November 4, 2016
G-Logics File 01-0739-F

BV Holdings, LLC
Mr. Michael Nielson
10672 NE 9th Pl
Bellevue, WA 98004

**Subject: 2016 4th Quarter System Operation and Monitoring Report**
**Former Drycleaner Location**
**10610 NE 8th Street**
**Bellevue, WA**

Dear Mr. Nielson:

This report discusses vapor-sampling results and the status of the treatment system at the above referenced property (Figure 1). This work has been performed in accordance with our workplan *Authorization for SVE Continued Pulse Operation*, dated August 11, 2015. Operation of the SVE system was extended to continue the removal of volatile contaminants from the subsurface. With the continued operation, monthly site visits and vapor sampling has been conducted to monitor the system and the operational components. Additionally, analytical results from the collected vapor samples have been used to calculate the total amount of contaminant mass removed.

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## Site Background

The Property is located on the northeast corner of the intersection of NE 8th Street and 106th Avenue NE in downtown Bellevue (Figure 1). During the 1950s, a single structure was built on the site and used as an auto-fueling and service station. In 1976, the service station was converted to operate as a retail/commercial space. A dry-cleaning business operated on the property from 1976 to 1986. During that time, a common dry-cleaning solvent known as tetrachloroethylene (PCE) was used in the operations. After 1986, the structure was used for various commercial uses, including a pet store and toy store (Thinker Toys) until 2007. In 2007, the structure was demolished and the site was converted to its current use as a parking lot.

Several environmental investigations have been conducted on the Property and immediate vicinity to evaluate contaminant impacts to soil and groundwater from release(s) of PCE. The results of a soil-vapor survey conducted in 2009 indicated chlorinated solvents were present on the Property. Two subsurface investigations conducted in 2010 confirmed that the soil and groundwater on the Property were contaminated with chlorinated solvents, specifically PCE and its associated degradation products. The highest concentrations of chlorinated solvents are located near the center of the Property (Figure 2) in the general vicinity of the former dry-cleaning operations.

In 2010/2011, a Remedial Investigation/Feasibility Study (RI/FS) and an Interim Cleanup Action Plan (ICAP) was prepared for the Property by SoundEarth Strategies (SES). The SES work provided information for the Figures included in this vapor-sampling memo.

In 2012, BV Holdings and two other parties entered into a Settlement Agreement with Sterling Realty Organization (SRO), owner of the property directly across 8$^{th}$ Street to the south. As part of this agreement, a "reasonable interim action" was to be conducted on the subject Property. The purpose of the interim action was to reduce concentrations of PCE in soils at the Property and thereby reduce offsite migration of PCE-related substances. Specifically, a treatment system was to be installed in order to reduce soil concentrations such that when soils are excavated (as part of a future site development) they could be disposed as a non-hazardous waste, subject to Ecology approval.

### *System Configuration*

Initially, the treatment system included an air-sparge and soil-vapor extraction system (AS/SVE) that was installed at the former Thinker Toys property. Installation of the AS/SVE system began in October 2012 after receiving appropriate permits. During the December 2013 visit/sampling event, air-pressure was observed to remain in the supply line between the backflow valve and the wells. This continued to be observed through the June 2014 visit/sampling event, when it was apparent that the soil formation was not sufficiently permeable to effectively accomplish a sparging action. Due to this observation, the AS system was permanently shut down during the June 2014 visit.

The SVE system primarily consists of one regenerative blower, one rotary-vane compressor, related electrical equipment, and a moisture-reduction or "knockout" tank (K/O tank). The equipment is housed in a wood-framed building identified as the Equipment Shed (Figure 2). The regenerative blower produces a vacuum that removes subsurface vapors from the vadose zone. The regenerative blower operates on a pulsed schedule, running for two 6-hour periods every 24-hours (resting between operating times).

A vacuum-pipe line extends from the blower in the equipment shed to the north vault, where a manifold directs vacuum to SVE Wells 1 through 4. Similarly, a vacuum-pipe line extends from the blower in the equipment shed to the south vault, where a manifold directs vacuum to SVE Wells 5 through 9.

### *System Monitoring*

During monthly site visits, vacuum readings were observed on vacuum gauges and recorded. The vacuum gauges are located on the K/O tank and at each of the two vacuum lines immediately after the manifold. The manifold is located inside the shed, positioned between the K/O tank and the wells.

### *Vapor Removal Discussion*

On October 10, 2016, vapor samples were collected from the exhaust-stack and SVE Wells. Collected vapor samples were analyzed for PCE and its breakdown components by EPA Method 8260. Analytical results demonstrate that PCE continues to be removed from the soil on the property (Table 1, Graph 1). The highest concentration of PCE removal

continues to be observed in SVE Wells 5, 6, and 7. These wells are located in the area that was mapped as having elevated concentrations of Tetrachloroethene (PCE) in the soil (Figure 3). From June 23, 2016 to October 10, 2016, an additional 0.56 pounds of PCE have been removed from the subsurface (see Table 2).

***Summary Discussion***

The system has removed over 100 pounds of PCE since the system was started (December 7, 2012 to October 10, 2016), with the largest volume removed during the first year of system operation. This also is illustrated on Graph 2, which plots the effluent concentrations of PCE over time removed by the system. Both the cumulative total and daily average of PCE removal are shown on Graph 2.

The most recent analytical results indicate that the system continues to remove PCE contaminants from the subsurface. Based on the continued removal of PCE, the understood objective to reduce PCE concentrations in the soil (for ultimate soil disposal), and the agreement with SRO (to reduce potential off-site migration), it is recommended the SVE system continue to be operated on a pulsed-operating schedule. A pulsed-operating schedule reduces the time of system operation to a few hours per day. This allows for the diffusion of contaminant into the soil pores during resting phases, which can then be removed by the SVE during the operational phase. Additionally, pulsed operation allows for decreased electricity use while still removing residual contamination.

## Closing

We appreciate this opportunity to provide our services to you. Please contact us at your convenience with any questions regarding our work or findings.

Sincerely,
**G-Logics, Inc.**

Rory L. Galloway, LG, LHG
Principal

Dan Hatch, PMP
Remediation Manager

cc: Mark Myers
Rob Zarkos

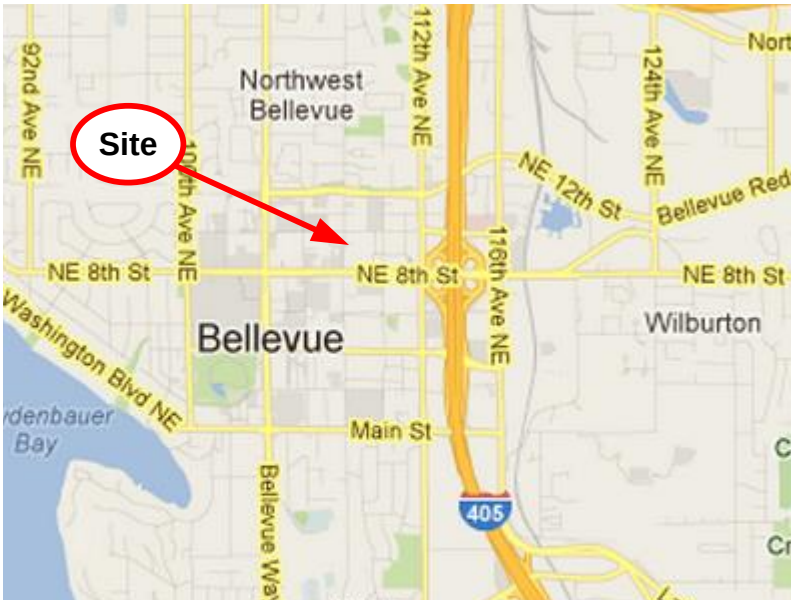
Attachments:

Figure 1 – Site Location Maps
Figure 2 – Property Diagram, AS/SVE System Layout
Figure 3 – AS/SVE System Layout with PCE Mapping

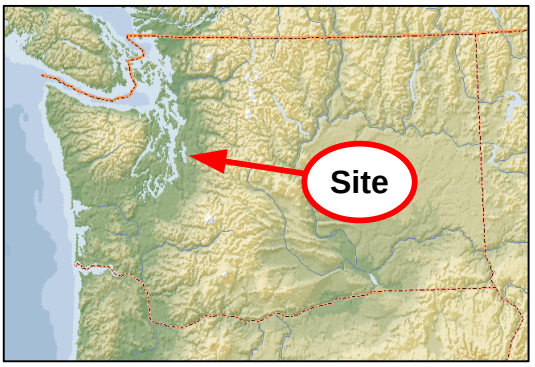
Table 1 – Vapor Sample Analyses, Volatile Organic Compounds
Table 2 – Vapor Contaminant Removal Summary Calculations

Graph 1 –Analytical Results for PCE Vapor
Graph 2 – Pounds of PCE Removal

# FIGURES



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***Site Location Maps***

***Former Thinker Toy Property***

***10610 NE 8th Street***

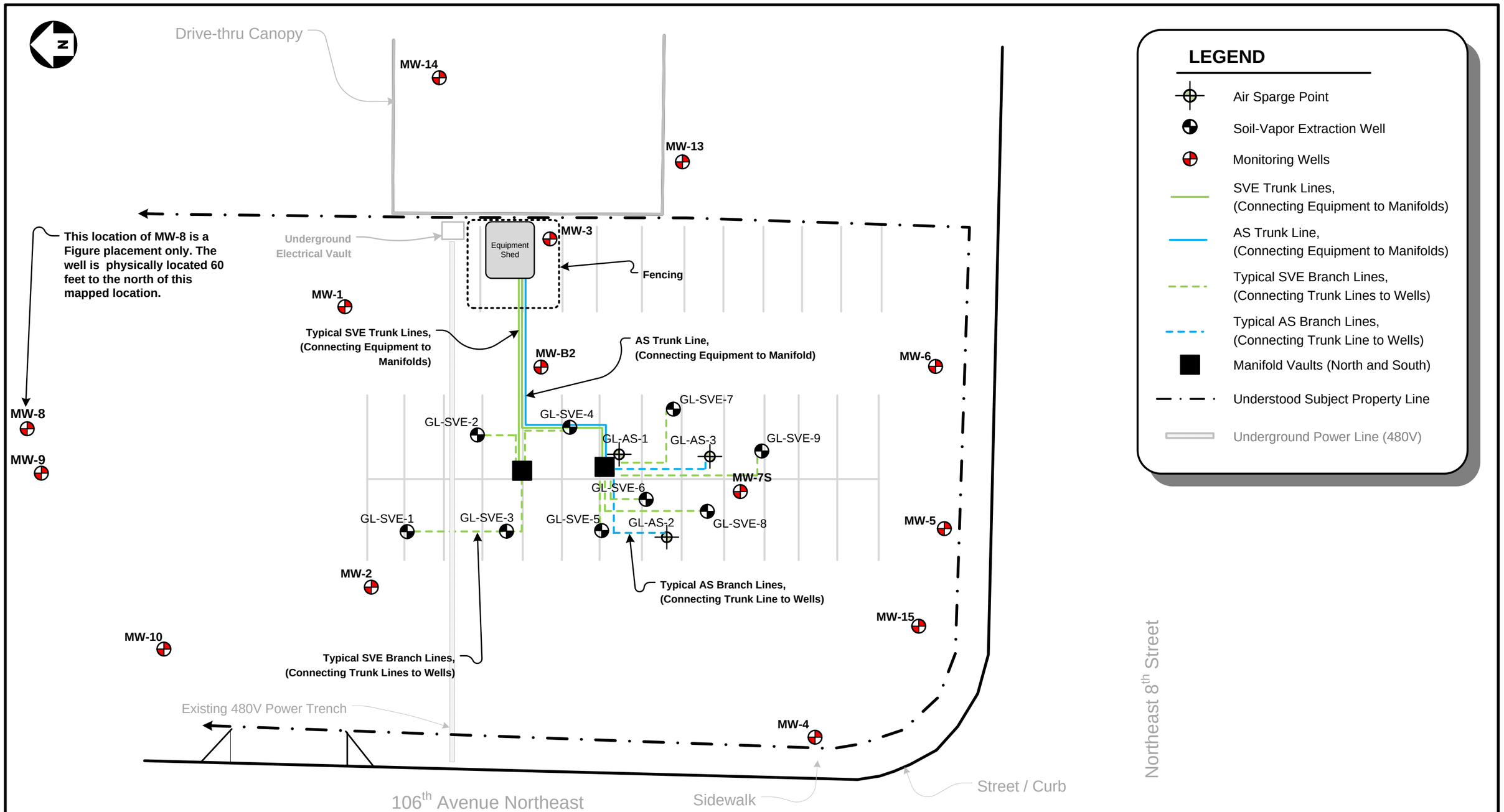
***Bellevue, Washington***

Figure

1

Project File: 01-0739-F F1.vsd

Mapping Reference: Google, Bing Maps




Project File: 01-0739-F F2.vsd

g-logics

This figure contains information in color. Black & white photocopies may not be suitable for review. Buildings are shown for reference only and may not be to scale.

**Approximate Drawing Scale: 1" = 20'**

0 ft. 12 ft. 20 ft. 40 ft.

