TETRA TECH, INC.

June 4, 2013

Dustin Johnson, P.E.
City of Bozeman
P.O. Box 1230
Bozeman, MT 59715

SUBJECT: Progress Report on Soil Gas Probe BSV-9 to BSV-12 Installations
Second Sampling Event and Analysis of Soil Gas Samples from
Soil Gas Probes BSV-1 through BSV-12
Bozeman Landfill, Bozeman, Montana

Dear Mr. Johnson,

The following progress report summarizes results of soil gas investigative activities conducted between May 6 and May 10, 2013. These activities were conducted as a follow-up on detections of volatile organic compounds (VOCs) in soil gas samples collected from 14 soil gas probes in 8 locations in a residential area immediately south of the Bozeman Landfill[1]. The activities were conducted in accordance with *Task Order/Proposal Additional Soil Gas Investigation and Sampling* dated May 2, 2013. This task order was approved by City of Bozeman on May 3, 2013. The monitoring of probes BSV-1 to BSV-8 occurred on April 4, 2013. Field and analytical results of this earlier monitoring event are summarized in Tetra Tech's Progress Report dated May 14, 2013[1].

Investigative procedures including probe installations, sampling, and laboratory analysis were conducted in accordance with the Montana Vapor Intrusion Guide published by Montana Department of Environmental Quality[2]. As with the previous probe installations, the additional soil gas probes BSV-9 through BSV-12 were installed using a Geoprobe® operated by Enviro Probe Services located in Butte, Montana. On May 6, 2013, probes were installed at four locations along the south boundary of the Bozeman Landfill (**Figure 1**).

During installation of probes BSV-9 to BSV-12, subsurface geologic materials were observed to consist of unconsolidated silt with varying amounts of sand and/or clay. Gravel scattered through the silt intervals would be observed, as well as some intervals of sand. In probe BSV-11, the silt is underlain by sand and gravel that resulted in drilling refusal at 21.1 feet below ground surface (bgs). Drilling refusal also occurred in probe BSV-9, at 22.3 feet bgs due to extremely dense silt. The other two probes, BSV-10 and BSV-12 attained their target depths of 30 feet bgs. Groundwater was not encountered in any of the probe locations on the landfill property.

At BSV-9 and BSV-11 locations, probes were installed at two (*shallow* and *deep*) depth intervals or approximately 10 and 20 feet depth below ground surface (bgs). At BSV-10 and BSV-12 locations, probes were installed at three (*shallow, mid,* and *deep*) depth intervals or approximately 10, 20, and 30 feet depth below ground surface (bgs). Probe locations are shown in **Figure 1**. All probe locations were completed with seven-inch long, stainless steel-screened implants connected to ¼-inch OD Nylaflow® tubing to the surface. The tubing is protected with steel, bolt-down, flush-mount covers secured with concrete grout. The logs of soil gas probes BSV-9 through BSV-12 are contained in **Attachment A**.

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On May 7, 2013, soil gas probes BSV-9 through BSV-12 were fitted with one-way and three-way polycarbonate (Luer) valves and purged of three pore volumes using a *Gilian BDX Abatement Air Sampler* pump operating at approximately 2 liters per minute. This was conducted to insure the removal of any atmospheric air and allow the entry of 'formation' soil gas. All materials comprising the soil gas probes and completion materials (10-20 silica sand and powdered bentonite) were specified to not sorb VOCs.

Gas samples were collected from the soil gas probes on May 9 and 10, 2013 using 6 liter SUMMA canisters and flow controllers set to 200 milliliters per minute for each probe. Immediately prior to sample collection, the tubing and probe were purged of soil gas using a *Gilian BDX Abatement Air Sampler* pump operating at approximately 2 liters per minute. The duration of this purging varied with the length of tubing to be purged: two seconds of purging for up to 10 feet of tubing, four seconds of purging for up to 20 feet of tubing, and six seconds of purging for up to 20 feet of tubing. Sample equipment was provided by Eurofins Air Toxics (Air Toxics) in Folsom, California. The air sampling field data sheets and atmospheric temperature and barometric pressure logs are contained in **Attachment B**

The SUMMA canister samples were shipped to Air Toxics for laboratory analysis of selected VOCs using the TO-15 Selected Ion Mode (SIM) method. VOC components were selected on the basis of what had been detected or assessed by Tetra Tech to be of particular concern in the October 2012 gas sampling of the BLG- methane monitoring probes. Therefore, the VOC components analyzed include the following:

Tetrahydrofuran
1,2,4 trimethylbenzene
Vinyl chloride
cis 1,2-dichloroethene
Benzene
Trichloroethene
Toluene
Tetrachloroethene
Ethylbenzene
Xylenes
trans 1,2-dichloroethene
Chloroform

The laboratory report is contained in **Attachment C**. VOC components detected at or above the analytical *Report Limit* include the following:

Tetrahydrofuran
1,2,4 trimethylbenzene
Vinyl chloride
cis 1,2-dichloroethene
Benzene
Trichloroethene
Toluene
Tetrachloroethene
Ethylbenzene
Xylenes
Chloroform

The above detections are summarized in **Table 1**. Results of the April, 2013 sampling and analysis event are also included in this table. In addition, analytical results in this table are plotted against United States Environmental Protection Agency (EPA) residential indoor air screening levels (RSLs) (for individual VOC components)[3]. The VOC components that exceed the EPA residential screening level are highlighted in **Table 1**. Components detected that exceeded EPA RSLs include the following:

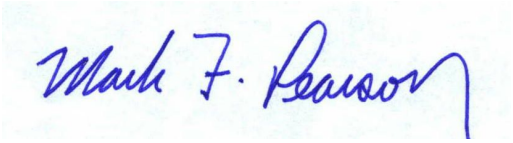
1,2,4-Trimethylbenzene
Vinyl Chloride
Benzene
Trichloroethene
Tetrachloroethene
Ethylbenzene
Chloroform

Concentrations of components detected and exceeding EPA RSLs are presented in plan maps of the site (**Figures 2** through **7**). These figures display the concentration differences between individual locations and the shallow and deep probes or shallow, middle (mid), and deep probes for the April and May 2013 sampling events.

Please contact me with any questions or comments regarding this progress report.

Sincerely,

Tetra Tech Inc.



Mark Pearson
Project Manager/Hydrogeologist

References cited:

1 Tetra Tech, 2013. Progress Report on Soil Gas Probe Installation, Sampling, and Analysis of Soil Gas Samples, Soil Gas Probes BSV-1 through BSV-8; Bozeman Landfill, Bozeman, Montana. Report submitted to City of Bozeman. May 14.

2 Department of Environmental Quality, 2011. *Montana Vapor Intrusion Guide.* http://deq.mt.gov/statesuperfund/viguide.mcpx.

3 United States Environmental Protection Agency, November 2012. Regional Screening Levels (formerly PRGs), Screening Levels for Chemical Contaminants. Pacific Southwest, Region 9. http://www.epa.gov/region9/superfund/prg

List of Table and Figures:

List of Attachments:

Table 1
Analysis of Soil Gas Samples
Bozeman Landfill
Bozeman, Montana

Analyte concentrations in micrograms per cubic meter (µg/m3)

Sample Location		BSV-1	BSV-1 DUP	BSV-1
Collection Date		4/4/2013	4/4/2013	5/9/2013
Probe Depth		SHALLOW	SHALLOW	SHALLOW
Top of Filter Pack (ft bgs)		6.3	6.3	6.3
Analyte	EPA SL			
Tetrahydrofuran	2,100	<3.2	<3.2	<3.2
1,2,4-Trimethylbenzene	7.3	<1.1	<1.1	<1.1
Vinyl Chloride	0.16	<0.056	<0.056	<0.056
cis-1,2-Dichloroethene	No SL	<0.18	<0.18	<0.17
Benzene	0.31	1.2	1.2	1.6
Trichloroethene	0.43	2.2	2.2	2.3
Toluene	5,200	0.68	0.63	1.2
Tetrachloroethene	9.40	90	96	98
Ethyl Benzene	0.97	0.24	0.32	0.49
m,p-Xylene	100	<0.38	<0.38	0.59
o-Xylene	100	<0.19	<0.19	0.55
trans-1,2-Dichloroethene	63	<0.88	<0.88	<0.87
Chloroform	0.11	0.64	0.61	0.97

Sample Location		BSV-2	BSV-2	BSV-2	BSV-2
Collection Date		4/4/2013	4/4/2013	5/9/2013	5/9/2013
Probe Depth		SHALLOW	DEEP	SHALLOW	DEEP
Top of Filter Pack (ft bgs)		7.5	15.5	7.5	15.5
Analyte	EPA SL				
Tetrahydrofuran	2,100	<3.0	<3.2	<3.4	<3.2
1,2,4-Trimethylbenzene	7.3	2.0	<1.0	1.1	<1.0
Vinyl Chloride	0.16	<0.053	<0.055	<0.058	<0.055
cis-1,2-Dichloroethene	No SL	<0.16	<0.17	<0.18	<0.17
Benzene	0.31	3.0	2.6	1.6	1.9
Trichloroethene	0.43	<0.22	<0.23	<0.25	<0.23
Toluene	5,200	3.9	2.2	1.5	0.93
Tetrachloroethene	9.40	28	72	44	74
Ethyl Benzene	0.97	1.5	0.93	0.80	0.50
m,p-Xylene	100	3.0	1.9	0.80	0.50
o-Xylene	100	1.3	0.92	0.77	0.48
trans-1,2-Dichloroethene	63	<0.82	<0.85	<0.91	<0.85
Chloroform	0.11	3.7	1.7	1.8	1.1

Sample Location		BSV-3	BSV-3	BSV-3	BSV-3
Collection Date		4/4/2013	4/4/2013	5/9/2013	5/9/2013
Probe Depth		SHALLOW	DEEP	SHALLOW	DEEP
Top of Filter Pack (ft bgs)		7.1	15.1	7.1	15.1
Analyte	EPA SL				
Tetrahydrofuran	2,100	<3.4	<3.5		<3.2
1,2,4-Trimethylbenzene	7.3	2.4	<1.2		<1.1
Vinyl Chloride	0.16	<0.058	<0.061		<0.055
cis-1,2-Dichloroethene	No SL	<0.18	<0.19	Plugged -	<0.17
Benzene	0.31	10	3.6	No Sample	2.2
Trichloroethene	0.43	<0.24	<0.26	Collected	<0.23
Toluene	5,200	18	1.2		0.62
Tetrachloroethene	9.40	0.78	2.2		2.6
Ethyl Benzene	0.97	3.2	0.48		0.22
m,p-Xylene	100	9.0	0.78		<0.38
o-Xylene	100	3.6	0.56		<0.19
trans-1,2-Dichloroethene	63	<0.9	<0.94		<0.86
Chloroform	0.11	75	2.2		1.6

Table 1
Analysis of Soil Gas Samples
Bozeman Landfill
Bozeman, Montana

Analyte concentrations in micrograms per cubic meter (µg/m3)

Sample Location		BSV-4	BSV-4	BSV-4	BSV-4
Collection Date		4/4/2013	4/4/2013	5/9/2013	5/9/2013
Probe Depth		SHALLOW	DEEP	SHALLOW	DEEP
Top of Filter Pack (ft bgs)		7.5	13.5	7.5	13.5
Analyte	EPA SL				
Tetrahydrofuran	2,100	<3.6	<3.4	<3.2	<3.2
1,2,4-Trimethylbenzene	7.3	1.4	<1.1	1.2	<1.1
Vinyl Chloride	0.16	<0.062	<0.060	<0.056	<0.055
cis-1,2-Dichloroethene	No SL	<0.19	<0.18	<0.18	<0.17
Benzene	0.31	6.3	4.8	5.6	3.7
Trichloroethene	0.43	<0.26	<0.25	<0.24	<0.23
Toluene	5,200	6.6	1.6	4.1	0.84
Tetrachloroethene	9.40	2.7	6.7	4.6	7.7
Ethyl Benzene	0.97	1.5	0.53	0.78	0.35
m,p-Xylene	100	3.8	0.88	1.0	0.47
o-Xylene	100	1.5	0.57	0.81	0.28
trans-1,2-Dichloroethene	63	<0.96	<0.92	<0.88	<0.86
Chloroform	0.11	8.3	0.42	1.9	0.61

Sample Location		BSV-5	BSV-5	BSV-5	BSV-5 DUP	BSV-5
Collection Date		4/4/2013	4/4/2013	5/10/2013	5/10/2013	5/10/2013
Probe Depth		SHALLOW	DEEP	SHALLOW	SHALLOW	DEEP
Top of Filter Pack (ft bgs)		8.8	18.8	8.8	8.8	18.8
Analyte	EPA SL					
Tetrahydrofuran	2,100	<3.0	<5.4	<4.2	<3.8	<5.2
1,2,4-Trimethylbenzene	7.3	4.0	<1.8	5.2	4.8	<1.7
Vinyl Chloride	0.16	<0.053	<0.094	<0.073	<0.066	<0.089
cis-1,2-Dichloroethene	No SL	<0.16	<0.29	<0.23	<0.20	<0.28
Benzene	0.31	6.8	1.1	11	11	6.1
Trichloroethene	0.43	<0.22	0.94	<0.31	<0.28	1.3
Toluene	5,200	22	1.3	30	25	0.86
Tetrachloroethene	9.40	17	260	41	40	330
Ethyl Benzene	0.97	4.0	<0.32	5.4	5.1	<0.30
m,p-Xylene	100	14	<0.64	14	14	<0.61
o-Xylene	100	3.8	<0.32	4.7	4.3	<0.30
trans-1,2-Dichloroethene	63	<0.82	<1.4	<1.1	<1.0	<1.4
Chloroform	0.11	28	3.9	43	42	7.0

Sample Location		BSV-6	BSV-6	BSV-6	BSV-6
Collection Date		4/4/2013	4/4/2013	5/9/2013	5/9/2013
Probe Depth		SHALLOW	DEEP	SHALLOW	DEEP
Top of Filter Pack (ft bgs)		7.8	15.8	7.8	15.8
Analyte	EPA SL				
Tetrahydrofuran	2,100	<3.1	<3.3	<3.3	<3.2
1,2,4-Trimethylbenzene	7.3	2.7	<1.1	4.2	1.2
Vinyl Chloride	0.16	<0.054	<0.057	<0.058	<0.056
cis-1,2-Dichloroethene	No SL	<0.17	<0.18	<0.18	<0.18
Benzene	0.31	10	2.4	7.7	1.4
Trichloroethene	0.43	<0.23	<0.24	<0.24	0.28
Toluene	5,200	18	2.0	21	0.64
Tetrachloroethene	9.40	2.2	48	6.2	58
Ethyl Benzene	0.97	3.0	0.61	5.4	0.29
m,p-Xylene	100	9.6	1.1	12	0.41
o-Xylene	100	2.8	0.71	4.4	0.23
trans-1,2-Dichloroethene	63	<0.84	<0.89	<0.90	<0.88
Chloroform	0.11	32	0.50	16	<0.22

Table 1
Analysis of Soil Gas Samples
Bozeman Landfill
Bozeman, Montana

Analyte concentrations in micrograms per cubic meter (µg/m3)

Sample Location		BSV-7	BSV-7
Collection Date		4/4/2013	5/9/2013
Probe Depth		SHALLOW	SHALLOW
Top of Filter Pack (ft bgs)		6.8	6.8
Analyte	EPA SL		
Tetrahydrofuran	2,100	<3.6	<2.8
1,2,4-Trimethylbenzene	7.3	<1.2	<0.92
Vinyl Chloride	0.16	<0.063	<0.048
cis-1,2-Dichloroethene	No SL	<0.20	<0.15
Benzene	0.31	2.2	0.92
Trichloroethene	0.43	<0.27	<0.20
Toluene	5,200	0.83	0.82
Tetrachloroethene	9.40	9.2	14
Ethyl Benzene	0.97	0.43	0.28
m,p-Xylene	100	0.66	0.33
o-Xylene	100	0.38	0.20
trans-1,2-Dichloroethene	63	<0.98	<0.74
Chloroform	0.11	<0.24	<0.18

Sample Location		BSV-8	BSV-8	BSV-8	BSV-8
Collection Date		4/4/2013	4/4/2013	5/9/2013	5/9/2013
Probe Depth		SHALLOW	DEEP	SHALLOW	DEEP
Top of Filter Pack (ft bgs)		8.8	18.8	8.8	18.8
Analyte	EPA SL				
Tetrahydrofuran	2,100	<8.1	<12	<10	<11
1,2,4-Trimethylbenzene	7.3	<2.7	<4.0	<3.5	4.1
Vinyl Chloride	0.16	<0.14	<0.21	<0.18	<0.19
cis-1,2-Dichloroethene	No SL	<0.44	<0.65	<0.56	<0.60
Benzene	0.31	0.89	1.8	2.0	5.4
Trichloroethene	0.43	<0.59	<0.88	<0.76	<0.81
Toluene	5,200	4.1	8.0	2.8	7.4
Tetrachloroethene	9.40	530	680	680	790
Ethyl Benzene	0.97	0.98	3.0	1.1	5.1
m,p-Xylene	100	2.8	8.5	<1.2	8.6
o-Xylene	100	1.2	2.8	0.90	3.6
trans-1,2-Dichloroethene	63	<2.2	<3.3	<2.8	<3.0
Chloroform	0.11	1.6	<0.8	<0.69	<0.74

Sample Location		BSV-9	BSV-9
Collection Date		5/10/2013	5/10/2013
Probe Depth		SHALLOW	DEEP
Top of Filter Pack (ft bgs)		10.5	21.0
Analyte	EPA SL		
Tetrahydrofuran	2,100	17	12
1,2,4-Trimethylbenzene	7.3	9.1	2.8
Vinyl Chloride	0.16	<0.090	<0.12
cis-1,2-Dichloroethene	No SL	<0.28	<0.38
Benzene	0.31	1.5	1.0
Trichloroethene	0.43	1.4	1.9
Toluene	5,200	25	8.8
Tetrachloroethene	9.40	310	590
Ethyl Benzene	0.97	7.9	2.7
m,p-Xylene	100	32	9.8
o-Xylene	100	8.0	2.5
trans-1,2-Dichloroethene	63	<1.4	<1.9
Chloroform	0.11	1.6	1.3

Table 1
Analysis of Soil Gas Samples
Bozeman Landfill
Bozeman, Montana

Analyte concentrations in micrograms per cubic meter (µg/m3)

Sample Location		BSV-10	BSV-10	BSV-10 DUP	BSV-10
Collection Date		5/10/2013	5/10/2013	5/10/2013	5/10/2013
Probe Depth		SHALLOW	MID	MID	DEEP
Top of Filter Pack (ft bgs)		9.0	19.0	19.0	29.0
Analyte	EPA SL				
Tetrahydrofuran	2,100	46	26	25	35
1,2,4-Trimethylbenzene	7.3	<9.8	<3.4	<3.6	4.2
Vinyl Chloride	0.16	850	290	280	190
cis-1,2-Dichloroethene	No SL	<1.6	<0.56	0.61	1.0
Benzene	0.31	16	6.8	6.6	11
Trichloroethene	0.43	<2.1	1.4	1.4	2.4
Toluene	5,200	31	9.4	8.4	28
Tetrachloroethene	9.40	3.9	7.3	7.7	6.3
Ethyl Benzene	0.97	5.2	1.8	1.9	5.4
m,p-Xylene	100	17	7.4	7.6	16
o-Xylene	100	6.2	2.6	2.2	4.9
trans-1,2-Dichloroethene	63	<7.9	<2.8	<2.9	<2.2
Chloroform	0.11	14	2.7	2.6	2.4

Sample Location		BSV-11	BSV-11
Collection Date		5/10/2013	5/10/2013
Probe Depth		SHALLOW	DEEP
Top of Filter Pack (ft bgs)		9.0	20.0
Analyte	EPA SL		
Tetrahydrofuran	2,100	31	17
1,2,4-Trimethylbenzene	7.3	4.2	3.4
Vinyl Chloride	0.16	<0.055	<0.057
cis-1,2-Dichloroethene	No SL	<0.17	4.0
Benzene	0.31	1.7	2.5
Trichloroethene	0.43	0.87	20
Toluene	5,200	9.3	6.2
Tetrachloroethene	9.40	21	120
Ethyl Benzene	0.97	4.1	3.8
m,p-Xylene	100	14	12
o-Xylene	100	3.0	2.7
trans-1,2-Dichloroethene	63	<0.86	<0.88
Chloroform	0.11	1.2	0.87

