Site Investigation Summary
Former CBS/Fender Facility
500 South Raymond Avenue
Fullerton, California

Prepared for **CBS**

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1. Introduction and Objectives

CBS/Fender Musical Instruments (Fender) owned and occupied a facility at 500 South Raymond Avenue (South Raymond site) in Fullerton, California (Figure 1). Orange County Water District (OCWD) has identified a regional groundwater plume in the Anaheim and Fullerton area where groundwater has been impacted by trichloroethylene (TCE), perchloroethylene (PCE), and other volatile organic compounds (VOCs) at concentrations that exceed U.S. Environmental Protection Agency (EPA) maximum contaminant levels (MCLs). Based on their investigation, OCWD identified a number of potentially responsible parties and has filed a lawsuit against a number of parties, including CBS as successor in interest to Fender, which OCWD believes has contributed to the regional VOC contamination.

CBS has followed up on previous investigations of the South Raymond site to further evaluate the nature and extent of contamination that may be derived from its operations at the South Raymond site. The objectives of the investigation described in this summary report are to:

- Determine if releases of chlorinated solvents occurred at the South Raymond site.

- If releases appear to have occurred, evaluate the horizontal and vertical extent of those releases.

- Determine if chlorinated solvents previously found in temporary groundwater grab samples near the South Raymond site are related to contaminants found in the vadose zone at the South Raymond site or to contamination at adjacent sites.

- If releases appear to have contaminated the South Raymond site, characterize the soil characteristics that influence the fate and transport of contaminants in the vadose zone at the South Raymond site.

This report describes the field sampling activities, laboratory analyses, and quality assurance/quality control (QA/QC) procedures that were conducted by Daniel B. Stephens & Associates, Inc. (DBS&A) on behalf of CBS at the former Fender facility at the South Raymond site. Also included are a discussion and an interpretation of the data, primarily those collected during this investigation.

2. Field Investigation

This section describes the tasks and the procedures that were used during field work, including drilling methods, equipment, and environmental sample collection. Field tasks were completed in accordance with the *Work Plan for Site Investigation* dated March 29, 2011 (DBS&A, 2011). Soil vapor probe installation and sampling were completed in accordance with California Environmental Protection Agency (Cal/EPA) guidance (Cal/EPA, 2003).

In accordance with the site-specific health and safety plan (HASP) prepared for this investigation (DBS&A, 2011, Appendix C), all field work was completed under Level D safety conditions. As discussed in the HASP, a calibrated photoionization detector (PID) was used during field operations to periodically monitor working space air quality and confirm Level D working conditions.

Vadose zone and groundwater characterization was achieved by collecting and analyzing soil and soil vapor (soil gas) samples, grab groundwater samples, and monitor well groundwater samples. Field sampling tasks were completed sequentially as Phases IA and IB:

- *Phase IA:* Sampling within Unit 5/F, within the parking area north of the building (North Parking Area), and along the alley south of the building (South Alley) at the South Raymond site

- *Phase IB:* Sampling to laterally and vertically delineate sources identified during Phase IA, to characterize hydrogeologic properties of the vadose zone, and to characterize contamination from the former Chicago Musical Instruments (Chicago Musical) property to the north (Figure 1)

Phase IA field work consisted of geophysical surveying for utility line locations, sewer video logging, and data collection using a cone-penetrometer testing (CPT) rig, at times in tandem with a membrane interface probe (MIP). A site-wide utility survey was completed to confirm that utility lines were not co-located with proposed boring locations. Where accessible, sewer lines inside each tenant unit of the South Raymond building were video-logged and traced north to the main sewer line at East Valencia Drive. Soil vapor probes were installed at approximately 10 and 20 feet below ground surface (ft bgs) at 30 locations (Figure 2), 15 of which are inside Unit 5/F and 15 outside the building. Deeper probes were installed at approximately 10, 20, 30, and 40 ft bgs at another 5 locations at the South Raymond site.

Three soil borings (SB-01 through SB-03) were also completed during Phase IA field operations, to a depth of approximately 145 ft bgs. The soil borings were located upgradient and downgradient of the potential source at the South Raymond site (Figure 2). The borings were field-logged for lithology and completed as monitor wells DMW-01 through DMW-03, all of which are screened from 135 to 145 ft bgs. Another deep soil boring (SB-06) was completed to a depth of 120 ft bgs inside Unit 5/F for soil and groundwater grab sampling. One additional shallow hand auger boring (SB-05) was completed to 10 ft bgs for soil sampling within the potential source area in Unit 5/F (Figure 2).

During Phase IB, four additional CPT/MIP sample points were completed along East Valencia Drive in order to collect semiquantitative information and evaluate the horizontal and vertical extent of VOC impacts identified during Phase IA. Two deep borings, north (SV-37) and northwest (SV-34) of the site, were completed as multi-port vapor wells, with probes installed every 10 feet from 10 to 88 ft bgs. Soil gas samples were collected from each vapor sampling point (SV-01 through SV-37) to provide quantitative information regarding the distribution of VOCs in the vadose zone. The location of deep multi-port vapor well SV-37 was selected after review of the Phase IB CPT/MIP data (Figure 2).

Also during Phase IB, a deep soil boring (SB-06A) was completed to a depth of 139.5 ft bgs inside Unit 5/F adjacent to boring SB-06. This boring was advanced to obtain soil samples from the deep vadose zone that were not obtained from SB-06 and to collect additional groundwater grab samples.

A fourth soil boring (SB-04) was also completed during Phase IB field operations to a depth of approximately 145 ft bgs. The soil boring was located downgradient of the former degreasers at Chicago Musical, north and west of the South Raymond site. The boring was field-logged for lithology and completed as monitor well DMW-04, which was screened from 135 to 145 ft bgs. Deep multi-port vapor well SV-34 was installed adjacent to well DMW-04 (Figure 2).

As detailed in Sections 2.5 through 2.7, selected soil, soil vapor, and/or groundwater samples were submitted for (1) VOC analysis, including 1,4-dioxane, (2) compound-specific isotope analysis (CSIA), and (3) dissolved gases, major ions, total dissolved solids, ferrous iron, and total organic carbon analyses. In addition, soil samples from selected depth intervals were selected for hydrologic soil properties testing, and selected samples were retained for hexavalent chromium analysis. Soil and groundwater data were validated for conformance with field sampling and laboratory performance standards.

In summary, the field investigation consisted of the following tasks:

- Permitting
- Utility location and clearance
- Geophysical surveying
- Sewer video camera logging
- CPT/MIP testing
- Drilling and well installation
- Active soil gas probe installation and sampling
- Soil, soil gas, and groundwater sampling and analysis
- Land surveying
- Data validation
- Waste soil and water management

These tasks are discussed in Sections 2.1 through 2.11.

2.1 Permitting and Traffic Control Planning

Before field work began, DBS&A prepared and submitted permit applications on behalf of CBS to the Orange County Health Care Agency (OCHCA), Environmental Health Division, for monitoring well installation. The county well permit (#11-04-33) for well installation was approved on April 25, 2011 (Appendix A). The county permit for Phase IB CPT/MIP work along East Valencia Drive (#11-08-06) was approved on July 28, 2011 (Appendix A).

DBS&A also coordinated with the City of Fullerton for required permitting for Phase IB work along Raymond Avenue and East Valencia Drive (City permits were not required for Phase IA field work on the South Raymond site):

- City permit ENG11-00242 was approved on August 2, 2011 for CPT/MIP field work on East Valencia Drive.

- City permit ENG11-00258 was approved on August 24, 2011 for well installation on Raymond Avenue.

- City permit ENG11-00259 was also approved on August 24, 2011 for periodically accessing a well location (well DMW-04) on Raymond Avenue.

In addition, the city encroachment agreement (unnumbered) for accessing the work area on the sidewalk along Raymond Avenue was signed and approved on August 25, 2011 (Appendix A).

Traffic control plans were prepared by California Barricade for Phase IB drilling and video camera work on Raymond Avenue and East Valencia Drive.

2.2 Utility Location and Clearance

Underground Service Alert of Southern California (USA)/Digalert was contacted prior to subsurface field work at the site to help identify public utility line locations. Digalert notified AT&T, Time Warner Cable, Utiliquest, XO Communications, Southern California Edison, Sprint Nextel, Verizon Communications, Metropolitan Water District (MWD), and the City of Fullerton so that those entities could mark their utilities in the area.

The City of Fullerton was also contacted to determine if the city has maps or records available for known utility lines in the vicinity of proposed drilling or testing locations. The city provided electronic files for review showing water and sewer lines in the vicinity of South Raymond Avenue and East Valencia Drive.

Geovision, Inc. (Geovision), of Corona, California, was contracted to perform a supplemental point search for subsurface utility lines (borehole clearance) in the vicinity of planned subsurface sampling locations to ensure that field-marked sample points were not co-located with known utility lines. Under DBS&A field oversight, the search was completed using a variety of field geophysical survey instrumentation, including magnetic, electromagnetic, radar, and physical inspection/location.

The final step in utility line clearance was borehole clearance by hand augering. All subsurface sampling points were first hand augered to 7 feet below grade to help determine if the sampling location was co-located with subsurface utility lines. Utility lines were not encountered in any of the drilling or subsurface testing locations completed for this investigation.

2.3 Geophysical Surveying

Geovision was also subcontracted to complete a wide-area field geophysical survey for other potential utility lines across the North Parking Area, within the South Alley, and within Unit 5/F at the South Raymond site. Compared to the borehole clearance described in Section 2.2, the field geophysical survey covered a broader area that was not based solely on pre-marked point sampling locations. The objective of the field survey was to help identify sewer lines for subsequent video logging and to provide supplemental utility line clearance in advance of drilling and subsurface sampling.

The field survey was completed between April 11 and April 15, 2011. Geovision noted the location of several utility lines in the area, including sanitary sewer, electric, communication, natural gas, and water, as well as unknown linear or non-linear subsurface anomalies related to buried metal or metallic objects, and prepared two summary maps of their findings (Appendix B). Lines consistent with sanitary sewer connections were identified at Units 4/E, 5/F, 6/G, 7/H, 8/I, and 9/J, but only the lines at units 4/E and 5/F were later confirmed by video camera to be sewer lines (Section 2.4). A linear feature extending south from Valencia Drive toward Unit 1/A may also be a sanitary sewer line, but this could not be confirmed.

2.4 Sewer Video Camera Logging

Geovision completed, under DBS&A field oversight, a trace of the sewer connector lines at the South Raymond site. The trace surveys were completed with downhole camera/video-logging instrumentation inserted into the sewer cleanouts within Units 5/F and 6/G, the only units where the sewer cleanouts were accessible (Appendix B). The sewer line surveys began at the opened sewer cleanout and proceeded approximately northwest out of the unit and then northerly toward the main sewer along East Valencia Drive. The identified lines that are consistent with sanitary sewer connections at Units 4/E, 7/H, 8/I, and 9/J and the partial lines in Valencia Drive north of Units 2/B and 3/C were not surveyed because cleanouts at these units could not be located or accessed.

A sewer line survey was also completed by Geovision along the main sewer line under East Valencia Drive. Video-logging instrumentation was inserted into the manhole north and east of Unit 9/J at the South Raymond site and advanced west for approximately 350 feet. The survey terminated where the line was partially subsided and water had accumulated (Appendix B).

On November 14, 2011, a second video survey was completed along the city sewer line under Valencia Drive. (Permit ENG11-00311 was obtained from the City of Fullerton for access to the sewer.) DBS&A contracted National Plant Services Inc. to complete the work. The camera survey was completed inside the sewer line between the east and west manholes in front of the Raymond Avenue property on Valencia Drive (Figure 2). A downhole camera was inserted into the east manhole and advanced slowly toward the west manhole while video imagery was viewed and recorded. Photographs were also taken at points of interest along the line. The survey extended a distance of 631.3 feet along the sewer line before the west manhole was encountered (Appendix B).

Once the video survey was complete, the camera was removed from the sewer in preparation for fluid sampling inside the line. A 2-inch Rediflo stainless steel submersible pump was attached behind the video camera, and dedicated polyethylene sample tubing was attached to the pump. The entire assembly was inserted into the east manhole and progressed 295 feet along the sewer. At this point the pump was turned on in an attempt to collect a fluid sample, but the fluid depth in the line was not high enough to enter the pump intake. The sampling assembly was removed from the line and the east manhole was closed.

2.5 Cone Penetrometer Testing/Soil Vapor Survey

2.5.1 Cone Penetrometer/Membrane Interface Probe Testing

Gregg Drilling and Testing, Inc. (Gregg) of Signal Hill, California, was subcontracted to provide CPT and soil vapor probe installation services under DBS&A field oversight. CPT is a method that logs soil characteristics and stratigraphic information when a cone penetrometer is driven into the subsurface. The electrical piezocone used in the CPT is a 15-square centimeter (cm^2) stainless-steel cone tip manufactured by Gregg. The piezocone and associated computer system was designed and constructed to collect data in accordance with ASTM International method D5778 (ASTM, 2007).

To further evaluate subsurface conditions at selected sampling points the CPT string was followed by a membrane-interface probe (MIP) connected in-line behind the CPT. MIP testing is a relatively rapid field screening tool used for the detection and measurement of VOCs in the subsurface. A heated probe and permeable membrane is advanced by cone penetrometer or other means to a target depth, and as VOCs cross the membrane and enter a carrier gas stream the VOCs are recorded by a detector at the surface. Vironex, Inc. of Santa Ana, California, was subcontracted by Gregg to provide MIP testing services.

During Phase IA field work, CPT points were completed at 21 locations inside Unit 5/F and 20 locations within the North Parking Area (Figure 2). An additional 6 were completed in the South Alley, and 1 of these, SV-08, was completed outside the rear (south) entrance to Unit 5/F within the fenced Unit 5/F trash bin compound. The MIP probe behind the CPT string was used at 5 of the CPT locations inside Unit 5/F and at 8 locations in the North Parking Area.

Inside Unit 5/F, CPT and CPT/MIP testing was completed using a limited access Ramset hydraulic push rig temporarily bolted onto the cement floor of the unit at each location. The Ramset cone penetrometers were advanced to between approximately 31 and 36 ft bgs inside Unit 5/F.

A 20-ton cone penetrometer truck was used for CPTs and CPT/MIPs completed in the North Parking Area and for the CPTs completed in the South Alley. The CPTs and CPT/MIPs in the North Parking Area were completed between approximately 20 and 65 ft bgs. The CPTs in the South Alley were all completed at approximately 20 ft bgs. Phase IA CPT work was completed between April 18 and 28, 2011. Phase IA CPT/MIP work was completed between April 21 and 25, 2011. During Phase IB field work, on September 8, 2011, CPT/MIP testing was conducted at four locations along East Valencia Drive (CPT/MIP-14, -15, -16, and -17 on Figure 2). All CPT and MIP logs are provided in Appendices C and D, respectively.

2.5.2 Vapor Probe Installation

Once the CPT or CPT/MIP string was advanced to depth at each location, the instrumentation was removed and the borehole was completed as a multi-port soil vapor probe. Construction information for each vapor probe is included in Table 1.

The subsurface vapor probes were constructed of a porous polyethylene (PET) sample point suspended on segments of ¼-inch Nylaflow tubing. Around each sample point, 1 foot of No. 3 filter sand was emplaced, and a bentonite seal was installed between probe intervals according to Cal/EPA guidance (Cal/EPA, 2003). Hydrated bentonite chips were emplaced from the upper seal to grade, and each tube was capped with a 2-way sampling valve. Probes completed outside Unit 5/F were protected by a 3-inch traffic box installed at the surface.

2.5.3 Soil Vapor Sampling and Analysis

Soil vapor sampling and mobile laboratory testing services were provided by Jones Environmental (Jones) of Fullerton, California, under DBS&A field oversight. Once vapor probes were installed and allowed to equilibrate for at least 48 hours, Jones conducted soil gas sampling in accordance with Cal/EPA guidance (Cal/EPA, 2003). Soil vapor probes were purged and sampled using gas-tight glass syringes, and the samples were delivered to Jones' on-site mobile laboratory for the analysis of VOCs and 1,4-dioxane using EPA method 8260B. Laboratory reports for analyses performed by Jones are included in Appendix F. Results of soil vapor analyses performed by Jones are summarized in Tables 2a through 2h and 3a through 3e.

Jones conducted Phase IA soil vapor sampling and mobile laboratory analysis at locations SV-01 through SV-33, SV-35, and SV-36 (Figure 2) between April 18 and 29, 2011. Phase IB sampling and mobile laboratory analysis was completed on September 19 and 20, 2011 at new locations SV-34 and SV-37 (Figure 2), as well as the following Phase IA locations:

- SV-01 (all probe depths)
- SV-02-10 (23.5, 36, and 40 ft bgs)
- SV-3 (all probe depths)
- SV-11 (40 ft bgs)
- SV-16 (40 ft bgs)
- SV-27 (10, 23.5, 36, and 40 ft bgs)
- SV-35 (all probe depths)
- SV-36 (all probe depths)

At 8 locations, 1-liter Summa canister samples were also collected to serve as a quality assurance/quality control (QA/QC) for a portion of the field samples. Each canister was equipped with a flow regulator, and samples were collected with a flow rate of approximately 100 milliliters per minute. The 8 locations included:

- During Phase IA field work:
  - SV-04-20 (April 20, 2011)
  - SV-35-40 (April 26, 2011)
  - SV-03-40 (April 27, 2011)
  - SV-26-10 (April 28, 2011)
  - SV-02-36 (April 28, 2011)

- During Phase IB field work (all on September 20, 2011):
  - SV-37-40
  - SV-34-20
  - SV-3-40

Summa canister samples were delivered to Calscience Environmental Laboratories, Inc. (Calscience) in Garden Grove, California, and analyzed for VOCs and 1,4-dioxane using EPA method TO-15. Laboratory reports for vapor analyses performed by Calscience are included in Appendix G. A comparison of the results obtained from methods 8260B and TO-15 is provided in Table 4. Figures 3a through 3d show the results for PCE, TCE, 1,1-dichloroethylene (1,1-DCE), and cis-1,2-DCE, respectively, in soil gas samples collected during April 2011 and analyzed using EPA method 8260B. Also included are samples collected in September 2011 from vapor probes SV-34 and SV-37.

Supplemental soil gas sampling and field analysis were conducted during Phase IB field operations using an RKI Eagle vapor analyzer. The RKI Eagle is a hand-held field probe that provides air sample analyses for oxygen, carbon dioxide (as a volumetric percentage), and methane (as a percentage of the lower explosive limit [LEL]). The RKI was connected to the vapor probe tubing for data collection on September 19 and 20, 2011. The following locations were tested:

- SV-03 (20 and 40 feet)
- SV-34 (all 9 probes between 10 and 88 feet)
- SV-37 (all probes except at 30 and 70 feet, where there was no flow due to low-permeability soil).

Results of methane, carbon dioxide, and oxygen analyses performed in the field are provided in Table 5.

After the Phase IB vapor sampling event was complete, all of the probes inside Unit 5/F and selected probes outside the building (South Alley probes SV-08, -20, -21, -22, -23, and -24 and North Parking Area probes SV-25, -26, -29, -30, -31, -32, and -33) were abandoned. Probe abandonment was completed on September 27, 2011 and October 3, 2011 by removing the well box (if present), manually removing and/or cutting off the Nylaflow tubing at the surface, and backfilling the upper portion of the borehole (approximately 6 inches below grade) with hydrated bentonite chips. The borehole location was then sealed with an asphalt or concrete patch to match the existing surface.

2.6 Soil Borings and Groundwater Grab Sampling

Four soil boings (SB-01, SB-02, SB-03, and SB-04) were completed in the vicinity of the South Raymond site for soil and groundwater grab sampling and monitoring well installation. In addition, two soil borings (SB-06 and SB-6A) were completed inside Unit 5/F for soil and groundwater grab sampling, one (SV-34) was completed off-site for soil vapor probe installation, and one (SV-37) was completed off-site for soil and groundwater grab sampling, as well as for soil vapor probe installation (Figure 2). All soil borings were advanced using a hollow stem auger rig. A hand auger boring labeled SB-05 was also completed to 10 ft bgs inside Unit 5/F to collect a soil sample near relatively high VOC concentrations detected inside the unit during soil vapor sampling. The SB-05 sample was submitted for VOC and CSIA analysis.

Borings SB-01, SB-02, SB-03, SB-05, and SB-06 were completed during Phase IA field work in May and June 2011. Borings SB-04, SB-6A, SV-34, and SV-37 were completed during Phase IB field work in August and September 2011.

Soil samples were collected every 5 or 10 feet of boring depth using a split-spoon sampler lined with three pre-cleaned brass sample sleeves (rings). Soil samples were logged in the field according to ASTM method D2488, *Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)* (ASTM, 2000). Boring logs prepared for each boring are provided in Appendix E.

The two sleeves with the most intact and most complete recovery from each depth interval were sent by overnight courier to the DBS&A Soil Testing Laboratory (DBS&A laboratory) for hydraulic properties analyses. At boring DMW-01, grab samples from the 19.5-, 119.5-, and 140.5-foot sample intervals were also collected in 1-gallon plastic bags and sent to the DBS&A laboratory.

Hydraulic properties analyses included saturated and unsaturated hydraulic conductivity, dry bulk density, moisture retention curves, moisture content, Atterberg limits, and particle size analysis using the methods listed below:

- Particle size analyses

– Particle size analysis (wet)	ASTM D422
– Atterberg limits	ASTM D4318
– Classification for engineering purposes	ASTM D2487

- Hydraulic properties package (HPP)

– Saturated hydraulic conductivity	ASTM D2434M
– Initial gravimetric and volumetric water content	ASTM D2216
	ASTM D7263
– Dry bulk density	ASTM D7263
– Calculated total porosity	ASTM D7263
– Moisture characteristics (5 to 7points)	ASTM D6836
	ASTM D6836M
	MOSA1 Chp. 26
– Calculated unsaturated hydraulic conductivity	ASTM D6836
	van Genuchten, 1980
	van Genuchten et al., 1991
– Specific gravity (particle density)	ASTM D854
	ASTM C127

Volumetric water content, total organic carbon (TOC, using the Walkley-Black method) and particle size analyses were also conducted. The hydraulic properties package (HPP) analyses were conducted on samples selected from each boring for each major soil type identified. Results of soil analyses performed by DBS&A are provided in Appendix H and summarized in Table 6.

Soil samples for VOC analysis (including 1,4-dioxane) using EPA method 8260B were collected from the third brass sleeve collected at each depth interval using the Encore sampling method in accordance Cal/EPA guidance (Cal/EPA, 2004). Selected VOC samples were also collected using a Terracore sampler (DMW-02-29.5, DMW-02-89.5, DMW-01-59.5 and DMW-01-89.5). Upon collection, each sample container was properly labeled and placed on ice in a sample cooler, and chain of custody documentation was completed. At the end of each day, a courier from Calscience took control of the samples and delivered the samples to the laboratory for analysis. Results of soil analyses performed by Calscience are provided in Appendix G and summarized in Table 7. Figures 4a through 4d show the results for PCE, TCE, 1,1-DCE, and cis-1,2-DCE, respectively, in soil samples.

Soil samples for CSIA analysis were sent on ice by overnight courier for delivery to Zymax in Escondido, California. The CSIA samples were held until VOC analyses were performed to confirm that concentrations were adequate for conducting the CSIA analyses. Based on the VOC results, CSIA analysis was conducted on Phase IA soil samples SB-05-5 and SB-05-5 duplicate, both collected on May 25, 2011. Results of soil analyses performed by Zymax are provided in Appendix I and summarized in Table 8.

Once groundwater was encountered in each boring, a grab groundwater sample was collected using a dedicated bailer or decontaminated grab sampler and retained for fixed laboratory analysis for VOCs (including 1,4-dioxane) using EPA method 8260B. Grab groundwater samples were collected from the following borings and depths:

- SB-01: 109.5 and 144 ft bgs
- SB-02: 109.5 and 145 ft bgs
- SB-03: 112 and 143.5 ft bgs
- SB-04: 105 and 135 ft bgs
- SB-06: 105 and 140 ft bgs
- SB-6A: 95 and 135 ft bgs
- SV-37: 99 and 135 ft bgs

Following sample collection, borings SB-05, SB-06, and SB-06A were abandoned by adding cement-bentonite slurry and/or hydrated bentonite pellets from total depth to just below the surface in accordance with California Department of Water Resources (CDWR) standards (CDWR, 1991). The ground surface was completed with a concrete patch to match existing grade. Borings SV-34 and SV-37 were completed as multi-port soil vapor probes as described in Section 2.5.2. Probes were installed in SV-34 and SV-37 every 10 feet between 10 and 80 ft bgs, with a final probe at 88 ft bgs. Borings SB-01, SB-02, SB-03, and SB-04 were completed as groundwater monitoring wells as described in Section 2.7.

2.7 Monitoring Well Installation and Groundwater Sampling

After soil and groundwater grab sampling was complete, soil borings SB-01, SB-02, SB-03, and SB-04 were completed as groundwater monitoring wells. Gregg provided well installation services. Drilling and well installation was completed using a hollow stem auger rig. Each well was constructed of 4-inch Schedule 40 PVC casing using the auger "pull-back" method, with 10 feet of Schedule 40 pre-slotted 0.020-inch well screen installed from 135 to 145 ft bgs. The well screen was surrounded by No. 3 filter sand pack in the boring annulus to 3 feet above the screen. Above the filter pack, 3 feet of bentonite slurry seal was installed in the boring annulus, and the remaining length of the annulus was filled with a cement-bentonite slurry to approximately 1 foot bgs. Each well was finished with a traffic-rated surface and flush-mount well box. Boring logs and well construction diagrams are included in Appendix E.

After well installation, wells were developed using rig-assisted wireline surging, bailing, and pumping. Gregg, under DBS&A field supervision, used a Smeal well development rig to complete the well development on May 31, 2011 (DMW-02 and DMW-03), June 1, 2011 (DMW-01 and DMW-03), and September 8, 2011 (DMW-04). Well development logs are included in Appendix J.

Water level measurement, well purging, and groundwater sampling was conducted at least 48 hours after well development. Water levels were measured using a decontaminated Solinst electronic water level meter. Rounds of water level measurement and groundwater sampling were completed on June 6, 2011 (DMW-03) and June 7, 2011 (DMW-01 and DMW-02). A second round of sampling was completed on September 13, 2011 (DMW-01 and DMW-03) and September 14, 2011 (DMW-02 and DMW-04). Groundwater sampling logs are included in Appendix K; water level data are provided in Table 9.

Groundwater sampling was completed using a Grundfos electric submersible pump and dedicated ⅝-inch polyethylene tubing. Groundwater samples were collected from each well using low-flow sampling methodology and retained for the following analyses:

- VOCs (including 1,4 dioxane) using EPA method 8260B
- CSIA
- Dissolved gases (methane, ethane, and ethene) using RSKSOP-175 (NRMRL, 2004)
- Sulfide using standard method 4500-S^2
- Anions using standard method 2320B and EPA method 300.0
- Cations using EPA method 6010B
- Ferrous iron (Fe(II)) using standard method 3500-Fe
- Total organic carbon (TOC) using standard method 5310
- Total dissolved solids (TDS) using standard method 2540C
- Hexavalent chromium using EPA method 7199 (selected wells)

Upon collection, each sample container was properly labeled and placed on ice in a sample cooler, and chain of custody documentation was completed. At the end of each day, a courier from Calscience took control of the samples and delivered the samples to the laboratory for analysis. Results of groundwater analyses performed by Calscience are provided in Appendix G and summarized in Tables 10 and 11. Figures 5a through 5d show the results for PCE, TCE, 1,1-DCE, and cis-1,2-DCE, respectively, in groundwater samples collected in June 2011. Figures 6a through 6d show the results for PCE, TCE, 1,1-DCE, and cis-1,2-DCE, respectively, in groundwater samples collected in September 2011.

Groundwater samples for CSIA analysis were sent on ice by overnight courier for delivery to Zymax in Escondido, California. The CSIA samples were held until VOC analyses were performed to confirm that concentrations were adequate for conducting the CSIA analyses. Based on the VOC results, CSIA analysis was conducted on Phase IA groundwater grab sample SB-06-140 (collected June 3, 2011) and on groundwater samples from monitoring wells DMW-01 (collected June 7, 2011), DMW-02 (collected June 7, 2011), and DMW-03 (collected June 6, 2011).

CSIA analysis was also conducted on Phase IB groundwater grab samples SV-37-99 (collected September 9, 2011) and SV-37-135 (collected September 12, 2011) and on groundwater samples from monitoring well DMW-04 (DMW-04 and DMW-04 duplicate, collected September 14, 2011). Results of CSIA analyses performed by Zymax are provided in Appendix I and summarized in Table 8.

2.8 Data Validation

An independent data validator, Nankoweep Environmental Services (Nankoweep) of Golden, Colorado, was contracted to perform third-party validation of field and fixed laboratory analytical results. Nankoweep reviewed the mobile and fixed laboratory data output and QC procedures against the required standard EPA methodologies and guidance documents, such as Cal/EPA (2003), to ensure that laboratory procedures and data were in compliance with QA/QC requirements. A written report of findings was prepared for each group of samples reviewed (Appendix L). No significant data quality issues were identified that affect the usability of the data from the CBS site investigation.

2.9 Land Surveying

Upon completion of the field activities, a California-registered land surveyor, Smith Surveying, Inc. (Smith) of Big Bear City, California, was retained to survey the field sampling and monitoring well locations for horizontal and vertical coordinates. Smith also provided horizontal coordinates for the following South Raymond reference point locations:

- The corners of the 500 South Raymond Avenue building
- The four interior corners of Unit 5/F
- The four interior corners of the walkway west of Unit 5/F
- Existing points SG-3 and SG-4

Smith produced a site plan that includes a list of the surveyed points and their horizontal and vertical coordinates as well as information regarding the utilized datums and local monuments (Appendix M).

2.10 Field Photographs

Photographs of field operations were taken periodically to provide a record of field activities. Records of the photographs were entered into a list maintained in the field records with a description of the subject and the general orientation (north, south, east, west) of the camera view. Selected field photographs are provided in Appendix N.

2.11 Waste Management

Waste soil cuttings, decontamination fluids, purge water, and other potentially contaminated investigation-derived waste (IDW) from field operations were directed to on-site soil bins, soil drums, or fluid drums in preparation for waste characterization sampling and proper off-site disposal. Waste soil bins and drums were labeled and staged on-site pending receipt of waste sample data, waste profiling, and pickup scheduling. Belshire Environmental Services (Belshire) provided waste management, profiling, and transport/disposal services.

Four 20-cubic yard (yd^3) bins provided by Belshire were used for soil containment. Bins 1 and 2 were used during Phase IA field work and Bins 3 and 4 were used for Phase IB field work. Before the bins were available Phase IA waste soil was directed to six 55-gallon drums temporarily staged at the site.

Phase IA bin soil samples were collected for waste characterization on May 25, 2011 (Bin 1) and June 7, 2011 (Bin 2). Soil samples from the six drums were collected for waste characterization on June 3, 2011. Waste soil samples were analyzed for the following parameters required by Belshire:

- Total petroleum hydrocarbons (TPH) (EPA method 8015) (diesel-range organics [DRO] and gasoline-range organics [GRO])

- VOCs (EPA method 8260B), including 1,4-dioxane
- Title 22 metals, including mercury (EPA methods 6010B and 7471A)
- Polychlorinated biphenyls (PCBs) (EPA method 8082)
- Semivolatile organic compounds (EPA method 8270C)

Wastewater from Phase IA field equipment decontamination, purging, well sampling, and well development (wells DMW-01, DMW-02, and DMW-03) was directed to 22 drums temporarily staged inside Unit 5/F at the site. Wastewater samples from three representative Phase IA drums were collected on June 3, 2011 and were analyzed for VOCs (EPA method 8260), including MTBE and 1,4-dioxane.

On June 10, 2011, Belshire profiled the waste soil from Bins 1 and 2 and all six soil drums as non-hazardous solid waste. Bin 1 was removed from the site and transported on July, 29, 2011 to the Soil Safe thermal desorption facility at 12328 Hibiscus Avenue in Adelanto, California. Bin 2 was removed from the site and transported to Soil Safe on August 1, 2011. The removal of Bins 1 and 2 are listed in manifest 37479 and identified as Loads 001 and 002. Soil Safe provided a soil certificate for Load 002 (10.40 tons) on August 12, 2011 and for Load 001 (6.64 tons) on August 19, 2011.

On August 31, 2011 the six soil drums were removed from the site and transported under manifest #37479 (Load 003) to Soil Safe, who provided a soil certificate (1.94 tons) for Load 003 on October 6, 2011. A total of 18.98 tons of soil was received by Soil Safe from Bin 1, Bin 2, and the six soil drums.

On July 6, 2011, Belshire profiled the Phase IA wastewater from the 22 drums as non-hazardous liquid waste. The water drums were removed from the site on July 25, 2011 and transported under manifest 694194 to the Demenno/Kerdoon (D/K) wastewater recycling facility at 2000 North Alameda Street in Compton, California. A total of 1,210 gallons from Phase IA field work was received at the facility. A certificate of destruction for the Phase IA wastewater was received from D/K on September 6, 2011.

Phase IB bin soil samples were collected on September 14, 2011 (Bin 3) and September 16, 2011 (Bin 4). The Title 22 metals analysis for Bin 4 detected a lead concentration of 229 milligrams per kilogram (mg/kg). The sample was further tested using the toxicity characteristic leaching procedure (TCLP) and the soluble threshold limit concentration (STLC). The TCLP analysis is preceded by EPA preparation method 1311 and the STLC analysis is preceded by California preparation method T22.11.5. After the sample preparations, the samples were analyzed for lead again using EPA method 6010B.

The TCLP and STLC analyses did not detect lead, which allowed the contents of Bins 3 and 4 to be characterized as non-hazardous solid waste for disposal purposes. Phase IB Bins 3 (Load 004, 13.73 tons) and 4 (Load 005, 3.27 tons) were removed from the site on October 25, 2011 and transported under Manifest 37479 to Soil Safe. A soil certificate (17.00 tons) was provided for Bins 3 and 4 combined on November 4, 2011.

Phase IB wastewater from field equipment decontamination and DMW-04 well development, purging, and sampling was directed to seven drums temporarily staged inside Unit 5/F. Water samples were collected from two representative drums on September 16, 2011 and were analyzed for VOCs (EPA method 8260, including MTBE and 1,4-dioxane) and profiled by Belshire as nonhazardous liquid waste. The Phase IB wastewater drums were removed from the site on October 25, 2011 and transported under manifest 695863 to the D/K wastewater recycling facility at 2000 North Alameda Street in Compton, California. A total of 385 gallons from Phase IB field work was received at the facility. A certificate of destruction for the Phase IB wastewater was received from D/K on November 7, 2011.

3. Analysis and Discussion

OCWD has indicated that they believe CBS/Fender's operations at the South Raymond site to be a "likely" source of PCE contamination in groundwater, as opposed to a "major" or "definite" source (Waddell, 2011c, vol.16, pp. 2870:11-22). Although CBS/Fender had a permit to use 1,1,1-trichloroethane (TCA) (City of Fullerton, 1968), PCE was the only solvent known to have been used at the South Raymond site, based on deposition testimony of a former CBS/Fender employee (Cherry, 2007, pp. 31:19-32:1, 36:20-37:12). A PCE degreaser was located in the northeast corner of Unit 5/F during the early 1970s through approximately 1984 (Centeno, 2011). PCE for the degreaser was initially stored in an aboveground storage tank (AST) inside Unit 5/F adjacent to the degreaser (Figure 1). Later, an AST was located outside along the north end of Unit 5/F (Cherry, 2007, pp. 33:11-13, 34:17-35:6, 109:11-24). CBS/Fender did not store PCE at any other location on the site (Cherry, 2007, pp. 127:5-10). After CBS/Fender operations had ceased, PCE was also used at 500 South Raymond Unit D by Terry's Automotive Inc (DTSC, 2002). This location is in Unit 3A to the west of the CBS/Fender Unit 5/F (Figure 1).