***Property Diagram, AS/SVE System Layout***

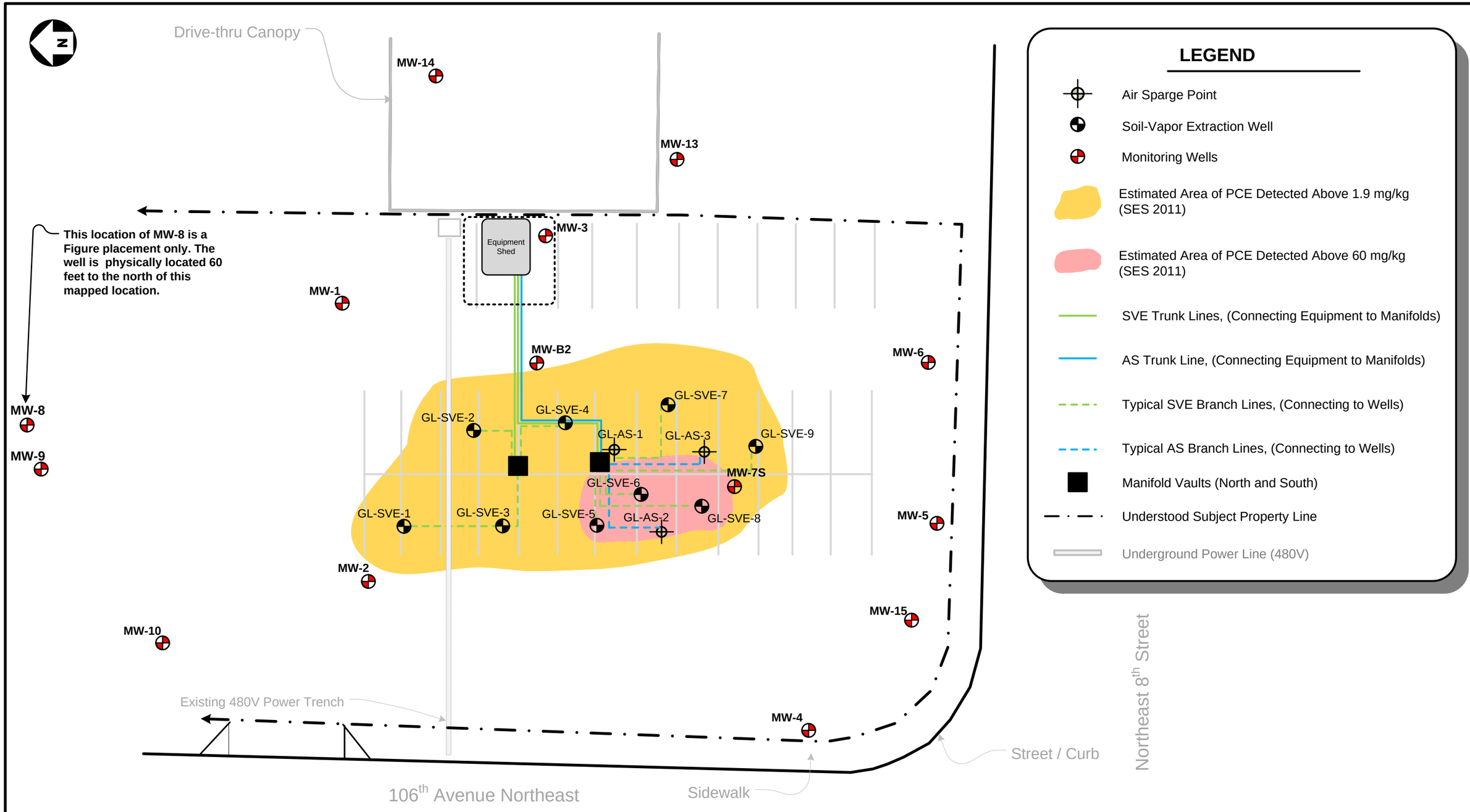
***Former Thinker Toy Property***

***NE. 8th St.***

***Bellevue, Washington***

Figure 2

Mapping Reference: SES RI/FS (2011), G-Logics Site Measurements




Project File: 01-0739-F F3.vsd

g-logics

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**Approximate Drawing Scale: 1" = 20'**

0 ft. 12 ft. 20 ft. 40 ft.

***AS/SVE System Layout with PCE Mapping***

***Former Thinker Toy Property***

***NE. 8th St.***

***Bellevue, Washington***

Figure 3

Mapping Reference: SES RI/FS (2011), G-Logics Site Measurements

# TABLES

**TABLE 1**
**Vapor Sample Analyses, Volatile Organic Compounds (1)**
**Former Thinker Toys (Bellevue)**

| Sample Location | Sample Date | Sample Number | trans-1,2-Dichloroethene | Chloroethane | Toluene | cis-1, 2-Dichloroethene | Trichloroethene (TCE) | Tetrachloroethene (PCE) | Chloroform | m, p-Xylene | 1,1,1-Trichloroethane |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **(Units reported in ug/L)** | | | | | | | | | | | |
| **Exhaust Stack** | 12/7/2012 | Ex Stack | <0.100 | <0.100 | <0.100 | **1.32** | **1.29** | **21.4** | <0.100 | <0.100 | <0.100 |
| | 12/28/2012 | Ex Stack | <0.100 | <0.100 | <0.100 | **0.110** | <0.100 | **28.0** | <0.100 | **0.106** | <0.100 |
| | 1/5/2013 | Ex Stack | <0.100 | <0.100 | <0.100 | **0.103** | <0.100 | **26.5** | <0.100 | <0.100 | <0.100 |
| | 1/14/2013 | Ex Stack (H) | <0.100 | <0.100 | <0.100 | **0.231** | **0.203** | **54.6** | <0.100 | <0.100 | <0.100 |
| | 1/22/2013 | Ex Stack | <0.100 | <0.100 | <0.100 | **0.169** | **0.169** | **64.7** | <0.100 | <0.100 | <0.100 |
| | 1/31/2013 | Ex Stack | <0.100 | <0.100 | <0.100 | **0.453** | **0.475** | **40.4** | <0.100 | <0.100 | <0.100 |
| | 3/8/2013 | Ex Stack | <0.100 | <0.100 | <0.100 | <0.100 | <0.100 | **19.4** | <0.100 | <0.100 | <0.100 |
| | 4/10/2013 | Ex Stack | <0.100 | <0.100 | <0.100 | <0.100 | <0.100 | **9.85** | <0.100 | <0.100 | <0.100 |
| | 5/30/2013 | Ex Stack | <0.100 | <0.100 | <0.100 | <0.100 | <0.100 | **8.0** | <0.100 | <0.100 | <0.100 |
| | 6/11/2013 | Ex Stack | <0.100 | <0.100 | <0.100 | **0.113** | **0.145** | **21.8** | <0.100 | <0.100 | <0.100 |
| | 9/12/2013 | Ex Stack | <0.100 | <0.100 | <0.100 | <0.100 | **0.127** | **15.7** | <0.100 | <0.100 | <0.100 |
| | 12/23/2013 | Ex Stack | <0.100 | <0.100 | <0.100 | <0.100 | <0.100 | **4.65** | <0.100 | **0.143** | <0.100 |
| | 3/19/2014 | Ex Stack Dup | <0.100 | <0.100 | <0.100 | <0.100 | <0.100 | **0.826** | <0.100 | <0.100 | <0.100 |
| | 6/19/2014 | Ex Stack | <0.100 | <0.100 | <0.100 | <0.100 | <0.100 | **2.24** | <0.100 | <0.100 | <0.100 |