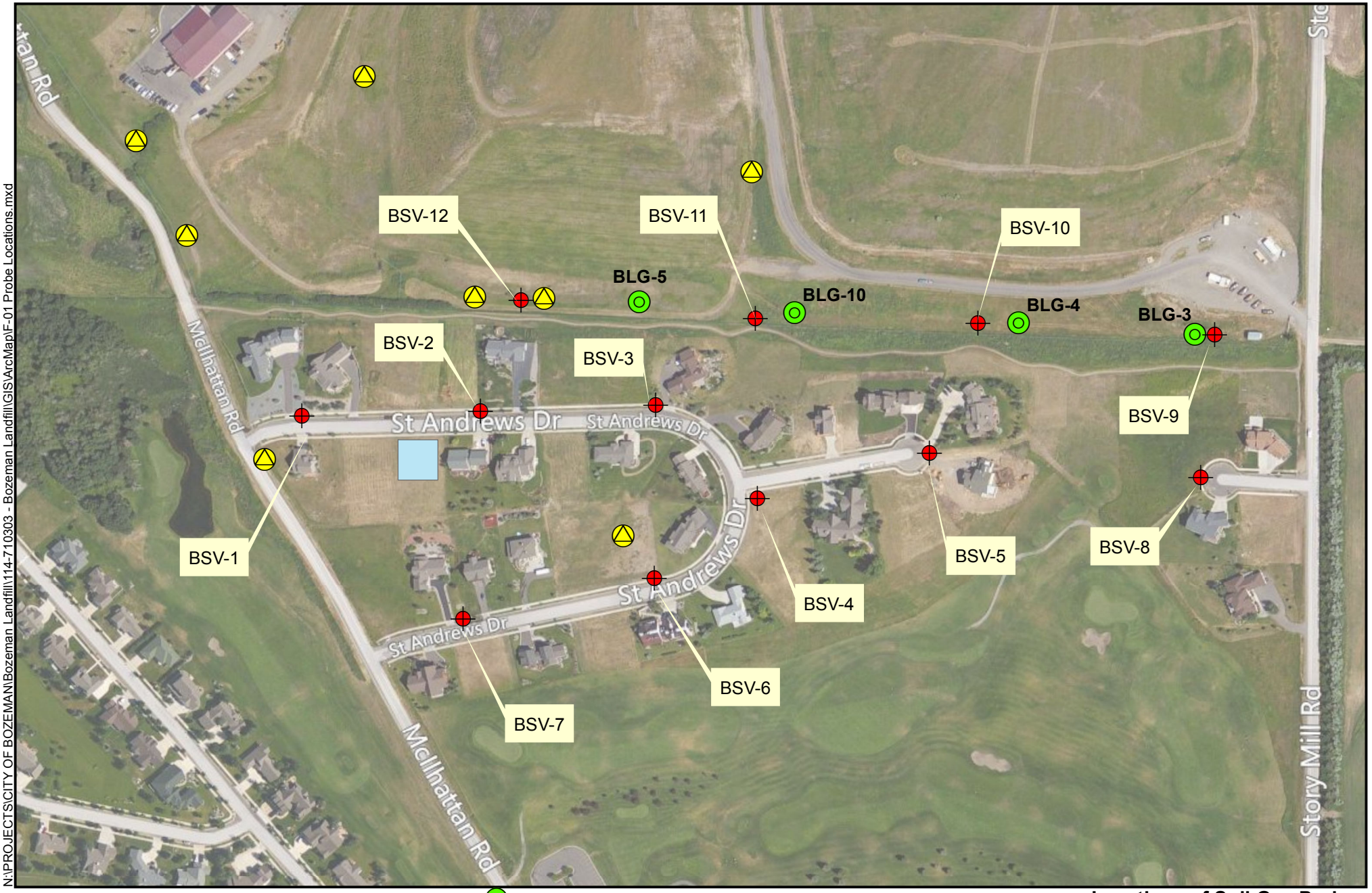
Sample Location		BSV-12	BSV-12	BSV-12
Collection Date		5/10/2013	5/10/2013	5/10/2013
Probe Depth		SHALLOW	MID	DEEP
Top of Filter Pack (ft bgs)		9.0	19.0	29.0
Analyte	EPA SL			
Tetrahydrofuran	2,100	15	16	13
1,2,4-Trimethylbenzene	7.3	2.9	1.9	<1.2
Vinyl Chloride	0.16	<0.054	<0.053	<0.061
cis-1,2-Dichloroethene	No SL	<0.17	0.17	2.4
Benzene	0.31	1.4	1.7	1.9
Trichloroethene	0.43	3.3	9.8	24
Toluene	5,200	6.2	5.3	3.1
Tetrachloroethene	9.40	26	52	91
Ethyl Benzene	0.97	3.2	2.1	1.1
m,p-Xylene	100	11	7.6	3.0
o-Xylene	100	2.2	1.9	0.81
trans-1,2-Dichloroethene	63	<0.84	<0.82	<0.95
Chloroform	0.11	0.88	1.1	1.3

Definitions:

EPA SL : Environmental Protection Agency Residential Indoor Air Screening Level (November 2012)
< : Less than analytical report limit
Top of Filter Pack : Top of depth interval consisting of 10-20 silica sand around soil gas probe
ft bgs : Feet below ground surface

Notes:

Yellow highlighting of analytical result indicates meeting or exceeding EPA SL
Samples analyzed by Eurofins Air Toxics, Folsom, California
Analytical Method is TO-15 Selective Ion Mode (SIM)



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N
W E
S

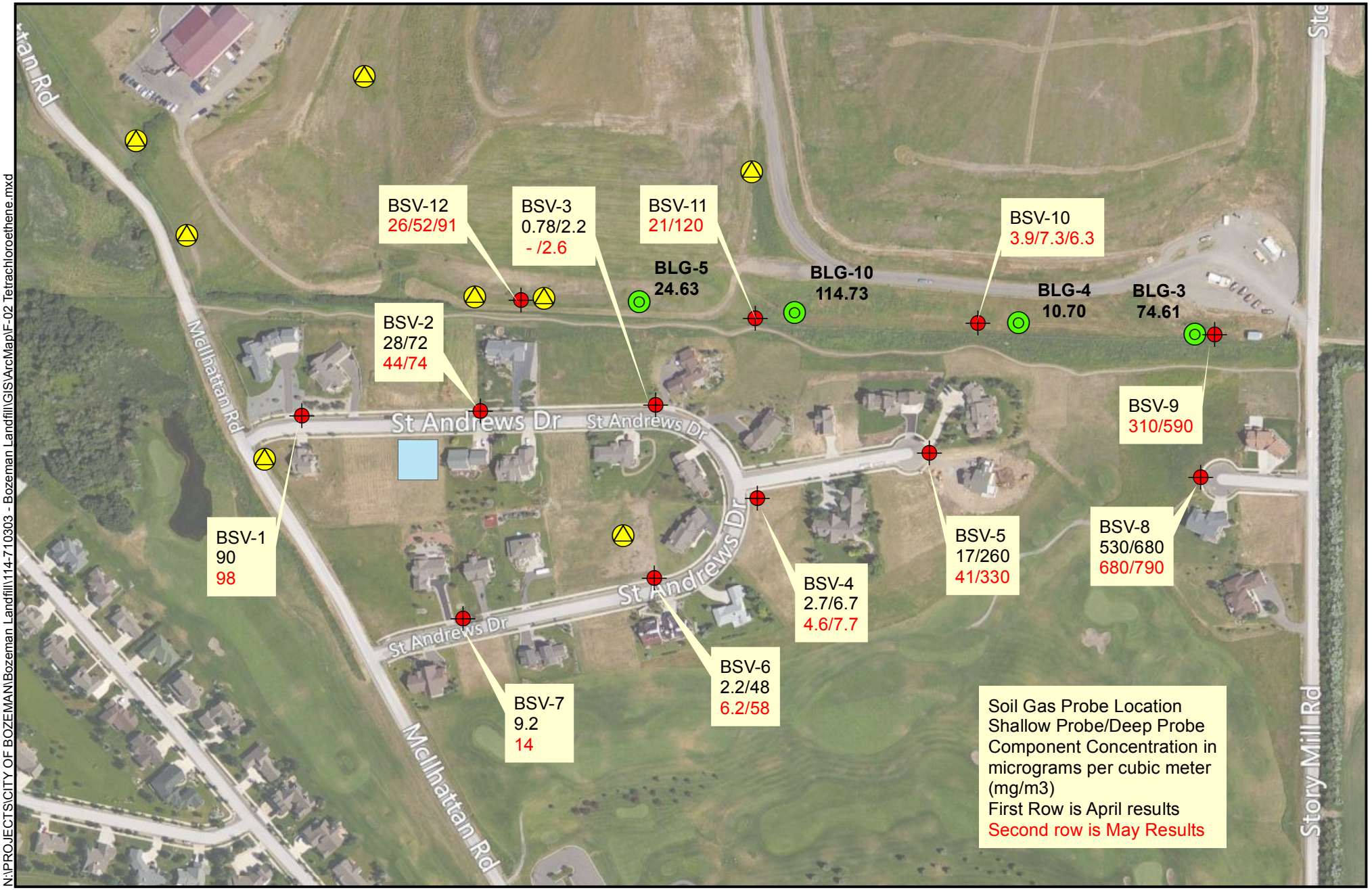
0 250 500
Feet

Datum: NAD83
StatePlane Montana

- Methane Monitoring Point
- Groundwater Monitoring Well
- Soil Gas Probe
- New Residential Construction

Notes: Soil gas probes were installed in March and May, 2013; all probe locations are between the sidewalk and street curb in the public right-of-way or on Bozeman Landfill property.

Locations of Soil Gas Probes
Bozeman Landfill
Bozeman, Montana
May 2013
FIGURE 1



N:\PROJECTS\CITY OF BOZEMAN\Bozeman Landfill\114-710303 - Bozeman Landfill\GIS\ArcMap\F-02 Tetrachloroethene.mxd

N
W E
S

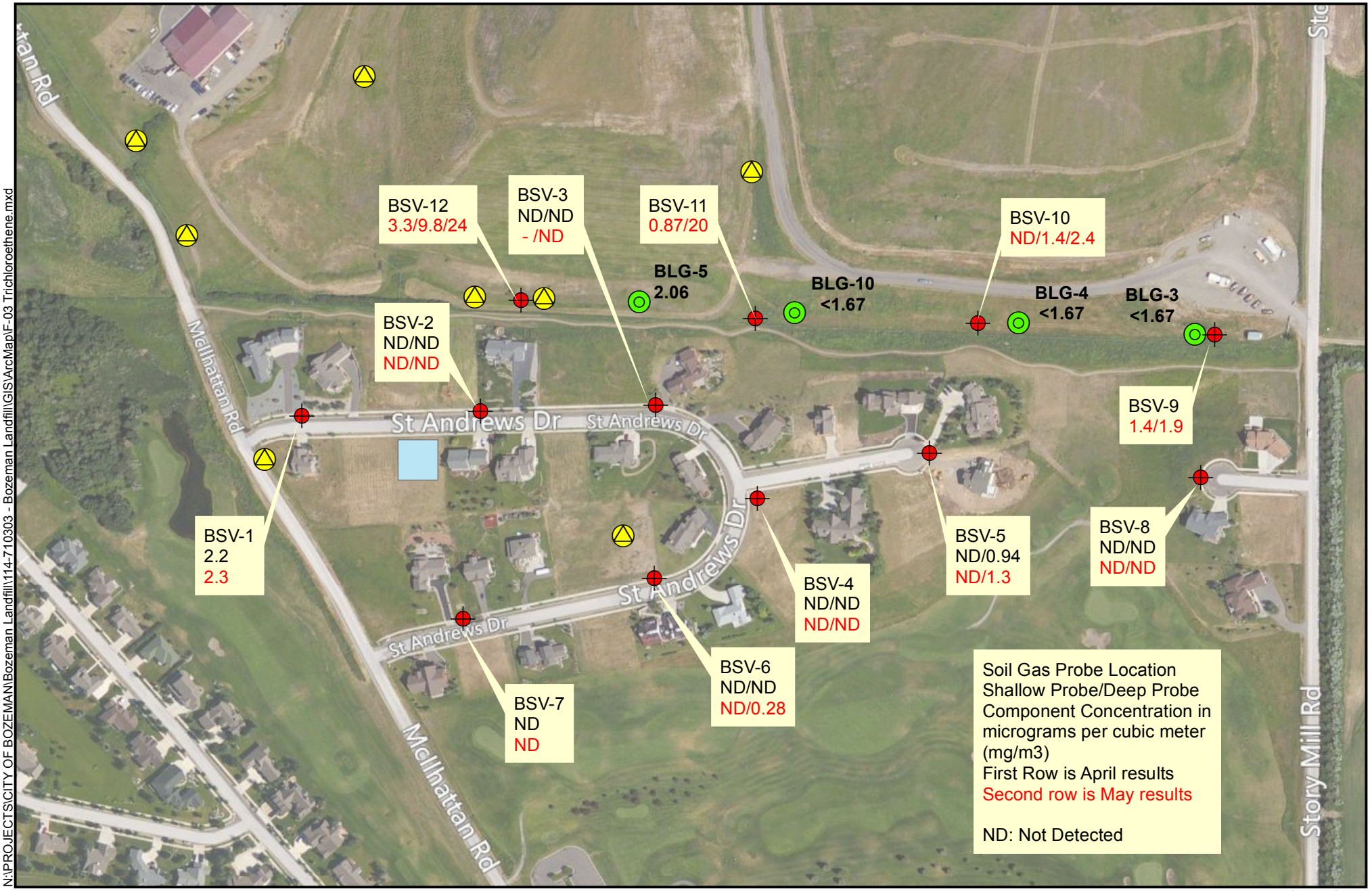
0 250 500
Feet

Datum: NAD83
StatePlane Montana

- Methane Monitoring Point
- Groundwater Monitoring Well
- Soil Gas Probe
- New Residential Construction

Notes: Methane Monitoring Probes (BLG-) were sampled Oct 30, 2012. Soil gas probes (BSV-) were installed March 20 and 21, 2013 and sampled April 4, 2013. Tetrachloroethene USEPA Residential Screening Level is 9.4 micrograms per cubic meter (November 2012).

Tetrachloroethene in Soil Gas
Bozeman Landfill
Bozeman, Montana
May 2013
FIGURE 2



N:\PROJECTS\CITY OF BOZEMAN\Bozeman Landfill\114-710303 - Bozeman Landfill\GIS\ArcMap\F-03 Trichloroethene.mxd

N
W E
S

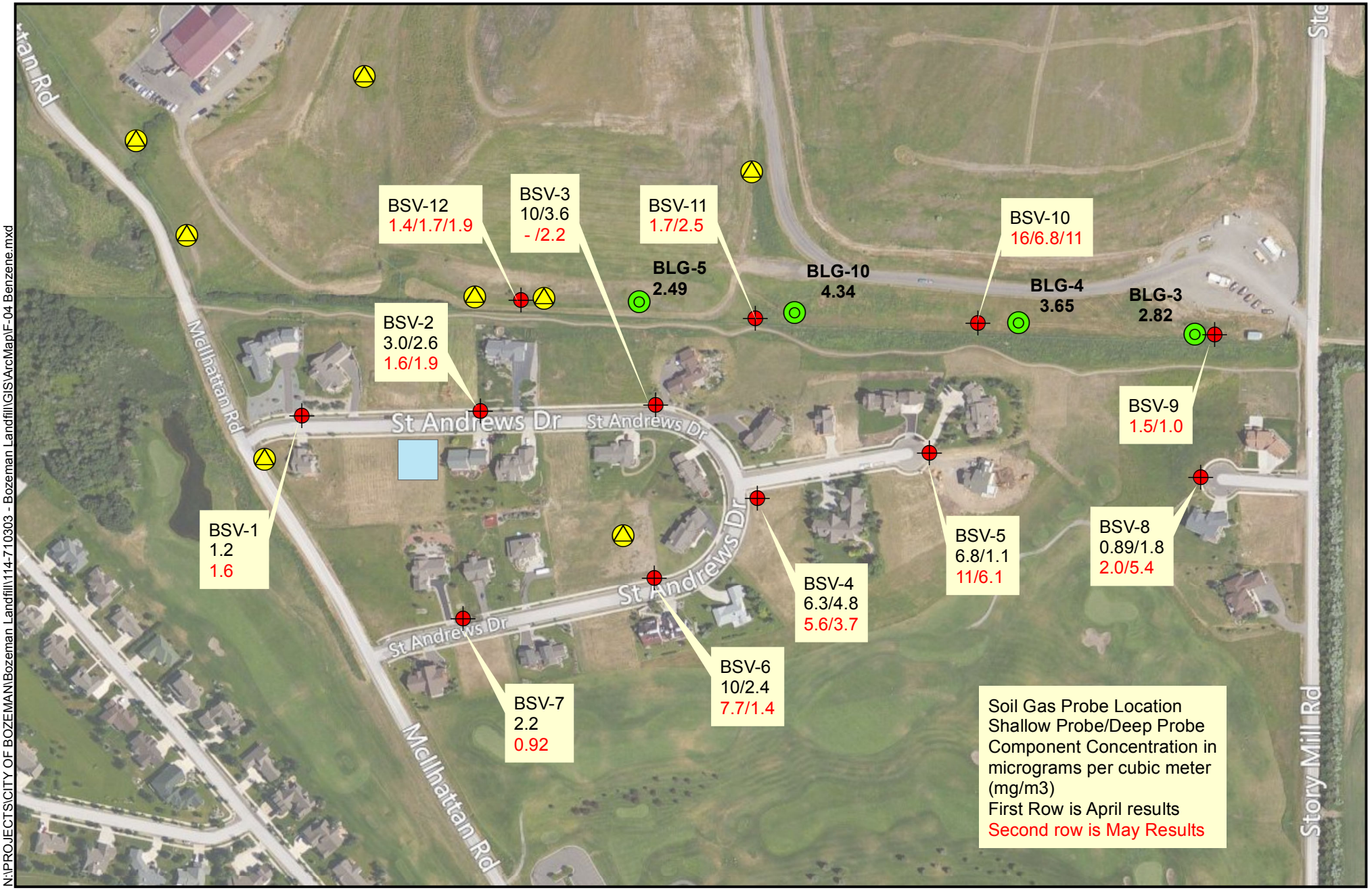
0 250 500
Feet

Datum: NAD83
StatePlane Montana

- Methane Monitoring Point
- Groundwater Monitoring Well
- Soil Gas Probe
- New Residential Construction

Notes: Methane Monitoring Probes (BLG-) were sampled Oct 30, 2012. Soil gas probes (BSV-) were installed March 20 and 21, 2013 and sampled April 4, 2013. Trichloroethene USEPA Residential Screening Level is 0.43 micrograms per cubic meter (November 2012).

Trichloroethene in Soil Gas
Bozeman Landfill
Bozeman, Montana
May 2013
FIGURE 3



N:\PROJECTS\CITY OF BOZEMAN\Bozeman Landfill\114-710303 - Bozeman Landfill\GIS\ArcMap\F-04 Benzene.mxd

N
W E
S

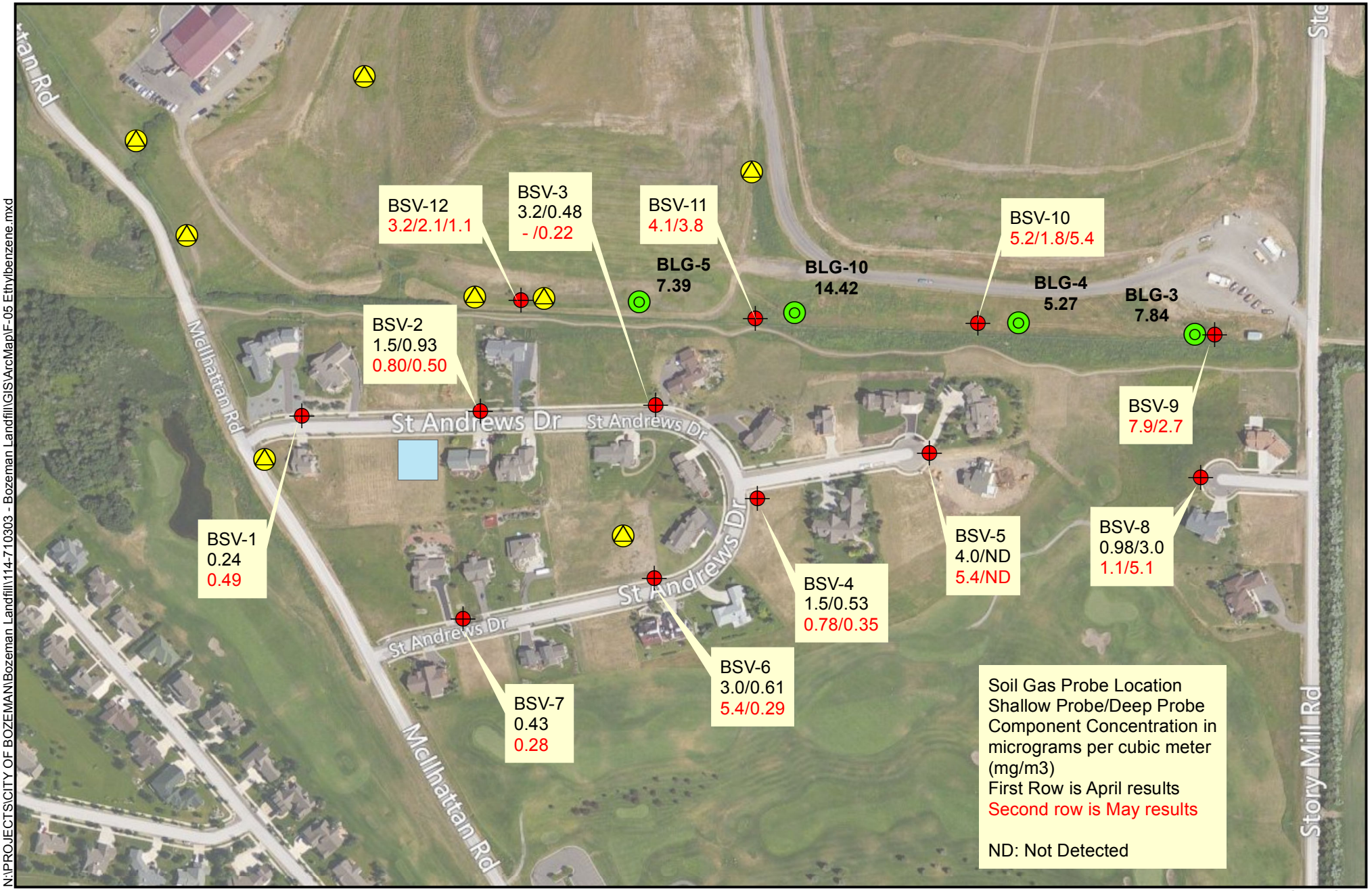
0 250 500
Feet

Datum: NAD83
StatePlane Montana

- Methane Monitoring Point
- Groundwater Monitoring Well
- Soil Gas Probe
- New Residential Construction

Notes: Methane Monitoring Probes (BLG-) were sampled Oct 30, 2012. Soil gas probes (BSV-) were installed March 20 and 21, 2013 and sampled April 4, 2013. Benzene USEPA Residential Screening Level is 0.31 micrograms per cubic meter (November 2012).