The use of PCE was limited to about two or three times per week (Cherry, 2007, pp 79:3-8), for a period of about two hours (Centeno, 2011). There were no reports of spills (Cherry, 2007, pp. 79:17-80:21; Centeno, 2011). DBS&A's 2011 inspection of the floor inside Unit 5/F near the former degreaser and the former AST revealed very limited staining, and the 4-inch-thick concrete appeared to be in very good condition. No floor drains or sumps were present inside Unit 5/F.

DBS&A's analysis of the South Raymond property relies upon information collected during our investigation as well as, in places, some of the information obtained in earlier investigations at the South Raymond property (ABC, 2009; EST, 2010) and the adjacent Chicago Musical site (AMEC, 2011a, 2011b). The data indicate that (1) a relatively minor release of some PCE to shallow soil has occurred at the South Raymond site, (2) at depth, PCE in soil has migrated south in the vadose zone from the Chicago Musical site along with other chemicals, and (3) PCE in soil from sources due to CBS/Fender operations at the South Raymond site has not impacted groundwater. The bases for these conclusions are provided in Sections 3.1 through 3.3.

3.1 A relatively minor release of some PCE to shallow soil has occurred at the South Raymond site.

PCE was found in shallow (above about 20 ft bgs or less) soil and soil gas samples at the South Raymond site in the vicinity of the former aboveground PCE storage tank north of Unit 5/F and near the former degreaser located about 10 to 15 feet away, inside the northeast corner of Unit 5/F. The release of PCE at the South Raymond site is relatively minor in comparison to the PCE released at the neighboring Chicago Musical site, where the maximum PCE detected in shallow soil gas (62,000 µg/L at 10 ft bgs at SG30 [AMEC, 2011b]) is roughly 50 times greater than at the South Raymond site (1,270 µg/L at 20 ft bgs at SV-10 [Figure 3a]).

At shallow depth (above about 20 ft bgs), PCE is by far the predominant chlorinated solvent found in soil beneath the former degreaser and storage tank at the South Raymond site. Locally elevated concentrations of PCE in shallow soil gas in the area of Unit 5/F are shown in Figure 3a. The detections of PCE in shallow soil and soil gas near the former degreaser and AST are consistent with reported PCE use. DBS&A found no indication that PCE was released by any mechanism other than at the land surface based on (1) the distribution of PCE concentrations in shallow soil in the immediate vicinity of the location where PCE was stored and used (Figure 3a), (2) inspection of the interior of Unit 5/F, where we found no indication of floor drains or sumps, and (3) inspection of the sewers (Appendix B).

Figure 4a shows the concentrations of PCE in soil samples collected during the DBS&A investigation, and Figure 7, a west-east hydrogeologic cross section, shows PCE along with TCE and 1,1-DCE in soil at the South Raymond site. As shown by the pie charts in Figure 7, the concentration pattern in shallow soil is distinct from that below about 20 to 30 ft bgs, where there are increasing proportions of TCE and 1,1-DCE. Soil concentrations of TCE and 1,1-DCE, chemicals not known to have been used at the South Raymond site, tend to increase with depth toward the base of the stratified sand zone about 40 ft bgs. The tendency for TCE and 1,1-DCE in soil to be absent immediately beneath source areas and to increase with depth suggests that TCE and 1,1-DCE were not released from overlying sources. Additionally, no 1,1,1-TCA, a parent of 1,1-DCE, was found in soil or soil gas beneath the former South Raymond source areas, indicating that 1,1,1-TCA was not released at the South Raymond site.

3.2 At depth, PCE in soil has migrated south in the vadose zone from the Chicago Musical site along with other chemicals.

Based on the types of chemicals found, the depth at which these chemicals are found, and the spatial distribution of concentrations of these chemicals in soil and soil gas, as well as MIP data, there is PCE in soil beneath the South Raymond site that is attributable to migration from the Chicago Musical site.

Beneath potential sources at the South Raymond site, shallow soil samples (about 10 ft bgs) contain few chemicals other than PCE, the only chlorinated VOC reported to have been used at this site. But below about 30 to 40 ft bgs, other chemicals such as TCE and 1,1-DCE occur along with PCE. PCE, TCE, and 1,1-DCE are found in high concentrations at the Chicago Musical site, where the maximum soil gas concentration of PCE is 79,000 µg/L at 42 ft bgs, the maximum TCE is 12,000 µg/L at 60 ft bgs, and the maximum 1,1-DCE is 33,000 µg /L at 60 ft bgs (AMEC, 2011a, 2011b). These concentrations are more than 10-fold greater than those at the South Raymond site.

Figure 8 is a north-south hydrogeologic cross section that also shows the relative concentrations of PCE, TCE and 1,1-DCE in soil and groundwater between the South Raymond site and the nearby Chicago Musical site. As shown by the pie charts in this figure, the concentration patterns in soil at the Chicago Musical site typically show significant proportions of TCE and 1,1-DCE. This pattern persists to the water table and is also found extending off-site to the south, toward the South Raymond site.

Figure 8 also shows that the 40-foot soil depth corresponds approximately with the base of a stratified sand/silt sequence, which is continuous between the Chicago Musical and the South Raymond sites. Underlying this is a 20- to 30-foot-thick zone of relatively low-permeability clay (in places less than 10^{-7} centimeters per second [cm/s] [Table 6, Figures 9 and 10]) with near saturated water content and thus very low permeability to downward vapor phase migration. At the Chicago Musical site, PCE, TCE, and 1,1-DCE concentrations in soil and soil gas tend to peak near the base of this stratified sand/silt sequence (Figure 8). The stratified zone is permeable, especially in the horizontal direction, and has relatively low water content, making it a favorable zone for lateral vapor phase, as well as liquid phase (perched), transport. Vapor transport above 40 feet is expected by diffusion alone.

PCE, TCE, and 1,1-DCE concentrations in soil gas at the 40-foot depth show a consistently decreasing pattern along a horizontal path from Chicago Musical to the South Raymond site (Figure 11). MIP data collected on-site and off-site between the South Raymond and Chicago Musical sites confirm the decreasing concentrations of chlorinated VOCs from the Chicago Musical to the South Raymond site. Figure 12 shows the signature of the electron capture detector (ECD) from the MIP borings. By far, the thickest interval with the highest concentration of VOCs is at MIP-15 along Valencia Drive at about the 40-foot depth. Clearly, the greatest concentration of total VOCs in soil gas (sum of PCE, TCE, and 1,1-DCE concentrations) occurs at Chicago Musical (Figure 13). Based on soil, soil gas, and MIP data between the Chicago Musical and the South Raymond sites, it appears that contaminants at the 40-foot horizon have migrated laterally south-southeast from Chicago Musical in a fairly narrow zone toward the South Raymond site.

After migrating laterally in the vadose zone at about 40 ft bgs, PCE, TCE, and 1,1-DCE from Chicago Musical diffused upward to shallower soil depths beneath the South Raymond site. Just north of the building at the South Raymond site (e.g., SV-1, SV-2), 1,1-DCE occurs at low concentrations (about 2 to 30 micrograms per liter [μg/L]) in shallow soil gas (30 ft bgs or less), but concentrations increase significantly at the 36- to 40-foot depth, to greater than 200 μg/L (Figure 14). The pattern of upward-decreasing 1,1-DCE concentrations from about 40 ft bgs indicates that 1,1-DCE likely migrated upward from the 40-foot horizon by vapor diffusion. A similar pattern is shown for TCE. The data are consistent with testimony that neither TCE, 1,1-DCE, or 1,1,1-TCA were used or released at the South Raymond site.

Figure 14 also shows contours of the PCE soil gas plume extending laterally from Chicago Musical to the South Raymond site, along the base of the stratified sand and silt at around 40 ft bgs. Because some of the PCE migrated from the Chicago Musical site to the South Raymond site along with the TCE and 1,1-DCE, and because the TCE and 1,1-DCE diffused upward to shallower soil, some of the PCE in shallow soil above 40 ft bgs is also likely from Chicago Musical. Therefore, although PCE was released to soil from sources at the South Raymond site, some of the PCE in soil there is also from the Chicago Musical site.

A relatively permeable deep sand/gravel/silt stratum present within the vadose zone at about 70 to 90 ft bgs beneath Chicago Musical also likely served as a transport pathway southward toward the South Raymond site. Elevated concentrations of predominantly TCE and 1,1-DCE occur in soil samples from this horizon beneath Chicago Musical and in this same zone at borings SV-37, SB-01, SB-02 and SB-06a (Figures 7 and 8). A similar pattern of elevated TCE and 1,1-DCE is present in the lower part of the vadose zone at the South Raymond site, and these constituents are likely transported from the Chicago Musical site (Figures 7 and 8).

An expert for the Orange County Water District, Richard Waddell, agrees with the interpretation of data showing lateral migration of contaminants through soil from the Chicago Musical site to the South Raymond site (Waddell, 2011b, vol. 14, pp. 2468:8-20).

3.3 PCE in soil from sources due to CBS/Fender operations at the South Raymond site has not impacted groundwater.

Although CBS/Fender did use PCE at the South Raymond site, there is no nexus between PCE found in soil near the AST/degreaser source areas and the PCE detected in the middle zone of the shallow aquifer (±100 ft bgs) as defined by Waddell (2011a). In the vicinity of the South Raymond property, including the north portion along Valencia, there is a general tendency for PCE in soil and soil gas to decrease with depth to about 40 ft bgs, at which point concentrations markedly increase. Within the underlying low-permeability layer of silt and clay, PCE concentrations generally decrease again toward the water table. In fact, in all of the four deep soil borings that reach to the water table near the potential source areas at the South Raymond site, PCE is absent (not detected [ND]) in soil at one or more depths above the regional water table. For example, PCE was not detected in SB-01 at 79.5 ft bgs, in CBS-GW-01 at 80 ft bgs, in SB-06 at 60 ft bgs, or in SB-06A at 81.5 ft bgs (Figure 15, Tables 2 and 3), all depths that are above the historical high water table. These four borings are all located within about 50 feet of each other and in the immediate area of the former AST/degreaser, both inside and outside Unit 5/F. Together, they reveal a consistent interpretation, namely, that PCE did not reach groundwater beneath the former source areas at the South Raymond site.

Downward migration of PCE from CBS/Fender operations at the South Raymond site is limited because of the relatively small mass of PCE that may be attributable to CBS/Fender operations (Figures 3a and 13). Geologic conditions also explain in part why PCE did not reach the water table. The downward migration of PCE in soil beneath the South Raymond site is limited in both the liquid and vapor phase by low-permeability (less than 10^{-7} cm/s) clay layers between about 45 and 65 ft bgs. The permeability of the vadose zone materials was well characterized by testing representative samples in the DBS&A laboratory (Table 6, Appendix G). Based on geologic boring logs, CPT profiles, and laboratory data, this clay layer appears to be laterally extensive beneath the South Raymond property (Figures 9 and 10).

An alternate explanation for the absence of PCE at depth beneath the South Raymond site is that PCE is known to degrade to TCE under environmental conditions where there is very little oxygen. However, DBS&A found no indication that PCE was depleted in deep soil simply because it was degraded to TCE. Oxygen concentration data collected in the soil gas monitor wells indicate that the anaerobic conditions necessary for reductive dechlorination are not present (Table 5), and other PCE-TCE degradation compounds, including cis-1,2 DCE, are not present in soil (Table 6) or soil gas (Tables 1 and 2) under the South Raymond site, but are found under the Chicago Musical site. The TCE that is present in the vadose zone has another source: lateral migration from the Chicago Musical site (Figure 12).

The TCE found in deep soil samples (e.g., Figure 8), about 90 to 100 ft or more bgs at the South Raymond site, is likely due also to upgradient and off-site sources of groundwater contamination that is predominantly due to TCE. In 2006, the water table beneath the South Raymond site rose to about 90 ft bgs before declining, and a similar condition likely existed in the early to mid-1990s. When contaminant plumes drain through soil during a falling water table condition, a contaminant residue having the chemical characteristics of the groundwater plume is left in the soil.

Data collected during our investigation indicate that there is no locally elevated PCE in the regional aquifer (middle zone of the shallow aquifer) beneath the South Raymond site. The absence of a PCE "hot spot" in groundwater beneath the South Raymond site is consistent with the above lines of evidence indicating that PCE from releases at the South Raymond site were minor and did not impact the underlying groundwater. Grab samples of groundwater near the former degreaser and the shallow soil gas hot spot inside Unit 5/F showed no evidence of PCE impacts near the water table, the depth most likely to be impacted if contaminants were migrating downward through the vadose zone soils and impacting groundwater. Grab groundwater samples collected inside Unit 5/F near the former degreaser in 2011 indicate PCE concentrations in SB-06 and SB-06A of 8 µg/L at 95 ft bgs (just below the September 2011 water table), 4.8 µg/L at 105 ft bgs (just below the June 2011 water table), 6.3 µg/L at 135 ft bgs, and 4.9 µg/L at 140 ft bgs (Table 10). And approximately 40 feet away at DMW-01, just outside the northwest corner of Unit 5/F, PCE was 8.6 µg/L at 109.5 ft bgs (just below the water table depth measured in May 2011) and 9.0 µg/L at 144 ft bgs (Table 10).

These PCE concentrations at the water table beneath the potential South Raymond source areas are about the same as those in upgradient and downgradient grab samples near the water table at this same time. The general direction of groundwater flow is to the west, although this may vary seasonally, roughly between northwest to southwest. Grab groundwater samples collected during drilling indicated PCE concentrations of 8.4 µg/L at 112 ft bgs in upgradient well DMW-03 and 8.7 µg/L at 109.5 ft bgs in downgradient well DMW-02 (Table 10).

Screened and developed monitor wells DMW-1, DMW-2, and DMW-3 also show no indication of a PCE impact from the South Raymond site (Figure 6a). PCE was detected at concentrations ranging from 5.7 to 7.5 µg/L in water samples collected from these three wells in September 2011 (Table 10). Water samples collected from these same three wells in June 2011 contained PCE at 3.9 to 8.9 µg/L, respectively. The June 2011 concentrations are similar to those found in September 2011. CSIA of groundwater samples (Table 8) also indicates that the VOCs in groundwater sampled upgradient and downgradient of the South Raymond site are from the same source and exhibit no evidence of being from the South Raymond site.

Groundwater upgradient and downgradient from the South Raymond property has the same composition with respect to contaminants other than VOCs that are relevant to the regional remediation proposed by OCWD. The points representing the composite chemical proportions of major cations and anions all plot in the same location on the trilinear diagram (Figure 16), indicating that the major inorganic chemistry is essentially the same in the on-site monitor wells. Table 12 shows that nitrate, perchlorate, and 1,4-dioxane are also essentially the same in the upgradient and downgradient on-site monitor wells. Therefore, the South Raymond site is not a source of these chemicals to groundwater.

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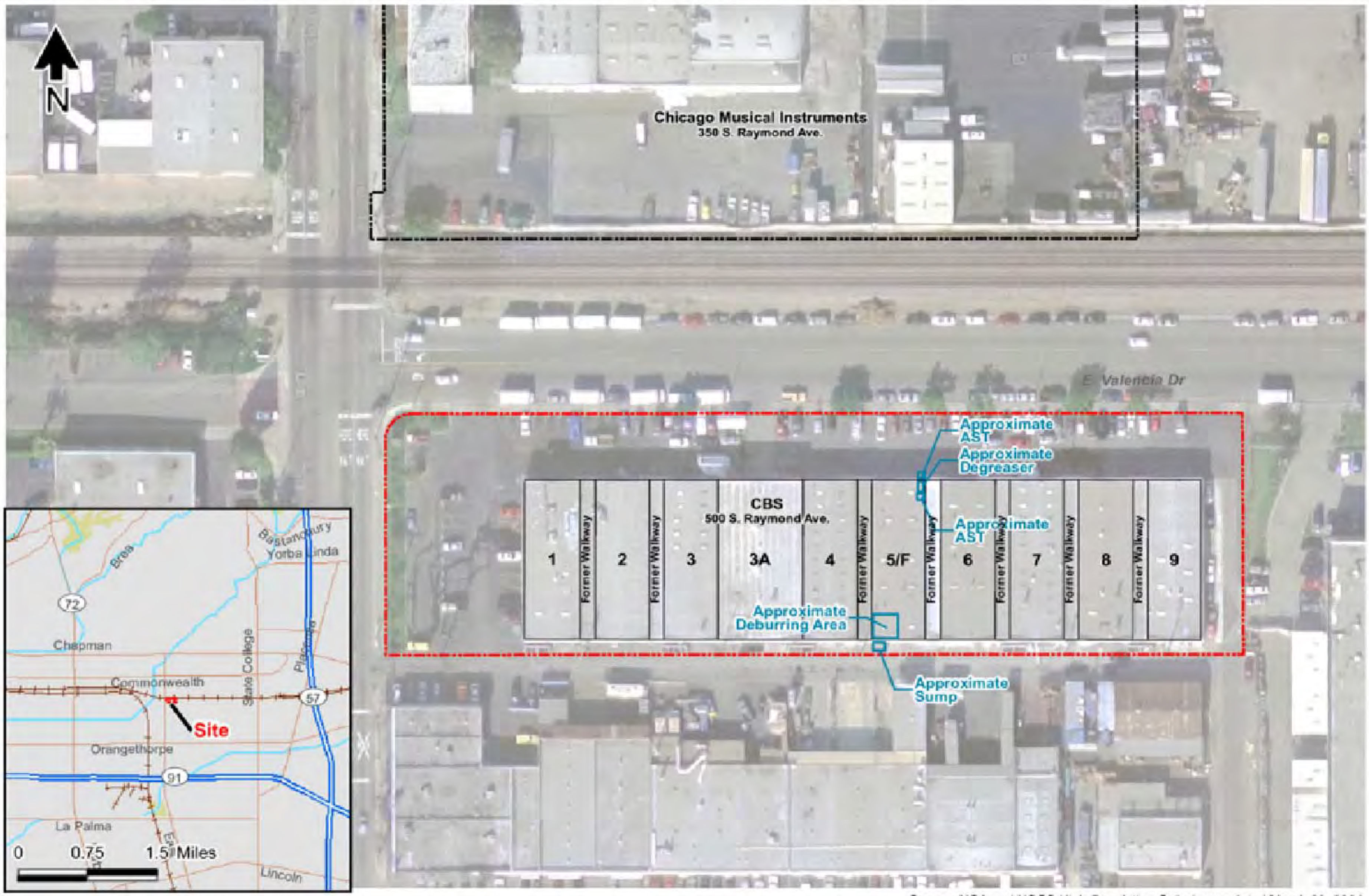
Figures

Q:/PROJECTS/LT10.0175_CBS/GIS/MXDS/WORK_PLAN_FIGURES/FIG01_SITE_MAP.MXD 112//3



Source: NGA and USGS High Resolution Orthoimage dated March 23, 2004

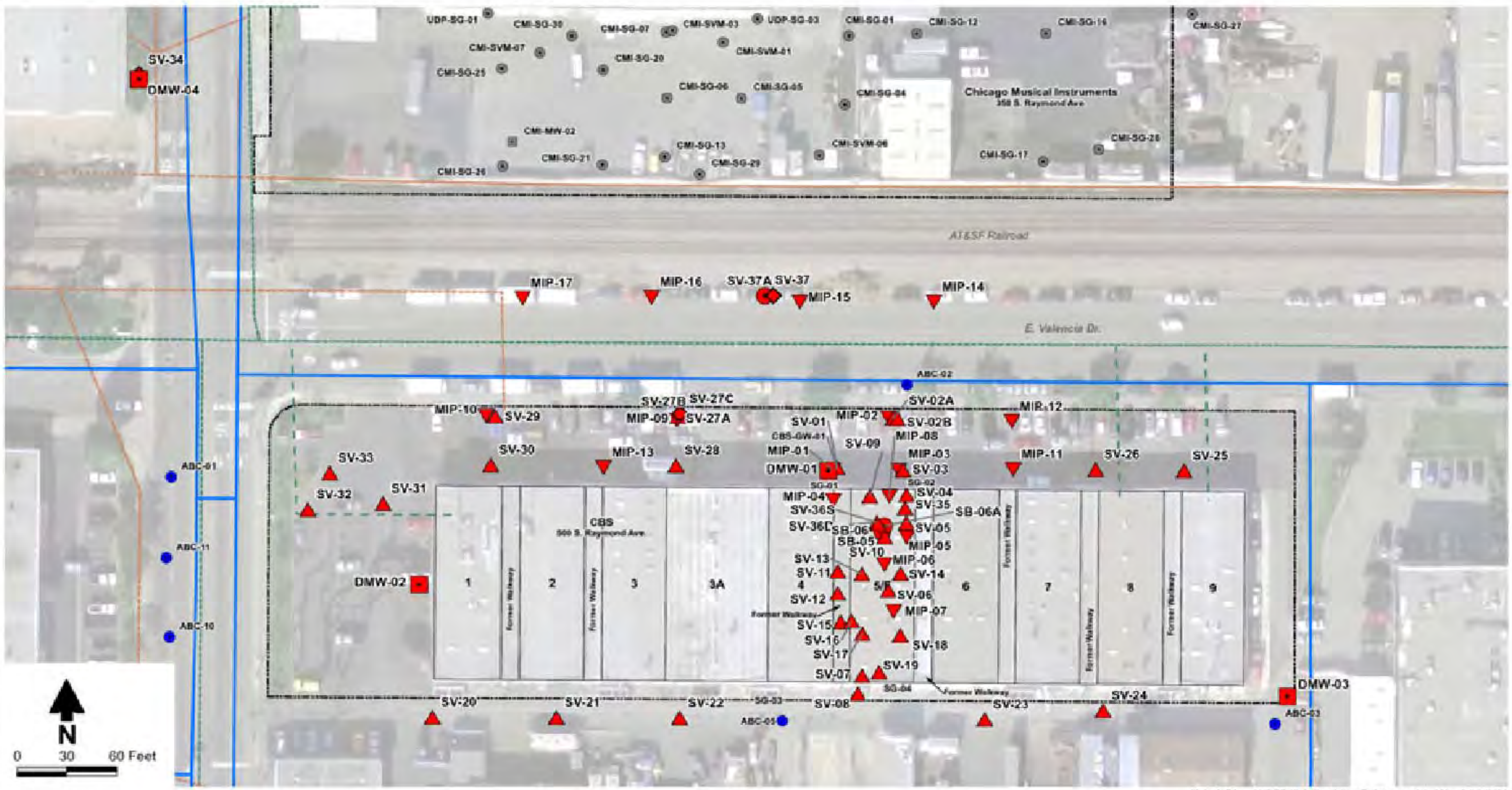
0 50 100 Feet

Daniel B. Stephens & Associates, Inc.
3/4/2011
JN LT10.0175

CBS
Site Plan and Location Map

Figure 1

20304-39



Explanation

- Sanitary sewer
- Sanitary sewer (approximate)
- Storm water (lined)
- Storm water (unlined)
- Storm water (underground and approximate)
- Water line
- △ Cone penetrometer test/soil vapor probe
- ◇ Soil vapor probe
- ▽ Cone penetrometer test/membrane interface probe
- ⊕ Hand auger
- ⊙ Soil boring with groundwater grab sample(s)
- ▣ Monitor well

Current investigation locations in red
Previous investigation locations in blue
Locations at other sites in grey

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1/26/2012 JN LT10.0175

CBS
Sample Locations
Figure 2

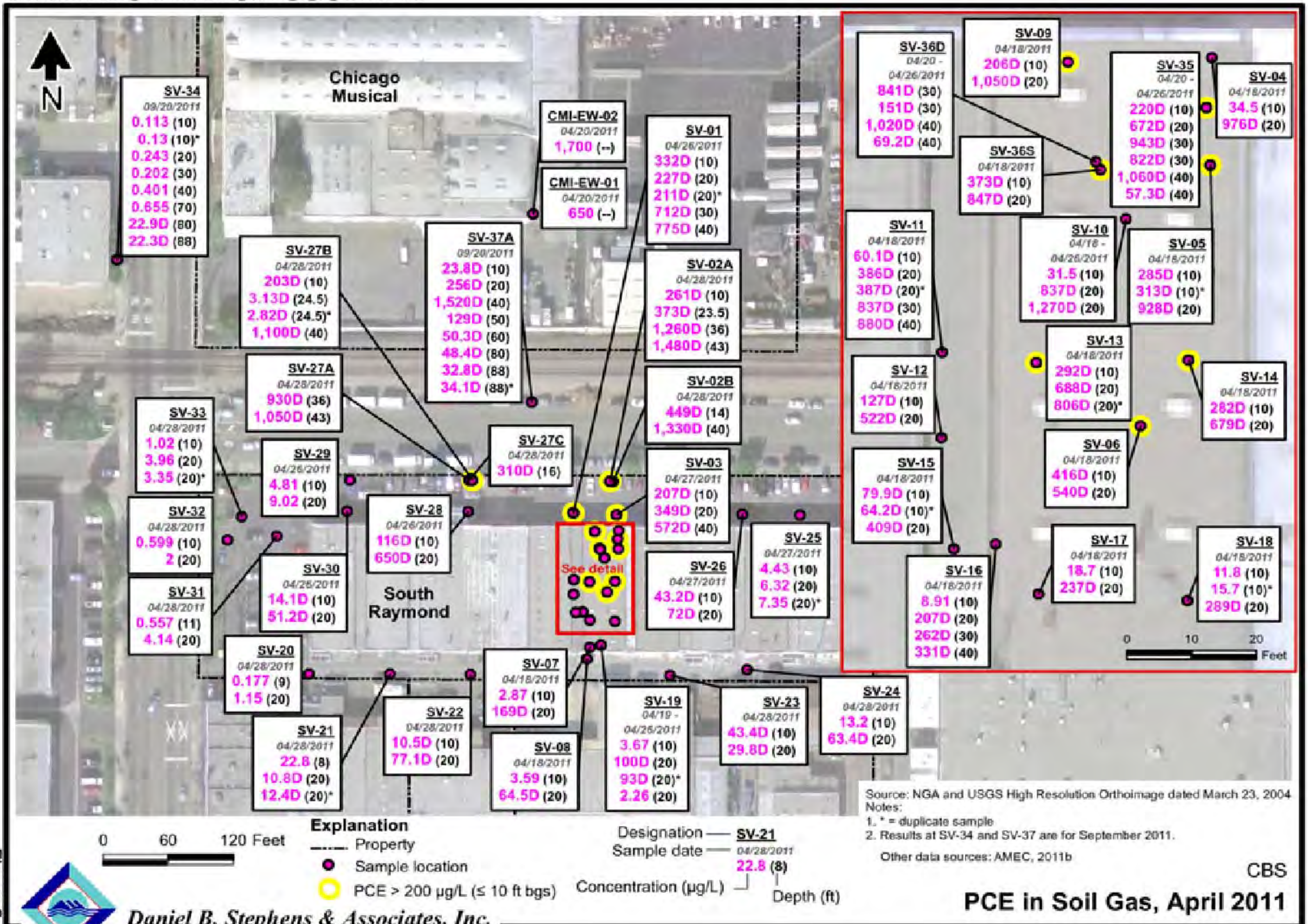

N
Chicago Musical
South Raymond
SV-34
09/20/2011
0.113 (10)
0.13 (10)*
0.243 (20)
0.202 (30)
0.401 (40)
0.655 (70)
22.9D (80)
22.3D (88)
CMI-EW-02
04/20/2011
1,700 (--)
CMI-EW-01
04/20/2011
650 (--)
SV-01
04/26/2011
332D (10)
227D (20)
211D (20)*
712D (30)
775D (40)
SV-27B
04/28/2011
203D (10)
3.13D (24.5)
2.82D (24.5)*
1,100D (40)
SV-37A
09/20/2011
23.8D (10)
256D (20)
1,520D (40)
129D (50)
50.3D (60)
48.4D (80)
32.8D (88)
34.1D (88)*
SV-02A
04/28/2011
261D (10)
373D (23.5)
1,260D (36)
1,480D (43)
SV-27A
04/28/2011
930D (36)
1,050D (43)
SV-02B
04/28/2011
449D (14)
1,330D (40)
SV-33
04/28/2011
1.02 (10)
3.96 (20)
3.35 (20)*
SV-29
04/26/2011
4.81 (10)
9.02 (20)
SV-27C
04/28/2011
310D (16)
SV-03
04/27/2011
207D (10)
349D (20)
572D (40)
SV-32
04/28/2011
0.599 (10)
2 (20)
SV-28
04/26/2011
116D (10)
650D (20)
See detail
SV-25
04/27/2011
4.43 (10)
6.32 (20)
7.35 (20)*
SV-30
04/26/2011
14.1D (10)
51.2D (20)
SV-26
04/27/2011
43.2D (10)
72D (20)
SV-31
04/28/2011
0.557 (11)
4.14 (20)
SV-20
04/28/2011
0.177 (9)
1.15 (20)
SV-07
04/18/2011
2.87 (10)
169D (20)
SV-19
04/19 -
04/26/2011
3.67 (10)
100D (20)
93D (20)*
2.26 (20)
SV-23
04/28/2011
43.4D (10)
29.8D (20)
SV-24
04/28/2011
13.2 (10)
63.4D (20)
SV-21
04/28/2011
22.8 (8)
10.8D (20)
12.4D (20)*
SV-22
04/28/2011
10.5D (10)
77.1D (20)
SV-08
04/18/2011
3.59 (10)
64.5D (20)
SV-36D
04/20 -
04/26/2011
841D (30)
151D (30)
1,020D (40)
69.2D (40)
SV-09
04/18/2011
206D (10)
1,050D (20)
SV-35
04/20 -
04/26/2011
220D (10)
672D (20)
943D (30)
822D (30)
1,060D (40)
57.3D (40)
SV-04
04/18/2011
34.5 (10)
976D (20)
SV-36S
04/18/2011
373D (10)
847D (20)
SV-11
04/18/2011
60.1D (10)
386D (20)
387D (20)*
837D (30)
880D (40)
SV-10
04/18 -
04/26/2011
31.5 (10)
837D (20)
1,270D (20)
SV-05
04/18/2011
285D (10)
313D (10)*
928D (20)
SV-13
04/18/2011
292D (10)
688D (20)
806D (20)*
SV-12
04/18/2011
127D (10)
522D (20)
SV-14
04/18/2011
282D (10)
679D (20)
SV-06
04/18/2011
416D (10)
540D (20)
SV-15
04/18/2011
79.9D (10)
64.2D (10)*
409D (20)
SV-17
04/18/2011
18.7 (10)
237D (20)
SV-18
04/18/2011
11.8 (10)
15.7 (10)*
289D (20)
SV-16
04/18/2011
8.91 (10)
207D (20)
262D (30)
331D (40)
0 10 20 Feet
0 60 120 Feet
Explanation
Property
Sample location
PCE > 200 µg/L (≤ 10 ft bgs)
Designation — SV-21
Sample date — 04/28/2011
22.8 (8)
Concentration (µg/L)
Depth (ft)
Source: NGA and USGS High Resolution Orthoimage dated March 23, 2004
Notes:
1. * = duplicate sample
2. Results at SV-34 and SV-37 are for September 2011.
Other data sources: AMEC, 2011b
CBS
PCE in Soil Gas, April 2011
Daniel B. Stephens & Associates, Inc.
1/24/2012
JN LT10.0175

