BOS 100® Overburden and Bedrock Groundwater Remediation
Former Dry Cleaning Facility
Lexington, KY.

Period – May 2011 – December 2011

Project Value - $225,000

Background Information

AST Environmental, Inc. (AST) was contracted in May 2010 to remediate chlorinated hydrocarbon impacted groundwater contained in the overburden soils and limestone bedrock at a former dry cleaning facility in Lexington, Kentucky. Site investigation and redial efforts had been on-going at the site since 2005. Redial technologies including dual phase extraction and RegenOx® injection had been implemented at the site resulting in minimal reductions in groundwater concentrations.

After reviewing the historical site information, AST obtained a general understanding of the site characteristics including:

- There are chlorinated groundwater impacts in the overburden and limestone bedrock.

- The overburden/bedrock interface is approximately 10 to 12 feet below ground surface (bgs).
- The impacts in the overburden extend: from the top of groundwater, approximately 6 feet bgs, to the bedrock interface and over approximately a 3,000 s.f area.
- The impacts in the limestone bedrock extend: over approximately a 18,000 s.f. form the top of bedrock to 20 feet bgs.
- The primary contaminants of concern are PCE and daughter products.

AST used a phased approach to complete the remedial efforts at the site. The approach included the following task:

1) Remedial Design Characterization
2) BOS 100® Overburden Injection
3) BOS 100® Bedrock Injection

Remedial Design Characterization

This is the first and a very crucial step to developing and implementing a cost effective and successful in-situ remediation project. The remedial design characterization (RDC) involves the collection of high resolution samples to obtain a robust set of data to supplement the existing site information to develop a detailed conceptual site model. The historical site investigations that have been conducted at the site have defined the horizontal and vertical limits of impacts. However, the distribution of the mass within the limits has not been defined. The goal of the RDC was to:

- Determine the vertical distribution of saturated soil mass within the overburden impacted area.
- Determine the vertical distribution of impacted groundwater as a function of depth and horizontal location within the limestone bedrock.
- Identify preferential groundwater flow paths such as fractures, weathered bedding planes, etc. in the bedrock.
- Evaluate the connectivity of the fractures and flow paths within the bedrock.

Overburden Groundwater and Soil Sampling

AST completed soil borings at 11 locations in the area of MW-1, MW-2, MW-3, and MW-4. AST collected soil from each of the borings at varying depth intervals. At a minimum, a soil sample was collected from each boring at the soil bedrock interface. A micro-well (1/2 diameter well) was installed in each soil boring. The micro-wells are labeled AST-1 through AST-11, see attached Figures for micro-well locations.

The soil sample results confirmed that residual Vinyl Chloride (VC) and Tetrachloroethene (PCE) remain in the saturated soils. The majority of the impacts were identified in the samples collected within two to three feet of the bedrock interface. Impacts were also identified at shallower depths (6 feet bgs) in AST-1, AST-2, and AST-3. These are borings completed closest to the source and building footer. The highest VC concentrations in the soil were identified in AST-2 (6' 5" to 8' - 0.34 mg/kg), AST-3 (11' 5" to 11' 11" - 0.17 mg/kg), and AST-8 (11' 5" to 12' – 0.26 mg/kg). The highest concentrations of PCE in the soil were identified in AST-1 (6' to 7' –0.43 mg/kg), AST-2 (8' to 9'10" – 0.78 mg/kg), AST-3 (6'4" to 8' – 0.54 mg/kg), and AST-8 (12' to 13'7" – 0.66 mg/kg).

The groundwater samples results from the micro wells confirmed that dissolved phase concentrations of VC, cis-Dichloroethene (DCE), Trichloroethene (TCE), and PCE remain in the saturated overburden above allowable levels (MCLs). Two rounds of groundwater samples were collected from the micro-wells. AST-5 and AST-6 did not produce water during both events. In most wells the concentrations increased from sample event 1 to sample event 2. The highest concentrations of each contaminant were identified in the following micro-wells: AST-1 (VC-3,400 ug/l), AST-1 (DCE-11,300 ug/l), AST-2 (TCE-1,500 ug/l), and AST-2 (PCE-1,100).
The highest contaminate mass the overburden soil and groundwater was identified in the soil borings an micro-wells completed adjacent to the building footer indicating that mass most likely remains under the building.

Bedrock Groundwater Sampling

Based on the historical data, the groundwater is impacted with chlorinated hydrocarbons at MW-1, MW-2, MW-3, MW-4, MW-5, MW-7, MW-101, MW-102, MW-104, MW-105, and MW-106. MW-1, MW-4, MW-101, MW-102, MW-104,

MW-105, and MW-106 are bedrock wells constructed with an outer casing to bedrock and screened only in bedrock. MW-2, MW-3, MW-5, and MW-7 are screened across the bedrock interface. NAPL was assumed to be present in the top five feet of bedrock (weathered zone) in the source area and migrating off-site through the weathered zone. The primary contaminants of concern are PCE and VC.

In order to characterize the bedrock groundwater in the area between the former dry cleaner and the creek, a network of bedrock monitoring points were installed in the following areas: four (4) bedrock monitoring points in the area of MW-1 and MW-104, three (3) bedrock monitoring points in the area of MW-2 and MW-3 and two (2) bedrock monitoring points in the area of MW-4. A monitoring point was planned to be installed adjacent to AST-8 but could not be installed due to overhead power lines. The monitoring points are labeled IP-1 through IP-9 on the attached figures. The monitoring points consisted of 6" diameter holes drilled with a rotary air-percussion drill rig. The monitoring points were drilled to approximately 24 to 25 feet bgs, approximately 13 to 15 feet into bedrock. The depth of the monitoring points was chosen based on adding 5-feet to the bottom of the average depth of the deepest wells (20 feet). The additional 5-feet was needed to allow the lower packer of the straddle packer assemble extend below the bottom interval of the deepest monitoring wells. The unconsolidated materials above bedrock were cased off with 6" steel surface casing. A manhole and well pad was constructed at the surface of each of the newly constructed monitoring points.

After the monitoring points were installed, geophysical work was completed on each monitoring point. The geophysical work included: downhole testing using a caliper, optical viewer, EM probe, and Gamma probe. A borehole video camera was also used to observe the bedrock. The geophysical results and the borehole camera identified the location, configuration, and density of existing fractures within each monitoring point. As was suspected a large weathered zone was observed within the top portion of the bedrock in all of the points except IP-5 and IP-9. The weathered zone was as large as three to four feet in some locations. Discrete small fractures were also observed and detected using the caliper below the large weathered zone to the bottom of the boreholes. The large weathered zone and the smaller discrete fractures were then sampled using a specialty designed straddle packer and sampling pump system. The sampling interval between the two packers is approximately 18 inches. Transducers were used above and below the straddle packer to verify that the packers were not allowing water to enter the sample zone from above or below the fracture in the borehole. Five transducers were also installed in surrounding monitoring wells and bedrock monitoring points to document if the fractures are connected during pumping. Multiple intervals were sampled during the investigation including: four intervals from IP-3, IP-6, IP-7, IP-8, and IP-9, three from IP-2, two from IP-1 and IP-5, and one from IP-4.

The groundwater and soil samples collected during the RDC were analyzed using Method 8260B by Remediation Products, Inc. quality assurance laboratory in Golden Colorado at no cost to the client. The sample results were used for design purposes and not for compliance.

The results of the bedrock characterization provided the following information:

- The weathered zone was observed in all monitoring points east of IP-8 with varying thickness. The weathered zone produces a significant volume of water and is connected between points.
- The highest concentration of PCE and daughter products observed in the weathered zone was in IP-4. IP-4 is the closest point to the source area. IP7 and IP-6 all contained significant concentrations of PCE and VC in the weathered zone.
- The small fractures located below the weathered zone east of IP-8 produce significant water and are connected to surrounding points.
- The concentrations of PCE and daughter products are greater in small fractures located approximately 16 to 20 feet below ground surface than in the weathered zone.
- Significant concentrations of PCE and VC were detected down to 24 feet in the monitoring points east of IP-8.
- The newly installed MW-106 contains significant groundwater impacts and appears to be connected to the source area through fractures below the weathered zone.
- IP-5 and IP-9 do not have the same characteristic of the other monitoring points. They did not produce significant water and did not have connection with surrounding monitoring points. The groundwater impacts in these points are low and do not indicate that they have immediate connection to the source.
- Based on depth to bedrock in soil borings, wells, and injection points drilled to-date, there appears to be a trough (dip in the bedrock surface) in the area between IP4 and IP-7. Monitoring points or wells within the

trough contain significant concentrations of PCE and VC in the weathered zone. Monitoring points outside its influence include: IP-3, IP-2, MW-7, and IP-8.

- Based on observations in the field and knowledge of NAPL migration, it appears that impacts originating from the source area beneath the building migrated along the building footers and higher conductive zones such as utility trenches. These man-made features resulted in wide spread impacts in the overburden soils and groundwater. The impacted groundwater within the overburden entered the bedrock through weathered features on the bedrock surface and migrated horizontally through the weathered zone, centered on the trough. The groundwater migrated through vertical fractures that intersected discrete horizontal fractures.
- DNAPL may be present in the vertical and horizontal fractures in the bedrock below the building based on concentrations observed in the deeper fractures outside the building.

Description of Remedial Efforts

After collecting, compiling and reviewing the data from the RDC, AST developed a remediation plan to address contamination issues at the site. The plan included the injection of BOS 100® in the overburden and bedrock to achieve the desired remediation goals for the site. The remediation goal for the site was to obtain a managed closure by demonstrating that:

- the saturated soil and groundwater mass in the overburden has been significantly reduced and contained,
- the bedrock groundwater plume has been significantly reduced in size, and
- the contaminant concentrations in the bedrock have been significantly reduced and a downward trend is demonstrated by long term monitoring.

