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Memorandum

To: John Hill, CIV AFCEE/EXA
John DeBack, DAIM-ODB

From: John Sperry
Tom Holmes

Date: 15 February 2011

Re: **Rebound Test and Confirmation Soil Sampling**
Fluvial Soil Vapor Extraction System
Dunn Field – Defense Depot Memphis, Tennessee

HDR has prepared this report to present the results of the rebound test and confirmation soil sampling for the Fluvial soil vapor extraction (FSVE) system on Dunn Field at Defense Depot Memphis, Tennessee (DDMT). This report was prepared for the Department of the Army under Contract FA8903-08-D-8771, Task Order (TO) 0069 to the Air Force Center for Engineering and the Environment (AFCEE).

The selected remedy from the *Dunn Field Record of Decision* (ROD) (CH2M HILL, 2004) included soil vapor extraction (SVE) to reduce volatile organic compound (VOC) concentrations in subsurface soils to levels that are protective of the intended land use and groundwater. Remediation goals (RGs) from the ROD are shown on Table 1 for the primary chlorinated volatile organic compounds (CVOCs) reported at Dunn Field. The SVE component of the remedy was later amended to incorporate thermal SVE (TSVE) (in situ thermal desorption) in the shallow fine-grained soils (loess) with conventional SVE used in the deeper coarse-grained fluvial soils.

The FSVE system consists of two 13.1 horsepower blowers connected to seven SVE wells (SVE-A through SVE-G) screened at depths of 32 to 66 feet below ground surface (bgs). There are 10 paired vapor monitoring points (VMPs) (VMP-1A/B through VMP-10A/B) located 15 to 80 feet from the SVE wells to monitor vacuum influence from the SVE wells and CVOC concentrations in the subsurface vapor. The FSVE system layout is shown on Figure 1.

Performance monitoring of the FSVE system consists of field measurements and laboratory analysis of vapor samples. Field measurements of flow and pressure and photoionization detector (PID) readings at SVE wells and system effluent are collected weekly. Field measurements at VMPs consist of vacuum measurements collected monthly and PID readings collected quarterly. Vapor samples are collected quarterly from the SVE wells and system effluent and annually from the VMPs.

System operations began in July 2007 and 4,007 pounds of VOCs have been removed through October 2010. TSVE operations ran concurrently with FSVE operations from May to December 2008 and removed approximately 12,500 pounds of VOCs from the

loess. VOC concentrations in the extracted soil vapor for the FSVE system have become asymptotic at low levels (less than 0.5 parts per million (ppm) by volume of total VOCs), as shown on Figure 2.

The rebound test was performed to determine an appropriate period for pulsed operations. Soil confirmation samples were collected to evaluate progress in achieving RGs for fluvial soils. Selected soil borings installed for confirmation samples were converted to SVE wells for use as additional extraction wells or passive vent wells in order to enhance removal of residual VOCs from the fluvial soils.

The remedial action objective (RAO) for the fluvial soils will be met when the average concentration in a treatment area (TA) (defined as TA-1, TA-2, TA-3 and TA-4) for each CVOC is below the RG, and no individual sample result exceeds the RG by a factor of 10 or more. For samples that are non-detect, the average is calculated using one-half the sample quantitation limit (laboratory reporting limit [RL]).

The field activities and analysis were performed in accordance with *Work Plan for Fluvial Soil Vapor Extraction Confirmation Sampling, Revision 1* (HDR, 2010). The work plan was approved by Tennessee Department of Environment and Conservation on October 13, 2010 and United States Environmental Protection Agency (USEPA) on December 6, 2010.

CONFIRMATION SOIL SAMPLING

Confirmation soil samples were collected at the locations described in the work plan. Sample locations were based on baseline fluvial soil samples collected during installation of FSVE wells and VMPs with CVOCs above RGs and loess samples with the highest CVOC concentrations in each treatment area. Sample borings adjacent to SVE wells were shifted 7 to 10 feet to provide results more representative of the treatment area, and sample borings adjacent to VMPs were shifted 5 to 7 feet to avoid damage to the VMP.

Soil Sampling

Soil samples were collected from 20 borings (fluvial soil boring [FSB]-1 to FSB-20). The sample locations are shown on Figures 3 to 5. The location coordinates, depth of loess (top of Fluvial soil) and sample depths for each boring are shown on Table 2.

The borings were marked on 19 October 2010 by Allen & Hoshall, a Tennessee-licensed Registered Professional Land Surveyor. The locations had been cleared for underground utilities during previous drilling for fluvial and thermal SVE installation and confirmation sampling. The buried FSVE lines near the sample locations were also marked by Allen & Hoshall on 19 October. General access and clearance from overhead power lines were reviewed prior to start of drilling.

The borings were advanced by WDC from 4 to 13 November 2011 using rotasonic drilling methods with a 6-inch casing and a 4-inch core barrel. An HDR field geologist was present during drilling to record field observations and to log the soil core. Soil boring logs are provided in Appendix A.

Samples were collected from each boring at three depths: 8 feet, 18 feet, and 28 feet below the bottom of the loess. At each location, 6-inch diameter soil borings were

advanced and lithologic core samples were recovered beginning at the ground surface in order to identify the bottom of the loess based on the transition to sand and gravel in the fluvial deposits. Borings were halted 1 to 2 feet above each sample depth and a Macro-Core sampler was attached to the drill rod and hydraulically advanced 3 feet into the undisturbed soil below the drill rod and casing. The Macro-Core was retrieved and opened at the surface by the field geologist, and the soil sample was collected using a TerraCore sampling pack. After samples were collected, soil was placed in a zip-lock bag for PID screening; PID readings were less than 2 ppm for all samples except the top sample at FSB-18 in TA-4, which was 9.6 ppm.

Each Terracore pack contained two 40-milliliter (mL) volatile organic analysis (VOA) vials with de-ionized water (white cap), one 40-mL VOA vial with 5-mL Methanol (red cap) and one 60-mL Amber Packer with unlined cap for soil moisture. A small plastic T-handle gauged at 5 grams was also provided. A 5 gram plug was placed in each vial and capped. The amber jar was filled by hand. The sample containers for each location were placed in a bubble-wrap bag with the sample labels enclosed. Samples were shipped to Microbac Laboratories in Marietta, OH for VOC analysis by USEPA Method 8260B.

Borings not selected for installation of new SVE wells were filled with grout upon completion of sampling. A bentonite-cement grout was used to fill the borehole from the bottom to ground surface using a side-discharge tremie pipe.

SVE Well Installation

SVE wells were installed in ten sample borings based on the following criteria: borings at loess samples not adjacent to existing SVE wells or VMPs (FSB-1, FSB-4, FSB-8, FSB-12, FSB-13 and FSB-20); near VMPs with higher baseline sample results or vapor concentrations (FSB-6, FSB-11 and FSB-16); and near existing SVE wells with low flow rates (FSB-18). Well construction was performed by WDC under the supervision of an HDR field geologist. Well installation diagrams are included on the boring logs in Appendix A. A well installation summary is provided on Table 3.

Following sample collection, the selected soil borings were advanced through the final sample interval. The SVE wells were constructed using new, unused, decontaminated, 2-inch inside diameter Schedule 40 polyvinyl chloride (PVC) screen and riser, with internal flush-jointed threads and a 25-foot section of 0.006-inch slot screen. The riser extended approximately 2 feet above the ground surface.

Filter pack was placed in the annular space around the well screen from the bottom of the well to approximately five feet above the top of the screen. The filter pack was gravity-placed through the outer drill casing in lifts of 1 to 2 feet and the casing was vibrated as it was withdrawn between lifts to compact the filter pack. The filter pack consisted of 10-20 grade inert, hard, well rounded sand (less than 2 percent flat particles). A 5-foot thick hydrated seal of bentonite was placed above the filter pack. The bentonite seal was created by hydrating $^{3}/_{8}$-inch diameter dry chips for approximately 2 hours prior to installation of the grout. A bentonite-cement grout was placed above the bentonite seal and extended to the ground surface. This seal was installed using a side discharge tremie pipe.

The SVE wells were completed with a threaded coupling approximately 2 feet above ground surface to allow installation of a well cap, vent cover or connection to SVE

conveyance piping using flexible hose. Individual well pads were not constructed since the SVE wells were installed within the grout caps covering the TSVE treatment areas.

The soil borings and completed wells were surveyed for location and ground elevation by Allen and Hoshall on 17 November 2010. Horizontal and vertical coordinates are based on the North American Datum, 1927 used for all survey data at DDMT. Horizontal coordinates were provided in the Tennessee State Plane coordinate system.

Existing SVE Wellhead Modifications

The existing 2-inch stainless steel SVE wells were connected to 4-inch high density polyethylene HDPE conveyance lines at the wellheads approximately 2 feet bgs. In order to allow the new SVE wells to easily connect to the conveyance lines, existing wellhead connections were excavated and re-configured aboveground. A schematic drawing of the modification and photographs are included in Appendix B.

The modifications were made by United States Environmental Services on 7 to 10 December 2011. Each SVE well connection to the conveyance line was capped at the "T"-fitting and 2-inch Schedule 40 PVC riser used to extend the wellhead aboveground. The conveyance line was cut approximately 3 feet from each SVE well, and a 2-inch reducing fitting, elbow and 2-inch Schedule 40 PVC riser was used to bring the line aboveground. An aboveground "T"-Fitting was installed on both the wellhead and conveyance line to re-connect the SVE well and conveyance line; riser pipe was installed above the fittings. Valves were installed on both risers and the connection in order to isolate the well and conveyance line, open the SVE well for use as a vent and connect new SVE wells to the existing conveyance line. No glue was used on any piping connections; silicon sealant was used to seal the joints. The excavations were backfilled with the excavated soil. While excavating the connection at SVE-E, a section of the HDPE conveyance line was observed to be damaged, apparently from heat during TSVE treatment; the damaged section was replaced.

IDW Management

The waste generated during soil sampling and SVE well installation in November 2010 was classified as either non-investigative waste or investigation-derived waste (IDW). Non-investigative waste, such as packaging materials, personal protective equipment, disposable sampling supplies, and other inert refuse, was collected, containerized, and transported to a designated collection bin for disposal at a municipal landfill.

The IDW consisted of soil cuttings from the soil borings. The soil cuttings were spread on Dunn Field.

REBOUND TEST

The FSVE system was shut-down on 21 October 2010 following collection of quarterly vapor samples from the SVE wells and system influent. The system was re-started on 19 January 2011 following collection of rebound vapor samples from the original SVE wells and VMPs and testing of the new SVE wells.

Field Measurements

PID measurements were collected weekly at SVE wells and VMPs using a MiniRae 2000 (10.6 eV lamp) PID. The PID was calibrated with a 100 ppm concentration of isobutylene prior to each use. Vapor samples for field measurements were collected in a dedicated Tedlar® bag for each location using a portable, oil-less high vacuum pump (such as a rotary vane pump) with a vacuum capability exceeding that of the SVE blower. The PID meter was connected to the Tedlar® bag for the measurement, and measurements were recorded in field logbooks with date, time, and location.

Field measurements at VMPs were collected before SVE wells. The VMP was purged of three tubing volumes using the sampling pump prior to measurements. Multiple PID readings were collected at each VMP until three consecutive readings are within 10%. Following measurements at the VMPs, a single blower was started with the unused manifold legs open and the SVE wells closed. Each SVE well was opened individually to purge the conveyance piping and collect measurements; once the PID measurement was collected, the SVE well was closed and the next SVE well was opened.