| | 9/19/2014 | Ex Stack | <0.100 | <0.100 | <0.100 | **0.101** | <0.100 | **8.00** | <0.100 | <0.100 | <0.100 |
| | 12/19/2014 | Ex Stack | <0.100 | <0.100 | <0.100 | <0.100 | <0.100 | **3.46** | <0.100 | <0.100 | <0.100 |
| | 3/26/2015 | Ex Stack | <0.100 | <0.100 | <0.100 | <0.100 | <0.100 | **1.38** | <0.100 | <0.100 | <0.100 |
| | 6/26/2015 | Ex Stack | <0.100 | <0.100 | <0.100 | <0.100 | **0.105** | **10.00** | <0.100 | <0.100 | <0.100 |
| | 1/7/2016 | Ex Stack | <0.100 | <0.100 | <0.100 | <0.100 | <0.100 | **1.69** | <0.100 | <0.100 | <0.100 |
| | 3/17/2016 | Ex Stack | <0.100 | <0.100 | <0.100 | <0.100 | <0.100 | **1.50** | <0.100 | <0.100 | <0.100 |
| | 6/23/2016 | Ex Stack | <0.100 | <0.100 | **0.161** | <0.100 | <0.100 | **1.03** | <0.100 | <0.100 | <0.100 |
| | 10/10/2016 | Ex Stack | <0.100 | <0.100 | <0.100 | <0.100 | **0.103** | **4.12** | <0.100 | <0.100 | <0.100 |
| **SVE-1** | 1/31/2013 | SVE-1 | <0.100 | <0.100 | **0.123** | **1.06** | **0.445** | **10.8** | <0.100 | <0.100 | <0.100 |
| | 3/8/2013 | SVE-1 | <0.100 | <0.100 | <0.100 | <0.100 | **0.147** | **14.0** | <0.100 | <0.100 | <0.100 |
| | 4/10/2013 | SVE-1 | <0.100 | <0.100 | <0.100 | **0.271** | **0.289** | **22.8** | <0.100 | <0.100 | <0.100 |
| | 5/30/2013 | SVE-1 | <0.100 | <0.100 | <0.100 | **0.333** | <0.100 | **16.4** | <0.100 | <0.100 | <0.100 |
| | 6/11/2013 | SVE-1 | <0.100 | <0.100 | <0.100 | **0.313** | **0.363** | **37.7** | <0.100 | <0.100 | <0.100 |
| | 9/12/2013 | SVE-1 | <0.100 | <0.100 | <0.100 | **0.133** | **0.176** | **18.4** | <0.100 | <0.100 | <0.100 |
| | 12/23/2013 | SVE-1 | <0.100 | <0.100 | <0.100 | <0.100 | <0.100 | **12.8** | <0.100 | <0.100 | <0.100 |
| | 3/19/2014 | SVE-1 | <0.100 | <0.100 | <0.100 | <0.100 | <0.100 | **2.73** | <0.100 | <0.100 | <0.100 |
| | 6/19/2014 | SVE-1 | <0.100 | <0.100 | <0.100 | <0.100 | <0.100 | **1.72** | <0.100 | <0.100 | <0.100 |
| | 9/19/2014 | SVE-1 | <0.100 | <0.100 | <0.100 | **0.330** | **0.225** | **14.6** | <0.100 | <0.100 | <0.100 |
| | 12/19/2014 | SVE-1 | <0.100 | <0.100 | **0.134** | <0.100 | <0.100 | **2.12** | <0.100 | **0.117** | <0.100 |
| | 3/26/2015 | SVE-1 | <0.100 | <0.100 | <0.100 | <0.100 | <0.100 | **0.870** | <0.100 | <0.100 | <0.100 |
| | 6/26/2015 | SVE-1 | <0.100 | <0.100 | <0.100 | <0.100 | <0.100 | **3.29** | <0.100 | <0.100 | <0.100 |
| | 1/7/2016 | SVE-1 | <0.100 | <0.100 | <0.100 | <0.100 | <0.100 | **2.75** | <0.100 | <0.100 | <0.100 |
| | 3/17/2016 | SVE-1 | <0.100 | <0.100 | <0.100 | <0.100 | <0.100 | **5.07** | <0.100 | <0.100 | <0.100 |
| | 6/23/2016 | SVE-1 | <0.100 | <0.100 | <0.100 | <0.100 | <0.100 | **0.952** | <0.100 | <0.100 | <0.100 |
| | 10/10/2016 | SVE-1 | <0.100 | <0.100 | <0.100 | **0.108** | **0.123** | **5.10** | <0.100 | <0.100 | <0.100 |

