V contract. This report documents the data validation for three air sample collected for the South Dayton Landfill Site that were analyzed for the following parameters and methods.

- Volatile Organic Compounds (VOC) by TO-15
- Methane by ASTM Method D-1946

A level II data package was requested from Air Toxics. The data validation was conducted in general accordance with the U.S. EPA "Contract Laboratory Program National Functional Guidance for Superfund Organic Methods Data Review" dated June 2008. The Attachment contains the results summary sheets with the hand-written qualifiers applied during data validation.

VOCs BY U.S. EPA METHOD TO-15

1. Samples

The following table summarizes the samples for which this data validation is being conducted.

Samples	Lab ID	Matrix	Date Collected	Date Analyzed
2391RIVER-SS-080112	1208065A-01A	Air	8/1/2012	8/6/2012
2232RIVER-SS-080112	1208065A-02A	Air	8/1/2012	8/6/2012
2373RIVER-SS-080112	1208065A-03A	Air	8/1/2012	8/6/2012

2. Holding Times

The samples were analyzed within the required holding time limit of 30 days from sample collection.

3. Blanks

A method blank was analyzed with the VOC analysis and was free of target compound contamination above the reporting limit.

4. Surrogate Results

The surrogate recovery results were within the laboratory-established quality control (QC) limits.

5. Continuing Calibration Results

The continuing calibration results were within the QC limits for percent recovery.

6. Laboratory Control Sample (LCS) Results

The LCS and LCS duplicate (LCSD) recoveries were within laboratory QC limits except for as follows. In the LCS and LCSD, ethanol was detected low (below QC limit) and methy- tert butyl ether (MTBE) was detected slightly above the QC limit. Because MTBE was not detected in the samples, no qualifications were required. Fore ethanol, the quantitation limits were flagged "UJ" as estimated.

7. Overall Assessment

The VOC data are acceptable for use as qualified based on the information received.

Data Validation Report
South Dayton Landfill Site
Air Toxics Ltd.
Laboratory Project #: 1208065

METHANE BY ASTM D-1946

1. Samples

The following table summarizes the samples for which this data validation is being conducted.

Samples	Lab ID	Matrix	Date Collected	Date Analyzed
2391RIVER-SS-080112	1208065B-01A	Air	8/1/2012	8/8/2012
2232RIVER-SS-080112	1208065B-02A	Air	8/1/2012	8/8/2012
2373RIVER-SS-080112	1208065B-03A	Air	8/1/2012	8/8/2012

2. Holding Times

The sample was analyzed within the required holding time limit of 30 days from sample collection.

3. Blanks

A method blank was analyzed with the methane analyses and was free of target compound contamination above the reporting limit.

4. LCS Results

The LCS and LCSD recoveries were within laboratory QC limits.

5. Overall Assessment

The methane data are acceptable for use based on the information received.

ATTACHMENT

AIR TOXICS LTD.
RESULTS SUMMARY

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Client Sample ID: 2391RIVER-SS-080112

Lab ID#: 1208065A-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p080611**	**Date of Collection:**	**8/1/12 10:57:00 AM**
Dil. Factor:	**1.79**	**Date of Analysis:**	**8/6/12 02:05 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.90	Not Detected	4.4	Not Detected
Freon 114	0.90	Not Detected	6.2	Not Detected
Chloromethane	9.0	Not Detected	18	Not Detected
Vinyl Chloride	0.90	Not Detected	2.3	Not Detected
1,3-Butadiene	0.90	Not Detected	2.0	Not Detected
Bromomethane	9.0	Not Detected	35	Not Detected
Chloroethane	3.6	Not Detected	9.4	Not Detected
Freon 11	0.90	Not Detected	5.0	Not Detected
Ethanol	3.6 UJ	Not Detected	6.7 UJ	Not Detected
Freon 113	0.90	Not Detected	6.8	Not Detected
1,1-Dichloroethene	0.90	Not Detected	3.5	Not Detected
Acetone	9.0	Not Detected	21	Not Detected
2-Propanol	3.6	Not Detected	8.8	Not Detected
Carbon Disulfide	3.6	Not Detected	11	Not Detected
3-Chloropropene	3.6	Not Detected	11	Not Detected
Methylene Chloride	9.0	Not Detected	31	Not Detected
Methyl tert-butyl ether	0.90	Not Detected	3.2	Not Detected
trans-1,2-Dichloroethene	0.90	Not Detected	3.5	Not Detected
Hexane	0.90	Not Detected	3.2	Not Detected
1,1-Dichloroethane	0.90	Not Detected	3.6	Not Detected
2-Butanone (Methyl Ethyl Ketone)	3.6	Not Detected	10	Not Detected
cis-1,2-Dichloroethene	0.90	Not Detected	3.5	Not Detected
Tetrahydrofuran	0.90	Not Detected	2.6	Not Detected
Chloroform	0.90	Not Detected	4.4	Not Detected
1,1,1-Trichloroethane	0.90	1.2	4.9	6.3
Cyclohexane	0.90	Not Detected	3.1	Not Detected
Carbon Tetrachloride	0.90	Not Detected	5.6	Not Detected
2,2,4-Trimethylpentane	0.90	Not Detected	4.2	Not Detected
Benzene	0.90	Not Detected	2.8	Not Detected
1,2-Dichloroethane	0.90	Not Detected	3.6	Not Detected
Heptane	0.90	Not Detected	3.7	Not Detected
Trichloroethene	0.90	Not Detected	4.8	Not Detected
1,2-Dichloropropane	0.90	Not Detected	4.1	Not Detected
1,4-Dioxane	3.6	Not Detected	13	Not Detected
Bromodichloromethane	0.90	Not Detected	6.0	Not Detected
cis-1,3-Dichloropropene	0.90	Not Detected	4.1	Not Detected
4-Methyl-2-pentanone	0.90	Not Detected	3.7	Not Detected
Toluene	0.90	Not Detected	3.4	Not Detected
trans-1,3-Dichloropropene	0.90	Not Detected	4.1	Not Detected
1,1,2-Trichloroethane	0.90	Not Detected	4.9	Not Detected
Tetrachloroethene	0.90	20	6.1	130
2-Hexanone	3.6	Not Detected	15	Not Detected

LH 8/15/12

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Client Sample ID: 2391RIVER-SS-080112

Lab ID#: 1208065A-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p080611**	**Date of Collection:**	**8/1/12 10:57:00 AM**
Dil. Factor:	**1.79**	**Date of Analysis:**	**8/6/12 02:05 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.90	Not Detected	7.6	Not Detected
1,2-Dibromoethane (EDB)	0.90	Not Detected	6.9	Not Detected
Chlorobenzene	0.90	Not Detected	4.1	Not Detected
Ethyl Benzene	0.90	Not Detected	3.9	Not Detected
m,p-Xylene	0.90	Not Detected	3.9	Not Detected
o-Xylene	0.90	Not Detected	3.9	Not Detected
Styrene	0.90	Not Detected	3.8	Not Detected
Bromoform	0.90	Not Detected	9.2	Not Detected
Cumene	0.90	Not Detected	4.4	Not Detected
1,1,2,2-Tetrachloroethane	0.90	Not Detected	6.1	Not Detected
Propylbenzene	0.90	Not Detected	4.4	Not Detected
4-Ethyltoluene	0.90	Not Detected	4.4	Not Detected
1,3,5-Trimethylbenzene	0.90	Not Detected	4.4	Not Detected
1,2,4-Trimethylbenzene	0.90	Not Detected	4.4	Not Detected
1,3-Dichlorobenzene	0.90	Not Detected	5.4	Not Detected
1,4-Dichlorobenzene	0.90	Not Detected	5.4	Not Detected
alpha-Chlorotoluene	0.90	Not Detected	4.6	Not Detected
1,2-Dichlorobenzene	0.90	Not Detected	5.4	Not Detected
1,2,4-Trichlorobenzene	3.6	Not Detected	26	Not Detected
Hexachlorobutadiene	3.6	Not Detected	38	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	94	70-130
1,2-Dichloroethane-d4	96	70-130
4-Bromofluorobenzene	103	70-130