Figure 3a

Q:\PROJECTS\LT10.0175_CBS\GIS\MXDS\JAN_2012\FIG_3B_SG_TCE.MXD 122401

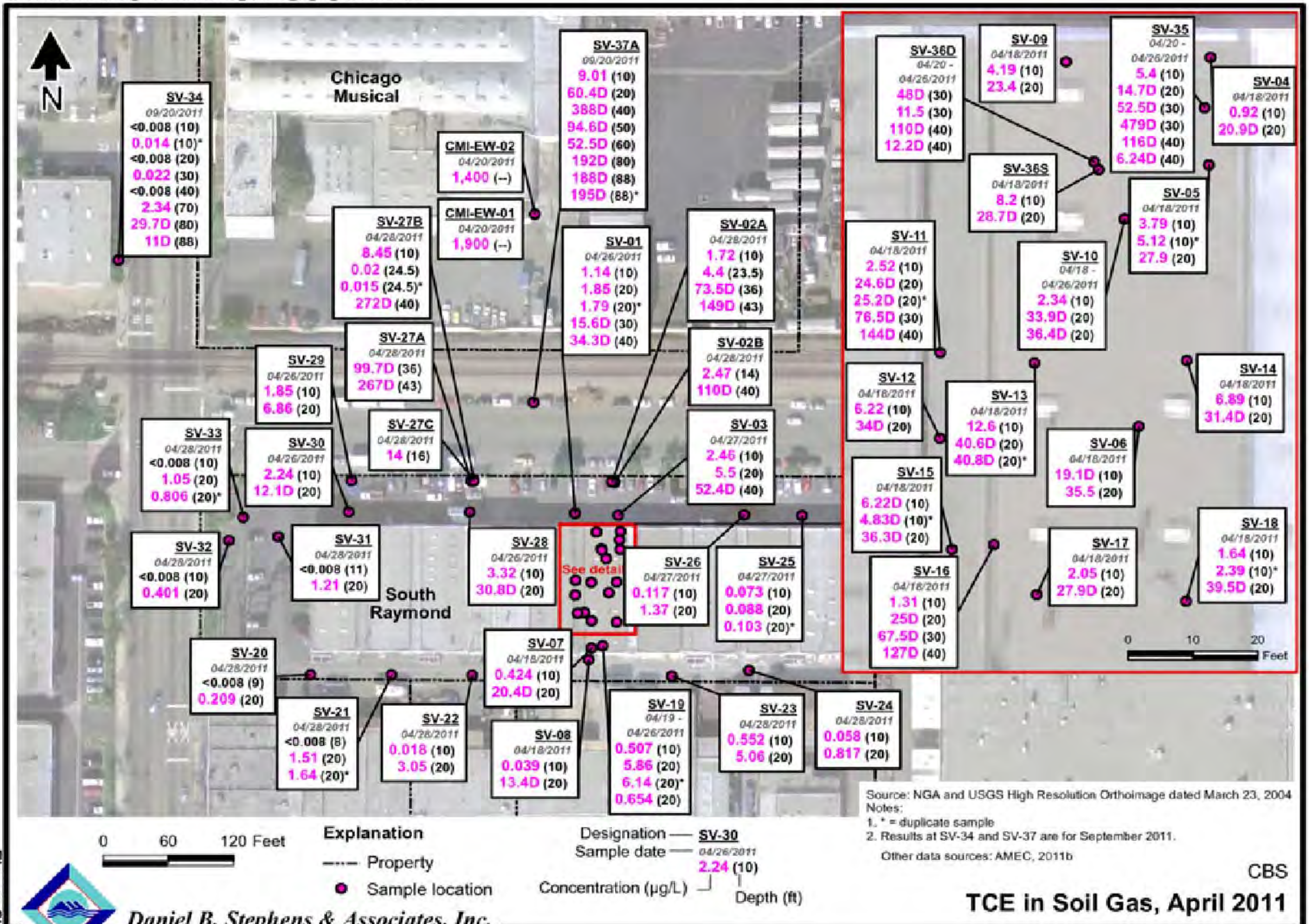


Figure 3b

Q:\PROJECTS\LT10.0175_CBS\GIS\MXDS\JAN_2012\FIG_3C_SG_DCE11.MXD 122401

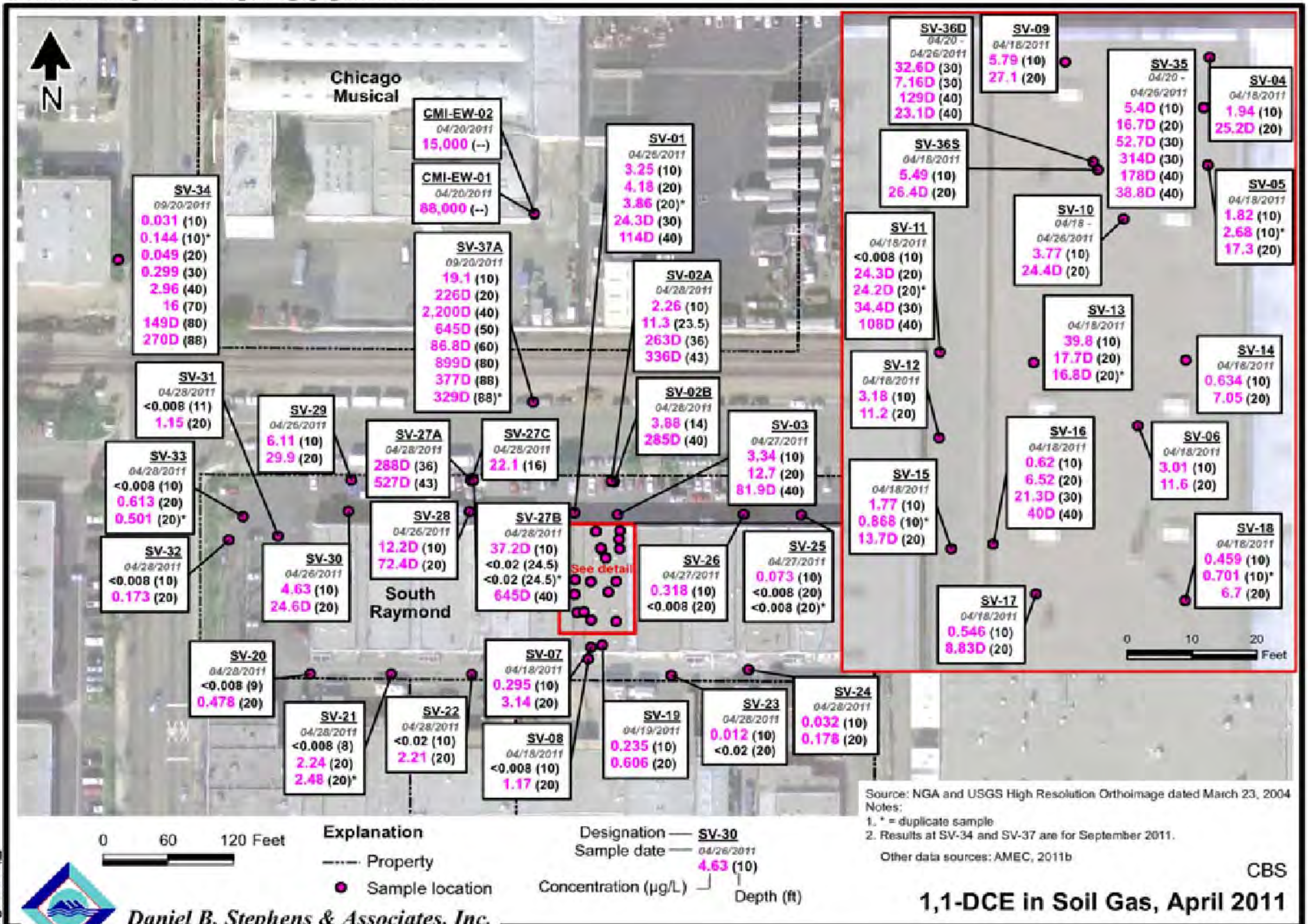


Figure 3c

Q:\PROJECTS\LT10.0175_CBS\GIS\MXDS\JAN_2012\FIG_3D_SG_DCE12C.MXD 122401

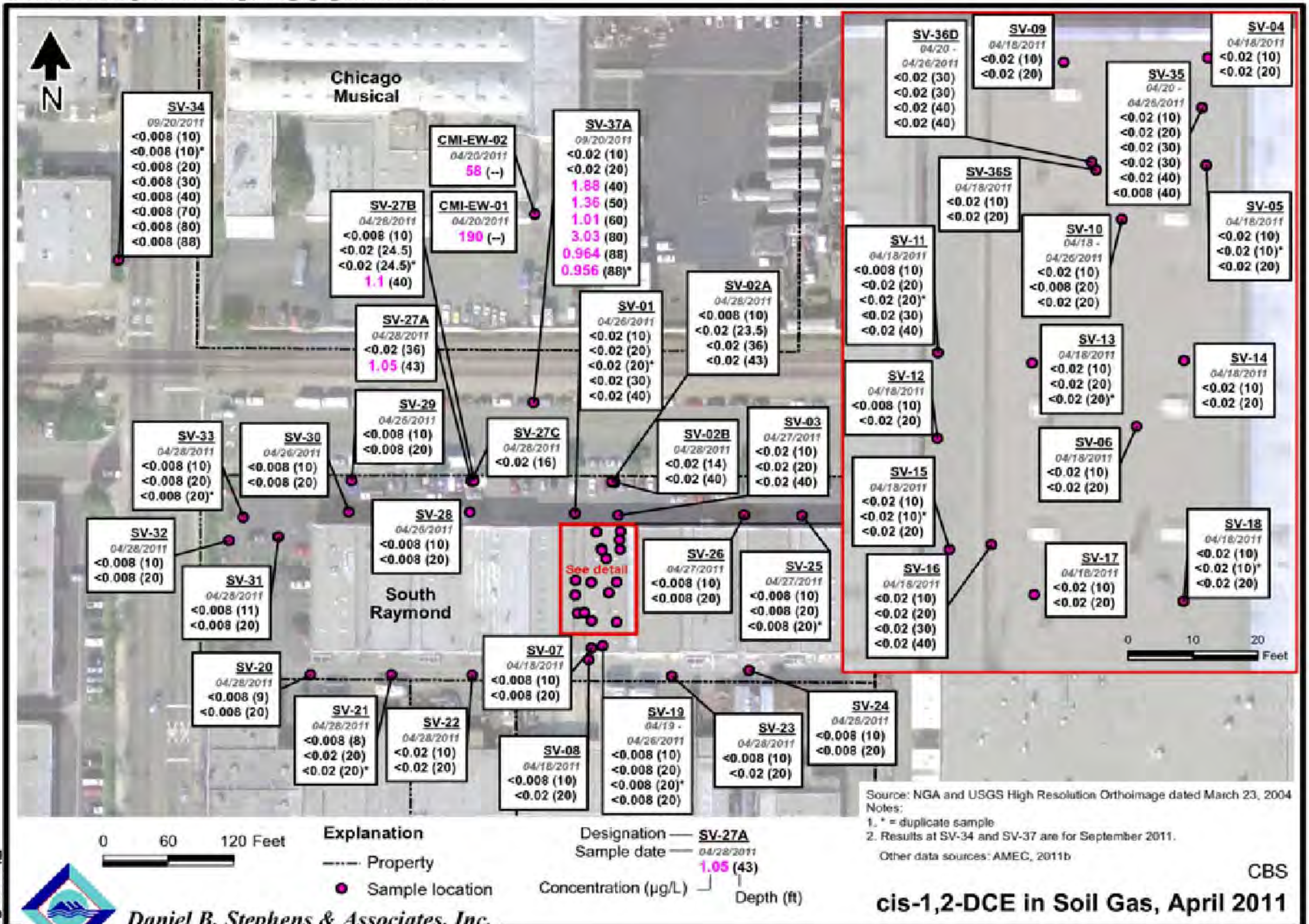


Figure 3d

20304-44

Q:\PROJECTS\LT10.0175_CBS\GIS\MXDS\FEB_2012\FIG_4A_SO_PCE_FEB_2012.MXD 121702

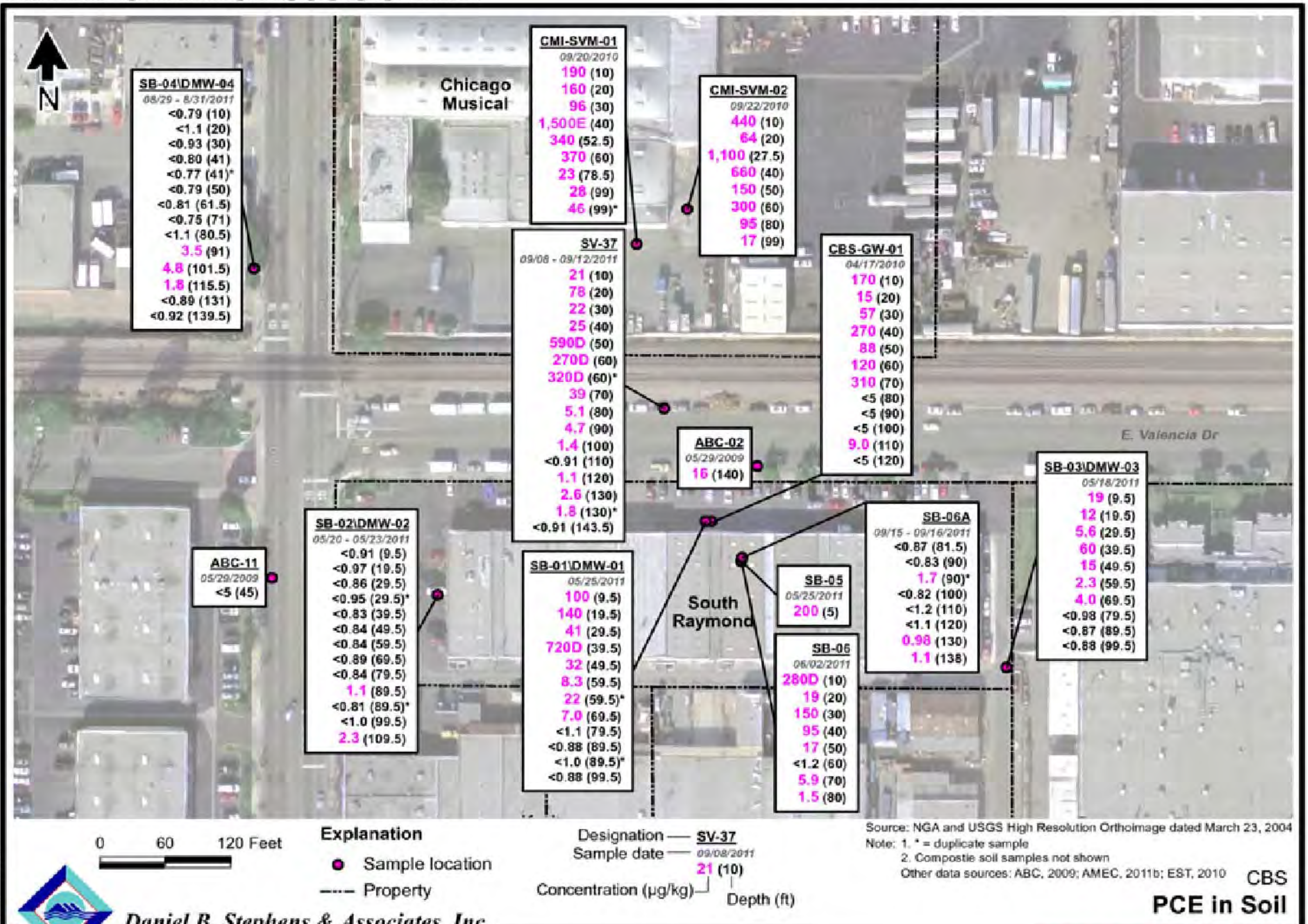


Figure 4a

REVISED FEBRUARY 17, 2012

Q:\PROJECTS\LT10.0175_CBS\GIS\MXDS\FEB_2012\FIG_4B_SO_TCE_FEB_2012.MXD 121702

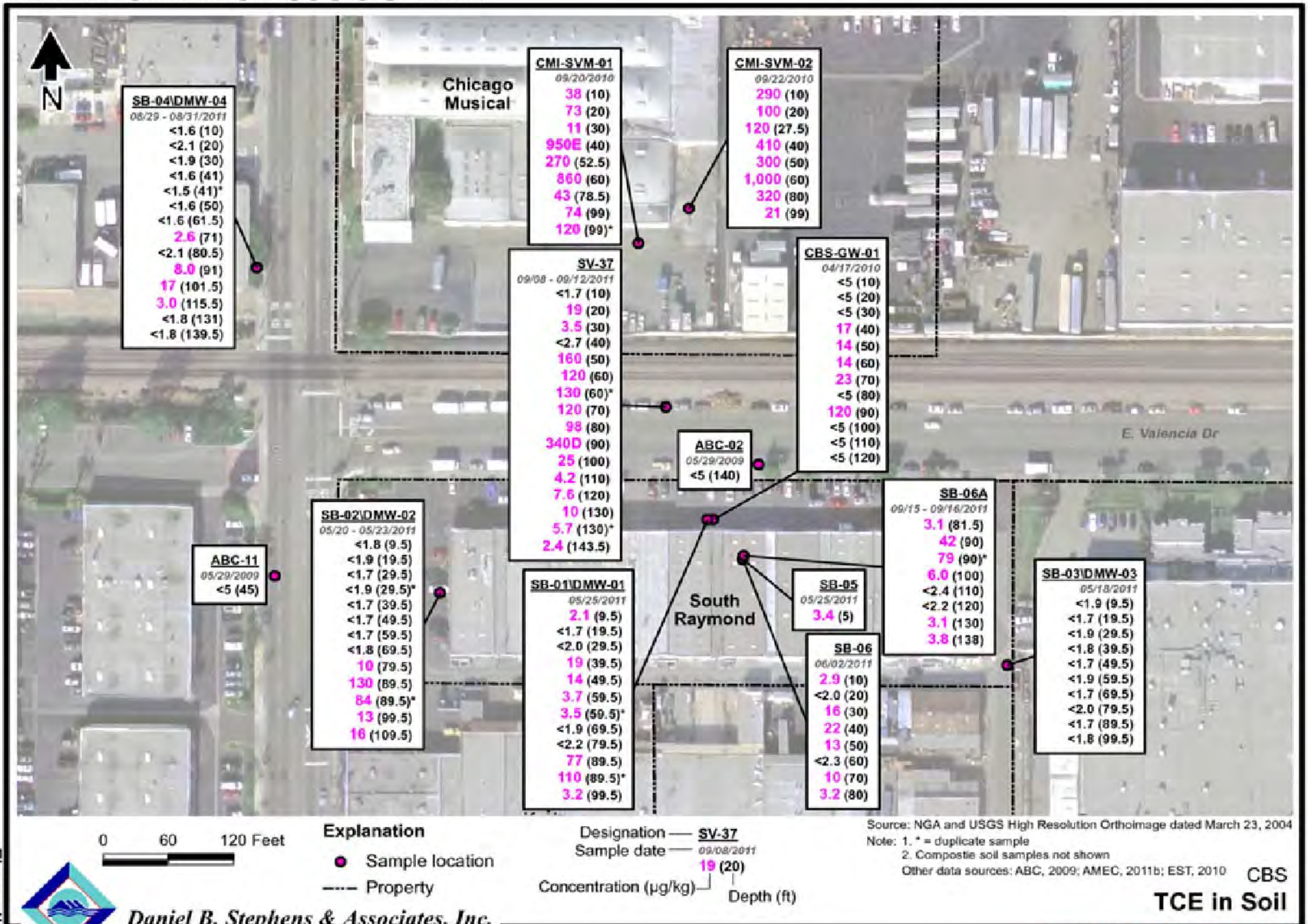


Figure 4b

REVISED FEBRUARY 17, 2012

Q:\PROJECTS\LT10.0175_CBS\GIS\MXDS\FEB_2012\FIG_4C_SO_DCE11_FEB_2012.MXD 121702

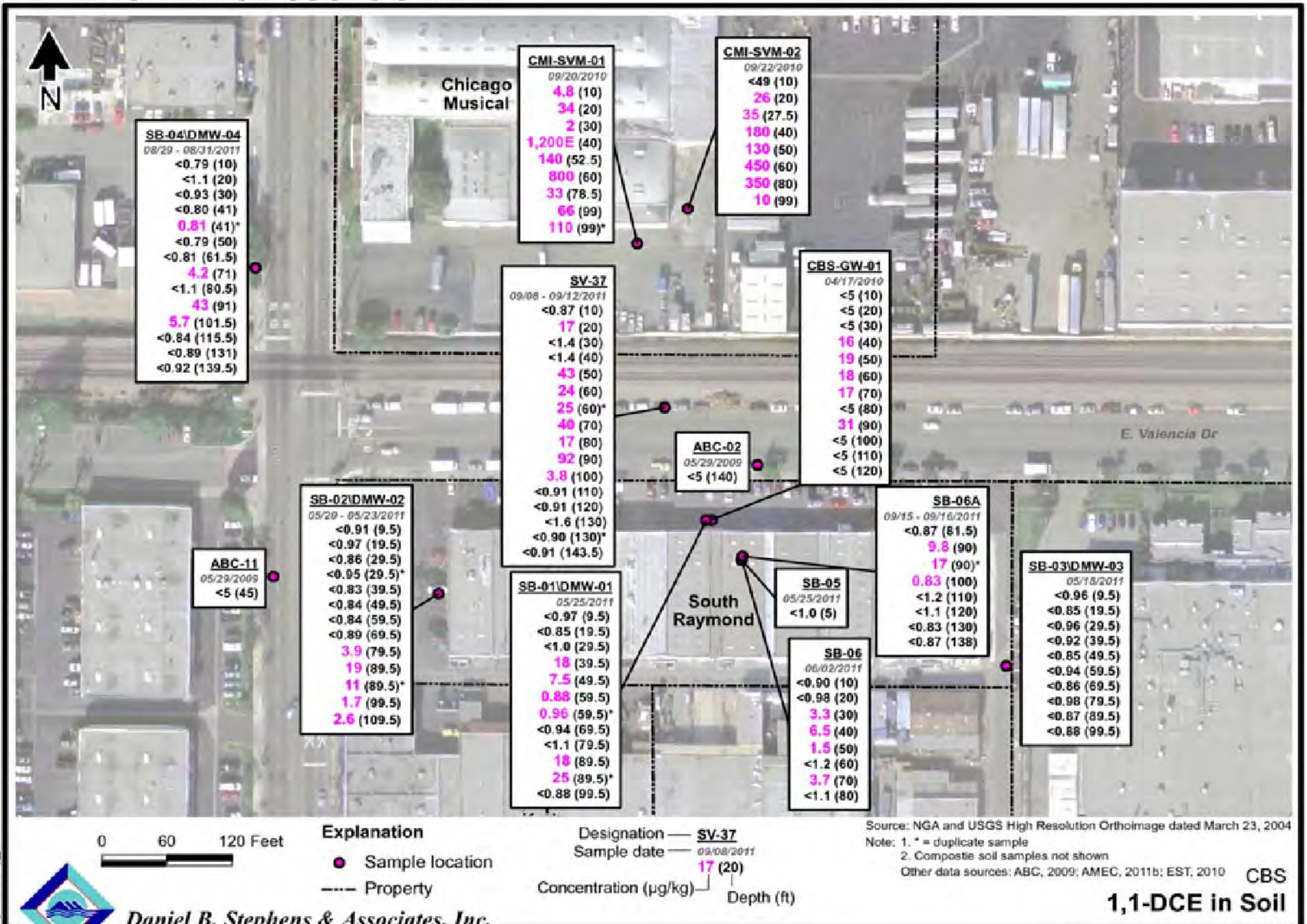


Figure 4c

REVISED FEBRUARY 17, 2012

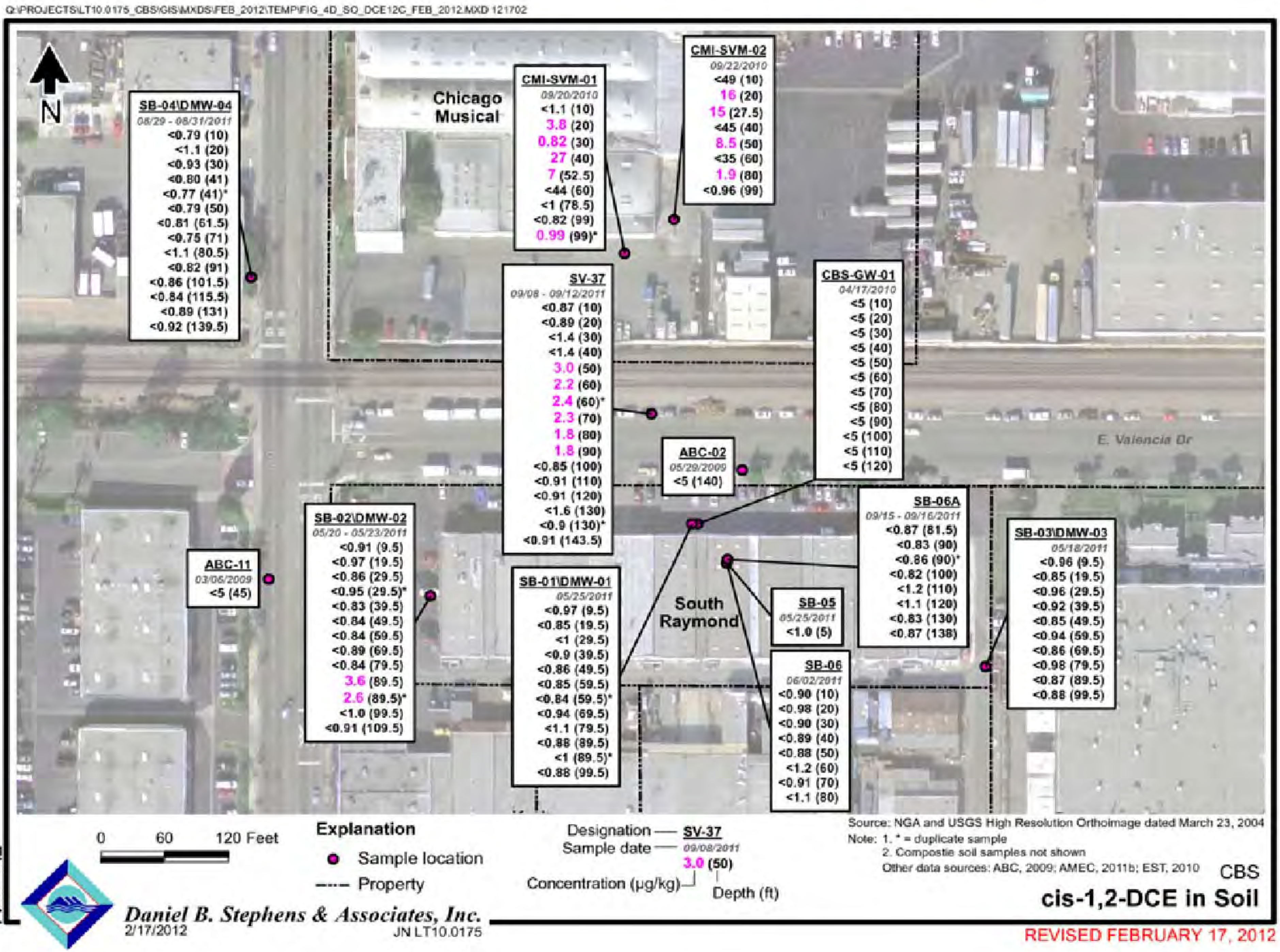
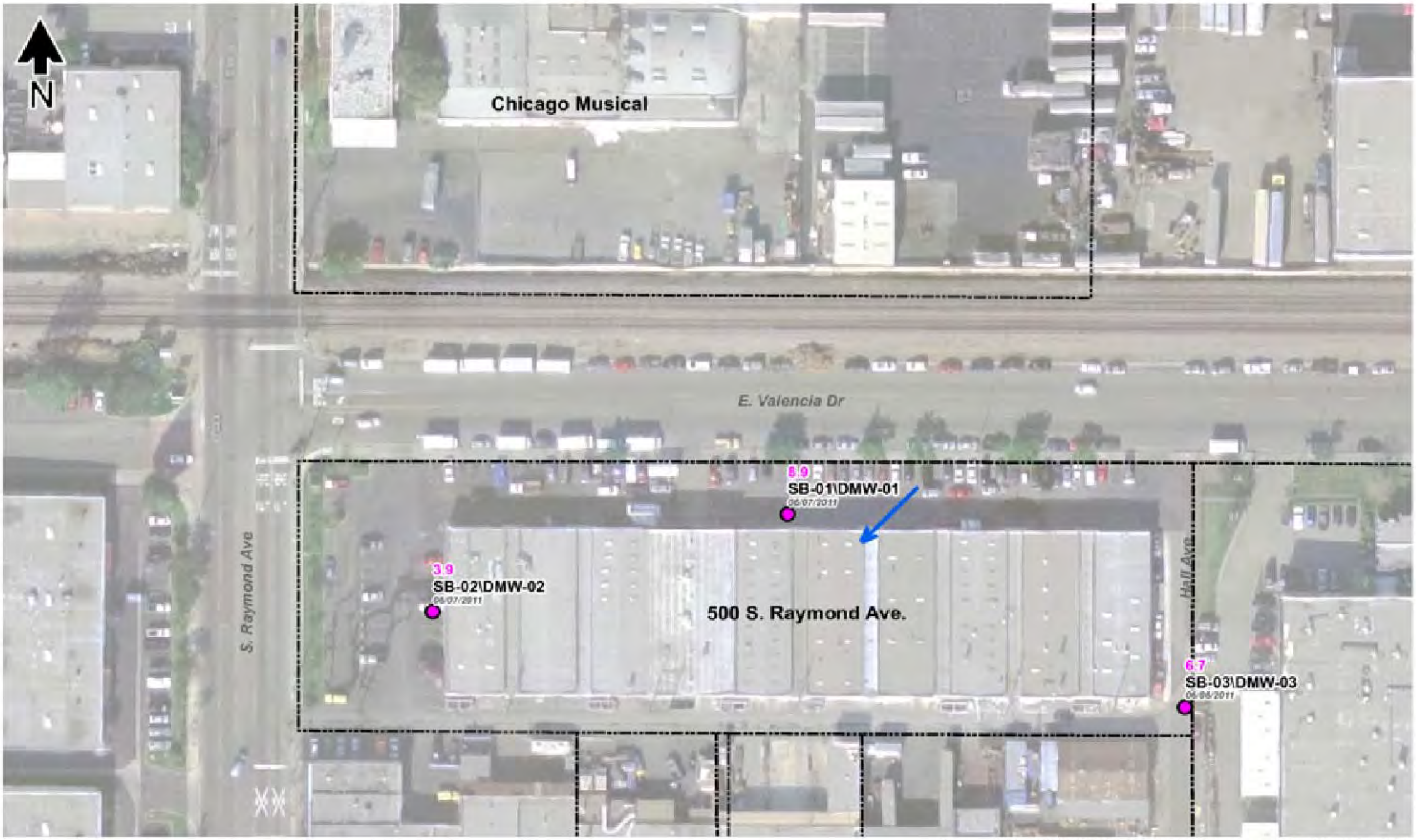


Figure 4d

20304-48

Q:\PROJECTS\LT10.0175_CBS\GIS\MXDS\JAN_2012\FIG_5A_GW_PCE_JUNE.MXD 122401



Source: NGA and USGS High Resolution Orthoimage dated March 23, 2004

0 50 100 Feet

Explanation

- Sample location
- Property
- Groundwater flow direction

Concentration (µg/L) — 8.9
Designation — SB-01\DMW-01
Sample date — 06/07/2011

CBS

PCE in Groundwater, June 2011

Figure 5a

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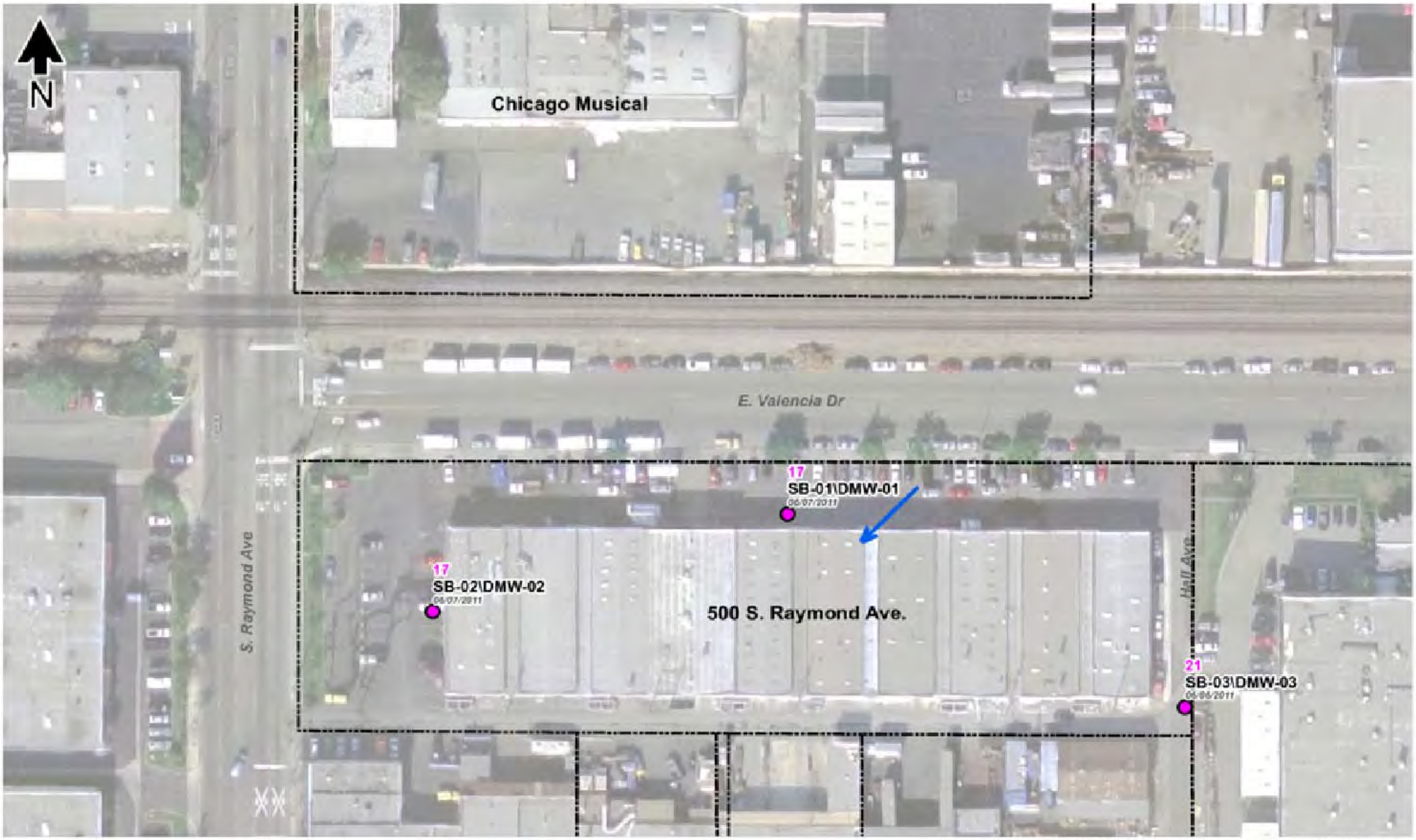
1/24/2012
JN LT10.0175

Q:\PROJECTS\LT10.0175_CBS\GIS\MXDS\JAN_2012\FIG_5B_GW_TCE_JUNE.MXD 122401



Source: NGA and USGS High Resolution Orthoimage dated March 23, 2004

0 50 100 Feet

Explanation

- Sample location
- Property
- Groundwater flow direction

Concentration (µg/L) — 17
Designation — SB-01\DMW-01
Sample date — 06/07/2011

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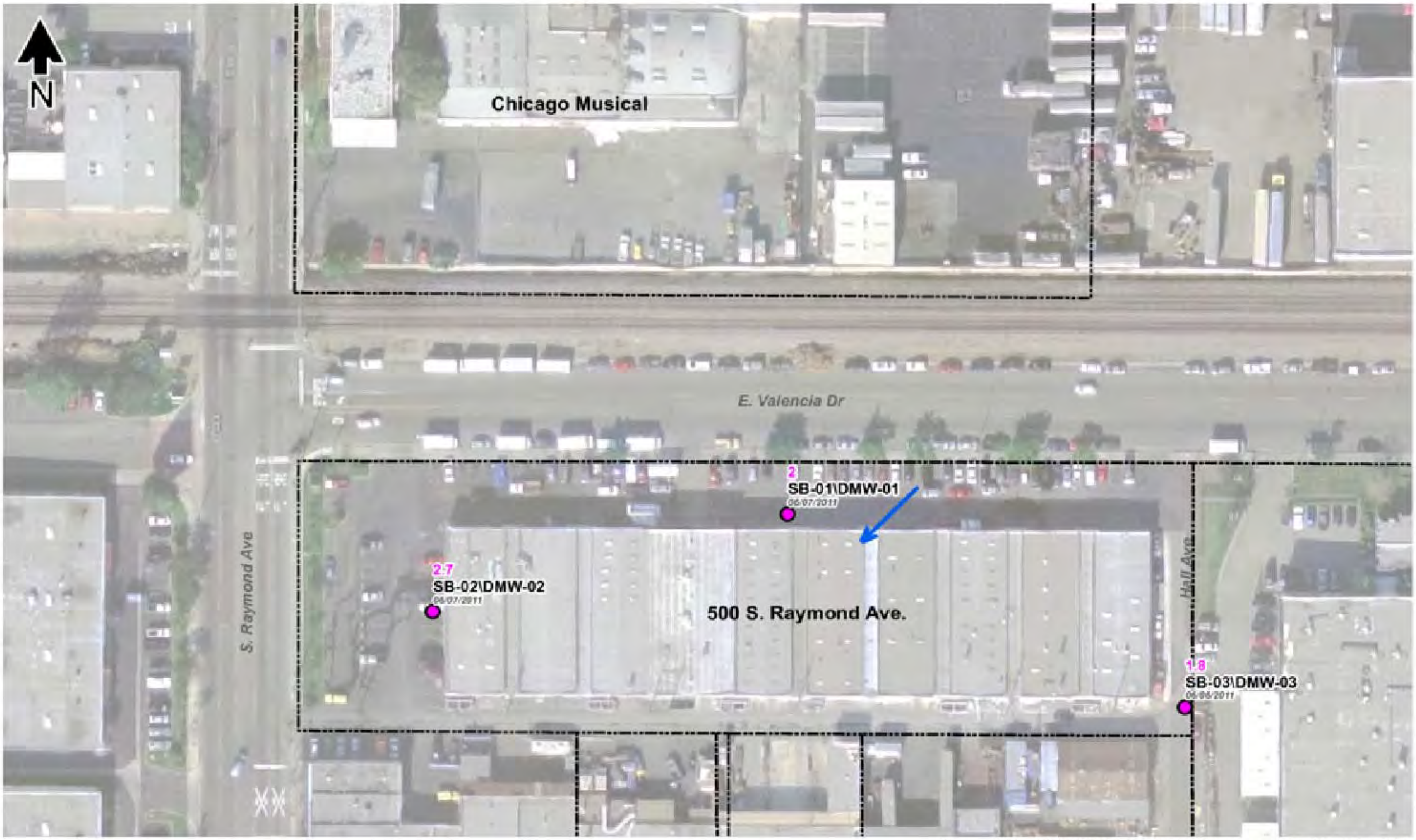
1/24/2012
JN LT10.0175