**TABLE 1**
**Vapor Sample Analyses, Volatile Organic Compounds (1)**
**Former Thinker Toys (Bellevue)**

| Sample Location | Sample Date | Sample Number | | trans-1,2-Dichloroethene | Chloroethane | Toluene | cis-1, 2-Dichloroethene | Trichloroethene (TCE) | Tetrachloroethene (PCE) | Chloroform | m, p-Xylene | 1,1,1-Trichloroethane |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (Units reported in ug/L) | | | | | | | | | | | | |
| **SVE-2** | 1/31/2013 | SVE-2 | | <0.100 | <0.100 | **0.132** | **1.04** | **0.466** | **5.64** | <0.100 | **0.190** | <0.100 |
| | 3/8/2013 | SVE-2 | | <0.100 | <0.100 | <0.100 | nd | <0.100 | **6.82** | <0.100 | nd | <0.100 |
| | 4/10/2013 | SVE-2 | | <0.100 | <0.100 | <0.100 | nd | <0.100 | **6.55** | <0.100 | nd | <0.100 |
| | 5/30/2013 | SVE-2 | | <0.100 | <0.100 | <0.100 | nd | <0.100 | **6.27** | <0.100 | nd | <0.100 |
| | 6/11/2013 | SVE-2 | | <0.100 | <0.100 | <0.100 | nd | <0.100 | **10.6** | <0.100 | nd | <0.100 |
| | 9/12/2013 | SVE-2 | | <0.100 | <0.100 | <0.100 | nd | <0.100 | **4.82** | <0.100 | nd | <0.100 |
| | 12/23/2013 | SVE-2 | | <0.100 | <0.100 | <0.100 | nd | <0.100 | **7.04** | <0.100 | nd | <0.100 |
| | 3/19/2014 | SVE-2 | | <0.100 | <0.100 | <0.100 | nd | <0.100 | **1.98** | <0.100 | nd | <0.100 |
| | 6/19/2014 | SVE-2 | | <0.100 | <0.100 | <0.100 | nd | <0.100 | **0.316** | <0.100 | nd | <0.100 |
| | 9/19/2014 | SVE-2 | | <0.100 | <0.100 | <0.100 | **0.168** | <0.100 | **3.93** | <0.100 | nd | <0.100 |
| | 12/19/2014 | SVE-2 | | <0.100 | <0.100 | <0.100 | nd | <0.100 | **1.23** | <0.100 | nd | <0.100 |
| | 3/26/2015 | SVE-2 | | <0.100 | <0.100 | <0.100 | nd | <0.100 | **0.677** | <0.100 | nd | <0.100 |
| | 6/26/2015 | SVE-2 | | <0.100 | <0.100 | <0.100 | nd | <0.100 | **1.28** | <0.100 | nd | <0.100 |
| | 1/7/2016 | SVE-2 | | <0.100 | <0.100 | <0.100 | nd | <0.100 | **1.63** | <0.100 | nd | <0.100 |
| | 3/17/2016 | SVE-2 | * | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 6/23/2016 | SVE-2 | | <0.100 | <0.100 | **0.229** | <0.100 | <0.100 | **0.293** | <0.100 | <0.100 | <0.100 |
| | 10/10/2016 | SVE-2 | | <0.100 | <0.100 | <0.100 | <0.100 | <0.100 | **2.93** | <0.100 | <0.100 | <0.100 |
| **SVE-3** | 1/31/2013 | SVE-3 | | <0.100 | <0.100 | **0.125** | **1.030** | **0.460** | **15.8** | <0.100 | <0.100 | <0.100 |
| | 3/8/2013 | SVE-3 | | <0.100 | <0.100 | <0.100 | **1.07** | **0.553** | **13.6** | <0.100 | <0.100 | <0.100 |
| | 4/10/2013 | SVE-3 | | <0.100 | <0.100 | <0.100 | **0.340** | **0.426** | **14.2** | <0.100 | <0.100 | <0.100 |
| | 5/30/2013 | SVE-3 | | <0.100 | <0.100 | <0.100 | **1.08** | **0.494** | **14.8** | <0.100 | <0.100 | <0.100 |
| | 6/11/2013 | SVE-3 | | <0.100 | <0.100 | <0.100 | **3.14** | **1.74** | **36.7** | <0.100 | <0.100 | <0.100 |
| | 9/12/2013 | SVE-3 | | <0.100 | <0.100 | <0.100 | **0.989** | **0.495** | **15.8** | <0.100 | <0.100 | <0.100 |
| | 12/23/2013 | SVE-3 | | <0.100 | <0.100 | <0.100 | <0.100 | **0.261** | **21.2** | <0.100 | <0.100 | <0.100 |
| | 3/19/2014 | SVE-3 | | <0.100 | <0.100 | <0.100 | <0.100 | <0.100 | **3.60** | <0.100 | <0.100 | <0.100 |
| | 6/19/2014 | SVE-3 | | <0.100 | <0.100 | <0.100 | <0.100 | <0.100 | **2.15** | <0.100 | <0.100 | <0.100 |
| | 9/19/2014 | SVE-3 | | <0.100 | <0.100 | <0.100 | **0.115** | <0.100 | **2.21** | <0.100 | <0.100 | <0.100 |
| | 12/19/2014 | SVE-3 | | <0.100 | <0.100 | <0.100 | <0.100 | <0.100 | **1.49** | <0.100 | <0.100 | <0.100 |
| | 3/26/2015 | SVE-3 | | <0.100 | <0.100 | <0.100 | <0.100 | <0.100 | **3.78** | <0.100 | <0.100 | <0.100 |
| | 6/26/2015 | SVE-3 | | <0.100 | <0.100 | <0.100 | <0.100 | <0.100 | **0.93** | <0.100 | <0.100 | <0.100 |
| | 1/7/2016 | SVE-3 | | <0.100 | <0.100 | <0.100 | <0.100 | <0.100 | **0.93** | <0.100 | <0.100 | <0.100 |
| | 3/17/2016 | SVE-3 | * | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 6/23/2016 | SVE-3 | | <0.100 | <0.100 | **0.238** | <0.100 | **0.176** | **3.76** | <0.100 | <0.100 | <0.100 |
| | 10/10/2016 | SVE-3 | | <0.100 | <0.100 | <0.100 | <0.100 | <0.100 | **2.51** | <0.100 | <0.100 | <0.100 |
| **SVE-4** | 1/31/2013 | SVE-4 | | <0.100 | <0.100 | **0.125** | **0.981** | **0.546** | **18.3** | <0.100 | <0.100 | <0.100 |
| | 3/8/2013 | SVE-4 | | <0.100 | <0.100 | <0.100 | **0.853** | **3.380** | **70.5** | <0.100 | <0.100 | <0.100 |
| | 4/10/2013 | SVE-4 | | <0.100 | <0.100 | <0.100 | **1.29** | **12.1** | **191** | <0.100 | <0.100 | <0.100 |
| | 5/30/2013 | SVE-4 | | <0.100 | <0.100 | <0.100 | **0.40** | **2.52** | **78.2** | <0.100 | <0.100 | <0.100 |
| | 6/11/2013 | SVE-4 | | <0.100 | <0.100 | <0.100 | **0.240** | **1.70** | **21.0** | <0.100 | <0.100 | <0.100 |
| | 9/12/2013 | SVE-4 | | <0.100 | <0.100 | <0.100 | **2.74** | **15.3** | **493** | <0.100 | <0.100 | <0.100 |
| | 12/23/2013 | SVE-4 | | <0.100 | <0.100 | <0.100 | **0.890** | **10.8** | **199** | <0.100 | <0.100 | <0.100 |
| | 3/19/2014 | SVE-4 | | <0.100 | <0.100 | <0.100 | <0.100 | <0.100 | **4.77** | <0.100 | <0.100 | <0.100 |
| | 6/19/2014 | SVE-4 | | <0.100 | <0.100 | <0.100 | <0.100 | <0.100 | **0.195** | <0.100 | <0.100 | <0.100 |
| | 9/19/2014 | SVE-4 | | <0.100 | <0.100 | <0.100 | **0.686** | **7.01** | **119** | <0.100 | <0.100 | <0.100 |
| | 12/19/2014 | SVE-4 | | <0.100 | <0.100 | <0.100 | **0.125** | **0.306** | **4.60** | <0.100 | <0.100 | <0.100 |
| | 3/26/2015 | SVE-4 | | <0.100 | <0.100 | <0.100 | <0.100 | <0.100 | **2.09** | <0.100 | <0.100 | <0.100 |
| | 6/26/2015 | SVE-4 | | <0.100 | <0.100 | <0.100 | <0.100 | <0.100 | **1.66** | <0.100 | <0.100 | <0.100 |
| | 1/7/2016 | SVE-4 | | <0.100 | <0.100 | <0.100 | <0.100 | <0.100 | **0.67** | <0.100 | <0.100 | <0.100 |
| | 3/17/2016 | SVE-4 | * | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 6/23/2016 | SVE-4 | | <0.100 | <0.100 | **0.249** | <0.100 | <0.100 | **1.73** | <0.100 | <0.100 | <0.100 |
| | 10/10/2016 | SVE-4 | | <0.100 | <0.100 | <0.100 | **0.191** | **1.18** | **14.8** | <0.100 | <0.100 | <0.100 |