BOS 100® Overburden Injection

The overburden injections included the installation of a total of 2100 lbs. of BOS 100® in 75 direct push injection points in four areas referred to as 1S, 2S, 3S and 4S, see Figure 1. The injections were completed from June 11, 2011 through June 16, 2011. The injection summary for each area is summarized below:

Area 1S

- 28 injection points (5' centers) injecting from 6' to 12' (or refusal) (1.5' vertical spacing - 4 injections per point)
- 10 lbs/injection per injection = 1,120 lbs of BOS 100®
- Approximately 1,700 gallons of water

Area 2S

- 22 injection points (7.5' centers)
- 7 injection points around MW-2 & AST-5 received two injections at bedrock interface and 1.5' above
- 15 injection points received injections at bedrock interface only
- 7 lbs/injection = 203 lbs of BOS 100®
- Approximately 600 gallons of water

Area 3S

- 16 injection points (~5' centers) injecting from 6.75' to 13.5' (refusal) (1.5' vertical spacing) – 5 injections per point
- 7 lbs/injection = 560 lbs of BOS 100®
- Approximately 900 gallons of water

Area 4S

- 9 injection points (~7.5' centers) injecting at bedrock interface (refusal) and 1' above
- 7 lbs/injection = 126 lbs of BOS 100®
- Approximately 400 gallons of water

AST optimized the BOS 100® slurry distribution by 1) using top down techniques, 2) using relatively high flow (35 gpm) and high pressure injections (enough pressure to provide localized soil lifting and propagation of BOS 200®

from the injection tip), and 3) using a 5-foot and 7.5 foot triangular grid pattern.

BOS 100® Bedrock Injection

The 9 bedrock monitoring points were used as the bedrock injection points; therefore, no additional drilling was necessary for injection of the BOS 100® in the bedrock. The following equipment was used to mix the BOS 100® slurries and hydrofracturing the limestone bedrock during injection of the BOS 100®:

1. Three custom packer assemblies were used to complete the work. The first packer straddle packer was constructed to span the large weathered zone creating an injection interval of approximately 30 inches. The second straddle provided an approximately 18 inch injection zone capable of targeting the small discrete fractures. The third packer consist of only an upper packer used to inject the bottom portion of the borehole.

2. Triplex positive displacement pump capable of up to 300 gpm or 2000 psi.

3. Water tank with a capacity of 2000 gallons.

4. Forklift to place straddle-packer assembly in borehole.

5. BOS 100® mixing trailer.

6. Hoses, plumbing, manifolds, and charge-pump to connect the BOS 100® mixing trailer to down-hole injection pump.

7. Pressure transducers, gauges and flow meters to manually record data for downhole pressure, injection pump pressure, injection rate, and injection volumes.

8. Four additional packers available for use as “plugs” when surfacing is seen in nearby injection boreholes.

The bedrock injections were completed from November 15, 2011 through November 23, 2011 and one additional day on December 9, 2011. A total of 7 work days was required to complete the bedrock injections. Once BOS 100® injections began; neighboring observation and injection points were monitored using downhole pressure transducers to identify directional and preferential flow paths. Injections commenced from the top of the injection points and moved down to each predetermined interval. Once formation breakdown was achieved, the injection rate was adjusted to achieve optimal distribution of the BOS 100® and minimizing surfacing.

The bedrock monitoring boreholes (injection points) were evaluated separately to determine the number of injections required to provide complete coverage of the borehole. The number of injections varied between injection points dependent on the thickness of the weathered zone and the number of discrete fractures identified during the geophysical work. The BOS 100® demand was calculated separately using the concentration of PCE and VC in the groundwater at each interval. In most cases VC required the greatest demand of the BOS 100® and became the driving factor for treatment of the impacted groundwater. A safety factor of 1.25 was used when calculating the BOS 100® demand in all injection points except IP-4. As indicated previously a safety factor of 3 was used for IP-4 to address unknowns and to provide additional coverage under the building. Below was the final design for the bedrock treatment at each injection point:

IP-1 – 3 drums – 4 injections
IP-2 – 3 drums – 4 injections
IP-3 – 4 drums – 5 injections
IP-4 – 13.0 drums – 6 injections
IP-5 – 2.0 drums – 5 injections
IP-6 – 2.0 drums – 4 injections
IP-7 – 9.0 drums – 5 injections
IP-8 – 2.0 drums – 4 injections
IP-9 – 2.0 drums – 4 injections

A total of approximately 8,000 lbs (38 drums) of BOS 100® was injected at the site. The total amount of BOS 100® planned for injection in IP-1, IP-2, and IP-3 could not be installed due to short circuiting to the surface during injection in the weathered portion of the bedrock.

Results and Status

The micro-wells, AST 1 through 9, have been sampled 5 to seven separate times, dependent on the specific micro-well, after the injections in the overburden. The results are provided on the attached Table 1. The pre and post overburden injection sampling results from the micro-wells is provided on the attached Figure 2. The last round of samples collected from the micro-wells is identified as the post injection results. The BOS 100® injections in the overburden soil have significantly reduced concentrations of PCE, TCE and cis-DCE in the groundwater in the majority of the micro-wells. There has not been a significant decline in concentrations of PCE, TCE, or DCE in AST-8; however, there has been a major decline in VC. There has been an increase in VC at AST-2 and AST-3. The possible rise in VC could be a result of degradation of significant chlorinated mass under the building or around the former grease trap. The results indicate that the first remedial goal for the site has been achieved by significantly reducing and containing the saturated soil and groundwater mass in the overburden.

The bedrock monitoring wells at the site have been sampled a minimum of three times since the bedrock injections. The six primary monitoring wells, MW-1, MW,-2, MW-3, MW-4, MW104 and MW106, considered to be in or directly adjacent to the source area have been sampled four times since the injection event. The results from the groundwater sampling are provided on the attached Table 1. The pre and post bedrock injection sampling results from the bedrock wells is provided on the attached Figure 3. Trend graphs are also provided for each of the six primary wells, see attached. The trend graphs indicate that the contaminate mass in the bedrock groundwater is on a downward trend. MW104 and MW106 directly north of the source area have seen dramatic declines. MW106 has achieved MCLs and MW106 is approaching MCLs. MW-1 considered to be in the heart of the source area historically has contained the highest concentrations of chlorinated hydrocarbons in groundwater. MW-1 contained 86.6 mg/l PCE during the May 31, 2006 sampling event. MW-1 contained 11.0 mg/l PCE prior to the bedrock injects and has been reduced to 1.75 mg/l during the last sampling event, a 84% decline. The second and third goal for the remediation has been achieved to date. The bedrock groundwater plume has been significantly reduced in size and the contaminant concentrations are on a downward trend as demonstrated by long term monitoring.

The State of Kentucky has indicated that they will provide the owner a managed closure when one additional yearly sampling event, scheduled for the April 2014, continues to show a downward trend in groundwater concentrations.

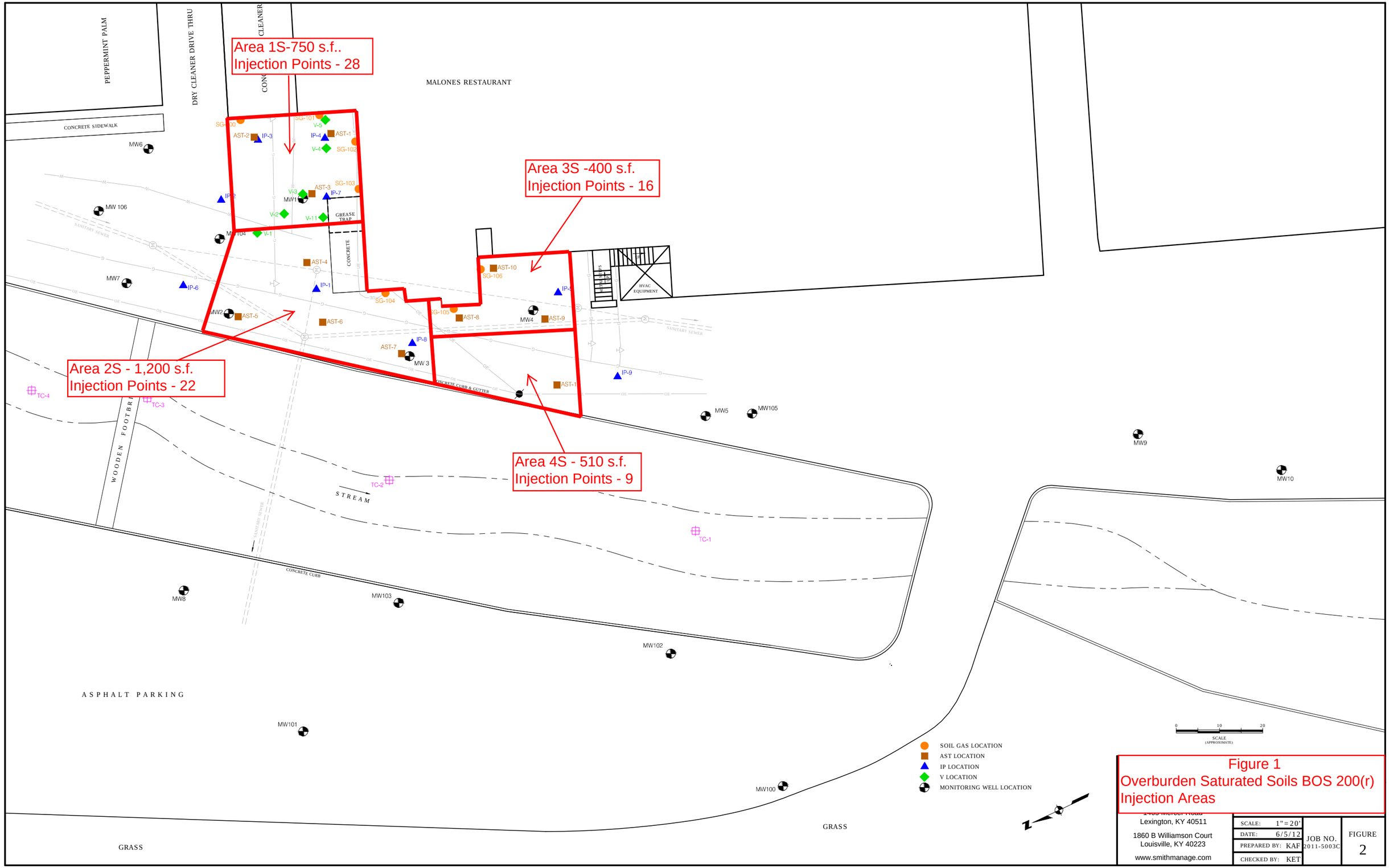

Figure 1
Overburden Saturated Soils BOS 200(r)
Injection Areas

Lexington, KY 40511

1860 B Williamson Court
Louisville, KY 40223

www.smithmanage.com

SCALE:	1" = 20'
DATE:	6/5/12
PREPARED BY:	KAF
CHECKED BY:	KET

JOB NO. 2011-5003C

FIGURE 2

AST-2	Pre 6/02/11	Post 10/02/12
PCE	1,100	ND
TCE	1,500	ND
cis-DCE	2,400	330
VC	900	5,000

AST-1	Pre 6/02/11	Post 10/02/12
PCE	31	7
TCE	11	9
cis-DCE	11,300	1,600
VC	3,400	2,600