The period needed for subsurface pressure to return to background conditions was evaluated through pressure measurements collected at VMPs prior to the blower being started. A portable magnehelic differential pressure gauge was used to collect vacuum measurements at each VMP weekly. The magnehelic gauge was connected to each VMP using flexible Tygon (or equivalent) tubing, equipped with a small isolation (ball) valve.

PID measurements are shown on Table 4 for SVE wells and on Table 5 for VMPs. Vacuum measurements at VMPs are shown on Table 6.

Vapor Samples

Laboratory samples were collected from VMPs on 6 to 11 January after the VMPs had been purged and PID measurements collected; samples were collected in 6-liter Summa canisters with flow regulators at 200 mL per minute. Laboratory samples were collected from SVE wells on 11 January 2011; samples were collected in 6-liter Summa canisters with the flow regulators removed because of past problems with the regulators being clogged with water. The SVE well and VMP samples were submitted to Columbia Analytical in Simi Valley, California for analysis of VOCs by USEPA Method TO-15.

Line Repairs and Flow Test

Final PID readings and vapor samples were to be collected after PID readings had stabilized or after 8 weeks. However, problems were observed when the SVE conveyance lines were tested on 17 December prior to collecting the final PID readings and samples. The lines were tested with the SVE wells closed and the conveyance line open to the atmosphere; there was no flow from SVE-G and limited flow from SVE-E. The lines from SVE-E and SVE-G were excavated within the treatment areas to determine if the lines had been damaged from TSVE operations; no problems were observed. The lines were then excavated at intervals between the control building and the SVE wells. Standing water in low areas was determined to be blocking the lines; the lines were cleared by draining the lines at the cuts and pulling remaining water out through the air-water separator using the system vacuum. Due to the length of the SVE-G line (920 feet), two vents were installed to help clear the line in future. The lines were

re-tested on 5 January 2011 with the conveyance lines open to the atmosphere; flow rates at all lines were 160 to 200 actual cubic feet per minute (acfm).

Following completion of the rebound test, the new and existing SVE wells were operated to measure vapor extraction flow rates with the nearby vent wells closed and open. The existing wells were tested using the modified connections and the new wells were tested using flexible hose connected to the conveyance line header. The measurements were made with a single blower operating and two unused manifold legs open. Each SVE well was opened individually and allowed to run for 10 to 15 minutes; the flow rate was recorded and a PID measurement made. The well was then closed and the next SVE well was opened. After measurements were made for all SVE wells connected to the conveyance lines, the vent wells were opened and a second set of measurements collected. Alternate SVE wells in each area were then connected to the conveyance line, the vent wells were closed and a new set of measurements were made. This was continued until all new and existing wells were tested with vent wells open and closed.

The test measurements are shown on Table 7. Vapor flow rates and PID measurements did not vary appreciably between the existing and new wells in each area, except for flow rate at SVE-G. The flow rate at SVE-G has been much lower than other SVE wells; this has resulted in condensate collecting in the conveyance line and decreasing the flow rate further. Both new wells (SVE-G-Alt and SVE-G-South) had flow rates near 100 acfm, comparable to the other wells.

SUMMARY OF FINDINGS

Soil Samples

The complete analytical results for the confirmation soil samples are presented on Table C-1. The soil analytical results are summarized on Table 8, which lists the results for the primary CVOCs and for other VOC analytes detected above the RL in one or more samples. CVOCs detected above the RG are shown in bold type and are also underlined where detected above 10 times the RG.

Only 4 of the 60 confirmation soil samples had reported concentrations above an RG and no concentrations exceeded 10 times the RG. 1,1,2,2 Tetrachloroethane (TeCA) exceeded the RG in 3 of 24 samples from TA-1 and methylene chloride exceeded the RG in 1 of 12 samples from TA-3. The average concentration of TeCA in TA-1 was determined using the results of the new samples and the 2007 baseline samples from SVE-A and VMP-1, as shown on Table 9. The average TeCA concentration is below the RG. The reported concentration of methylene chloride in FSB-16T is only slightly above the RG and the average for the area is clearly below the RG.

Rebound Test

PID measurements were collected weekly from system shutdown on 21 October to 10 December at all SVE wells and VMPs. The measurements did not increase noticeably at SVE wells or VMPs; PID measurements were stable at low concentrations near 1 ppm throughout the rebound test. The vacuum measurements indicate the soil vacuum decreased significantly within one day of system shutdown; the vacuum measurements were stable for the next two weeks until confirmation soil sampling began on 4 November.

The complete analytical results for the vapor samples are presented on Table C-2 for SVE wells and on Table C-3 for VMPs. Analytical results for the primary CVOCs and for other VOCs detected above the RL in one or more samples are shown on Table 10 for the SVE wells and on Table 11 for VMPs. The tables also list the protective soil vapor concentration (fluvial deposits) for the primary CVOCs and the totals for primary CVOCs and all VOCs detected in each sample.

The analytical results were similar to the PID measurements and indicated limited rebound in VOC concentrations at most locations. Total VOCs in vapor samples were below 1000 parts per billion (ppb) at all locations except: SVE-F (4481 ppb); SVE-G (6157 ppb); VMP-2B (1177 ppb); VMP-3A (1011 ppb); VMP-7A (2917 ppb); VMP-7B (4158 ppb) and VMP-8B (1463 ppb).

Reported concentrations exceeded protective soil vapor concentrations for one or more CVOCs in fluvial soils at all locations. Protective concentrations for tetrachloroethene and trichloroethene (TCE) were most commonly exceeded. Individual CVOCs detected above 1000 ppb were: chloroform at SVE-F (3300 ppb), SVE-G (2400 ppb), VMP-7A (1800 ppb) and VMP-7B (3900 ppb); and TCE at SVE-G (3400 ppb) and VMP-2B (1100 ppb).

The trend in total VOC concentrations at each SVE well and the associated VMPs are shown on Figures 6 to 11.

CONCLUSIONS AND RECOMMENDATIONS

The confirmation soil sample results demonstrate the RAO for the FSVE has been met. In addition, the absence of increased PID measurements while the SVE wells were shutdown indicates the FSVE system has removed the majority of VOCs in fluvial soils. However, the vapor samples collected following the rebound period indicate VOCs remain in the fluvial soil, primarily in TA-3 and TA-4. The total VOC trends on Figures 10 and 11 show increased concentrations at SVE-F and SVE-G.

The system was re-started on 19 January 2011; the initial SVE wells were used, except that SVE-G-Alt replaced SVE-G. The SVE wells connected to the conveyance lines will be switched approximately every 2 weeks with a single well in each area connected to the conveyance line. During the 2-week cycle, the other SVE wells will be open as vent wells during the second week. PID measurements will be collected weekly at SVE wells and the system effluent and will be used to evaluate selection of SVE wells and use of vent wells.

Since the FSVE RAO has been met, we recommend the majority of the SVE wells be shutdown after the next quarterly samples are collected in April 2011. Wells SVE-F and SVE-G are recommended for continued operation until the end of Year 4 in July 2011. Following shutdown, the blowers will be maintained and briefly operated weekly with conveyance lines open to the atmosphere. The new and existing SVE wells will be left open to the atmosphere and will operate as passive vent wells.

Results from Off Depot long-term monitoring (LTM) will be reviewed for indication of contaminant migration to groundwater. If increased CVOC concentrations are not observed in LTM wells on Dunn Field after FSVE operations are halted, a recommendation will be made to abandon the FSVE wells and remove the control building and treatment compound. The estimated time required for CVOCs to migrate

through fluvial soils and the sampling frequency of LTM wells on Dunn Field will be reviewed prior to recommending FSVE system removal.

TABLES

TABLE 1
REMEDIATION GOALS FROM DUNN FIELD RECORD OF DECISION
REBOUND TEST AND CONFIRMATION SOIL SAMPLING
FLUVIAL SOIL VAPOR EXTRACTION SYSTEM
Dunn Field - Defense Depot Memphis, Tennessee

	Remedial Goal Objectives				
	Site-Specific Soil Screening Levels to be Protective of Groundwater		Protective Soil Vapor Concentration		Groundwater Target Concentrations at 10-4 Target Risk Levels and Target HI=1.0
Parameter	Loess Specific Values (mg/kg)	Fluvial Deposit Specific Values (mg/kg)	Loess Specific Values (ppbv)	Fluvial Deposit Specific Values (ppbv)	(µg/L)
Carbon Tetrachloride	0.2150	0.1086	28.14	14.22	3.0
Chloroform	0.9170	0.4860	61.57	32.63	12.0
Dichloroethane, 1,2-	0.0329	0.0189	1.12	0.64	—
Dichloroethene, 1,1-	0.1500	0.0764	57.00	29.03	7/340
Dichloroethene, cis-1,2-	0.7550	0.4040	73.86	39.52	35.0
Dichloroethene, trans-1,2-	1.5200	0.7910	256.53	133.50	50.0
Methylene Chloride	0.0305	0.0169	5.14	2.85	—
Tetrachloroethane, 1,1,2,2-	0.0112	0.0066	0.03	0.55	2.2
Tetrachloroethene	0.1806	0.0920	15.18	0.99	2.5
Trichloroethane, 1,1,2	0.0627	0.0355	0.84	2.03	1.9
Trichloroethene	0.1820	0.0932	10.56	2.06	5.0
Vinyl Chloride	0.0294	0.0150	28.94	14.77	—

Notes:
—: Not available for groundwater cleanup goals because of low number of detections or detected values consistently less than MCLs.
µg/L: micrograms per liter
HI: hazard index
MCL: maximum contaminant level
mg/kg: milligrams per kilogram
ppbv: parts per billion per volume

TABLE 2
SOIL CONFIRMATION SAMPLE LOCATIONS
REBOUND TEST AND CONFIRMATION SOIL SAMPLING
FLUVIAL SOIL VAPOR EXTRACTION SYSTEM
Dunn Field - Defense Depot Memphis, Tennessee

Boring ID	Area	Date Sampled	Northing	Easting	Top of Fluvial (ft, bgs)	Sample Depths			Total Boring Depth (ft. bgs)
						Top (ft, bgs)	Middle (ft, bgs)	Bottom (ft, bgs)	
FSB-1	TA-1	11/12/2010	281629.4	802203.6	30	38	48	58	60
FSB-2	TA-1	11/13/2010	281625.4	802161.3	28	36	46	56	56
FSB-3	TA-1	11/13/2010	281607.1	802177.2	27	35	45	55	55
FSB-4	TA-1	11/12/2010	281420.6	802170.9	34	42	52	62	62
FSB-5	TA-1	11/13/2010	281396.4	802115.9	34	42	52	62	62
FSB-6	TA-1	11/11/2010	281409.1	802087.8	33	41	51	61	62
FSB-7	TA-1	11/11/2010	281346.3	802125.0	32	40	50	60	61
FSB-8	TA-2	11/10/2010	281030.7	802161.1	32	40	50	60	61
FSB-9	TA-2	11/10/2010	280993.3	802163.5	33	41	51	61	59
FSB-10	TA-2	11/9/2010	280994.1	802139.2	32	40	50	60	61
FSB-11	TA-2	11/9/2010	280958.7	802140.7	29	37	47	57	58
FSB-12	TA-2	11/8/2010	280953.1	802114.5	29	37	47	57	59
FSB-13	TA-3	11/6/2010	280585.8	802172.9	25	33	43	53	55
FSB-14	TA-3	11/6/2010	280597.0	802197.5	26	34	44	54	52
FSB-15	TA-3	11/7/2010	280582.7	802216.9	28	36	46	56	55
FSB-16	TA-3	11/7/2010	280573.5	802283.0	31	39	49	59	61
FSB-17	TA-4	11/4/2010	280250.9	802102.5	26	34	44	54	56
FSB-18	TA-4	11/4/2010	280226.4	802141.4	31	39	49	59	60
FSB-19	TA-4	11/5/2010	280225.9	802198.9	31	39	49	59	59
FSB-20	TA-4	11/5/2010	280187.9	802144.6	31	39	49	59	60