Benzene in Soil Gas
Bozeman Landfill
Bozeman, Montana
May 2013
FIGURE 4



N:\PROJECTS\CITY OF BOZEMAN\Bozeman Landfill\114-710303 - Bozeman Landfill\GIS\ArcMap\F-05 Ethylbenzene.mxd

N
W E
S

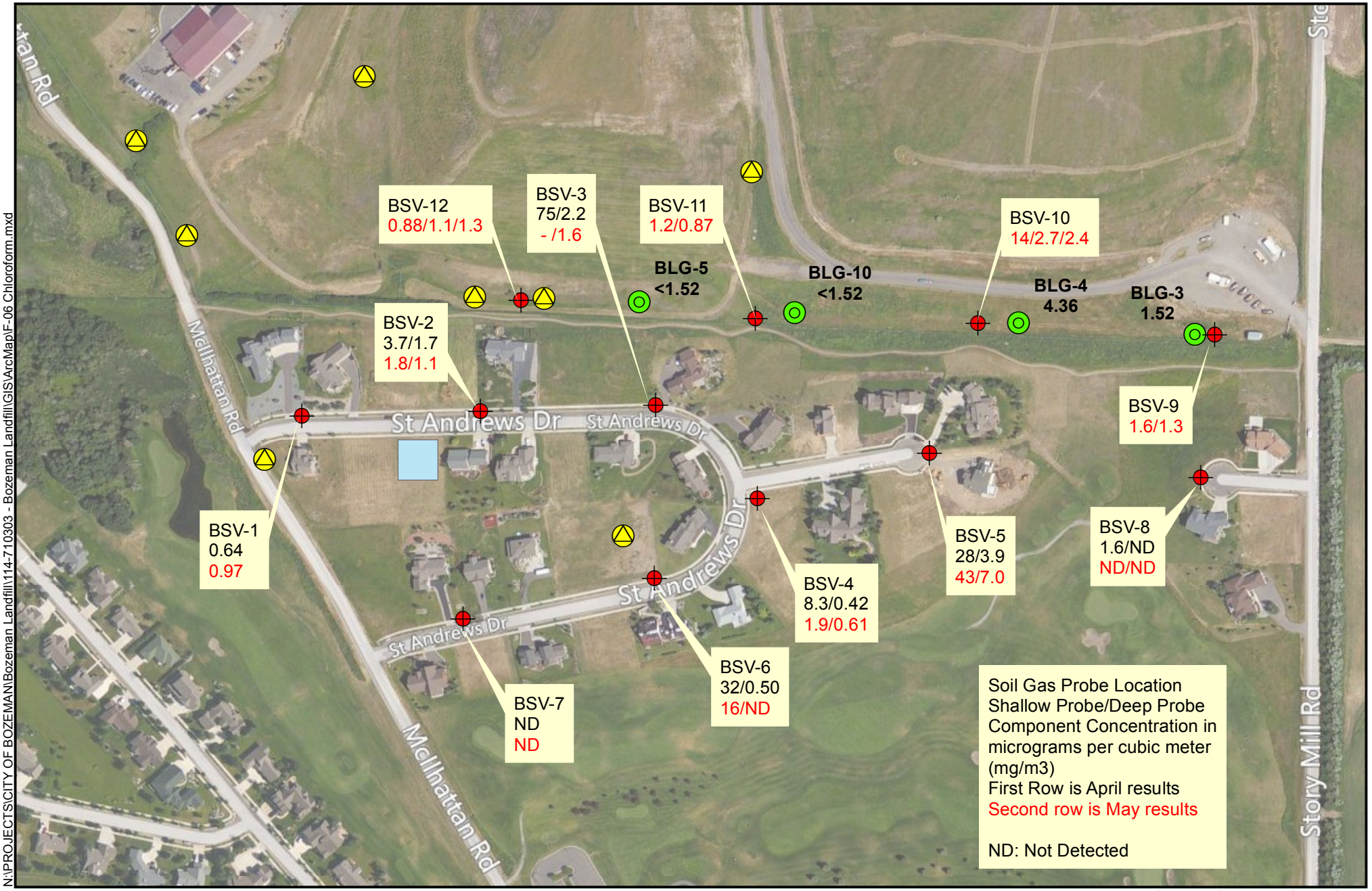
0 250 500
Feet

Datum: NAD83
StatePlane Montana

- Methane Monitoring Point
- Groundwater Monitoring Well
- Soil Gas Probe
- New Residential Construction

Notes: Methane Monitoring Probes (BLG-) were sampled Oct 30, 2012. Soil gas probes (BSV-) were installed March 20 and 21, 2013 and sampled April 4, 2013. Ethylbenzene USEPA Residential Screening Level is 0.97 micrograms per cubic meter (November 2012).

Ethylbenzene in Soil Gas
Bozeman Landfill
Bozeman, Montana
May 2013
FIGURE 5



N:\PROJECTS\CITY OF BOZEMAN\Bozeman Landfill\114-710303 - Bozeman Landfill\GIS\ArcMap\F-06 Chloroform.mxd

N
W E
S

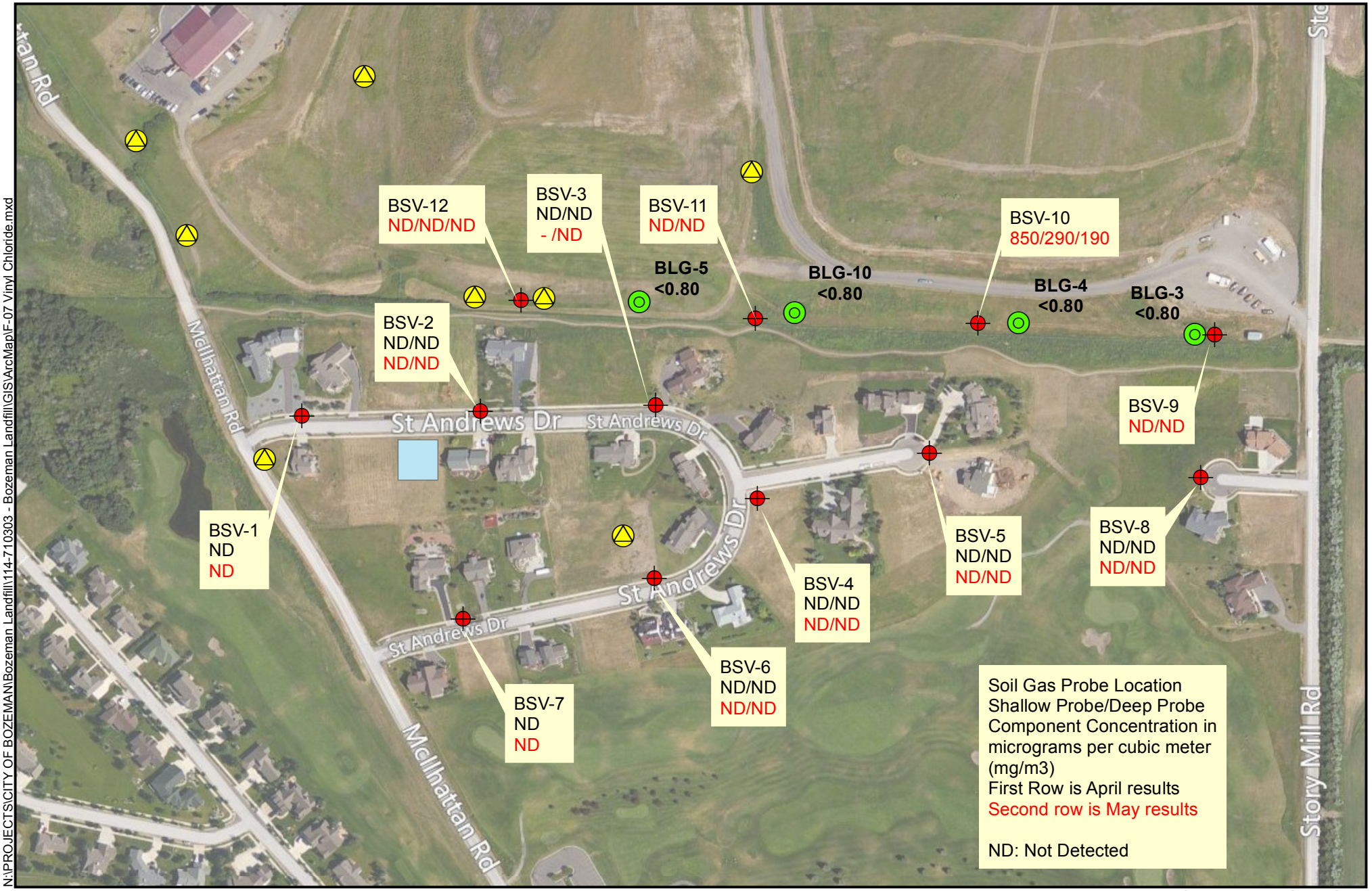
0 250 500
Feet

Datum: NAD83
StatePlane Montana

- Methane Monitoring Point
- Groundwater Monitoring Well
- Soil Gas Probe
- New Residential Construction

Notes: Methane Monitoring Probes (BLG-) were sampled Oct 30, 2012. Soil gas probes (BSV-) were installed March 20 and 21, 2013 and sampled April 4, 2013. Chloroform USEPA Residential Screening Level is 0.11 micrograms per cubic meter (November 2012).

Chloroform in Soil Gas
Bozeman Landfill
Bozeman, Montana
May 2013
FIGURE 6



N:\PROJECTS\CITY OF BOZEMAN\Bozeman Landfill\114-710303 - Bozeman Landfill\GIS\ArcMap\F-07 Vinyl Chloride.mxd

N
W E
S

0 250 500
Feet

Datum: NAD83
StatePlane Montana

- Methane Monitoring Point
- Groundwater Monitoring Well
- Soil Gas Probe
- New Residential Construction

Notes: Methane Monitoring Probes (BLG-) were sampled Oct 30, 2012. Soil gas probes (BSV-) were installed March 20 and 21, 2013 and sampled April 4, 2013. Vinyl chloride USEPA Residential Screening Level is 0.16 micrograms per cubic meter (November 2012).

Vinyl Chloride in Soil Gas
Bozeman Landfill
Bozeman, Montana
May 2013
FIGURE 7

ATTACHMENT A

LOG OF DRILLING AND INSTALLATION

PAGE 1 OF 1

TETRA TECH, INC.

PROJECT: Bozeman Landfill
JOB NO.: 114-710303.740
DRILL TYPE: Geoprobe 5410
DRILLED BY: Ty Deboo - Enviro Probe WET
LOGGED BY: MF Pearson
REMARKS:

BOREHOLE WELL or PROBE NO.: BSV-9
LOCATION: East of BLG-3
DATE: 5/6/2013

1750 - Move onto location
1800 - Start drilling
1915 Stop drilling and begin completions
1945 end completion & begin concrete work

DEPTH (FT)	GRAPHIC LOG	CLASSIFICATION AND DESCRIPTION	SAMPLE INTERVAL	S.P.T. (IN) (BLOWS/FT.)	ORGANIC VAPOR CONTENT (ppm)	WELL COMPLETION
0		Silt w/ organic matter, scattered gravel sl. moist firm				
		Sandier interval				
5		Sandy Silt - v. firm, brown, moist				
		v. firm & gray green color very hard driving: 4' — 22.33'				
10						10.5'
						11.75'
15		Cont'd Sandy Silt - v. firm, brown-green moist				
		Incr. fn. gr. Sand				
20		Cont'd Silt w/ minor v. fn gr. Sand - brown-green, moist, very firm to 21'				
		21.0 - Change to fn to med. gr. sand to 22'				21.0'
TD		Sandy Silt - very firm Refusal at 22.33'				22.33'
25						
30						

Powdered & Hydrated Bentonite

10-20 Silica Sand

2030 End Concrete Work

LOG OF DRILLING AND INSTALLATION

PAGE 1 OF 1

PROJECT: Bozeman Landfill
JOB NO.: 114-710303.740
DRILL TYPE: Geoprobe 5410
DRILLED BY: Ty Deboo - Enviro Probe WET
LOGGED BY: MF Pearson
REMARKS:

TETRA TECH, INC.

BOREHOLE WELL or PROBE NO.: BSV-10
LOCATION: 3' uphill of staked location 35' west of 'old' BLG-4
DATE: 5/6/2013

DEPTH (FT)	GRAPHIC LOG	CLASSIFICATION AND DESCRIPTION	SAMPLE INTERVAL	S.P.T. (IN) (BLOWS/FT.)	ORGANIC VAPOR CONTENT (ppm)	WELL COMPLETION

850 WET arrives at ofc drive to LF get located on BSV-10
945 - Start drilling 1045 - Stop drilling & start well compl. 1245 - Finish well compl.

Dense, brn Silt - moist

Gravel & plastic bag material, wood

Dense brn silt - moist, dark brown patches w/ plastic & wood 4.5'-5.0' - dk brn silt, dense

6-8' decr. density of Silt

Cont'd brn, moist Silt w/ tr. clay

Scattered gravel for 0.2'

12.5' - 15.0' Incr. in fn. to crse gr. sand in silt moist dense/firm brn

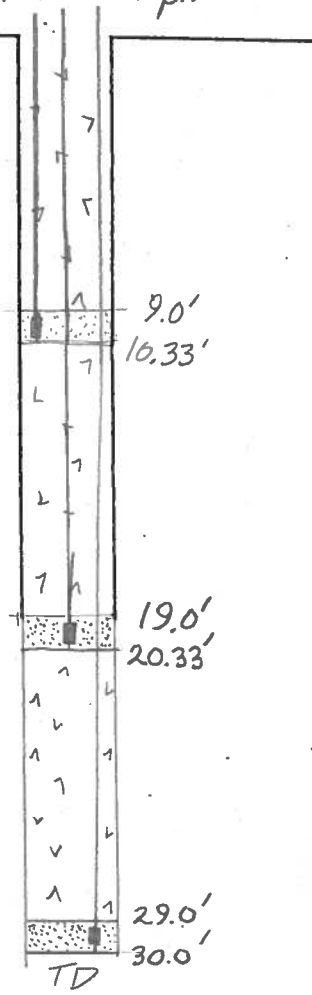
Cont'd Silt

Sand and Gravel in Silt matrix - moist 0.4' thick then, cont'd silt

22.5' - incr. in moisture/water content & incr. clay content - Clayey Silt

Cont'd Silt w/ decr. moist, dense green-gray color, scattered small rock

TD



Hydrated Powdered Bentonite

10-20 Silica Sand

LOG OF DRILLING AND INSTALLATION

PAGE 1 OF 1

TETRA TECH, INC.

PROJECT: Bozeman Landfill
JOB NO.: 114-710303.740
DRILL TYPE: Geoprobe 5410
DRILLED BY: Ty Deboo - Enviroprobe WET
LOGGED BY: MF Pearson
REMARKS: Two probe completions

BOREHOLE WELL or PROBE NO.: BSV-11
LOCATION: west of BLG-10
DATE: 5/6/2013

DEPTH (FT)	GRAPHIC LOG	CLASSIFICATION AND DESCRIPTION	SAMPLE INTERVAL	S.P.T. (IN) (BLOWS/FT.)	ORGANIC VAPOR CONTENT (ppm)	WELL COMPLETION

Mob onto site - 1315 and begin drilling

1400 - Refusal @ 21.1'

1400 - Begin well compl.

1500 finish well compl.

Topsoil w/ organic matter - Silt

Silt - sl. moist to dry, brn, trace scattered small gravel

5

Silty Sand - Fine to med gr sand in silt matrix, sl. moist, brn, loose to 9'

10

Change to Sandy Silt - brn, moist, incr. Firmness

Sand & Gravel - loose, silt matrix, brown Silty Sand

Change to sandy Silt - firm, moist, brown, tr. clay

15

Sandy Silt - Firm moist, brn, grn-gray tr. scattered gravel

20

Change to Sand and gravel in Silt matrix

Sand & Gravel - incr. size w/ depth - brown to gray, sl. moist, loose

TD

Refusal at 21.1' (TD)

25

30

9.0'

10.3'

20.0'

21.1'

TD

Powdered & hydrated Bentonite

10-20 Silica Sand

20
21

4
1.4

LOG OF DRILLING AND INSTALLATION

PAGE 1 OF 1

TETRA TECH, INC.

PROJECT: Bozeman Landfill
JOB NO.: 114-710303.740
DRILL TYPE: Geoprobe 5410
DRILLED BY: Ty Deboo - Enviroprobe Wet
LOGGED BY: MF Pearson
REMARKS:

BOREHOLE WELL or PROBE NO.: BSV-12
LOCATION: 20' west of MW-3
DATE: 5/6/2013

DEPTH (FT)	GRAPHIC LOG	CLASSIFICATION AND DESCRIPTION	SAMPLE INTERVAL	S.P.T. (IN) (BLOWS/FT.)	ORGANIC VAPOR CONTENT (ppm)	WELL COMPLETION

1515 - Move onto drill site
1615 - TD @ 30' Pull out
1630 - Begin completions
1745 - End completions, move off.

Silt w organic matter to 1.8'
Silt - brown, sl. moist, not firm, becoming drier w/ depth
5
Silt - lt. brown, sl. moist, firm
tr. scattered sand - fn. to crse gr. & gravel (small)
10
Incr. moisture
Sandy Silt - firm, brown, moist
15
Cont'd Sandy Silt to 19.7'. Intercept gravel in silt matrix at 19.7' to 20.2'
20
Sandy Silt - w/scattered small gravel firm, moist, brown
At 24'
Sand & Gravel in Silt matrix - firm, brown, moist
25
Silty Sand - fn gr. sand, sl. firm, moist, brown (Incr. silt 27-28')
Fn gr Sand w/ minor Silt
TD 29.5-30' Incr. silt Silty Sand - brn, moist, firm
TD-30'

9.0'
10.2'
19.0'
20.2'
29.0'
30.0'
TD

Powdered & hydrated Bentonite
10-20 Silica Sand

ATTACHMENT B

Ambient Outdoor Air Sampling Field Data Sheet

Prepared by the Montana Department of Environmental Quality

Site ID:	BGV-1
Project Name:	BOZEMAN LANDFILL
Sample location:	
Date:	5/9/13
Field Personnel:	BDQ MFP
Recorded by:	

Start Weather:	
Start Air Temp:	
Start Atmospheric Pressure:	
End Weather:	
End Air Temp:	
End Atmospheric Pressure:	

Canister and Sample Information

Start Date	Start Time	End Date	End Time	Sample ID	Canister ID	Flow Controller #	Vacuum Gauge #	Initial Vacuum	Final Vacuum
5/9/13	1639	5/9	1709	BGV-1	9546	FC00705	-26.0	-24.6	-7.5

Comment/location description:

Ambient Outdoor Air Sampling Field Data Sheet

Prepared by the Montana Department of Environmental Quality

Site ID:	BSV-2	**Start Weather:**	
		Start Air Temp:	
Project Name:	BOZEMAN LANDFILL	**Start Atmospheric Pressure:**	
Sample location:			
Date:	5/9/13	**End Weather:**	
Field Personnel:	BOQ MFT	**End Air Temp:**	
Recorded by:		**End Atmospheric Pressure:**	

Canister and Sample Information

Start Date	Start Time	End Date	End Time	Sample ID	Canister ID	Flow Controller #	Vacuum Gauge #	Initial Vacuum	Final Vacuum
5/9/13	1621	5/9	1651	BSV-2 SHALLOW	933	FC00869	-26.0	-25.4	-9.0
5/9	1655	5/9	1725	BSV-2 DEEP	25261	FC00355	-26.0	-26.25	-8.25

Comment/location description:

Ambient Outdoor Air Sampling Field Data Sheet

Prepared by the Montana Department of Environmental Quality

Site ID:	BSV-3	**Start Weather:**	Breeze to wind, Storm cell, intmt rain
Project Name:	Bozeman (Landfill)	**Start Air Temp:**	
Sample location:		**Start Atmospheric Pressure:**	
Date:	5/9/13	**End Weather:**	
Field Personnel:	MF-P & BOQ	**End Air Temp:**	
Recorded by:		**End Atmospheric Pressure:**	

Canister and Sample Information

Start Date	Start Time	End Date	End Time	Sample ID	Canister ID	Flow Controller #	Vacuum Gauge #	Initial Vacuum	Final Vacuum
5/9	1531	5/9		BSV-3 Shallow @1611 -23.5 Vacuum - Continue to let fill @1649 -23.5 Vacuum - No flow, will try to inject air on 5/10/13 -Stop Sampling Tried Purging w/ Gilian - No flow	33981	FC00973	-25.6	-24.6	
5/9	~~1552~~ 1703	5/9	1732	BSV-3 Deep ~~Purging at 0.3 LPM very low, partially clogged screen~~ Purge at 1.6 LPM - OK	33943	6333	-26.0	-25.6	-7.8

Injected air on 5/10 but cannot clear obstruction

Comment/location description:

No sample collected from BSV-3 due to blockage

Ambient Outdoor Air Sampling Field Data Sheet

Prepared by the Montana Department of Environmental Quality

Site ID:	BSV-4	**Start Weather:**	
		Start Air Temp:	
Project Name:	Bozeman Landfill	**Start Atmospheric Pressure:**	
Sample location:			
Date:	5/9/13	**End Weather:**	
Field Personnel:	MF & BOQ	**End Air Temp:**	
Recorded by:		**End Atmospheric Pressure:**	

Canister and Sample Information

Start Date	Start Time	End Date	End Time	Sample ID	Canister ID	Flow Controller #	Vacuum Gauge #	Initial Vacuum	Final Vacuum
5/9	1443	5/9	1513	BSV-4 Shallow	35283	100164	-25.5	-25.3	-7.5
5/9	1515	5/9	1545	BSV-4 Deep	5717	FC00628	-26.0	-25.6	-8.0

Comment/location description:

Ambient Outdoor Air Sampling Field Data Sheet

Prepared by the Montana Department of Environmental Quality

Site ID:	BSV-5	**Start Weather:**	
		Start Air Temp:	
Project Name:	Bozeman Landfill	**Start Atmospheric Pressure:**	
Sample location:			
Date:	5/10/13	**End Weather:**	
Field Personnel:	MFP BDQ	**End Air Temp:**	
Recorded by:		**End Atmospheric Pressure:**	

Canister and Sample Information

Start Date	Start Time	End Date	End Time	Sample ID	Canister ID	Flow Controller #	Vacuum Gauge #	Initial Vacuum	Final Vacuum
5/10	1243	5/10	1356	BSV-5 Shallow	13861	40679	-25.7	-24.6	-10.9
5/10	1243	5/10	1356	DUP	14116	FC00426	-25.7	-24.6	-9.4
5/10	~~1358~~ 1400	5/10	1430	BSV-5 Deep	34346	FC00740	-25.8	-22.0	-8.4

Comment/location description:

T in BSV-5 Shallow box w/ other T

Ambient Outdoor Air Sampling Field Data Sheet

Prepared by the Montana Department of Environmental Quality

Site ID:	BSV-5	Start Weather:	
		Start Air Temp:	
Project Name:	Bozeman Landfill	Start Atmospheric Pressure:	
Sample location:			
Date:	5/9/13	End Weather:	
Field Personnel:	MFP & BDQ	End Air Temp:	
Recorded by:		End Atmospheric Pressure:	

Canister and Sample Information

Start Date	Start Time	End Date	End Time	Sample ID	Canister ID	Flow Controller #	Vacuum Gauge #	Initial Vacuum	Final Vacuum
5/9	1347	5/9	1417	BSV-5 Shallow	5670	40679	-25.75	-25.0	-9.6
5/9	1347	5/9	1417	DUP (of BSV-5 Shallow)	34460	FC00426	-25.0	-24.5	-6.7
~~5/9~~				BSV-5 Deep	34346	FC00740	-25.8		
				Obs. BSV-5 Deep w/ open 1-way valve. Therefore purge for 2 min. w/ Gilian air pump and close valve for sampling on 5/10 @1400					

resampled w/ diff. canisters

Comment/location description:

Suspect leak in bolt of sampling T ∴ resample w/ diff. canisters on 5/10 -MFP

5/10/13 See log

Ambient Outdoor Air Sampling Field Data Sheet

Prepared by the Montana Department of Environmental Quality

Site ID:	BSV-6	Start Weather:	
		Start Air Temp:	
Project Name:	Bozeman Landfill	Start Atmospheric Pressure:	
Sample location:			
Date:	5/9/13	End Weather:	
Field Personnel:	MFP, BOQ	End Air Temp:	
Recorded by:		End Atmospheric Pressure:	

Canister and Sample Information

Start Date	Start Time	End Date	End Time	Sample ID	Canister ID	Flow Controller #	Vacuum Gauge #	Initial Vacuum	Final Vacuum
5/9	1744	5/9	1837	BSV-6 Shallow 1813 -15.3 Vac 1824 -11.8 Vac	10788	6840	-25.9	-26.3	-8.8
5/9	1839	5/9	1903	BSV-6 Deep	34495	40842	-25.8	-24.0	-5.9

Comment/location description:

5/10/13 LF-3 DTGW = 14.34'

↓ LF-2 DTGW = 14.26'

Ambient Outdoor Air Sampling Field Data Sheet

Prepared by the Montana Department of Environmental Quality

Site ID:	BSV-7	Start Weather:	
		Start Air Temp:	
Project Name:	Bozeman Landfill	Start Atmospheric Pressure:	
Sample location:			
Date:	5/9/13	End Weather:	
Field Personnel:	MFP BOQ	End Air Temp:	
Recorded by:		End Atmospheric Pressure:	

Canister and Sample Information

Start Date	Start Time	End Date	End Time	Sample ID	Canister ID	Flow Controller #	Vacuum Gauge #	Initial Vacuum	Final Vacuum
5/9	1800	5/9	1830	BSV-7	34011	FC00448	-25.9	-24.8	-3.6

Comment/location description:

Ambient Outdoor Air Sampling Field Data Sheet

Prepared by the Montana Department of Environmental Quality

Site ID:	BSV-8	**Start Weather:**	
		Start Air Temp:	
Project Name:	Bozeman Landfill	**Start Atmospheric Pressure:**	
Sample location:			
Date:	5/9/2013	**End Weather:**	
Field Personnel:	MFP & BDQ	**End Air Temp:**	
Recorded by:		**End Atmospheric Pressure:**	

Canister and Sample Information

Start Date	Start Time	End Date	End Time	Sample ID	Canister ID	Flow Controller #	Vacuum Gauge #	Initial Vacuum	Final Vacuum
5/9	1158	5/9	1228	BSV-8 Shallow	4355	FC00896	-25.6	~~-27.0~~ -26.0	-6.5
5/9	1232	5/9	1309	BSV-8 Deep	36039	FC00658	-25.6	-26.0	-7.5

Comment/location description:

Ambient Outdoor Air Sampling Field Data Sheet

Prepared by the Montana Department of Environmental Quality

Site ID:	BSV-9	Start Weather:	
		Start Air Temp:	
Project Name:	BOZEMAN LANDFILL	Start Atmospheric Pressure:	
Sample location:			
Date:	5/10/13	End Weather:	
Field Personnel:	JDQ MEP	End Air Temp:	
Recorded by:		End Atmospheric Pressure:	

Canister and Sample Information

Start Date	Start Time	End Date	End Time	Sample ID	Canister ID	Flow Controller #	Vacuum Gauge #	Initial Vacuum	Final Vacuum
5/10	0851	5/10	0915	BSV-9 Shallow	12089	FC00691	-25.9	-25.0	-7.0
5/10	0916	5/10	0946	BSV-9 Deep	14012	6853	-25.2	-24.6	-7.8

Comment/location description:

Ambient Outdoor Air Sampling Field Data Sheet

Prepared by the Montana Department of Environmental Quality

Site ID:	BSV-10	Start Weather:	
		Start Air Temp:	
Project Name:	BOZEMAN LANDFILL	Start Atmospheric Pressure:	
Sample location:			
Date:	5/10/13	End Weather:	
Field Personnel:	BDQ MFD	End Air Temp:	
Recorded by:		End Atmospheric Pressure:	

Canister and Sample Information

Start Date	Start Time	End Date	End Time	Sample ID	Canister ID	Flow Controller #	Vacuum Gauge #	Initial Vacuum	Final Vacuum
5/10	1002		~~1001~~ 1031	BSV-10 SHALLOW	33791	FC00313	-25.5	-22.2	-3.4
5/10	1032		1102	BSV-10 MID	10767	FC00763	-25.9	-25.7	-6.5
	1032		1102	DUP-2	11870	20941	-26.0	-25.0	-8.0
5/10	1103		~~1103~~ 1133	BSV-10 DEEP	34430	6850	-26.2	~~-25.2~~ -25.2	-7.0

Comment/location description:

Sampling T is in Dup Box

Ambient Outdoor Air Sampling Field Data Sheet

Prepared by the Montana Department of Environmental Quality

Site ID:	BSV-11	**Start Weather:**	
		Start Air Temp:	
Project Name:	Bozeman Landfill	**Start Atmospheric Pressure:**	
Sample location:			
Date:	5/10/13	**End Weather:**	
Field Personnel:	MFP & BOQ	**End Air Temp:**	
Recorded by:		**End Atmospheric Pressure:**	

Canister and Sample Information

Start Date	Start Time	End Date	End Time	Sample ID	Canister ID	Flow Controller #	Vacuum Gauge #	Initial Vacuum	Final Vacuum
5/10	1041	5/10	1111	BSV-11 Shallow	31139	FC 00467	-26.2	-26.2	-7.4
5/10	1112	5/10	1142	BSV-11 Deep	13853	FC00557	-26.1	-26.0	-6.6

Comment/location description:

5/10/13 MW-8A DTGW = 47.64'

Ambient Outdoor Air Sampling Field Data Sheet

Prepared by the Montana Department of Environmental Quality

Site ID:	BSV-12	Start Weather:	
		Start Air Temp:	
Project Name:	BOZEMAN LANDFILL	Start Atmospheric Pressure:	
Sample location:			
Date:	5/10/13	End Weather:	
Field Personnel:	BOQ MFP	End Air Temp:	
Recorded by:		End Atmospheric Pressure:	

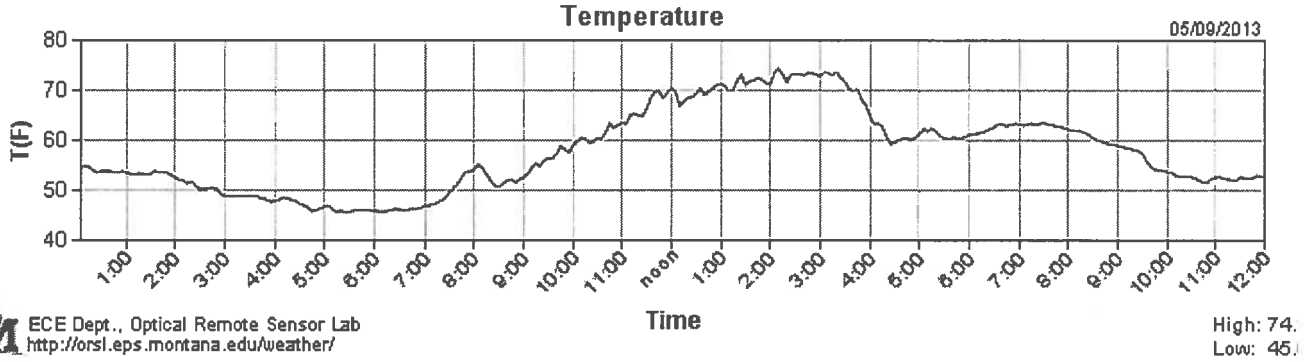
Canister and Sample Information

Start Date	Start Time	End Date	End Time	Sample ID	Canister ID	Flow Controller #	Vacuum Gauge #	Initial Vacuum	Final Vacuum
5/10	1100	5/10	1130	BSV-12 Shallow	1562	FC00886	-25.5	-25.9	-7.5
5/10	1131	5/10	1201	BSV-12 Mid	11303	FC00388	-25.8	-25.4	-6.1
5/10	1551	5/10	1616	BSV-12 Deep	33984	FC00785	-25.6	-25.5	-8.2

Comment/location description:

Data for 05/09/2013

Sea-Level Adjusted Pressure	Absolute Pressure	Temperature	Relative Humidity	Dew Point
mb/inHg	mb/inHg	°C/°F	%	°C/°F

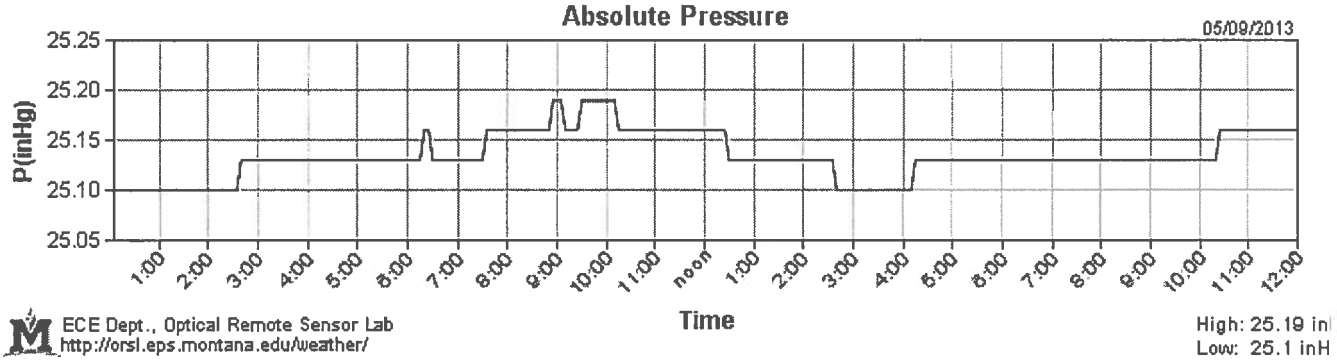


Wind	Precipitation	Solar Irradiance
m/s & ° from true north	0.254 mm/0.01 in	w/m²

* Select the desired unit above to view the corresponding chart. *
(Example: clicking °F shows the chart in Fahrenheit.)

Data for 05/09/2013

Sea-Level Adjusted Pressure	Absolute Pressure	Temperature	Relative Humidity	Dew Point
mb/inHg	mb/inHg	°C/°F	%	°C/°F



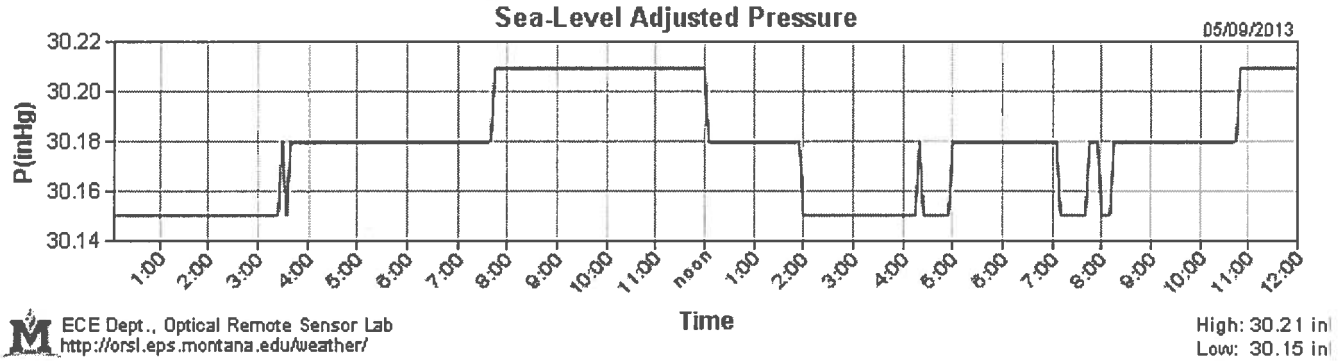
Wind	Precipitation	Solar Irradiance
m/s & ° from true north	0.254 mm/0.01 in	w/m²

* Select the desired unit above to view the corresponding chart. *
(Example: clicking °F shows the chart in Fahrenheit.)

Data for 05/09/2013

Sea-Level Adjusted Pressure | Absolute Pressure | Temperature | Relative Humidity | Dew Point

mb/inHg | mb/inHg | °C/°F | % | °C/°F



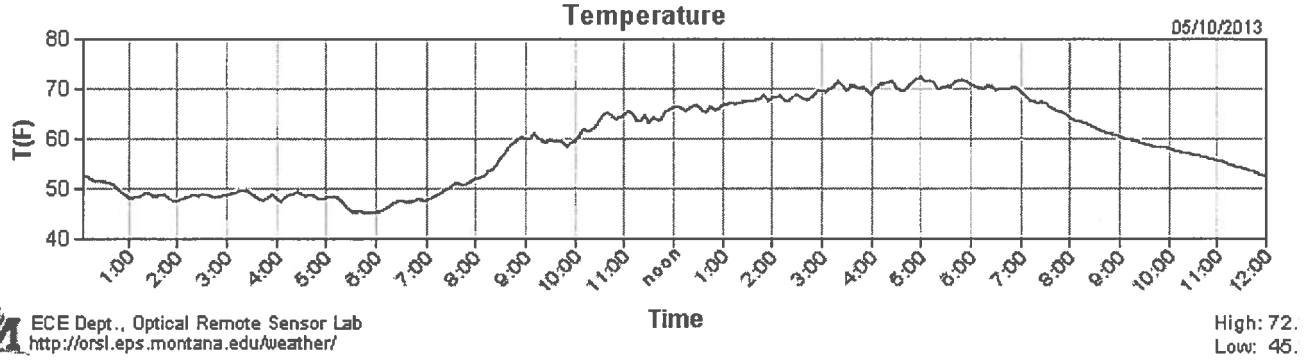
Wind | Precipitation | Solar Irradiance

m/s & ° from true north | 0.254 mm/0.01 in | w/m²

* Select the desired unit above to view the corresponding chart. *
(Example: clicking °F shows the chart in Fahrenheit.)

Data for 05/10/2013

Sea-Level Adjusted Pressure	Absolute Pressure	Temperature	Relative Humidity	Dew Point
mb/inHg	mb/inHg	°C/°F	%	°C/°F

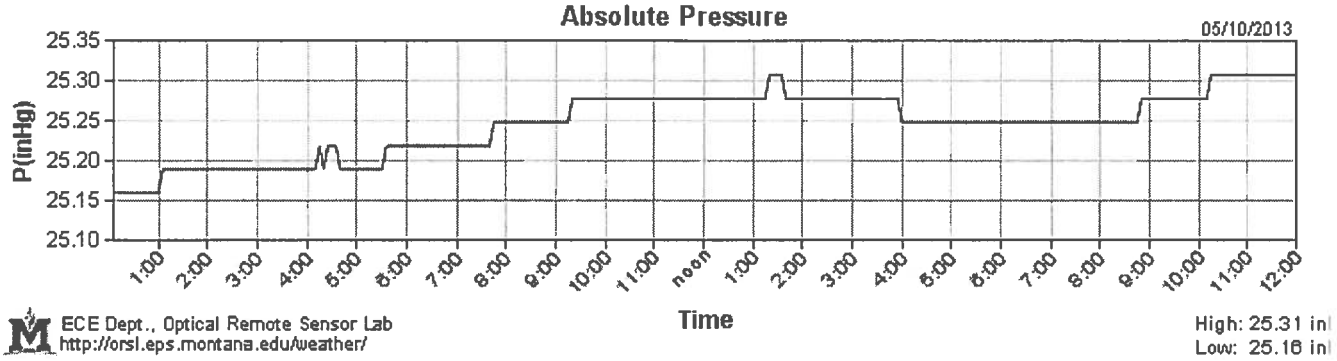


Wind	Precipitation	Solar Irradiance
m/s & ° from true north	0 mm/0 in	w/m²

* Select the desired unit above to view the corresponding chart. *
(Example: clicking °F shows the chart in Fahrenheit.)

Data for 05/10/2013

Sea-Level Adjusted Pressure	Absolute Pressure	Temperature	Relative Humidity	Dew Point
mb/inHg	mb/inHg	°C/°F	%	°C/°F

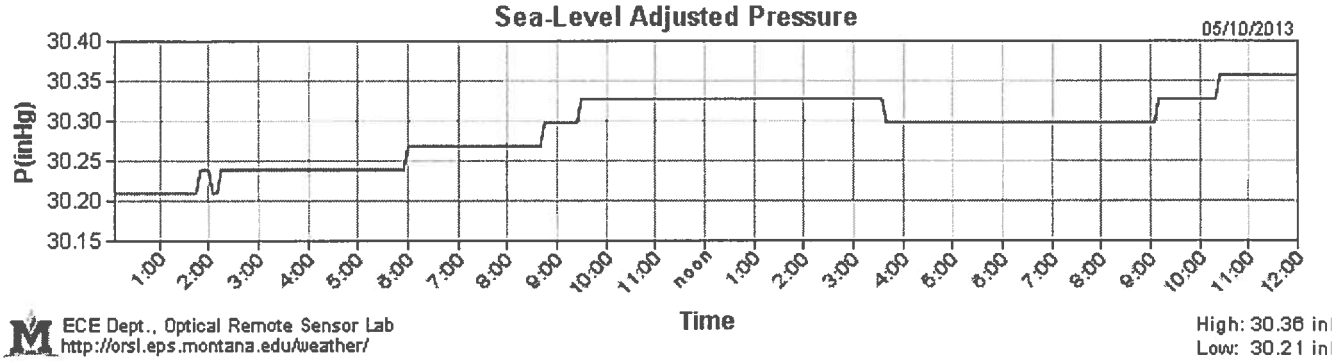


Wind	Precipitation	Solar Irradiance
m/s & ° from true north	0 mm/0 in	w/m²

* Select the desired unit above to view the corresponding chart. *
(Example: clicking °F shows the chart in Fahrenheit.)

Data for 05/10/2013

Sea-Level Adjusted Pressure	Absolute Pressure	Temperature	Relative Humidity	Dew Point
mb/inHg	mb/inHg	°C/°F	%	°C/°F



ECE Dept., Optical Remote Sensor Lab
http://orsl.eps.montana.edu/weather/

High: 30.36 in
Low: 30.21 in

Wind	Precipitation	Solar Irradiance
m/s & ° from true north	0 mm/0 in	w/m²

* Select the desired unit above to view the corresponding chart. *
(Example: clicking °F shows the chart in Fahrenheit.)

ATTACHMENT C

Air Toxics LTD.