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Client Sample ID: 2232RIVER-SS-080112

Lab ID#: 1208065A-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p080613**	**Date of Collection: 8/1/12 11:39:00 AM**	
Dil. Factor:	**2.01**	**Date of Analysis: 8/6/12 02:53 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.0	Not Detected	5.0	Not Detected
Freon 114	1.0	Not Detected	7.0	Not Detected
Chloromethane	10	Not Detected	21	Not Detected
Vinyl Chloride	1.0	Not Detected	2.6	Not Detected
1,3-Butadiene	1.0	Not Detected	2.2	Not Detected
Bromomethane	10	Not Detected	39	Not Detected
Chloroethane	4.0	Not Detected	11	Not Detected
Freon 11	1.0	Not Detected	5.6	Not Detected
Ethanol	4.0 UJ	Not Detected	7.6 UJ	Not Detected
Freon 113	1.0	Not Detected	7.7	Not Detected
1,1-Dichloroethene	1.0	Not Detected	4.0	Not Detected
Acetone	10	Not Detected	24	Not Detected
2-Propanol	4.0	Not Detected	9.9	Not Detected
Carbon Disulfide	4.0	Not Detected	12	Not Detected
3-Chloropropene	4.0	Not Detected	12	Not Detected
Methylene Chloride	10	Not Detected	35	Not Detected
Methyl tert-butyl ether	1.0	Not Detected	3.6	Not Detected
trans-1,2-Dichloroethene	1.0	Not Detected	4.0	Not Detected
Hexane	1.0	Not Detected	3.5	Not Detected
1,1-Dichloroethane	1.0	Not Detected	4.1	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.0	Not Detected	12	Not Detected
cis-1,2-Dichloroethene	1.0	Not Detected	4.0	Not Detected
Tetrahydrofuran	1.0	Not Detected	3.0	Not Detected
Chloroform	1.0	Not Detected	4.9	Not Detected
1,1,1-Trichloroethane	1.0	7.7	5.5	42
Cyclohexane	1.0	Not Detected	3.4	Not Detected
Carbon Tetrachloride	1.0	Not Detected	6.3	Not Detected
2,2,4-Trimethylpentane	1.0	Not Detected	4.7	Not Detected
Benzene	1.0	Not Detected	3.2	Not Detected
1,2-Dichloroethane	1.0	Not Detected	4.1	Not Detected
Heptane	1.0	Not Detected	4.1	Not Detected
Trichloroethene	1.0	Not Detected	5.4	Not Detected
1,2-Dichloropropane	1.0	Not Detected	4.6	Not Detected
1,4-Dioxane	4.0	Not Detected	14	Not Detected
Bromodichloromethane	1.0	Not Detected	6.7	Not Detected
cis-1,3-Dichloropropene	1.0	Not Detected	4.6	Not Detected
4-Methyl-2-pentanone	1.0	Not Detected	4.1	Not Detected
Toluene	1.0	Not Detected	3.8	Not Detected
trans-1,3-Dichloropropene	1.0	Not Detected	4.6	Not Detected
1,1,2-Trichloroethane	1.0	Not Detected	5.5	Not Detected
Tetrachloroethene	1.0	14	6.8	94
2-Hexanone	4.0	Not Detected	16	Not Detected

8/15/12

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Client Sample ID: 2232RIVER-SS-080112

Lab ID#: 1208065A-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p080613**	**Date of Collection:**	**8/1/12 11:39:00 AM**
Dil. Factor:	**2.01**	**Date of Analysis:**	**8/6/12 02:53 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.0	Not Detected	8.6	Not Detected
1,2-Dibromoethane (EDB)	1.0	Not Detected	7.7	Not Detected
Chlorobenzene	1.0	Not Detected	4.6	Not Detected
Ethyl Benzene	1.0	Not Detected	4.4	Not Detected
m,p-Xylene	1.0	Not Detected	4.4	Not Detected
o-Xylene	1.0	Not Detected	4.4	Not Detected
Styrene	1.0	Not Detected	4.3	Not Detected
Bromoform	1.0	Not Detected	10	Not Detected
Cumene	1.0	Not Detected	4.9	Not Detected
1,1,2,2-Tetrachloroethane	1.0	Not Detected	6.9	Not Detected
Propylbenzene	1.0	Not Detected	4.9	Not Detected
4-Ethyltoluene	1.0	Not Detected	4.9	Not Detected
1,3,5-Trimethylbenzene	1.0	Not Detected	4.9	Not Detected
1,2,4-Trimethylbenzene	1.0	Not Detected	4.9	Not Detected
1,3-Dichlorobenzene	1.0	Not Detected	6.0	Not Detected
1,4-Dichlorobenzene	1.0	Not Detected	6.0	Not Detected
alpha-Chlorotoluene	1.0	Not Detected	5.2	Not Detected
1,2-Dichlorobenzene	1.0	Not Detected	6.0	Not Detected
1,2,4-Trichlorobenzene	4.0	Not Detected	30	Not Detected
Hexachlorobutadiene	4.0	Not Detected	43	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	95	70-130
1,2-Dichloroethane-d4	98	70-130
4-Bromofluorobenzene	109	70-130

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Client Sample ID: 2373RIVER-SS-080112