Notes:
ft, bgs: feet below ground surface
FSB: fluvial soil boring
TA: treatment area

TABLE 3
SVE WELL INSTALLATION SUMMARY
REBOUND TEST AND CONFIRMATION SOIL SAMPLING
FLUVIAL SOIL VAPOR EXTRACTION SYSTEM
Dunn Field - Defense Depot Memphis, Tennessee

									Well Screen		
Well ID	Boring ID	Area	Target Boring	Date Installed	Northing	Easting	Top of Fluvial (ft, bgs)	Total Boring Depth (ft. bgs)	Top (ft, bgs)	Bottom (ft, bgs)	Length (ft)
SVE-B-East	FSB-1	TA-1	LSB-5	11/12/2010	281629	802204	30	60	35	60	25
SVE-C-East	FSB-4	TA-1	LSB-28	11/12/2010	281421	802171	34	62	37	62	25
SVE-C-West	FSB-6	TA-1	VMP-3A	11/11/2010	281409	802088	33	62	37	62	25
SVE-D-North	FSB-8	TA-2	LSB-16	11/10/2010	281031	802161	32	61	36	61	25
SVE-D-South	FSB-11	TA-2	VMP-6A	11/9/2010	280959	802141	29	58	33	58	25
SVE-E-North	FSB-12	TA-2	LSB-12	11/8/2010	280953	802115	29	59	34	59	25
SVE-F-West	FSB-13	TA-3	LSB-17	11/6/2010	280586	802173	25	55	29	54	25
SVE-F-East	FSB-16	TA-3	VMP-8B	11/8/2010	280574	802283	31	61	36	61	25
SVE-G-Alt	FSB-18	TA-4	SVE-G	11/4/2010	280226	802141	31	60	35	60	25
SVE-G-South	FSB-20	TA-4	LSB-32	11/5/2010	280188	802145	31	60	34	59	25

Notes:
ft: feet
ft, bgs: feet below ground surface
FSB: fluvial soil boring
SVE: soil vapor extraction
TA: treatment area

TABLE 4
PID MEASUREMENTS AT SVE WELLS
REBOUND TEST AND CONFIRMATION SOIL SAMPLING
FLUVIAL SOIL VAPOR EXTRACTION SYSTEM
Dunn Field - Defense Depot Memphis, Tennessee

	PID Measurement (ppm)						
Date	SVE-A	SVE-B	SVE-C	SVE-D	SVE-E	SVE-F	SVE-G
10/21/2010	1.2	2.6	1.1	1.5	0.6	1.0	1.3
11/1/2010	0.2	0.1	0.2	0.2	0.3	0.2	5.5
11/5/2010	0.3	0.7	1.0	0.4	0.8	0.5	0.5
11/12/2010	0.6	0.6	1.1	0.3	0.7	0.8	0.4
11/19/2010	0.5	0.5	1.0	0.4	0.7	0.6	0.6
11/24/2010	0.5	0.5	0.9	0.4	0.6	0.6	0.6
12/3/2010	0.3	0.4	1.0	0.2	0.4	0.8	0.5
12/10/2010	0.2	0.4	1.0	0.1	0.1	0.7	0.2
1/6/2011	0.4	0.4	0.6	0.4	0.3	2.1	0.3

Notes:

1) PID manufactured by RAE System (Model: MiniRAE 2000) with a 10.6 eV lamp.
2) Measurements on 10/21/2010 collected before system shutdown for rebound test. Other measurements collected during shutdown period.

PID: photoionization detector
ppm: parts per milltion
SVE: soil vapor extraction

TABLE 5
PID MEASUREMENTS AT VMPS
REBOUND TEST AND CONFIRMATION SOIL SAMPLING
FLUVIAL SOIL VAPOR EXTRACTION SYSTEM
Dunn Field - Defense Depot Memphis, Tennessee

	Closest SVE Well and Distance (ft)		PID Measurement (ppm)								
			10/22/2010	10/29/2010	11/5/2010	11/12/2010	11/19/2010	11/24/2010	12/3/2010	12/10/2010	1/6/2011
VMP1A	SVE-A	15.1	2.3	1.7	2.9	4.3	4.5	1.7	0.6	1.3	0.2
VMP1B	SVE-A	21.0	0.8	0.7	0.8	2.0	2.1	0.7	0.4	0.3	0.4
VMP2A	SVE-B	30.7	0.7	0.7	0.6	1.6	1.8	0.6	1.0	0.2	0.6
VMP2B	SVE-B	37.5	1.7	1.4	2.3	2.2	2.2	1.1	3.4	1.1	2.9
VMP3A	SVE-C	30.7	1.0	1.4	0.9	1.3	1.4	0.4	0.4	0.4	1.7
VMP3B	SVE-C	25.5	2.2	2.4	0.9	2.1	2.5	0.8	1.2	1.3	0.4
VMP4A	SVE-C	60.0	0.6	1.2	0.5	1.0	1.2	0.5	0.2	0.4	0.2
VMP4B	SVE-C	59.5	1.1	1.3	0.8	1.2	1.4	0.6	0.8	0.7	0.3
VMP5A	SVE-D	31.0	0.6	0.9	1.0	0.9	1.1	0.4	0.4	0.3	0.2
VMP5B	SVE-D	31.0	3.1	5.0	1.8	2.2	2.8	1.9	1.0	1.4	0.9
VMP6A	SVE-E	45.0	0.6	0.8	0.6	0.8	0.8	0.3	0.2	0.1	0.1
VMP6B	SVE-E	45.0	1.2	2.8	2.3	2.8	2.7	1.1	0.7	1.6	1.2
VMP7A	SVE-F	15.3	0.5	1.3	0.7	1.1	1.2	0.3	0.7	0.7	1.5
VMP7B	SVE-F	15.2	0.6	0.8	0.7	0.9	0.8	0.3	0.4	0.5	0.3
VMP8A	SVE-F	80.4	0.7	1.1	0.8	1.1	1.0	0.7	0.3	0.4	0.2
VMP8B	SVE-F	80.2	1.1	0.8	1.0	1.3	1.0	1.8	17.1	1.6	0.3
VMP9A	SVE-G	45.2	1.0	0.9	1.0	1.0	1.0	0.7	0.8	0.7	0.4
VMP9B	SVE-G	45.2	1.0	1.6	1.1	1.6	1.5	1.3	1.3	2.2	0.8
VMP10A	SVE-G	60.1	0.9	1.2	1.3	1.1	1.2	0.8	0.4	0.2	0.2
VMP10B	SVE-G	60.5	0.9	1.2	1.4	1.2	1.2	0.5	0.8	0.7	0.7

Notes:

1) PID manufactured by RAE Systems (Model: MiniRAE 2000) with a 10.6 eV lamp.
2) All VMP wells contain 5-foot screen lengths. VMP "A" wells (e.g., VMP-1A) were constructed with a screen located near the bottom of the screen of the associated SVE well. VMP "B" wells (e.g., VMP-1B) were constructed with a screen located near the top of the screen of the associated SVE well.
3) System shutdown for rebound test on 10/21/2010. All measurements collected while system offline.

ft: feet
PID: photoionization detector
ppm: parts per million
SVE: soil vapor extraction
VMP: vapor monitoring point

TABLE 6
VACUUM READINGS AT VMPS
REBOUND TEST AND CONFIRMATION SOIL SAMPLING
FLUVIAL SOIL VAPOR EXTRACTION SYSTEM
Dunn Field - Defense Depot Memphis, Tennessee

			10/21/2010	10/22/2010	10/29/2010	11/5/2010	11/12/2010	11/19/2010	11/24/2010	12/10/2010	1/6/2011	1/19/11
Number of Blowers Online			2	0	0	0	0	0	0	0	0	2
Date	Closest SVE Well	and Distance (ft)	Vacuum (in. H_2O)									
VMP1A	SVE-A	15.1	11.3	2.3	2.2	1.7	0.9	0.0	0.0	1.1	0.0	9.7
VMP1B	SVE-A	21.0	11.6	2.3	2.2	1.7	0.9	0.0	0.0	1.2	0.0	9.8
VMP2A	SVE-B	30.7	13.4	3.4	2.4	2.4	1.8	1.0	0.6	1.7	1.3	11.2
VMP2B	SVE-B	37.5	12.4	3.1	2.1	2.1	1.7	0.9	0.5	1.6	1.2	10.8
VMP3A	SVE-C	30.7	11.6	3.0	2.4	2.3	1.4	0.8	1.0	1.4	1.2	9.7
VMP3B	SVE-C	25.5	12.5	2.8	2.1	2.2	1.3	0.8	0.8	1.3	1.1	10.3
VMP4A	SVE-C	60.0	9.4	2.0	1.5	1.9	0.8	0.0	0.0	0.5	0.0	7.6
VMP4B	SVE-C	59.5	8.4	1.8	1.3	1.8	0.7	0.0	0.0	0.0	0.0	6.9
VMP5A	SVE-D	31.0	9.2	1.6	1.1	1.5	0.5	0.0	0.0	0.0	0.0	8.8
VMP5B	SVE-D	31.0	9.5	1.6	1.1	1.4	0.5	0.0	0.0	0.0	0.0	8.9
VMP6A	SVE-E	45.0	9.2	2.1	0.9	1.8	0.0	0.0	0.0	0.0	0.0	9.0
VMP6B	SVE-E	45.0	9.2	2.1	0.9	1.8	0.0	0.0	0.0	0.0	0.0	8.8
VMP7A	SVE-F	15.3	12.4	1.2	1.4	1.8	0.0	0.0	-1.1	0.0	-0.9	10.1
VMP7B	SVE-F	15.2	11.3	1.1	1.3	1.7	0.0	0.0	-1.1	0.0	-0.9	10.0
VMP8A	SVE-F	80.4	8.0	1.3	0.7	1.9	0.0	0.0	-1.4	0.0	3.1	6.6
VMP8B	SVE-F	80.2	5.5	0.5	0.5	1.1	0.0	0.0	-1.4	0.0	1.7	5.8
VMP9A	SVE-G	45.2	4.3	1.1	1.9	1.8	0.0	0.0	-1.4	0.0	3.2	5.8
VMP9B	SVE-G	45.2	4.1	1.0	1.9	1.7	0.0	0.0	-1.6	0.0	3.1	5.6
VMP10A	SVE-G	60.1	3.6	1.4	1.1	1.6	0.0	0.0	-2.0	0.0	3.0	5.0
VMP10B	SVE-G	60.5	3.5	1.3	1.1	1.6	0.0	0.0	-2.0	0.0	3.0	4.6

Notes:

1) Vacuum readings collected using a Dwyer 475-3-FM Digital Manometer
2) the screen of the associated SVE well. VMP "B" wells (e.g., VMP-1B) were constructed with a screen located near the top of the

ft: feet
in. H_2O: inches of water
SVE: soil vapor extraction
VMP: vapor monitoring point

TABLE 7
VAPOR FLOW RATES AND PID MEASUREMENTS AT SVE WELLS
REBOUND TEST AND CONFIRMATION SOIL SAMPLING
FLUVIAL SOIL VAPOR EXTRACTION SYSTEM
Dunn Field - Defense Depot Memphis, Tennessee