CBS

TCE in Groundwater, June 2011

Figure 5b

Q:\PROJECTS\LT10.0175_CBS\GIS\MXDS\JAN_2012\FIG_5C_GW_DCE11_JUNE.MXD 122401



Source: NGA and USGS High Resolution Orthoimage dated March 23, 2004

0 50 100 Feet

Explanation

- Sample location
- Property
- Groundwater flow direction

Concentration (µg/L) — 2
Designation — SB-01\DMW-01
Sample date — 06/07/2011

CBS

1,1-DCE in Groundwater, June 2011

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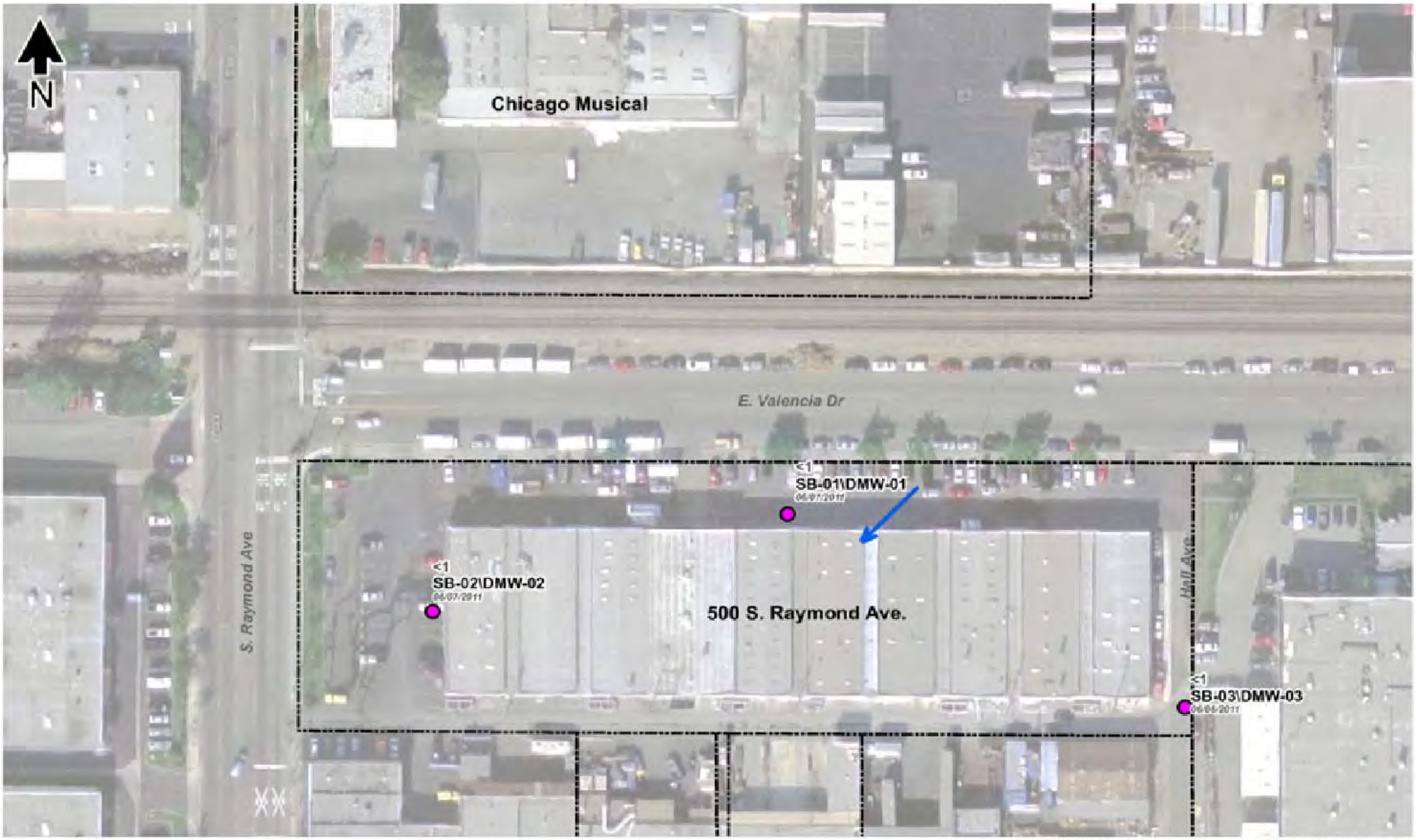
1/24/2012
JN LT10.0175

Figure 5c

Q:\PROJECTS\LT10.0175_CBS\GIS\MXDS\JAN_2012\FIG_5D_GW_DCE12C_JUNE.MXD 122401



Source: NGA and USGS High Resolution Orthoimage dated March 23, 2004

0 50 100 Feet

Explanation

- Sample location
- Property
- Groundwater flow direction

Concentration (µg/L) — <1
Designation — SB-01\DMW-01
Sample date — 06/07/2011

CBS

cis-1,2-DCE in Groundwater, June 2011

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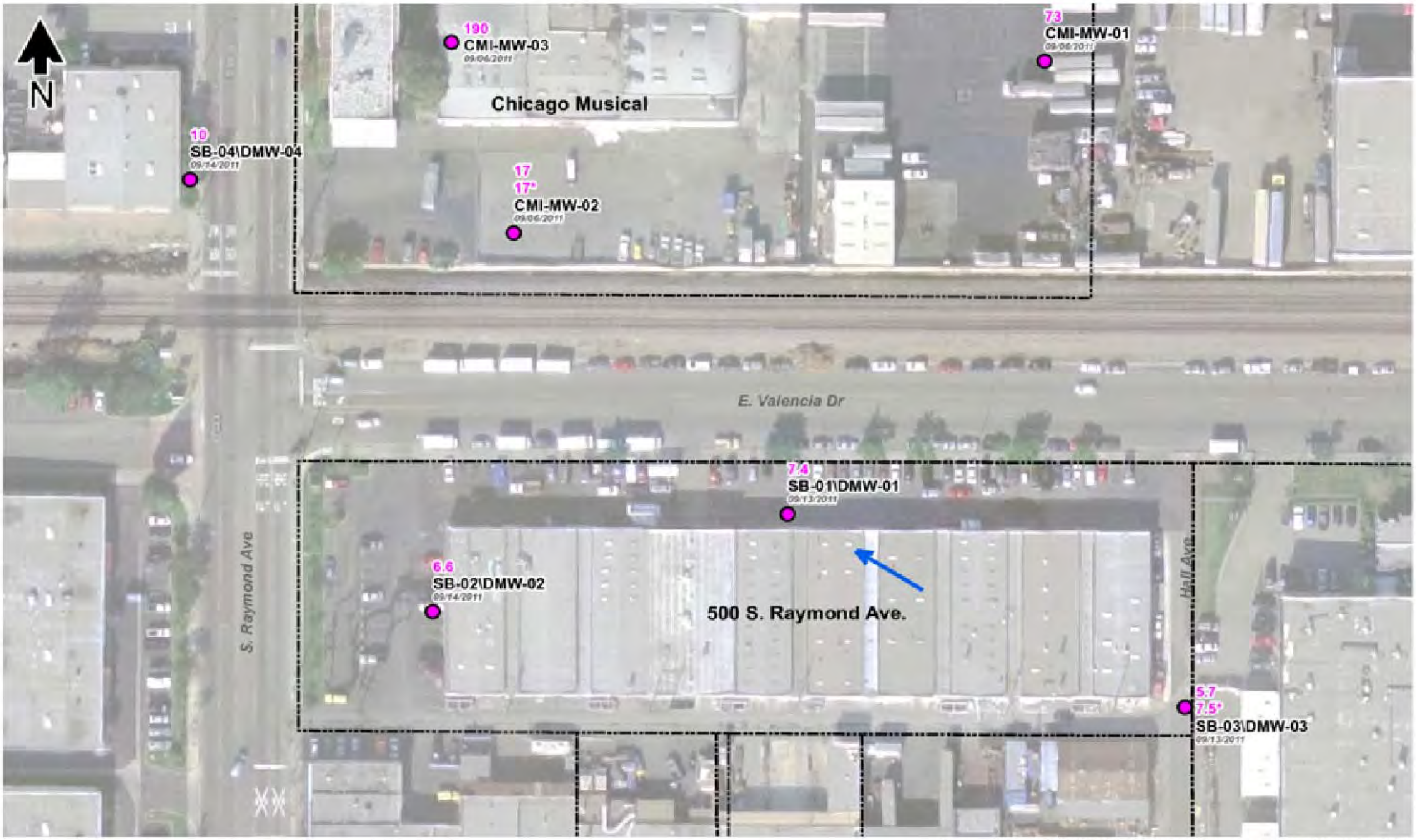
1/24/2012 JN LT10.0175

Figure 5d

Q:\PROJECTS\LT10.0175_CBS\GIS\MXDS\JAN_2012\FIG_6A_GW_PCE_SEPTEMBER.MXD 122401



Source: NGA and USGS High Resolution Orthoimage dated March 23, 2004

Other data sources: AMEC, 2011b

0 50 100 Feet

Explanation

- Sample location
- Property
- Groundwater flow direction

* = duplicate sample

Concentration (µg/L) — 7.4

Designation — SB-01\DMW-01

Sample date — 09/13/2011

CBS

PCE in Groundwater, September 2011

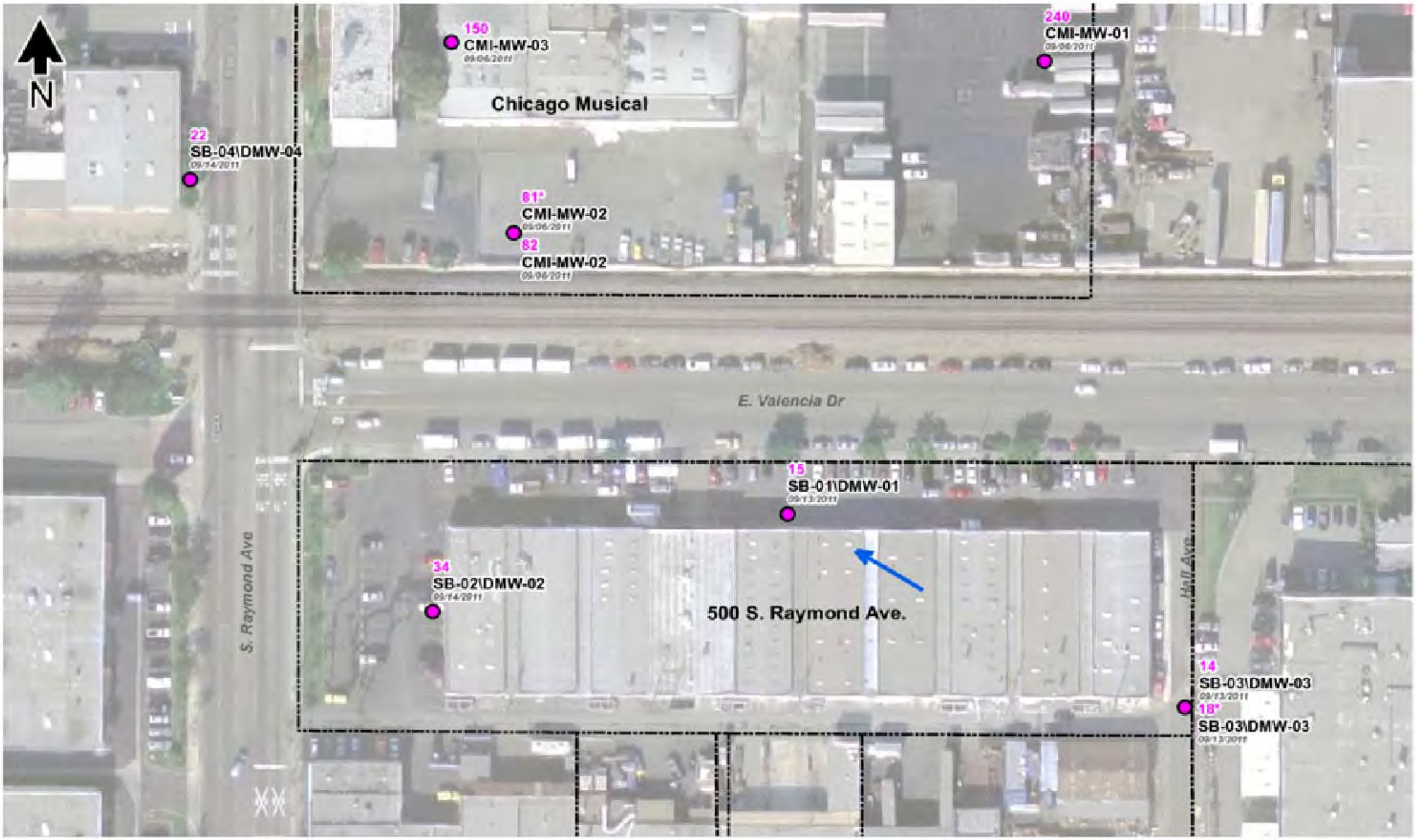
Daniel B. Stephens & Associates, Inc.

1/24/2012

JN LT10.0175

Figure 6a

Q:\PROJECTS\LT10.0175_CBS\GIS\MXDS\JAN_2012\FIG_6B_GW_TCE_SEPTEMBER.MXD 122401



Source: NGA and USGS High Resolution Orthoimage dated March 23, 2004

Other data sources: AMEC, 2011b

0 50 100 Feet

Explanation

- Sample location
- Property
- Groundwater flow direction

* = duplicate sample

Concentration (µg/L) — 15

Designation — SB-01\DMW-01

Sample date — 09/13/2011

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1/24/2012

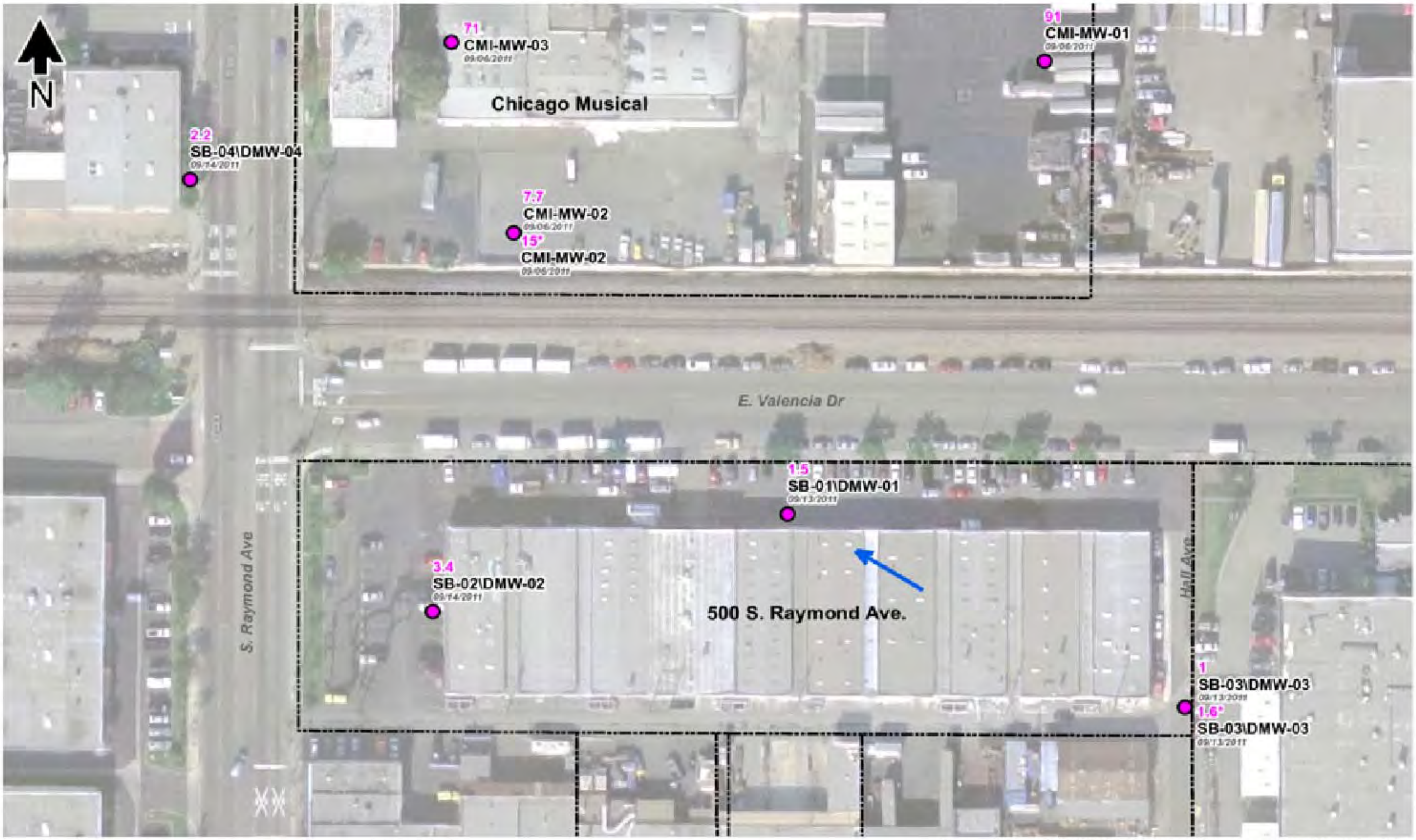
JN LT10.0175

CBS

TCE in Groundwater, September 2011

Figure 6b

Q:\PROJECTS\LT10.0175_CBS\GIS\MXDS\JAN_2012\FIG_6C_GW_DCE11_SEPTEMBER.MXD 122401



Source: NGA and USGS High Resolution Orthoimage dated March 23, 2004

Other data sources: AMEC, 2011b

0 50 100 Feet

Explanation

- Sample location
- Property
- Groundwater flow direction

* = duplicate sample

Concentration (µg/L) — 1.5

Designation — SB-01\DMW-01

Sample date — 09/13/2011

CBS

1,1-DCE in Groundwater, September 2011

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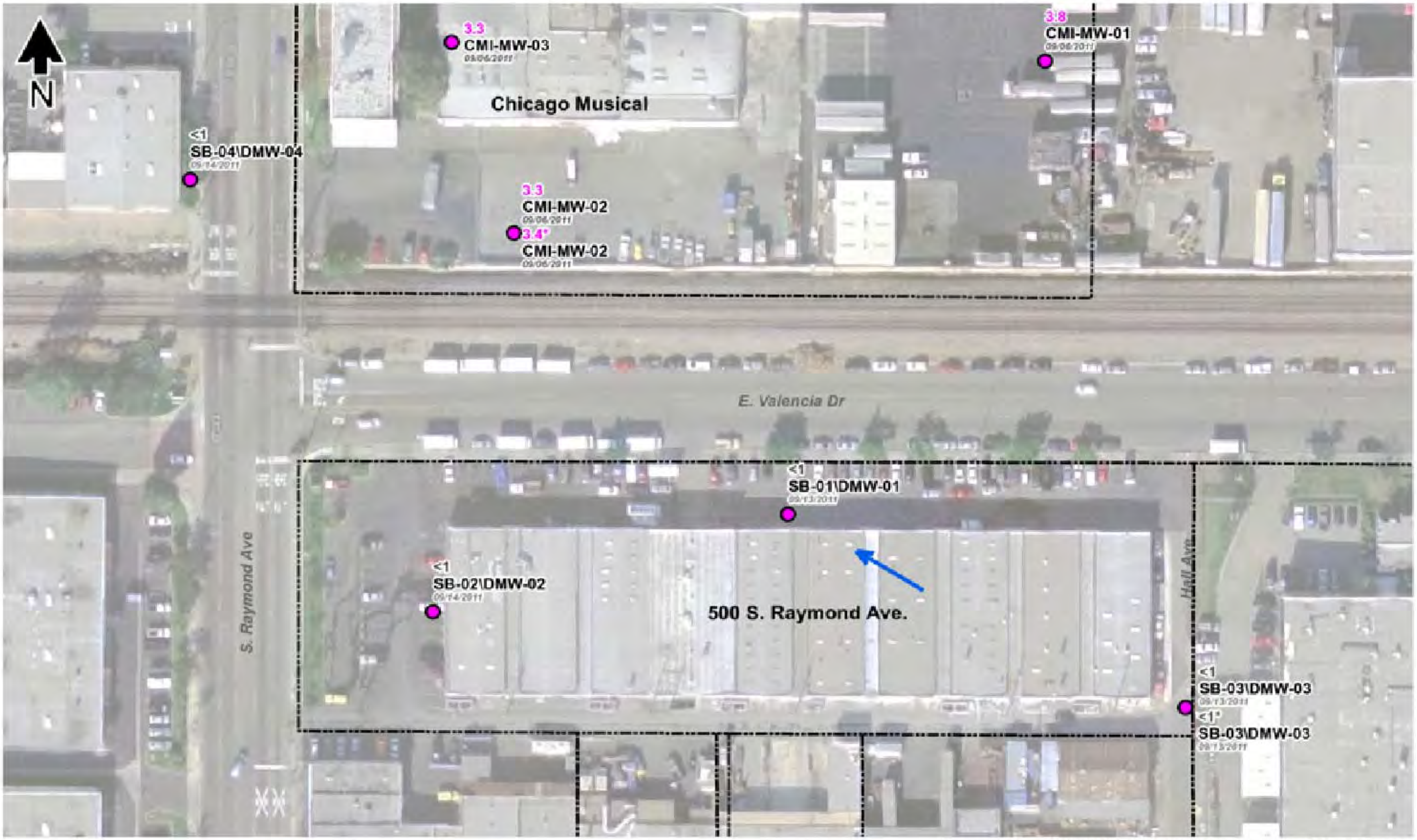
1/24/2012

JN LT10.0175

Figure 6c

Q:\PROJECTS\LT10.0175_CBS\GIS\MXDS\FEB_2012\FIG_6D_GW_DCE12C_SEPTEMBER.MXD 121602



Source: NGA and USGS High Resolution Orthoimage dated March 23, 2004

Other data sources: AMEC, 2011b

0 50 100 Feet

Explanation

- Sample location
- Property
- Groundwater flow direction

* = duplicate sample

Concentration (µg/L) — 3.8

Designation — CMI-MW-01

Sample date — 09/06/2011

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2/16/2012 JN LT10.0175

CBS

cis-1,2-DCE in Groundwater, September 2011

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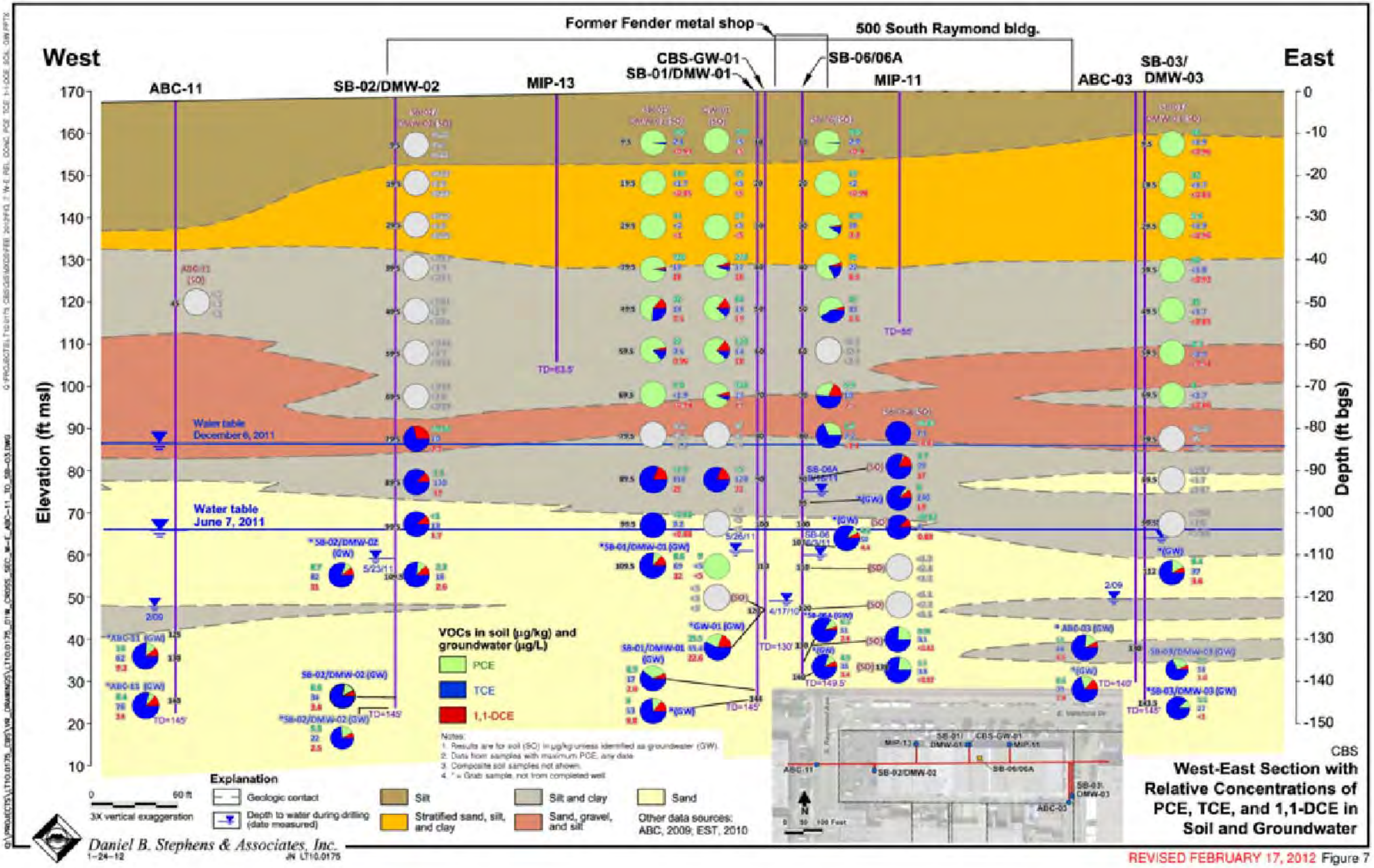
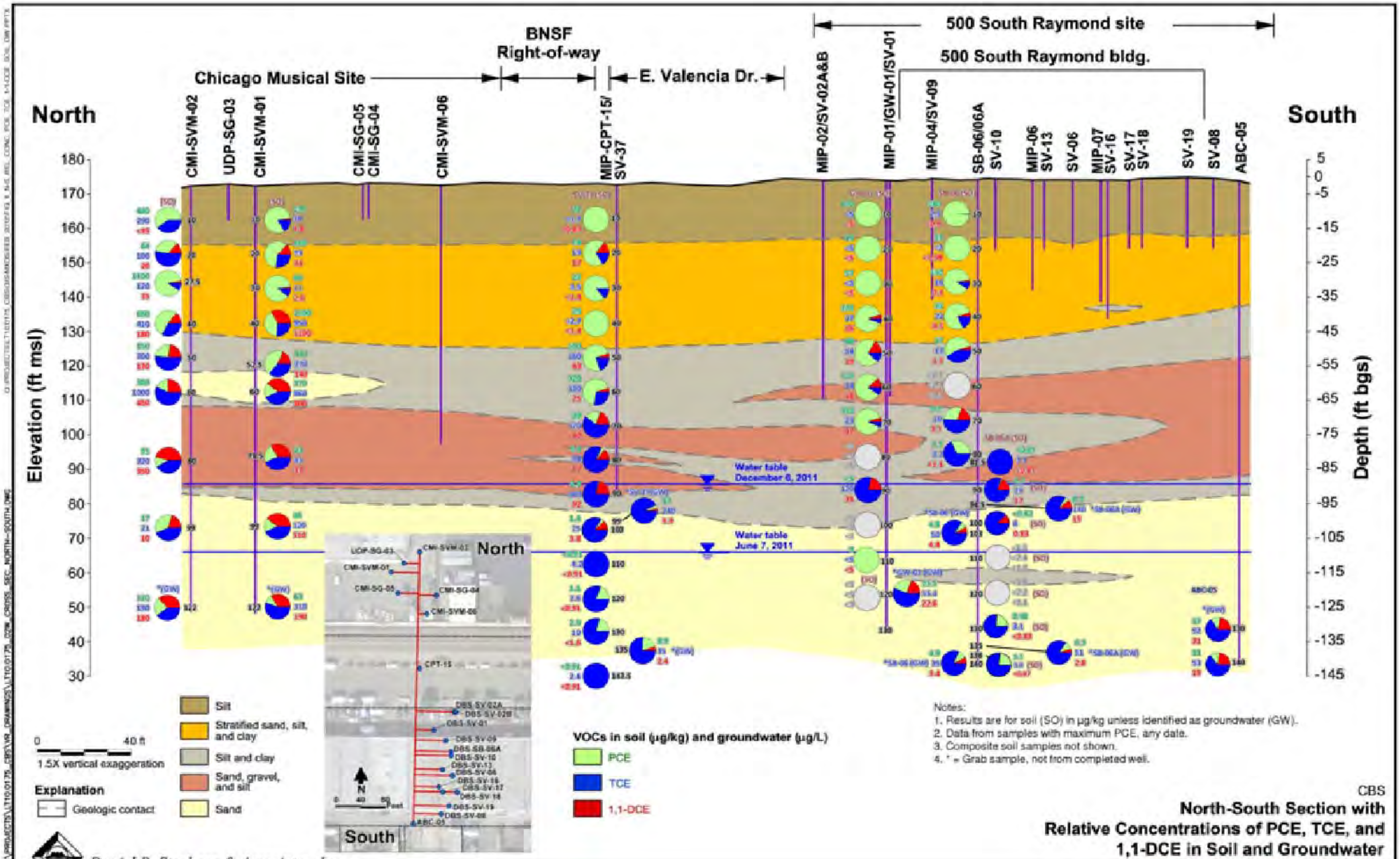
Figure 6d

20304-56

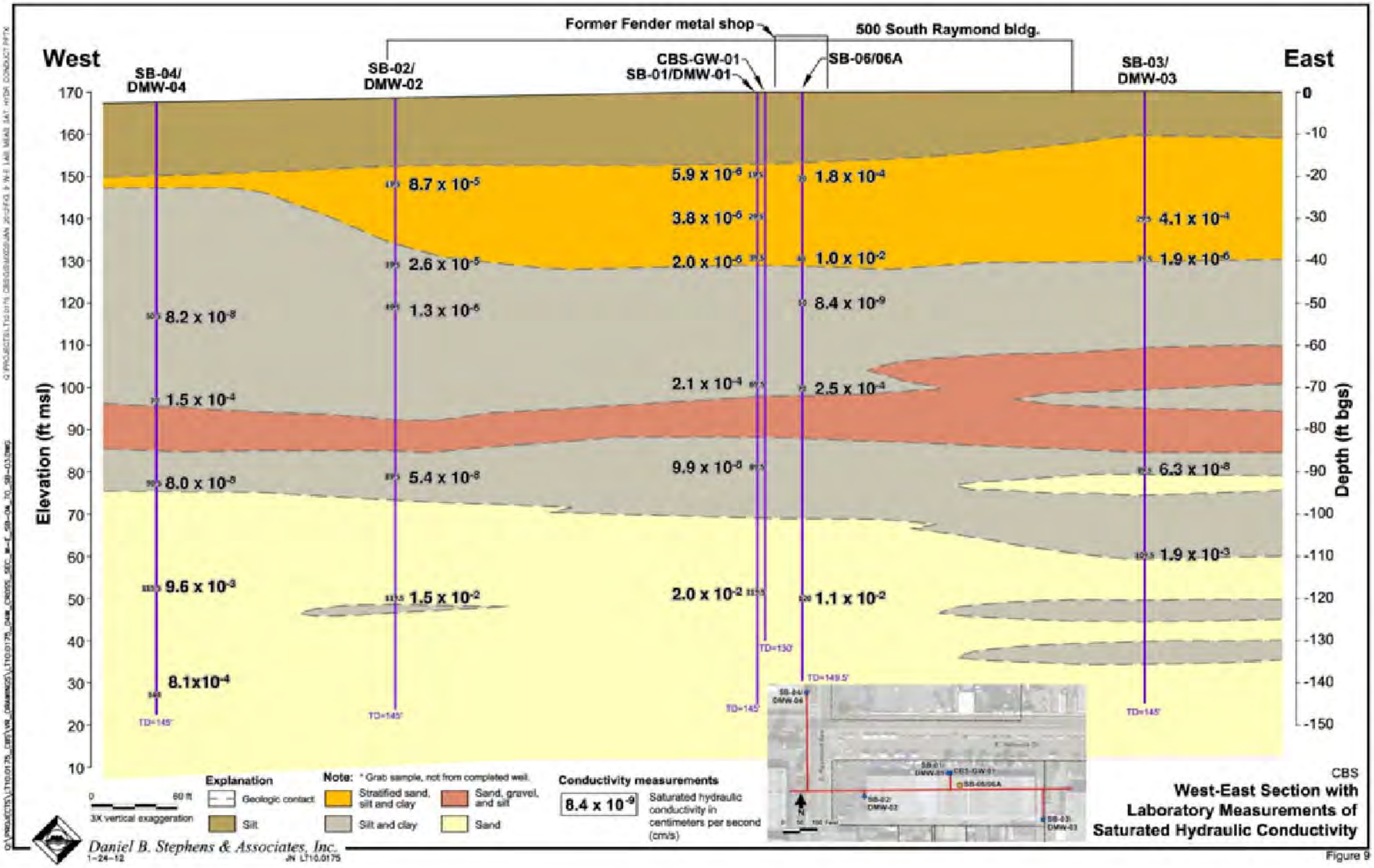


Former Fender metal shop
500 South Raymond bldg.
West
East
ABC-11
SB-02/DMW-02
MIP-13
CBS-GW-01
SB-01/DMW-01
SB-06/06A
MIP-11
ABC-03
SB-03/
DMW-03
Elevation (ft msl)
Depth (ft bgs)
Water table
December 6, 2011
Water table
June 7, 2011
VOCs in soil (µg/kg) and
groundwater (µg/L)
PCE
TCE
1,1-DCE
Explanation
Geologic contact
3X vertical exaggeration
Depth to water during drilling (date measured)
Silt
Stratified sand, silt, and clay
Silt and clay
Sand, gravel, and silt
Sand
Other data sources:
ABC, 2009; EST, 2010
CBS
West-East Section with
Relative Concentrations of
PCE, TCE, and 1,1-DCE in
Soil and Groundwater
Daniel B. Stephens & Associates, Inc.
1-24-12
JN LT10.0175
REVISED FEBRUARY 17, 2012
Figure 7

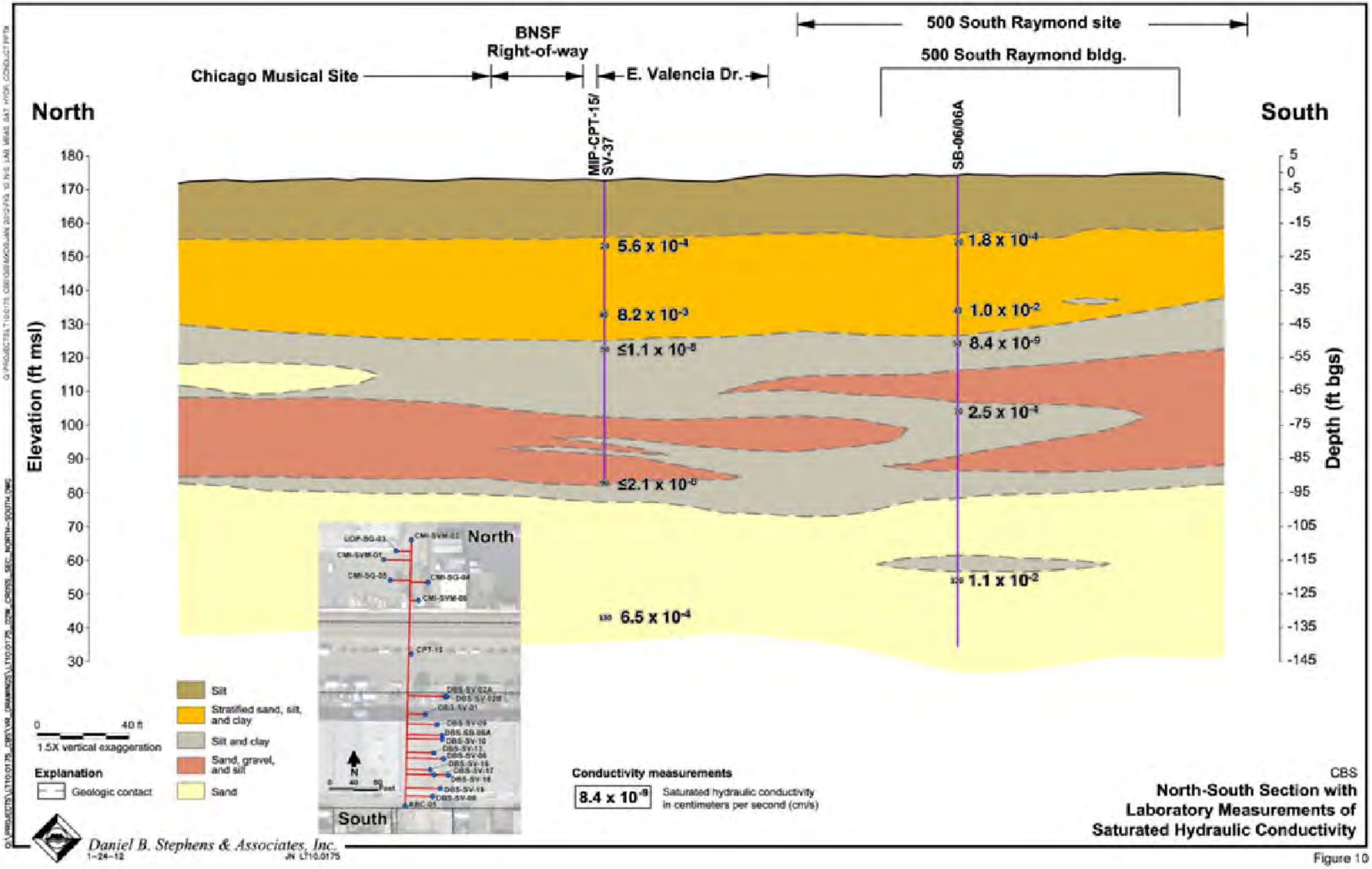


North-South Section with Relative Concentrations of PCE, TCE, and 1,1-DCE in Soil and Groundwater