Lab ID#: 1208065A-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p080614**	**Date of Collection: 8/1/12 12:23:00 PM**	
Dil. Factor:	**1.75**	**Date of Analysis: 8/6/12 04:00 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.88	Not Detected	4.3	Not Detected
Freon 114	0.88	Not Detected	6.1	Not Detected
Chloromethane	8.8	Not Detected	18	Not Detected
Vinyl Chloride	0.88	Not Detected	2.2	Not Detected
1,3-Butadiene	0.88	Not Detected	1.9	Not Detected
Bromomethane	8.8	Not Detected	34	Not Detected
Chloroethane	3.5	Not Detected	9.2	Not Detected
Freon 11	0.88	Not Detected	4.9	Not Detected
Ethanol	3.5 UJ	Not Detected	6.6 UJ	Not Detected
Freon 113	0.88	Not Detected	6.7	Not Detected
1,1-Dichloroethene	0.88	Not Detected	3.5	Not Detected
Acetone	8.8	Not Detected	21	Not Detected
2-Propanol	3.5	Not Detected	8.6	Not Detected
Carbon Disulfide	3.5	Not Detected	11	Not Detected
3-Chloropropene	3.5	Not Detected	11	Not Detected
Methylene Chloride	8.8	Not Detected	30	Not Detected
Methyl tert-butyl ether	0.88	Not Detected	3.2	Not Detected
trans-1,2-Dichloroethene	0.88	Not Detected	3.5	Not Detected
Hexane	0.88	Not Detected	3.1	Not Detected
1,1-Dichloroethane	0.88	Not Detected	3.5	Not Detected
2-Butanone (Methyl Ethyl Ketone)	3.5	Not Detected	10	Not Detected
cis-1,2-Dichloroethene	0.88	Not Detected	3.5	Not Detected
Tetrahydrofuran	0.88	Not Detected	2.6	Not Detected
Chloroform	0.88	Not Detected	4.3	Not Detected
1,1,1-Trichloroethane	0.88	Not Detected	4.8	Not Detected
Cyclohexane	0.88	Not Detected	3.0	Not Detected
Carbon Tetrachloride	0.88	Not Detected	5.5	Not Detected
2,2,4-Trimethylpentane	0.88	Not Detected	4.1	Not Detected
Benzene	0.88	Not Detected	2.8	Not Detected
1,2-Dichloroethane	0.88	Not Detected	3.5	Not Detected
Heptane	0.88	Not Detected	3.6	Not Detected
Trichloroethene	0.88	Not Detected	4.7	Not Detected
1,2-Dichloropropane	0.88	Not Detected	4.0	Not Detected
1,4-Dioxane	3.5	Not Detected	13	Not Detected
Bromodichloromethane	0.88	Not Detected	5.9	Not Detected
cis-1,3-Dichloropropene	0.88	Not Detected	4.0	Not Detected
4-Methyl-2-pentanone	0.88	Not Detected	3.6	Not Detected
Toluene	0.88	Not Detected	3.3	Not Detected
trans-1,3-Dichloropropene	0.88	Not Detected	4.0	Not Detected
1,1,2-Trichloroethane	0.88	Not Detected	4.8	Not Detected
Tetrachloroethene	0.88	8.8	5.9	60
2-Hexanone	3.5	Not Detected	14	Not Detected

8/15/12

eurofins | Air Toxics

Client Sample ID: 2373RIVER-SS-080112

Lab ID#: 1208065A-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p080614**	**Date of Collection: 8/1/12 12:23:00 PM**	
Dil. Factor:	**1.75**	**Date of Analysis: 8/6/12 04:00 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.88	Not Detected	7.4	Not Detected
1,2-Dibromoethane (EDB)	0.88	Not Detected	6.7	Not Detected
Chlorobenzene	0.88	Not Detected	4.0	Not Detected
Ethyl Benzene	0.88	Not Detected	3.8	Not Detected
m,p-Xylene	0.88	Not Detected	3.8	Not Detected
o-Xylene	0.88	Not Detected	3.8	Not Detected
Styrene	0.88	Not Detected	3.7	Not Detected
Bromoform	0.88	Not Detected	9.0	Not Detected
Cumene	0.88	Not Detected	4.3	Not Detected
1,1,2,2-Tetrachloroethane	0.88	Not Detected	6.0	Not Detected
Propylbenzene	0.88	Not Detected	4.3	Not Detected
4-Ethyltoluene	0.88	Not Detected	4.3	Not Detected
1,3,5-Trimethylbenzene	0.88	Not Detected	4.3	Not Detected
1,2,4-Trimethylbenzene	0.88	Not Detected	4.3	Not Detected
1,3-Dichlorobenzene	0.88	Not Detected	5.3	Not Detected
1,4-Dichlorobenzene	0.88	Not Detected	5.3	Not Detected
alpha-Chlorotoluene	0.88	Not Detected	4.5	Not Detected
1,2-Dichlorobenzene	0.88	Not Detected	5.3	Not Detected
1,2,4-Trichlorobenzene	3.5	Not Detected	26	Not Detected
Hexachlorobutadiene	3.5	Not Detected	37	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	91	70-130
1,2-Dichloroethane-d4	100	70-130
4-Bromofluorobenzene	106	70-130

eurofins | Air Toxics

Client Sample ID: 2391RIVER-SS-080112

Lab ID#: 1208065B-01A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9080836**	**Date of Collection: 8/1/12 10:57:00 AM**	
Dil. Factor:	**1.79**	**Date of Analysis: 8/8/12 09:28 PM**	

Compound	**Rpt. Limit (%)**	**Amount (%)**
Methane	0.00018	Not Detected

Container Type: 6 Liter Summa Canister

eurofins | Air Toxics

Client Sample ID: 2232RIVER-SS-080112

Lab ID#: 1208065B-02A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9080837**	**Date of Collection: 8/1/12 11:39:00 AM**	
Dil. Factor:	**2.01**	**Date of Analysis: 8/8/12 09:50 PM**	

Compound	**Rpt. Limit (%)**	**Amount (%)**
Methane	0.00020	Not Detected

Container Type: 6 Liter Summa Canister

eurofins | Air Toxics

Client Sample ID: 2373RIVER-SS-080112

Lab ID#: 1208065B-03A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9080838**	**Date of Collection: 8/1/12 12:23:00 PM**	
Dil. Factor:	**1.75**	**Date of Analysis: 8/8/12 10:14 PM**	

Compound	Rpt. Limit (%)	Amount (%)
Methane	0.00018	0.00028

Container Type: 6 Liter Summa Canister

SOUTH DAYTON LANDFILL
MORAINE, MONTGOMERY COUNTY, OHIO
DATA VALIDATION REPORT

Date: August 15, 2012
Laboratory: Air Toxics Ltd. (Air Toxics), Folsom, California
Laboratory Project #: 1208174
Data Validation Performed By: Lisa Graczyk, Weston Solutions, Inc. (WESTON®) Superfund Technical Assessment and Response Team (START)
Weston Analytical Work Order #/TDD #: 20405.016.008.1869.00/S05-0008-1206-003

This data validation report has been prepared by WESTON START under the START III Region V contract. This report documents the data validation for one air sample collected for the South Dayton Landfill Site that was analyzed for the following parameters and methods.

- Volatile Organic Compounds (VOC) by TO-15
- Methane by ASTM Method D-1946

A level II data package was requested from Air Toxics. The data validation was conducted in general accordance with the U.S. EPA "Contract Laboratory Program National Functional Guidance for Superfund Organic Methods Data Review" dated June 2008. The Attachment contains the results summary sheets with the hand-written qualifiers applied during data validation.

VOCs BY U.S. EPA METHOD TO-15

1. Samples

The following table summarizes the samples for which this data validation is being conducted.

Samples	Lab ID	Matrix	Date Collected	Date Analyzed
SDL-GP2-16-073012	1208174A-01A	Air	7/30/2012	8/10/2012

2. Holding Times

The sample was analyzed within the required holding time limit of 30 days from sample collection.

3. Blanks

A method blank was analyzed with the VOC analysis and was free of target compound contamination above the reporting limit.

4. Surrogate Results

The surrogate recovery results were within the laboratory-established quality control (QC) limits.

5. Continuing Calibration Results

The continuing calibration results were within the QC limits for percent recovery.

6. Laboratory Control Sample (LCS) Results

The LCS and LCS duplicate (LCSD) recoveries were within laboratory QC limits except for as follows. In the LCS and LCSD, chloromethane was detected slightly above the QC limit. Because chloromethane was not detected in the sample, no qualification was required.

7. Overall Assessment

The VOC data are acceptable for use based on the information received.

Data Validation Report
South Dayton Landfill Site
Air Toxics Ltd.
Laboratory Project #: 1208174

METHANE BY ASTM D-1946

1. Samples

The following table summarizes the samples for which this data validation is being conducted.

Samples	Lab ID	Matrix	Date Collected	Date Analyzed
SDL-GP2-16-073012	1208174B-01A	Air	7/30/2012	8/9/2012

2. Holding Times

The sample was analyzed within the required holding time limit of 30 days from sample collection.