Test			Vents closed Date/Time	Vents closed Flow (acfm)	Vents open Time	Vents open Flow (acfm)	PID (ppm)
1	Well	**SVE-B**	1/13/2011 13:43	170	16:35	170	1.1
	Vent Wells	SVE-B-E					
2	Well	**SVE-B-E**	1/14/2011 15:02	150	15:18	160	0.5
	Vent Wells	SVE-B					
3	Well	**SVE-C**	1/13/2011 13:50	200	16:24	200	1.2
	Vent Wells	SVE-C-E					
		SVE-C-W					
4	Well	**SVE-C-E**	1/14/2011 15:36	170	15:50	180	0.6
	Vent Wells	SVE-C					
		SVE-C-W					
5	Well	**SVE-C-W**	1/14/2011 16:03	180	16:22	180	0.9
	Vent Wells	SVE-C					
		SVE-C-E					
6	Well	**SVE-D**	1/13/2011 13:57	170	16:13	170	0.5
	Vent Wells	SVE-D-N					
		SVE-D-S					
7	Well	**SVE-D-N**	1/18/2011 8:35	150	8:49	150	0.2
	Vent Wells	SVE-D					
		SVE-D-S					
8	Well	**SVE-D-S**	1/18/2011 9:05	140	9:22	140	0.6
	Vent Wells	SVE-D					
		SVE-D-N					
9	Well	**SVE-E**	1/13/11 14:04	150	16:02	150	0.7
	Vent Wells	SVE-E-N					
		SVE-D-S					
10	Well	**SVE-E-N**	1/18/2011 10:17	130	10:32	130	0.4
	Vent Wells	SVE-E					
		SVE-D-S					
11	Well	**SVE-D-S**	1/18/2011 9:40	130	10:01	130	0.3
	Vent Wells	SVE-E					
		SVE-E-N					
12	Well	**SVE-F**	1/13/2011 14:10	150	15:50	150	2.1
	Vent Wells	SVE-F-W					
		SVE-F-E					
13	Well	**SVE-F-W**	1/18/2011 10:51	130	11:06	120	0.6
	Vent Wells	SVE-F					
		SVE-F-E					
14	Well	**SVE-F-E**	1/18/2011 11:29	120	11:43	130	1.6
	Vent Wells	SVE-F-W					
		SVE-F					
15	Well	**SVE-G**	1/13/2011 14:24	60	15:38	60	12.6
	Vent Wells	SVE-G-Alt					
		SVE-G-S					
16	Well	**SVE-G-Alt**	1/18/2011 12:00	110	12:17	110	4
	Vent Wells	SVE-G					
		SVE-G-S					
17	Well	**SVE-G-S**	1/18/2011 12:35	100	12:55	110	1.6
	Vent Wells	SVE-G-Alt					
		SVE-G					

Notes:
acfm: actual cubic feet per minute
ppm: parts per million
SVE: soil vapor extraction

TABLE 8
SOIL ANALYTICAL RESULTS SUMMARY
REBOUND TEST AND CONFIRMATION SOIL SAMPLING
FLUVIAL SOIL VAPOR EXTRACTION SYSTEM
Dunn Field - Defense Depot Memphis, Tennessee

	Location Id	Fluvial Deposit Remediation Goal (mg/kg)	FSB-01T	FSB-01M	FSB-01B	FSB-02T	FSB-02M	FSB-02B
	Date		11/12/2010	11/12/2010	11/12/2010	11/13/2010	11/13/2010	11/13/2010
	Id		TA1-FSB-01T	TA1-FSB-01M	TA1-FSB-01B	TA1-FSB-02T	TA1-FSB-02M	TA1-FSB-02B
	Lab ID		L10110451-01	L10110451-02	L10110451-03	L10110500-01	L10110500-02	L10110500-03
Primary VOCs	Units							
1,1,2,2-Tetrachloroethane	mg/kg	0.0066	<0.00275	<0.00323	<0.00338	**0.0527**	**0.00897**	0.00144 F
1,1,2-Trichloroethane	mg/kg	0.0355	<0.00459	<0.00539	<0.00564	0.00107 F	<0.00565	<0.00537
1,1-Dichloroethene	mg/kg	0.0764	<0.00551	<0.00647	<0.00676	<0.00587	<0.00678	<0.00645
1,2-Dichloroethane	mg/kg	0.0189	<0.00275	<0.00323	<0.00338	<0.00293	<0.00339	<0.00322
Carbon tetrachloride	mg/kg	0.1086	<0.00459	<0.00539	<0.00564	<0.00489	<0.00565	<0.00537
Chloroform	mg/kg	0.486	<0.00184	<0.00216	<0.00225	<0.00196	<0.00226	<0.00215
cis-1,2-Dichloroethene	mg/kg	0.404	<0.00459	<0.00539	<0.00564	0.00319 F	<0.00565	<0.00537
Methylene chloride	mg/kg	0.0169	0.00164 F	0.00292 F	0.00228 F	0.00808	0.00262 F	0.0121
Tetrachloroethene	mg/kg	0.092	<0.00459	<0.00539	<0.00564	<0.00489	<0.00565	<0.00537
trans-1,2-Dichloroethene	mg/kg	0.791	<0.00459	<0.00539	<0.00564	0.000534 F	<0.00565	<0.00537
Trichloroethene	mg/kg	0.0932	<0.00459	<0.00539	<0.00564	0.0133	<0.00565	<0.00537
Vinyl chloride	mg/kg	0.015	<0.00459	<0.00539	<0.00564	<0.00489	<0.00565	<0.00537
Total			0.00164	0.00292	0.00228	0.078874	0.01159	0.01354
Acetone	mg/kg	--	0.012 F	0.0177 F	0.0197 F	<0.0196	0.0125 F	<0.0215

Notes:
FSB: fluvial soil boring
mg/kg: milligrams per kilogram
RL: reporting limit
RG: remediation goal
TA: treatment area

DQE Flags:
F: Concentration below RL but above MDL
J: Analyte positively identified, but quantitation estimated.
Q: Quality control criteria failed, further review required
M: Concentration estimated due to matrix effect
<: Analyte not detected above RL
Bold: Detected above the Fluval Deposit RG

TABLE 8
SOIL ANALYTICAL RESULTS SUMMARY
REBOUND TEST AND CONFIRMATION SOIL SAMPLING
FLUVIAL SOIL VAPOR EXTRACTION SYSTEM
Dunn Field - Defense Depot Memphis, Tennessee

	Location Date Id Lab ID	Fluvial Deposit Remediation Goal (mg/kg)	FSB-03T 11/13/2010 TA1-FSB-03T L10110500-04	FSB-03M 11/13/2010 TA1-FSB-03M L10110500-05	FSB-03B 11/13/2010 TA1-FSB-03B L10110500-06	FSB-04T 11/12/2010 TA1-FSB-04T L10110451-04	FSB-04M 11/12/2010 TA1-FSB-04M L10110451-05	FSB-04B 11/12/2010 TA1-FSB-04B L10110451-06
Primary VOCs	Units							
1,1,2,2-Tetrachloroethane	mg/kg	0.0066	**0.0272**	0.0029 F	0.000737 F	<0.00317	<0.00356	<0.00302
1,1,2-Trichloroethane	mg/kg	0.0355	<0.00514	<0.00522	<0.00524	<0.00528	<0.00594	<0.00504
1,1-Dichloroethene	mg/kg	0.0764	<0.00617	<0.00627	<0.00629	<0.00634	<0.00713	<0.00605
1,2-Dichloroethane	mg/kg	0.0189	<0.00308	<0.00313	<0.00315	<0.00317	<0.00356	<0.00302
Carbon tetrachloride	mg/kg	0.1086	<0.00514	<0.00522	<0.00524	<0.00528	<0.00594	<0.00504
Chloroform	mg/kg	0.486	<0.00206	<0.00209	<0.0021	<0.00211	<0.00238	<0.00202
cis-1,2-Dichloroethene	mg/kg	0.404	0.000765 F	<0.00522	<0.00524	<0.00528	<0.00594	<0.00504
Methylene chloride	mg/kg	0.0169	0.00198 F	0.00208 F	0.00306 F	0.0017 F	0.00679	0.00265 F
Tetrachloroethene	mg/kg	0.092	<0.00514	<0.00522	<0.00524	<0.00528	<0.00594	<0.00504
trans-1,2-Dichloroethene	mg/kg	0.791	<0.00514	<0.00522	<0.00524	<0.00528	<0.00594	<0.00504
Trichloroethene	mg/kg	0.0932	0.00191 F	0.00164 F	<0.00524	<0.00528	<0.00594	<0.00504
Vinyl chloride	mg/kg	0.015	<0.00514	<0.00522	<0.00524	<0.00528	<0.00594	<0.00504
Total			0.031855	0.00662	0.003797	0.0017	0.00679	0.00265
Acetone	mg/kg	--	0.00941 F	0.0148 F	0.0149 F	0.0215	0.0273	0.0237

Notes:
FSB: fluvial soil boring
mg/kg: milligrams per kilogram
RL: reporting limit
RG: remediation goal
TA: treatment area

DQE Flags:
F: Concentration below RL but above MDL
J: Analyte positively identified, but quantitation estimated.
Q: Quality control criteria failed, further review required
M: Concentration estimated due to matrix effect
<: Analyte not detected above RL
Bold: Detected above the Fluval Deposit RG

TABLE 8
SOIL ANALYTICAL RESULTS SUMMARY
REBOUND TEST AND CONFIRMATION SOIL SAMPLING
FLUVIAL SOIL VAPOR EXTRACTION SYSTEM
Dunn Field - Defense Depot Memphis, Tennessee

	Location	Fluvial Deposit	FSB-05T	FSB-05M	FSB-05B	FSB-06T	FSB-06M	FSB-06B
	Date	Remediation Goal	11/13/2010	11/13/2010	11/13/2010	11/11/2010	11/11/2010	11/11/2010
	Id	(mg/kg)	TA1-FSB-05T	TA1-FSB-05M	TA1-FSB-05B	TA1-FSB-06T	TA1-FSB-06M	TA1-FSB-06B
	Lab ID		L10110500-07	L10110500-08	L10110500-09	L10110431-01	L10110431-02	L10110431-03
Primary VOCs	Units							
1,1,2,2-Tetrachloroethane	mg/kg	0.0066	<0.00273	<0.00321	<0.00318	<0.00304	<0.00333	<0.00326
1,1,2-Trichloroethane	mg/kg	0.0355	<0.00454	<0.00535	<0.00529	<0.00506	<0.00555	<0.00543
1,1-Dichloroethene	mg/kg	0.0764	<0.00545	<0.00641	<0.00635	<0.00608	<0.00666	<0.00651
1,2-Dichloroethane	mg/kg	0.0189	<0.00273	<0.00321	<0.00318	<0.00304	<0.00333	<0.00326
Carbon tetrachloride	mg/kg	0.1086	<0.00454	<0.00535	<0.00529	<0.00506	<0.00555	<0.00543
Chloroform	mg/kg	0.486	<0.00182	<0.00214	<0.00212	<0.00203	<0.00222	<0.00217
cis-1,2-Dichloroethene	mg/kg	0.404	<0.00454	<0.00535	<0.00529	<0.00506	<0.00555	<0.00543
Methylene chloride	mg/kg	0.0169	0.0142	0.00972	0.0101	0.0061	0.00484 F	0.00822
Tetrachloroethene	mg/kg	0.092	<0.00454	<0.00535	<0.00529	<0.00506	<0.00555	<0.00543
trans-1,2-Dichloroethene	mg/kg	0.791	<0.00454	<0.00535	<0.00529	<0.00506	<0.00555	<0.00543
Trichloroethene	mg/kg	0.0932	<0.00454	<0.00535	<0.00529	<0.00506	<0.00555	<0.00543
Vinyl chloride	mg/kg	0.015	<0.00454	<0.00535	<0.00529	<0.00506	<0.00555	<0.00543
Total			0.0142	0.00972	0.0101	0.0061	0.00484	0.00822
Acetone	mg/kg	--	0.00594 F	<0.0214	0.00748 F	<0.0203 Q	0.00777 Q	<0.0217 Q