REVISED FEBRUARY 17, 2012 Figure 8

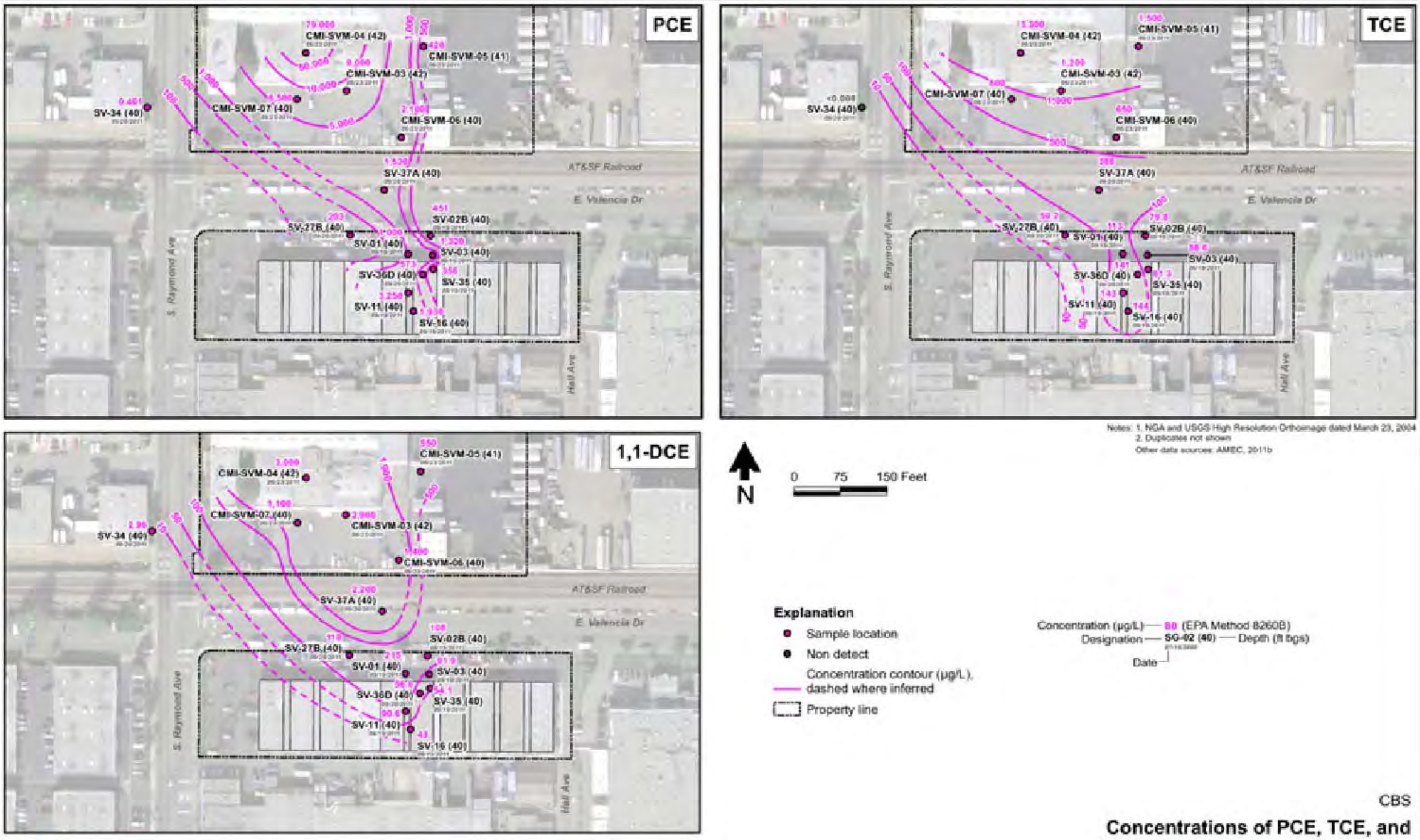


West
East
Former Fender metal shop
500 South Raymond bldg.
SB-04/ DMW-04
SB-02/ DMW-02
CBS-GW-01
SB-01/DMW-01
SB-06/06A
SB-03/ DMW-03
Elevation (ft msl)
Depth (ft bgs)
8.7 x 10-5
2.6 x 10-5
1.3 x 10-6
5.4 x 10-8
1.5 x 10-2
8.2 x 10-8
1.5 x 10-4
8.0 x 10-8
9.6 x 10-3
8.1x10-4
5.9 x 10-6
3.8 x 10-6
2.0 x 10-6
2.1 x 10-4
9.9 x 10-8
2.0 x 10-2
1.8 x 10-4
1.0 x 10-2
8.4 x 10-9
2.5 x 10-4
1.1 x 10-2
4.1 x 10-4
1.9 x 10-6
6.3 x 10-8
1.9 x 10-3
TD=145'
TD=130'
TD=149.5'
Explanation
Geologic contact
Silt
Note: * Grab sample, not from completed well.
Stratified sand, silt and clay
Silt and clay
Sand, gravel, and silt
Sand
Conductivity measurements
8.4 x 10-9 Saturated hydraulic conductivity in centimeters per second (cm/s)
3X vertical exaggeration
Daniel B. Stephens & Associates, Inc.
1-24-12
JN LT10.0175
CBS
West-East Section with Laboratory Measurements of Saturated Hydraulic Conductivity
Figure 9



500 South Raymond site
BNSF
Right-of-way
500 South Raymond bldg.
Chicago Musical Site
E. Valencia Dr.
North
South
MIP-CPT-15/
SV-37
SB-06/06A
Elevation (ft msl)
Depth (ft bgs)
5.6 x 10-4
8.2 x 10-3
≤1.1 x 10-8
≤2.1 x 10-8
6.5 x 10-4
1.8 x 10-4
1.0 x 10-2
8.4 x 10-9
2.5 x 10-4
1.1 x 10-2
Silt
Stratified sand, silt, and clay
Silt and clay
Sand, gravel, and silt
Sand
Explanation
Geologic contact
1.5X vertical exaggeration
Conductivity measurements
8.4 x 10-9
Saturated hydraulic conductivity in centimeters per second (cm/s)
CBS
North-South Section with
Laboratory Measurements of
Saturated Hydraulic Conductivity
Daniel B. Stephens & Associates, Inc.
1-24-12
JN LT10.0175

Figure 10



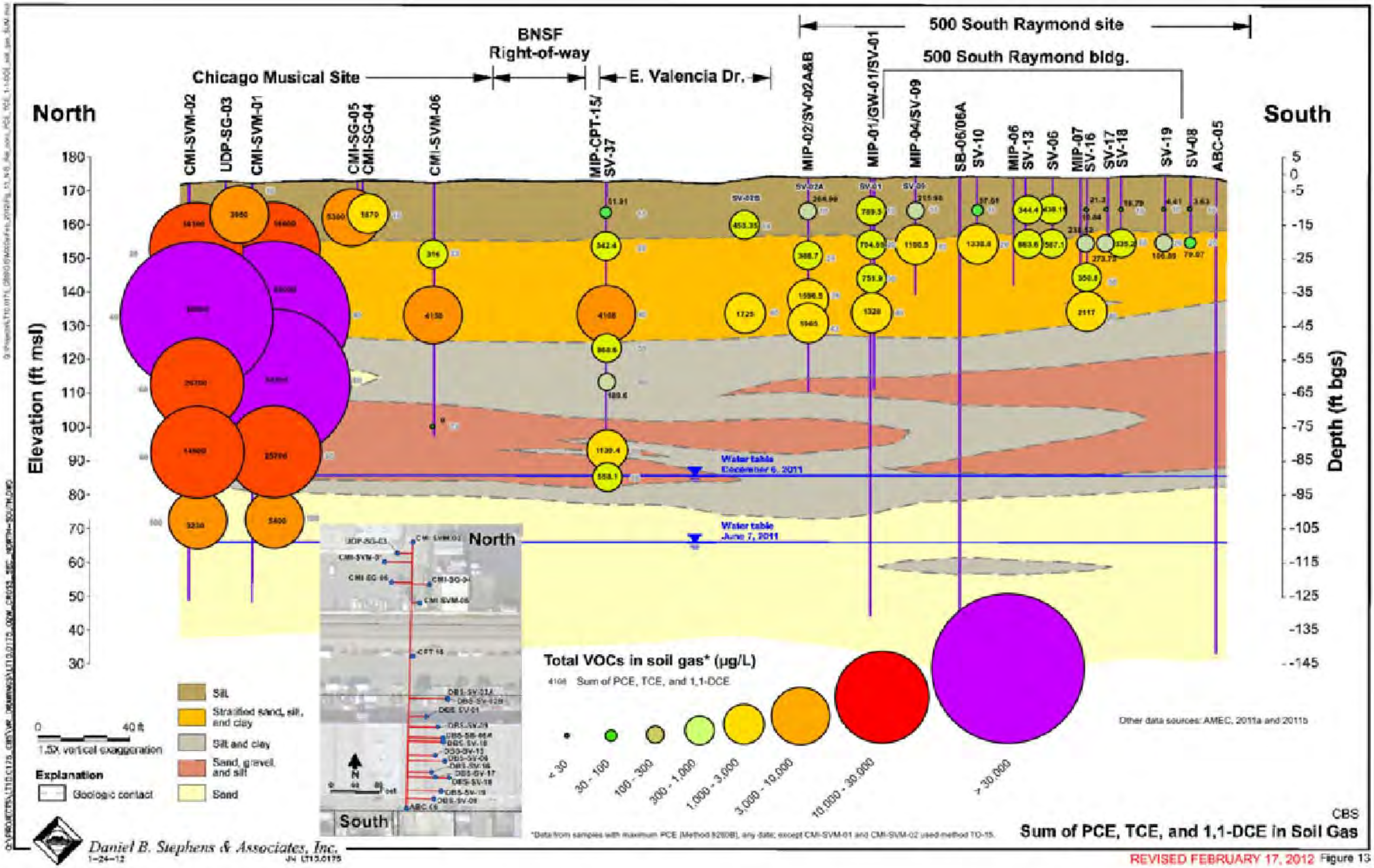
CBS

Concentrations of PCE, TCE, and 1,1-DCE in Soil Gas at 40-42 ft bgs June and September 2011

REVISED FEBRUARY 17, 2012 Figure 11

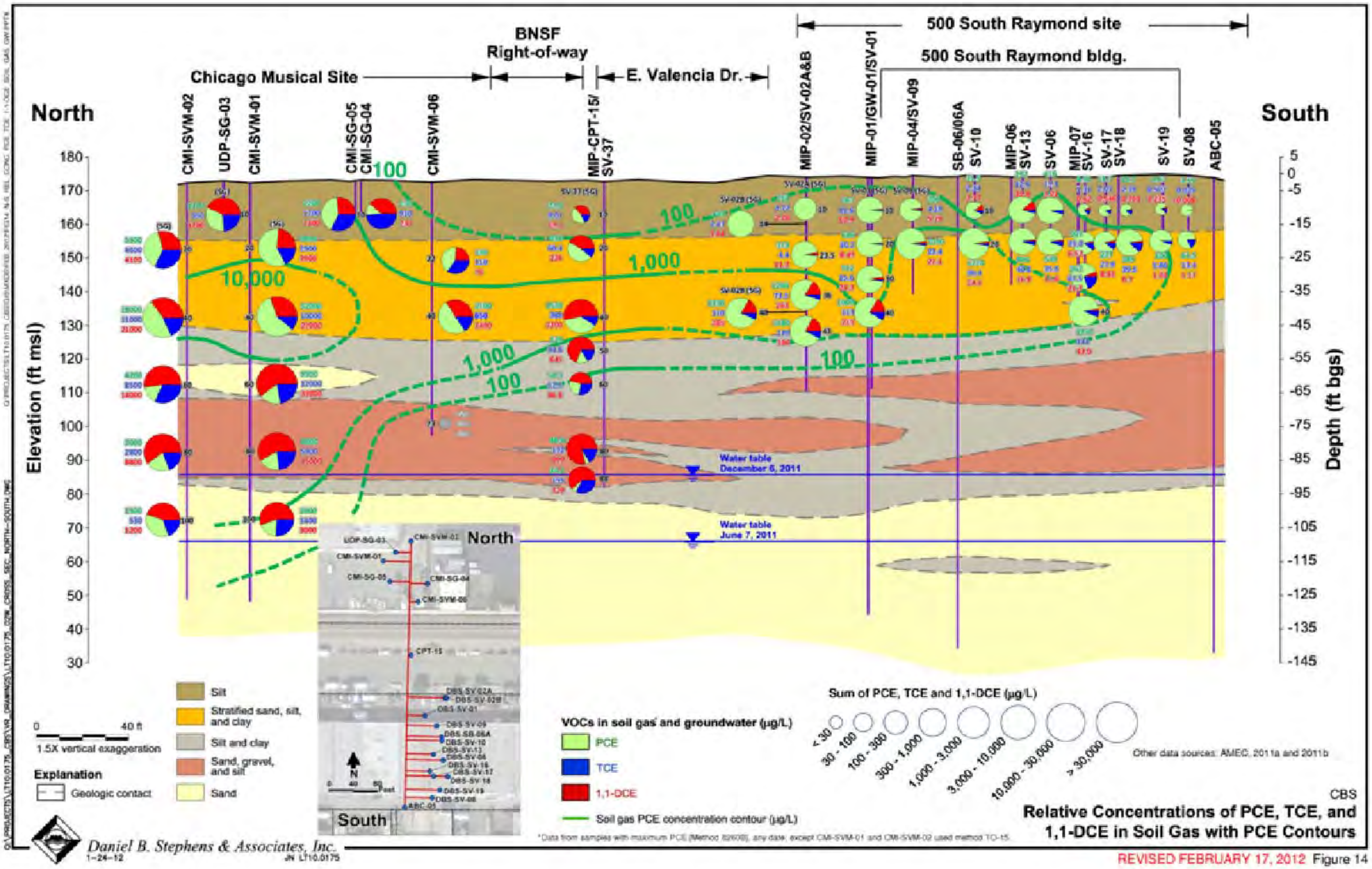
Daniel B. Stephens & Associates, Inc.
1/11/2012 JN LT10.0175

REVISED FEBRUARY 17, 2012 Figure 12



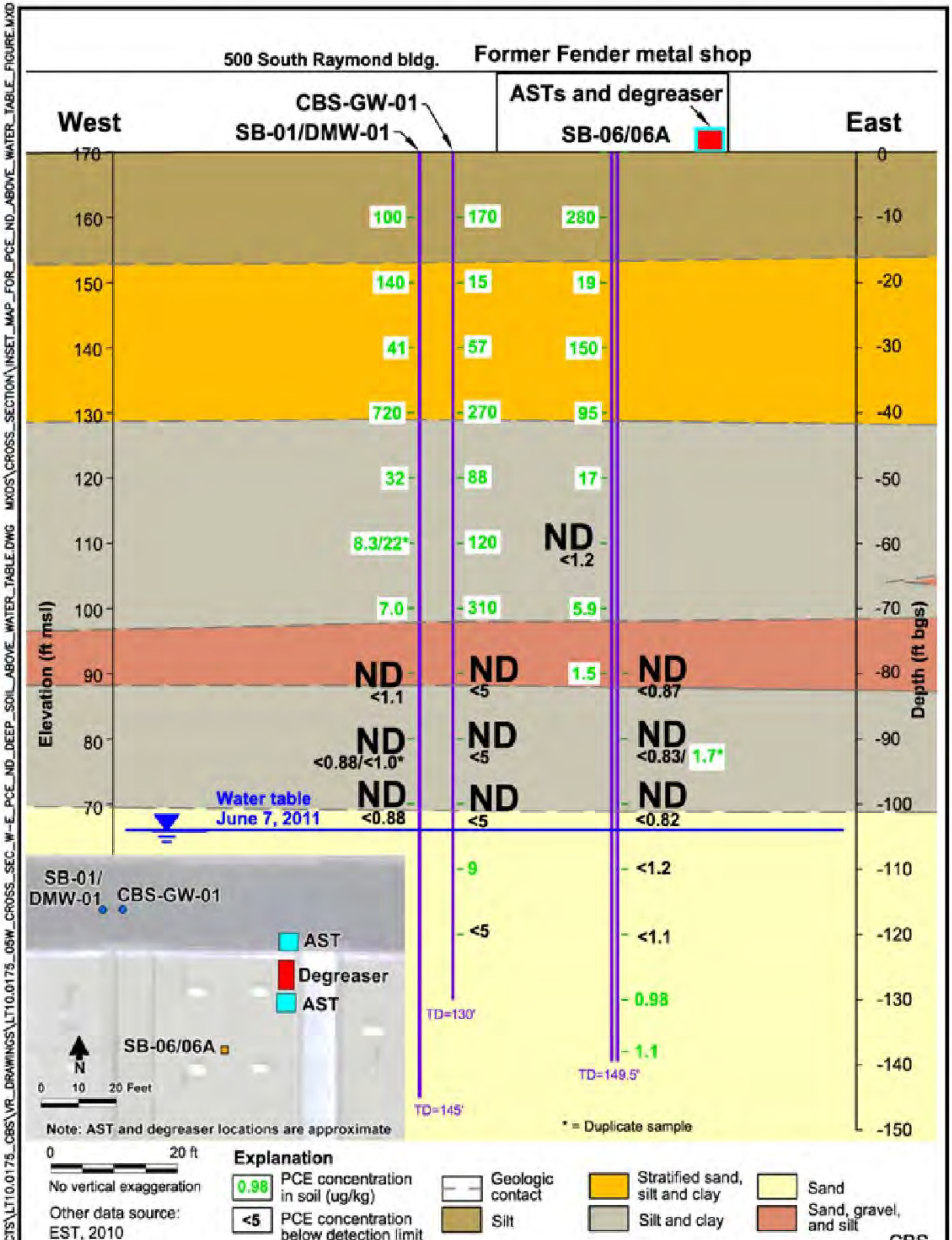
REVISED FEBRUARY 17, 2012 Figure 13

20304-63



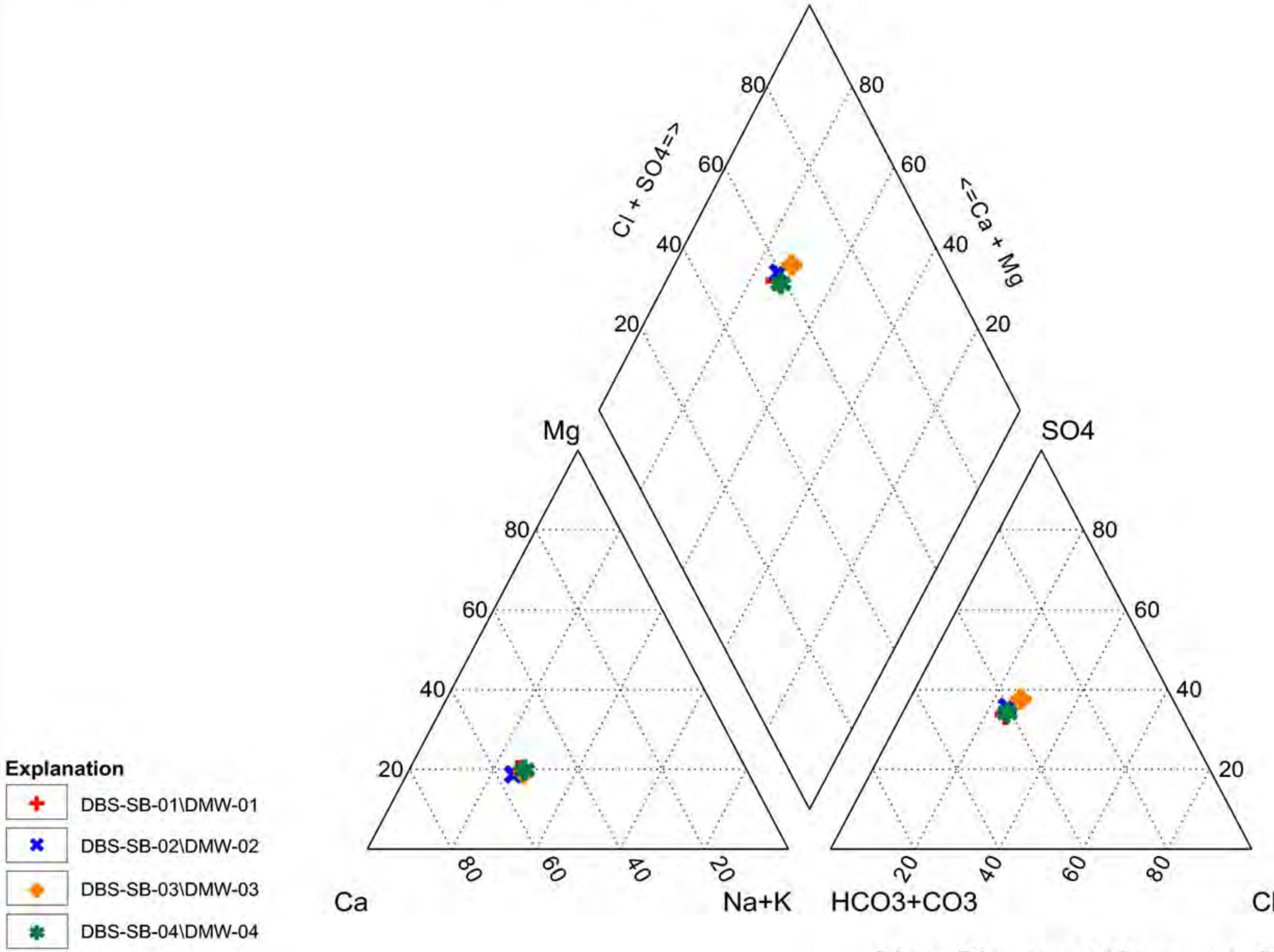
Relative Concentrations of PCE, TCE, and 1,1-DCE in Soil Gas with PCE Contours

REVISED FEBRUARY 17, 2012 Figure 14



PCE Not Detected in Deep Soil Above the Water Table

Daniel B. Stephens & Associates, Inc.
2-16-12
JN LTR10.0175
REVISED FEBRUARY 17, 2012 Figure 15



CBS
Piper Diagram of Inorganic Water Quality at 500 South Raymond

Figure 16

Daniel B. Stephens & Associates, Inc.
1-24-12
LT10.0175.00

Tables

Table 1. Investigation Location Summary

Location ID	Date Completed	Depth (ft bgs)	Location Type	Soil Gas Port Depths (ft bgs)	Well Screen Depth (ft bgs)
SV-01	4/26/2011	40.2	CPT/SV	10, 20, 30, 40	NA
SV-02A	4/27/2011	37.1	CPT/SV	10, 23.5, 36, 43	NA
SV-02B	4/27/2011	39.9	CPT/SV	14, 40	NA
SV-03	4/26/2011	40.2	CPT/SV	10, 20, 40	NA
SV-04	4/18/2011	20.0	CPT/SV	10, 20	NA
SV-05	4/18/2011	20.1	CPT/SV	10, 20	NA
SV-06	4/18/2011	20.1	CPT/SV	10, 20	NA
SV-07	4/19/2011	20.0	CPT/SV	10, 20	NA
SV-08	4/19/2011	20.0	CPT/SV	10, 20	NA
SV-09	4/18/2011	20.1	CPT/SV	10, 20	NA
SV-10	4/18/2011	20.1	CPT/SV	10, 20	NA
SV-11	4/19/2011	43.0	CPT/SV	10, 20, 30, 40	NA
SV-12	4/20/2011	20.1	CPT/SV	10, 20	NA
SV-13	4/18/2011	20.0	CPT/SV	10, 20	NA
SV-14	4/18/2011	20.0	CPT/SV	10, 20	NA
SV-15	4/20/2011	20.2	CPT/SV	10, 20	NA
SV-16	4/19/2011	40.1	CPT/SV	10, 20, 30, 40	NA
SV-17	4/19/2011	20.0	CPT/SV	10, 20	NA
SV-18	4/19/2011	20.0	CPT/SV	10, 20	NA
SV-19	4/19/2011	20.1	CPT/SV	10, 20	NA
SV-20	4/28/2011	20.2	CPT/SV	9, 20	NA
SV-21	4/28/2011	20.0	CPT/SV	8, 20	NA
SV-22	4/28/2011	20.0	CPT/SV	10, 20	NA
SV-23	4/27/2011	20.2	CPT/SV	10, 20	NA
SV-24	4/27/2011	20.0	CPT/SV	10, 20	NA
SV-25	4/26/2011	20.2	CPT/SV	10, 20	NA
SV-26	4/26/2011	20.0	CPT/SV	10, 20	NA
SV-27A	4/27/2011	43.3	CPT/SV	36, 43	NA
SV-27B	4/27/2011	40.2	CPT/SV	10, 24.5, 40	NA
SV-27C	4/27/2011	16.5	SV	16	NA
SV-28	4/26/2011	20.2	CPT/SV	10, 20	NA
SV-29	4/26/2011	20.0	CPT/SV	10, 20	NA
SV-30	4/26/2011	20.0	CPT/SV	10, 20	NA

CPT/SV = Cone penetrometer test/soil vapor probe
SV = Soil vapor probe
CPT/MIP = Cone penetrometer test/membrane interface probe
HA = Hand auger
SB/GWG = Soil boring with groundwater grab sample(s)
MW = Monitor well

ft bgs = Feet below ground surface
NA = Not applicable

Table 1. Investigation Location Summary

Location ID	Date Completed	Depth (ft bgs)	Location Type	Soil Gas Port Depths (ft bgs)	Well Screen Depth (ft bgs)
SV-31	4/28/2011	20.2	CPT/SV	11, 20	NA
SV-32	4/28/2011	20.2	CPT/SV	10, 20	NA
SV-33	4/28/2011	20.2	CPT/SV	10, 20	NA
SV-34	9/7/2011	88.5	SV	10, 20, 30, 40, 50, 60, 70, 80, 88	NA
SV-35	4/20/2011	40.2	CPT/SV	10, 20, 30, 40	NA
SV-36	4/20/2011	40.2	CPT/SV	10, 20, 30, 40	NA
SV-37	9/12/2011	145	SB/GWG	NA	NA
SV-37A	9/13/2011	90	SV	10, 20, 30, 40, 50, 60, 70, 80, 88	NA
MIP-01	4/22/2011	63.3	CPT/MIP	NA	NA
MIP-02	4/22/2011	62.5	CPT/MIP	NA	NA
MIP-03	4/22/2011	59.1	CPT/MIP	NA	NA
MIP-04	4/21/2011	34.9	CPT/MIP	NA	NA
MIP-05	4/21/2011	36.6	CPT/MIP	NA	NA
MIP-06	4/21/2011	31.7	CPT/MIP	NA	NA
MIP-07	4/21/2011	36.1	CPT/MIP	NA	NA
MIP-08	4/21/2011	35.0	CPT/MIP	NA	NA
MIP-09	4/22/2011	65.0	CPT/MIP	NA	NA
MIP-10	4/25/2011	59.5	CPT/MIP	NA	NA
MIP-11	4/25/2011	55.4	CPT/MIP	NA	NA
MIP-12	4/25/2011	56.1	CPT/MIP	NA	NA
MIP-13	4/25/2011	65.1	CPT/MIP	NA	NA
MIP-14	9/08/2011	88.3	CPT/MIP	NA	NA
MIP-15	9/07/2011	90.1	CPT/MIP	NA	NA
MIP-16	9/07/2011	90.1	CPT/MIP	NA	NA
MIP-17	9/07/2011	88.3	CPT/MIP	NA	NA
SB-01/DMW-01	5/26/2011	145	MW	NA	135-145
SB-02/DMW-02	5/24/2011	145	MW	NA	135-145
SB-03/DMW-03	5/19/2011	145	MW	NA	135-145
SB-04/DMW-04	8/31/2011	145	MW	NA	135-145
SB-05	5/25/2011	5	HA	NA	NA
SB-06	6/03/2011	120	SB/GWG	NA	NA
SB-06A	9/16/2011	139.5	SB/GWG	NA	NA

CPT/SV = Cone penetrometer test/soil vapor probe
SV = Soil vapor probe
CPT/MIP = Cone penetrometer test/membrane interface probe
HA = Hand auger
SB/GWG = Soil boring with groundwater grab sample(s)
MW = Monitor well
ft bgs = Feet below ground surface
NA = Not applicable

T01_Investigation Summary.doc

Table 2a. Compounds Detected in Soil Vapor Samples, Soil Borings SV-01 through SV-03
Investigation Phase IA, April 2011

	Concentration [a] (µg/L)													
Analyte	SV-01-10	SV-01-20	SV-01-20 DUP	SV-01-30	SV-01-40	SV-02-10	SV-02-14	SV-02-23.5	SV-02-36	SV-02-40	SV-02-43	SV-03-10	SV-03-20	SV-03-40
Date sampled	*4/26/2011*	*4/26/2011*	*4/26/2011*	*4/26/2011*	*4/26/2011*	*4/28/2011*	*4/28/2011*	*4/28/2011*	*4/28/2011*	*4/28/2011*	*4/28/2011*	*4/27/2011*	*4/27/2011*	*4/27/2011*
Purge volume	*7*	*3*	*3*	*3*	*3*	*7*	*7*	*3*	*3*	*3*	*3*	*7*	*3*	*3*
Benzene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.008	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Chlorobenzene	<0.020	<0.020	<0.020	**0.036**	**0.124**	<0.008	<0.020	<0.020	**0.128**	**0.062**	**0.222**	<0.020	<0.020	<0.020
Chloroform	<0.020	<0.020	<0.020	<0.020	**0.220**	**0.032**	**0.188**	<0.020	**0.282**	**0.187**	**0.399**	<0.020	<0.020	**0.164**
Dichlorodifluoromethane	<0.020	<0.020	<0.020	<0.020	<0.020	<0.008	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
1,1-Dichloroethane	<0.020	<0.020	<0.020	**0.377**	**0.118**	<0.008	<0.020	<0.020	**0.120**	**0.386**	**0.140**	<0.020	<0.020	**0.396**
1,2-Dichloroethane	<0.020	<0.020	<0.020	<0.020	<0.020	<0.008	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
1,1-Dichloroethene	**3.25**	**4.18**	**3.86**	**24.3 D**	**114 D**	**2.26**	**3.88**	**11.3**	**263 D**	**285 D**	**336 D**	**3.34**	**12.7**	**81.9 D**
cis-1,2-Dichloroethene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.008	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Ethylbenzene	**0.048**	**0.032**	**0.025**	**0.066**	<0.020	<0.008	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Trichlorotrifluoroethane	**0.054**	**0.129**	**0.150**	**0.504**	**0.976**	**0.126**	**0.190**	**0.253**	**2.22**	<0.020	**3.22**	**0.151**	**0.290**	**0.661**
Methylene chloride	<0.020	<0.020	<0.020	<0.020	<0.020	**0.032**	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
1,1,1,2-Tetrachloroethane	<0.020	<0.020	<0.020	**0.094**	<0.020	<0.008	<0.020	<0.020	<0.020	**0.160**	**0.224**	<0.020	<0.020	**0.162**
Tetrachloroethylene	**332 D**	**227 D**	**211 D**	**712 D**	**775 D**	**261 D**	**449 D**	**373 D**	**1,260 D**	**1,330 D**	**1,480 D**	**207 D**	**349 D**	**572 D**
Toluene	**0.340**	**0.274**	**0.249**	**0.154**	**0.318**	<0.008	<0.020	<0.020	**0.180**	**0.160**	<0.020	<0.020	**0.098**	<0.020
1,1,1-Trichloroethane	<0.020	<0.020	<0.020	<0.020	<0.020	<0.008	<0.020	<0.020	**0.399**	<0.020	<0.020	<0.020	<0.020	<0.020
1,1,2-Trichloroethane	<0.020	<0.020	<0.020	<0.020	<0.020	<0.008	<0.020	<0.020	<0.020	**4.84**	**0.044**	<0.020	<0.020	**1.72**
Trichloroethylene	**1.14**	**1.85**	**1.79**	**15.6 D**	**34.3 D**	**1.72**	**2.47**	**4.40**	**73.5 D**	**110 D**	**149 D**	**2.46**	**5.50**	**52.4 D**
Trichlorofluoromethane	<0.020	<0.020	<0.020	**0.155**	**0.305**	**0.041**	**0.130**	**0.068**	**0.534**	**0.711**	**1.43**	<0.020	**0.118**	**0.553**
1,2,4-Trimethylbenzene	<0.020	<0.020	<0.020	**0.036**	<0.020	<0.008	<0.020	<0.020	<0.020	**0.027**	<0.020	<0.020	<0.020	<0.020
1,3,5-Trimethylbenzene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.008	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Xylenes	**0.402**	**0.130**	**0.091**	**0.804**	<0.020	<0.008	<0.020	<0.020	<0.020	**0.056**	<0.020	<0.020	<0.020	<0.020
MTBE	<0.020	<0.020	<0.020	<0.020	<0.020	<0.008	<0.020	<0.020	**0.290**	<0.020	<0.020	<0.020	<0.020	<0.020

[a] Samples analyzed using EPA Method 8260B
Bold indicates value that exceeds the applicable detection limit.