CHAIN-OF-CUSTODY RECORD

Sample Transportation Notice
Relinquishing signature on this document indicates that sample is being shipped in compliance with all applicable local, State, Federal, national, and international laws, regulations and ordinances of any kind. Air Toxics Limited assumes no liability with respect to the collection, handling or shipping of these samples. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Air Toxics Limited against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples. D.O.T. Hotline (800) 467-4922

180 BLUE RAVINE ROAD, SUITE B
FOLSOM, CA 95630-4719
(916) 985-1000 FAX (916) 985-1020

Project Manager Mark Pearson

Collected by: (Print and Sign) Mark Pearson Mark T. Pearson

Company Tetra Tech Email mark.pearson@tetratech.com

Address 851 Bridger Dr City Bozeman State MT Zip 59715

Phone 406-582-8780 Fax

Project Info:
P.O. # — —
Project # 114-710303.740
Project Name Bozeman Landfill

Turn Around Time:
☒ Normal
☐ Rush
specify

Lab Use Only
Pressurized by:
Date:
Pressurization Gas: N_2 He

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum Initial	Final	Receipt	Final (psi)
01AB	BSV-1	9546	5/9/13	1709	See attached	-24.6	-7.5		
02AB	BSV-2 Shallow	933		1651		-25.4	-9.6		
03AB	BSV-2 Deep	25261		1725		-26.25	-8.25		
04AB	BSV-3 Deep	33943		1732		-25.6	-7.8		
05AB	BSV-4 Shallow	35283	5/9/13	1513		-25.3	-7.5		
06AB	BSV-4 Deep	5717		1545		-25.0	-8.0		
07AB	BSV-5 Shallow	13861	5/10/13	1356		-24.6	-10.9		
08AB	DUP	14116		1356		-24.6	-9.4		
09AB	BSV-5 Deep	34346		1430		-22.6	-8.4		
10AB	BSV-6 Shallow	10788	5/9/13	1837		-26.3	-8.8		

Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time
Mark T. Pearson 5/10/13 1600	FedEx Bozeman 5/10/13 @ 1700
Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time
	Kathy Dear ATL 05/14/13 0950
Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time

Notes:
Canisters and related equipment shipped in 8 boxes

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	FedEx		NA	good	Yes No None	1305306

Form 1293 rev.11

Bozeman Landfill
April 4, 2013 Monitoring Event – and – May 9 and 10 Monitoring Event
Bozeman, Montana
Project Number 114-710303.740

Analyze in accordance with TO-15 SIM with the following component list:

Chloroform
Vinyl chloride
Tetrachloroethene
Trichloroethene
Benzene
Ethylbenzene
Toluene
Xylenes
cis-1,2-DCE
trans-1,2-DCE
1,2,4-trimethylbenzene
Tetrahydrofuran

Air Toxics LTD.

CHAIN-OF-CUSTODY RECORD

Sample Transportation Notice
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180 BLUE RAVINE ROAD, SUITE B
FOLSOM, CA 95630-4719
(916) 985-1000 FAX (916) 985-1020

Project Manager See Page 1

Collected by: (Print and Sign) _____

Company _____ Email _____

Address _____ City _____ State ____ Zip ____

Phone _____ Fax _____

Project Info:
P.O. # — —
Project # 114-710308.740
Project Name Bozeman Landfill

Turn Around Time:
❑ Normal
❑ Rush
specify

Lab Use Only
Pressurized by:
Date:
Pressurization Gas: N_2 He

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum Initial	Final	Receipt	Final (psi)
01AB	BSV-6 Deep	34495	5/9/13	1903	See attached	-24.0	-5.9		
02AB	BSV-7	34011		1830		-24.8	-3.6		
03AB	BSV-8 Shallow	4355		1228		-26.0	-6.5		
04AB	BSV-8 Deep	36039		1309		-26.0	-7.5		
05AB	BSV-9 Shallow	12089	5/10/13	915		-25.0	-7.0		
06AB	BSV-9 Deep	14012		946		-24.6	-7.8		
07AB	BSV-10 Shallow	33791		1031		-22.2	-3.4		
08AB	BSV-10 Mid	10767		1102		-25.7	-6.5		
09AB	DUP-2	11870		1102		-25.0	-8.0		
10AB	BSV-10 Deep	34430		1133		-25.2	-7.0		

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
Mark T. Vaughan	5/10/13 1600	FedEx Bozeman	5/10/13 1700
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
		Katie Becker ATL	05/14/13 0950
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time

Notes: Returned:
29 Canisters
26 Flow controllers,
1 Vacuum gage & 2 sampling Ts

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	FedEx		NA	good	Yes No (None)	1305307

Form 1293 rev.11

Bozeman Landfill
April 4, 2013 Monitoring Event – and – May 9 and 10 Monitoring Event
Bozeman, Montana
Project Number 114-710303.740

Analyze in accordance with TO-15 SIM with the following component list:

Chloroform
Vinyl chloride
Tetrachloroethene
Trichloroethene
Benzene
Ethylbenzene
Toluene
Xylenes
cis-1,2-DCE
trans-1,2-DCE
1,2,4-trimethylbenzene
Tetrahydrofuran

Air Toxics LTD.

CHAIN-OF-CUSTODY RECORD

Sample Transportation Notice
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180 BLUE RAVINE ROAD, SUITE B
FOLSOM, CA 95630-4719
(916) 985-1000 FAX (916) 985-1020

Project Manager: See Page 1
Collected by: (Print and Sign)
Company ____ Email ____
Address ____ City ____ State ____ Zip ____
Phone ____ Fax ____

Project Info:
P.O. # — —
Project # 114-710303.740
Project Name Bozeman Landfill

Turn Around Time:
☐ Normal
☐ Rush
____ specify

Lab Use Only
Pressurized by:
Date:
Pressurization Gas: N_2 He

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum Initial	Final	Receipt	Final (psi)
01AB	BSV-11 Shallow	31139	5/10/13	1111	See Attached	-26.2	-7.4		
02AB	BSV-11 Deep	13853	↓	1142	↓	-26.0	-6.6		
03AB	BSV-12 Shallow	1562		1130		-25.9	-7.5		
04AB	BSV-12 Mid	11303		1201		-25.4	-6.1		
05AB	BSV-12 Deep	33984		1616		-25.5	-8.2		

Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time
Mark J. Lawson 5/10/13 @ 1600	FedEx Bozeman 5/10/13 @ 1700
Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time
	Cathi Decker ATL 05/14/13 0950
Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time

Notes:

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	FedEx		NA	good	Yes No (None)	1305308

Form 1293 rev.11

Bozeman Landfill
April 4, 2013 Monitoring Event – and – May 9 and 10 Monitoring Event
Bozeman, Montana
Project Number 114-710303.740

Analyze in accordance with TO-15 SIM with the following component list:

Chloroform
Vinyl chloride
Tetrachloroethene
Trichloroethene
Benzene
Ethylbenzene
Toluene
Xylenes
cis-1,2-DCE
trans-1,2-DCE
1,2,4-trimethylbenzene
Tetrahydrofuran

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5/29/2013
Mr. Mark Pearson
Tetra Tech
851 Bridger Drive
Suite 6
Bozeman MT 59715

Project Name: Bozeman Landfill
Project #: 114-710303.740
Workorder #: 1305306

Dear Mr. Mark Pearson

The following report includes the data for the above referenced project for sample(s) received on 5/14/2013 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner

Project Manager

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WORK ORDER #: 1305306

Work Order Summary

CLIENT:	Mr. Mark Pearson Tetra Tech 851 Bridger Drive Suite 6 Bozeman, MT 59715	**BILL TO:**	Mr. Mark Pearson Tetra Tech 851 Bridger Drive Suite 6 Bozeman, MT 59715
PHONE:	406-582-8780	**P.O. #**	
FAX:	406-582-8790	**PROJECT #**	114-710303.740 Bozeman Landfill
DATE RECEIVED:	05/14/2013	**CONTACT:**	Kelly Buettner
DATE COMPLETED:	05/29/2013		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	BSV-1	Modified TO-15	11.8 "Hg	4.9 psi
01B	BSV-1	Modified TO-15	11.8 "Hg	4.9 psi
02A	BSV-2 Shallow	Modified TO-15	12.4 "Hg	5 psi
02B	BSV-2 Shallow	Modified TO-15	12.4 "Hg	5 psi
03A	BSV-2 Deep	Modified TO-15	11.4 "Hg	4.9 psi
03B	BSV-2 Deep	Modified TO-15	11.4 "Hg	4.9 psi
04A	BSV-3 Deep	Modified TO-15	11.4 "Hg	5 psi
04B	BSV-3 Deep	Modified TO-15	11.4 "Hg	5 psi
05A	BSV-4 Shallow	Modified TO-15	11.8 "Hg	5 psi
05B	BSV-4 Shallow	Modified TO-15	11.8 "Hg	5 psi
06A	BSV-4 Deep	Modified TO-15	11.8 "Hg	4.6 psi
06B	BSV-4 Deep	Modified TO-15	11.8 "Hg	4.6 psi
07A	BSV-5 Shallow	Modified TO-15	15.9 "Hg	5 psi
07B	BSV-5 Shallow	Modified TO-15	15.9 "Hg	5 psi
08A	DUP	Modified TO-15	14.5 "Hg	4.9 psi
08B	DUP	Modified TO-15	14.5 "Hg	4.9 psi
09A	BSV-5 Deep	Modified TO-15	11 "Hg	4.8 psi
09B	BSV-5 Deep	Modified TO-15	11 "Hg	4.8 psi
10A	BSV-6 Shallow	Modified TO-15	12.4 "Hg	4.7 psi
10B	BSV-6 Shallow	Modified TO-15	12.4 "Hg	4.7 psi
11A	Lab Blank	Modified TO-15	NA	NA
11B	Lab Blank	Modified TO-15	NA	NA
11C	Lab Blank	Modified TO-15	NA	NA

Continued on next page

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WORK ORDER #: 1305306

Work Order Summary

CLIENT:	Mr. Mark Pearson Tetra Tech 851 Bridger Drive Suite 6 Bozeman, MT 59715	**BILL TO:**	Mr. Mark Pearson Tetra Tech 851 Bridger Drive Suite 6 Bozeman, MT 59715
PHONE:	406-582-8780	**P.O. #**	
FAX:	406-582-8790	**PROJECT #**	114-710303.740 Bozeman Landfill
DATE RECEIVED:	05/14/2013	**CONTACT:**	Kelly Buettner
DATE COMPLETED:	05/29/2013		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
11D	Lab Blank	Modified TO-15	NA	NA
12A	CCV	Modified TO-15	NA	NA
12B	CCV	Modified TO-15	NA	NA
12C	CCV	Modified TO-15	NA	NA
12D	CCV	Modified TO-15	NA	NA
13A	LCS	Modified TO-15	NA	NA
13AA	LCSD	Modified TO-15	NA	NA
13B	LCS	Modified TO-15	NA	NA
13BB	LCSD	Modified TO-15	NA	NA
13C	LCS	Modified TO-15	NA	NA
13CC	LCSD	Modified TO-15	NA	NA
13D	LCS	Modified TO-15	NA	NA
13DD	LCSD	Modified TO-15	NA	NA

CERTIFIED BY: Heidi Mayo DATE: 05/29/13

Technical Director

Certification numbers: AZ Licensure AZ0775, CA NELAP - 12282CA, NY NELAP - 11291,
TX NELAP - T104704434-12-4, UT NELAP CA009332012-3, WA NELAP - C935
Name of Accrediting Agency: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2012, Expiration date: 10/17/2013.
Eurofins Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 9563
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified TO-15 Full Scan/SIM
Tetra Tech
Workorder# 1305306

Ten 6 Liter Summa Canister (SIM Certified) samples were received on May 14, 2013. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the Full Scan and SIM acquisition modes. The method involves concentrating up to 1.0 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

Requirement	***TO-15***	***ATL Modifications***
ICAL %RSD acceptance criteria	</=30% RSD with 2 compounds allowed out to < 40% RSD	For Full Scan: 30% RSD with 4 compounds allowed out to < 40% RSD For SIM: Project specific; default criteria is </=30% RSD with 10% of compounds allowed out to < 40% RSD
Daily Calibration	+- 30% Difference	For Full Scan: </= 30% Difference with four allowed out up to </=40%.; flag and narrate outliers For SIM: Project specific; default criteria is </= 30% Difference with 10% of compounds allowed out up to </=40%.; flag and narrate outliers
Blank and standards	Zero air	Nitrogen
Method Detection Limit	Follow 40CFR Pt.136 App. B	The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

The results for each sample in this report were acquired from two separate data files originating from the same analytical run. The two data files have the same base file name and are differentiated with a "sim" extension on the SIM data file.

Dilution was performed on sample BSV-5 Deep due to the presence of high level target species.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

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Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

Client Sample ID: BSV-1

Lab ID#: 1305306-01A

No Detections Were Found.

Client Sample ID: BSV-1

Lab ID#: 1305306-01B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.11	0.50	0.35	1.6
Trichloroethene	0.044	0.44	0.24	2.3
Toluene	0.044	0.32	0.16	1.2
Tetrachloroethene	0.044	14	0.30	98
Ethyl Benzene	0.044	0.11	0.19	0.49
m,p-Xylene	0.088	0.14	0.38	0.59
o-Xylene	0.044	0.12	0.19	0.55
Chloroform	0.044	0.20	0.21	0.97

Client Sample ID: BSV-2 Shallow

Lab ID#: 1305306-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2,4-Trimethylbenzene	0.23	0.23	1.1	1.1

Client Sample ID: BSV-2 Shallow

Lab ID#: 1305306-02B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.11	0.51	0.36	1.6
Toluene	0.046	0.40	0.17	1.5
Tetrachloroethene	0.046	6.5	0.31	44
Ethyl Benzene	0.046	0.18	0.20	0.80
m,p-Xylene	0.092	0.18	0.40	0.80
o-Xylene	0.046	0.18	0.20	0.77
Chloroform	0.046	0.36	0.22	1.8

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Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

Client Sample ID: BSV-2 Deep

Lab ID#: 1305306-03A

No Detections Were Found.

Client Sample ID: BSV-2 Deep

Lab ID#: 1305306-03B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.11	0.59	0.34	1.9
Toluene	0.043	0.25	0.16	0.93
Tetrachloroethene	0.043	11	0.29	74
Ethyl Benzene	0.043	0.11	0.19	0.50
m,p-Xylene	0.086	0.12	0.37	0.50
o-Xylene	0.043	0.11	0.19	0.48
Chloroform	0.043	0.23	0.21	1.1

Client Sample ID: BSV-3 Deep

Lab ID#: 1305306-04A

No Detections Were Found.

Client Sample ID: BSV-3 Deep

Lab ID#: 1305306-04B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.11	0.69	0.34	2.2
Toluene	0.043	0.16	0.16	0.62
Tetrachloroethene	0.043	0.38	0.29	2.6
Ethyl Benzene	0.043	0.051	0.19	0.22
Chloroform	0.043	0.34	0.21	1.6

Client Sample ID: BSV-4 Shallow

Lab ID#: 1305306-05A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2,4-Trimethylbenzene	0.22	0.24	1.1	1.2

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Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

Client Sample ID: BSV-4 Shallow

Lab ID#: 1305306-05B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.11	1.8	0.35	5.6
Toluene	0.044	1.1	0.17	4.1
Tetrachloroethene	0.044	0.68	0.30	4.6
Ethyl Benzene	0.044	0.18	0.19	0.78
m,p-Xylene	0.088	0.24	0.38	1.0
o-Xylene	0.044	0.18	0.19	0.81
Chloroform	0.044	0.39	0.22	1.9

Client Sample ID: BSV-4 Deep

Lab ID#: 1305306-06A

No Detections Were Found.

Client Sample ID: BSV-4 Deep

Lab ID#: 1305306-06B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.11	1.2	0.35	3.7
Toluene	0.043	0.22	0.16	0.84
Tetrachloroethene	0.043	1.1	0.29	7.7
Ethyl Benzene	0.043	0.080	0.19	0.35
m,p-Xylene	0.087	0.11	0.38	0.47
o-Xylene	0.043	0.063	0.19	0.28
Chloroform	0.043	0.12	0.21	0.61

Client Sample ID: BSV-5 Shallow

Lab ID#: 1305306-07A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2,4-Trimethylbenzene	0.29	1.0	1.4	5.2

Client Sample ID: BSV-5 Shallow

Lab ID#: 1305306-07B

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Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

Client Sample ID: BSV-5 Shallow

Lab ID#: 1305306-07B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.14	3.4	0.46	11
Toluene	0.057	8.0	0.22	30
Tetrachloroethene	0.057	6.0	0.39	41
Ethyl Benzene	0.057	1.2	0.25	5.4
m,p-Xylene	0.11	3.3	0.50	14
o-Xylene	0.057	1.1	0.25	4.7
Chloroform	0.057	8.8	0.28	43

Client Sample ID: DUP

Lab ID#: 1305306-08A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2,4-Trimethylbenzene	0.26	0.97	1.3	4.8

Client Sample ID: DUP

Lab ID#: 1305306-08B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.13	3.4	0.41	11
Toluene	0.052	6.6	0.19	25
Tetrachloroethene	0.052	5.9	0.35	40
Ethyl Benzene	0.052	1.2	0.22	5.1
m,p-Xylene	0.10	3.2	0.45	14
o-Xylene	0.052	1.0	0.22	4.3
Chloroform	0.052	8.7	0.25	42

Client Sample ID: BSV-5 Deep

Lab ID#: 1305306-09A

No Detections Were Found.

Client Sample ID: BSV-5 Deep

Lab ID#: 1305306-09B

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Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

Client Sample ID: BSV-5 Deep

Lab ID#: 1305306-09B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.18	1.9	0.56	6.1
Trichloroethene	0.070	0.24	0.38	1.3
Toluene	0.070	0.23	0.26	0.86
Tetrachloroethene	0.070	49	0.47	330
Chloroform	0.070	1.4	0.34	7.0

Client Sample ID: BSV-6 Shallow

Lab ID#: 1305306-10A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2,4-Trimethylbenzene	0.23	0.86	1.1	4.2

Client Sample ID: BSV-6 Shallow

Lab ID#: 1305306-10B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.11	2.4	0.36	7.7
Toluene	0.045	5.6	0.17	21
Tetrachloroethene	0.045	0.91	0.31	6.2
Ethyl Benzene	0.045	1.2	0.20	5.4
m,p-Xylene	0.090	2.8	0.39	12
o-Xylene	0.045	1.0	0.20	4.4
Chloroform	0.045	3.3	0.22	16

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Client Sample ID: BSV-1

Lab ID#: 1305306-01A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052014**	**Date of Collection: 5/9/13 5:09:00 PM**	
Dil. Factor:	**2.20**	**Date of Analysis: 5/20/13 09:04 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrahydrofuran	1.1	Not Detected	3.2	Not Detected
1,2,4-Trimethylbenzene	0.22	Not Detected	1.1	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	111	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	92	70-130

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Client Sample ID: BSV-1

Lab ID#: 1305306-01B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052014sim**	**Date of Collection: 5/9/13 5:09:00 PM**	
Dil. Factor:	**2.20**	**Date of Analysis: 5/20/13 09:04 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.022	Not Detected	0.056	Not Detected
cis-1,2-Dichloroethene	0.044	Not Detected	0.17	Not Detected
Benzene	0.11	0.50	0.35	1.6
Trichloroethene	0.044	0.44	0.24	2.3
Toluene	0.044	0.32	0.16	1.2
Tetrachloroethene	0.044	14	0.30	98
Ethyl Benzene	0.044	0.11	0.19	0.49
m,p-Xylene	0.088	0.14	0.38	0.59
o-Xylene	0.044	0.12	0.19	0.55
trans-1,2-Dichloroethene	0.22	Not Detected	0.87	Not Detected
Chloroform	0.044	0.20	0.21	0.97

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	118	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	96	70-130

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Client Sample ID: BSV-2 Shallow

Lab ID#: 1305306-02A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052015**	**Date of Collection: 5/9/13 4:51:00 PM**	
Dil. Factor:	**2.29**	**Date of Analysis: 5/20/13 10:21 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrahydrofuran	1.1	Not Detected	3.4	Not Detected
1,2,4-Trimethylbenzene	0.23	0.23	1.1	1.1

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	105	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	90	70-130

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Client Sample ID: BSV-2 Shallow

Lab ID#: 1305306-02B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052015sim**	**Date of Collection: 5/9/13 4:51:00 PM**	
Dil. Factor:	**2.29**	**Date of Analysis: 5/20/13 10:21 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.023	Not Detected	0.058	Not Detected
cis-1,2-Dichloroethene	0.046	Not Detected	0.18	Not Detected
Benzene	0.11	0.51	0.36	1.6
Trichloroethene	0.046	Not Detected	0.25	Not Detected
Toluene	0.046	0.40	0.17	1.5
Tetrachloroethene	0.046	6.5	0.31	44
Ethyl Benzene	0.046	0.18	0.20	0.80
m,p-Xylene	0.092	0.18	0.40	0.80
o-Xylene	0.046	0.18	0.20	0.77
trans-1,2-Dichloroethene	0.23	Not Detected	0.91	Not Detected
Chloroform	0.046	0.36	0.22	1.8

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	112	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	93	70-130

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Client Sample ID: BSV-2 Deep

Lab ID#: 1305306-03A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052016**	**Date of Collection: 5/9/13 5:25:00 PM**	
Dil. Factor:	**2.15**	**Date of Analysis: 5/20/13 11:02 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrahydrofuran	1.1	Not Detected	3.2	Not Detected
1,2,4-Trimethylbenzene	0.22	Not Detected	1.0	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	108	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	89	70-130

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Client Sample ID: BSV-2 Deep