AST-3	Pre 6/02/11	Post 10/02/12
PCE	22	ND
TCE	14	ND
cis-DCE	130	68
VC	27	1,000

AST-10	Pre 6/02/11	Post 10/02/12
PCE	1	ND
TCE	2	ND
cis-DCE	190	ND
VC	54	ND

AST-5	Pre 6/02/11	Post 5/17/12
PCE	30	76
TCE	6	47
cis-DCE	65	490
VC	30	72

AST-9	Pre 6/02/11	Post 10/02/12
PCE	310	48
TCE	120	11
cis-DCE	1,900	43
VC	280	ND

AST-11	Pre 6/02/11	Post 10/02/12
PCE	47	4
TCE	92	5
cis-DCE	100	20
VC	4	ND

AST-7	Pre 6/02/11	Post 10/02/12
PCE	1	2
TCE	ND	ND
cis-DCE	ND	1
VC	ND	ND

AST-8	Pre 6/02/11	Post 10/02/12
PCE	11	52
TCE	25	15
cis-DCE	23	1,600
VC	8,800	460

CONCORD DRY CLEANERS
CONCRETE SIDEWALK
GREASE TRAP
CONCRETE
HVAC EQUIPMENT
SANITARY SEWER
CONCRETE CURB & GUTTER
WOODEN FOOTBRIDGE
CONCRETE CURB
ASPHALT PARKING
GRASS
GRASS
MW1
MW2
MW3
MW4
MW5
MW6
MW7
MW8
MW9
MW10
MW100
MW101
MW102
MW103
MW104
MW105
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IP-6
IP-7
IP-8
IP-9
V-1
V-2
V-3
V-4
V-5
V-11
SG-101
SG-102
SG-103
SG-104
SG-105
SG-106
TC-1
TC-3
TC-4

SOIL GAS LOCATION
AST LOCATION
IP LOCATION
V LOCATION
MONITORING WELL LOCATION

0 10 20
SCALE (APPROXIMATE)

Figure 2
Overburden Groundwater Results

Lexington, KY 40511
1860 B Williamson Court
Louisville, KY 40223
www.smithmanage.com

SCALE: 1"=20'
DATE: 6/5/12
PREPARED BY: KAF
CHECKED BY: KET
JOB NO. 2011-5003C
FIGURE 2

MW104	Pre 8/28/11	Post 4/25/13
PCE	2,300	1
TCE	310	3
cis-DCE	630	408
VC	470	57

MW-1	Pre 8/28/11	Post 4/25/13
PCE	11,000	1,750
TCE	1,400	290
cis-DCE	2,900	1,110
VC	1,200	433

MW-4	Pre 9/09/11	Post 4/25/13
PCE	20	20
TCE	4	8
cis-DCE	100	378
VC	1	22

MW105	Pre 10/06/10	Post 9/27/12
PCE	ND	ND
TCE	ND	ND
cis-DCE	ND	ND
VC	50	ND

MW106	Pre 9/09/11	Post 4/25/13
PCE	4,100	ND
TCE	440	ND
cis-DCE	760	6
VC	150	4

MW-2	Pre 9/09/11	Post 4/25/13
PCE	1,300	94
TCE	330	16
cis-DCE	1,400	93
VC	470	57

MW-3	Pre 9/09/11	Post 4/25/13
PCE	790	443
TCE	78	85
cis-DCE	140	127
VC	4	16

MW-5	Pre 10/06/11	Post 9/27/12
PCE	ND	ND
TCE	ND	ND
cis-DCE	ND	ND
VC	8	ND

MW102	Pre 10/07/10	Post 9/26/12
PCE	ND	ND
TCE	ND	ND
cis-DCE	ND	ND
VC	ND	ND

MW103	Pre 10/07/10	Post 9/26/12
PCE	158	21
TCE	ND	ND
cis-DCE	ND	ND
VC	ND	ND

MW101	Pre 10/07/11	Post 9/26/12
PCE	45	3
TCE	12	1
cis-DCE	21	2
VC	ND	ND

MW100	Pre 10/07/10	Post 9/26/12
PCE	ND	ND
TCE	ND	ND
cis-DCE	ND	ND
VC	ND	ND

>Bedrock Wells screened only in competent Limestone: MW-1, MW-4, MW100, MW101, MW102, MW103, MW104, MW105, MW106