µg/L = Micrograms per liter
D = Analyzed at higher sample dilution

MTBE = Methyl tertiary-butyl ether

Table 2b. Compounds Detected in Soil Vapor Samples, Soil Borings SV-04 Through SV-06
Investigation Phase IA, April 2011

	Concentration [a] (µg/L)										
Analyte	SV-04-10' 1P	SV-04-10' 3P	SV-04-10' 7P	SV-04-20' 1P	SV-04-20' 3P	SV-04-20' 7P	SV-05-10'	SV-05-10' DUP	SV-05-20'	SV-06-10'	SV-06-20'
Date sampled	*4/18/2011*	*4/18/2011*	*4/18/2011*	*4/18/2011*	*4/18/2011*	*4/18/2011*	*4/18/2011*	*4/18/2011*	*4/18/2011*	*4/18/2011*	*4/18/2011*
Purge volume	*1*	*3*	*7*	*1*	*3*	*7*	*7*	*7*	*3*	*7*	*3*
Benzene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Chlorobenzene	<0.020	<0.020	<0.020	**0.284**	**0.316**	**0.276**	<0.020	<0.020	<0.020	<0.020	**0.158**
Chloroform	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	**0.03**	**0.039**	**0.262**	<0.020	**0.252**
Dichlorodifluoromethane	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
1,1-Dichloroethane	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
1,2-Dichloroethane	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
1,1-Dichloroethene	**0.574**	**1.22**	**1.94**	**24.4 D**	**24.7 D**	**25.2 D**	**1.82**	**2.68**	**17.3**	**3.01**	**11.6**
cis-1,2-Dichloroethene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Ethylbenzene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Trichlorotrifluoroethane	<0.020	<0.020	<0.020	**0.663**	**0.407**	**0.25**	**0.038**	**0.065**	**0.518**	**0.121**	**0.507**
Methylene chloride	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
1,1,1,2- Tetrachloroethane	<0.020	<0.020	<0.020	**0.608**	**0.54**	**0.445**	**0.146**	**0.19**	**0.824**	<0.020	<0.020
Tetrachloroethylene	**11.7**	**28**	**34.5**	**920 D**	**987 D**	**976 D**	**285 D**	**313 D**	**928 D**	**416 D**	**540 D**
Toluene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	**0.08**	**0.117**	<0.020	<0.020	<0.020
1,1,1-Trichloroethane	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
1,1,2-Trichloroethane	**0.100**	**0.301**	**0.489**	**0.086**	<0.020	<0.020	**5.04**	**4.66**	**0.175**	<0.020	**0.251**
Trichloroethylene	**0.274**	**0.614**	**0.92**	**19.8 D**	**20.9 D**	**20.9 D**	**3.79**	**5.12**	**27.9**	**19.1 D**	**35.5**
Trichlorofluoromethane	<0.020	<0.020	<0.020	**0.238**	<0.020	<0.020	**0.045**	**0.054**	**0.256**	**0.146**	**0.338**
1,2,4-Trimethylbenzene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
1,3,5-Trimethylbenzene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Xylenes	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
MTBE	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020

[a] Samples analyzed using EPA Method 8260B
Bold indicates value that exceeds the applicable detection limit.

µg/L = Micrograms per liter
D = Analyzed at higher sample dilution

MTBE = Methyl tertiary-butyl ether

Table 2c. Compounds Detected in Soil Vapor Samples, Soil Borings SV-07 Through SV-11
Investigation Phase IA, April 2011

Analyte	Concentration [a] (µg/L)													
	SV-07-10'	SV-07-20'	SV-08-10'	SV-08-20'	SV-09-10'	SV-09-20'	SV-10-10'	SV-10-20'	SV-10-20	SV-11-10'	SV-11-20'	SV-11-20' DUP	SV-11-30'	SV-11-40'
Date sampled	*4/19/2011*	*4/19/2011*	*4/19/2011*	*4/19/2011*	*4/18/2011*	*4/18/2011*	*4/18/2011*	*4/18/2011*	*4/26/2011*	*4/19/2011*	*4/19/2011*	*4/19/2011*	*4/19/2011*	*4/19/2011*
Purge volume	*7*	*3*	*7*	*3*	*7*	*3*	*7*	*3*	*3*	*7*	*3*	*3*	*3*	*3*
Benzene	<0.008	<0.008	<0.008	<0.020	<0.020	<0.020	<0.020	<0.020	<0.008	<0.008	<0.020	<0.020	<0.020	<0.020
Chlorobenzene	<0.008	<0.008	<0.008	<0.020	<0.020	<0.020	<0.020	**0.372**	**0.266**	<0.008	<0.020	<0.020	**0.086**	**0.131**
Chloroform	<0.008	<0.008	<0.008	<0.020	<0.020	<0.020	<0.020	**0.286**	**0.108**	<0.008	<0.020	<0.020	**0.206**	**0.389**
Dichlorodifluoromethane	<0.008	<0.008	<0.008	<0.020	<0.020	<0.020	<0.020	<0.020	<0.008	<0.008	<0.020	<0.020	<0.020	<0.020
1,1-Dichloroethane	<0.008	**0.050**	<0.008	**0.378**	<0.020	<0.020	<0.020	<0.020	**0.380**	<0.008	<0.020	<0.020	**0.431**	**0.194**
1,2-Dichloroethane	<0.008	<0.008	**0.010**	<0.020	<0.020	<0.020	<0.020	<0.020	<0.008	<0.008	<0.020	<0.020	<0.020	<0.020
1,1-Dichloroethene	**0.295**	**3.14**	<0.008	**1.17**	**5.79**	**27.1**	**3.77**	**24.4 D**	**15.7 D**	<0.008	**24.3 D**	**24.2 D**	**34.4 D**	**108 D**
cis-1,2-Dichloroethene	<0.008	<0.008	<0.008	<0.020	<0.020	<0.020	<0.020	<0.020	<0.008	<0.008	<0.020	<0.020	<0.020	<0.020
Ethylbenzene	<0.008	<0.008	<0.008	<0.020	<0.020	<0.020	<0.020	<0.020	<0.008	<0.008	<0.020	<0.020	<0.020	<0.020
Trichlorotrifluoroethane	**0.026**	**0.267**	<0.008	**0.152**	**0.246**	**0.852**	**0.114**	**0.672**	**0.398**	**0.057**	<0.020	<0.020	**0.822**	**1.05**
Methylene chloride	<0.008	<0.008	<0.008	<0.020	<0.020	<0.020	<0.020	<0.020	<0.008	<0.008	<0.020	<0.020	<0.020	<0.020
1,1,1,2-Tetrachloroethane	<0.008	<0.008	<0.008	<0.020	<0.020	**0.514**	<0.020	**0.586**	**0.742**	<0.008	<0.020	<0.020	<0.020	<0.020
Tetrachloroethylene	**2.87**	**169 D**	**3.59**	**64.5 D**	**206 D**	**1,050 D**	**31.5**	**1,270 D**	**837 D**	**60.1 D**	**386 D**	**387 D**	**837 D**	**880 D**
Toluene	<0.008	<0.008	**0.008**	<0.020	<0.020	<0.020	<0.020	<0.020	<0.008	**0.029**	<0.020	<0.020	<0.020	<0.020
1,1,1-Trichloroethane	<0.008	<0.008	<0.008	<0.020	<0.020	<0.020	<0.020	<0.020	<0.008	<0.008	<0.020	<0.020	<0.020	<0.020
1,1,2-Trichloroethane	<0.008	<0.008	<0.008	<0.020	<0.020	**0.074**	**0.124**	<0.020	**0.736**	<0.008	**2.49**	**1.82**	**3.02**	<0.020
Trichloroethylene	**0.424**	**20.4 D**	**0.039**	**13.4 D**	**4.19**	**23.4**	**2.34**	**36.4 D**	**33.9 D**	**2.52**	**24.6 D**	**25.2 D**	**76.5 D**	**144 D**
Trichlorofluoromethane	**0.078**	**0.263**	**0.050**	**0.262**	**0.102**	**0.294**	**0.102**	**0.326**	**0.214**	**0.054**	<0.020	<0.020	**0.538**	**0.758**
1,2,4-Trimethylbenzene	<0.008	<0.008	<0.008	<0.020	<0.020	<0.020	<0.020	<0.020	<0.008	<0.008	<0.020	<0.020	<0.020	<0.020
1,3,5-Trimethylbenzene	<0.008	<0.008	<0.008	<0.020	<0.020	<0.020	<0.020	<0.020	<0.008	<0.008	<0.020	<0.020	<0.020	<0.020
Xylenes	<0.008	<0.008	<0.008	<0.020	<0.020	<0.020	<0.020	<0.020	<0.008	<0.008	<0.020	<0.020	<0.020	<0.020
MTBE	<0.008	<0.008	<0.008	<0.020	<0.020	<0.020	<0.020	<0.020	<0.008	<0.008	<0.020	<0.020	<0.020	<0.020

[a] Samples analyzed using EPA Method 8260B
Bold indicates value that exceeds the applicable detection limit.

µg/L = Micrograms per liter
D = Analyzed at higher sample dilution

MTBE = Methyl tertiary-butyl ether

Table 2d. Compounds Detected in Soil Vapor Samples, Soil Borings SV-12 through SV-16
Investigation Phase IA, April 2011

Analyte	Concentration [a] (µg/L)													
	SV-12-10'	SV-12-20'	SV-13-10'	SV-13-20'	SV-13-20' DUP	SV-14-10'	SV-14-20'	SV-15-10'	SV-15-10' DUP	SV-15-20'	SV-16-10'	SV-16-20'	SV-16-30'	SV-16-40'
Date sampled	*4/20/2011*	*4/20/2011*	*4/18/2011*	*4/18/2011*	*4/18/2011*	*4/18/2011*	*4/18/2011*	*4/20/2011*	*4/20/2011*	*4/20/2011*	*4/19/2011*	*4/19/2011*	*4/19/2011*	*4/19/2011*
Purge volume	*7*	*3*	*7*	*3*	*3*	*7*	*3*	*7*	*7*	*3*	*7*	*3*	*3*	*3*
Benzene	<0.008	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Chlorobenzene	<0.008	**0.120**	<0.020	<0.020	<0.020	<0.020	**0.046**	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Chloroform	<0.008	**0.234**	**0.046**	<0.020	<0.020	<0.020	**0.09**	<0.020	<0.020	**0.226**	<0.020	<0.020	**0.114**	<0.020
Dichlorodifluoromethane	<0.008	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
1,1-Dichloroethane	<0.008	**0.126**	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	**0.129**	<0.020	<0.020	**0.400**	**0.136**
1,2-Dichloroethane	<0.008	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
1,1-Dichloroethene	**3.18**	**11.2**	**39.8**	**17.7 D**	**16.8 D**	**0.634**	**7.05**	**1.77**	**0.868**	**13.7 D**	**0.620**	**6.52**	**21.3 D**	**40.0 D**
cis-1,2-Dichloroethene	<0.008	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Ethylbenzene	**0.016**	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Trichlorotrifluoroethane	**0.035**	**0.292**	**0.13**	<0.020	<0.020	**0.085**	**0.32**	**0.030**	**0.024**	**0.305**	<0.020	<0.020	**0.353**	**0.430**
Methylene chloride	<0.008	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
1,1,1,2-Tetrachloroethane	<0.008	<0.020	<0.020	<0.020	<0.020	<0.020	**0.148**	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Tetrachloroethylene	**127 D**	**522 D**	**292 D**	**688 D**	**806 D**	**282 D**	**679 D**	**79.9 D**	**64.2 D**	**409 D**	**8.91**	**207 D**	**262 D**	**331 D**
Toluene	**0.161**	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	**0.100**	**0.105**	<0.020	<0.020	<0.020	<0.020	<0.020
1,1,1-Trichloroethane	<0.008	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
1,1,2-Trichloroethane	<0.008	<0.020	<0.020	<0.020	<0.020	<0.020	**1.82**	<0.020	<0.020	<0.020	<0.020	<0.020	**4.09**	**2.36**
Trichloroethylene	**6.22**	**34.0 D**	**12.6**	**40.6 D**	**40.8 D**	**6.89**	**31.4 D**	**6.22 D**	**4.83 D**	**36.3 D**	**1.31**	**25.0 D**	**67.5 D**	**127 D**
Trichlorofluoromethane	**0.070**	**0.270**	**0.134**	<0.020	<0.020	**0.108**	**0.236**	**0.089**	**0.079**	**0.293**	<0.020	**0.271**	**0.446**	**0.490**
1,2,4-Trimethylbenzene	<0.008	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
1,3,5-Trimethylbenzene	<0.008	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Xylenes	**0.130**	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
MTBE	<0.008	**0.350**	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	**0.310**	<0.020	<0.020	<0.020	<0.020

[a] Samples analyzed using EPA Method 8260B
Bold indicates value that exceeds the applicable detection limit.

µg/L = Micrograms per liter
D = Analyzed at higher sample dilution

MTBE = Methyl tertiary-butyl ether

Table 2e. Compounds Detected in Soil Vapor Samples, Soil Borings SV-17 through SV-21
Investigation Phase IA, April 2011

Analyte	Concentration [a] (µg/L)													
	SV-17-10'	SV-17-20'	SV-18-10'	SV-18-10' DUP	SV-18-20'	SV-19-10'	SV-19-20'	SV-19-20	SV-19-20 DUP	SV-20-9	SV-20-20	SV-21-8	SV-21-20	SV-21-20 DUP
Date sampled	*4/19/2011*	*4/19/2011*	*4/19/2011*	*4/19/2011*	*4/19/2011*	*4/19/2011*	*4/19/2011*	*4/26/2011*	*4/26/2011*	*4/28/2011*	*4/28/2011*	*4/28/2011*	*4/28/2011*	*4/28/2011*
Purge volume	*7*	*3*	*7*	*7*	*3*	*7*	*3*	*3*	*3*	*7*	*3*	*7*	*3*	*3*
Benzene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.020	<0.020
Chlorobenzene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.020	<0.020
Chloroform	<0.020	<0.020	<0.020	<0.020	<0.020	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	**0.192**	**0.191**
Dichlorodifluoromethane	<0.020	<0.020	<0.020	<0.020	<0.020	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.020	<0.020
1,1-Dichloroethane	<0.020	<0.020	<0.020	<0.020	<0.020	<0.008	<0.008	<0.008	<0.008	<0.008	**0.057**	<0.008	**0.194**	**0.182**
1,2-Dichloroethane	<0.020	<0.020	<0.020	<0.020	<0.020	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.020	<0.020
1,1-Dichloroethene	**0.55**	**8.83 D**	**0.459**	**0.701**	**6.7**	**0.235**	**0.606**	**1.03**	**1.19**	<0.008	**0.478**	<0.008	**2.24**	**2.48**
cis-1,2-Dichloroethene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.020	<0.020
Ethylbenzene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.008	**0.083**	<0.008	<0.008	<0.008	<0.008	<0.008	<0.020	<0.020
Trichlorotrifluoroethane	<0.020	<0.020	<0.020	<0.020	<0.020	**0.036**	<0.008	**0.163**	**0.158**	**0.014**	**0.112**	**0.031**	**0.122**	**0.132**
Methylene chloride	<0.020	<0.020	<0.020	<0.020	<0.020	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.020	<0.020
1,1,1,2-Tetrachloroethane	<0.020	<0.020	<0.020	<0.020	<0.020	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.020	<0.020
Tetrachloroethylene	**18.7**	**237 D**	**11.8**	**15.7**	**289 D**	**3.67**	**2.26**	**100 D**	**93.0 D**	**0.177**	**1.15**	**22.8**	**10.8**	**12.4**
Toluene	<0.020	<0.020	**0.218**	**0.215**	<0.020	**0.013**	**0.309**	**0.294**	**0.301**	**0.020**	<0.008	<0.008	<0.020	<0.020
1,1,1-Trichloroethane	<0.020	<0.020	<0.020	<0.020	<0.020	<0.008	<0.008	<0.008	<0.008	<0.008	**0.133**	**0.139**	**0.432**	**0.450**
1,1,2-Trichloroethane	<0.020	**1.82**	<0.020	<0.020	<0.020	**0.122**	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.020	<0.020
Trichloroethylene	**2.05**	**27.9 D**	**1.64**	**2.39**	**39.5 D**	**0.507**	**0.654**	**5.86**	**6.14**	<0.008	**0.209**	<0.008	**1.51**	**1.64**
Trichlorofluoromethane	**0.07**	**0.344**	<0.020	<0.020	**0.349**	**0.093**	**0.145**	**0.232**	**0.230**	<0.008	**0.113**	**0.065**	**0.194**	**0.209**
1,2,4-Trimethylbenzene	<0.020	<0.020	**0.035**	**0.104**	<0.020	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.020	<0.020
1,3,5-Trimethylbenzene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.020	<0.020
Xylenes	<0.020	<0.020	**0.218**	**0.252**	<0.020	<0.008	**0.510**	**0.079**	**0.089**	<0.008	<0.008	<0.008	<0.020	<0.020
MTBE	<0.020	<0.020	<0.020	<0.020	<0.020	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.020	<0.020

[a] Samples analyzed using EPA Method 8260B
Bold indicates value that exceeds the applicable detection limit.

µg/L = Micrograms per liter
D = Analyzed at higher sample dilution

MTBE = Methyl tertiary-butyl ether

Table 2f. Compounds Detected in Soil Vapor Samples, Soil Borings SV-22 through SV-26
Investigation Phase IA, April 2011

Analyte	Concentration [a] (µg/L)										
	SV-22-10	SV-22-20	SV-23-10	SV-23-20	SV-24-10	SV-24-20	SV-25-10	SV-25-20	SV-25-20 DUP	SV-26-10	SV-26-20
Date sampled	*4/28/2011*	*4/28/2011*	*4/28/2011*	*4/28/2011*	*4/28/2011*	*4/28/2011*	*4/27/2011*	*4/27/2011*	*4/27/2011*	*4/27/2011*	*4/27/2011*
Purge volume	*7*	*3*	*7*	*3*	*7*	*3*	*7*	*3*	*3*	*3*	*3*
Benzene	<0.020	<0.020	<0.008	<0.020	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
Chlorobenzene	<0.020	<0.020	<0.008	<0.020	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
Chloroform	<0.020	**0.178**	<0.008	<0.020	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
Dichlorodifluoromethane	<0.020	<0.020	<0.008	<0.020	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
1,1-Dichloroethane	<0.020	**0.159**	<0.008	<0.020	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
1,2-Dichloroethane	<0.020	<0.020	<0.008	<0.020	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
1,1-Dichloroethene	<0.020	**2.21**	**0.012**	<0.020	**0.032**	**0.178**	**0.073**	<0.008	<0.008	**0.318**	<0.008
cis-1,2-Dichloroethene	<0.020	<0.020	<0.008	<0.020	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
Ethylbenzene	<0.020	<0.020	<0.008	<0.020	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
Trichlorotrifluoroethane	<0.020	**0.167**	**0.122**	**0.176**	**0.054**	**0.163**	**0.232**	**0.168**	**0.242**	**0.367**	**0.395**
Methylene chloride	<0.020	<0.020	<0.008	<0.020	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
1,1,1,2-Tetrachloroethane	<0.020	<0.020	<0.008	<0.020	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
Tetrachloroethylene	**10.5**	**77.1 D**	**43.4 D**	**29.8**	**13.2**	**63.4 D**	**4.43**	**6.32**	**7.35**	**43.2 D**	**72.0 D**
Toluene	**0.026**	<0.020	<0.008	<0.020	**0.018**	<0.008	**0.102**	<0.008	<0.008	**0.105**	<0.008
1,1,1-Trichloroethane	<0.020	**0.417**	<0.008	<0.020	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
1,1,2-Trichloroethane	<0.020	**0.098**	<0.008	<0.020	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
Trichloroethylene	**0.018**	**3.05**	**0.552**	**5.06**	**0.058**	**0.817**	**0.073**	**0.088**	**0.103**	**0.117**	**1.37**
Trichlorofluoromethane	<0.020	**0.248**	**0.209**	**0.268**	**0.112**	**0.191**	**0.093**	**0.060**	**0.086**	**0.114**	**0.126**
1,2,4-Trimethylbenzene	<0.020	<0.020	<0.008	<0.020	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
1,3,5-Trimethylbenzene	<0.020	<0.020	<0.008	<0.020	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
Xylenes	<0.020	<0.020	<0.008	<0.020	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
MTBE	<0.020	<0.020	<0.008	<0.020	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008

[a] Samples analyzed using EPA Method 8260B
Bold indicates value that exceeds the applicable detection limit.

µg/L = Micrograms per liter
D = Analyzed at higher sample dilution

MTBE = Methyl tertiary-butyl ether

Table 2g. Compounds Detected in Soil Vapor Samples, Soil Borings SV-27 through SV-29
Investigation Phase IA, April 2011

Analyte	Concentration [a] (µg/L)										
	SV-27-10	SV-27-16	SV-27-24.5	SV-27-24.5 DUP	SV-27-36	SV-27-40	SV-27-43	SV-28-10	SV-28-20	SV-29-10	SV-29-20
Date sampled	*4/28/2011*	*4/28/2011*	*4/28/2011*	*4/28/2011*	*4/28/2011*	*4/28/2011*	*4/28/2011*	*4/26/2011*	*4/26/2011*	*4/26/2011*	*4/26/2011*
Purge volume	*7*	*7*	*3*	*3*	*3*	*3*	*3*	*7*	*3*	*7*	*3*
Benzene	<0.008	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.008	**0.015**	**0.262**	**0.560**
Chlorobenzene	<0.008	<0.020	<0.020	<0.020	**0.144**	**0.127**	**0.288**	<0.008	**0.063**	<0.008	<0.008
Chloroform	**0.032**	<0.020	<0.020	<0.020	**0.253**	**0.170**	**0.356**	**0.017**	**0.020**	<0.008	<0.008
Dichlorodifluoromethane	<0.008	<0.020	<0.020	<0.020	<0.020	**0.114**	<0.020	<0.008	<0.008	<0.008	**0.041**
1,1-Dichloroethane	<0.008	<0.020	<0.020	<0.020	**0.122**	**0.458**	**0.209**	<0.008	**0.055**	<0.008	<0.008
1,2-Dichloroethane	<0.008	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.008	<0.008	<0.008	<0.008
1,1-Dichloroethene	**37.2 D**	**22.1**	<0.020	<0.020	**288 D**	**645 D**	**527 D**	**12.2 D**	**72.4 D**	**6.11**	**29.9**
cis-1,2-Dichloroethene	<0.008	<0.020	<0.020	<0.020	<0.020	**1.10**	**1.05**	<0.008	<0.008	<0.008	<0.008
Ethylbenzene	**0.030**	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	**0.085**	<0.008	**0.015**	<0.008
Trichlorotrifluoroethane	**0.524**	**0.382**	<0.020	<0.020	**1.65**	**2.23**	**2.53**	**0.237**	**0.638**	**0.194**	**0.650**
Methylene chloride	<0.008	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.008	<0.008	<0.008	<0.008
1,1,1,2-Tetrachloroethane	<0.008	<0.020	<0.020	<0.020	<0.020	**0.880**	**0.966**	<0.008	**0.063**	<0.008	<0.008
Tetrachloroethylene	**203 D**	**310 D**	**3.13**	**2.82**	**930 D**	**1,100 D**	**1,050 D**	**116 D**	**650 D**	**4.81**	**9.02**
Toluene	**0.103**	**0.108**	<0.020	<0.020	<0.020	<0.020	<0.020	**0.358**	**0.020**	**0.234**	**0.400**
1,1,1-Trichloroethane	<0.008	<0.020	<0.020	<0.020	**0.350**	**0.401**	**0.432**	<0.008	<0.008	<0.008	<0.008
1,1,2-Trichloroethane	<0.008	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.008	<0.008	<0.008	<0.008
Trichloroethylene	**8.45**	**14.0**	**0.020**	**0.015**	**99.7 D**	**272 D**	**267 D**	**3.32**	**30.8 D**	**1.85**	**6.86**
Trichlorofluoromethane	**0.108**	**0.140**	<0.020	<0.020	**0.373**	**0.781**	**0.676**	**0.076**	**0.187**	**0.051**	**0.148**
1,2,4-Trimethylbenzene	<0.008	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.008	<0.008	<0.008	<0.008
1,3,5-Trimethylbenzene	<0.008	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.008	<0.008	<0.008	<0.008
Xylenes	**0.147**	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	**0.508**	<0.008	**0.106**	**0.035**
MTBE	<0.008	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.008	<0.008	<0.008	<0.008

[a] Samples analyzed using EPA Method 8260B
Bold indicates value that exceeds the applicable detection limit.

µg/L = Micrograms per liter
D = Analyzed at higher sample dilution

MTBE = Methyl tertiary-butyl ether

Table 2h. Compounds Detected in Soil Vapor Samples, Soil Borings SV-30 through SV-33
Investigation Phase IA, April 2011

Analyte	Concentration [a] (µg/L)								
	SV-30-10	SV-30-20	SV-31-11	SV-31-20	SV-32-10	SV-32-20	SV-33-10	SV-33-20	SV-33-20 DUP
Date sampled	*4/26/2011*	*4/26/2011*	*4/28/2011*	*4/28/2011*	*4/28/2011*	*4/28/2011*	*4/29/2011*	*4/29/2011*	*4/29/2011*
Purge volume	*7*	*3*	*7*	*3*	*7*	*3*	*7*	*3*	*3*
Benzene	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
Chlorobenzene	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
Chloroform	<0.008	**0.095**	<0.008	**0.070**	<0.008	<0.008	<0.008	<0.008	<0.008
Dichlorodifluoromethane	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
1,1-Dichloroethane	<0.008	**0.047**	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
1,2-Dichloroethane	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
1,1-Dichloroethene	**4.63**	**24.6 D**	<0.008	**1.15**	<0.008	**0.173**	<0.008	**0.613**	**0.501**
cis-1,2-Dichloroethene	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
Ethylbenzene	**0.050**	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
Trichlorotrifluoroethane	**0.229**	**0.556**	**0.145**	**0.256**	**0.052**	**0.196**	**0.065**	**0.233**	**0.189**
Methylene chloride	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
1,1,1,2-Tetrachloroethane	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
Tetrachloroethylene	**14.1 D**	**51.2 D**	**0.557**	**4.14**	**0.599**	**2.00**	**1.02**	**3.96**	**3.35**
Toluene	**0.160**	<0.008	**0.062**	<0.008	**0.025**	<0.008	**0.038**	<0.008	<0.008
1,1,1-Trichloroethane	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
1,1,2-Trichloroethane	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
Trichloroethylene	**2.24**	**12.1 D**	<0.008	**1.21**	<0.008	**0.401**	<0.008	**1.05**	**0.806**
Trichlorofluoromethane	**0.066**	**0.154**	**0.061**	**0.101**	<0.008	**0.077**	<0.008	**0.087**	**0.076**
1,2,4-Trimethylbenzene	**0.056**	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
1,3,5-Trimethylbenzene	**0.013**	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
Xylenes	**0.369**	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
MTBE	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008

[a] Samples analyzed using EPA Method 8260B
Bold indicates value that exceeds the applicable detection limit.

µg/L = Micrograms per liter
D = Analyzed at higher sample dilution

MTBE = Methyl tertiary-butyl ether

Table 2i. Compounds Detected in Soil Vapor Samples, Soil Borings SV-35 through SV-36
Investigation Phase IA, April 2011

Analyte	Concentration [a] (µg/L)											
	SV-35-10	SV-35-20	SV-35-30	SV-35-30	SV-35-40	SV-35-40	SV-36-10	SV-36-20	SV-36-30	SV-36-30	SV-36-40	SV-36-40
Date sampled	*4/20/2011*	*4/20/2011*	*4/20/2011*	*4/26/2011*	*4/20/2011*	*4/26/2011*	*4/20/2011*	*4/20/2011*	*4/20/2011*	*4/26/2011*	*4/20/2011*	*4/26/2011*
Purge volume	*7*	*3*	*3*	*3*	*3*	*3*	*7*	*3*	*3*	*3*	*3*	*3*
Benzene	<0.020	<0.020	<0.020	<0.020	<0.008	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Chlorobenzene	<0.020	**0.252**	<0.020	**0.437**	<0.008	**0.297**	<0.020	**0.356**	<0.020	**0.238**	<0.020	**0.206**
Chloroform	<0.020	<0.020	**0.106**	**0.250**	<0.008	**0.462**	<0.020	**0.248**	**0.06**	**0.198**	<0.020	**0.408**
Dichlorodifluoromethane	<0.020	<0.020	<0.020	<0.020	<0.008	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
1,1-Dichloroethane	<0.020	<0.020	**0.378**	**0.390**	<0.008	**0.152**	<0.020	<0.020	**0.378**	**0.392**	<0.020	**0.152**
1,2-Dichloroethane	<0.020	<0.020	<0.020	<0.020	<0.008	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
1,1-Dichloroethene	**5.4 D**	**16.7 D**	**314 D**	**52.7 D**	**38.8 D**	**178 D**	**5.49**	**26.4 D**	**7.16 D**	**32.6 D**	**23.1 D**	**129 D**
cis-1,2-Dichloroethene	<0.020	<0.020	<0.020	<0.020	<0.008	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Ethylbenzene	<0.020	<0.020	<0.020	<0.020	<0.008	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Trichlorotrifluoroethane	**0.206**	**0.334**	**0.399**	**0.905**	**0.542**	**1.52**	**0.161**	**0.57**	**0.192**	**0.740**	**0.206**	**0.983**
Methylene chloride	<0.020	<0.020	<0.020	<0.020	<0.008	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
1,1,1,2-Tetrachloroethane	**0.021**	**0.322**	<0.020	**0.906**	<0.008	**0.274**	**0.042**	**0.372**	<0.020	**0.554**	<0.020	**0.138**
Tetrachloroethylene	**220 D**	**672 D**	**822 D**	**943 D**	**57.3 D**	**1,060 D**	**373 D**	**847 D**	**151 D**	**841 D**	**69.2 D**	**1,020 D**
Toluene	<0.020	<0.020	<0.020	<0.020	**0.034**	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
1,1,1-Trichloroethane	<0.020	<0.020	<0.020	<0.020	<0.008	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
1,1,2-Trichloroethane	**4.2**	**1.3**	**1.74**	**2.30**	**0.058**	**1.40**	<0.020	**0.033**	**3.20**	**2.92**	<0.020	**1.70**
Trichloroethylene	**5.4**	**14.7 D**	**479 D**	**52.5 D**	**6.24 D**	**116 D**	**8.2**	**28.7 D**	**11.5**	**48.0 D**	**12.2 D**	**110 D**
Trichlorofluoromethane	**0.094**	**0.19**	**0.188**	**0.433**	**0.258**	**1.02**	**0.094**	**0.246**	**0.102**	**0.337**	**0.184**	**0.642**
1,2,4-Trimethylbenzene	<0.020	<0.020	<0.020	<0.020	<0.008	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
1,3,5-Trimethylbenzene	<0.020	<0.020	<0.020	<0.020	<0.008	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Xylenes	<0.020	<0.020	<0.020	<0.020	<0.008	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
MTBE	<0.020	<0.020	<0.020	<0.020	<0.008	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020

[a] Samples analyzed using EPA Method 8260B
Bold indicates value that exceeds the applicable detection limit.

µg/L = Micrograms per liter
D = Analyzed at higher sample dilution

MTBE = Methyl tertiary-butyl ether

Table 3a. Compounds Detected in Soil Vapor Samples, Soil Borings SV-01 through SV-02
Investigation Phase IB, September 2011

Analyte	Concentration [a] (µg/L)								
	SV-01-10'	SV-01-20'	SV-01-30'	SV-01-40'	SV-02-10'	SV-02-14'	SV-02-23.5'	SV-02-36'	SV-02-40'
Date sampled	*9/19/2011*	*9/19/2011*	*9/19/2011*	*9/19/2011*	*9/19/2011*	*9/19/2011*	*9/19/2011*	*9/19/2011*	*9/19/2011*
Purge volume	*7*	*3*	*3*	*3*	*7*	*7*	*3*	*3*	*3*
Bromodichloromethane	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Carbon tetrachloride	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Chlorobenzene	**0.042**	**0.032**	**0.107**	**0.198**	<0.020	<0.020	<0.020	**0.072**	**0.098**
Chloroform	**0.038**	<0.020	**0.049**	**0.230**	<0.020	<0.020	**0.037**	**0.188**	**0.238**
Dichlorodifluoromethane	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
1,1-Dichloroethane	<0.020	<0.020	<0.020	**0.392**	<0.020	<0.020	<0.020	**0.390**	**0.394**
1,1-Dichloroethene	**10.9**	**8.49**	**49.3 D**	**215 D**	**2.16**	**3.04**	**30.7**	**189 D**	**108 D**
cis-1,2-Dichloroethene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
trans-1,2-Dichloroethene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Trichlorotrifluoroethane	**0.276**	**0.233**	**0.462**	**0.890**	**0.040**	**0.080**	**0.252**	**0.699**	**0.640**
Methylene chloride	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
1,1,1,2-Tetrachloroethane	**0.136**	**0.100**	**0.224**	**0.564**	<0.020	<0.020	<0.020	**0.110**	**0.154**
Tetrachloroethylene	**767 D**	**686 D**	**636 D**	**1,000 D**	**197 D**	**211 D**	**317 D**	**605 D**	**451 D**
Toluene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
1,1,1-Trichloroethane	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
1,1,2-Trichloroethane	<0.020	<0.020	<0.020	**0.216**	<0.020	<0.020	<0.020	**2.38**	**2.15**
Trichloroethylene	**11.6**	**10.2**	**22.0**	**113 D**	**2.22**	**2.77**	**6.63**	**82.2 D**	**79.8 D**
Trichlorofluoromethane	**0.109**	**0.073**	**0.202**	**0.842**	<0.020	<0.020	**0.067**	**0.716**	**0.806**
Vinyl chloride	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
1,4-Dioxane	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25

[a] Samples analyzed using EPA method 8260B
Bold indicates value that exceeds the applicable detection limit.

µg/L = Micrograms per liter
D = Analyzed at higher sample dilution

Table 3b. Compounds Detected in Soil Vapor Samples, Soil Borings SV-03, SV-11, SV16, a<0.020 SV-27
Investigation Phase IB, September 2011

Analyte	Concentration[a] (µg/L)									
	SV-03-10'	SV-03-20'	SV-03-20' DUP	SV-03-40'	SV-11-40'	SV-16-40'	SV-27-10'	SV-27-24.5'	SV-27-36'	SV-27-40'
Date sampled	*9/19/2011*	*9/19/2011*	*9/19/2011*	*9/19/2011*	*9/19/2011*	*9/19/2011*	*9/20/2011*	*9/20/2011*	*9/20/2011*	*9/20/2011*
Purge volume	*7*	*3*	*3*	*3*	*3*	*3*	*7*	—	*3*	*3*
Bromodichloromethane	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020		<0.020	<0.020
Carbon tetrachloride	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	**N**	<0.020	<0.020
Chlorobenzene	<0.020	<0.020	<0.020	**0.078**	<0.020	<0.020	<0.020	**O**	**0.058**	**0.032**
Chloroform	**0.036**	**0.032**	<0.020	**0.225**	**0.266**	**0.240**	**0.056**		**0.102**	**0.071**
Dichlorodifluoromethane	<0.020	<0.020	<0.020	<0.020	**0.110**	**0.095**	<0.020	**F**	<0.020	<0.020
1,1-Dichloroethane	<0.020	<0.020	<0.020	**0.403**	**0.460**	**0.518**	<0.020	**L**	**0.402**	**0.416**
1,1-Dichloroethene	**8.79**	**7.66**	**7.67**	**91.9 D**	**90.6 D**	**43.0 D**	**22.2**	**O**	**322 D**	**118 D**
cis-1,2-Dichloroethene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	**W**	**0.214**	**0.158**
trans-1,2-Dichloroethene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020		<0.020	<0.020
Trichlorotrifluoroethane	**0.213**	**0.250**	**0.204**	**0.474**	**0.804**	**0.574**	**0.198**		**0.798**	**0.328**
Methylene chloride	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020		<0.020	<0.020
1,1,1,2-Tetrachloroethane	**0.374**	**0.346**	**0.348**	**0.246**	<0.020	<0.020	<0.020	**N**	**0.206**	**0.222**
Tetrachloroethylene	**607 D**	**424 D**	**375 D**	**1,320 D**	**3,250 D**	**1,930 D**	**406 D**	**O**	**602 D**	**203 D**
Toluene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020		<0.020	<0.020
1,1,1-Trichloroethane	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	**F**	<0.020	<0.020
1,1,2-Trichloroethane	<0.020	<0.020	<0.020	**1.71**	**1.53**	**2.18**	<0.020	**L**	<0.020	<0.020
Trichloroethylene	**9.20**	**9.14**	**9.66**	**88.6 D**	**143 D**	**144 D**	**18.7**	**O**	**106 D**	**59.2 D**
Trichlorofluoromethane	**0.094**	**0.104**	**0.096**	**0.566**	**1.06**	**0.930**	**0.062**	**W**	**0.358**	**0.286**
Vinyl chloride	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020		<0.020	<0.020
1,4-Dioxane	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25		<0.25	<0.25

[a] Samples analyzed using EPA method 8260B
Bold indicates value that exceeds the applicable detection limit.