Lab ID#: 1305306-03B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052016sim**	**Date of Collection:**	**5/9/13 5:25:00 PM**
Dil. Factor:	**2.15**	**Date of Analysis:**	**5/20/13 11:02 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.022	Not Detected	0.055	Not Detected
cis-1,2-Dichloroethene	0.043	Not Detected	0.17	Not Detected
Benzene	0.11	0.59	0.34	1.9
Trichloroethene	0.043	Not Detected	0.23	Not Detected
Toluene	0.043	0.25	0.16	0.93
Tetrachloroethene	0.043	11	0.29	74
Ethyl Benzene	0.043	0.11	0.19	0.50
m,p-Xylene	0.086	0.12	0.37	0.50
o-Xylene	0.043	0.11	0.19	0.48
trans-1,2-Dichloroethene	0.22	Not Detected	0.85	Not Detected
Chloroform	0.043	0.23	0.21	1.1

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	113	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	89	70-130

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Client Sample ID: BSV-3 Deep

Lab ID#: 1305306-04A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052017**	**Date of Collection: 5/9/13 5:32:00 PM**	
Dil. Factor:	**2.16**	**Date of Analysis: 5/21/13 06:38 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrahydrofuran	1.1	Not Detected	3.2	Not Detected
1,2,4-Trimethylbenzene	0.22	Not Detected	1.1	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	105	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	89	70-130

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Client Sample ID: BSV-3 Deep

Lab ID#: 1305306-04B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052017sim**	**Date of Collection:**	**5/9/13 5:32:00 PM**
Dil. Factor:	**2.16**	**Date of Analysis:**	**5/21/13 06:38 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.022	Not Detected	0.055	Not Detected
cis-1,2-Dichloroethene	0.043	Not Detected	0.17	Not Detected
Benzene	0.11	0.69	0.34	2.2
Trichloroethene	0.043	Not Detected	0.23	Not Detected
Toluene	0.043	0.16	0.16	0.62
Tetrachloroethene	0.043	0.38	0.29	2.6
Ethyl Benzene	0.043	0.051	0.19	0.22
m,p-Xylene	0.086	Not Detected	0.38	Not Detected
o-Xylene	0.043	Not Detected	0.19	Not Detected
trans-1,2-Dichloroethene	0.22	Not Detected	0.86	Not Detected
Chloroform	0.043	0.34	0.21	1.6

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	110	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	94	70-130

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Client Sample ID: BSV-4 Shallow

Lab ID#: 1305306-05A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052018**	**Date of Collection: 5/9/13 3:13:00 PM**	
Dil. Factor:	**2.21**	**Date of Analysis: 5/21/13 07:17 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrahydrofuran	1.1	Not Detected	3.2	Not Detected
1,2,4-Trimethylbenzene	0.22	0.24	1.1	1.2

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	108	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	90	70-130

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Client Sample ID: BSV-4 Shallow

Lab ID#: 1305306-05B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052018sim**	**Date of Collection: 5/9/13 3:13:00 PM**	
Dil. Factor:	**2.21**	**Date of Analysis: 5/21/13 07:17 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.022	Not Detected	0.056	Not Detected
cis-1,2-Dichloroethene	0.044	Not Detected	0.18	Not Detected
Benzene	0.11	1.8	0.35	5.6
Trichloroethene	0.044	Not Detected	0.24	Not Detected
Toluene	0.044	1.1	0.17	4.1
Tetrachloroethene	0.044	0.68	0.30	4.6
Ethyl Benzene	0.044	0.18	0.19	0.78
m,p-Xylene	0.088	0.24	0.38	1.0
o-Xylene	0.044	0.18	0.19	0.81
trans-1,2-Dichloroethene	0.22	Not Detected	0.88	Not Detected
Chloroform	0.044	0.39	0.22	1.9

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	114	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	92	70-130

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Client Sample ID: BSV-4 Deep

Lab ID#: 1305306-06A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052019**	**Date of Collection: 5/9/13 3:45:00 PM**	
Dil. Factor:	**2.17**	**Date of Analysis: 5/21/13 07:53 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrahydrofuran	1.1	Not Detected	3.2	Not Detected
1,2,4-Trimethylbenzene	0.22	Not Detected	1.1	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	108	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	92	70-130

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Client Sample ID: BSV-4 Deep

Lab ID#: 1305306-06B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052019sim**	**Date of Collection:**	**5/9/13 3:45:00 PM**
Dil. Factor:	**2.17**	**Date of Analysis:**	**5/21/13 07:53 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.022	Not Detected	0.055	Not Detected
cis-1,2-Dichloroethene	0.043	Not Detected	0.17	Not Detected
Benzene	0.11	1.2	0.35	3.7
Trichloroethene	0.043	Not Detected	0.23	Not Detected
Toluene	0.043	0.22	0.16	0.84
Tetrachloroethene	0.043	1.1	0.29	7.7
Ethyl Benzene	0.043	0.080	0.19	0.35
m,p-Xylene	0.087	0.11	0.38	0.47
o-Xylene	0.043	0.063	0.19	0.28
trans-1,2-Dichloroethene	0.22	Not Detected	0.86	Not Detected
Chloroform	0.043	0.12	0.21	0.61

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	116	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	92	70-130

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Client Sample ID: BSV-5 Shallow

Lab ID#: 1305306-07A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052020**	**Date of Collection: 5/10/13 1:56:00 PM**	
Dil. Factor:	**2.86**	**Date of Analysis: 5/21/13 08:29 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrahydrofuran	1.4	Not Detected	4.2	Not Detected
1,2,4-Trimethylbenzene	0.29	1.0	1.4	5.2

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	110	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	90	70-130

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Client Sample ID: BSV-5 Shallow

Lab ID#: 1305306-07B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052020sim**	**Date of Collection: 5/10/13 1:56:00 PM**	
Dil. Factor:	**2.86**	**Date of Analysis: 5/21/13 08:29 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.029	Not Detected	0.073	Not Detected
cis-1,2-Dichloroethene	0.057	Not Detected	0.23	Not Detected
Benzene	0.14	3.4	0.46	11
Trichloroethene	0.057	Not Detected	0.31	Not Detected
Toluene	0.057	8.0	0.22	30
Tetrachloroethene	0.057	6.0	0.39	41
Ethyl Benzene	0.057	1.2	0.25	5.4
m,p-Xylene	0.11	3.3	0.50	14
o-Xylene	0.057	1.1	0.25	4.7
trans-1,2-Dichloroethene	0.29	Not Detected	1.1	Not Detected
Chloroform	0.057	8.8	0.28	43

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	118	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	90	70-130

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Client Sample ID: DUP

Lab ID#: 1305306-08A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052021**	**Date of Collection: 5/10/13 1:56:00 PM**	
Dil. Factor:	**2.58**	**Date of Analysis: 5/21/13 09:06 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrahydrofuran	1.3	Not Detected	3.8	Not Detected
1,2,4-Trimethylbenzene	0.26	0.97	1.3	4.8

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	116	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	91	70-130

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Client Sample ID: DUP

Lab ID#: 1305306-08B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052021sim**	**Date of Collection: 5/10/13 1:56:00 PM**	
Dil. Factor:	**2.58**	**Date of Analysis: 5/21/13 09:06 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.026	Not Detected	0.066	Not Detected
cis-1,2-Dichloroethene	0.052	Not Detected	0.20	Not Detected
Benzene	0.13	3.4	0.41	11
Trichloroethene	0.052	Not Detected	0.28	Not Detected
Toluene	0.052	6.6	0.19	25
Tetrachloroethene	0.052	5.9	0.35	40
Ethyl Benzene	0.052	1.2	0.22	5.1
m,p-Xylene	0.10	3.2	0.45	14
o-Xylene	0.052	1.0	0.22	4.3
trans-1,2-Dichloroethene	0.26	Not Detected	1.0	Not Detected
Chloroform	0.052	8.7	0.25	42

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	120	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	90	70-130

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Client Sample ID: BSV-5 Deep

Lab ID#: 1305306-09A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052107**	**Date of Collection: 5/10/13 2:30:00 PM**	
Dil. Factor:	**3.50**	**Date of Analysis: 5/21/13 02:04 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrahydrofuran	1.8	Not Detected	5.2	Not Detected
1,2,4-Trimethylbenzene	0.35	Not Detected	1.7	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	105	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	88	70-130

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Client Sample ID: BSV-5 Deep

Lab ID#: 1305306-09B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052107sim**	**Date of Collection: 5/10/13 2:30:00 PM**	
Dil. Factor:	**3.50**	**Date of Analysis: 5/21/13 02:04 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.035	Not Detected	0.089	Not Detected
cis-1,2-Dichloroethene	0.070	Not Detected	0.28	Not Detected
Benzene	0.18	1.9	0.56	6.1
Trichloroethene	0.070	0.24	0.38	1.3
Toluene	0.070	0.23	0.26	0.86
Tetrachloroethene	0.070	49	0.47	330
Ethyl Benzene	0.070	Not Detected	0.30	Not Detected
m,p-Xylene	0.14	Not Detected	0.61	Not Detected
o-Xylene	0.070	Not Detected	0.30	Not Detected
trans-1,2-Dichloroethene	0.35	Not Detected	1.4	Not Detected
Chloroform	0.070	1.4	0.34	7.0

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	110	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	88	70-130

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Client Sample ID: BSV-6 Shallow

Lab ID#: 1305306-10A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052108**	**Date of Collection: 5/9/13 6:37:00 PM**	
Dil. Factor:	**2.26**	**Date of Analysis: 5/21/13 02:53 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrahydrofuran	1.1	Not Detected	3.3	Not Detected
1,2,4-Trimethylbenzene	0.23	0.86	1.1	4.2

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	128	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	90	70-130

eurofins | Air Toxics

Client Sample ID: BSV-6 Shallow

Lab ID#: 1305306-10B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052108sim**	**Date of Collection: 5/9/13 6:37:00 PM**	
Dil. Factor:	**2.26**	**Date of Analysis: 5/21/13 02:53 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.023	Not Detected	0.058	Not Detected
cis-1,2-Dichloroethene	0.045	Not Detected	0.18	Not Detected
Benzene	0.11	2.4	0.36	7.7
Trichloroethene	0.045	Not Detected	0.24	Not Detected
Toluene	0.045	5.6	0.17	21
Tetrachloroethene	0.045	0.91	0.31	6.2
Ethyl Benzene	0.045	1.2	0.20	5.4
m,p-Xylene	0.090	2.8	0.39	12
o-Xylene	0.045	1.0	0.20	4.4
trans-1,2-Dichloroethene	0.23	Not Detected	0.90	Not Detected
Chloroform	0.045	3.3	0.22	16

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	130	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	90	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1305306-11A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052006a**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/20/13 12:57 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrahydrofuran	0.50	Not Detected	1.5	Not Detected
1,2,4-Trimethylbenzene	0.10	Not Detected	0.49	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	109	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	82	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1305306-11B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052006asim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/20/13 12:57 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.010	Not Detected	0.026	Not Detected
cis-1,2-Dichloroethene	0.020	Not Detected	0.079	Not Detected
Benzene	0.050	Not Detected	0.16	Not Detected
Trichloroethene	0.020	Not Detected	0.11	Not Detected
Toluene	0.020	Not Detected	0.075	Not Detected
Tetrachloroethene	0.020	Not Detected	0.14	Not Detected
Ethyl Benzene	0.020	Not Detected	0.087	Not Detected
m,p-Xylene	0.040	Not Detected	0.17	Not Detected
o-Xylene	0.020	Not Detected	0.087	Not Detected
trans-1,2-Dichloroethene	0.10	Not Detected	0.40	Not Detected
Chloroform	0.020	Not Detected	0.098	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	110	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	85	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1305306-11C

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052106**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/21/13 01:18 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrahydrofuran	0.50	Not Detected	1.5	Not Detected
1,2,4-Trimethylbenzene	0.10	Not Detected	0.49	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	104	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	84	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1305306-11D

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052106sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/21/13 01:18 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.010	Not Detected	0.026	Not Detected
cis-1,2-Dichloroethene	0.020	Not Detected	0.079	Not Detected
Benzene	0.050	Not Detected	0.16	Not Detected
Trichloroethene	0.020	Not Detected	0.11	Not Detected
Toluene	0.020	Not Detected	0.075	Not Detected
Tetrachloroethene	0.020	Not Detected	0.14	Not Detected
Ethyl Benzene	0.020	Not Detected	0.087	Not Detected
m,p-Xylene	0.040	Not Detected	0.17	Not Detected
o-Xylene	0.020	Not Detected	0.087	Not Detected
trans-1,2-Dichloroethene	0.10	Not Detected	0.40	Not Detected
Chloroform	0.020	Not Detected	0.098	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	111	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	86	70-130

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Client Sample ID: CCV

Lab ID#: 1305306-12A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052002**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/20/13 09:41 AM**	

Compound	**%Recovery**
Tetrahydrofuran	97
1,2,4-Trimethylbenzene	109

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
1,2-Dichloroethane-d4	99	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	100	70-130

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Client Sample ID: CCV

Lab ID#: 1305306-12B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052002sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/20/13 09:41 AM**	

Compound	**%Recovery**
Vinyl Chloride	105
cis-1,2-Dichloroethene	97
Benzene	94
Trichloroethene	92
Toluene	98
Tetrachloroethene	92
Ethyl Benzene	103
m,p-Xylene	104
o-Xylene	105
trans-1,2-Dichloroethene	95
Chloroform	96

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
1,2-Dichloroethane-d4	103	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	98	70-130

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Client Sample ID: CCV

Lab ID#: 1305306-12C

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052102**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/21/13 10:06 AM**	

Compound	**%Recovery**
Tetrahydrofuran	103
1,2,4-Trimethylbenzene	105

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
1,2-Dichloroethane-d4	106	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	96	70-130

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Client Sample ID: CCV

Lab ID#: 1305306-12D

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052102sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/21/13 10:06 AM**	

Compound	**%Recovery**
Vinyl Chloride	107
cis-1,2-Dichloroethene	99
Benzene	96
Trichloroethene	92
Toluene	99
Tetrachloroethene	93
Ethyl Benzene	100
m,p-Xylene	100
o-Xylene	102
trans-1,2-Dichloroethene	97
Chloroform	100

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
1,2-Dichloroethane-d4	106	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	98	70-130

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Client Sample ID: LCS

Lab ID#: 1305306-13A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052003**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/20/13 10:18 AM**	

Compound	**%Recovery**
Tetrahydrofuran	104
1,2,4-Trimethylbenzene	111

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
1,2-Dichloroethane-d4	102	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	97	70-130

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Client Sample ID: LCSD

Lab ID#: 1305306-13AA

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052004**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/20/13 10:59 AM**	

Compound	**%Recovery**
Tetrahydrofuran	103
1,2,4-Trimethylbenzene	108

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
1,2-Dichloroethane-d4	102	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	99	70-130

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Client Sample ID: LCS

Lab ID#: 1305306-13B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052003sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/20/13 10:18 AM**	

Compound	**%Recovery**
Vinyl Chloride	112
cis-1,2-Dichloroethene	106
Benzene	103
Trichloroethene	101
Toluene	105
Tetrachloroethene	98
Ethyl Benzene	108
m,p-Xylene	111
o-Xylene	111
trans-1,2-Dichloroethene	115
Chloroform	107

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
1,2-Dichloroethane-d4	103	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	99	70-130

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Client Sample ID: LCSD

Lab ID#: 1305306-13BB

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052004sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/20/13 10:59 AM**	

Compound	%Recovery
Vinyl Chloride	110
cis-1,2-Dichloroethene	106
Benzene	103
Trichloroethene	100
Toluene	106
Tetrachloroethene	98
Ethyl Benzene	108
m,p-Xylene	112
o-Xylene	112
trans-1,2-Dichloroethene	114
Chloroform	106

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	101	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	100	70-130

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Client Sample ID: LCS

Lab ID#: 1305306-13C

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052103**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/21/13 11:02 AM**	

Compound	**%Recovery**
Tetrahydrofuran	104
1,2,4-Trimethylbenzene	99

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
1,2-Dichloroethane-d4	100	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	93	70-130

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Client Sample ID: LCSD

Lab ID#: 1305306-13CC

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052104**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/21/13 11:44 AM**	

Compound	**%Recovery**
Tetrahydrofuran	105
1,2,4-Trimethylbenzene	110

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
1,2-Dichloroethane-d4	102	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	95	70-130

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Client Sample ID: LCS

Lab ID#: 1305306-13D

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052103sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/21/13 11:02 AM**	

Compound	%Recovery
Vinyl Chloride	115
cis-1,2-Dichloroethene	107
Benzene	104
Trichloroethene	100
Toluene	106
Tetrachloroethene	97
Ethyl Benzene	106
m,p-Xylene	106
o-Xylene	107
trans-1,2-Dichloroethene	116
Chloroform	108

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	102	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	96	70-130

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Client Sample ID: LCSD

Lab ID#: 1305306-13DD

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052104sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/21/13 11:44 AM**	

Compound	**%Recovery**
Vinyl Chloride	113
cis-1,2-Dichloroethene	107
Benzene	104
Trichloroethene	100
Toluene	107
Tetrachloroethene	98
Ethyl Benzene	108
m,p-Xylene	111
o-Xylene	110
trans-1,2-Dichloroethene	116
Chloroform	109

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
1,2-Dichloroethane-d4	102	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	98	70-130

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5/29/2013
Mr. Mark Pearson
Tetra Tech
851 Bridger Drive
Suite 6
Bozeman MT 59715

Project Name: Bozeman Landfill
Project #: 114710303.740
Workorder #: 1305307

Dear Mr. Mark Pearson

The following report includes the data for the above referenced project for sample(s) received on 5/14/2013 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner

Project Manager

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WORK ORDER #: 1305307

Work Order Summary

CLIENT:	Mr. Mark Pearson Tetra Tech 851 Bridger Drive Suite 6 Bozeman, MT 59715	**BILL TO:**	Mr. Mark Pearson Tetra Tech 851 Bridger Drive Suite 6 Bozeman, MT 59715
PHONE:	406-582-8780	**P.O. #**	
FAX:	406-582-8790	**PROJECT #**	114710303.740 Bozeman Landfill
DATE RECEIVED:	05/14/2013	**CONTACT:**	Kelly Buettner
DATE COMPLETED:	05/29/2013		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	BSV-6 Deep	Modified TO-15	11.8 "Hg	5 psi
01B	BSV-6 Deep	Modified TO-15	11.8 "Hg	5 psi
02A	BSV-7	Modified TO-15	8.8 "Hg	4.8 psi
02B	BSV-7	Modified TO-15	8.8 "Hg	4.8 psi
03A	BSV-8 Shallow	Modified TO-15	11.2 "Hg	4.8 psi
03B	BSV-8 Shallow	Modified TO-15	11.2 "Hg	4.8 psi
04A	BSV-8 Deep	Modified TO-15	12.4 "Hg	4.8 psi
04B	BSV-8 Deep	Modified TO-15	12.4 "Hg	4.8 psi
05A	BSV-9 Shallow	Modified TO-15	11.2 "Hg	4.8 psi
05B	BSV-9 Shallow	Modified TO-15	11.2 "Hg	4.8 psi
06A	BSV-9 Deep	Modified TO-15	13.5 "Hg	4.9 psi
06B	BSV-9 Deep	Modified TO-15	13.5 "Hg	4.9 psi
07A	BSV-10 Shallow	Modified TO-15	10 "Hg	4.9 psi
07B	BSV-10 Shallow	Modified TO-15	10 "Hg	4.9 psi
08A	BSV-10 Mid	Modified TO-15	11 "Hg	4.9 psi
08B	BSV-10 Mid	Modified TO-15	11 "Hg	4.9 psi
09A	Dup-2	Modified TO-15	11.8 "Hg	4.8 psi
09B	Dup-2	Modified TO-15	11.8 "Hg	4.8 psi
10A	BSV-10 Deep	Modified TO-15	11.8 "Hg	5 psi
10B	BSV-10 Deep	Modified TO-15	11.8 "Hg	5 psi
11A	Lab Blank	Modified TO-15	NA	NA
11B	Lab Blank	Modified TO-15	NA	NA
12A	CCV	Modified TO-15	NA	NA

Continued on next page

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WORK ORDER #: 1305307

Work Order Summary

CLIENT:	Mr. Mark Pearson Tetra Tech 851 Bridger Drive Suite 6 Bozeman, MT 59715	**BILL TO:**	Mr. Mark Pearson Tetra Tech 851 Bridger Drive Suite 6 Bozeman, MT 59715
PHONE:	406-582-8780	**P.O. #**	
FAX:	406-582-8790	**PROJECT #**	114710303.740 Bozeman Landfill
DATE RECEIVED:	05/14/2013	**CONTACT:**	Kelly Buettner
DATE COMPLETED:	05/29/2013		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
12B	CCV	Modified TO-15	NA	NA
13A	LCS	Modified TO-15	NA	NA
13AA	LCSD	Modified TO-15	NA	NA
13B	LCS	Modified TO-15	NA	NA
13BB	LCSD	Modified TO-15	NA	NA

CERTIFIED BY:  DATE: 05/29/13

Technical Director

Certification numbers: AZ Licensure AZ0775, CA NELAP - 12282CA, NY NELAP - 11291,
TX NELAP - T104704434-12-4, UT NELAP CA009332012-3, WA NELAP - C935
Name of Accrediting Agency: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2012, Expiration date: 10/17/2013.
Eurofins Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 9563
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified TO-15 Full Scan/SIM
Tetra Tech
Workorder# 1305307

Ten 6 Liter Summa Canister (SIM Certified) samples were received on May 14, 2013. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the Full Scan and SIM acquisition modes. The method involves concentrating up to 1.0 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

Requirement	***TO-15***	***ATL Modifications***
ICAL %RSD acceptance criteria	</=30% RSD with 2 compounds allowed out to < 40% RSD	For Full Scan: 30% RSD with 4 compounds allowed out to < 40% RSD For SIM: Project specific; default criteria is </=30% RSD with 10% of compounds allowed out to < 40% RSD
Daily Calibration	+- 30% Difference	For Full Scan: </= 30% Difference with four allowed out up to </=40%.; flag and narrate outliers For SIM: Project specific; default criteria is </= 30% Difference with 10% of compounds allowed out up to </=40%.; flag and narrate outliers
Blank and standards	Zero air	Nitrogen
Method Detection Limit	Follow 40CFR Pt.136 App. B	The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

The results for each sample in this report were acquired from two separate data files originating from the same analytical run. The two data files have the same base file name and are differentiated with a "sim" extension on the SIM data file.