**TABLE 1**
**Vapor Sample Analyses, Volatile Organic Compounds (1)**
**Former Thinker Toys (Bellevue)**

| Sample Location | Sample Date | Sample Number | trans-1,2-Dichloroethene | Chloroethane | Toluene | cis-1, 2-Dichloroethene | Trichloroethene (TCE) | Tetrachloroethene (PCE) | Chloroform | m, p-Xylene | 1,1,1-Trichloroethane |
|---|---|---|---|---|---|---|---|---|---|---|---|
| (Units reported in ug/L) | | | | | | | | | | | |
| **SVE-5** | 1/31/2013 | SVE-5 | <0.100 | <0.100 | **0.147** | **0.62** | **1.06** | **45.0** | <0.100 | <0.100 | <0.100 |
| | 3/8/2013 | SVE-5 | <0.100 | <0.100 | <0.100 | **0.46** | **0.66** | **55.2** | <0.100 | <0.100 | <0.100 |
| | 4/10/2013 | SVE-5 | <0.100 | <0.100 | <0.100 | **0.934** | **1.40** | **38.1** | <0.100 | <0.100 | <0.100 |
| | 5/30/2013 | SVE-5 | <0.100 | **0.222** | <0.100 | <0.100 | **0.473** | **33.3** | <0.100 | <0.100 | <0.100 |
| | 6/11/2013 | SVE-5 | **0.458** | <0.100 | <0.100 | **5.87** | **9.23** | **238** | <0.100 | <0.100 | <0.100 |
| | 9/12/2013 | SVE-5 | **0.224** | <0.100 | <0.100 | **4.04** | **8.7** | **1,720** | **0.135** | <0.100 | **0.262** |
| | 12/23/2013 | SVE-5 | <0.100 | <0.100 | <0.100 | **2.26** | **3.5** | **472** | <0.100 | <0.100 | <0.100 |
| | 3/19/2014 | SVE-5 | <0.100 | <0.100 | <0.100 | <0.100 | <0.100 | **6.07** | <0.100 | <0.100 | <0.100 |
| | 6/19/2014 | SVE-5 | <0.100 | <0.100 | <0.100 | <0.100 | <0.100 | **0.806** | <0.100 | <0.100 | <0.100 |
| | 9/19/2014 | SVE-5 | <0.100 | <0.100 | <0.100 | **0.311** | **0.648** | **125** | <0.100 | <0.100 | <0.100 |
| | 12/19/2014 | SVE-5 | <0.100 | <0.100 | <0.100 | <0.100 | <0.100 | **22.0** | <0.100 | <0.100 | <0.100 |
| | 3/26/2015 | SVE-5 | <0.100 | <0.100 | <0.100 | <0.100 | **0.196** | **16.7** | <0.100 | <0.100 | <0.100 |
| | 6/26/2015 | SVE-5 | <0.100 | <0.100 | <0.100 | <0.100 | **0.259** | **50.10** | <0.100 | <0.100 | <0.100 |
| | 1/7/2016 | SVE-5 | <0.100 | <0.100 | <0.100 | **0.478** | **1.88** | **53.80** | <0.100 | <0.100 | <0.100 |
| | 3/17/2016 | SVE-5 | <0.100 | <0.100 | <0.100 | <0.100 | <0.100 | **2.36** | <0.100 | <0.100 | <0.100 |
| | 6/23/2016 | SVE-5 | <0.100 | <0.100 | **0.240** | **0.153** | **0.307** | **21.5** | <0.100 | <0.100 | <0.100 |
| | 10/10/2016 | SVE-5 | <0.100 | <0.100 | <0.100 | **1.23** | **4.70** | **174** | <0.100 | <0.100 | <0.100 |
| **SVE-6** | 1/31/2013 | SVE-6 | <0.100 | <0.100 | **0.130** | **0.246** | **0.716** | **77.6** | <0.100 | <0.100 | <0.100 |
| | 3/8/2013 | SVE-6 | <0.100 | <0.100 | <0.100 | nd | **0.257** | **307** | <0.100 | <0.100 | <0.100 |
| | 4/10/2013 | SVE-6 | <0.100 | <0.100 | <0.100 | **0.204** | **0.471** | **240** | <0.100 | <0.100 | <0.100 |
| | 5/30/2013 | SVE-6 | <0.100 | <0.100 | <0.100 | nd | nd | **47.4** | <0.100 | <0.100 | <0.100 |
| | 6/11/2013 | SVE-6 | <0.100 | <0.100 | <0.100 | **0.284** | **1.21** | **370** | <0.100 | <0.100 | <0.100 |
| | 9/12/2013 | SVE-6 | <0.100 | <0.100 | <0.100 | **0.287** | **0.748** | **238** | <0.100 | <0.100 | <0.100 |
| | 12/23/2013 | SVE-6 | <0.100 | <0.100 | <0.100 | **0.153** | **0.290** | **55.3** | <0.100 | <0.100 | <0.100 |
| | 3/19/2014 | SVE-6 | <0.100 | <0.100 | <0.100 | nd | **0.159** | **11.5** | <0.100 | <0.100 | <0.100 |
| | 6/19/2014 | SVE-6 | <0.100 | <0.100 | <0.100 | nd | nd | **1.2** | <0.100 | <0.100 | <0.100 |
| | 9/19/2014 | SVE-6 | <0.100 | <0.100 | <0.100 | **0.835** | **0.960** | **196** | <0.100 | <0.100 | <0.100 |
| | 12/19/2014 | SVE-6 | <0.100 | <0.100 | <0.100 | **0.287** | **0.348** | **27.7** | <0.100 | <0.100 | <0.100 |
| | 3/26/2015 | SVE-6 | <0.100 | <0.100 | <0.100 | nd | **0.130** | **13.6** | <0.100 | <0.100 | <0.100 |
| | 6/26/2015 | SVE-6 | <0.100 | <0.100 | <0.100 | nd | nd | **14.60** | <0.100 | <0.100 | <0.100 |
| | 1/7/2016 | SVE-6 | <0.100 | <0.100 | <0.100 | **0.157** | **0.491** | **39.40** | <0.100 | <0.100 | <0.100 |
| | 3/17/2016 | SVE-6 | <0.100 | <0.100 | <0.100 | **0.199** | **0.350** | **16.8** | <0.100 | <0.100 | <0.100 |
| | 6/23/2016 | SVE-6 | <0.100 | <0.100 | **0.212** | <0.100 | <0.100 | **7.55** | <0.100 | <0.100 | <0.100 |
| | 10/10/2016 | SVE-6 | <0.100 | <0.100 | <0.100 | **0.358** | **1.13** | **57.4** | <0.100 | <0.100 | <0.100 |
| **SVE-7** | 1/31/2013 | SVE-7 | <0.100 | <0.100 | **0.139** | **0.388** | **0.712** | **57.2** | <0.100 | **0.187** | <0.100 |
| | 3/8/2013 | SVE-7 | <0.100 | <0.100 | <0.100 | **0.591** | **7.500** | **165.0** | <0.100 | <0.100 | <0.100 |
| | 4/10/2013 | SVE-7 | <0.100 | <0.100 | <0.100 | <0.100 | **0.688** | **22.9** | <0.100 | <0.100 | <0.100 |
| | 5/30/2013 | SVE-7 | <0.100 | <0.100 | <0.100 | <0.100 | <0.100 | **6.0** | <0.100 | <0.100 | <0.100 |
| | 6/11/2013 | SVE-7 | <0.100 | <0.100 | <0.100 | <0.100 | **1.72** | **89.0** | <0.100 | <0.100 | <0.100 |
| | 9/12/2013 | SVE-7 | <0.100 | <0.100 | <0.100 | **0.570** | **16.2** | **330** | <0.100 | <0.100 | <0.100 |
| | 12/23/2013 | SVE-7 | <0.100 | <0.100 | <0.100 | **0.244** | **6.1** | **102** | <0.100 | <0.100 | <0.100 |
| | 3/19/2014 | SVE-7 | <0.100 | <0.100 | <0.100 | <0.100 | **1.34** | **18.6** | <0.100 | <0.100 | <0.100 |
| | 6/19/2014 | SVE-7 | <0.100 | <0.100 | <0.100 | <0.100 | **0.664** | **3.10** | <0.100 | <0.100 | <0.100 |
| | 9/19/2014 | SVE-7 | <0.100 | <0.100 | <0.100 | **0.107** | **1.530** | **87.6** | <0.100 | <0.100 | <0.100 |
| | 12/19/2014 | SVE-7 | <0.100 | <0.100 | <0.100 | <0.100 | **0.338** | **13.8** | <0.100 | <0.100 | <0.100 |
| | 3/26/2015 | SVE-7 | <0.100 | <0.100 | <0.100 | <0.100 | **0.436** | **7.24** | <0.100 | <0.100 | <0.100 |
| | 6/26/2015 | SVE-7 | <0.100 | <0.100 | <0.100 | <0.100 | **0.104** | **6.25** | <0.100 | <0.100 | <0.100 |
| | 1/7/2016 | SVE-7 | <0.100 | <0.100 | <0.100 | <0.100 | **0.975** | **29.0** | <0.100 | <0.100 | <0.100 |
| | 3/17/2016 | SVE-7 | <0.100 | <0.100 | <0.100 | <0.100 | <0.100 | **1.0** | <0.100 | <0.100 | <0.100 |
| | 6/23/2016 | SVE-7 | <0.100 | <0.100 | **0.203** | <0.100 | **0.310** | **7.9** | <0.100 | <0.100 | <0.100 |
| | 10/10/2016 | SVE-7 | <0.100 | <0.100 | <0.100 | **0.231** | **2.61** | **55.7** | <0.100 | <0.100 | <0.100 |