µg/L = Micrograms per liter
D = Analyzed at higher sample dilution

Table 3c. Compounds Detected in Soil Vapor Samples, Soil Boring SV-34
Investigation Phase IB, September 2011

Analyte	Concentration [a] (µg/L)													
	SV-34-10'	SV-34-10' DUP	SV-34-20' 1P	SV-34-20' 3P	SV-34-20' 7P	SV-34-30'	SV-34-40'	SV-34-50'	SV-34-60'	SV-34-70' 1P	SV-34-70' 3P	SV-34-70' 7P	SV-34-80'	SV-34-88'
Date sampled	*9/20/2011*	*9/20/2011*	*9/20/2011*	*9/20/2011*	*9/20/2011*	*9/20/2011*	*9/20/2011*	*9/20/2011*	*9/20/2011*	*9/20/2011*	*9/20/2011*	*9/20/2011*	*9/20/2011*	*9/20/2011*
Purge volume	*7*	*7*	*1*	*3*	*7*	*7*	*7*	—	—	*1*	*3*	*7*	*7*	*7*
Bromodichloromethane	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008			**0.014**	<0.008	<0.008	<0.008	<0.008
Carbon tetrachloride	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	**N**	**N**	<0.008	<0.008	<0.008	<0.008	<0.008
Chlorobenzene	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	**O**	**O**	<0.008	<0.008	<0.008	<0.008	<0.008
Chloroform	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008			**0.012**	<0.008	<0.008	<0.008	<0.008
Dichlorodifluoromethane	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	**F**	**F**	<0.008	<0.008	<0.008	**0.067**	**0.074**
1,1-Dichloroethane	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	**L**	**L**	<0.008	<0.008	<0.008	<0.008	<0.008
1,1-Dichloroethene	**0.031**	**0.144**	**0.029**	**0.028**	**0.049**	**0.299**	**2.96**	**O**	**O**	**20.2 D**	**6.31**	**16.0**	**149 D**	**270 D**
cis-1,2-Dichloroethene	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	**W**	**W**	<0.008	<0.008	<0.008	<0.008	<0.008
trans-1,2-Dichloroethene	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008			<0.008	<0.008	<0.008	<0.008	<0.008
Trichlorotrifluoroethane	<0.008	<0.008	<0.008	<0.008	<0.008	**0.147**	<0.008			**0.303**	**0.067**	**0.266**	**2.10**	**5.91**
Methylene chloride	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008			<0.008	<0.008	<0.008	<0.008	<0.008
1,1,1,2-Tetrachloroethane	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	**N**	**N**	<0.008	<0.008	<0.008	<0.008	<0.008
Tetrachloroethylene	**0.113**	**0.130**	**0.243**	**0.238**	**0.243**	**0.202**	**0.401**	**O**	**O**	**0.766**	**0.374**	**0.655**	**22.9 D**	**22.3 D**
Toluene	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008			<0.008	<0.008	<0.008	<0.008	<0.008
1,1,1-Trichloroethane	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	**F**	**F**	<0.008	<0.008	<0.008	**0.121**	**0.109**
1,1,2-Trichloroethane	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	**L**	**L**	<0.008	<0.008	<0.008	<0.008	<0.008
Trichloroethylene	<0.008	**0.014**	<0.008	<0.008	<0.008	**0.022**	<0.008	**O**	**O**	**3.06**	**0.921**	**2.34**	**29.7 D**	**11.0 D**
Trichlorofluoromethane	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	**0.047**	**W**	**W**	<0.008	<0.008	<0.008	<0.008	<0.008
Vinyl chloride	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008			<0.008	<0.008	<0.008	<0.008	<0.008
1,4-Dioxane	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10			<0.10	<0.10	<0.10	<0.10	<0.10

[a] Samples analyzed using EPA method 8260B
Bold indicates value that exceeds the applicable detection limit.

µg/L = Micrograms per liter
D = Analyzed at higher sample dilution

Table 3d. Compounds Detected in Soil Vapor Samples, Soil Borings SV-35 through SV-36
Investigation Phase IB, September 2011

Analyte	Concentration [a] (µg/L)							
	SV-35-10'	SV-35-20'	SV-35-30'	SV-35-40'	SV-36-11'	SV-36-22'	SV-36-30'	SV-36-40'
Date sampled	*9/19/2011*	*9/19/2011*	*9/19/2011*	*9/19/2011*	*9/20/2011*	*9/20/2011*	*9/20/2011*	*9/20/2011*
Purge volume	*7*	*3*	*3*	*3*	*7*	*3*	*3*	*3*
Bromodichloromethane	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Carbon tetrachloride	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Chlorobenzene	**0.072**	**0.342**	**0.434**	**0.062**	**0.048**	**0.291**	**0.385**	**0.106**
Chloroform	**0.086**	**0.095**	**0.360**	**0.278**	**0.060**	**0.166**	**0.274**	**0.301**
Dichlorodifluoromethane	**0.222**	**0.094**	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
1,1-Dichloroethane	<0.020	<0.020	**0.394**	**0.412**	<0.020	**0.385**	**0.391**	**0.422**
1,1-Dichloroethene	**7.01**	**15.1**	**64.5 D**	**54.1**	**6.62**	**25.0 D**	**72.6 D**	**56.9 D**
cis-1,2-Dichloroethene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
trans-1,2-Dichloroethene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Trichlorotrifluoroethane	**0.174**	**0.380**	**0.552**	**0.562**	**0.187**	**0.527**	**0.621**	**0.591**
Methylene chloride	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
1,1,1,2-Tetrachloroethane	**1.57**	**0.932**	**0.958**	**0.065**	**0.774**	**0.566**	**0.520**	**0.066**
Tetrachloroethylene	**618 D**	**722 D**	**885 D**	**356 D**	**546 D**	**509 D**	**685 D**	**573 D**
Toluene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
1,1,1-Trichloroethane	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
1,1,2-Trichloroethane	**1.08**	**1.83**	**2.36**	**1.73**	**1.13**	**1.85**	**2.26**	**2.83**
Trichloroethylene	**16.1**	**24.7**	**59.4 D**	**81.3**	**15.4**	**40.4 D**	**72.4 D**	**141 D**
Trichlorofluoromethane	**0.096**	**0.170**	**0.366**	**0.768**	**0.101**	**0.329**	**0.503**	**0.792**
Vinyl chloride	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
1,4-Dioxane	**0.198 J**	**0.157 J**	**0.128 J**	**0.018 J**	<0.25	<0.25	<0.25	<0.25

[a] Samples analyzed using EPA method 8260B
Bold indicates value that exceeds the applicable detection limit.

µg/L = Micrograms per liter
D = Analyzed at higher sample dilution
J = Value is below the practical quantitation level and is considered an estimate.

Daniel B. Stephens & Associates, Inc.

Table 3e. Compounds Detected in Soil Vapor Samples, Soil Boring SV-37
Investigation Phase IB, September 2011

Analyte	Concentration [a] (µg/L)													
	SV-37-10'	SV-37-20'	SV-37-30'	SV-37-40' 1P	SV-37-40' 3P	SV-37-40' 7P	SV-37-50' 1P	SV-37-50' 3P	SV-37-50' 7P	SV-37-60'	SV-37-70'	SV-37-80'	SV-37-88'	SV-37-88' DUP
Date sampled	*9/20/2011*	*9/20/2011*	*9/20/2011*	*9/20/2011*	*9/20/2011*	*9/20/2011*	*9/20/2011*	*9/20/2011*	*9/20/2011*	*9/20/2011*	*9/20/2011*	*9/20/2011*	*9/20/2011*	*9/20/2011*
Purge volume	*7*	*7*	—	*1*	*3*	*7*	*1*	*3*	*7*	*7*	—	*3*	*7*	*7*
Bromodichloromethane	**0.051**	<0.020		**0.046**	**0.021**	**0.019**	**0.046**	**0.048**	**0.072**	**0.054**		**0.019**	<0.008	<0.008
Carbon tetrachloride	<0.020	<0.020	**N**	**0.202**	**0.175**	**0.161**	<0.020	<0.020	**0.165**	<0.008	**N**	<0.008	<0.008	<0.008
Chlorobenzene	<0.020	<0.020	**O**	**0.055**	**0.055**	**0.059**	<0.020	<0.020	<0.020	<0.008	**O**	<0.008	<0.008	<0.008
Chloroform	**0.161**	**0.090**		**0.630**	**0.340**	**0.348**	**0.306**	**0.314**	**0.329**	**0.288**		**0.294**	**0.245**	**0.244**
Dichlorodifluoromethane	<0.020	<0.020	**F**	**0.107**	**0.143**	**0.142**	<0.020	<0.020	<0.020	<0.008	**F**	<0.008	<0.008	<0.008
1,1-Dichloroethane	<0.020	<0.020	**L**	**0.314**	**0.600**	**0.558**	**0.460**	**0.476**	**0.535**	**0.402**	**L**	**0.523**	**0.426**	**0.428**
1,1-Dichloroethene	**19.1**	**226 D**	**O**	**1,970 D**	**2,040 D**	**2,200 D**	**458 D**	**502 D**	**645 D**	**86.8 D**	**O**	**899 D**	**377 D**	**329 D**
cis-1,2-Dichloroethene	<0.020	<0.020	**W**	**1.44**	**1.79**	**1.88**	**1.55**	**1.57**	**1.36**	**1.01**	**W**	**3.03**	**0.964**	**0.956**
trans-1,2-Dichloroethene	<0.020	<0.020		**1.27**	**0.596**	**0.668**	**0.301**	**0.310**	**0.727**	**0.078**		**0.557**	**0.148**	**0.153**
Trichlorotrifluoroethane	<0.020	**0.632**		**1.84**	**2.84**	**2.88**	**0.008**	**0.288**	**4.02**	<0.008		**7.31**	**0.406**	**0.395**
Methylene chloride	<0.020	<0.020		**0.011**	<0.020	<0.020	<0.020	<0.020	**0.056**	<0.008		**0.066**	<0.008	<0.008
1,1,1,2-Tetrachloroethane	<0.020	<0.020	**N**	**0.177**	**0.168**	**0.126**	<0.020	<0.020	<0.020	<0.008	**N**	<0.008	<0.008	<0.008
Tetrachloroethylene	**23.8**	**256 D**	**O**	**1,390 D**	**1,360 D**	**1,520 D**	**75.6 D**	**98.8 D**	**129 D**	**50.3 D**	**O**	**48.4 D**	**32.8 D**	**34.1 D**
Toluene	<0.020	<0.020		**0.140**	**0.032**	**0.33**	<0.020	<0.020	<0.020	<0.008		**0.015**	<0.008	<0.008
1,1,1-Trichloroethane	<0.020	**0.286**	**F**	**3.52**	**2.02**	**0.454**	<0.020	<0.020	**0.576**	<0.008	**F**	<0.008	<0.008	<0.008
1,1,2-Trichloroethane	<0.020	<0.020	**L**	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.008	**L**	<0.008	<0.008	<0.008
Trichloroethylene	**9.01**	**60.4 D**	**O**	**337 D**	**357 D**	**388 D**	**117 D**	**153 D**	**94.6 D**	**52.5 D**	**O**	**192 D**	**188 D**	**195 D**
Trichlorofluoromethane	<0.020	**0.068**	**W**	**1.11**	**1.53**	**1.40**	**0.122**	**0.190**	**1.30**	**0.081**	**W**	**0.439**	**0.731**	**0.705**
Vinyl chloride	<0.020	<0.020		<0.020	<0.020	<0.020	<0.020	<0.020	**0.038**	<0.008		**0.028**	<0.008	<0.008
1,4-Dioxane	<0.25	<0.25		<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.10		<0.10	<0.10	<0.10

[a] Samples analyzed using EPA method 8260B
Bold indicates value that exceeds the applicable detection limit.

µg/L = Micrograms per liter
D = Analyzed at higher sample dilution

Table 4. Comparison of Soil Gas Analyses Using EPA Methods TO-15 and 8260B

Analyte	Concentration [a] (µg/L)															
	SV-04-20		SV-35-40		SV-03-40		SV-26-10		SV-02-36		SV-37-40		SV-34-20		SV-3-40	
Sample Date	*4/20/2011*		*4/26/2011*		*4/27/2011*		*4/28/2011*		*4/28/2011*		*9/20/2011*		*9/20/2011*		*9/20/2011*	
Analysis Method	*TO-15*	*8260*	*TO-15*	*8260*	*TO-15*	*8260*	*TO-15*	*8260*	*TO-15*	*8260*	*TO-15*	*8260*	*TO-15*	*8260*	*TO-15*	*8260*
Acetone	<0.048	NA	**2.1**	NA	**2.6**	NA	**0.19**	NA	**2.4**	NA	<0.19	NA	**0.026**	NA	<0.048	NA
Benzene	**0.033**	<0.020	<0.48	<0.020	<0.48	<0.020	<0.040	<0.008	<0.64	<0.020	<0.064	<0.020	**0.0023**	<0.008	**0.029**	<0.020
2-Butanone	<0.044	<0.020	<1.3	<0.020	<1.3	<0.020	<0.11	<0.008	<1.8	<0.020	<0.18	NA	**0.0089**	NA	<0.044	NA
Bromodichloromethane	<0.034	<0.020	<1.0	<0.020	<1.0	<0.020	<0.084	<0.008	<1.3	<0.020	<0.13	**0.019**	<0.0034	<0.008	<0.034	<0.020
Carbon tetrachloride	<0.031	<0.020	<0.94	<0.020	<0.94	<0.020	<0.079	<0.008	<1.3	<0.020	<0.13	**0.161**	<0.0031	<0.008	<0.031	<0.020
Chlorobenzene	**0.26**	**0.276**	<0.69	**0.297**	<0.69	<0.020	<0.058	<0.008	<0.92	**0.128**	<0.092	**0.059**	<0.0023	<0.008	**0.16**	**0.078**
Chloroform	**0.091**	<0.020	<0.73	**0.462**	<0.73	**0.164**	<0.061	<0.008	<0.98	**0.282**	**0.25**	**0.348**	<0.0024	<0.008	**0.29**	**0.225**
Chloromethane	<0.010	<0.020	<0.31	<0.020	<0.31	<0.020	<0.026	<0.008	<0.41	<0.020	<0.041	<0.020	**0.0017**	<0.008	<0.010	<0.020
Cyclohexane	<0.017	NA	<0.52	NA	<0.52	NA	<0.043	NA	<0.69	NA	<0.069	NA	<0.0017	NA	**0.018**	NA
Dichlorodifluoromethane	<0.025	<0.020	<0.74	<0.020	<0.74	<0.020	<0.062	<0.008	<0.99	<0.020	<0.099	**0.142**	<0.0025	<0.008	**<0.025**	<0.020
1,1-Dichloroethane	<0.020	<0.020	<0.61	**0.152**	<0.61	**0.396**	<0.051	<0.008	<0.81	**0.120**	**0.19**	**0.558**	<0.0020	<0.008	**0.046**	**0.403**
1,1-Dichloroethene	**30**	**25.2 D**	**76**	**178 D**	**65**	**81.9 D**	**0.19**	**0.318**	**160**	**263 D**	**470 D**	**2200 D**	**0.014**	**0.049**	**54 D**	**91.9 D**
1,2-Dichloroethane	<0.020	<0.020	<0.61	<0.020	<0.61	<0.020	<0.051	<0.008	<0.81	<0.020	<0.081	<0.020	<0.0020	<0.008	**0.023**	<0.020
1,4-Dioxane	**1.1**	<1.0	<11	<1.0	<11	<1.0	<0.90	<0.400	<14	<1.0	<1.4	<0.25	<0.036	<0.10	<0.36	<0.25
c-1,2-Dichloroethene	<0.020	<0.020	<0.59	<0.020	<0.59	<0.020	<0.050	<0.008	<0.79	<0.020	**1.2**	**1.88**	<0.0020	<0.008	**0.053**	<0.020
t-1,2-Dichloroethene	<0.020	<0.020	<0.59	<0.020	<0.59	<0.020	<0.050	<0.008	<0.79	<0.020	**0.49**	**0.668**	<0.0020	<0.008	**0.054**	<0.020
Ethanol	<0.094	NA	<2.8	NA	<2.8	NA	<0.24	NA	<3.8	NA	<0.38	NA	**0.014**	NA	<0.094	NA
Methyl-tertiary-butyl ether	<0.072	<0.020	<2.2	<0.020	<2.2	<0.020	<0.18	<0.008	<2.9	**0.290**	<0.29	<0.020	<0.0072	<0.008	<0.072	<0.020
Tetrachloroethene	**750**	**976 D**	**430 D**	**1060 D**	**340 D**	**572 D**	**29 D**	**43.2 D**	**570 D**	**1260 D**	**680 D**	**1520 D**	**0.13**	**0.243**	**400 D**	**1320 D**
Toluene	<0.019	<0.020	<0.57	<0.020	**0.58**	<0.020	**0.072**	**0.105**	<0.75	**0.180**	**0.11**	**0.33**	**0.0028**	<0.008	<0.019	<0.020
Trichloroethene	**32**	**20.9**	**50**	**116 D**	**34**	**52.4 D**	**0.075**	**0.117**	**36**	**73.5 D**	**120 D**	**388 D**	**0.0075**	<0.008	**52 D**	**88.6 D**
Trichlorofluoromethane	**0.15**	<0.020	<1.7	**1.02**	<1.7	**0.553**	<0.14	**0.114**	<2.2	**0.534**	**0.7**	**1.40**	<0.0056	<0.008	**0.47**	**0.566**
Trichlorotrifluoroethane	**0.51**	**0.25**	<3.4	**1.52**	<3.4	**0.661**	<0.29	**0.367**	<4.6	**2.22**	**2.3**	**2.88**	**0.018**	<0.008	**0.7**	**0.474**
1,1,1-Trichloroethane	**0.043**	<0.020	<0.82	<0.020	<0.82	<0.020	<0.068	<0.008	<1.1	**0.399**	**1.0**	**0.454**	<0.0027	<0.008	<0.027	<0.020
1,1,2-Trichloroethane	<0.027	<0.020	<0.82	**1.40**	<0.82	**1.72**	<0.068	<0.008	<1.1	<0.020	<0.11	<0.020	<0.0027	<0.008	**0.073**	**1.71**
1,1,1,2-Tetrachloroethane	NA	**0.445**	NA	**0.274**	NA	**0.162**	NA	<0.008	NA	<0.020	NA	**0.126**	NA	<0.008	NA	**0.246**
Butane	<0.12	NA	<3.6	NA	<3.6	NA	<0.30	NA	<4.8	NA	<0.48	NA	**0.017**	NA	<0.12	NA
Methanol	<0.66	NA	<20	NA	<20	NA	<1.6	NA	<26	NA	<2.6	NA	**0.14**	NA	<0.66	NA
2,2,4-Trimethyl pentane	**0.024**	NA	<0.70	NA	<0.70	NA	<0.058	NA	<0.93	NA	<0.093	NA	<0.0023	NA	**0.16**	NA

[a] **Bold** indicates compounds detected above applicable method detection limit.

µg/L = Micrograms per liter
< = Compound not detected at posted value

NA = Compound not analyzed for
D = Compound analyzed after secondary dilution

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Table 5. Soil Vapor Field Readings for Methane, Carbon Dioxide, and Oxygen

Location ID	Date	Depth (ft bgs)	Methane [a]		Carbon Dioxide (vol %)	Oxygen (vol %)	Notes
			vol %	ppm			
DBS-SV-03	9/19/2011	10	1.55	15,500	5	14.6	Methane rechecked next day at 1,000–1,500 ppm with no further purge; CO_2 and O_2 were 4.96 and 15.1 vol %.
DBS-SV-03	9/19/2011	20	0.05	500	1.36	18.9	
DBS-SV-03	9/19/2011	40	0.2	2,000	5	10	
DBS-SV-34	9/20/2011	10	0.05	500	1.94	13.6	
DBS-SV-34	9/20/2011	20	0.1	1,000	5	10.9	
DBS-SV-34	9/20/2011	30	0.1	1,000	3.14	10.1	
DBS-SV-34	9/20/2011	40	0.1	1,000	0.32	18.6	
DBS-SV-34	9/20/2011	50	0.05	500	0.02	20.8	
DBS-SV-34	9/20/2011	60	0.1	1,000	0.22	18.1	
DBS-SV-34	9/20/2011	70	0.05	500	0.02	20.9	
DBS-SV-34	9/20/2011	80	0.1	1,000	3.42	5.1	
DBS-SV-34	9/20/2011	88	0.1	1,000	3.1	8.3	
DBS-SV-37	9/20/2011	10	0.15	1,500	0.88	15.5	
DBS-SV-37	9/20/2011	20	0.15	1,500	5	13.5	
DBS-SV-37	9/20/2011	40	0.95	9,500	5	10.4	Methane readings of 5,500–9,500 ppm.
DBS-SV-37	9/20/2011	50	0	0	0.58	16.2	
DBS-SV-37	9/20/2011	60	0.1	1,000	0.48	17.2	Meter indicated 21 ppm carbon monoxide.
DBS-SV-37	9/20/2011	80	0.05	500	0.56	16.8	Meter indicated 8 ppm carbon monoxide.
DBS-SV-37	9/20/2011	88	0.05	500	5	8	
DBS-SV-37	9/20/2011	30	NA	NA	NA	NA	Not enough flow for sample or meter reading.
DBS-SV-37	9/20/2011	70	NA	NA	NA	NA	Not enough flow for sample or meter reading.

[a] Methane (vol %) is calculated from readings in units of ppm or percentage of lower explosive limit to put all measurements in consistent units.

ft bgs = Feet below ground surface
vol % = Percent by volume
ppm = Parts per million
NA = Not analyzed

Table 6. Summary of Soil Physical Properties Analyses
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Sample Number	Ksat (cm/s)	Moisture Content: Gravimetric (%, g/g)	Moisture Content: Volumetric (%, cm^3/cm^3)	Grain-Size Distribution: % Gravel (>4.75mm)	Grain-Size Distribution: % Sand (<4.75mm, >0.075mm)	Grain-Size Distribution: % Silt (<0.075mm, >0.002mm)	Grain-Size Distribution: % Clay (<0.002mm)
DMW-01-119.5 Sleeve	2.0×10^{-2}	19.2	31.1	7.2	86.5	5.1	1.2
DMW-01-19.5 Sleeve	5.9×10^{-6}	21.4	35.2	0.2	55.6	28.8	15.4
DMW-01-29.5 #2	3.8×10^{-6}	21.8	32.5	1.7	13.4	74.2	10.7
DMW-01-39.5 #2	2.0×10^{-6}	26.7	39.9	0.0	15.3	67.6	17.0
DMW-01-69.5 #2	2.1×10^{-4}	23.8	36.2	0.1	12.8	62.6	24.5
DMW-01-89.5 #2	9.9×10^{-8}	23.7	38.6	0.1	28.1	42.3	29.5
DMW-02-119.5 #2	1.5×10^{-2}	21.6	30.9	0.2	92.4	5.3	2.2
DMW-02-19.5 #2	8.7×10^{-5}	18.2	28.7	0.0	57.6	33.5	8.9
DMW-02-39.5 #1	2.6×10^{-5}	13.6	23.4	0.1	64.3	25.2	10.3
DMW-02-49.5 #2	1.3×10^{-6}	21.4	34.4	0.0	17.5	59.4	23.1
DMW-02-89.5 #2	5.4×10^{-8}	23.5	38.3	0.1	29.8	38.6	31.6
DMW-03-109.5 #1	1.9×10^{-3}	19.8	31.8	0.1	90.3	7.1	2.5
DMW-03-29.5 #2	4.1×10^{-4}	13.9	21.0	0.0	61.1	33.2	5.6
DMW-03-39.5 #2	1.9×10^{-6}	34.3	47.2	0.0	3.2	77.5	19.3
DMW-03-89.5 #2	6.3×10^{-8}	23.3	36.9	0.2	23.6	40.5	35.7
SB-04-115.5-116	9.6×10^{-3}	13.2	25	2.4	93.2	3.3	1.2
SB-04-140.0-140.5	8.1×10^{-4}	16.2	29.3	3.7	89.8	5.6	1.0
SB-04-50.5-51.0	8.2×10^{-8}	17.7	31.1	0.0	40.1	36.3	23.6
SB-04-70.0-70.5	1.5×10^{-4}	14.1	25.4	0.0	44.0	37.0	19.1
SB-04-90.5-91.0	8.0×10^{-8}	20.6	35.3	0.6	31.5	34.6	33.3
SB-06-120 #2	1.1×10^{-2}	12.1	20.0	1.1	96.6	1.3	0.9

Ksat = Saturated hydraulic conductivity
cm/s = Centimeters per second
g/g = Grams per gram
cm^3/cm^3 = Cubic centimeter per cubic centimeters
mm = Millimeters

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Table 6. Summary of Soil Physical Properties Analyses
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Sample Number	Ksat (cm/s)	Moisture Content		Grain-Size Distribution			
		Gravimetric (%, g/g)	Volumetric (%, cm^3/cm^3)	% Gravel (>4.75mm)	% Sand (<4.75mm, >0.075mm)	% Silt (<0.075mm, >0.002mm)	% Clay (<0.002mm)
SB-06-20 #1	1.8×10^{-4}	13.4	17.1	0.0	67.8	23.0	9.2
SB-06-40 #2	1.0×10^{-2}	3.5	5.6	0.0	91.9	5.5	2.6
SB-06-50 #2	8.4×10^{-9}	22.4	36.9	0.0	25.0	38.0	37.0
SB-06-70 #2	2.5×10^{-4}	16.0	26.8	0.8	47.8	32.3	19.2
SV-37-130 #1	6.5×10^{-4}	15.1	28.1	0.3	92.9	5.2	1.6
SV-37-20 #1	5.6×10^{-4}	17.9	28.8	0.0	53.0	39.2	7.8
SV-37-40 #1	8.2×10^{-3}	7.8	11.4	0.0	90.2	7.0	2.8
SV-37-50 #1	$\leq 1.1 \times 10^{-8}$ [a]	19.9	34.1	0.0	20.3	42.6	37.1
SV-37-90 #1	$\leq 2.1 \times 10^{-8}$ [a]	18.8	33.0	0.7	38.8	29.0	31.5

[a] Outflow was not detected after several days of testing. The samples appeared saturated upon removal from the permeameter. Results are based on flow into sample. Reported conductivity is near the limit of the testing apparatus; the result is less than or equal to the reported conductivity.

Ksat = Saturated hydraulic conductivity
cm/s = Centimeters per second
g/g = Grams per gram
cm^3/cm^3 = Cubic centimeter per cubic centimeters
mm = Millimeters

Table 7a. Compounds Detected in Soil, Well DMW-01

Analyte	Concentration [a,b] (µg/kg)											
	DMW-01-9.5	DMW-01-19.5	DMW-01-29.5	DMW-01-39.5	DMW-01-49.5	DMW-01-59.5	DMW-01-59.5 [c]	DMW-01-69.5	DMW-01-79.5	DMW-01-89.5	DMW-01-89.5 [c]	DMW-01-99.5
Date Sampled	*05/25/11*	*05/25/11*	*05/25/11*	*05/25/11*	*05/25/11*	*05/25/11*	*05/25/11*	*05/25/11*	*05/25/11*	*05/25/11*	*05/25/11*	*05/25/11*
1,1,1,2-Tetrachloroethane	<0.97	<0.85	<1.0	<0.90	<0.86	<0.85	<0.84	<0.94	<1.1	<0.88	<1.0	<0.88
1,1-Dichloroethene	<0.97	<0.85	<1.0	**18**	**7.5**	**0.88**	**0.96**	<0.94	<1.1	**18**	**25**	<0.88
1,2-Dibromo-3-Chloropropane	<4.9	<4.2	<5.1	<4.5	<4.3	<4.2	<4.2	<4.7	<5.6	<4.4	<5.2	<4.4
1,2-Dibromoethane	<0.97	<0.85	<1.0	<0.90	<0.86	<0.85	<0.84	<0.94	<1.1	<0.88	<1.0	<0.88
Benzene	<0.97	**1.8**	<1.0	**0.98**	<0.86	<0.85	<0.84	<0.94	<1.1	<0.88	<1.0	<0.88
cis-1,2-Dichloroethene	<0.97	<0.85	<1.0	<0.90	<0.86	<0.85	<0.84	<0.94	<1.1	<0.88	<1.0	<0.88
Ethylbenzene	<0.97	<0.85	<1.0	<0.90	<0.86	<0.85	<0.84	<0.94	<1.1	<0.88	<1.0	<0.88
o-Xylene	<0.97	<0.85	<1.0	<0.90	<0.86	<0.85	<0.84	<0.94	<1.1	<0.88	<1.0	<0.88
p/m-Xylene	<1.9	<1.7	<2.0	<1.8	<1.7	<1.7	<1.7	<1.9	<2.2	<1.8	<2.1	<1.8
Styrene	<0.97	<0.85	<1.0	<0.90	<0.86	<0.85	<0.84	<0.94	<1.1	<0.88	<1.0	<0.88
Tetrachloroethene	**100**	**140**	**41**	**720 D**	**32**	**8.3**	**22**	**7.0**	<1.1	<0.88	<1.0	<0.88
Toluene	<0.97	**1.4**	<1.0	<0.90	<0.86	<0.85	<0.84	<0.94	<1.1	<0.88	<1.0	<0.88
Trichloroethene	**2.1**	<1.7	<2.0	**19**	**14**	**3.7**	**3.5**	<1.9	<2.2	**77**	**110**	**3.2**

Table 7b. Compounds Detected in Soil, Well DMW-02

Analyte	Concentration [a,b] (µg/kg)												
	DMW-02-9.5	DMW-02-19.5	DMW-02-29.5	DMW-02-29.5 [c]	DMW-02-39.5	DMW-02-49.5	DMW-02-59.5	DMW-02-69.5	DMW-02-79.5	DMW-02-89.5	DMW-02-89.5 [c]	DMW-02-99.5	DMW-02-109.5
Date Sampled	*05/20/11*	*05/20/11*	*05/20/11*	*05/20/11*	*05/20/11*	*05/20/11*	*05/23/11*	*05/23/11*	*05/23/11*	*05/23/11*	*05/23/11*	*05/23/11*	*05/23/11*
1,1,1,2-Tetrachloroethane	<0.91	<0.97	<0.86	<0.95	<0.83	<0.84	<0.84	<0.89	<0.84	<0.85	<0.81	<1.0	<0.91
1,1-Dichloroethene	<0.91	<0.97	<0.86	<0.95	<0.83	<0.84	<0.84	<0.89	**3.9**	**19**	**11**	**1.7**	**2.6**
1,2-Dibromo-3-Chloropropane	<4.5	<4.9	<4.3	<4.8	<4.2	<4.2	<4.2	<4.5	<4.2	<4.3	<4.1	<5.2	<4.5
1,2-Dibromoethane	<0.91	<0.97	<0.86	<0.95	<0.83	<0.84	<0.84	<0.89	<0.84	<0.85	<0.81	<1.0	<0.91
Benzene	**1.4**	<0.97	**0.98**	<0.95	**0.85**	<0.84	<0.84	<0.89	<0.84	**2.1**	**1.4**	<1.0	<0.91
cis-1,2-Dichloroethene	<0.91	<0.97	<0.86	<0.95	<0.83	<0.84	<0.84	<0.89	<0.84	**3.6**	**2.6**	<1.0	<0.91
Ethylbenzene	**1.4**	<0.97	<0.86	<0.95	<0.83	<0.84	<0.84	0.89	<0.84	<0.85	<0.81	<1.0	<0.91
o-Xylene	<0.91	<0.97	<0.86	<0.95	<0.83	<0.84	<0.84	<0.89	<0.84	<0.85	<0.81	<1.0	<0.91
p/m-Xylene	<1.8	<1.9	<1.7	<1.9	<1.7	<1.7	<1.7	<1.8	<1.7	<1.7	<1.6	<2.1	<1.8
Styrene	<0.91	<0.97	<0.86	<0.95	<0.83	<0.84	<0.84	<0.89	<0.84	<0.85	<0.81	<1.0	<0.91
Tetrachloroethene	<0.91	<0.97	<0.86	<0.95	<0.83	<0.84	<0.84	<0.89	<0.84	**1.1**	<0.81	<1.0	**2.3**
Toluene	**2.0**	<0.97	**1.0**	<0.95	<0.83	<0.84	<0.84	<0.89	<0.84	**1.1**	<0.81	<1.0	<0.91
Trichloroethene	<1.8	<1.9	<1.7	<1.9	<1.7	<1.7	<1.7	<1.8	**10**	**130**	**84**	**13**	**16**

[a] Samples analyzed using EPA Method 8260B or 8270C (Modified).
Data represent dry basis results for soils.
All data have been validated.

[b] Bold indicates value that exceeds the applicable detection limit.
[c] Duplicate sample

µg/kg = Micrograms per kilogram

T07a-7b_Soil_DMW-01&02.doc

Table 7c. Compounds Detected in Soil, Well DMW-03

Analyte	Concentration [a,b] (µg/kg)									
	DMW-03-9.5	DMW-03-19.5	DMW-03-29.5	DMW-03-39.5	DMW-03-49.5	DMW-03-59.5	DMW-03-69.5	DMW-03-79.5	DMW-03-89.5	DMW-03-99.5
Date Sampled	*05/18/11*	*05/18/11*	*05/18/11*	*05/18/11*	*05/18/11*	*05/18/11*	*05/18/11*	*05/18/11*	*05/18/11*	*05/18/11*
1,1,1,2-Tetrachloroethane	<0.96	<0.85	<0.96	<0.92	<0.85	<0.94	<0.86	<0.98	<0.87	<0.88
1,1-Dichloroethene	<0.96	<0.85	<0.96	<0.92	<0.85	<0.94	<0.86	<0.98	<0.87	<0.88
1,2-Dibromo-3-Chloropropane	<4.8	<4.2	<4.8	<4.6	<4.2	<4.7	<4.3	<4.9	<4.3	<4.4
1,2-Dibromoethane	<0.96	<0.85	<0.96	<0.92	<0.85	<0.94	<0.86	<0.98	<0.87	<0.88
Benzene	**1.5**	**1.2**	<0.96	**2.6**	<0.85	<0.94	<0.86	<0.98	**1.1**	<0.88
cis-1,2-Dichloroethene	<0.96	<0.85	<0.96	<0.92	<0.85	<0.94	<0.86	<0.98	<0.87	<0.88
Ethylbenzene	**1.5**	<0.85	<0.96	<0.92	<0.85	<0.94	<0.86	<0.98	<0.87	<0.88
o-Xylene	<0.96	<0.85	<0.96	<0.92	<0.85	<0.94	<0.86	<0.98	<0.87	<0.88
p/m-Xylene	<1.9	<1.7	<1.9	<1.8	<1.7	<1.9	<1.7	<2.0	<1.7	<1.8
Styrene	<0.96	<0.85	<0.96	<0.92	<0.85	<0.94	<0.86	<0.98	<0.87	<0.88
Tetrachloroethene	**19**	**12**	**5.6**	**60**	**15**	**2.3**	**4.0**	<0.98	<0.87	<0.88
Toluene	**2.3**	**1.5**	<0.96	**2.2**	<0.85	<0.94	<0.86	<0.98	<0.87	<0.88
Trichloroethene	<1.9	<1.7	<1.9	<1.8	<1.7	<1.9	<1.7	<2.0	<1.7	<1.8

Table 7d. Compounds Detected in Soil Boring SB-04

Analyte	Concentration [a,b] (µg/kg)													
	SB-04-10	SB-04-20	SB-04-30	SB-04-41	SB-04-41.5 [c]	SB-04-50	SB-04-61.5	SB-04-71	SB-04-80.5	SB-04-91	SB-04-101.5	SB-04-115.5	SB-04-131	SB-04-139.5
Date Sampled	*08/29/11*	*08/29/11*	*08/29/11*	*08/29/11*	*08/29/11*	*08/29/11*	*08/29/11*	*08/29/11*	*08/30/11*	*08/30/11*	*08/30/11*	*08/30/11*	*08/30/11*	*8/31/11*
1,1,1,2-Tetrachloroethane	<0.79	<1.1	<0.93	<0.80	<0.77	<0.79	<0.81	<0.75	<1.1	<0.82	<0.86	<0.84	<0.89	<0.92
1,1-Dichloroethene	<0.79	<1.1	<0.93	<0.80	**0.81**	<0.79	<0.81	**4.2**	<1.1	**43**	**5.7**	<0.84	<0.89	<0.92
1,2-Dibromo-3-Chloropropane	<3.9	<5.4	<4.7	<4.0	<3.8	<4.0	<4.1	<3.8	<5.3	<4.1	<4.3	<4.2	<4.4	<4.6
1,2-Dibromoethane	<0.79	<1.1	<0.93	<0.80	<0.77	<0.79	<0.81	<0.75	<1.1	<0.82	<0.86	<0.84	<0.89	<0.92
Benzene	**1.3**	<1.1	<0.93	<0.80	<0.77	<0.79	<0.81	<0.75	<1.1	**1.0**	<0.86	<0.84	<0.89	<0.92
cis-1,2-Dichloroethene	<0.79	<1.1	<0.93	<0.80	<0.77	<0.79	<0.81	<0.75	<1.1	<0.82	<0.86	<0.84	<0.89	<0.92
Ethylbenzene	<0.79	<1.1	<0.93	<0.80	<0.77	<0.79	<0.81	<0.75	<1.1	<0.82	<0.86	<0.84	<0.89	<0.92
o-Xylene	<0.79	<1.1	<0.93	<0.80	<0.77	<0.79	<0.81	<0.75	<1.1	<0.82	<0.86	<0.84	<0.89	<0.92
p/m-Xylene	<1.6	<2.1	<1.9	<1.6	<1.5	<1.6	<1.6	<1.5	<2.1	<1.6	<1.7	<1.7	<1.8	<1.8
Styrene	<0.79	<1.1	<0.93	<0.80	<0.77	<0.79	<0.81	<0.75	<1.1	<0.82	<0.86	<0.84	<0.89	<0.92
Tetrachloroethene	<0.79	<1.1	<0.93	<0.80	<0.77	<0.79	<0.81	<0.75	<1.1	**3.5**	**4.8**	**1.8**	<0.89	<0.92
Toluene	**1.2**	<1.1	<0.93	<0.80	<0.77	<0.79	<0.81	<0.75	<1.1	<0.82	<0.86	<0.84	<0.89	<0.92
Trichloroethene	<1.6	<2.1	<1.9	<1.6	<1.5	<1.6	<1.6	**2.6**	<2.1	**8.0**	**17**	**3.0**	<1.8	<1.8

[a] Samples analyzed using EPA Method 8260B or 8270C (Modified).
Data represent dry basis results for soils.
All data have been validated.