3. Blanks

A method blank was analyzed with the methane analyses and was free of target compound contamination above the reporting limit.

4. LCS Results

The LCS and LCSD recoveries were within laboratory QC limits.

5. Overall Assessment

The methane data are acceptable for use based on the information received.

ATTACHMENT

AIR TOXICS LTD.
RESULTS SUMMARY

eurofins | Air Toxics

Client Sample ID: SDL-GP2-16-073012

Lab ID#: 1208174A-01A

EPA METHOD TO-15 GC/MS

File Name:	**14081012**	**Date of Collection:**	**7/30/12 12:55:00 PM**
Dil. Factor:	**74.5**	**Date of Analysis:**	**8/10/12 08:41 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	370	Not Detected	1800	Not Detected
Freon 114	370	Not Detected	2600	Not Detected
Chloromethane	1500	Not Detected	3100	Not Detected
Vinyl Chloride	370	Not Detected	950	Not Detected
1,3-Butadiene	370	Not Detected	820	Not Detected
Bromomethane	370	Not Detected	1400	Not Detected
Chloroethane	1500	Not Detected	3900	Not Detected
Freon 11	370	Not Detected	2100	Not Detected
Ethanol	1500	Not Detected	2800	Not Detected
Freon 113	370	Not Detected	2800	Not Detected
1,1-Dichloroethene	370	Not Detected	1500	Not Detected
Acetone	1500	Not Detected	3500	Not Detected
2-Propanol	1500	Not Detected	3700	Not Detected
Carbon Disulfide	370	Not Detected	1200	Not Detected
3-Chloropropene	1500	Not Detected	4700	Not Detected
Methylene Chloride	370	Not Detected	1300	Not Detected
Methyl tert-butyl ether	370	Not Detected	1300	Not Detected
trans-1,2-Dichloroethene	370	Not Detected	1500	Not Detected
Hexane	370	12000	1300	42000
1,1-Dichloroethane	370	Not Detected	1500	Not Detected
2-Butanone (Methyl Ethyl Ketone)	1500	Not Detected	4400	Not Detected
cis-1,2-Dichloroethene	370	Not Detected	1500	Not Detected
Tetrahydrofuran	370	Not Detected	1100	Not Detected
Chloroform	370	Not Detected	1800	Not Detected
1,1,1-Trichloroethane	370	Not Detected	2000	Not Detected
Cyclohexane	370	Not Detected	1300	Not Detected
Carbon Tetrachloride	370	Not Detected	2300	Not Detected
2,2,4-Trimethylpentane	370	14000	1700	66000
Benzene	370	Not Detected	1200	Not Detected
1,2-Dichloroethane	370	Not Detected	1500	Not Detected
Heptane	370	860	1500	3500
Trichloroethene	370	Not Detected	2000	Not Detected
1,2-Dichloropropane	370	Not Detected	1700	Not Detected
1,4-Dioxane	1500	Not Detected	5400	Not Detected
Bromodichloromethane	370	Not Detected	2500	Not Detected
cis-1,3-Dichloropropene	370	Not Detected	1700	Not Detected
4-Methyl-2-pentanone	370	Not Detected	1500	Not Detected
Toluene	370	Not Detected	1400	Not Detected
trans-1,3-Dichloropropene	370	Not Detected	1700	Not Detected
1,1,2-Trichloroethane	370	Not Detected	2000	Not Detected
Tetrachloroethene	370	Not Detected	2500	Not Detected
2-Hexanone	1500	Not Detected	6100	Not Detected

eurofins | Air Toxics

Client Sample ID: SDL-GP2-16-073012

Lab ID#: 1208174A-01A

EPA METHOD TO-15 GC/MS

File Name:	**14081012**	**Date of Collection: 7/30/12 12:55:00 PM**	
Dil. Factor:	**74.5**	**Date of Analysis: 8/10/12 08:41 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	370	Not Detected	3200	Not Detected
1,2-Dibromoethane (EDB)	370	Not Detected	2900	Not Detected
Chlorobenzene	370	Not Detected	1700	Not Detected
Ethyl Benzene	370	Not Detected	1600	Not Detected
m,p-Xylene	370	Not Detected	1600	Not Detected
o-Xylene	370	Not Detected	1600	Not Detected
Styrene	370	Not Detected	1600	Not Detected
Bromoform	370	Not Detected	3800	Not Detected
Cumene	370	Not Detected	1800	Not Detected
1,1,2,2-Tetrachloroethane	370	Not Detected	2600	Not Detected
Propylbenzene	370	Not Detected	1800	Not Detected
4-Ethyltoluene	370	Not Detected	1800	Not Detected
1,3,5-Trimethylbenzene	370	Not Detected	1800	Not Detected
1,2,4-Trimethylbenzene	370	Not Detected	1800	Not Detected
1,3-Dichlorobenzene	370	Not Detected	2200	Not Detected
1,4-Dichlorobenzene	370	Not Detected	2200	Not Detected
alpha-Chlorotoluene	370	Not Detected	1900	Not Detected
1,2-Dichlorobenzene	370	Not Detected	2200	Not Detected
1,2,4-Trichlorobenzene	1500	Not Detected	11000	Not Detected
Hexachlorobutadiene	1500	Not Detected	16000	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	122	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	95	70-130

eurofins | Air Toxics

Client Sample ID: SDL-GP2-16-073012

Lab ID#: 1208174B-01A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9080919**	**Date of Collection: 7/30/12 12:55:00 PM**	
Dil. Factor:	**1.49**	**Date of Analysis: 8/9/12 06:16 PM**	

Compound	Rpt. Limit (%)	Amount (%)
Methane	0.00015	2.5

Container Type: 6 Liter Summa Canister

SOUTH DAYTON LANDFILL
MORAINE, MONTGOMERY COUNTY, OHIO
DATA VALIDATION REPORT

Date: September 12, 2012
Laboratory: Air Toxics Ltd. (Air Toxics), Folsom, California
Laboratory Project #: 1208202
Data Validation Performed By: Lisa Graczyk, Weston Solutions, Inc. (WESTON®) Superfund Technical Assessment and Response Team (START)
Weston Analytical Work Order #/TDD #: 20405.016.008.1869.00/S05-0008-1206-003

This data validation report has been prepared by WESTON START under the START III Region V contract. This report documents the data validation for one air sample collected for the South Dayton Landfill Site that was analyzed for the following parameters and methods.

- Volatile Organic Compounds (VOC) by TO-15
- Methane by ASTM Method D-1946

A level II data package was requested from Air Toxics. The data validation was conducted in general accordance with the U.S. EPA "Contract Laboratory Program National Functional Guidance for Superfund Organic Methods Data Review" dated June 2008. The Attachment contains the results summary sheets with the hand-written qualifiers applied during data validation.

VOCs BY U.S. EPA METHOD TO-15

1. Samples

The following table summarizes the samples for which this data validation is being conducted.

Samples	Lab ID	Matrix	Date Collected	Date Analyzed
2015 Dryden-SS-080812	1208202A-01A	Air	8/8/2012	8/10/2012

2. Holding Times

The sample was analyzed within the required holding time limit of 30 days from sample collection.

3. Blanks

A method blank was analyzed with the VOC analysis and was free of target compound contamination above the reporting limit.

4. Surrogate Results

The surrogate recovery results were within the laboratory-established quality control (QC) limits.