**TABLE 1**
**Vapor Sample Analyses, Volatile Organic Compounds (1)**
**Former Thinker Toys (Bellevue)**

| Sample Location | Sample Date | Sample Number | | trans-1,2-Dichloroethene | Chloroethane | Toluene | cis-1, 2-Dichloroethene | Trichloroethene (TCE) | Tetrachloroethene (PCE) | Chloroform | m, p-Xylene | 1,1,1-Trichloroethane |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (Units reported in ug/L) | | | | | | | | | | | | |
| **SVE-8** | 1/31/2013 | SVE-8 | | <0.100 | <0.100 | **0.134** | **0.349** | **0.373** | **19.7** | <0.100 | **0.203** | <0.100 |
| | 3/8/2013 | SVE-8 | | <0.100 | <0.100 | nd | nd | **0.108** | **6.9** | <0.100 | nd | <0.100 |
| | 4/10/2013 | SVE-8 | | <0.100 | <0.100 | nd | nd | nd | **4.8** | <0.100 | nd | <0.100 |
| | 5/30/2013 | SVE-8 | | <0.100 | <0.100 | nd | nd | nd | **4.75** | <0.100 | nd | <0.100 |
| | 6/11/2013 | SVE-8 | | <0.100 | <0.100 | nd | nd | **0.175** | **31.6** | <0.100 | nd | <0.100 |
| | 9/12/2013 | SVE-8 | | <0.100 | <0.100 | nd | nd | **0.243** | **26.3** | <0.100 | nd | <0.100 |
| | 12/23/2013 | SVE-8 | | <0.100 | <0.100 | nd | nd | nd | **1.3** | <0.100 | nd | <0.100 |
| | 3/19/2014 | SVE-8 | | <0.100 | <0.100 | nd | nd | **0.391** | **10.5** | <0.100 | nd | <0.100 |
| | 6/19/2014 | SVE-8 | | <0.100 | <0.100 | nd | nd | **0.163** | **2.08** | <0.100 | nd | <0.100 |
| | 9/19/2014 | SVE-8 | | <0.100 | <0.100 | nd | nd | nd | **13.7** | <0.100 | nd | <0.100 |
| | 12/19/2014 | SVE-8 | | <0.100 | <0.100 | nd | nd | nd | **6.04** | <0.100 | nd | <0.100 |
| | 3/26/2015 | SVE-8 | | <0.100 | <0.100 | nd | nd | nd | **2.01** | <0.100 | nd | <0.100 |
| | 6/26/2015 | SVE-8 | | <0.100 | <0.100 | nd | nd | nd | **2.45** | <0.100 | nd | <0.100 |
| | 1/7/2016 | SVE-8 | | <0.100 | <0.100 | nd | nd | **0.189** | **12.9** | <0.100 | nd | <0.100 |
| | 3/17/2016 | SVE-8 | * | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 6/23/2016 | SVE-8 | | <0.100 | <0.100 | **0.201** | <0.100 | <0.100 | **3.75** | <0.100 | <0.100 | <0.100 |
| | 10/10/2016 | SVE-8 | | <0.100 | <0.100 | <0.100 | <0.100 | **0.489** | **26.7** | <0.100 | <0.100 | <0.100 |
| **SVE-9** | 1/31/2013 | SVE-9 | | <0.100 | <0.100 | **0.123** | **0.312** | **0.256** | **14.4** | <0.100 | <0.100 | <0.100 |
| | 3/8/2013 | SVE-9 | | <0.100 | <0.100 | <0.100 | <0.100 | <0.100 | **17.2** | <0.100 | <0.100 | <0.100 |
| | 4/10/2013 | SVE-9 | | <0.100 | <0.100 | <0.100 | <0.100 | <0.100 | **6.20** | <0.100 | <0.100 | <0.100 |
| | 5/30/2013 | SVE-9 | | <0.100 | **0.222** | <0.100 | <0.100 | <0.100 | **13.7** | <0.100 | <0.100 | <0.100 |
| | 6/11/2013 | SVE-9 | | <0.100 | <0.100 | <0.100 | <0.100 | <0.100 | **15.2** | <0.100 | <0.100 | <0.100 |
| | 9/12/2013 | SVE-9 | | <0.100 | <0.100 | <0.100 | <0.100 | **0.441** | **39.4** | <0.100 | <0.100 | <0.100 |
| | 12/23/2013 | SVE-9 | | <0.100 | <0.100 | <0.100 | <0.100 | <0.100 | **1.58** | <0.100 | <0.100 | <0.100 |
| | 3/19/2014 | SVE-9 | | <0.100 | <0.100 | <0.100 | <0.100 | **0.158** | **6.32** | <0.100 | <0.100 | <0.100 |
| | 6/19/2014 | SVE-9 | | <0.100 | <0.100 | <0.100 | <0.100 | <0.100 | **0.603** | <0.100 | <0.100 | <0.100 |
| | 9/19/2014 | SVE-9 | | <0.100 | <0.100 | <0.100 | <0.100 | <0.100 | **5.34** | <0.100 | <0.100 | <0.100 |
| | 12/19/2014 | SVE-9 | | <0.100 | <0.100 | <0.100 | <0.100 | <0.100 | **4.53** | <0.100 | <0.100 | <0.100 |
| | 3/26/2015 | SVE-9 | | <0.100 | <0.100 | <0.100 | <0.100 | <0.100 | **1.15** | <0.100 | <0.100 | <0.100 |
| | 6/26/2015 | SVE-9 | | <0.100 | <0.100 | <0.100 | <0.100 | <0.100 | **1.90** | <0.100 | <0.100 | <0.100 |
| | 1/7/2016 | SVE-9 | | <0.100 | <0.100 | <0.100 | <0.100 | **0.125** | **10.60** | <0.100 | <0.100 | <0.100 |
| | 3/17/2016 | SVE-9 | * | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 6/23/2016 | SVE-9 | | <0.100 | <0.100 | **0.178** | <0.100 | <0.100 | **2.88** | <0.100 | <0.100 | <0.100 |
| | 10/10/2016 | SVE-9 | | <0.100 | <0.100 | <0.100 | <0.100 | **0.234** | **16.7** | <0.100 | <0.100 | <0.100 |
| | | RL | | 0.100 | 0.100 | 0.100 | 0.100 | 0.100 | 0.100 | 0.100 | 0.100 | 0.100 |

Notes: Refer to site diagram(s) for sampling locations.
(1) Method EPA 8260B, Other 8260 Compounds not listed were not detected.
**H** Holding times for preparation or analysis exceeded.
<0.10 The analyte was not detected at a concentration above the indicated reporting limit.
--- Not Analyzed - No Sample Collected
* Well closed at valve, no sample collected this event.
**4.8** Bold Number(s) Indicates Contaminant Detected.
RL Laboratory Reporting Limits for EPA Method 8260
dup Duplicate Sample
Most Recent Sampling Event

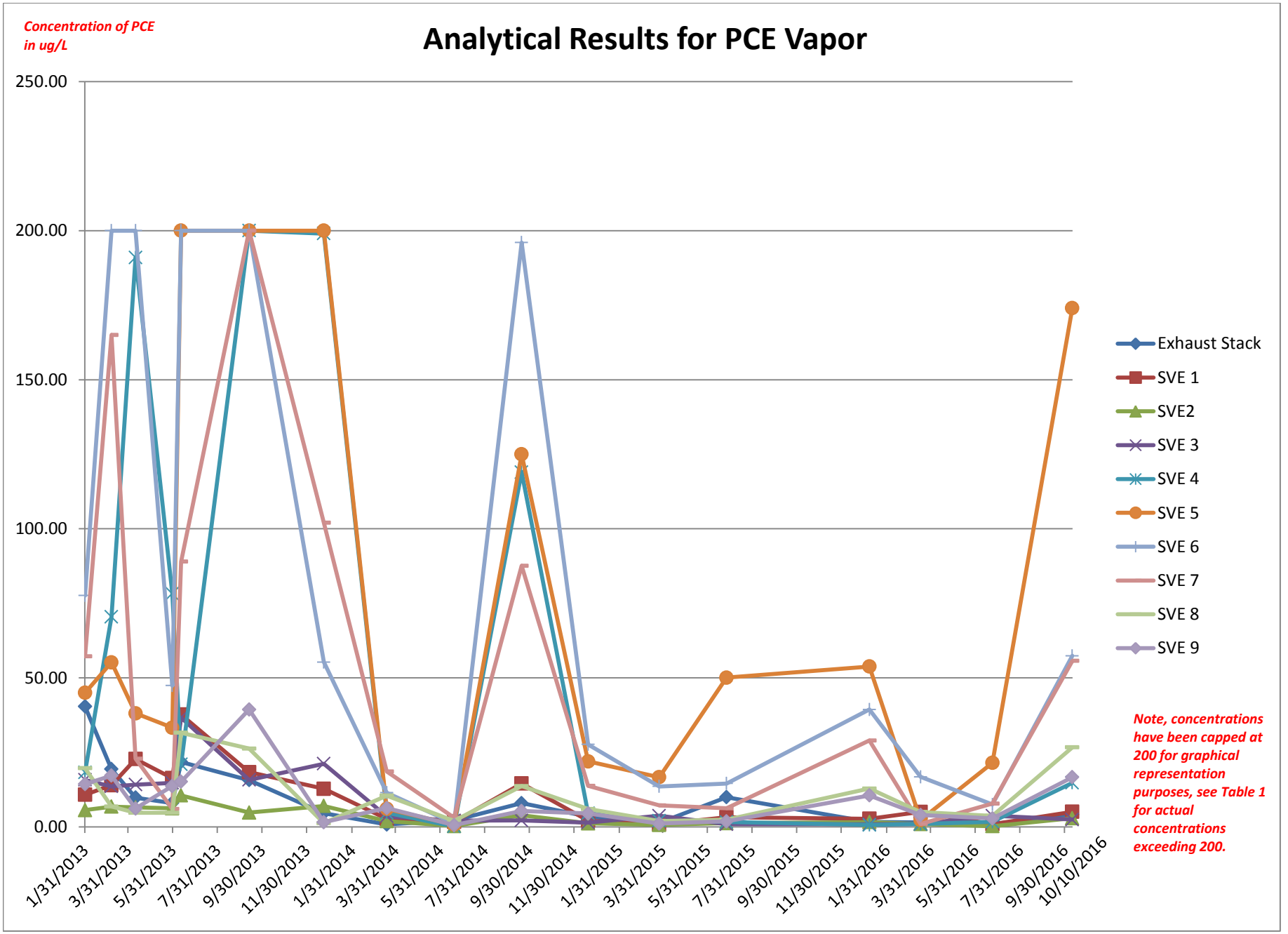
## Table 2
**Vapor Contaminant Removal Summary Calculations**
**Former Thinker Toys (Bellevue)**
**Tetrachloroethene (PCE) Removal**