>Bedrock Wells screened across overburden/bedrock interface:MW-2, MW-3, MW-5

>Groundwater Results reported in: ug/l

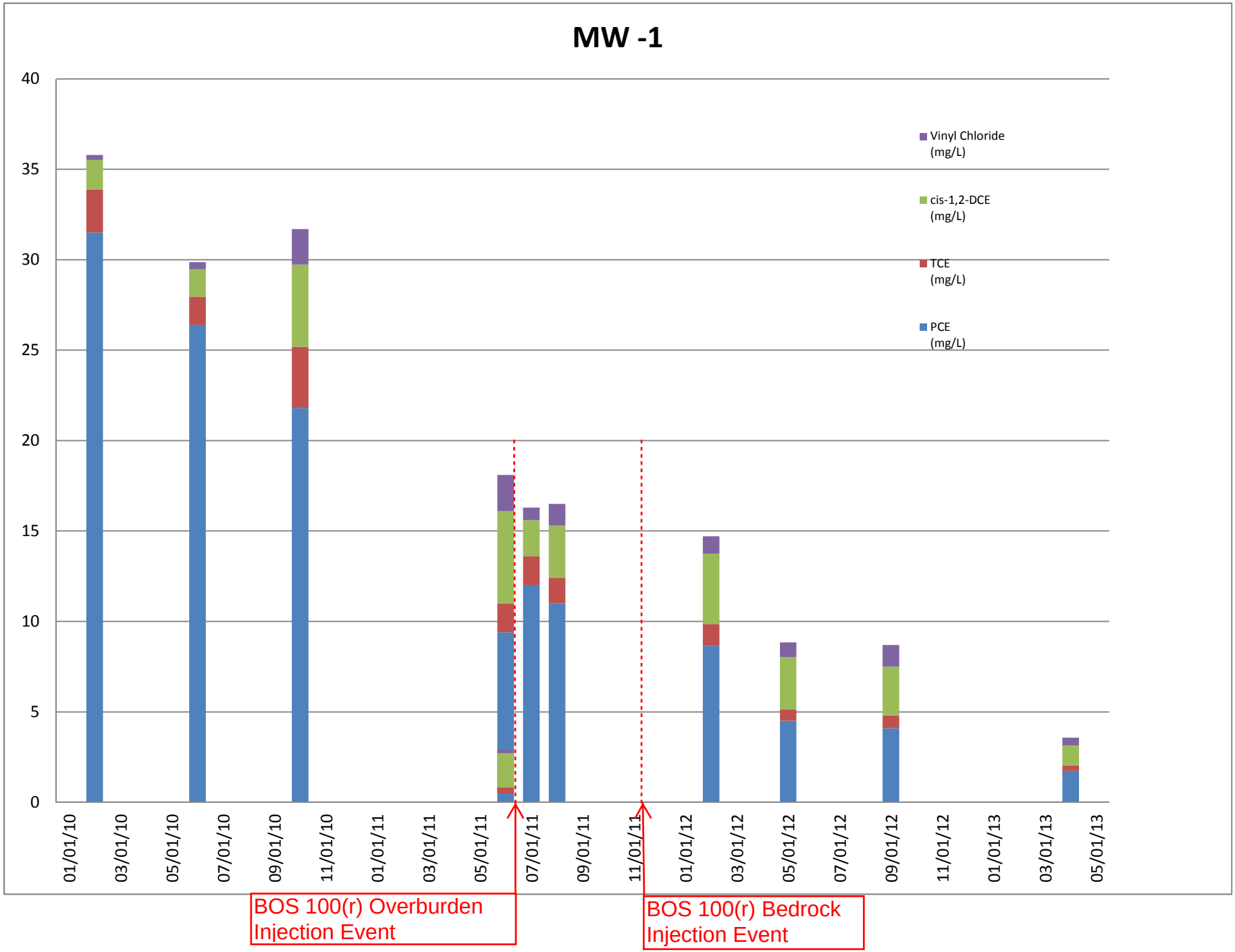
SOIL GAS LOCATION
AST LOCATION
IP LOCATION
V LOCATION
MONITORING WELL LOCATION

SCALE (APPROXIMATE) 0 10 20

Figure 3
Bedrock Groundwater Results

1860 B Williamson Court
Louisville, KY 40223
www.smithmanage.com

SCALE: 1" = 20'
DATE: 6/5/12
PREPARED BY: KAF
CHECKED BY: KET
JOB NO. 2011-5003C
FIGURE 2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25
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cis-1,2-DCE (mg/L)
TCE (mg/L)
PCE (mg/L)
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05/01/10
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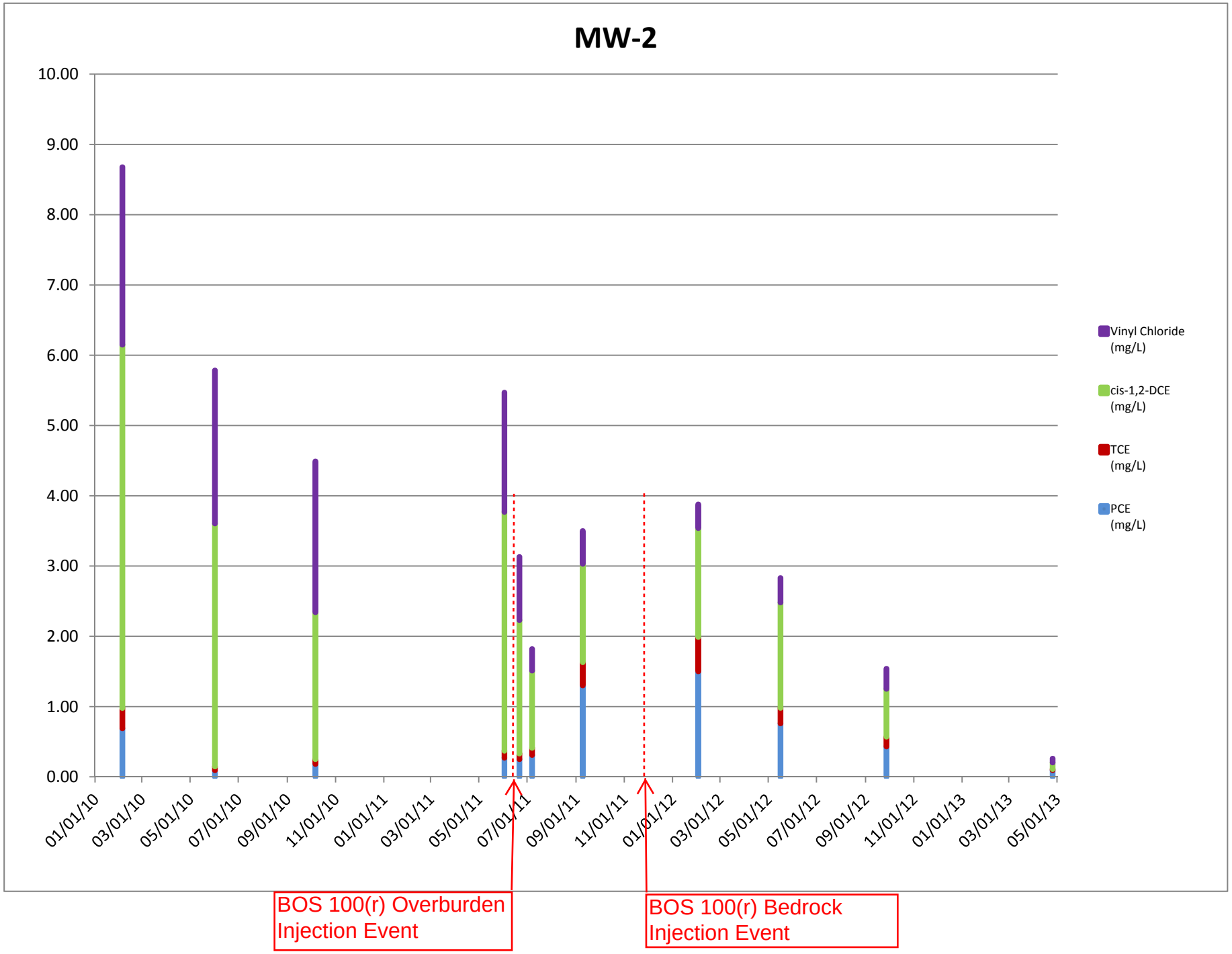
BOS 100(r) Overburden Injection Event
BOS 100(r) Bedrock Injection Event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Vinyl Chloride (mg/L)
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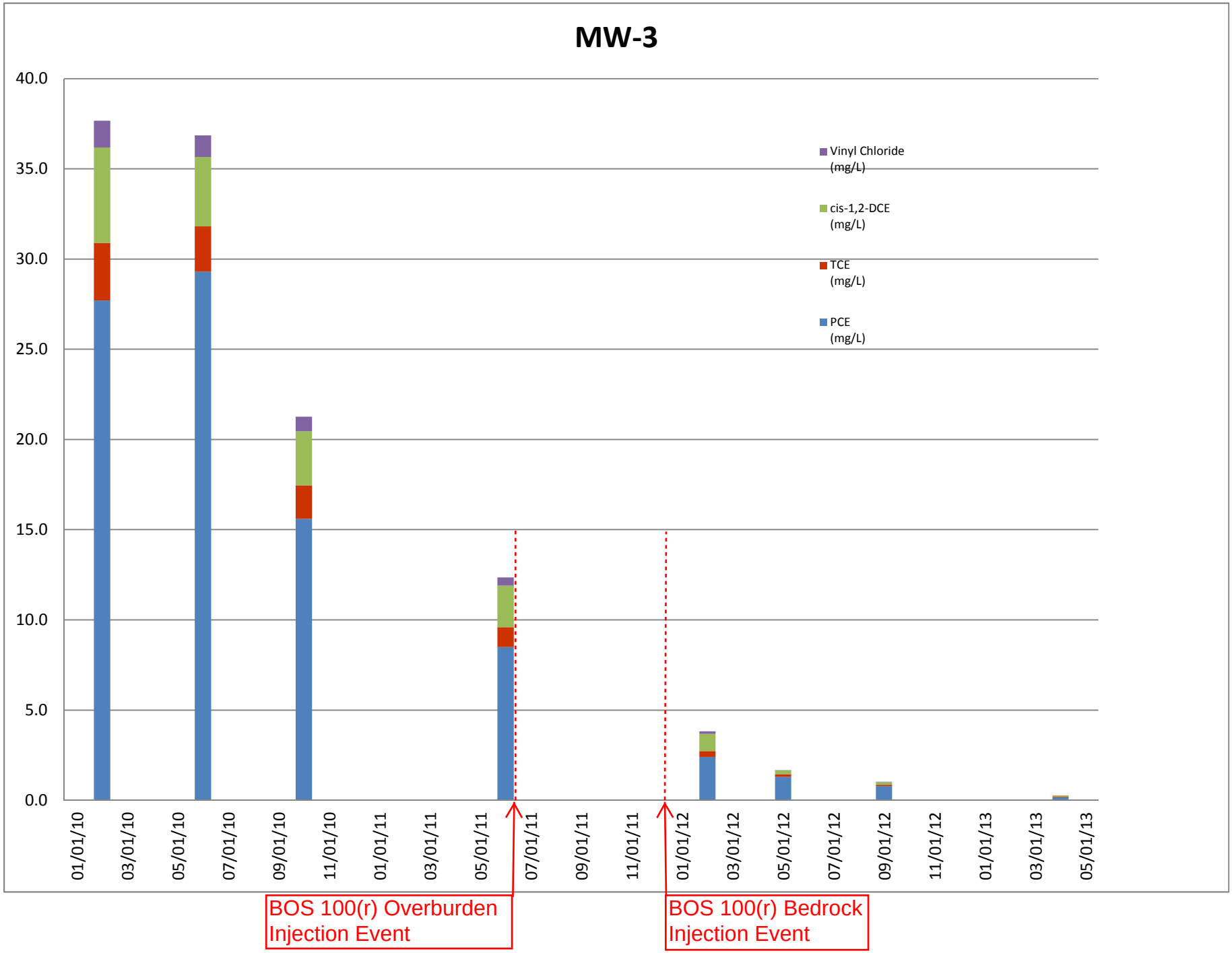
BOS 100(r) Overburden Injection Event
BOS 100(r) Bedrock Injection Event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10.0
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Vinyl Chloride (mg/L)
cis-1,2-DCE (mg/L)
TCE (mg/L)
PCE (mg/L)
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03/01/10
05/01/10
07/01/10
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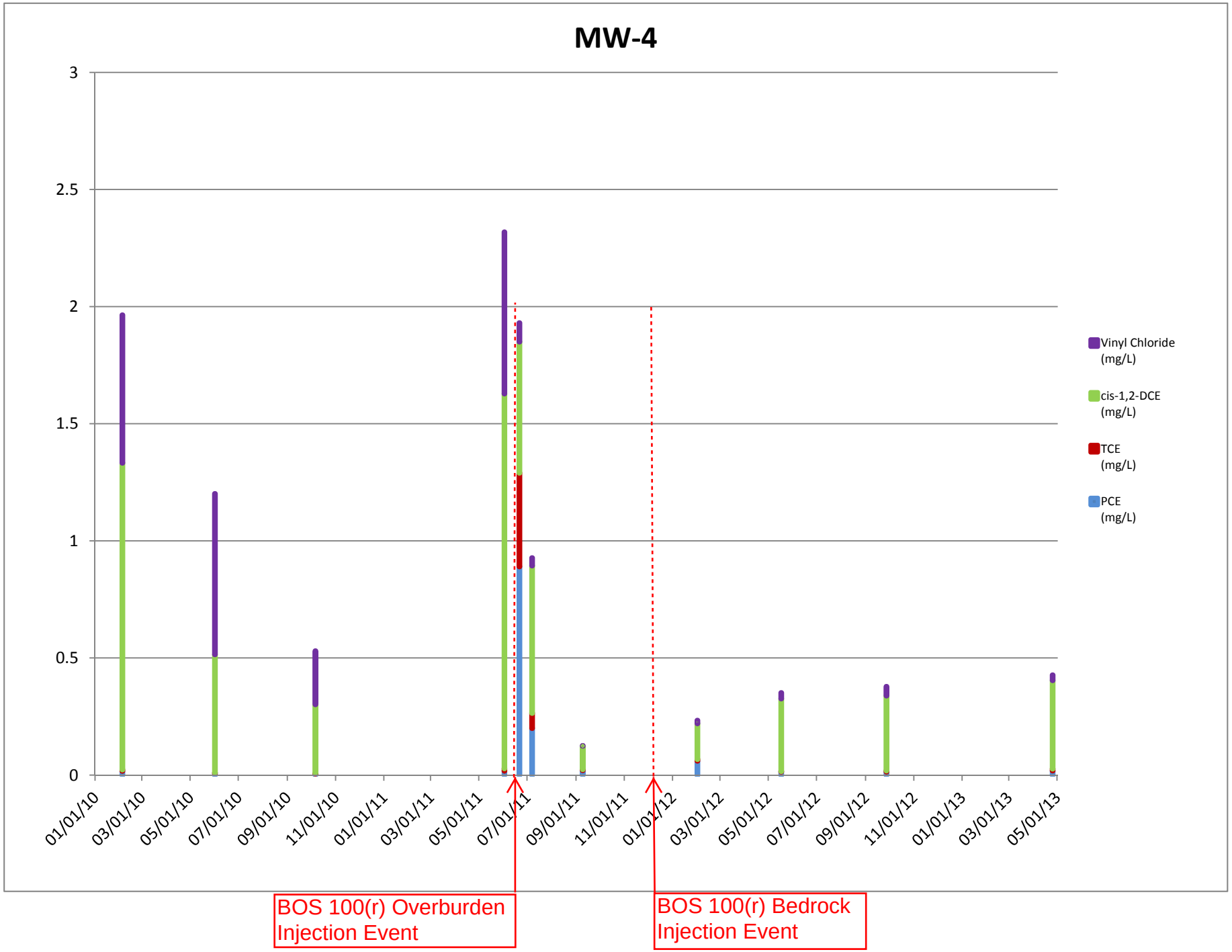
BOS 100(r) Overburden Injection Event
BOS 100(r) Bedrock Injection Event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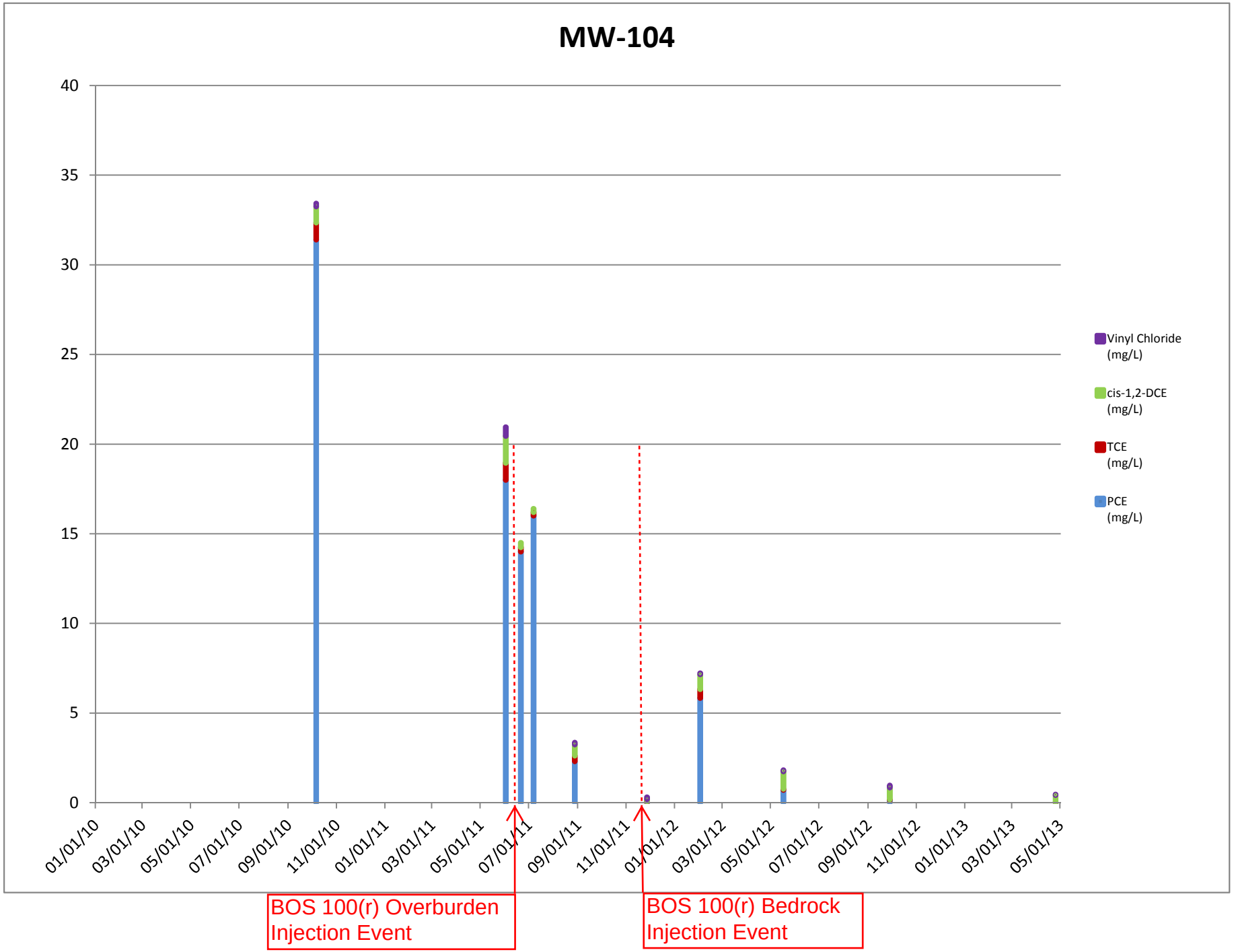
cis-1,2-DCE (mg/L)
TCE (mg/L)
PCE (mg/L)
BOS 100(r) Overburden Injection Event
BOS 100(r) Bedrock Injection Event