Notes:
FSB: fluvial soil boring
mg/kg: milligrams per kilogram
RL: reporting limit
RG: remediation goal
TA: treatment area

DQE Flags:
F: Concentration below RL but above MDL
J: Analyte positively identified, but quantitation estimated.
Q: Quality control criteria failed, further review required
M: Concentration estimated due to matrix effect
<: Analyte not detected above RL
Bold: Detected above the Fluval Deposit RG

TABLE 8
SOIL ANALYTICAL RESULTS SUMMARY
REBOUND TEST AND CONFIRMATION SOIL SAMPLING
FLUVIAL SOIL VAPOR EXTRACTION SYSTEM
Dunn Field - Defense Depot Memphis, Tennessee

	Location Date Id Lab ID	Fluvial Deposit Remediation Goal (mg/kg)	FSB-07T 11/11/2010 TA1-FSB-07T L10110431-04	FSB-07M 11/11/2010 TA1-FSB-07M L10110431-05	FSB-07B 11/11/2010 TA1-FSB-07B L10110431-08	FSB-08T 11/10/2010 TA1-FSB-08T L10110394-01	FSB-08M 11/10/2010 TA1-FSB-08M L10110394-02	FSB-08B 11/10/2010 TA1-FSB-08B L10110394-03
Primary VOCs	Units							
1,1,2,2-Tetrachloroethane	mg/kg	0.0066	<0.00343	<0.00314 M	<0.0035	<0.00317	<0.00338 Q	0.0011 F
1,1,2-Trichloroethane	mg/kg	0.0355	<0.00571	<0.00523 M	<0.00583	<0.00528	<0.00563	<0.00482
1,1-Dichloroethene	mg/kg	0.0764	<0.00686	<0.00628 M	<0.007	<0.00633	<0.00676	<0.00578
1,2-Dichloroethane	mg/kg	0.0189	<0.00343	<0.00314 M	<0.0035	<0.00317	<0.00338	<0.00289
Carbon tetrachloride	mg/kg	0.1086	<0.00571	<0.00523 M	<0.00583	<0.00528	<0.00563	<0.00482
Chloroform	mg/kg	0.486	<0.00229	<0.00209 M	<0.00233	<0.00211	<0.00225	<0.00193
cis-1,2-Dichloroethene	mg/kg	0.404	<0.00571	<0.00523 M	<0.00583	<0.00528	<0.00563	<0.00482
Methylene chloride	mg/kg	0.0169	0.0132	0.0103 M	0.0157	0.0107	0.00746	0.00578
Tetrachloroethene	mg/kg	0.092	<0.00571	<0.00523 M	<0.00583	<0.00528	<0.00563	<0.00482
trans-1,2-Dichloroethene	mg/kg	0.791	<0.00571	<0.00523 M	<0.00583	<0.00528	<0.00563	<0.00482
Trichloroethene	mg/kg	0.0932	<0.00571	<0.00523 M	<0.00583	<0.00528	<0.00563	<0.00482
Vinyl chloride	mg/kg	0.015	<0.00571	<0.00523 M	<0.00583	<0.00528	<0.00563	<0.00482
Total			0.0132	0.0103	0.0157	0.0107	0.00746	0.00688
Acetone	mg/kg	--	<0.0229 Q	<0.0209 Q	0.00901 Q	<0.0211 Q	0.0202 F	<0.0193

Notes:
FSB: fluvial soil boring
mg/kg: milligrams per kilogram
RL: reporting limit
RG: remediation goal
TA: treatment area

DQE Flags:
F: Concentration below RL but above MDL
J: Analyte positively identified, but quantitation estimated.
Q: Quality control criteria failed, further review required
M: Concentration estimated due to matrix effect
<: Analyte not detected above RL
Bold: Detected above the Fluval Deposit RG

TABLE 8
SOIL ANALYTICAL RESULTS SUMMARY
REBOUND TEST AND CONFIRMATION SOIL SAMPLING
FLUVIAL SOIL VAPOR EXTRACTION SYSTEM
Dunn Field - Defense Depot Memphis, Tennessee

	Location Date Id Lab ID	Fluvial Deposit Remediation Goal (mg/kg)	FSB-09T 11/10/2010 TA1-FSB-09T L10110394-04	FSB-09M 11/10/2010 TA1-FSB-09M L10110394-05	FSB-09B 11/10/2010 TA1-FSB-09B L10110394-06	FSB-10T 11/9/2010 TA1-FSB-10T L10110356-01	FSB-10M 11/9/2010 TA1-FSB-10M L10110356-02	FSB-10B 11/9/2010 TA1-FSB-10B L10110356-03
Primary VOCs	Units							
1,1,2,2-Tetrachloroethane	mg/kg	0.0066	<0.00291	0.00135 F	<0.00305	0.00272 Q	<0.00347 Q	<0.00313 Q
1,1,2-Trichloroethane	mg/kg	0.0355	<0.00486	<0.00567	<0.00509	<0.00496	<0.00579	<0.00522
1,1-Dichloroethene	mg/kg	0.0764	<0.00583	<0.00681	<0.0061	<0.00595	<0.00695	<0.00626
1,2-Dichloroethane	mg/kg	0.0189	<0.00291	<0.0034	<0.00305	<0.00298	<0.00347	<0.00313
Carbon tetrachloride	mg/kg	0.1086	<0.00486	<0.00567	<0.00509	<0.00496	<0.00579	<0.00522
Chloroform	mg/kg	0.486	<0.00194	<0.00227	<0.00203	<0.00198	<0.00232	<0.00209
cis-1,2-Dichloroethene	mg/kg	0.404	<0.00486	<0.00567	<0.00509	0.000729 F	<0.00579	<0.00522
Methylene chloride	mg/kg	0.0169	0.00224 F	0.00266 F	0.00435 F	0.00255 F	0.00407 F	0.00204 F
Tetrachloroethene	mg/kg	0.092	<0.00486	<0.00567	<0.00509	<0.00496	<0.00579	<0.00522
trans-1,2-Dichloroethene	mg/kg	0.791	<0.00486	<0.00567	<0.00509	<0.00496	<0.00579	<0.00522
Trichloroethene	mg/kg	0.0932	0.0011 F	<0.00567	0.0046 F	0.0016 F	<0.00579	<0.00522
Vinyl chloride	mg/kg	0.015	<0.00486	<0.00567	<0.00509	<0.00496	<0.00579	<0.00522
Total			0.00334	0.00401	0.00895	0.007599	0.00407	0.00204
Acetone	mg/kg	--	<0.0194	0.0067 F	0.0107 F	0.00974 F	0.00767 F	0.0175 F

Notes:
FSB: fluvial soil boring
mg/kg: milligrams per kilogram
RL: reporting limit
RG: remediation goal
TA: treatment area

DQE Flags:
F: Concentration below RL but above MDL
J: Analyte positively identified, but quantitation estimated.
Q: Quality control criteria failed, further review required
M: Concentration estimated due to matrix effect
<: Analyte not detected above RL
Bold: Detected above the Fluval Deposit RG

TABLE 8
SOIL ANALYTICAL RESULTS SUMMARY
REBOUND TEST AND CONFIRMATION SOIL SAMPLING
FLUVIAL SOIL VAPOR EXTRACTION SYSTEM
Dunn Field - Defense Depot Memphis, Tennessee

	Location	Fluvial Deposit	FSB-11T	FSB-11M	FSB-11B	FSB-12T	FSB-12M	FSB-12B
	Date	Remediation Goal	11/9/2010	11/9/2010	11/9/2010	11/8/2010	11/8/2010	11/8/2010
	Id	(mg/kg)	TA1-FSB-11T	TA1-FSB-11M	TA1-FSB-11B	TA1-FSB-12T	TA1-FSB-12M	TA1-FSB-12B
	Lab ID		L10110356-04	L10110356-05	L10110356-06	L10110297-19	L10110297-20	L10110297-21
Primary VOCs	Units							
1,1,2,2-Tetrachloroethane	mg/kg	0.0066	<0.00306 Q	<0.00297 Q	<0.00294 Q	<0.00292	<0.00312	<0.00277
1,1,2-Trichloroethane	mg/kg	0.0355	<0.00511	<0.00495	<0.00489	<0.00487	<0.0052	<0.00462
1,1-Dichloroethene	mg/kg	0.0764	<0.00613	<0.00594	<0.00587	<0.00584	<0.00624	<0.00554
1,2-Dichloroethane	mg/kg	0.0189	<0.00306	<0.00297	<0.00294	<0.00292	<0.00312	<0.00277
Carbon tetrachloride	mg/kg	0.1086	<0.00511	<0.00495	<0.00489	<0.00487	<0.0052	<0.00462
Chloroform	mg/kg	0.486	<0.00204	<0.00198	<0.00196	<0.00195	<0.00208	<0.00185
cis-1,2-Dichloroethene	mg/kg	0.404	<0.00511	<0.00495	<0.00489	<0.00487	<0.0052	<0.00462
Methylene chloride	mg/kg	0.0169	0.0145	0.00825	0.00834	0.00838	0.00144 F	0.00674
Tetrachloroethene	mg/kg	0.092	<0.00511	<0.00495	<0.00489	<0.00487	<0.0052	<0.00462
trans-1,2-Dichloroethene	mg/kg	0.791	<0.00511	<0.00495	<0.00489	<0.00487	<0.0052	<0.00462
Trichloroethene	mg/kg	0.0932	<0.00511	<0.00495	<0.00489	<0.00487	<0.0052	<0.00462
Vinyl chloride	mg/kg	0.015	<0.00511	<0.00495	<0.00489	<0.00487	<0.0052	<0.00462
Total			0.0145	0.00825	0.00834	0.00838	0.00144	0.00674
Acetone	mg/kg	--	0.0129 F	0.00557 F	0.0153 F	<0.0195	0.012 F	<0.0185

Notes:
FSB: fluvial soil boring
mg/kg: milligrams per kilogram
RL: reporting limit
RG: remediation goal
TA: treatment area

DQE Flags:
F: Concentration below RL but above MDL
J: Analyte positively identified, but quantitation estimated.
Q: Quality control criteria failed, further review required
M: Concentration estimated due to matrix effect
<: Analyte not detected above RL
Bold: Detected above the Fluval Deposit RG

TABLE 8
SOIL ANALYTICAL RESULTS SUMMARY
REBOUND TEST AND CONFIRMATION SOIL SAMPLING
FLUVIAL SOIL VAPOR EXTRACTION SYSTEM
Dunn Field - Defense Depot Memphis, Tennessee