5. Continuing Calibration Results

The continuing calibration results were within the QC limits for percent recovery.

6. Laboratory Control Sample (LCS) Results

The LCS and LCS duplicate (LCSD) recoveries were within laboratory QC limits except for as follows. In the LCS and LCSD, chloromethane was detected slightly above the QC limit. Because chloromethane was not detected in the sample, no qualification was required.

7. Overall Assessment

The VOC data are acceptable for use based on the information received.

Data Validation Report
South Dayton Landfill Site
Air Toxics Ltd.
Laboratory Project #: 1208202

METHANE BY ASTM D-1946

1. Samples

The following table summarizes the samples for which this data validation is being conducted.

Samples	Lab ID	Matrix	Date Collected	Date Analyzed
2015 Dryden-SS-080812	1208202B-01A	Air	8/8/2012	8/9/2012

2. Holding Times

The sample was analyzed within the required holding time limit of 30 days from sample collection.

3. Blanks

A method blank was analyzed with the methane analyses and was free of target compound contamination above the reporting limit.

4. LCS Results

The LCS and LCSD recoveries were within laboratory QC limits.

5. Overall Assessment

The methane data are acceptable for use based on the information received.

ATTACHMENT

AIR TOXICS LTD.
RESULTS SUMMARY

eurofins | Air Toxics

Client Sample ID: 2015 Dryden-SS-080812

Lab ID#: 1208202A-01A

EPA METHOD TO-15 GC/MS

File Name:	**14081007**	**Date of Collection:**	**8/8/12 7:35:00 AM**
Dil. Factor:	**5.70**	**Date of Analysis:**	**8/10/12 06:16 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	28	Not Detected	140	Not Detected
Freon 114	28	Not Detected	200	Not Detected
Chloromethane	110	Not Detected	240	Not Detected
Vinyl Chloride	28	Not Detected	73	Not Detected
1,3-Butadiene	28	Not Detected	63	Not Detected
Bromomethane	28	Not Detected	110	Not Detected
Chloroethane	110	Not Detected	300	Not Detected
Freon 11	28	Not Detected	160	Not Detected
Ethanol	110	Not Detected	210	Not Detected
Freon 113	28	Not Detected	220	Not Detected
1,1-Dichloroethene	28	Not Detected	110	Not Detected
Acetone	110	Not Detected	270	Not Detected
2-Propanol	110	Not Detected	280	Not Detected
Carbon Disulfide	28	Not Detected	89	Not Detected
3-Chloropropene	110	Not Detected	360	Not Detected
Methylene Chloride	28	Not Detected	99	Not Detected
Methyl tert-butyl ether	28	Not Detected	100	Not Detected
trans-1,2-Dichloroethene	28	620	110	2400
Hexane	28	Not Detected	100	Not Detected
1,1-Dichloroethane	28	Not Detected	120	Not Detected
2-Butanone (Methyl Ethyl Ketone)	110	Not Detected	340	Not Detected
cis-1,2-Dichloroethene	28	1400	110	5600
Tetrahydrofuran	28	Not Detected	84	Not Detected
Chloroform	28	64	140	320
1,1,1-Trichloroethane	28	Not Detected	160	Not Detected
Cyclohexane	28	Not Detected	98	Not Detected
Carbon Tetrachloride	28	Not Detected	180	Not Detected
2,2,4-Trimethylpentane	28	Not Detected	130	Not Detected
Benzene	28	Not Detected	91	Not Detected
1,2-Dichloroethane	28	Not Detected	120	Not Detected
Heptane	28	Not Detected	120	Not Detected
Trichloroethene	28	17000	150	91000
1,2-Dichloropropane	28	Not Detected	130	Not Detected
1,4-Dioxane	110	Not Detected	410	Not Detected
Bromodichloromethane	28	Not Detected	190	Not Detected
cis-1,3-Dichloropropene	28	Not Detected	130	Not Detected
4-Methyl-2-pentanone	28	Not Detected	120	Not Detected
Toluene	28	Not Detected	110	Not Detected
trans-1,3-Dichloropropene	28	Not Detected	130	Not Detected
1,1,2-Trichloroethane	28	Not Detected	160	Not Detected
Tetrachloroethene	28	Not Detected	190	Not Detected
2-Hexanone	110	Not Detected	470	Not Detected

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Client Sample ID: 2015 Dryden-SS-080812

Lab ID#: 1208202A-01A

EPA METHOD TO-15 GC/MS

File Name:	**14081007**	**Date of Collection:**	**8/8/12 7:35:00 AM**
Dil. Factor:	**5.70**	**Date of Analysis:**	**8/10/12 06:16 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	28	Not Detected	240	Not Detected
1,2-Dibromoethane (EDB)	28	Not Detected	220	Not Detected
Chlorobenzene	28	Not Detected	130	Not Detected
Ethyl Benzene	28	Not Detected	120	Not Detected
m,p-Xylene	28	Not Detected	120	Not Detected
o-Xylene	28	Not Detected	120	Not Detected
Styrene	28	Not Detected	120	Not Detected
Bromoform	28	Not Detected	290	Not Detected
Cumene	28	Not Detected	140	Not Detected
1,1,2,2-Tetrachloroethane	28	Not Detected	200	Not Detected
Propylbenzene	28	Not Detected	140	Not Detected
4-Ethyltoluene	28	Not Detected	140	Not Detected
1,3,5-Trimethylbenzene	28	Not Detected	140	Not Detected
1,2,4-Trimethylbenzene	28	Not Detected	140	Not Detected
1,3-Dichlorobenzene	28	Not Detected	170	Not Detected
1,4-Dichlorobenzene	28	Not Detected	170	Not Detected
alpha-Chlorotoluene	28	Not Detected	150	Not Detected
1,2-Dichlorobenzene	28	Not Detected	170	Not Detected
1,2,4-Trichlorobenzene	110	Not Detected	850	Not Detected
Hexachlorobutadiene	110	Not Detected	1200	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	115	70-130
Toluene-d8	105	70-130
4-Bromofluorobenzene	93	70-130

eurofins | Air Toxics

Client Sample ID: 2015 Dryden-SS-080812

Lab ID#: 1208202B-01A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9080922**	**Date of Collection: 8/8/12 7:35:00 AM**	
Dil. Factor:	**1.71**	**Date of Analysis: 8/9/12 07:33 PM**	

Compound	**Rpt. Limit (%)**	**Amount (%)**
Methane	0.00017	0.00045

Container Type: 6 Liter Summa Canister

SOUTH DAYTON LANDFILL
MORAINE, MONTGOMERY COUNTY, OHIO
DATA VALIDATION REPORT

Date: September 12, 2012
Laboratory: Air Toxics Ltd. (Air Toxics), Folsom, California
Laboratory Project #: 1208205
Data Validation Performed By: Lisa Graczyk, Weston Solutions, Inc. (WESTON®) Superfund Technical Assessment and Response Team (START)
Weston Analytical Work Order #/TDD #: 20405.016.008.1869.00/S05-0008-1206-003

This data validation report has been prepared by WESTON START under the START III Region V contract. This report documents the data validation for one air sample collected for the South Dayton Landfill Site that was analyzed for the following parameters and methods.

- Volatile Organic Compounds (VOC) by TO-15
- Methane by ASTM Method D-1946

A level II data package was requested from Air Toxics. The data validation was conducted in general accordance with the U.S. EPA "Contract Laboratory Program National Functional Guidance for Superfund Organic Methods Data Review" dated June 2008. The Attachment contains the results summary sheets with the hand-written qualifiers applied during data validation.