MW-104
40
35
30
25
20
15
10
5
0
01/01/10
03/01/10
05/01/10
07/01/10
09/01/10
11/01/10
01/01/11
03/01/11
05/01/11
07/01/11
09/01/11
11/01/11
01/01/12
03/01/12
05/01/12
07/01/12
09/01/12
11/01/12
01/01/13
03/01/13
05/01/13
Vinyl Chloride (mg/L)
cis-1,2-DCE (mg/L)
TCE (mg/L)
PCE (mg/L)
BOS 100(r) Overburden Injection Event
BOS 100(r) Bedrock Injection Event

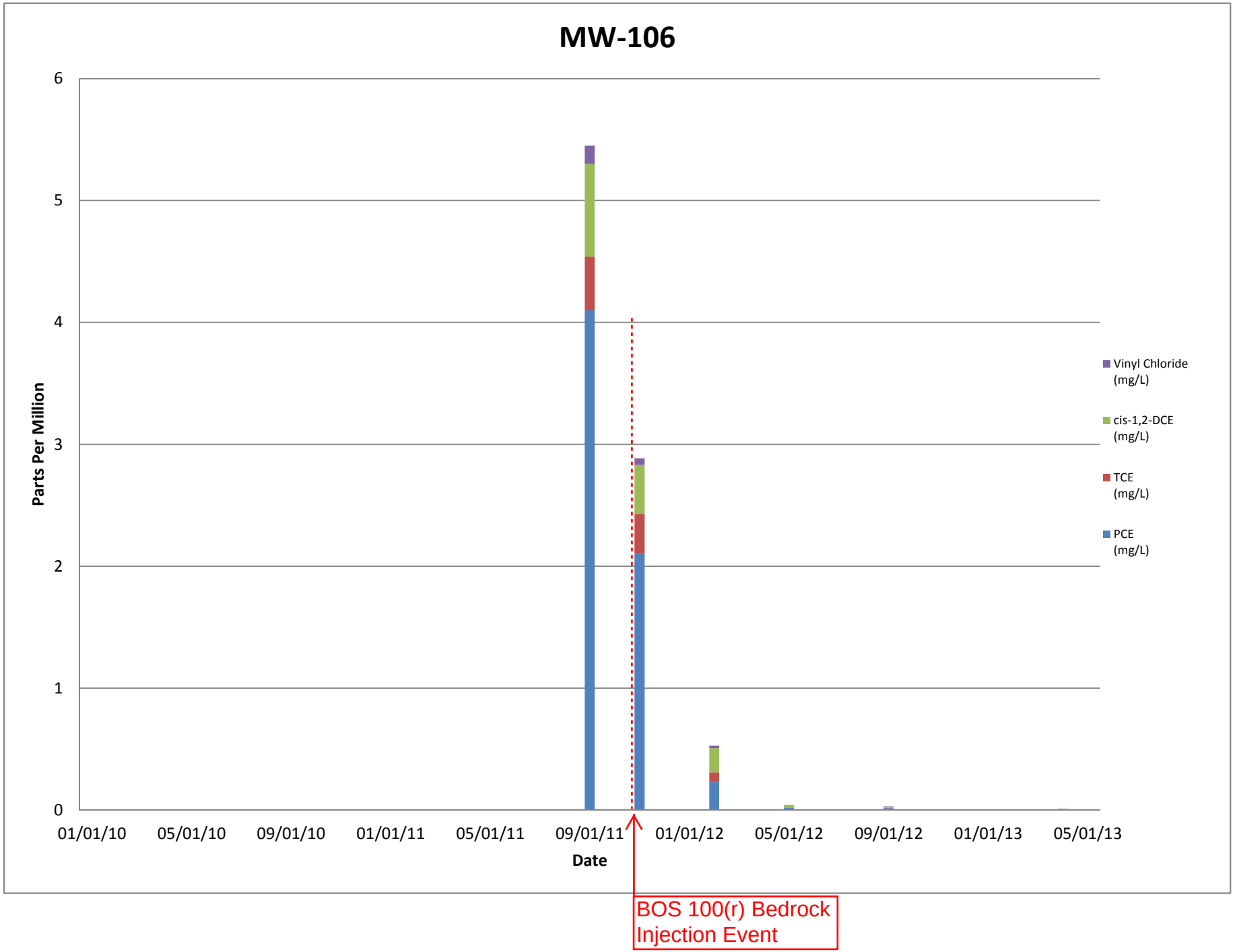

MW-106
Parts Per Million
6
5
4
3
2
1
0
01/01/10
05/01/10
09/01/10
01/01/11
05/01/11
09/01/11
01/01/12
05/01/12
09/01/12
01/01/13
05/01/13
Date
Vinyl Chloride (mg/L)
cis-1,2-DCE (mg/L)
TCE (mg/L)
PCE (mg/L)
BOS 100(r) Bedrock Injection Event

Table 1
Groundwater Analytical Data Summary
Former Dry Cleaners
Lexington, Kentucky