	Location	Fluvial Deposit	FSB-13T	FSB-13M	FSB-13B	FSB-14T	FSB-14M	FSB-14B
	Date	Remediation Goal	11/6/2010	11/6/2010	11/6/2010	11/6/2010	11/6/2010	11/7/2010
	Id	(mg/kg)	TA1-FSB-13T	TA1-FSB-13M	TA1-FSB-13B	TA1-FSB-14T	TA1-FSB-14M	TA1-FSB-14B
	Lab ID		L10110297-01	L10110297-02	L10110297-03	L10110297-04	L10110297-07	L10110297-11
Primary VOCs	Units							
1,1,2,2-Tetrachloroethane	mg/kg	0.0066	<0.00302	<0.00314	<0.00265	<0.00298	<0.00288	<0.00325
1,1,2-Trichloroethane	mg/kg	0.0355	<0.00504	<0.00524	<0.00442	<0.00496	<0.00481	<0.00542
1,1-Dichloroethene	mg/kg	0.0764	<0.00604	<0.00629	<0.0053	<0.00595	<0.00577	<0.0065
1,2-Dichloroethane	mg/kg	0.0189	<0.00302	<0.00314	<0.00265	<0.00298	<0.00288	<0.00325
Carbon tetrachloride	mg/kg	0.1086	<0.00504	<0.00524	<0.00442	<0.00496	<0.00481	<0.00542
Chloroform	mg/kg	0.486	<0.00201	<0.0021	<0.00177	<0.00198	<0.00192	<0.00217
cis-1,2-Dichloroethene	mg/kg	0.404	<0.00504	<0.00524	<0.00442	<0.00496	<0.00481	<0.00542
Methylene chloride	mg/kg	0.0169	0.00296 F	0.00325 F	0.00183 F	0.0113 M	0.00894	0.00192 F
Tetrachloroethene	mg/kg	0.092	<0.00504	<0.00524	<0.00442	<0.00496	<0.00481	<0.00542
trans-1,2-Dichloroethene	mg/kg	0.791	<0.00504	<0.00524	<0.00442	<0.00496	<0.00481	<0.00542
Trichloroethene	mg/kg	0.0932	<0.00504	<0.00524	<0.00442	<0.00496	<0.00481	<0.00542
Vinyl chloride	mg/kg	0.015	<0.00504	<0.00524	<0.00442	<0.00496	<0.00481	<0.00542
Total			0.00296	0.00325	0.00183	0.0113	0.00894	0.00192
Acetone	mg/kg	--	0.0179 F	0.0122 F	0.0164 F	<0.0198 M	<0.0192	0.00984 F

Notes:
FSB: fluvial soil boring
mg/kg: milligrams per kilogram
RL: reporting limit
RG: remediation goal
TA: treatment area

DQE Flags:
F: Concentration below RL but above MDL
J: Analyte positively identified, but quantitation estimated.
Q: Quality control criteria failed, further review required
M: Concentration estimated due to matrix effect
<: Analyte not detected above RL
Bold: Detected above the Fluval Deposit RG

TABLE 8
SOIL ANALYTICAL RESULTS SUMMARY
REBOUND TEST AND CONFIRMATION SOIL SAMPLING
FLUVIAL SOIL VAPOR EXTRACTION SYSTEM
Dunn Field - Defense Depot Memphis, Tennessee

	Location	Fluvial Deposit	FSB-15T	FSB-15M	FSB-15B	FSB-16T	FSB-16M	FSB-16B
	Date	Remediation Goal	11/7/2010	11/7/2010	11/7/2010	11/7/2010	11/7/2010	11/7/2010
	Id	(mg/kg)	TA1-FSB-15T	TA1-FSB-15M	TA1-FSB-15B	TA1-FSB-16T	TA1-FSB-16M	TA1-FSB-16B
	Lab ID		L10110297-12	L10110297-13	L10110297-14	L10110297-15	L10110297-16	L10110297-17
Primary VOCs	Units							
1,1,2,2-Tetrachloroethane	mg/kg	0.0066	<0.00282	<0.00317	<0.00295	<0.00256	<0.0029	<0.00288
1,1,2-Trichloroethane	mg/kg	0.0355	<0.0047	<0.00529	<0.00491	0.00201 F	<0.00484	<0.0048
1,1-Dichloroethene	mg/kg	0.0764	<0.00565	<0.00635	<0.00589	<0.00513	<0.00581	<0.00576
1,2-Dichloroethane	mg/kg	0.0189	<0.00282	<0.00317	<0.00295	<0.00256	<0.0029	<0.00288
Carbon tetrachloride	mg/kg	0.1086	<0.0047	<0.00529	<0.00491	<0.00427	<0.00484	<0.0048
Chloroform	mg/kg	0.486	0.00807	<0.00212	<0.00196	0.317	<0.00194	<0.00192
cis-1,2-Dichloroethene	mg/kg	0.404	<0.0047	<0.00529	<0.00491	0.0037 F	<0.00484	<0.0048
Methylene chloride	mg/kg	0.0169	0.00706	0.00147 F	0.00193 F	**0.0243**	0.00141 F	0.0026 F
Tetrachloroethene	mg/kg	0.092	<0.0047	<0.00529	<0.00491	0.00109 F	<0.00484	<0.0048
trans-1,2-Dichloroethene	mg/kg	0.791	<0.0047	<0.00529	<0.00491	<0.00427	<0.00484	<0.0048
Trichloroethene	mg/kg	0.0932	<0.0047	<0.00529	<0.00491	0.00453	<0.00484	<0.0048
Vinyl chloride	mg/kg	0.015	<0.0047	<0.00529	<0.00491	<0.00427	<0.00484	<0.0048
Total			0.01513	0.00147	0.00193	0.35263	0.00141	0.0026
Acetone	mg/kg	--	<0.0188	<0.0212	<0.0196	<0.0171	0.0146 F	0.00482 F

Notes:
FSB: fluvial soil boring
mg/kg: milligrams per kilogram
RL: reporting limit
RG: remediation goal
TA: treatment area

DQE Flags:
F: Concentration below RL but above MDL
J: Analyte positively identified, but quantitation estimated.
Q: Quality control criteria failed, further review required
M: Concentration estimated due to matrix effect
<: Analyte not detected above RL
Bold: Detected above the Fluval Deposit RG

TABLE 8
SOIL ANALYTICAL RESULTS SUMMARY
REBOUND TEST AND CONFIRMATION SOIL SAMPLING
FLUVIAL SOIL VAPOR EXTRACTION SYSTEM
Dunn Field - Defense Depot Memphis, Tennessee

	Location Id	Fluvial Deposit Remediation Goal (mg/kg)	FSB-17T 11/4/2010 TA1-FSB-17T	FSB-17M 11/4/2010 TA1-FSB-17M	FSB-17B 11/4/2010 TA1-FSB-17B	FSB-18T 11/4/2010 TA1-FSB-18T	FSB-18M 11/4/2010 TA1-FSB-18M	FSB-18B 11/4/2010 TA1-FSB-18B
	Date							
	Id							
	Lab ID		L10110228-01	L10110228-02	L10110228-03	L10110228-04	L10110228-05	L10110228-06
Primary VOCs	Units							
1,1,2,2-Tetrachloroethane	mg/kg	0.0066	<0.00284	<0.00323	<0.00264	<0.00295	<0.00291	<0.00291
1,1,2-Trichloroethane	mg/kg	0.0355	<0.00473	<0.00538	<0.0044	<0.00491	<0.00485	<0.00485
1,1-Dichloroethene	mg/kg	0.0764	<0.00568	<0.00645	<0.00528	<0.00589	<0.00582	<0.00582
1,2-Dichloroethane	mg/kg	0.0189	<0.00284	<0.00323	<0.00264	<0.00295	<0.00291	<0.00291
Carbon tetrachloride	mg/kg	0.1086	<0.00473	<0.00538	<0.0044	<0.00491	<0.00485	<0.00485
Chloroform	mg/kg	0.486	<0.00189	<0.00215	<0.00176	0.000528 F	<0.00194	<0.00194
cis-1,2-Dichloroethene	mg/kg	0.404	<0.00473	<0.00538	<0.0044	<0.00491	<0.00485	<0.00485
Methylene chloride	mg/kg	0.0169	0.00189 F	0.00398 F	0.00222 F	0.0039 F	0.00219 F	0.00635
Tetrachloroethene	mg/kg	0.092	<0.00473	<0.00538	<0.0044	<0.00491	<0.00485	<0.00485
trans-1,2-Dichloroethene	mg/kg	0.791	<0.00473	<0.00538	<0.0044	<0.00491	<0.00485	<0.00485
Trichloroethene	mg/kg	0.0932	<0.00473	<0.00538	<0.0044	0.000978 F	<0.00485	<0.00485
Vinyl chloride	mg/kg	0.015	<0.00473	<0.00538	<0.0044	<0.00491	<0.00485	<0.00485
Total			0.00189	0.00398	0.00222	0.005406	0.00219	0.00635
Acetone	mg/kg	--	0.0142 F	0.0223	0.219	0.0236	0.0136 F	0.0158 F

Notes:
FSB: fluvial soil boring
mg/kg: milligrams per kilogram
RL: reporting limit
RG: remediation goal
TA: treatment area

DQE Flags:
F: Concentration below RL but above MDL
J: Analyte positively identified, but quantitation estimated.
Q: Quality control criteria failed, further review required
M: Concentration estimated due to matrix effect
<: Analyte not detected above RL
Bold: Detected above the Fluval Deposit RG

TABLE 8
SOIL ANALYTICAL RESULTS SUMMARY
REBOUND TEST AND CONFIRMATION SOIL SAMPLING
FLUVIAL SOIL VAPOR EXTRACTION SYSTEM
Dunn Field - Defense Depot Memphis, Tennessee

	Location	Fluvial Deposit	FSB-19T	FSB-19M	FSB-19B	FSB-20T	FSB-20M	FSB-20B
	Date	Remediation Goal	11/5/2010	11/5/2010	11/6/2010	11/5/2010	11/5/2010	11/5/2010
	Id	(mg/kg)	TA1-FSB-19T	TA1-FSB-19M	TA1-FSB-19B	TA1-FSB-20T	TA1-FSB-20M	TA1-FSB-20B
	Lab ID		L10110245-01	L10110245-02	L10110297-08	L10110245-03	L10110245-04	L10110245-05
Primary VOCs	Units							
1,1,2,2-Tetrachloroethane	mg/kg	0.0066	<0.0028	<0.00318	<0.00278	<0.00256	<0.00272	<0.00333
1,1,2-Trichloroethane	mg/kg	0.0355	<0.00467	<0.0053	<0.00463	<0.00427	<0.00453	<0.00554
1,1-Dichloroethene	mg/kg	0.0764	<0.00561	<0.00636	<0.00556	<0.00513	<0.00543	<0.00665
1,2-Dichloroethane	mg/kg	0.0189	<0.0028	<0.00318	<0.00278	<0.00256	<0.00272	<0.00333
Carbon tetrachloride	mg/kg	0.1086	<0.00467	<0.0053	<0.00463	<0.00427	<0.00453	<0.00554
Chloroform	mg/kg	0.486	0.00051 F	<0.00212	<0.00185	<0.00171	<0.00181	<0.00222
cis-1,2-Dichloroethene	mg/kg	0.404	<0.00467	<0.0053	<0.00463	<0.00427	<0.00453	<0.00554
Methylene chloride	mg/kg	0.0169	0.00211 F	0.00182 F	0.00225 F	0.00997	0.00957	0.00344 F
Tetrachloroethene	mg/kg	0.092	<0.00467	<0.0053	<0.00463	<0.00427	<0.00453	<0.00554
trans-1,2-Dichloroethene	mg/kg	0.791	<0.00467	<0.0053	<0.00463	<0.00427	<0.00453	<0.00554
Trichloroethene	mg/kg	0.0932	<0.00467	<0.0053	<0.00463	<0.00427	<0.00453	<0.00554
Vinyl chloride	mg/kg	0.015	<0.00467	<0.0053	<0.00463	<0.00427	<0.00453	<0.00554 M
Total			0.00262	0.00182	0.00225	0.00997	0.00957	0.00344
Acetone	mg/kg	--	0.00961 F	0.013 F	<0.0185	0.338 J	0.0392	0.0167 M