Dilution was performed on samples BSV-8 Shallow, BSV-8 Deep, BSV-9 Shallow, BSV-9 Deep,

BSV-10 Shallow, BSV-10 Mid, Dup-2, and BSV-10 Deep due to the presence of high level target species.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

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Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

Client Sample ID: BSV-6 Deep

Lab ID#: 1305307-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2,4-Trimethylbenzene	0.22	0.24	1.1	1.2

Client Sample ID: BSV-6 Deep

Lab ID#: 1305307-01B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.11	0.44	0.35	1.4
Trichloroethene	0.044	0.051	0.24	0.28
Toluene	0.044	0.17	0.17	0.64
Tetrachloroethene	0.044	8.5	0.30	58
Ethyl Benzene	0.044	0.068	0.19	0.29
m,p-Xylene	0.088	0.094	0.38	0.41
o-Xylene	0.044	0.054	0.19	0.23

Client Sample ID: BSV-7

Lab ID#: 1305307-02A

No Detections Were Found.

Client Sample ID: BSV-7

Lab ID#: 1305307-02B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.094	0.29	0.30	0.92
Toluene	0.038	0.22	0.14	0.82
Tetrachloroethene	0.038	2.0	0.26	14
Ethyl Benzene	0.038	0.065	0.16	0.28
m,p-Xylene	0.075	0.076	0.33	0.33
o-Xylene	0.038	0.047	0.16	0.20

Client Sample ID: BSV-8 Shallow

Lab ID#: 1305307-03A

No Detections Were Found.

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Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

Client Sample ID: BSV-8 Shallow

Lab ID#: 1305307-03B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.35	0.61	1.1	2.0
Toluene	0.14	0.75	0.53	2.8
Tetrachloroethene	0.14	100	0.96	680
Ethyl Benzene	0.14	0.25	0.61	1.1
o-Xylene	0.14	0.21	0.61	0.90

Client Sample ID: BSV-8 Deep

Lab ID#: 1305307-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2,4-Trimethylbenzene	0.76	0.84	3.7	4.1

Client Sample ID: BSV-8 Deep

Lab ID#: 1305307-04B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.38	1.7	1.2	5.4
Toluene	0.15	2.0	0.57	7.4
Tetrachloroethene	0.15	120	1.0	790
Ethyl Benzene	0.15	1.2	0.66	5.1
m,p-Xylene	0.30	2.0	1.3	8.6
o-Xylene	0.15	0.83	0.66	3.6

Client Sample ID: BSV-9 Shallow

Lab ID#: 1305307-05A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrahydrofuran	1.8	5.9	5.2	17
1,2,4-Trimethylbenzene	0.35	1.8	1.7	9.1

Client Sample ID: BSV-9 Shallow

Lab ID#: 1305307-05B

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Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

Client Sample ID: BSV-9 Shallow

Lab ID#: 1305307-05B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.18	0.47	0.56	1.5
Trichloroethene	0.071	0.26	0.38	1.4
Toluene	0.071	6.7	0.27	25
Tetrachloroethene	0.071	46	0.48	310
Ethyl Benzene	0.071	1.8	0.31	7.9
m,p-Xylene	0.14	7.3	0.61	32
o-Xylene	0.071	1.8	0.31	8.0
Chloroform	0.071	0.33	0.34	1.6

Client Sample ID: BSV-9 Deep

Lab ID#: 1305307-06A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrahydrofuran	2.4	4.1	7.1	12
1,2,4-Trimethylbenzene	0.48	0.58	2.4	2.8

Client Sample ID: BSV-9 Deep

Lab ID#: 1305307-06B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.24	0.33	0.77	1.0
Trichloroethene	0.097	0.36	0.52	1.9
Toluene	0.097	2.3	0.36	8.8
Tetrachloroethene	0.097	87	0.66	590
Ethyl Benzene	0.097	0.63	0.42	2.7
m,p-Xylene	0.19	2.2	0.84	9.8
o-Xylene	0.097	0.58	0.42	2.5
Chloroform	0.097	0.27	0.47	1.3

Client Sample ID: BSV-10 Shallow

Lab ID#: 1305307-07A

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Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

Client Sample ID: BSV-10 Shallow

Lab ID#: 1305307-07A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrahydrofuran	10	16	29	46

Client Sample ID: BSV-10 Shallow

Lab ID#: 1305307-07B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.20	330	0.51	850
Benzene	1.0	5.1	3.2	16
Toluene	0.40	8.2	1.5	31
Tetrachloroethene	0.40	0.57	2.7	3.9
Ethyl Benzene	0.40	1.2	1.7	5.2
m,p-Xylene	0.80	3.9	3.5	17
o-Xylene	0.40	1.4	1.7	6.2
Chloroform	0.40	2.9	2.0	14

Client Sample ID: BSV-10 Mid

Lab ID#: 1305307-08A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrahydrofuran	3.5	8.7	10	26

Client Sample ID: BSV-10 Mid

Lab ID#: 1305307-08B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.070	110	0.18	290
Benzene	0.35	2.1	1.1	6.8
Trichloroethene	0.14	0.26	0.76	1.4
Toluene	0.14	2.5	0.53	9.4
Tetrachloroethene	0.14	1.1	0.95	7.3
Ethyl Benzene	0.14	0.42	0.61	1.8
m,p-Xylene	0.28	1.7	1.2	7.4

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Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

Client Sample ID: BSV-10 Mid

Lab ID#: 1305307-08B

o-Xylene	0.14	0.61	0.61	2.6
Chloroform	0.14	0.55	0.69	2.7

Client Sample ID: Dup-2

Lab ID#: 1305307-09A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrahydrofuran	3.6	8.4	11	25

Client Sample ID: Dup-2

Lab ID#: 1305307-09B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.073	110	0.19	280
cis-1,2-Dichloroethene	0.15	0.15	0.58	0.61
Benzene	0.36	2.0	1.2	6.6
Trichloroethene	0.15	0.26	0.78	1.4
Toluene	0.15	2.2	0.55	8.4
Tetrachloroethene	0.15	1.1	0.99	7.7
Ethyl Benzene	0.15	0.44	0.63	1.9
m,p-Xylene	0.29	1.8	1.3	7.6
o-Xylene	0.15	0.52	0.63	2.2
Chloroform	0.15	0.54	0.71	2.6

Client Sample ID: BSV-10 Deep

Lab ID#: 1305307-10A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrahydrofuran	2.8	12	8.1	35
1,2,4-Trimethylbenzene	0.55	0.85	2.7	4.2

Client Sample ID: BSV-10 Deep

Lab ID#: 1305307-10B

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Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

Client Sample ID: BSV-10 Deep

Lab ID#: 1305307-10B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.055	74	0.14	190
cis-1,2-Dichloroethene	0.11	0.27	0.44	1.0
Benzene	0.28	3.5	0.88	11
Trichloroethene	0.11	0.44	0.59	2.4
Toluene	0.11	7.5	0.42	28
Tetrachloroethene	0.11	0.92	0.75	6.3
Ethyl Benzene	0.11	1.2	0.48	5.4
m,p-Xylene	0.22	3.8	0.96	16
o-Xylene	0.11	1.1	0.48	4.9
Chloroform	0.11	0.50	0.54	2.4

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Client Sample ID: BSV-6 Deep

Lab ID#: 1305307-01A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052109**	**Date of Collection: 5/9/13 7:03:00 PM**	
Dil. Factor:	**2.21**	**Date of Analysis: 5/21/13 03:47 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrahydrofuran	1.1	Not Detected	3.2	Not Detected
1,2,4-Trimethylbenzene	0.22	0.24	1.1	1.2

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	115	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	86	70-130

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Client Sample ID: BSV-6 Deep

Lab ID#: 1305307-01B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052109sim**	**Date of Collection: 5/9/13 7:03:00 PM**	
Dil. Factor:	**2.21**	**Date of Analysis: 5/21/13 03:47 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.022	Not Detected	0.056	Not Detected
cis-1,2-Dichloroethene	0.044	Not Detected	0.18	Not Detected
Benzene	0.11	0.44	0.35	1.4
Trichloroethene	0.044	0.051	0.24	0.28
Toluene	0.044	0.17	0.17	0.64
Tetrachloroethene	0.044	8.5	0.30	58
Ethyl Benzene	0.044	0.068	0.19	0.29
m,p-Xylene	0.088	0.094	0.38	0.41
o-Xylene	0.044	0.054	0.19	0.23
trans-1,2-Dichloroethene	0.22	Not Detected	0.88	Not Detected
Chloroform	0.044	Not Detected	0.22	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	116	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	89	70-130

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Client Sample ID: BSV-7

Lab ID#: 1305307-02A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052110**	**Date of Collection: 5/9/13 6:30:00 PM**	
Dil. Factor:	**1.88**	**Date of Analysis: 5/21/13 04:48 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrahydrofuran	0.94	Not Detected	2.8	Not Detected
1,2,4-Trimethylbenzene	0.19	Not Detected	0.92	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	116	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	88	70-130

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Client Sample ID: BSV-7

Lab ID#: 1305307-02B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052110sim**	**Date of Collection: 5/9/13 6:30:00 PM**	
Dil. Factor:	**1.88**	**Date of Analysis: 5/21/13 04:48 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.019	Not Detected	0.048	Not Detected
cis-1,2-Dichloroethene	0.038	Not Detected	0.15	Not Detected
Benzene	0.094	0.29	0.30	0.92
Trichloroethene	0.038	Not Detected	0.20	Not Detected
Toluene	0.038	0.22	0.14	0.82
Tetrachloroethene	0.038	2.0	0.26	14
Ethyl Benzene	0.038	0.065	0.16	0.28
m,p-Xylene	0.075	0.076	0.33	0.33
o-Xylene	0.038	0.047	0.16	0.20
trans-1,2-Dichloroethene	0.19	Not Detected	0.74	Not Detected
Chloroform	0.038	Not Detected	0.18	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	119	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	89	70-130

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Client Sample ID: BSV-8 Shallow

Lab ID#: 1305307-03A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052111**	**Date of Collection: 5/9/13 12:28:00 PM**	
Dil. Factor:	**7.06**	**Date of Analysis: 5/21/13 05:46 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrahydrofuran	3.5	Not Detected	10	Not Detected
1,2,4-Trimethylbenzene	0.71	Not Detected	3.5	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	105	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	86	70-130

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Client Sample ID: BSV-8 Shallow

Lab ID#: 1305307-03B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052111sim**	**Date of Collection:**	**5/9/13 12:28:00 PM**
Dil. Factor:	**7.06**	**Date of Analysis:**	**5/21/13 05:46 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.071	Not Detected	0.18	Not Detected
cis-1,2-Dichloroethene	0.14	Not Detected	0.56	Not Detected
Benzene	0.35	0.61	1.1	2.0
Trichloroethene	0.14	Not Detected	0.76	Not Detected
Toluene	0.14	0.75	0.53	2.8
Tetrachloroethene	0.14	100	0.96	680
Ethyl Benzene	0.14	0.25	0.61	1.1
m,p-Xylene	0.28	Not Detected	1.2	Not Detected
o-Xylene	0.14	0.21	0.61	0.90
trans-1,2-Dichloroethene	0.71	Not Detected	2.8	Not Detected
Chloroform	0.14	Not Detected	0.69	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	106	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	90	70-130

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Client Sample ID: BSV-8 Deep

Lab ID#: 1305307-04A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052112**	**Date of Collection: 5/9/13 1:09:00 PM**	
Dil. Factor:	**7.57**	**Date of Analysis: 5/21/13 06:28 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrahydrofuran	3.8	Not Detected	11	Not Detected
1,2,4-Trimethylbenzene	0.76	0.84	3.7	4.1

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	104	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	84	70-130

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Client Sample ID: BSV-8 Deep

Lab ID#: 1305307-04B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052112sim**	**Date of Collection: 5/9/13 1:09:00 PM**	
Dil. Factor:	**7.57**	**Date of Analysis: 5/21/13 06:28 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.076	Not Detected	0.19	Not Detected
cis-1,2-Dichloroethene	0.15	Not Detected	0.60	Not Detected
Benzene	0.38	1.7	1.2	5.4
Trichloroethene	0.15	Not Detected	0.81	Not Detected
Toluene	0.15	2.0	0.57	7.4
Tetrachloroethene	0.15	120	1.0	790
Ethyl Benzene	0.15	1.2	0.66	5.1
m,p-Xylene	0.30	2.0	1.3	8.6
o-Xylene	0.15	0.83	0.66	3.6
trans-1,2-Dichloroethene	0.76	Not Detected	3.0	Not Detected
Chloroform	0.15	Not Detected	0.74	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	106	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	87	70-130

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Client Sample ID: BSV-9 Shallow

Lab ID#: 1305307-05A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052113**	**Date of Collection: 5/10/13 9:15:00 AM**	
Dil. Factor:	**3.53**	**Date of Analysis: 5/21/13 07:16 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrahydrofuran	1.8	5.9	5.2	17
1,2,4-Trimethylbenzene	0.35	1.8	1.7	9.1

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	105	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	93	70-130

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Client Sample ID: BSV-9 Shallow

Lab ID#: 1305307-05B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052113sim**	**Date of Collection: 5/10/13 9:15:00 AM**	
Dil. Factor:	**3.53**	**Date of Analysis: 5/21/13 07:16 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.035	Not Detected	0.090	Not Detected
cis-1,2-Dichloroethene	0.071	Not Detected	0.28	Not Detected
Benzene	0.18	0.47	0.56	1.5
Trichloroethene	0.071	0.26	0.38	1.4
Toluene	0.071	6.7	0.27	25
Tetrachloroethene	0.071	46	0.48	310
Ethyl Benzene	0.071	1.8	0.31	7.9
m,p-Xylene	0.14	7.3	0.61	32
o-Xylene	0.071	1.8	0.31	8.0
trans-1,2-Dichloroethene	0.35	Not Detected	1.4	Not Detected
Chloroform	0.071	0.33	0.34	1.6

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	107	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	97	70-130

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Client Sample ID: BSV-9 Deep

Lab ID#: 1305307-06A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052114**	**Date of Collection: 5/10/13 9:46:00 AM**	
Dil. Factor:	**4.84**	**Date of Analysis: 5/21/13 08:38 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrahydrofuran	2.4	4.1	7.1	12
1,2,4-Trimethylbenzene	0.48	0.58	2.4	2.8

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	88	70-130

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Client Sample ID: BSV-9 Deep

Lab ID#: 1305307-06B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052114sim**	**Date of Collection: 5/10/13 9:46:00 AM**	
Dil. Factor:	**4.84**	**Date of Analysis: 5/21/13 08:38 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.048	Not Detected	0.12	Not Detected
cis-1,2-Dichloroethene	0.097	Not Detected	0.38	Not Detected
Benzene	0.24	0.33	0.77	1.0
Trichloroethene	0.097	0.36	0.52	1.9
Toluene	0.097	2.3	0.36	8.8
Tetrachloroethene	0.097	87	0.66	590
Ethyl Benzene	0.097	0.63	0.42	2.7
m,p-Xylene	0.19	2.2	0.84	9.8
o-Xylene	0.097	0.58	0.42	2.5
trans-1,2-Dichloroethene	0.48	Not Detected	1.9	Not Detected
Chloroform	0.097	0.27	0.47	1.3

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	104	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	93	70-130

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Client Sample ID: BSV-10 Shallow

Lab ID#: 1305307-07A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052115**	**Date of Collection: 5/10/13 10:31:00 AM**	
Dil. Factor:	**20.0**	**Date of Analysis: 5/21/13 09:14 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrahydrofuran	10	16	29	46
1,2,4-Trimethylbenzene	2.0	Not Detected	9.8	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	101	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	85	70-130

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Client Sample ID: BSV-10 Shallow

Lab ID#: 1305307-07B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052115sim**	**Date of Collection: 5/10/13 10:31:00 AM**	
Dil. Factor:	**20.0**	**Date of Analysis: 5/21/13 09:14 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.20	330	0.51	850
cis-1,2-Dichloroethene	0.40	Not Detected	1.6	Not Detected
Benzene	1.0	5.1	3.2	16
Trichloroethene	0.40	Not Detected	2.1	Not Detected
Toluene	0.40	8.2	1.5	31
Tetrachloroethene	0.40	0.57	2.7	3.9
Ethyl Benzene	0.40	1.2	1.7	5.2
m,p-Xylene	0.80	3.9	3.5	17
o-Xylene	0.40	1.4	1.7	6.2
trans-1,2-Dichloroethene	2.0	Not Detected	7.9	Not Detected
Chloroform	0.40	2.9	2.0	14

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	104	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	89	70-130

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Client Sample ID: BSV-10 Mid

Lab ID#: 1305307-08A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052116**	**Date of Collection: 5/10/13 11:02:00 AM**	
Dil. Factor:	**7.03**	**Date of Analysis: 5/21/13 10:03 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrahydrofuran	3.5	8.7	10	26
1,2,4-Trimethylbenzene	0.70	Not Detected	3.4	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	105	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	87	70-130

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Client Sample ID: BSV-10 Mid

Lab ID#: 1305307-08B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052116sim**	**Date of Collection:**	**5/10/13 11:02:00 AM**
Dil. Factor:	**7.03**	**Date of Analysis:**	**5/21/13 10:03 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.070	110	0.18	290
cis-1,2-Dichloroethene	0.14	Not Detected	0.56	Not Detected
Benzene	0.35	2.1	1.1	6.8
Trichloroethene	0.14	0.26	0.76	1.4
Toluene	0.14	2.5	0.53	9.4
Tetrachloroethene	0.14	1.1	0.95	7.3
Ethyl Benzene	0.14	0.42	0.61	1.8
m,p-Xylene	0.28	1.7	1.2	7.4
o-Xylene	0.14	0.61	0.61	2.6
trans-1,2-Dichloroethene	0.70	Not Detected	2.8	Not Detected
Chloroform	0.14	0.55	0.69	2.7

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	108	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	90	70-130

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Client Sample ID: Dup-2

Lab ID#: 1305307-09A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052117**	**Date of Collection: 5/10/13 11:02:00 AM**	
Dil. Factor:	**7.30**	**Date of Analysis: 5/21/13 10:45 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrahydrofuran	3.6	8.4	11	25
1,2,4-Trimethylbenzene	0.73	Not Detected	3.6	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	104	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	86	70-130

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Client Sample ID: Dup-2

Lab ID#: 1305307-09B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052117sim**	**Date of Collection: 5/10/13 11:02:00 AM**	
Dil. Factor:	**7.30**	**Date of Analysis: 5/21/13 10:45 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.073	110	0.19	280
cis-1,2-Dichloroethene	0.15	0.15	0.58	0.61
Benzene	0.36	2.0	1.2	6.6
Trichloroethene	0.15	0.26	0.78	1.4
Toluene	0.15	2.2	0.55	8.4
Tetrachloroethene	0.15	1.1	0.99	7.7
Ethyl Benzene	0.15	0.44	0.63	1.9
m,p-Xylene	0.29	1.8	1.3	7.6
o-Xylene	0.15	0.52	0.63	2.2
trans-1,2-Dichloroethene	0.73	Not Detected	2.9	Not Detected
Chloroform	0.15	0.54	0.71	2.6

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	108	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	91	70-130

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Client Sample ID: BSV-10 Deep

Lab ID#: 1305307-10A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052118**	**Date of Collection: 5/10/13 11:33:00 AM**	
Dil. Factor:	**5.52**	**Date of Analysis: 5/21/13 11:21 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrahydrofuran	2.8	12	8.1	35
1,2,4-Trimethylbenzene	0.55	0.85	2.7	4.2

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	104	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	88	70-130

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Client Sample ID: BSV-10 Deep

Lab ID#: 1305307-10B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052118sim**	**Date of Collection: 5/10/13 11:33:00 AM**	
Dil. Factor:	**5.52**	**Date of Analysis: 5/21/13 11:21 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.055	74	0.14	190
cis-1,2-Dichloroethene	0.11	0.27	0.44	1.0
Benzene	0.28	3.5	0.88	11
Trichloroethene	0.11	0.44	0.59	2.4
Toluene	0.11	7.5	0.42	28
Tetrachloroethene	0.11	0.92	0.75	6.3
Ethyl Benzene	0.11	1.2	0.48	5.4
m,p-Xylene	0.22	3.8	0.96	16
o-Xylene	0.11	1.1	0.48	4.9
trans-1,2-Dichloroethene	0.55	Not Detected	2.2	Not Detected
Chloroform	0.11	0.50	0.54	2.4