Sample		PCE (mg/L)	TCE (mg/L)	cis-1,2-DCE (mg/L)	trans-1,2-DCE (mg/L)	1,1-DCE (mg/L)	Vinyl Chloride (mg/L)	Sulfate (mg/L)	Total Organic Carbon (mg/L)	Total Iron (mg/L)	Chloride (mg/L)	Fluride (mg/L)
Location	Date											
USEPA MCLs (mg/L)		**0.005**	**0.005**	**0.07**	**0.1**	**0.007**	**0.002**	**NA**	**NA**	**NA**	**NA**	**NA**
Tap Water (mg/L)		**0.0097**	**0.00044**	**0.028**	**0.086**	**0.26**	**0.000015**	**NA**	**NA**	**NA**	**NA**	**NA**
MW-1	05/31/06	**86.6**	**4.32**	**7.86**	**0.0627**	**0.0045**	**2.3**	--	--	--	--	--
	04/18/07	**20.5**	**2.57**	**3.13**	<0.500	<0.500	**0.701**	--	--	--	--	--
	08/21/07	**5**	**1**	**52**	**0.12**	**0.026**	**13**	--	--	--	--	--
	03/12/08	**16.5**	**7.1**	**45.0**	**0.2**	**0.1**	**0.17**	--	--	--	--	--
	08/14/08	**27.2**	**5.57**	**24.2**	**0.148**	--	**7.95**	29	1.81	6.34	--	--
	01/19/09	**8.5**	**2.1**	**13.3**	**0.0885**	--	**1.18**	68.5	<1.00	4.9	--	--
	03/16/09	**42.6**	**10.3**	**25.0**	**0.1380**	--	**9.54**	40.5	4.04	4.15	--	--
	04/23/09	**74.6**	**19.4**	**53.0**	**0.6030**	--	**22.00**	52.1	5.99	8.4	--	--
	07/27/09	**25.5**	**6.5**	**12.7**	**0.1490**	--	**3.76**	--	2.26	--	--	--
	02/04/10	**31.5**	**2.4**	**1.6**	0.0150	--	**0.28**	--	--	--	--	--
	06/01/10	**26.4**	**1.6**	**1.5**	0.0106	--	**0.40**	--	1.54	--	--	0.296
	10/07/10	**21.8**	**3.38**	**4.55**	0.0862	--	**1.960**	--	--	--	--	--
	06/02/11	**9.4**	**1.60**	**5.10**	<0.050	<0.050	**2.0**	--	--	--	--	--
Post Overburden Inejction	06/21/11	**0.49**	**0.33**	**1.90**	<0.012	<0.012	**0.190**	--	--	--	--	--
	07/07/11	**12.0**	**1.60**	**2.00**	<0.012	<0.012	**0.690**	--	--	--	--	--
	08/28/11	**11.0**	**1.40**	**2.90**	<0.012	<0.012	**1.200**	--	--	--	--	--
Post Bedrock Injection	02/02/12	**8.650**	**1.21**	**3.89**	<0.050	--	**0.954**	--	--	--	116.0	--
	RPI DUP	**6.2**	**1.10**	**4.30**	0.0200	0.0170	**1.1**	--	--	--	130.0	--
	05/17/12	**4.5**	**0.63**	**2.90**	<0.005	<0.005	**0.81**	--	--	--	110.0	--
	09/28/12	**4.1**	**0.70**	**2.70**	0.0160	0.0160	**1.2**	--	--	--	86.0	--
	04/25/13	**1.740**	**0.290**	**1.110**	0.00899	0.00374	**0.433**	--	--	--	--	--
MW-2	05/31/06	**5.65**	**1.53**	**2.57**	**0.0188**	**0.0101**	**0.468**	--	--	--	--	--
	04/18/07	**29.2**	**5.82**	**9.4**	<0.500	<0.500	**2.31**	--	--	--	--	--
	08/21/07	**0.032**	**0.02**	**4.1**	0.0083	0.003	**3.7**	--	--	--	--	--
	03/12/08	**0.271**	<0.005	**0.167**	<0.005	<0.005	**0.151**	--	--	--	--	--
	08/14/08	**1.271**	<0.006	**1.167**	<0.005	<0.005	**1.151**	--	--	--	--	--
	01/20/09	0.00483	0.00441	0.0129	<0.001	--	**0.00315**	140	2.15	4.91	--	--
	03/16/09	**0.00860**	**0.00651**	**0.0897**	<0.001	--	**0.12700**	123	8.97	4.48	--	--
	04/23/09	**0.01020**	**0.00794**	**0.467**	0.001390	--	**0.11600**	133	13.4	7.09	--	--
	07/29/09	**0.0701**	**0.0133**	**0.0923**	--	--	**0.06270**	--	8.64	--	--	--
	02/04/10	**0.689**	**0.289**	**5.17**	**0.106**	--	**2.530**	--	--	--	--	--
	06/01/10	**0.093**	**0.053**	**3.46**	0.029	--	**2.180**	--	4.86	--	--	0.591
	10/06/10	**0.1810**	**0.0696**	**2.09**	0.0201	--	**2.150**	--	--	--	--	--
	06/02/11	**0.27**	**0.099**	**3.4**	0.0130	0.0150	**1.700**	--	--	--	--	--
Post Overburden Inejction	06/21/11	**0.25**	**0.080**	**1.9**	0.0076	**0.0089**	**0.900**	--	--	--	--	--
	07/07/11	**0.31**	**0.100**	**1.1**	<0.005	<0.005	**0.310**	--	--	--	--	--
	09/09/11	**1.30**	**0.330**	**1.4**	0.0076	0.0052	**0.470**	--	--	--	--	--
Post Bedrock Injection	02/02/12	**1.50**	**0.489**	**1.55**	0.0067	--	**0.339**	--	--	--	336.0	--
	RPI DUP	**1.10**	**0.370**	**1.6**	0.0065	0.0045	**0.370**	--	--	--	320.0	--
	5/16/2012	**0.76**	**0.220**	**1.5**	<0.0025	<0.0025	**0.350**	--	--	--	260.0	--
	9/27/2012	**0.43**	**0.140**	**0.680**	0.0042	<0.0046	**0.290**	--	--	--	120.0	--
	4/25/2013	**0.0943**	**0.0156**	**0.0931**	<0.001	<0.001	**0.057**	--	--	--	--	--
MW-3	05/31/06	**0.412**	**0.121**	**0.304**	0.0021	<0.0010	**0.0802**	--	--	--	--	--
	04/18/07	**5.87(D4)**	**1.6**	**4.09**	<0.125	<0.125	**1.17**	--	--	--	--	--
	08/21/07	**16**	**0.0054**	**12**	0.05	**0.017**	**0.96**	--	--	--	--	--
	03/12/08	**2.51**	**0.209**	**0.61**	<0.005	**0.613**	**0.194**	--	--	--	--	--
	08/14/08	**2.51**	**0.209**	**0.61**	<0.006	**0.613**	**0.194**	--	--	--	--	--
	01/19/09	**0.616**	**0.153**	**0.351**	0.00397	--	**0.103**	141	1.94	16	--	--
	03/17/09	**3.54**	**0.872**	**1.26**	0.01070	--	**0.438**	123	3.04	10.5	--	--
	04/23/09	**6.64**	**1.28**	**2.53**	0.02440	--	**0.890**	154	9.16	5.69	--	--
	07/29/09	**15.6**	**2.25**	**5.03**	**0.16000**	**--**	**1.69**	--	1.46	--	--	--
	02/04/10	**27.7**	**3.19**	**5.29**	**0.148**	--	**1.49**	--	1.46	--	--	--
	06/01/10	**29.3**	**2.51**	**3.85**	0.050	--	**1.19**	--	1.63	--	--	0.259
	10/08/10	**15.6**	**1.86**	**2.99**	0.0452	--	**0.81**	--	--	--	--	--
	06/02/11	**8.5**	**1.10**	**2.30**	<0.025	<0.025	**0.450**	--	--	--	--	--
Post Overburden Inejction	06/21/11	**2.4**	**0.32**	**0.96**	<0.0125	<0.0125	**0.140**	--	--	--	--	--
	07/07/11	**1.3**	**0.15**	**0.21**	<0.005	<0.005	**0.0058**	--	--	--	--	--
	09/09/11	**0.790**	**0.078**	**0.14**	<0.0025	0.0028	**0.0160**	--	--	--	--	--
Post Bedrock Injection	02/01/12	**0.157**	**0.0392**	0.069	<0.001	--	**0.0044**	--	--	--	57.5	--
	RPI DUP	**0.100**	**0.036**	**0.083**	<0.0005	0.0018	**0.0026**	--	--	--	65.0	--
	05/17/12	**0.210**	**0.049**	**0.140**	<0.0005	<0.0005	**0.0094**	--	--	--	100.0	--
	09/27/12	**0.290**	**0.072**	**0.150**	0.0013	0.0020	**0.0160**	--	--	--	49.0	--
	04/25/13	**0.443**	**0.0851**	**0.127**	0.00195	<0.001	**0.0162**	--	--	--	--	--

Table 1
Groundwater Analytical Data Summary
Former Dry Cleaners
Lexington, Kentucky