Notes:
FSB: fluvial soil boring
mg/kg: milligrams per kilogram
RL: reporting limit
RG: remediation goal
TA: treatment area

DQE Flags:
F: Concentration below RL but above MDL
J: Analyte positively identified, but quantitation estimated.
Q: Quality control criteria failed, further review required
M: Concentration estimated due to matrix effect
<: Analyte not detected above RL
Bold: Detected above the Fluval Deposit RG

TABLE 9
AVERAGE CVOC CONCENTRATION, TA-1
REBOUND TEST AND CONFIRMATION SOIL SAMPLING
FLUVIAL SOIL VAPOR EXTRACTION SYSTEM
Dunn Field - Defense Depot Memphis Tennessee

		1,1,2,2-Tetrachloroethane	
		Analytical Result	Value for Calculation
Sample ID	Sample Date	(mg/kg)	(mg/kg)
SVE-A-B	5/14/2007	<0.0031	0.00155
SVE-A-M	5/14/2007	<0.0032	0.0016
SVE-A-T	5/14/2007	<0.0034	0.0017
VP-01-B	5/15/2007	<0.0035	0.00175
VP-01-M	5/15/2007	<0.0032	0.0016
VP-01-T	5/15/2007	<0.0029	0.00145
FSB-01T	11/12/2010	<0.00275	0.001375
FSB-01M	11/12/2010	<0.00323	0.001615
FSB-01B	11/12/2010	<0.00338	0.00169
FSB-02T	11/13/2010	0.0527	0.0527
FSB-02M	11/13/2010	0.00897	0.00897
FSB-02B	11/13/2010	0.00144	0.00144
FSB-03T	11/13/2010	0.0272	0.0272
FSB-03M	11/13/2010	0.0029	0.0029
FSB-03B	11/13/2010	0.000737	0.000737
FSB-04T	11/12/2010	<0.00317	0.001585
FSB-04M	11/12/2010	<0.00356	0.00178
FSB-04B	11/12/2010	<0.00302	0.00151
FSB-05T	11/13/2010	<0.00273	0.001365
FSB-05M	11/13/2010	<0.00321	0.001605
FSB-05B	11/13/2010	<0.00318	0.00159
FSB-06T	11/11/2010	<0.00304	0.00152
FSB-06M	11/11/2010	<0.00333	0.001665
FSB-06B	11/11/2010	<0.00326	0.00163
FSB-07T	11/11/2010	<0.00343	0.001715
FSB-07M	11/11/2010	<0.00314	0.00157
FSB-07B	11/11/2010	<0.0035	0.00175
		Average	**0.0047**

Notes:

1) For samples that were non-detect, the average was calculated using one-half the reporting limit.
2) Fluvial soil remediation goal for 1,1,2,2-Tetrachloroethane is 0.0066 mg/kg

FSB: fluvial soil boring
mg/kg: millagrams per kilogram
SVE: soil vapor extraction

TABLE 10
VAPOR ANALYTICAL RESULTS SUMMARY, SVE WELLS
REBOUND TEST AND CONFIRMATION SOIL SAMPLING
FLUVIAL SOIL VAPOR EXTRACTION SYSTEM
Dunn Field - Defense Depot Memphis, Tennessee

	Location ID	Fluvial	SVE-A	SVE-B	SVE-C	SVE-D	SVE-E	SVE-F	SVE-G
	Date	Protective	1/11/2011	1/11/2011	1/11/2011	1/11/2011	1/11/2011	1/11/2011	1/11/2011
	Event	Vapor	FSVE_RB10	FSVE_RB10	FSVE_RB10	FSVE_RB10	FSVE_RB10	FSVE_RB10	FSVE_RB10
	Lab ID	Concentration	P1100117-001	P1100117-003	P1100117-004	P1100117-005	P1100117-006	P1100117-007	P1100117-008
Primary VOCs	Units								
1,1,2,2-Tetrachloroethane	ppb v/v	0.55	0.65 F	0.24 F	0.34	1.4	9.8	16 F	51
1,1,2-Trichloroethane	ppb v/v	2.03	0.46 F	<0.77	0.14 F	0.4	5.4	<35	44 F
1,1-Dichloroethene	ppb v/v	29.03	<1.8	<1.1	<0.34	<0.32	<3.2	<48	20 F
1,2-Dichloroethane	ppb v/v	0.64	<1.7	<1	<0.33	<0.31	<3.1	<47	<60
Carbon Tetrachloride	ppb v/v	14.22	1.2	0.22 F	0.22	0.12 F	1.4 F	26 F	14 F
Chloroform	ppb v/v	32.63	26	7.3	15	12	270	3300	2400
cis-1,2-Dichloroethene	ppb v/v	39.52	3.3	7.3	1.3	0.64	14	130	76
Methylene Chloride	ppb v/v	2.85	0.83 F	0.45 F	0.43	0.39	10	100	58 F
Tetrachloroethene	ppb v/v	0.99	140	5.8	13	1.1	7.6	160	70
trans-1,2-Dichloroethene	ppb v/v	133.5	1.9	3.3	0.31 F	0.17 F	3.4	29 F	24 F
Trichloroethene	ppb v/v	2.06	42	24	15	35	190	720	3400
Vinyl Chloride	ppb v/v	14.77	<2.7	<1.6	<0.52	<0.5	<4.9	<74	<95
Total CVOCs			**216**	**48.6**	**45.7**	**51.2**	**512**	**4481**	**6157**
Additional VOCs*									
Benzene	ppb v/v	--	0.44 F	1.4	0.25 F	0.24 F	<3.9	<59	<76
Carbon Disulfide	ppb v/v	--	0.88 F	0.35 F	2.4	0.11 F	4 F	<300	<390
Chloromethane	ppb v/v	--	<3.4	0.72 F	0.68	0.29 F	1.2 F	<91	<120
Dichlorodifluoromethane (CFC 12)	ppb v/v	--	0.57 F	0.63 F	0.67	0.6	0.99 F	<38	<49
Ethyl Acetate	ppb v/v	--	<1.9	200	0.63	<0.35	<3.5	<52	<68
Methyl Methacrylate	ppb v/v	--	<1.7	16	<0.32	<0.31	<3.1	<46	<59
n-Hexane	ppb v/v	--	<2	4.2	0.13 F	0.64	<3.6	<54	<69
Toluene	ppb v/v	--	<1.9	12	0.2 F	0.2 F	<3.3	<50	<65
Trichlorofluoromethane	ppb v/v	--	<1.2	0.27 F	0.32	0.29	<2.2	<34	<43
Total VOCs**			**216**	**282**	**50.4**	**52.8**	**512**	**4481**	**6157**

Notes:
F: Estimate, detected below RL
NA: Not Applicable
ppb v/v: parts per billion volume per volume
<: Analyte not detected above RL
--: Not Analyzed
* Detected above RL
** Sum of CVOCs and Additional VOCs detected above RL

TABLE 11
VAPOR ANALYTICAL RESULTS SUMMARY, VMPS
REBOUND TEST AND CONFIRMATION SOIL SAMPLING
FLUVIAL SOIL VAPOR EXTRACTION SYSTEM
Dunn Field - Defense Depot Memphis, Tennessee

	Location ID	Fluvial	VMP-01A	VMP-01B	VMP-02A	VMP-02B	VMP-03A	VMP-03B	VMP-04A	VMP-04B
	Date	Protective	1/6/2011	1/6/2011	1/6/2011	1/6/2011	1/6/2011	1/6/2011	1/7/2011	1/7/2011
	Event	Vapor	FSVE_RB10	FSVE_RB10	FSVE_RB10	FSVE_RB10	FSVE_RB10	FSVE_RB10	FSVE_RB10	FSVE_RB10
	Lab ID	Concentration	P1100117-009	P1100117-010	P1100117-012	P1100117-013	P1100117-014	P1100118-001	P1100118-002	P1100118-003
Primary VOCs	Units									
1,1,2,2-Tetrachloroethane	ppb v/v	0.55	<0.88	<1.8	8.7	<12	<6.9	<0.17	<0.18	<0.44
1,1,2-Trichloroethane	ppb v/v	2.03	<1.1	<2.2	0.87 F	<15	<8.7	<0.22	<0.23	<0.55
1,1-Dichloroethene	ppb v/v	29.03	<1.5	<3.1	0.66 F	6.4 F	9.6 F	2.3	<0.32	0.52 F
1,2-Dichloroethane	ppb v/v	0.64	<1.5	<3	<1.5	<20	<12	<0.29	<0.31	<0.75
Carbon Tetrachloride	ppb v/v	14.22	0.9 F	0.91 F	1.8	<13	22	0.055 F	0.044 F	<0.48
Chloroform	ppb v/v	32.63	16	21	14	4.6 F	61	0.71	1.3	20
cis-1,2-Dichloroethene	ppb v/v	39.52	0.38 F	7.6	55	45	7.8 F	5.6	44	2.3
Methylene Chloride	ppb v/v	2.85	0.55 F	0.7 F	0.44 F	<23	<14	0.38	0.14 F	0.22 F
Tetrachloroethene	ppb v/v	0.99	15	160	79	14	62	0.54	0.68	3.2
trans-1,2-Dichloroethene	ppb v/v	133.5	0.46 F	4	5.3	6.8 F	12 F	2.8	33	53
Trichloroethene	ppb v/v	2.06	6	48	99	1100	830	26	52	55
Vinyl Chloride	ppb v/v	14.77	<2.4	<4.7	<2.4	<31	6.1 F	0.31 F	<0.49	<1.2
Total CVOCs			**39.3**	**242**	**265**	**1177**	**1011**	**38.7**	**131**	**134**
Additional VOCs*										
1,1,2-Trichlorotrifluoroethane	ppb v/v	--	<0.79	<1.6	0.66 F	<10	3 F	0.073 F	0.069 F	<0.39
1,2,4-Trichlorobenzene	ppb v/v	--	<0.82	<1.6	<0.82	<11	<6.4	<0.16	<0.17	<0.41
1,3-Butadiene	ppb v/v	--	<2.7	<5.5	<2.7	<36	<22	<0.54	<0.57	<1.4
1,3-Dichlorobenzene	ppb v/v	--	<1	<2	<1	<13	<7.9	<0.2	<0.21	<0.5
1,4-Dichlorobenzene	ppb v/v	--	6.1	0.54 F	<1	<13	<7.9	0.29	0.18 F	0.19 F
1,4-Dioxane	ppb v/v	--	<1.7	<3.4	<1.7	<22	<13	<0.33	<0.35	<0.84
2-Butanone (MEK)	ppb v/v	--	150	1 F	1 F	<140	<81	0.47 F	0.31 F	2.9 F
2-Hexanone	ppb v/v	--	57	<3	<1.5	<20	<12	<0.29	<0.31	<0.74
2-Propanol (Isopropyl Alcohol)	ppb v/v	--	<2.5	<4.9	1.6 F	<33	<19	11	<0.51	<1.2
Acetone	ppb v/v	--	73	<25	6 F	<170	<100	4.7	4.6	16
Benzene	ppb v/v	--	0.54 F	0.95 F	0.72 F	<25	<15	1.5	0.15 F	0.57 F
Bromomethane	ppb v/v	--	<1.6	<3.1	<1.6	<21	<12	0.11 F	<0.32	0.96
Carbon Disulfide	ppb v/v	--	170	<19	<9.7	<130	<76	0.2 F	1.4 F	2.2 F
Chloromethane	ppb v/v	--	<2.9	<5.9	<2.9	<39	<23	0.21 F	<0.61	2.3
Dichlorodifluoromethane (CFC 12)	ppb v/v	--	0.61 F	0.64 F	1.7	<16	6.2 F	0.59	57	69
Ethanol	ppb v/v	--	20	<32	9.3 F	<210	<130	9.7	<3.3	<8
Ethyl Acetate	ppb v/v	--	<1.7	3.1 F	<1.7	<22	<13	24	<0.35	<0.84
m,p-Xylenes	ppb v/v	--	1.1 F	<2.8	<1.4	<18	<11	0.65	<0.29	<0.7
n-Heptane	ppb v/v	--	1.1 F	<3	<1.5	<20	<12	0.31	<0.31	<0.74
n-Hexane	ppb v/v	--	1 F	<3.4	0.84 F	<23	<14	1.3	<0.36	0.29 F
n-Nonane	ppb v/v	--	1.2	<2.3	<1.2	<15	<9.1	<0.23	<0.24	<0.58
n-Octane	ppb v/v	--	1.8	<2.6	<1.3	<17	<10	0.075 F	<0.27	<0.65
Propene	ppb v/v	--	2.6 F	<7	2.3 F	<47	<28	5.7	0.59 F	12
Tetrahydrofuran (THF)	ppb v/v	--	0.95 F	0.92 F	0.44 F	<27	<16	0.086 F	0.11 F	0.34 F
Toluene	ppb v/v	--	0.64 F	1 F	0.87 F	5.9 F	<13	3.6	0.28 F	0.29 F
Trichlorofluoromethane	ppb v/v	--	0.28 F	<2.2	0.32 F	<14	<8.5	0.24	0.2 F	0.17 F
Total VOCs**			**518**	**242**	**266**	**1177**	**1011**	**102**	**193**	**235**