[b] Bold indicates value that exceeds the applicable detection limit.

[c] Duplicate of sample SB-04-41

µg/kg = Micrograms per kilogram

Table 7e. Compounds Detected in Soil, Borings SB-05, SB-06, and SB-6A

Analyte	Concentration [a,b] (µg/kg)																
	SB-05-5	SB-06-10	SB-06-20	SB-06-30	SB-06-40	SB-06-50	SB-06-60	SB-06-70	SB-06-80	SB-6A-81.5	SB-6A-90	SB-6A-150[c]	SB-6A-100	SB-6A-110	SB-6A-120	SB-6A-130	SB-6A-138
Date Sampled	*05/25/11*	*06/02/11*	*06/02/11*	*06/02/11*	*06/02/11*	*06/02/11*	*06/02/11*	*06/02/11*	*06/02/11*	*09/15/11*	*09/15/11*	*09/15/11*	*09/16/11*	*09/16/11*	*09/16/11*	*09/16/11*	*09/16/11*
1,1,1,2-Tetrachloroethane	<1.0	**1.3**	<0.98	<0.90	<0.89	<0.88	<1.2	<0.91	<1.1	<0.87	<0.83	<0.86	<0.82	<1.2	<1.1	<0.83	<0.87
1,1-Dichloroethene	<1.0	<0.90	<0.98	**3.3**	**6.5**	**1.5**	<1.2	**3.7**	<1.1	<0.87	**9.8**	**17**	**0.83**	<1.2	<1.1	<0.83	<0.87
1,2-Dibromo-3-Chloropropane	<5.2	<4.5	<4.9	<4.5	<4.5	<4.4	<5.8	<4.5	<5.4	<4.3	<4.1	<4.3	<4.1	<5.9	<5.6	<4.1	<4.4
1,2-Dibromoethane	<1.0	<0.90	<0.98	<0.90	<0.89	<0.88	<1.2	<0.91	<1.1	<0.87	<0.83	<0.86	<0.82	<1.2	<1.1	<0.83	<0.87
Benzene	**2.7**	**1.7**	<0.98	<0.90	**2.6**	<0.88	<1.2	<0.91	<1.1	<0.87	<0.83	<0.86	<0.82	<1.2	<1.1	<0.83	<0.87
cis-1,2-Dichloroethene	<1.0	<0.90	<0.98	<0.90	<0.89	<0.88	<1.2	<0.91	<1.1	<0.87	<0.83	<0.86	<0.82	<1.2	<1.1	<0.83	<0.87
Ethylbenzene	<1.0	**1.8**	<0.98	<0.90	<0.89	<0.88	<1.2	<0.91	<1.1	<0.87	<0.83	<0.86	<0.82	<1.2	<1.1	<0.83	<0.87
o-Xylene	<1.0	<0.90	<0.98	<0.90	<0.89	<0.88	<1.2	<0.91	<1.1	<0.87	<0.83	<0.86	<0.82	<1.2	<1.1	<0.83	<0.87
p/m-Xylene	<2.1	<1.8	<2.0	<1.8	<1.8	<1.8	<2.3	<1.8	<2.1	<1.7	<1.7	<1.7	<1.6	<2.4	<2.2	<1.7	<1.7
Styrene	<1.0	<0.90	<0.98	<0.90	<0.89	<0.88	<1.2	<0.91	<1.1	<0.87	<0.83	<0.86	<0.82	<1.2	<1.1	<0.83	<0.87
Tetrachloroethene	**200**	**280 D**	**19**	**150**	**95**	**17**	<1.2	**5.9**	**1.5**	<0.87	<0.83	**1.7**	<0.82	<1.2	<1.1	**0.98**	**1.1**
Toluene	**2.3**	**2.6**	<0.98	<0.90	**1.7**	<0.88	<1.2	<0.91	<1.1	<0.87	<0.83	<0.86	<0.82	<1.2	<1.1	<0.83	**1.4**
Trichloroethene	**3.4**	**2.9**	<2.0	**16**	**22**	**13**	<2.3	**10**	**3.2**	**3.1**	**42**	**79**	**6.0**	<2.4	<2.2	**3.1**	**3.8**

Table 7f. Compounds Detected in Soil, Boring SV-37

Analyte	Concentration [a,b] (µg/kg)															
	SV-37-10	SV-37-20	SV-37-30	SV-37-40	SV-37-50	SV-37-60	SV-37-60-DUP	SV-37-70	SV-37-80	SV-37-90	SV-37-100	SV-37-110	SV-37-120	SV-37-130	SV-DUP[d]	SV-37-143.5
Date Sampled	*09/08/11*	*09/08/11*	*09/08/11*	*09/08/11*	*09/08/11*	*09/08/11*	*09/08/11*	*09/08/11*	*09/08/11*	*09/08/11*	*09/09/11*	*09/09/11*	*09/09/11*	*09/09/11*	*09/09/11*	*09/12/11*
1,1,1,2-Tetrachloroethane	<0.87	<0.89	<1.4	<1.4	<0.90	<0.86	<0.85	<0.80	<0.92	<0.86	<0.85	<0.91	<0.91	<1.6	<0.90	<0.91
1,1-Dichloroethene	<0.87	**17**	<1.4	<1.4	**43**	**24**	**25**	**40**	**17**	**92**	**3.8**	<0.91	<0.91	<1.6	<0.90	<0.91
1,2-Dibromo-3-Chloropropane	<4.4	<4.4	<6.9	<6.8	<4.5	<4.3	<4.3	<4.0	<4.6	<4.3	<4.2	<4.6	<4.5	<8.2	<4.5	<4.6
1,2-Dibromoethane	<0.87	<0.89	<1.4	<1.4	<0.90	<0.86	<0.85	<0.80	<0.92	<0.86	<0.85	<0.91	<0.91	<1.6	<0.90	<0.91
Benzene	**1.5**	**9.7**	<1.4	<1.4	<0.90	<0.86	<0.85	<0.80	**1.6**	<0.86	<0.85	<0.91	<0.91	<1.6	<0.90	<0.91
cis-1,2-Dichloroethene	<0.87	<0.89	<1.4	<1.4	**3.0**	**2.2**	**2.4**	**2.3**	**1.8**	**1.8**	<0.85	<0.91	<0.91	<1.6	<0.90	<0.91
Ethylbenzene	<0.87	**1.5**	<1.4	<1.4	<0.90	<0.86	<0.85	<0.80	<0.92	<0.86	<0.85	<0.91	<0.91	<1.6	<0.90	<0.91
o-Xylene	<0.87	**0.96**	<1.4	<1.4	<0.90	<0.86	<0.85	<0.80	<0.92	<0.86	<0.85	<0.91	<0.91	<1.6	<0.90	<0.91
p/m-Xylene	<1.7	**2.4**	<2.8	<2.7	<1.8	<1.7	<1.7	<1.6	<1.8	<1.7	<1.7	<1.8	<1.8	<3.3	<1.8	<1.8
Styrene	<0.87	<0.89	<1.4	<1.4	<0.90	<0.86	<0.85	<0.80	<0.92	<0.86	<0.85	<0.91	<0.91	<1.6	<0.90	<0.91
Tetrachloroethene	**21**	**78**	**22**	**25**	**590 D**	**270 D**	**320 D**	**39**	**5.1**	**4.7**	**1.4**	<0.91	**1.1**	**2.6**	**1.8**	<0.91
Toluene	**1.5**	**8.5**	<1.4	<1.4	<0.90	<0.86	<0.85	<0.80	<0.92	<0.86	<0.85	<0.91	<0.91	<1.6	<0.90	<0.91
Trichloroethene	<1.7	**19**	**3.5**	<2.7	**160**	**120**	**130**	**120**	**98**	**340 D**	**25**	**4.2**	**7.6**	**10**	**5.7**	**2.4**

[a] Samples analyzed using EPA Method 8260B or 8270C (Modified).
Data represent dry basis results for soils.
All data have been validated.

[b] Bold indicates value that exceeds the applicable detection limit.
[c] Duplicate of SB-06A-90
[d] Duplicate of SV-37-130

µg/kg = Micrograms per kilogram

Table 8. Compound-Specific Isotope Analysis of Chlorinated Solvents in Soil and Groundwater

		$\delta^{13}C$ (‰ PDB)						$\delta^{37}Cl$ (‰ SMOC)				$\delta^{2}H$ (‰ SMOW)	
Sample ID	Matrix	cis-1,2-DCE	σ cis-1,2-DCE	TCE	σ TCE	PCE	σ PCE	TCE	σ TCE	PCE	σ PCE	TCE	σ TCE
SB-05-5	Soil	ND	0.6	ND	0.5	–26.5	0.5	ND	0.5	2.1	0.4	ND	4
SB-05-5 (Dup)	Soil	ND	0.6	ND	0.5	–26.5	0.5	ND	0.5	2.0	0.4	ND	4
DMW-01	Water	ND	0.6	–28.6	0.5	–25.3	0.5	1.4	0.5	2.3	0.4	–72	4
DMW-02	Water	ND	0.6	–28.3	0.5	–25.3	0.5	1.4	0.5	2.4	0.4	–64	4
DMW-03	Water	ND	0.6	–28.1	0.5	–25.6	0.5	1.4	0.5	2.4	0.4	–68	4
DMW-04	Water	ND	0.5	–27.4 [a]	0.4	–27.1 [a]	0.6	1.6 [a]	0.4	2.1 [a]	0.4	–87 [a]	2
DMW-04 (Dup)	Water	ND	0.5	–26.7 [a]	0.4	ND	0.6	1.5 [a]	0.4	ND	0.4	–83 [a]	2
SB-06-140	Water	ND	0.6	–26.9	0.5	–26.3	0.5	1.5	0.5	2.5	0.4	–50	4
SV-37-99	Water	ND	0.5	–25.8	0.4	ND	0.6	2.0	0.4	2.5	0.4	–75	2
SV-37-135	Water	ND	0.5	–26.9	0.4	–26.5 [a]	0.6	1.7	0.4	2.3 [a]	0.4	–62	2

[a] = Sample analyzed at low concentration; 3 times standard deviation applies.

σ = Standard deviation from quality control samples
‰ PDB = Per mil PeeDee Belemnite reference standard
‰ SMOC = Per mil Standard Mean Ocean Chloride reference standard
‰ SMOW = Per mil Standard Mean Ocean Water reference standard
ND = Isotope ratio could not be determined at low concentration
Dup = Duplicate sample

Table 9. Water Level Measurements

Well	Date	Measuring Point Elevation (ft msl)	Depth to Water (feet)	Water Elevation (ft msl)
DMW-01	6/7/2011	171.53	105.26	66.27
DMW-01	9/13/2011	171.53	92.64	78.89
DMW-01	11/8/2011	171.53	86.84	84.69
DMW-01	11/18/2011	171.53	86.07	85.46
DMW-01	12/6/2011	171.53	85.65	85.88
DMW-02	6/7/2011	170.53	104.65	65.88
DMW-02	9/13/2011	170.53	92.01	78.52
DMW-02	11/8/2011	170.53	86.42	84.11
DMW-02	11/18/2011	170.53	85.64	84.89
DMW-02	12/6/2011	170.53	85.20	85.33
DMW-03	6/6/2011	172.21	105.82	66.39
DMW-03	9/13/2011	172.21	92.63	79.58
DMW-03	11/8/2011	172.21	87.06	85.15
DMW-03	11/18/2011	172.21	86.31	85.90
DMW-03	12/6/2011	172.21	85.92	86.29
DMW-04	9/13/2011	170.13	93.21	76.92
DMW-04	11/8/2011	170.13	87.37	82.76
DMW-04	11/18/2011	170.13	86.57	83.56
DMW-04	12/6/2011	170.13	86.09	84.04

ft msl = Feet above mean sea level

Table 10a. Compounds Detected in Groundwater, Volatile Organic Compounds and 1,4-Dioxane Wells DMW-01 and DMW-02

Analyte	Concentration [a] (µg/L)							
	DMW-01-109.5	DMW-01-144	DMW-01	DMW-01	DMW-02-109.5	DMW-02-145	DMW-02	DMW-02
Date sampled	*05/25/11* [b]	*05/25/11* [b]	*06/07/11*	*09/13/11*	*5/23/2011* [b]	*5/23/2011* [b]	*06/07/11*	*9/14/2011*
1,1,1-Trichloroethane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethene	**12**	**9.8**	**2.0**	**1.5**	**11**	**2.5**	**2.7**	**3.4**
1,4-Dioxane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**1.4**
Acetone	<50	**77**	<20	<20	<50	<50	<20	<20
Bromodichloromethane	<1.0	**1.2**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform	<1.0	**1.2**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroform	<1.0	**1.7**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dibromochloromethane	<1.0	**1.5**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene	**8.6**	**9.0**	**8.9**	**7.4**	**8.7**	**5.3**	**3.9**	**6.6**
Toluene	<1.0	<1.0	**5.6**	<1.0	<1.0	<1.0	**8.3**	<1.0
Trichloroethene	**69**	**53**	**17**	**15**	**82**	**22**	**17**	**34**

[a] **Bold** indicates value that exceeds the applicable detection limit.
[b] Groundwater grab sample collected prior to well construction and development

µg/L = Micrograms per liter

Table 10b. Compounds Detected in Groundwater, Volatile Organic Compounds and 1,4-Dioxane Wells DMW-03 and DMW-04

	Concentration [a] (µg/L)								
Analyte	DMW-03-112	DMW-03-143.5	DMW-03	DMW-03	DMW-05 [b]	GW-04-105 [d]	GW-04-110 [d,e]	GW-04-135 [d]	DMW-04
Date sampled	*5/18/2011* [c]	*5/19/2011* [c]	*6/06/2011*	*9/13/2011*	*9/13/2011*	*8/30/2011* [c]	*8/30/2011* [c]	*8/31/2011* [c]	*9/14/2011*
1,1,1-Trichloroethane	<1.0	<1.0	<1.0	<1.0	<1.0	**1.1**	<2.0	<1.0	<1.0
1,1-Dichloroethene	**3.6**	<1.0	**1.8**	**1.0**	**1.6**	**94**	**54**	**1.3**	**2.2**
1,4-Dioxane	<1.0	<1.0	<1.0	<1.0	<1.0	**2.1**	**2.7**	<1.0	<1.0
Acetone	<50	<50	<20	<20	<20	<20	<40	<20	<20
Bromodichloromethane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0
Bromoform	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0
cis-1,2-Dichloroethene	<1.0	<1.0	<1.0	<1.0	<1.0	**6.3**	**5.5**	<1.0	<1.0
Chloroform	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0
Dibromochloromethane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0
Tetrachloroethene	**8.4**	**3.5**	**6.7**	**5.7**	**7.5**	**100**	**95**	**14**	**10**
Toluene	<1.0	<1.0	**2.3**	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0
Trichloroethene	**37**	**27**	**21**	**14**	**18**	**210 D**	**200**	**24**	**22**

[a] **Bold** indicates value that exceeds the applicable detection limit.
[b] Blind duplicate of sample DMW-03
[c] Groundwater grab sample collected prior to well construction and development
[d] Water sample collected from boring SB-04/DMW-04
[e] Blind duplicate of sample GW-04-105

µg/L = Micrograms per liter
D = Compound analyzed at secondary dilution

Table 10c. Compounds Detected in Groundwater, Volatile Organic Compounds and 1,4-Dioxane Soil Borings and Soil Vapor Locations

Analyte	Concentration [a] (µg/L)							
	SB-06-105	SB-06-140	SB-6A-95	SB-6A-115 [b]	SB-6A-135	SV-37-99	SV-DUP [c]	SV-37-135
Date sampled	*6/2/2011*	*6/3/2011*	*09/15/11*	*09/15/11*	*9/16/2011*	*09/09/11*	*09/09/11*	*09/12/11*
1,1,1-Trichloroethane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethene	**4.4**	**3.4**	**19**	**29**	**2.8**	**27**	**5.9**	**2.4**
1,4-Dioxane	<1.1	<1.1	<1.1	<1.1	<1.1	**2.5**	**2.1**	**1.2**
Acetone	<20	<20	<20	<20	<20	<20	<20	<20
Bromodichloromethane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	<1.0	<1.0	<1.0	<1.0	<1.0	**2.0**	**2.2**	<1.0
Chloroform	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dibromochloromethane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene	**4.8**	**4.9**	**8.0**	**7.1**	**6.3**	**12**	**13**	**8.9**
Toluene	<1.0	**13**	<1.0	<1.0	**1.7**	<1.0	<1.0	<1.0
Trichloroethene	**50**	**35**	**140**	**130**	**51**	**220 D**	**240 D**	**35**

[a] **Bold** indicates value that exceeds the applicable detection limit.
[b] Blind duplicate sample of SB-6A-95
[c] Blind duplicate sample of SV-37-99

µg/L = Micrograms per liter
D = Compound analyzed at secondary dilution

Table 11a. Summary of Groundwater General Chemistry
Monitor Wells
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Analyte	Analytic Method	Concentration [a] (mg/L [b])							
		DMW-01	DMW-01	DMW-02	DMW-02	DMW-03	DMW-03	DMW-05 [c]	DMW-04
	Date Sampled	*06/07/11*	*09/13/11*	*06/07/11*	*9/14/2011*	*6/6/2011*	*09/13/11*	*09/13/11*	*9/14/2011*
Alkalinity, total (as $CaCO_3$)	SM 2320 B	**334**	—	**282**	—	**250**	—	—	**325**
Antimony	EPA 6010B	—	<0.0150	—	<0.0150	—	<0.0150	<0.0150	<0.0150
Arsenic	EPA 6010B	—	<0.0100	—	<0.0100	—	<0.0100	<0.0100	<0.0100
Barium	EPA 6010B	—	**0.0819**	—	**0.111**	—	**0.0498**	**0.0497**	**0.0552**
Beryllium	EPA 6010B	—	<0.0100	—	<0.0100	—	<0.0100	<0.0100	<0.0100
Bicarbonate (as $CaCO_3$)	SM 2320 B	**334**	—	**282**	—	**250**	—	—	**325**
Cadmium	EPA 6010B	—	<0.0100	—	<0.0100	—	<0.0100	<0.0100	<0.0100
Calcium	EPA 6010B	**209**	—	**190**	—	**179**	—	—	**194**
Carbon, total organic	SM 5310 B	**14**	—	**16**	—	**6.9**	—	—	—
Carbon, total organic	SM 5310 D	—	—	—	—	—	—	—	**0.90** / **0.84** [d]
Carbonate (as $CaCO_3$)	SM 2320 B	<1.0	—	<1.0	—	<1.0	—	—	<1.0
Chloride	EPA 300.0	**140**	—	**120**	—	**130**	—	—	**140**
Chromium	EPA 6010B	—	<0.0100	—	<0.0100	—	<0.0100	<0.0100	**0.0125**
Chromium, hexavalent (µg/L)	EPA 7199	—	**2.7**	—	**4.0**	—	**2.4**	**2.6**	**4.6**
Cobalt	EPA 6010B	—	<0.0100	—	<0.0100	—	<0.0100	<0.0100	<0.0100
Copper	EPA 6010B	—	**0.0748**	—	**0.0156**	—	<0.0100	**0.0751**	<0.0100
Ethane (µg/L)	RSK-175M	<1.00	—	<1.00	—	<1.00	—	—	<1.00 / <1.00 [d]

[a] Bold indicates value that exceeds the applicable detection limit. All data have been validated.
[b] All values in units of milligrams per liter unless otherwise noted.
[c] DMW-05 is a blind duplicate of the 9/13/11 sample from DMW-03.
[d] Duplicate sample for selected analyses.

— = Not analyzed

Table 11a. Summary of Groundwater General Chemistry
Monitor Wells

Analyte	Analytic Method	Concentration [a] (mg/L [b])							
		DMW-01	DMW-01	DMW-02	DMW-02	DMW-03	DMW-03	DMW-05 [c]	DMW-04
	Date Sampled	*06/07/11*	*09/13/11*	*06/07/11*	*9/14/2011*	*6/6/2011*	*09/13/11*	*09/13/11*	*9/14/2011*
Ethylene (µg/L)	RSK-175M	<1.00	—	<1.00	—	<1.00	—	—	<1.00 / <1.00 [d]
Fluoride	EPA 300.0	**0.27**	—	**0.38**	—	**0.36**	—	—	**0.34**
Hydroxide (as $CaCO_3$)	SM 2320 B	<1.0	—	<1.0	—	<1.0	—	—	<1.0
Iron	EPA 6010B	<0.100	—	<0.100	—	<0.100	—	—	**1.29**
Iron (II)	SM 3500-Fe B	<0.10	—	<0.10	—	<0.10	—	—	<0.10
Lead	EPA 6010B	—	<0.0100	—	<0.0100	—	<0.0100	<0.0100	<0.0100
Magnesium	EPA 6010B	**45.8**	—	**38.5**	—	**38.7**	—	—	**44.2**
Manganese	EPA 6010B	**0.0555**	—	**0.00550**	—	**0.0197**	—	—	**0.0354**
Mercury	EPA 7470A	—	<0.000500	—	<0.000500	—	<0.000500	<0.000500	<0.000500
Methane (µg/L)	RSK-175M	<1.00	—	<1.00	—	<1.00	—	—	<1.00 / <1.00 [d]
Molybdenum	EPA 6010B	—	<0.0100	—	<0.0100	—	<0.0100	<0.0100	<0.0100
Nickel	EPA 6010B	—	<0.0100	—	<0.0100	—	<0.0100	<0.0100	<0.0100
Nitrate (as N)	EPA 300.0	**17**	—	**18**	—	**17**	—	—	**16**
Nitrite (as N)	EPA 300.0	<0.10	—	<0.10	—	<0.10	—	—	<0.10
pH (standard units)	SM 4500-H^+ B	**7.35**	—	**7.43**	—	**6.99**	—	—	—
Potassium	EPA 6010B	**5.30**	—	**7.32**	—	**5.53**	—	—	**5.73**
Selenium	EPA 6010B	—	<0.0150	—	<0.0150	—	<0.0150	<0.0150	<0.0150
Silver	EPA 6010B	—	<0.00500	—	<0.00500	—	<0.00500	<0.00500	<0.00500

[a] Bold indicates value that exceeds the applicable detection limit. All data have been validated.
[b] All values in units of milligrams per liter unless otherwise noted.
[c] DMW-05 is a blind duplicate of the 9/13/11 sample from DMW-03.
[d] Duplicate sample for selected analyses.

— = Not analyzed

Daniel B. Stephens & Associates, Inc.

Table 11a. Summary of Groundwater General Chemistry
Monitor Wells

Analyte	Analytic Method	Concentration [a] (mg/L [b])							
		DMW-01	DMW-01	DMW-02	DMW-02	DMW-03	DMW-03	DMW-05 [c]	DMW-04
	Date Sampled	*06/07/11*	*09/13/11*	*06/07/11*	*9/14/2011*	*6/6/2011*	*09/13/11*	*09/13/11*	*9/14/2011*
Sodium	EPA 6010B	**111**	—	**94.3**	—	**103**	—	—	**112**
Solids, total dissolved	SM 2540 C	**1190**	—	**1040**	—	**1010**	—	—	**1040**
Specific conductance (µmhos/cm)	SM 2510 B	**1400**	—	**1200**	—	**1300**	—	—	**1600**
Sulfate	EPA 300.0	**260**	—	**240**	—	**250**	—	—	**260**
Sulfide, total	SM 4500-S^{2-} D	<0.050	—	<0.050	—	<0.050	—	—	<0.050 / <0.050 [d]
Thallium	EPA 6010B	—	<0.0150	—	<0.0150	—	<0.0150	<0.0150	<0.0150
Vanadium	EPA 6010B	—	<0.0100	—	<0.0100	—	<0.0100	<0.0100	<0.0100
Zinc	EPA 6010B	—	<0.0100	—	**0.0599**	—	**0.0245**	**0.0278**	**0.0255**

[a] Bold indicates value that exceeds the applicable detection limit. All data have been validated
[b] All values in units of milligrams per liter unless otherwise noted.
[c] DMW-05 is a blind duplicate of the 9/13/11 sample from DMW-03.
[d] Duplicate sample for selected analyses.

— = Not analyzed
ND = Not detected

Table 11b. Summary of Groundwater General Chemistry
Grab Samples from Soil Borings

Analyte	Analytic Method	Concentration [a] (mg/L [b])					
		SB-06-140	SB-6A-95	SB-6A-115 [c]	SB-6A-135	SV-37-99	SV-37-135
	Date Sampled	*06/03/11*	*09/15/11*	*09/15/11*	*09/16/11*	*09/09/11*	*09/12/11*
Alkalinity, total (as $CaCO_3$)	SM 2320 B	**282**	—	—	—	**356**	**296**
Antimony	EPA 6010B	—	<0.0150	<0.0150	**0.269**	<0.0150	<0.0150
Arsenic	EPA 6010B	—	<0.0100	<0.0100	**0.134**	**0.0312**	**0.0595**
Barium	EPA 6010B	—	**1.32**	**1.40**	**7.73**	**1.55**	**1.25**
Beryllium	EPA 6010B	—	**0.0178**	**0.0200**	**0.0306**	<0.0100	<0.0100
Bicarbonate (as $CaCO_3$)	SM 2320 B	**282**	—	—	—	**356**	**296**
Cadmium	EPA 6010B	—	**0.0306**	**0.0321**	<0.0100	<0.0100	<0.0100
Calcium	EPA 6010B	**349**	—	—	—	**280**	**282**
Calcium, dissolved	EPA 6010B	—		—		**209**	**173**
Carbon, total organic	SM 5310 D	—	—	—	—	**2.0**	**5.6**
Carbon, total organic	SM 5310 B	**20**	—	—	—	—	—
Carbonate (as $CaCO_3$)	SM 2320 B	<1.0	—	—	—	<1.0	<1.0
Chloride	EPA 300.0	**130**	—	—	—	**120**	**120**
Chromium	EPA 6010B	—	**0.0126**	**0.0185**	**2.66**	**0.233**	**0.529**
Chromium, hexavalent (µg/L)	EPA 7199	—	**1.6**	**1.7**	<1.0	**2.7**	<1.0
Cobalt	EPA 6010B	—	**0.0352**	**0.0425**	**0.550**	**0.121**	**0.104**
Copper	EPA 6010B	—	**0.0865**	**0.102**	**1.92**	**0.193**	**0.472**
Ethane (µg/L)	RSK-175M	<1.00	—	—	—	<1.00	<1.00
Ethylene (µg/L)	RSK-175M	<1.00	—	—	—	<1.00	<1.00

Note: Grab water samples were turbid; analysis of turbid samples may cause artificially elevated metal and cation concentrations except in laboratory-filtered samples where dissolved analytes are indicated.

[a] Bold indicates value that exceeds the applicable detection limit. All data have been validated.

[b] All values in units of milligrams per liter unless otherwise noted.

[c] SB-6A-115 is a blind duplicate of SB-6A-95.

— = Not analyzed

Table 11b. Summary of Groundwater General Chemistry
Grab Samples from Soil Borings

Analyte	Analytic Method	Concentration [a] (mg/L [b])					
		SB-06-140	SB-6A-95	SB-6A-115 [c]	SB-6A-135	SV-37-99	SV-37-135
	Date Sampled	*06/03/11*	*09/15/11*	*09/15/11*	*09/16/11*	*09/09/11*	*09/12/11*
Fluoride	EPA 300.0	<0.10	—	—	—	**0.40**	<0.10
Hydroxide (as $CaCO_3$)	SM 2320 B	<1.0	—	—	—	<1.0	<1.0
Iron	EPA 6010B	**53.5**	—	—	—	**235**	**277**
Iron, dissolved	EPA 6010B	—				<0.100	<0.100
Iron (II)	SM 3500-Fe B	<0.10	—	—	—	<0.10	<0.10
Lead	EPA 6010B	—	<0.0100	<0.0100	**0.356**	**0.0115**	**0.0222**
Magnesium	EPA 6010B	**57.1**	—	—	—	**134**	**106**
Magnesium, dissolved	EPA 6010B	—				**46.6**	**36.6**
Manganese	EPA 6010B	**10.9**	—	—	—	**4.02**	**4.49**
Mercury	EPA 7470A	—	<0.000500	<0.000500	**0.00147**	<0.000500	<0.000500
Methane (µg/L)	RSK-175M	**2.51**	—	—	—	<1.00	**1.02**
Molybdenum	EPA 6010B	—	<0.0100	<0.0100	**0.0974**	<0.0100	**0.0537**
Nickel	EPA 6010B	—	**0.0472**	**0.0568**	**1.07**	**0.197**	**0.334**
Nitrate (as N)	EPA 300.0	**21**	—	—	—	**19**	**18**
Nitrite (as N)	EPA 300.0	<0.10	—	—	—	<0.10	<0.10
pH (standard units)	SM 4500-H^+ B	**7.17**	—	—	—	—	—
Potassium	EPA 6010B	**14.3**	—	—	—	**52.6**	**48.7**
Potassium, dissolved	EPA 6010B	—				**5.41**	**6.76**
Selenium	EPA 6010B	—	<0.0150	<0.0150	**0.0886**	**0.0840**	**0.0199**

Note: Grab water samples were turbid; analysis of turbid samples may cause artificially elevated metal and cation concentrations except in laboratory-filtered samples where dissolved analytes are indicated.

[a] Bold indicates value that exceeds the applicable detection limit. All data have been validated.

[b] All values in units of milligrams per liter unless otherwise noted.

[c] SB-6A-115 is a blind duplicate of SB-6A-95.

— = Not analyzed

Table 11b. Summary of Groundwater General Chemistry
Grab Samples from Soil Borings
Page 3 of 3

Analyte	Analytic Method	Concentration [a] (mg/L [b])					
		SB-06-140	SB-6A-95	SB-6A-115 [c]	SB-6A-135	SV-37-99	SV-37-135
	Date Sampled	*06/03/11*	*09/15/11*	*09/15/11*	*09/16/11*	*09/09/11*	*09/12/11*
Silver	EPA 6010B	—	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Sodium	EPA 6010B	**104**	—	—	—	**88.3**	**97.3**
Sodium, dissolved	EPA 6010B	—				**91.9**	**98.9**
Solids, total dissolved	SM 2540 C	**1,010**	—	—	—	**1,080**	**1,040**
Specific conductance (µmhos/cm)	SM 2510 B	**1,400**	—	—	—	**1,600**	**1,400**
Sulfate	EPA 300.0	**280**	—	—	—	**230**	**250**
Sulfide, total	SM 4500-S^{2-} D	<0.050	—	—	—	<0.050	<0.050
Thallium	EPA 6010B	—	<0.0150	<0.0150	<0.0150	<0.0150	<0.0150
Vanadium	EPA 6010B	—	**0.376**	**0.422**	**1.35**	**0.471**	**0.438**
Zinc	EPA 6010B	—	**0.179**	**0.221**	**5.88**	**0.778**	**1.03**

Note: Grab water samples were turbid; analysis of turbid samples may cause artificially elevated metal and cation concentrations except in laboratory-filtered samples where dissolved analytes are indicated.

[a] Bold indicates value that exceeds the applicable detection limit. All data have been validated.

[b] All values in units of milligrams per liter unless otherwise noted.

[c] SB-6A-115 is a blind duplicate of SB-6A-95.

— = Not analyzed

Table 12. Nitrate, Perchlorate, and 1,4-Dioxane in Groundwater Monitor Wells

Analyte	Units	Concentration [a]							
		DMW-01		DMW-02		DMW-03		DMW-04	
	Laboratory	*Calscience*	*OCWD*	*Calscience*	*OCWD*	*Calscience*	*OCWD*	*Calscience*	*OCWD*
Phase IA									
	Date Sampled	*06/07/2011*	*06/07/2011*	*06/07/2011*	*06/07/2011*	*6/06/2011*	*6/06/2011*	—	—
Nitrate (as N)	mg/L	**17**	NA	**18**	NA	**17**	NA	—	—
Perchlorate [b]	µg/L	NA	<2.5	NA	<2.5	NA	<2.5	—	—
1,4-Dioxane	µg/L	<1	<1 / <1 [c]	<1	**1.2** / **1.1** [c]	<1	<1 / <1 [c]	—	—
Phase IB									
	Date Sampled	*9/13/2011*	*9/13/2011*	*9/14/2011*	*9/14/2011*	*9/13/2011*	*9/13/2011*	*9/14/2011*	*9/14/2011*
Nitrate (as N)	mg/L	NA	NA	NA	NA	NA	NA	**16**	NA
Perchlorate [b]	µg/L	NA	**5.6** / **6.3** [c]	NA	**7.3** / **7.9** [c]	NA	**3.5** / **6** [c]	NA	**7.2** / **7.9** [c]
1,4-Dioxane	µg/L	<1	<1 / <1 [c]	**1.4**	<1 / <1 [c]	<1 / <1 [c]	<1 / <1 [c]	<1	<1 / <1 [c]

[a] **Bold** indicates value that exceed applicable method detection limit.
[b] Perchlorate data obtained from split samples analyzed by Orange County Water District.
[c] Duplicate result.

mg/L= Milligrams per liter
µg/L = Micrograms per liter
— = No sample collected

Appendices

Site Investigation Summary, Former CBS/Fender Facility
500 South Raymond Avenue, Fullerton, California

Appendices

The appendices for this report may be found in the folder on this DVD entitled Appendices.