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	108	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	92	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1305307-11A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052106**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/21/13 01:18 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrahydrofuran	0.50	Not Detected	1.5	Not Detected
1,2,4-Trimethylbenzene	0.10	Not Detected	0.49	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	104	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	84	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1305307-11B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052106sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/21/13 01:18 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.010	Not Detected	0.026	Not Detected
cis-1,2-Dichloroethene	0.020	Not Detected	0.079	Not Detected
Benzene	0.050	Not Detected	0.16	Not Detected
Trichloroethene	0.020	Not Detected	0.11	Not Detected
Toluene	0.020	Not Detected	0.075	Not Detected
Tetrachloroethene	0.020	Not Detected	0.14	Not Detected
Ethyl Benzene	0.020	Not Detected	0.087	Not Detected
m,p-Xylene	0.040	Not Detected	0.17	Not Detected
o-Xylene	0.020	Not Detected	0.087	Not Detected
trans-1,2-Dichloroethene	0.10	Not Detected	0.40	Not Detected
Chloroform	0.020	Not Detected	0.098	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	111	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	86	70-130

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Client Sample ID: CCV

Lab ID#: 1305307-12A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052102**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/21/13 10:06 AM**	

Compound	**%Recovery**
Tetrahydrofuran	103
1,2,4-Trimethylbenzene	105

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
1,2-Dichloroethane-d4	106	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	96	70-130

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Client Sample ID: CCV

Lab ID#: 1305307-12B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052102sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/21/13 10:06 AM**	

Compound	**%Recovery**
Vinyl Chloride	107
cis-1,2-Dichloroethene	99
Benzene	96
Trichloroethene	92
Toluene	99
Tetrachloroethene	93
Ethyl Benzene	100
m,p-Xylene	100
o-Xylene	102
trans-1,2-Dichloroethene	97
Chloroform	100

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
1,2-Dichloroethane-d4	106	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	98	70-130

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Client Sample ID: LCS

Lab ID#: 1305307-13A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052103**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/21/13 11:02 AM**	

Compound	**%Recovery**
Tetrahydrofuran	104
1,2,4-Trimethylbenzene	99

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
1,2-Dichloroethane-d4	100	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	93	70-130

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Client Sample ID: LCSD

Lab ID#: 1305307-13AA

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052104**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/21/13 11:44 AM**	

Compound	**%Recovery**
Tetrahydrofuran	105
1,2,4-Trimethylbenzene	110

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
1,2-Dichloroethane-d4	102	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	95	70-130

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Client Sample ID: LCS

Lab ID#: 1305307-13B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052103sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/21/13 11:02 AM**	

Compound	**%Recovery**
Vinyl Chloride	115
cis-1,2-Dichloroethene	107
Benzene	104
Trichloroethene	100
Toluene	106
Tetrachloroethene	97
Ethyl Benzene	106
m,p-Xylene	106
o-Xylene	107
trans-1,2-Dichloroethene	116
Chloroform	108

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
1,2-Dichloroethane-d4	102	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	96	70-130

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Client Sample ID: LCSD

Lab ID#: 1305307-13BB

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052104sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/21/13 11:44 AM**	

Compound	**%Recovery**
Vinyl Chloride	113
cis-1,2-Dichloroethene	107
Benzene	104
Trichloroethene	100
Toluene	107
Tetrachloroethene	98
Ethyl Benzene	108
m,p-Xylene	111
o-Xylene	110
trans-1,2-Dichloroethene	116
Chloroform	109

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
1,2-Dichloroethane-d4	102	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	98	70-130

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5/29/2013
Mr. Mark Pearson
Tetra Tech
851 Bridger Drive
Suite 6
Bozeman MT 59715

Project Name: Bozeman Landfill
Project #: 114-710303.740
Workorder #: 1305308

Dear Mr. Mark Pearson

The following report includes the data for the above referenced project for sample(s) received on 5/14/2013 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner

Project Manager

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WORK ORDER #: 1305308

Work Order Summary

CLIENT:	Mr. Mark Pearson Tetra Tech 851 Bridger Drive Suite 6 Bozeman, MT 59715	**BILL TO:**	Mr. Mark Pearson Tetra Tech 851 Bridger Drive Suite 6 Bozeman, MT 59715
PHONE:	406-582-8780	**P.O. #**	
FAX:	406-582-8790	**PROJECT #**	114-710303.740 Bozeman Landfill
DATE RECEIVED:	05/14/2013	**CONTACT:**	Kelly Buettner
DATE COMPLETED:	05/29/2013		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	BSV-11 Shallow	Modified TO-15	11.6 "Hg	4.8 psi
01B	BSV-11 Shallow	Modified TO-15	11.6 "Hg	4.8 psi
02A	BSV-11 Deep	Modified TO-15	11.6 "Hg	5.4 psi
02B	BSV-11 Deep	Modified TO-15	11.6 "Hg	5.4 psi
03A	BSV-12 Shallow	Modified TO-15	11 "Hg	5.1 psi
03B	BSV-12 Shallow	Modified TO-15	11 "Hg	5.1 psi
04A	BSV-12 Mid	Modified TO-15	10.6 "Hg	4.9 psi
04B	BSV-12 Mid	Modified TO-15	10.6 "Hg	4.9 psi
05A	BSV-12 Deep	Modified TO-15	13.1 "Hg	5.2 psi
05B	BSV-12 Deep	Modified TO-15	13.1 "Hg	5.2 psi
06A	Lab Blank	Modified TO-15	NA	NA
06B	Lab Blank	Modified TO-15	NA	NA
07A	CCV	Modified TO-15	NA	NA
07B	CCV	Modified TO-15	NA	NA
08A	LCS	Modified TO-15	NA	NA
08AA	LCSD	Modified TO-15	NA	NA
08B	LCS	Modified TO-15	NA	NA
08BB	LCSD	Modified TO-15	NA	NA

CERTIFIED BY: Heidi Hayes DATE: 05/29/13

Technical Director

Certification numbers: AZ Licensure AZ0775, CA NELAP - 12282CA, NY NELAP - 11291,
TX NELAP - T104704434-12-4, UT NELAP CA009332012-3, WA NELAP - C935
Name of Accrediting Agency: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2012, Expiration date: 10/17/2013.
Eurofins Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 9563
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified TO-15 Full Scan/SIM
Tetra Tech
Workorder# 1305308

Five 6 Liter Summa Canister (SIM Certified) samples were received on May 14, 2013. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the Full Scan and SIM acquisition modes. The method involves concentrating up to 1.0 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

Requirement	***TO-15***	***ATL Modifications***
ICAL %RSD acceptance criteria	</=30% RSD with 2 compounds allowed out to < 40% RSD	For Full Scan: 30% RSD with 4 compounds allowed out to < 40% RSD For SIM: Project specific; default criteria is </=30% RSD with 10% of compounds allowed out to < 40% RSD
Daily Calibration	+- 30% Difference	For Full Scan: </= 30% Difference with four allowed out up to </=40%.; flag and narrate outliers For SIM: Project specific; default criteria is </= 30% Difference with 10% of compounds allowed out up to </=40%.; flag and narrate outliers
Blank and standards	Zero air	Nitrogen
Method Detection Limit	Follow 40CFR Pt.136 App. B	The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases

Receiving Notes

The Chain of Custody (COC) information for sample BSV-12 Shallow did not match the entry on the sample tag with regard to sample identification. The information on the COC was used to process and report the sample.

Analytical Notes

The results for each sample in this report were acquired from two separate data files originating from the same analytical run. The two data files have the same base file name and are differentiated with a "sim" extension on the SIM data file.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

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Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

Client Sample ID: BSV-11 Shallow

Lab ID#: 1305308-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrahydrofuran	1.1	10	3.2	31
1,2,4-Trimethylbenzene	0.22	0.85	1.1	4.2

Client Sample ID: BSV-11 Shallow

Lab ID#: 1305308-01B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.11	0.52	0.35	1.7
Trichloroethene	0.043	0.16	0.23	0.87
Toluene	0.043	2.5	0.16	9.3
Tetrachloroethene	0.043	3.2	0.29	21
Ethyl Benzene	0.043	0.95	0.19	4.1
m,p-Xylene	0.087	3.2	0.38	14
o-Xylene	0.043	0.70	0.19	3.0
Chloroform	0.043	0.24	0.21	1.2

Client Sample ID: BSV-11 Deep

Lab ID#: 1305308-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrahydrofuran	1.1	5.8	3.3	17
1,2,4-Trimethylbenzene	0.22	0.69	1.1	3.4

Client Sample ID: BSV-11 Deep

Lab ID#: 1305308-02B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
cis-1,2-Dichloroethene	0.045	1.0	0.18	4.0
Benzene	0.11	0.80	0.36	2.5
Trichloroethene	0.045	3.6	0.24	20
Toluene	0.045	1.6	0.17	6.2
Tetrachloroethene	0.045	17	0.30	120

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Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

Client Sample ID: BSV-11 Deep

Lab ID#: 1305308-02B

Ethyl Benzene	0.045	0.88	0.19	3.8
m,p-Xylene	0.089	2.8	0.39	12
o-Xylene	0.045	0.62	0.19	2.7
Chloroform	0.045	0.18	0.22	0.87

Client Sample ID: BSV-12 Shallow

Lab ID#: 1305308-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrahydrofuran	1.1	5.0	3.1	15
1,2,4-Trimethylbenzene	0.21	0.60	1.0	2.9

Client Sample ID: BSV-12 Shallow

Lab ID#: 1305308-03B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.11	0.44	0.34	1.4
Trichloroethene	0.043	0.61	0.23	3.3
Toluene	0.043	1.6	0.16	6.2
Tetrachloroethene	0.043	3.8	0.29	26
Ethyl Benzene	0.043	0.74	0.18	3.2
m,p-Xylene	0.085	2.6	0.37	11
o-Xylene	0.043	0.51	0.18	2.2
Chloroform	0.043	0.18	0.21	0.88

Client Sample ID: BSV-12 Mid

Lab ID#: 1305308-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrahydrofuran	1.0	5.3	3.0	16
1,2,4-Trimethylbenzene	0.21	0.40	1.0	1.9

Client Sample ID: BSV-12 Mid

Lab ID#: 1305308-04B

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Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

Client Sample ID: BSV-12 Mid

Lab ID#: 1305308-04B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
cis-1,2-Dichloroethene	0.041	0.042	0.16	0.17
Benzene	0.10	0.55	0.33	1.7
Trichloroethene	0.041	1.8	0.22	9.8
Toluene	0.041	1.4	0.16	5.3
Tetrachloroethene	0.041	7.7	0.28	52
Ethyl Benzene	0.041	0.49	0.18	2.1
m,p-Xylene	0.082	1.8	0.36	7.6
o-Xylene	0.041	0.43	0.18	1.9
Chloroform	0.041	0.22	0.20	1.1

Client Sample ID: BSV-12 Deep

Lab ID#: 1305308-05A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrahydrofuran	1.2	4.5	3.5	13

Client Sample ID: BSV-12 Deep

Lab ID#: 1305308-05B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
cis-1,2-Dichloroethene	0.048	0.61	0.19	2.4
Benzene	0.12	0.58	0.38	1.9
Trichloroethene	0.048	4.4	0.26	24
Toluene	0.048	0.83	0.18	3.1
Tetrachloroethene	0.048	13	0.32	91
Ethyl Benzene	0.048	0.24	0.21	1.1
m,p-Xylene	0.096	0.69	0.42	3.0
o-Xylene	0.048	0.19	0.21	0.81
Chloroform	0.048	0.26	0.23	1.3

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Client Sample ID: BSV-11 Shallow

Lab ID#: 1305308-01A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052212**	**Date of Collection: 5/10/13 11:11:00 AM**	
Dil. Factor:	**2.17**	**Date of Analysis: 5/22/13 04:51 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrahydrofuran	1.1	10	3.2	31
1,2,4-Trimethylbenzene	0.22	0.85	1.1	4.2

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	107	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	90	70-130

eurofins | Air Toxics

Client Sample ID: BSV-11 Shallow

Lab ID#: 1305308-01B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052212sim**	**Date of Collection: 5/10/13 11:11:00 AM**	
Dil. Factor:	**2.17**	**Date of Analysis: 5/22/13 04:51 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.022	Not Detected	0.055	Not Detected
cis-1,2-Dichloroethene	0.043	Not Detected	0.17	Not Detected
Benzene	0.11	0.52	0.35	1.7
Trichloroethene	0.043	0.16	0.23	0.87
Toluene	0.043	2.5	0.16	9.3
Tetrachloroethene	0.043	3.2	0.29	21
Ethyl Benzene	0.043	0.95	0.19	4.1
m,p-Xylene	0.087	3.2	0.38	14
o-Xylene	0.043	0.70	0.19	3.0
trans-1,2-Dichloroethene	0.22	Not Detected	0.86	Not Detected
Chloroform	0.043	0.24	0.21	1.2

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	110	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	92	70-130

eurofins | Air Toxics

Client Sample ID: BSV-11 Deep

Lab ID#: 1305308-02A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052217**	**Date of Collection: 5/10/13 11:42:00 AM**	
Dil. Factor:	**2.23**	**Date of Analysis: 5/22/13 10:10 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrahydrofuran	1.1	5.8	3.3	17
1,2,4-Trimethylbenzene	0.22	0.69	1.1	3.4

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	105	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	89	70-130

eurofins | Air Toxics

Client Sample ID: BSV-11 Deep

Lab ID#: 1305308-02B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052217sim**	**Date of Collection:**	**5/10/13 11:42:00 AM**
Dil. Factor:	**2.23**	**Date of Analysis:**	**5/22/13 10:10 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.022	Not Detected	0.057	Not Detected
cis-1,2-Dichloroethene	0.045	1.0	0.18	4.0
Benzene	0.11	0.80	0.36	2.5
Trichloroethene	0.045	3.6	0.24	20
Toluene	0.045	1.6	0.17	6.2
Tetrachloroethene	0.045	17	0.30	120
Ethyl Benzene	0.045	0.88	0.19	3.8
m,p-Xylene	0.089	2.8	0.39	12
o-Xylene	0.045	0.62	0.19	2.7
trans-1,2-Dichloroethene	0.22	Not Detected	0.88	Not Detected
Chloroform	0.045	0.18	0.22	0.87

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	108	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	94	70-130

eurofins | Air Toxics

Client Sample ID: BSV-12 Shallow

Lab ID#: 1305308-03A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052216**	**Date of Collection: 5/10/13 11:30:00 AM**	
Dil. Factor:	**2.13**	**Date of Analysis: 5/22/13 09:08 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrahydrofuran	1.1	5.0	3.1	15
1,2,4-Trimethylbenzene	0.21	0.60	1.0	2.9

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	104	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	90	70-130

eurofins | Air Toxics

Client Sample ID: BSV-12 Shallow

Lab ID#: 1305308-03B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052216sim**	**Date of Collection:**	**5/10/13 11:30:00 AM**
Dil. Factor:	**2.13**	**Date of Analysis:**	**5/22/13 09:08 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.021	Not Detected	0.054	Not Detected
cis-1,2-Dichloroethene	0.043	Not Detected	0.17	Not Detected
Benzene	0.11	0.44	0.34	1.4
Trichloroethene	0.043	0.61	0.23	3.3
Toluene	0.043	1.6	0.16	6.2
Tetrachloroethene	0.043	3.8	0.29	26
Ethyl Benzene	0.043	0.74	0.18	3.2
m,p-Xylene	0.085	2.6	0.37	11
o-Xylene	0.043	0.51	0.18	2.2
trans-1,2-Dichloroethene	0.21	Not Detected	0.84	Not Detected
Chloroform	0.043	0.18	0.21	0.88

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	112	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	95	70-130

eurofins | Air Toxics

Client Sample ID: BSV-12 Mid

Lab ID#: 1305308-04A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052218**	**Date of Collection: 5/10/13 12:01:00 PM**	
Dil. Factor:	**2.06**	**Date of Analysis: 5/22/13 10:48 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrahydrofuran	1.0	5.3	3.0	16
1,2,4-Trimethylbenzene	0.21	0.40	1.0	1.9

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	106	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	90	70-130

eurofins | Air Toxics

Client Sample ID: BSV-12 Mid

Lab ID#: 1305308-04B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052218sim**	**Date of Collection:**	**5/10/13 12:01:00 PM**
Dil. Factor:	**2.06**	**Date of Analysis:**	**5/22/13 10:48 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.021	Not Detected	0.053	Not Detected
cis-1,2-Dichloroethene	0.041	0.042	0.16	0.17
Benzene	0.10	0.55	0.33	1.7
Trichloroethene	0.041	1.8	0.22	9.8
Toluene	0.041	1.4	0.16	5.3
Tetrachloroethene	0.041	7.7	0.28	52
Ethyl Benzene	0.041	0.49	0.18	2.1
m,p-Xylene	0.082	1.8	0.36	7.6
o-Xylene	0.041	0.43	0.18	1.9
trans-1,2-Dichloroethene	0.21	Not Detected	0.82	Not Detected
Chloroform	0.041	0.22	0.20	1.1

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	108	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	96	70-130

eurofins | Air Toxics

Client Sample ID: BSV-12 Deep

Lab ID#: 1305308-05A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052219**	**Date of Collection: 5/10/13 4:16:00 PM**	
Dil. Factor:	**2.40**	**Date of Analysis: 5/22/13 11:24 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrahydrofuran	1.2	4.5	3.5	13
1,2,4-Trimethylbenzene	0.24	Not Detected	1.2	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	102	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	85	70-130

eurofins | Air Toxics

Client Sample ID: BSV-12 Deep

Lab ID#: 1305308-05B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052219sim**	**Date of Collection: 5/10/13 4:16:00 PM**	
Dil. Factor:	**2.40**	**Date of Analysis: 5/22/13 11:24 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.024	Not Detected	0.061	Not Detected
cis-1,2-Dichloroethene	0.048	0.61	0.19	2.4
Benzene	0.12	0.58	0.38	1.9
Trichloroethene	0.048	4.4	0.26	24
Toluene	0.048	0.83	0.18	3.1
Tetrachloroethene	0.048	13	0.32	91
Ethyl Benzene	0.048	0.24	0.21	1.1
m,p-Xylene	0.096	0.69	0.42	3.0
o-Xylene	0.048	0.19	0.21	0.81
trans-1,2-Dichloroethene	0.24	Not Detected	0.95	Not Detected
Chloroform	0.048	0.26	0.23	1.3

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	108	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	91	70-130

eurofins | Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1305308-06A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052207**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/22/13 01:17 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrahydrofuran	0.50	Not Detected	1.5	Not Detected
1,2,4-Trimethylbenzene	0.10	Not Detected	0.49	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	109	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	82	70-130

eurofins | Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1305308-06B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052207sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/22/13 01:17 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.010	Not Detected	0.026	Not Detected
cis-1,2-Dichloroethene	0.020	Not Detected	0.079	Not Detected
Benzene	0.050	Not Detected	0.16	Not Detected
Trichloroethene	0.020	Not Detected	0.11	Not Detected
Toluene	0.020	Not Detected	0.075	Not Detected
Tetrachloroethene	0.020	Not Detected	0.14	Not Detected
Ethyl Benzene	0.020	Not Detected	0.087	Not Detected
m,p-Xylene	0.040	Not Detected	0.17	Not Detected
o-Xylene	0.020	Not Detected	0.087	Not Detected
trans-1,2-Dichloroethene	0.10	Not Detected	0.40	Not Detected
Chloroform	0.020	Not Detected	0.098	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	112	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	86	70-130

eurofins | Air Toxics

Client Sample ID: CCV

Lab ID#: 1305308-07A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052202**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/22/13 09:33 AM**	

Compound	**%Recovery**
Tetrahydrofuran	99
1,2,4-Trimethylbenzene	107

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
1,2-Dichloroethane-d4	104	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	93	70-130

eurofins | Air Toxics

Client Sample ID: CCV

Lab ID#: 1305308-07B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052202sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/22/13 09:33 AM**	

Compound	%Recovery
Vinyl Chloride	108
cis-1,2-Dichloroethene	99
Benzene	96
Trichloroethene	92
Toluene	98
Tetrachloroethene	94
Ethyl Benzene	100
m,p-Xylene	101
o-Xylene	103
trans-1,2-Dichloroethene	96
Chloroform	98

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	99	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	97	70-130

eurofins | Air Toxics

Client Sample ID: LCS

Lab ID#: 1305308-08A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052204**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/22/13 10:56 AM**	

Compound	**%Recovery**
Tetrahydrofuran	103
1,2,4-Trimethylbenzene	114

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
1,2-Dichloroethane-d4	97	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	96	70-130

eurofins | Air Toxics

Client Sample ID: LCSD

Lab ID#: 1305308-08AA

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052205**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/22/13 11:37 AM**	

Compound	**%Recovery**
Tetrahydrofuran	104
1,2,4-Trimethylbenzene	108

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
1,2-Dichloroethane-d4	105	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	94	70-130

eurofins | Air Toxics

Client Sample ID: LCS

Lab ID#: 1305308-08B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052204sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/22/13 10:56 AM**	

Compound	**%Recovery**
Vinyl Chloride	113
cis-1,2-Dichloroethene	106
Benzene	103
Trichloroethene	99
Toluene	105
Tetrachloroethene	97
Ethyl Benzene	105
m,p-Xylene	107
o-Xylene	108
trans-1,2-Dichloroethene	114
Chloroform	108

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
1,2-Dichloroethane-d4	102	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	99	70-130

eurofins | Air Toxics

Client Sample ID: LCSD

Lab ID#: 1305308-08BB

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a052205sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/22/13 11:37 AM**	

Compound	**%Recovery**
Vinyl Chloride	112
cis-1,2-Dichloroethene	107
Benzene	103
Trichloroethene	99
Toluene	105
Tetrachloroethene	96
Ethyl Benzene	105
m,p-Xylene	106
o-Xylene	107
trans-1,2-Dichloroethene	115
Chloroform	108

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
1,2-Dichloroethane-d4	102	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	98	70-130