Sample Location	Date	PCE (mg/L)	TCE (mg/L)	cis-1,2-DCE (mg/L)	trans-1,2-DCE (mg/L)	1,1-DCE (mg/L)	Vinyl Chloride (mg/L)	Sulfate (mg/L)	Total Organic Carbon (mg/L)	Total Iron (mg/L)	Chloride (mg/L)	Fluride (mg/L)
USEPA MCLs (mg/L)		**0.005**	**0.005**	**0.07**	**0.1**	**0.007**	**0.002**	**NA**	**NA**	**NA**	**NA**	**NA**
MW-4	05/31/06	**0.358**	**0.200**	**1.40**	0.0065	0.0024	**0.466**	--	--	--	--	--
	04/18/07	**4.14**	**1.87**	**15.9**	0.0844(J)	<0.250	**4.67**	--	--	--	--	--
	08/21/07	**<0.050**	**<0.050**	**1**	<0.001	0.0013	**3.9**	--	--	--	--	--
	03/12/08	**0.058**	**0.014**	**0.069**	0.001	0.002	<0.002	--	--	--	--	--
	08/14/08	**0.00415**	0.002	**1.330**	0.00283	--	**1.15**	153	2.32	7.92	--	--
	01/19/09	**0.0367**	**0.0178**	**0.529**	0.00233	--	**0.476**	143	4.87	3.59	--	--
	03/17/09	**0.0113**	0.0049	**0.501**	0.00215	--	**0.417**	22.8	42.8	3.02	--	--
	04/23/09	**0.00965**	**0.0080**	**0.407**	0.00146	--	**0.411**	96.1	17.3	6.11	--	--
	07/28/09	0.00447	0.0023	**0.242**	<0.001	--	**0.373**	--	2.35	--	--	--
	02/04/10	**0.0174**	**0.00525**	**1.310**	0.00495	--	**0.631**	--	--	--	--	--
	06/01/10	**0.00719**	0.00274	**0.505**	0.00116	--	**0.686**	--	2.73	--	--	0.519
	10/06/10	**0.00524**	0.00313	**0.293**	0.00149	--	**0.228**	--	--	--	--	--
	06/02/11	**0.018**	**0.010**	**1.60**	0.0043	0.005	**0.690**	--	--	--	--	--
Post Overburden Inejction	06/21/11	**0.890**	**0.400**	**0.56**	<0.005	<0.005	**0.080**	--	--	--	--	--
	07/07/11	**0.200**	**0.064**	**0.63**	<0.005	<0.005	**0.033**	--	--	--	--	--
	09/09/11	**0.020**	**0.004**	**0.10**	<0.0005	<0.0005	0.001	--	--	--	--	--
Post Bedrock Injection	02/01/12	**0.0605**	**0.00681**	**0.153**	<0.001	--	**0.013**	--	--	--	84.7	--
	RPI DUP	**0.076**	**0.0084**	**0.17**	<0.0005	0.0026	**0.014**	--	--	--	96.0	--
	05/17/12	**0.014**	0.0020	**0.31**	<0.0005	<0.0005	**0.025**	--	--	--	120.0	--
	09/27/12	**0.014**	0.0047	**0.32**	0.0010	0.0030	**0.039**	--	--	--	42.0	--
	04/25/13	**0.0187**	**0.00766**	**0.378**	0.00314	0.00207	**0.022**	--	--	--	--	--
MW-5	04/19/07	**0.233**	**0.197**	**3.5**	0.020	**0.0118**	**0.980**	--	--	--	--	--
	08/21/07	**0.011**	**0.0087**	**0.56**	0.003	0.0019	**0.410**	--	--	--	--	--
	03/12/08	<0.005	**0.0057**	0.011	<0.005	<0.005	**0.00480**	--	--	--	--	--
	08/14/08	<0.001	<0.001	0.0246	<0.001	--	**0.0358**	128	1.78	20	--	--
	06/01/10	<0.001	<0.001	<0.001	<0.001	--	<0.001	--	2.3	--	--	0.298
	10/06/10	<0.001	<0.001	0.00822	<0.001	--	**0.00761**	--	--	--	--	--
Post Bedrock Injection	02/01/12	<0.001	<0.001	0.00337	<0.001	-	<0.001	--	--	--	119.0	--
	RPI DUP	<0.0005	<0.0005	0.00320	<0.0005	<0.0005	<0.0005	--	--	--	130.0	--
	05/15/12	<0.0005	<0.0005	0.00230	<0.0005	<0.0005	<0.0005	--	--	--	100.0	--
	09/27/12	<0.0005	<0.0005	0.00360	<0.0005	<0.0005	<0.0005				59.0	
MW-6	04/19/07	<0.005	<0.005	0.0225	<0.005	<0.005	**0.0941**	--	--	--	--	--
	08/21/07	0.0018	0.0019	0.058	0.001	<0.001	**0.16**	--	--	--	--	--
	03/12/08	0.0025	<0.001	**1.024**	0.002	<0.002	**1.750**	--	--	--	--	--
	08/13/08	<0.001	<0.001	**5.97**	0.0318	--	**3.940**	20	4.15	12.6	--	--
	06/01/10	<0.001	<0.001	<0.001	<0.001	--	**0.00313**	--	4.22	--	--	0.348
	10/06/10	<0.001	<0.001	<0.001	<0.001	--	<0.001	--		--	--	--
Post Bedrock Injection	02/01/12	0.00127	<0.001	0.00248	<0.001	--	0.00115	--	--	--	146	--
	RPI DUP	0.0014	<0.0005	0.0028	<0.0005	<0.0005	0.00090	--		--	180	--
	05/16/12	<0.0005	<0.0005	0.0042	<0.0005	<0.0005	<0.0005	--	--	--	160	--
	09/28/12	0.0016	0.0007	0.0068	<0.0005	<0.0005	**0.00750**				137	
MW-7	04/19/07	**0.0289**	**0.0116**	0.0404	<0.005	<0.005	**0.0074**	--	--	--	--	--
	08/21/07	0.0011	0.001	0.0085	<0.001	<0.001	**0.0024**	--	--	--	--	--
	03/12/08	0.002	0.001	0.0576	<0.001	<0.002	<0.001	--	--	--	--	--
	08/13/08	<0.001	0.00161	0.0353	<0.001	--	**0.0214**	126	1.84	6.54	--	--
	06/01/10	<0.001	<0.001	0.00789	<0.001	--	**0.0142**	--	2.95	--	--	0.352
	10/06/10	<0.001	<0.001	0.00486	<0.001	--	**0.00807**	--	--	--	--	--
Post Bedrock Injection	02/02/12	**0.0124**	**0.00572**	0.0249	<0.001	--	**0.00732**	--	--	--	249	--
	RPI DUP	**0.0097**	0.0043	0.026	<0.0005	<0.0005	**0.0059**	--	--	--	290	--
	05/16/12	**0.013**	0.0033	0.042	<0.0005	<0.0005	**0.01**	--	--	--	220	--
	09/27/12	**0.0097**	0.0033	0.024	<0.0005	<0.0005	**0.01**				40	
MW-8	04/18/07	**DRY**										
	08/21/07	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--
	03/12/08	0.025	<0.001	<0.001	<0.001	<0.002	<0.001	--	--	--	--	--
	10/07/10	<0.001	<0.001	<0.001	<0.001	--	<0.001	--	--	--	--	--
Post Bedrock Injection	01/31/12	<0.001	<0.001	<0.001	<0.001	--	<0.001	--	--	--	150	--
	RPI DUP	0.0026	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	150	--
	09/26/12	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005				470	

Table 1
Groundwater Analytical Data Summary
Former Dry Cleaners
Lexington, Kentucky

Sample		PCE (mg/L)	TCE (mg/L)	cis-1,2-DCE (mg/L)	trans-1,2-DCE (mg/L)	1,1-DCE (mg/L)	Vinyl Chloride (mg/L)	Sulfate (mg/L)	Total Organic Carbon (mg/L)	Total Iron (mg/L)	Chloride (mg/L)	Fluride (mg/L)
Location	**Date**											
USEPA MCLs (mg/L)		**0.005**	**0.005**	**0.07**	**0.1**	**0.007**	**0.002**	**NA**	**NA**	**NA**	**NA**	**NA**
MW-9	12/05/07	<0.001	<0.001	0.028	<0.001	<0.001	**0.050**	--	--	--	--	--
	03/12/08	<0.001	<0.001	0.0025	<0.001	<0.002	<0.001	--	--	--	--	--
MW-10	12/05/07	<0.001	<0.001	0.0041	<0.001	<0.001	**0.0082**	--	--	--	--	--
	03/12/08	0.002	<0.001	<0.001	<0.001	<0.002	<0.001	--	--	--	--	--
MW-100	10/07/10	<0.001	<0.001	<0.001	<0.001	--	<0.001	--	--	--	--	--
Post Bedrock Injection	02/04/12	<0.001	<0.001	<0.001	<0.001	--	<0.001				28	
	09/26/12	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005				44	
MW-101	10/07/10	**0.0448**	**0.0125**	0.0208	<0.001	--	<0.001	--	--	--	--	--
Post Bedrock Injection	02/04/12	<0.001	<0.001	<0.001	<0.001	--	<0.001	--	--	--	33	--
	05/15/12	0.0016	<0.0005	0.0015	<0.0005	<0.0005	<0.0005				53	
	09/26/12	0.0032	0.0009	0.0019	<0.0005	<0.0005	<0.0005				56	
MW-102	10/07/10	<0.001	<0.001	<0.001	<0.001	--	<0.001	--	--	--	--	--
Post Bedrock Injection	11/30/11	0.0026	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--
	01/30/12	<0.001	<0.001	<0.001	<0.001	--	<0.001	--	--	--	37.4	--
	RPI DUP	0.0007	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	50	--
	05/15/12	<0.0005	<0.0005	0.0007	<0.0005	<0.0005	<0.0005	--	--	--	55	--
	09/26/12	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005				43	
MW-103	10/07/10	**0.158**	**0.00775**	0.00961	<0.001	--	<0.001	--	--	--	--	--
Post Bedrock Injection	12/01/11	**0.039**	**0.0049**	0.0017	<0.0005	0.0006	<0.0005	--	--	--	--	--
	01/30/12	**0.00828**	<0.001	<0.001	<0.001	--	<0.001	--	--	--	31.8	--
	RPI DUP	**0.0081**	<0.0005	0.0005	<0.0005	<0.0005	<0.0005	--	--	--	42	--
	05/16/12	**0.0084**	<0.0005	0.0005	<0.0005	<0.0005	<0.0005	--	--	--	56	--
	09/26/12	**0.021**	0.0019	0.0025	<0.0005	<0.0005	<0.0005				60	
MW-104	10/06/10	**31.4**	**0.949**	**0.896**	0.0183	--	**0.181**	--	--	--	--	--
	06/02/11	**18**	**0.95**	**1.5**	<0.050	<0.050	**0.5**	--	--	--	--	--
Post Overburden Inejction	06/21/11	**14**	**0.24**	**0.260**	<0.025	<0.025	<0.025	--	--	--	--	--
	07/07/11	**16**	**0.2**	**0.200**	<0.025	<0.025	<0.025	--	--	--	--	--
	08/28/11	**2.3**	**0.31**	**0.630**	<0.025	<0.025	**0.12**	--	--	--	--	--
Post Bedrock Injection	11/27/11	**0.029**	**0.023**	**0.140**	<0.0005	0.0065	**0.12**	--	--	--	--	--
	02/02/12	**5.83**	**0.496**	**0.822**	<0.050	--	**0.0795**	--	--	--	97.3	--
	RPI DUP	**3.95**	**0.38**	**0.820**	0.0027	0.014	**0.083**	--	--	--	110.0	--
	05/17/12	**0.7**	**0.065**	**0.970**	<0.005	<0.005	**0.086**	--	--	--	110.0	--
	09/28/12	**0.14**	**0.042**	**0.660**	0.0033	0.0034	**0.13**	--	--	--	97.0	--
	04/25/13	0.00110	0.00282	**0.408**	0.00360	0.00140	**0.057**	--	--	--	--	--
MW-105	10/06/10	0.001	<0.001	0.008	<0.001	--	**0.0502**	--	--	--	--	--
Post Bedrock Injection	11/30/11	0.0031	<0.0005	0.0006	<0.0005	<0.0005	0.0013	--	--	--	--	--
	01/31/12	<0.001	<0.001	<0.001	<0.001	--	<0.001	--	--	--	37.5	--
	RPI DUP	0.0068	<0.0005	0.0012	<0.0005	<0.0005	<0.0005	--	--	--	54	--
	05/16/12	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	54	--
	09/27/12	<0.0005	<0.0005	0.0014	<0.0005	<0.0005	<0.0005	--	--	--	64	--
	RPI DUP	<0.0005	<0.0005	0.0012	<0.0005	<0.0005	<0.0005	--	--	--	54	--
MW-106	09/09/11	**4.1**	**0.44**	**0.76**	<0.0125	<0.0125	**0.15**	--	--	--	--	--
Post Bedrock Injection	11/27/11	**2.1**	**0.33**	**0.4**	<0.0005	<0.0005	**0.056**	--	--	--	--	--
	02/01/12	**0.23**	**0.0786**	**0.199**	<0.001	--	**0.021**	--	--	--	121	--
	RPI DUP	**0.18**	**0.065**	**0.200**	0.001	0.0013	**0.020**	--	--	--	140	--
	05/16/12	**0.017**	0.004	0.020	<0.0005	<0.0005	<0.0005	--	--	--	140	--
	09/27/12	**0.015**	0.003	0.007	<0.0005	<0.0005	**0.005**	--	--	--	99	--
	04/25/13	<0.001	<0.001	0.00576	<0.001	<0.001	**0.00446**	--	--	--	99	--
AST-1	05/12/11	**<0.050**	**<0.050**	**1.7**	<0.050	**<0.050**	**1.2**	--	--	--	--	--
	06/02/11	**0.031**	**0.011**	**11.3**	0.036	**0.026**	**3.4**	--	--	--	--	--
Post Overburden Inejction	06/21/11	**0.0046**	0.0016	0.052	<0.0005	<0.0005	**0.024**	--	--	--	--	--
	07/07/11	**0.024**	**0.024**	**0.52**	0.0074	0.0031	**0.38**	--	--	--	--	--
	08/28/11	0.0011	0.0033	**0.69**	0.0055	0.0018	**0.57**	--	--	--	--	--
	12/02/11	**0.0067**	**0.0056**	**0.2**	0.0021	<0.0005	**0.019**	--	--	--	--	--
	01/31/11	<0.0005	<0.0005	0.048	<0.0005	<0.0005	**0.11**	--	--	--	0.49	--
	05/17/12	0.0033	0.0019	**0.38**	<0.0005	<0.0005	**0.023**	--	--	--	0.55	--
	10/02/12	**0.007**	**0.0094**	**1.6**	0.0056	0.0051	**2.6**	--	--	--	0.059	--