VOCs BY U.S. EPA METHOD TO-15

1. Samples

The following table summarizes the samples for which this data validation is being conducted.

Samples	Lab ID	Matrix	Date Collected	Date Analyzed
1951 Dryden-SS-080712	1208205A-01A	Air	8/7/2012	8/10/2012
2031 Dryden-SS-080712	1208205A-02A	Air	8/7/2012	8/10/2012

2. Holding Times

The samples were analyzed within the required holding time limit of 30 days from sample collection.

3. Blanks

A method blank was analyzed with the VOC analysis and was free of target compound contamination above the reporting limit.

4. Surrogate Results

The surrogate recovery results were within the laboratory-established quality control (QC) limits.

5. Continuing Calibration Results

The continuing calibration results were within the QC limits for percent recovery.

6. Laboratory Control Sample (LCS) Results

The LCS and LCS duplicate (LCSD) recoveries were within laboratory QC limits except for as follows. In the LCS and LCSD, chloromethane was detected slightly above the QC limit. Because chloromethane was not detected in the sample, no qualification was required.

7. Overall Assessment

The VOC data are acceptable for use based on the information received.

Data Validation Report
South Dayton Landfill Site
Air Toxics Ltd.
Laboratory Project #: 1208205

METHANE BY ASTM D-1946

1. Samples

The following table summarizes the samples for which this data validation is being conducted.

Samples	Lab ID	Matrix	Date Collected	Date Analyzed
1951 Dryden-SS-080712	1208205B-01A	Air	8/7/2012	8/9/2012
2031 Dryden-SS-080712	1208205B-02A	Air	8/7/2012	8/9/2012

2. Holding Times

The samples were analyzed within the required holding time limit of 30 days from sample collection.

3. Blanks

A method blank was analyzed with the methane analyses and was free of target compound contamination above the reporting limit.

4. LCS Results

The LCS and LCSD recoveries were within laboratory QC limits.

5. Overall Assessment

The methane data are acceptable for use based on the information received.

ATTACHMENT

AIR TOXICS LTD.
RESULTS SUMMARY

eurofins | Air Toxics

Client Sample ID: 1951 Dryden-SS-080712

Lab ID#: 1208205A-01A

EPA METHOD TO-15 GC/MS

File Name:	**14081013**	**Date of Collection:**	**8/7/12 7:20:00 AM**
Dil. Factor:	**2.12**	**Date of Analysis:**	**8/10/12 09:03 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	11	Not Detected	52	Not Detected
Freon 114	11	Not Detected	74	Not Detected
Chloromethane	42	Not Detected	88	Not Detected
Vinyl Chloride	11	Not Detected	27	Not Detected
1,3-Butadiene	11	Not Detected	23	Not Detected
Bromomethane	11	Not Detected	41	Not Detected
Chloroethane	42	Not Detected	110	Not Detected
Freon 11	11	Not Detected	60	Not Detected
Ethanol	42	Not Detected	80	Not Detected
Freon 113	11	Not Detected	81	Not Detected
1,1-Dichloroethene	11	Not Detected	42	Not Detected
Acetone	42	Not Detected	100	Not Detected
2-Propanol	42	Not Detected	100	Not Detected
Carbon Disulfide	11	Not Detected	33	Not Detected
3-Chloropropene	42	Not Detected	130	Not Detected
Methylene Chloride	11	Not Detected	37	Not Detected
Methyl tert-butyl ether	11	Not Detected	38	Not Detected
trans-1,2-Dichloroethene	11	23	42	90
Hexane	11	Not Detected	37	Not Detected
1,1-Dichloroethane	11	Not Detected	43	Not Detected
2-Butanone (Methyl Ethyl Ketone)	42	Not Detected	120	Not Detected
cis-1,2-Dichloroethene	11	52	42	210
Tetrahydrofuran	11	Not Detected	31	Not Detected
Chloroform	11	30	52	150
1,1,1-Trichloroethane	11	Not Detected	58	Not Detected
Cyclohexane	11	Not Detected	36	Not Detected
Carbon Tetrachloride	11	Not Detected	67	Not Detected
2,2,4-Trimethylpentane	11	Not Detected	50	Not Detected
Benzene	11	Not Detected	34	Not Detected
1,2-Dichloroethane	11	Not Detected	43	Not Detected
Heptane	11	Not Detected	43	Not Detected
Trichloroethene	11	2900	57	16000
1,2-Dichloropropane	11	Not Detected	49	Not Detected
1,4-Dioxane	42	Not Detected	150	Not Detected
Bromodichloromethane	11	Not Detected	71	Not Detected
cis-1,3-Dichloropropene	11	Not Detected	48	Not Detected
4-Methyl-2-pentanone	11	Not Detected	43	Not Detected
Toluene	11	Not Detected	40	Not Detected
trans-1,3-Dichloropropene	11	Not Detected	48	Not Detected
1,1,2-Trichloroethane	11	Not Detected	58	Not Detected
Tetrachloroethene	11	18	72	120
2-Hexanone	42	Not Detected	170	Not Detected

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Client Sample ID: 1951 Dryden-SS-080712

Lab ID#: 1208205A-01A

EPA METHOD TO-15 GC/MS

File Name:	**14081013**	**Date of Collection:**	**8/7/12 7:20:00 AM**
Dil. Factor:	**2.12**	**Date of Analysis:**	**8/10/12 09:03 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	11	Not Detected	90	Not Detected
1,2-Dibromoethane (EDB)	11	Not Detected	81	Not Detected
Chlorobenzene	11	Not Detected	49	Not Detected
Ethyl Benzene	11	Not Detected	46	Not Detected
m,p-Xylene	11	Not Detected	46	Not Detected
o-Xylene	11	Not Detected	46	Not Detected
Styrene	11	Not Detected	45	Not Detected
Bromoform	11	Not Detected	110	Not Detected
Cumene	11	Not Detected	52	Not Detected
1,1,2,2-Tetrachloroethane	11	Not Detected	73	Not Detected
Propylbenzene	11	Not Detected	52	Not Detected
4-Ethyltoluene	11	Not Detected	52	Not Detected
1,3,5-Trimethylbenzene	11	Not Detected	52	Not Detected
1,2,4-Trimethylbenzene	11	Not Detected	52	Not Detected
1,3-Dichlorobenzene	11	Not Detected	64	Not Detected
1,4-Dichlorobenzene	11	Not Detected	64	Not Detected
alpha-Chlorotoluene	11	Not Detected	55	Not Detected
1,2-Dichlorobenzene	11	Not Detected	64	Not Detected
1,2,4-Trichlorobenzene	42	Not Detected	310	Not Detected
Hexachlorobutadiene	42	Not Detected	450	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	117	70-130
Toluene-d8	105	70-130
4-Bromofluorobenzene	94	70-130

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Client Sample ID: 2031 Dryden-SS-080712