| Period Start Date | Period End Date | Pounds Removed During Period | Elapsed Days During Period | Pounds Removed Daily (Average for Sampling Interval) |
|---|---|---|---|---|
| December 7, 2012 | December 28, 2012 | 4.43 | 21 | 0.211 |
| December 28, 2012 | January 5, 2013 | 2.27 | 8 | 0.284 |
| January 5, 2013 | January 14, 2013 | 3.10 | 9 | 0.344 |
| January 14, 2013 | January 22, 2013 | 2.79 | 8 | 0.349 |
| January 22, 2013 | January 31, 2013 | 2.96 | 9 | 0.329 |
| January 31, 2013 | March 8, 2013 | 10.35 | 36 | 0.288 |
| March 8, 2013 | April 10, 2013 | 5.94 | 33 | 0.180 |
| April 10, 2013 | May 30, 2013 | 5.58 | 50 | 0.112 |
| May 30, 2013 | June 11, 2013 | 2.27 | 12 | 0.189 |
| June 11, 2013 | September 12, 2013 | 22.10 | 93 | 0.238 |
| September 12, 2013 | December 23, 2013 | 13.16 | 102 | 0.129 |
| December 23, 2013 | March 19, 2014 | 3.01 | 86 | 0.035 |
| March 19, 2014 | June 19, 2014 | 1.79 | 92 | 0.019 |
| June 19, 2014 | September 19, 2014 | 5.78 | 92 | 0.063 |
| September 19, 2014 | December 19, 2014 | 3.21 | 91 | 0.035 |
| December 19, 2014 | March 26, 2015 | 1.46 | 97 | 0.015 |
| March 26, 2015 | June 26, 2015 | 3.22 | 92 | 0.035 |
| June 26, 2015 | January 7, 2016 | 4.92 | 195 | 0.025 |
| January 7, 2016 | March 17, 2016 | 0.94 | 70 | 0.013 |
| March 17, 2016 | June 23, 2016 | 0.24 | 97 | 0.003 |
| June 23, 2016 | October 10, 2016 | 0.56 | 109 | 0.005 |
| | *Total Pounds Removed: | 100.08 | | |
| | *Total Days of Operation: | 1294 | | |

* Quantity estimated from start of operation to most recent day of sample collection.

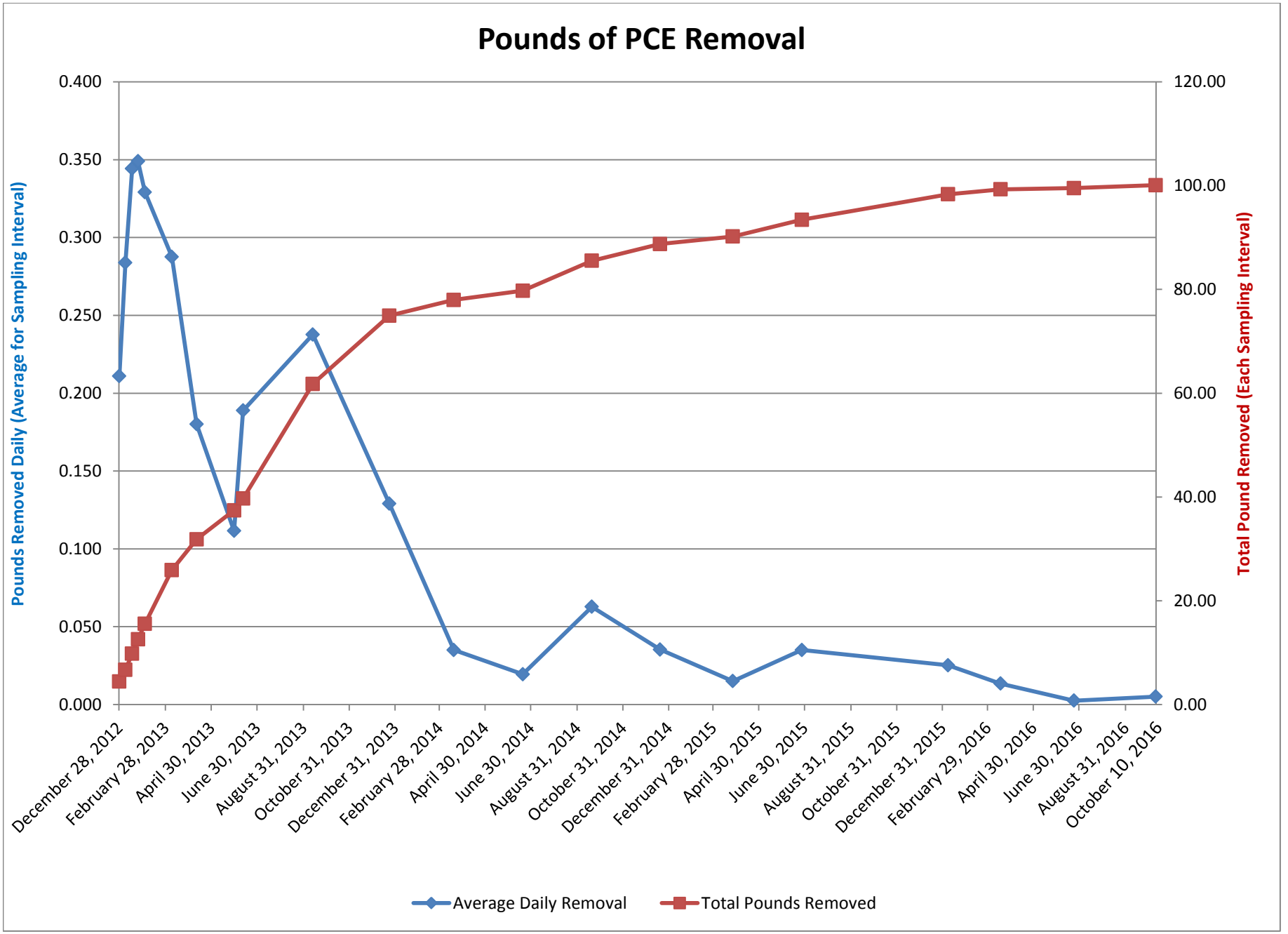
# GRAPHS

**Graph 1**
**Former Thinker Toys**




g-logics

**Graph 2**
**Former Thinker Toys**




g-logics