Table 1
Groundwater Analytical Data Summary
Former Dry Cleaners
Lexington, Kentucky

Sample		PCE (mg/L)	TCE (mg/L)	cis-1,2-DCE (mg/L)	trans-1,2-DCE (mg/L)	1,1-DCE (mg/L)	Vinyl Chloride (mg/L)	Sulfate (mg/L)	Total Organic Carbon (mg/L)	Total Iron (mg/L)	Chloride (mg/L)	Fluride (mg/L)
Location	Date											
USEPA MCLs (mg/L)		0.005	0.005	0.07	0.1	0.007	0.002	NA	NA	NA	NA	NA
AST-2	05/12/11	**0.31**	**0.34**	**1.2**	<0.050	**<0.050**	**0.59**	--	--	--	--	--
	06/02/11	**1.1**	**1.5**	**2.4**	0.013	**0.015**	**0.9**	--	--	--	--	--
Post Overburden Inejction	06/21/11	0.0027	**0.0085**	**0.14**	<0.0005	0.0008	**0.052**	--	--	--	--	--
	07/07/11	**0.013**	**0.016**	**0.079**	0.0005	0.0007	**0.031**	--	--	--	--	--
	08/28/11	**0.0098**	**0.0091**	**0.12**	<0.0005	0.0008	**0.11**	--	--	--	--	--
	12/02/11	<0.0005	<0.0005	0.011	<0.0005	<0.0005	**0.039**	--	--	--	--	--
	01/31/12	0.0007	<0.0005	0.012	<0.0005	<0.0005	**0.025**	--	--	--	0.2	--
	05/17/12	0.0024	**0.019**	**3**	0.0062	0.0071	**1.2**	--	--	--	0.24	--
	10/02/12	<0.0005	<0.0005	**0.33**	0.0015	0.0007	**5**	--	--	--	0.577	--
AST-3	05/12/11	**0.11**	**0.022**	**0.085**	<0.0005	<0.0005	**0.022**	--	--	--	--	--
	06/02/11	**0.022**	**0.014**	**0.13**	0.0008	<0.0005	**0.027**	--	--	--	--	--
Post Overburden Inejction	06/21/11	**0.95**	**0.31**	**1.9**	0.0096	0.0029	**0.42**	--	--	--	--	--
	07/07/11	**1**	**0.37**	**2.2**	0.012	0.0053	**0.83**	--	--	--	--	--
	08/28/11	**1.6**	**0.32**	**1.4**	0.0074	<0.005	**0.014**	--	--	--	--	--
	12/02/11	**0.062**	**0.081**	**1.2**	<0.005	**0.014**	**0.71**	--	--	--	--	--
	01/31/12	0.003	0.0029	**0.42**	0.001	0.0022	**0.36**	--	--	--	0.16	--
	05/17/12	**0.065**	**0.026**	**1.6**	0.0051	0.0025	**1.1**	--	--	--	0.12	--
	10/02/12	<0.0005	<0.0005	0.068	<0.0005	<0.0005	**1**	--	--	--	2	--
AST-4	01/31/12	**0.0065**	0.0011	0.0018	<0.0005	<0.0005	<0.0005	--	--	--	0.56	--
	10/02/12	**0.018**	**0.0056**	0.026	<0.0005	<0.0005	**0.0036**	--	--	--	0.95	--
AST-5	05/12/11	0.03	0.0066	0.065	<0.005	<0.005	**0.03**	--	--	--	--	--
	06/02/11	0.0006	<0.0005	0.011	<0.0005	<0.0005	<0.0005	--	--	--	--	--
Post Overburden Inejction	06/21/11	**0.076**	**0.051**	**0.43**	0.0015	0.0007	**0.059**	--	--	--	--	--
	07/07/11	**0.13**	**0.063**	**0.58**	0.0025	0.0012	**0.089**	--	--	--	--	--
	08/28/11	0.0007	0.0006	0.0074	<0.0005	0.0006	**0.006**	--	--	--	--	--
	01/31/12	**0.044**	**0.062**	**0.32**	0.0013	0.0014	**0.092**	--	--	--	0.39	--
	05/17/12	**0.076**	**0.047**	**0.49**	<0.0005	<0.0005	**0.072**	--	--	--	0.29	--
AST-7	05/12/11	0.0008	<0.0005	0.001	<0.0005	<0.0005	<0.0005	--	--	--	--	--
	06/02/11	0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--
	06/21/11	0.0009	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--
	07/07/11	0.0011	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--
	08/28/11	0.001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--
	01/31/12	0.001	<0.0005	0.0018	<0.0005	<0.0005	<0.00005	--	--	--	0.39	--
	05/17/12	0.0016	<0.0005	0.0013	<0.0005	<0.0005	<0.00005	--	--	--	0.48	--
	10/02/12	0.0021	<0.0005	0.0011	<0.0005	<0.0005	<0.0005	--	--	--	0.38	--
AST-8	05/12/11	**0.34**	**0.094**	**0.8**	<0.005	<0.005	**0.24**	--	--	--	--	--
	06/02/11	**0.11**	**0.25**	**2.3**	0.012	**0.019**	**8.8**	--	--	--	--	--
Post Overburden Inejction	06/21/11	**0.066**	**0.024**	**0.24**	0.0006	<0.0005	**0.01**	--	--	--	--	--
	07/07/11	**0.064**	**0.02**	**0.24**	0.0007	<0.0005	**0.01**	--	--	--	--	--
	08/28/11	**0.19**	**0.066**	**0.88**	0.0028	0.0012	**0.079**	--	--	--	--	--
	01/31/12	**2.5**	**0.58**	**2.4**	0.014	0.01	**0.47**	--	--	--	0.11	--
	05/15/12	**0.96**	**0.25**	**1.6**	0.0045	<.0025	**0.34**	--	--	--	0.1	--
	10/02/12	**0.52**	**0.15**	**1.6**	0.0065	**0.0075**	**0.46**	--	--	--	0.072	--
AST-9	05/12/11	**0.116**	**0.071**	**1.1**	0.0048	0.0034	**0.17**	--	--	--	--	--
	06/02/11	**0.31**	**0.12**	**1.9**	0.01	0.0092	**0.28**	--	--	--	--	--
Post Overburden Inejction	06/21/11	**0.02**	**0.01**	**0.071**	<0.0005	<0.0005	**0.028**	--	--	--	--	--
	07/07/11	**0.036**	**0.015**	**0.098**	<0.0005	<0.0005	**0.04**	--	--	--	--	--
	08/28/11	**0.065**	**0.027**	**0.1**	0.0006	<0.0005	**0.0078**	--	--	--	--	--
	01/31/12	**0.039**	**0.0075**	**0.071**	<0.0005	0.001	**0.0065**	--	--	--	0.11	--
	05/15/12	**0.097**	**0.011**	0.026	<0.0005	<0.0005	<0.0005	--	--	--	0.055	--
	10/2/2012	**0.048**	**0.011**	0.043	<0.0005	<0.0005	<0.0005	--	--	--	0.073	--
AST-10	05/12/11	0.0007	<0.0005	0.016	<0.0005	<0.0005	**0.016**	--	--	--	--	--
	06/02/11	0.0006	0.0019	**0.19**	<0.0005	0.0008	**0.054**	--	--	--	--	--
Post Overburden Inejction	06/21/11	<0.0005	<0.0005	0.033	<0.0005	<0.0005	**0.0086**	--	--	--	--	--
	07/07/11	<0.0005	0.0012	0.036	<0.0005	<0.0005	**0.0031**	--	--	--	--	--
	08/28/11	<0.0005	0.0006	0.058	0.0006	0.0005	**0.029**	--	--	--	--	--
	01/31/12	0.0015	0.0005	0.017	<0.0005	<0.0005	**0.022**	--	--	--	0.19	--
	05/15/12	<0.0005	<0.0005	0.0008	<0.0005	<0.0005	<0.0005	--	--	--	0.12	--
	10/02/12	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	0.11	--

Table 1
Groundwater Analytical Data Summary
Former Dry Cleaners
Lexington, Kentucky

Sample		PCE (mg/L)	TCE (mg/L)	cis-1,2-DCE (mg/L)	trans-1,2-DCE (mg/L)	1,1-DCE (mg/L)	Vinyl Chloride (mg/L)	Sulfate (mg/L)	Total Organic Carbon (mg/L)	Total Iron (mg/L)	Chloride (mg/L)	Fluride (mg/L)
Location	**Date**											
USEPA MCLs (mg/L)		**0.005**	**0.005**	**0.07**	**0.1**	**0.007**	**0.002**	**NA**	**NA**	**NA**	**NA**	**NA**
AST-11	05/12/11	**0.11**	**0.063**	**0.2**	0.0012	<0.0005	**0.0033**	--	--	--	--	--
	06/02/11	**0.047**	**0.092**	**0.1**	0.0011	<0.0005	**0.0038**	--	--	--	--	--
Post Overburden Inejction	06/21/11	0.001	0.0007	0.0052	<0.0005	<0.0005	0.0008	--	--	--	--	--
	07/07/11	0.002	0.0014	0.0042	<0.0005	<0.0005	0.001	--	--	--	--	--
	08/28/11	<0.0005	<0.0005	0.0034	<0.0005	<0.0005	<0.0005	--	--	--	--	--
	02/01/12	0.001	<0.0005	0.0016	<0.0005	<0.0005	<0.0005	--	--	--	0.54	--
	05/15/12	0.0021	<0.0005	0.0046	<0.0005	<0.0005	<0.0005	--	--	--	0.83	--
	10/02/12	0.0037	**0.0053**	0.02	<0.0005	<0.0005	<0.0005	--	--	--	0.82	--

All units reported in mg/L = milligrams per liter

Bold Exceed MCLs

RPI DUP = duplicate sample analyzed at RPI Golden, Colorado.