Lab ID#: 1208205A-02A

EPA METHOD TO-15 GC/MS

File Name:	**14081014**	**Date of Collection:**	**8/7/12 11:15:00 AM**
Dil. Factor:	**7.00**	**Date of Analysis:**	**8/10/12 09:29 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	35	Not Detected	170	Not Detected
Freon 114	35	Not Detected	240	Not Detected
Chloromethane	140	Not Detected	290	Not Detected
Vinyl Chloride	35	2600	89	6700
1,3-Butadiene	35	Not Detected	77	Not Detected
Bromomethane	35	Not Detected	140	Not Detected
Chloroethane	140	Not Detected	370	Not Detected
Freon 11	35	Not Detected	200	Not Detected
Ethanol	140	Not Detected	260	Not Detected
Freon 113	35	Not Detected	270	Not Detected
1,1-Dichloroethene	35	94	140	370
Acetone	140	Not Detected	330	Not Detected
2-Propanol	140	Not Detected	340	Not Detected
Carbon Disulfide	35	180	110	570
3-Chloropropene	140	Not Detected	440	Not Detected
Methylene Chloride	35	Not Detected	120	Not Detected
Methyl tert-butyl ether	35	Not Detected	130	Not Detected
trans-1,2-Dichloroethene	35	750	140	3000
Hexane	35	3500	120	12000
1,1-Dichloroethane	35	Not Detected	140	Not Detected
2-Butanone (Methyl Ethyl Ketone)	140	Not Detected	410	Not Detected
cis-1,2-Dichloroethene	35	27000	140	110000
Tetrahydrofuran	35	Not Detected	100	Not Detected
Chloroform	35	Not Detected	170	Not Detected
1,1,1-Trichloroethane	35	Not Detected	190	Not Detected
Cyclohexane	35	5000	120	17000
Carbon Tetrachloride	35	Not Detected	220	Not Detected
2,2,4-Trimethylpentane	35	Not Detected	160	Not Detected
Benzene	35	540	110	1700
1,2-Dichloroethane	35	Not Detected	140	Not Detected
Heptane	35	9200	140	38000
Trichloroethene	35	460	190	2400
1,2-Dichloropropane	35	Not Detected	160	Not Detected
1,4-Dioxane	140	Not Detected	500	Not Detected
Bromodichloromethane	35	Not Detected	230	Not Detected
cis-1,3-Dichloropropene	35	Not Detected	160	Not Detected
4-Methyl-2-pentanone	35	Not Detected	140	Not Detected
Toluene	35	7900	130	30000
trans-1,3-Dichloropropene	35	Not Detected	160	Not Detected
1,1,2-Trichloroethane	35	Not Detected	190	Not Detected
Tetrachloroethene	35	Not Detected	240	Not Detected
2-Hexanone	140	Not Detected	570	Not Detected

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Client Sample ID: 2031 Dryden-SS-080712

Lab ID#: 1208205A-02A

EPA METHOD TO-15 GC/MS

File Name:	**14081014**	**Date of Collection:**	**8/7/12 11:15:00 AM**
Dil. Factor:	**7.00**	**Date of Analysis:**	**8/10/12 09:29 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	35	Not Detected	300	Not Detected
1,2-Dibromoethane (EDB)	35	Not Detected	270	Not Detected
Chlorobenzene	35	1600	160	7600
Ethyl Benzene	35	830	150	3600
m,p-Xylene	35	2100	150	9100
o-Xylene	35	2000	150	8800
Styrene	35	Not Detected	150	Not Detected
Bromoform	35	Not Detected	360	Not Detected
Cumene	35	380	170	1900
1,1,2,2-Tetrachloroethane	35	Not Detected	240	Not Detected
Propylbenzene	35	470	170	2300
4-Ethyltoluene	35	1300	170	6600
1,3,5-Trimethylbenzene	35	1600	170	7800
1,2,4-Trimethylbenzene	35	2000	170	9700
1,3-Dichlorobenzene	35	Not Detected	210	Not Detected
1,4-Dichlorobenzene	35	Not Detected	210	Not Detected
alpha-Chlorotoluene	35	Not Detected	180	Not Detected
1,2-Dichlorobenzene	35	Not Detected	210	Not Detected
1,2,4-Trichlorobenzene	140	Not Detected	1000	Not Detected
Hexachlorobutadiene	140	Not Detected	1500	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	126	70-130
Toluene-d8	112	70-130
4-Bromofluorobenzene	93	70-130

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Client Sample ID: 1951 Dryden-SS-080712

Lab ID#: 1208205B-01A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9080923**	**Date of Collection: 8/7/12 7:20:00 AM**	
Dil. Factor:	**2.12**	**Date of Analysis: 8/9/12 08:13 PM**	

Compound	**Rpt. Limit (%)**	**Amount (%)**
Methane	0.00021	0.00037

Container Type: 6 Liter Summa Canister

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Client Sample ID: 2031 Dryden-SS-080712

Lab ID#: 1208205B-02A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9080924**	**Date of Collection: 8/7/12 11:15:00 AM**	
Dil. Factor:	**1.75**	**Date of Analysis: 8/9/12 08:35 PM**	

Compound	**Rpt. Limit (%)**	**Amount (%)**
Methane	0.00018	2.2

Container Type: 6 Liter Summa Canister

APPENDIX C
OHIO DEPARTMENT OF HEALTH LETTER DATED JULY 6, 2012

OHIO DEPARTMENT OF HEALTH

246 North High Street
Columbus, Ohio 43215

614/466-3543
www.odh.ohio.gov

John R. Kasich / Governor

Theodore E. Wymyslo, M.D. / Director of Health

July 6, 2012

Steven Renninger, On-Scene Coordinator
U.S. Environmental Protection Agency
Emergency Response Branch
26 West Martin Luther King Drive (G41)
Cincinnati, OH 45268

Dear Steve:

Per your request, ODH HAS is providing screening levels for the contaminants of concern in indoor air and sub-slab soil gas for properties at South Dayton Dump in Dayton, Ohio.

The values listed in the tables are expressed in micrograms per cubic meter ($\mu g/m^3$) and parts per billion (ppb). We prefer the use of ppb, as we believe it is more easily understood by the general public. Based on the Region 5 guidance, we are giving you both screening levels and action levels for assessing vapor intrusion sites:

Screening Levels are based on 10^{-5} cancer risk or hazard index of 1.0. Screening levels represent concentrations of a substance that are unlikely to cause harmful (adverse) health effects in exposed people. Detections in indoor air below these levels are not of a health concern. When available, our screening levels were taken from ATSDR's minimal risk levels (MRLs) and cancer risk evaluation guides (CREGs). Other sources include the U.S. EPA's reference concentrations (RfCs), regional screening levels (RSLs); and, in the case of cis-1,2-DCE, the 2002 OSWER Vapor Intrusion Guidance.

Action Levels are based on 10^{-4} cancer risk and hazard index of 10. Detections in indoor air that exceed this level would lead to a recommendation for actions to reduce exposure in a relatively short period of time. Detections below the action level, but above the screening level would be referred to the EPA Remedial program or to the state for evaluation.

Also included are corresponding values for non-residential buildings – spaces that are not used for residences or where children are not continuously present. Non-residential buildings include commercial businesses and public buildings, churches, non-manufacturing businesses, and industries where these chemicals are not used as part of the manufacturing process. The non-residential screening levels were derived by adjusting the residential values by a factor of 4.2 to adjust from a 168-hour week for the residential exposure to a 40-hour work week for the non-residential exposure. For industrial settings were the chemicals in question are used, OSHA permissible exposure limits or other occupational exposure values would apply.

Methane gas is explosive between its lower explosive limit (LEL) of 5 percent methane by volume in air and its upper explosive limit (UEL) of 15 percent by volume. At these levels, there is a ratio of methane to oxygen in air that allows for combustion to occur and an explosion hazard to exist if an ignition source is present in a confined indoor space. Based on Region 5 Vapor Intrusion Guidance, methane levels exceeding 10 percent of the LEL or 0.5 percent

methane by volume in the sub-slab soil gas are considered potential explosive situations that may need immediate action. For indoor air, methane results greater than 1 percent of the LEL or 0.05 percent methane by volume are levels where emergency actions may be undertaken. Because this is a physical hazard, these actionable levels would apply in both residential and commercial settings.

If you have any questions regarding these values, please contact John Kollman in my program at (614) 752-8335.

Thank you.

Sincerely,

Robert Frey, PhD
Chief, Health Assessment Section, Ohio Department of Health

RF/jk

Table 1. Screening Levels – South Dayton Dump

Chemical of Concern	*Residential*		*Source/Criteria*	*Non-residential*		*Source/Criteria*
	µg/m³	*ppb*		*µg/m³*	*ppb*	
Indoor Air Screening Levels						
1,1-Dichloroethane	15	3.7	EPA RSL/C/10^{-5}	63	16	EPA RSL/C/10^{-5} x 4.2
Benzene	1	0.4	CREG/C/10^{-5}	4	2	CREG/C/10^{-5} x 4.2
Chloroform	100	20	ATSDR/NC	400	80	ATSDR/NC
cis-1,2-Dichloroethylene	35	8.8	OSWER/NC	150	37	OSWER/NC x 4.2
Ethylbenzene	300	60	ATSDR/NC	1,300	250	ATSDR/NC x 4.2
Tetrachloroethylene (PCE)	40	6	EPA RfC	170	25	EPA RfC x 4.2
Trichloroethylene (TCE)	2	0.4	EPA RfC	10	2	EPA RfC x 4.2
m,p-Xylene*	200	50	ATSDR/NC	800	200	ATSDR/NC x 4.2
o-Xylene*	200	50	ATSDR/NC	800	200	ATSDR/NC x 4.2
Vinyl chloride	1	0.4	CREG/C/10^{-5}	4	2	CREG/C/10^{-5} x 4.2
Methane (in percent = %)	0.05		Region 5 VI Guide	0.05		Region 5 VI Guide
Sub-slab Soil Gas Screening Levels						
1,1-Dichloroethane	150	37	EPA RSL/C/10^{-5} x 10	630	160	EPA RSL/C/10^{-5} x 10 x 4.2
Benzene	10	4	CREG/C/10^{-5} x 10	40	20	CREG/C/10^{-5} x 10 x 4.2
Chloroform	1,000	200	ATSDR/NC x10	4,000	800	ATSDR/NC x10 x 4.2
cis-1,2-Dichloroethylene	350	88	OSWER/NC x 10	1,500	370	OSWER/NC x 10 x 4.2
Ethylbenzene	3,000	600	ATSDR/NC x10	13,000	2,500	ATSDR/NC x10 x 4.2
Tetrachloroethylene (PCE)	400	60	EPA RfC x 10	1,700	250	EPA RfC x 10 x 4.2
Trichloroethylene (TCE)	20	4	EPA RfC x 10	100	20	EPA RfC x 10 x 4.2
m,p-Xylene*	2,000	500	ATSDR/NC x 10	8,000	2,000	ATSDR/NC x 10 x 4.2
o-Xylene*	2,000	500	ATSDR/NC x 10	8,000	2,000	ATSDR/NC x 10 x 4.2
Vinyl chloride	10	4	CREG/C/10^{-5} x 10	40	20	CREG/C/10^{-5} x 10 x 4.2
Methane (in percent = %)	0.5		Region 5 VI Guide	0.5		Region 5 VI Guide

*ATSDR comparison value for total xylenes
µg/m³ = micrograms per cubic meter
ppb = parts per billion
C = cancer
NC = noncancer

10^{-5} = cancer risk of 1 in 100,000
CREG = cancer risk evaluation guide (ATSDR)\
RfC = EPA Reference Concentration
RSL = Regional Screening Level (EPA April 2012)

Table 2. Action Levels – South Dayton Dump

Chemical of Concern	*Residential*		*Source/Criteria*	*Non-residential*		*Source/Criteria*
	µg/m³	*ppb*		*µg/m³*	*ppb*	
Indoor Air Action Levels						
1,1-Dichloroethane	150	37	EPA RSL/C/10^{-4}	630	160	EPA RSL/C/10^{-4} x 4.2
Benzene	10	4	CREG/C/10^{-4}	40	20	CREG/C/10^{-4} x 4.2
Chloroform	1,000	200	ATSDR/NC x 10	4,000	800	ATSDR/NC x 10 x 4.2
cis-1,2-Dichloroethylene	350	88	OSWER/NC x 10	1,500	370	OSWER/NC x 10 x 4.2
Ethylbenzene	3,000	600	ATSDR/NC x 10	13,000	2,500	ATSDR/NC x 10 x 4.2
Tetrachloroethylene (PCE)	400	60	EPA RfC/NC x 10	1,700	250	EPA RfC/NC x 10 x 4.2
Trichloroethylene (TCE)	20	4	EPA RfC/NC x 10	100	20	EPA RfC/NC x 10 4.2
m,p-Xylene*	2,000	500	ATSDR/NC x 10	8,000	2,000	ATSDR/NC x 10 x 4.2
o-Xylene*	2,000	500	ATSDR/NC x 10	8,000	2,000	ATSDR/NC x 10 x 4.2
Vinyl chloride	10	4	CREG/C/10^{-4}	40	20	CREG/C/10^{-4} x 4.2
Methane (in percent = %)	0.05		Region 5 VI Guide	0.05		Region 5 VI Guide
Sub-slab Soil Gas Action Levels						
1,1-Dichloroethane	1,500	370	EPA RSL/C/10^{-4} x 10	6,300	1,600	EPA RSL/C/10^{-4} x 10 x 4.2
Benzene	100	40	CREG/C/10^{-4} x 10	400	200	CREG/C/10^{-4} x 10 x 4.2
Chloroform	10,000	2,000	ATSDR/NC x 100	40,000	8,000	ATSDR/NC x 100 x 4.2
cis-1,2-Dichloroethylene	3,500	880	OSWER/NC x 100	15,000	3,700	OSWER/NC x 100 x 4.2
Ethylbenzene	30,000	6,000	ATSDR/NC x100	130,000	25,000	ATSDR/NC x100 x 4.2
Tetrachloroethylene (PCE)	4,000	600	EPA RfC/NC x 100	17,000	2,500	EPA RfC/NC x 100 x 4.2
Trichloroethylene (TCE)	200	40	EPA RfC/NC x 100	1,000	200	EPA RfC/NC x 100 x 4.2
m,p-Xylene*	20,000	5,000	ATSDR/NC x 100	80,000	20,000	ATSDR/NC x 100 x 4.2
o-Xylene*	20,000	5,000	ATSDR/NC x 100	80,000	20,000	ATSDR/NC x 100 x 4.2
Vinyl chloride	100	40	CREG/C/10^{-4} x 10	400	200	CREG/C/10^{-4} x 10 x 4.2
Methane (in percent = %)	0.5		Region 5 VI Guide	0.5		Region 5 VI Guide

*ATSDR comparison value for total xylenes
µg/m³ = micrograms per cubic meter
ppb = parts per billion
C = cancer
NC = noncancer

10^{-4} = cancer risk of 1 in 10,000
CREG = cancer risk evaluation guide (ATSDR)\
RfC = EPA Reference Concentration
RSL = Regional Screening Level (EPA April 2012)