Notes:
F: Estimate, detected below RL
NA: Not Applicable
ppb v/v: parts per billion volume per volume
<: Analyte not detected above RL
--: Not Analyzed
* Detected above RL
** Sum of CVOCs and Additional VOCs detected above RL

TABLE 11
VAPOR ANALYTICAL RESULTS SUMMARY, VMPS
REBOUND TEST AND CONFIRMATION SOIL SAMPLING
FLUVIAL SOIL VAPOR EXTRACTION SYSTEM
Dunn Field - Defense Depot Memphis, Tennessee

	Location ID	Fluvial	VMP-05A	VMP-05B	VMP-06A	VMP-06B	VMP-07A	VMP-07B	VMP-08A	VMP-08B
	Date	Protective	1/7/2011	1/7/2011	1/7/2011	1/7/2011	1/7/2011	1/7/2011	1/11/2011	1/11/2011
	Event	Vapor	FSVE_RB10	FSVE_RB10	FSVE_RB10	FSVE_RB10	FSVE_RB10	FSVE_RB10	FSVE_RB10	FSVE_RB10
	Lab ID	Concentration	P1100118-005	P1100118-006	P1100118-007	P1100118-008	P1100118-009	P1100118-010	P1100118-011	P1100118-012
Primary VOCs	Units									
1,1,2,2-Tetrachloroethane	ppb v/v	0.55	50	4.7	<0.6	45	2.5 F	<3.5	0.22	<3.5
1,1,2-Trichloroethane	ppb v/v	2.03	1.2 F	<0.65	<0.75	<4.5	<4.5	<4.4	<0.21	8.3
1,1-Dichloroethene	ppb v/v	29.03	<6.4	<0.89	<1	<6.3	7.5	<6.1	0.58	<6.1
1,2-Dichloroethane	ppb v/v	0.64	<6.2	<0.88	<1	<6.1	<6	<6	0.069 F	<5.9
Carbon Tetrachloride	ppb v/v	14.22	<4	<0.56	<0.65	<3.9	37	<3.8	21	<3.8
Chloroform	ppb v/v	32.63	5.3	0.74	3.1	2.2 F	1800	3900	14	1200
cis-1,2-Dichloroethene	ppb v/v	39.52	96	0.68 F	1.1	17	68	40	0.95	52
Methylene Chloride	ppb v/v	2.85	<7.3	0.25 F	<1.2	<7.1	22	140	2.5	81
Tetrachloroethene	ppb v/v	0.99	7.2	1.9	0.54 F	5.4	190	22	4.1	17
trans-1,2-Dichloroethene	ppb v/v	133.5	20	0.75 F	0.28 F	6 F	27	4 F	0.16 F	4.6 F
Trichloroethene	ppb v/v	2.06	400	52	67	390	730	52	4.5	100
Vinyl Chloride	ppb v/v	14.77	<9.9	<1.4	<1.6	<9.7	12	<9.5	<0.45	<9.4
Total CVOCs			**580**	**61.0**	**72.0**	**466**	**2896**	**4158**	**48.1**	**1463**
Additional VOCs*										
1,1,2-Trichlorotrifluoroethane	ppb v/v	--	<3.3	<0.46	<0.54	<3.2	4.4	<3.2	1.3	<3.1
1,2,4-Trichlorobenzene	ppb v/v	--	<3.4	<0.48	<0.55	<3.3	<3.3	<3.3	<0.15	<3.2
1,3-Butadiene	ppb v/v	--	<11	<1.6	<1.9	<11	<11	<11	0.56	<11
1,3-Dichlorobenzene	ppb v/v	--	<4.2	<0.59	<0.68	<4.1	<4.1	<4	<0.19	<4
1,4-Dichlorobenzene	ppb v/v	--	<4.2	0.35 F	0.32 F	<4.1	<4.1	<4	0.077 F	<4
1,4-Dioxane	ppb v/v	--	<7	<0.98	<1.1	<6.9	<6.8	<6.7	<0.32	<6.7
2-Butanone (MEK)	ppb v/v	--	3 F	0.61 F	0.76 F	<42	<41	<41	0.61 F	<41
2-Hexanone	ppb v/v	--	<6.2	<0.87	<1	<6.1	<6	<5.9	<0.28	<5.9
2-Propanol (Isopropyl Alcohol)	ppb v/v	--	<10	<1.4	<1.7	<10	<9.9	<9.8	<0.47	<9.8
Acetone	ppb v/v	--	37 F	4.4 F	2.8 F	<52	<51	<51	2.3 F	<51
Benzene	ppb v/v	--	<7.9	0.71 F	<1.3	<7.8	1.6 F	<7.6	0.099 F	<7.5
Bromomethane	ppb v/v	--	<6.5	<0.91	<1.1	<6.4	<6.3	<6.2	<0.3	<6.2
Carbon Disulfide	ppb v/v	--	3.9 F	2.3 F	0.62 F	<40	<39	5.4 F	0.86 F	<39
Chloromethane	ppb v/v	--	<12	<1.7	0.58 F	3.9 F	<12	<12	<0.56	3.1 F
Dichlorodifluoromethane (CFC 12)	ppb v/v	--	<5.1	0.55 F	0.52 F	<5	17	<4.9	63	1.3 F
Ethanol	ppb v/v	--	<67	<9.4	<11	<66	55 F	<64	<3.1	<64
Ethyl Acetate	ppb v/v	--	<7	1.2	<1.1	<6.9	<6.8	<6.7	<0.32	<6.7
m,p-Xylenes	ppb v/v	--	<5.8	<0.82	<0.94	<5.7	<5.6	<5.6	<0.26	<5.5
n-Heptane	ppb v/v	--	<6.2	<0.86	<1	<6.1	<6	<5.9	<0.28	<5.9
n-Hexane	ppb v/v	--	<7.2	0.63 F	<1.2	<7	<6.9	<6.9	<0.33	<6.8
n-Nonane	ppb v/v	--	<4.8	<0.68	<0.78	<4.7	<4.7	<4.6	<0.22	<4.6
n-Octane	ppb v/v	--	<5.4	<0.76	<0.88	<5.3	<5.2	<5.2	<0.25	<5.1
Propene	ppb v/v	--	8.8 F	16	<2.4	4.8 F	6 F	<14	0.65 F	<14
Tetrahydrofuran (THF)	ppb v/v	--	<8.5	<1.2	<1.4	<8.4	<8.3	<8.2	0.36 F	<8.1
Toluene	ppb v/v	--	<6.7	0.62 F	<1.1	<6.6	<6.5	<6.4	0.069 F	<6.4
Trichlorofluoromethane	ppb v/v	--	<4.5	0.24 F	0.27 F	<4.4	<4.3	<4.3	0.4	<4.3
Total VOCs**			**580**	**78.2**	**72.0**	**466**	**2917**	**4158**	**113**	**1463**

Notes:
F: Estimate, detected below RL
NA: Not Applicable
ppb v/v: parts per billion volume per volume
<: Analyte not detected above RL
--: Not Analyzed
* Detected above RL
** Sum of CVOCs and Additional VOCs detected above RL

TABLE 11
VAPOR ANALYTICAL RESULTS SUMMARY, VMPS
REBOUND TEST AND CONFIRMATION SOIL SAMPLING
FLUVIAL SOIL VAPOR EXTRACTION SYSTEM
Dunn Field - Defense Depot Memphis, Tennessee

	Location ID	Fluvial	VMP-09A	VMP-09B	VMP-10A	VMP-10B
	Date	Protective	1/11/2011	1/11/2011	1/11/2011	1/11/2011
	Event	Vapor	FSVE_RB10	FSVE_RB10	FSVE_RB10	FSVE_RB10
	Lab ID	Concentration	P1100118-013	P1100118-014	P1100118-015	P1100118-016
Primary VOCs	Units					
1,1,2,2-Tetrachloroethane	ppb v/v	0.55	4.6	0.24	<0.17	<1.7
1,1,2-Trichloroethane	ppb v/v	2.03	0.42	0.28	<0.21	<2.1
1,1-Dichloroethene	ppb v/v	29.03	4	1.1	1.7	<2.9
1,2-Dichloroethane	ppb v/v	0.64	1.3	3.2	<0.28	<2.8
Carbon Tetrachloride	ppb v/v	14.22	22	12	23	20
Chloroform	ppb v/v	32.63	55	240	2.3	460
cis-1,2-Dichloroethene	ppb v/v	39.52	4.9	31	<0.29	3.6
Methylene Chloride	ppb v/v	2.85	0.59	6.1	0.085 F	0.76 F
Tetrachloroethene	ppb v/v	0.99	5.3	57	0.12 F	170
trans-1,2-Dichloroethene	ppb v/v	133.5	0.66	8.6	<0.29	14
Trichloroethene	ppb v/v	2.06	52	39	0.44	220
Vinyl Chloride	ppb v/v	14.77	<0.46	0.22 F	<0.45	<4.5
Total CVOCs			**151**	**399**	**27.6**	**888**
Additional VOCs*						
1,1,2-Trichlorotrifluoroethane	ppb v/v	--	0.85	0.19	1.1	<1.5
1,2,4-Trichlorobenzene	ppb v/v	--	1.8	0.31	<0.15	<1.5
1,3-Butadiene	ppb v/v	--	0.24 F	0.54	<0.52	<5.2
1,3-Dichlorobenzene	ppb v/v	--	2.2	0.94	<0.19	<1.9
1,4-Dichlorobenzene	ppb v/v	--	0.71	0.23	<0.19	<1.9
1,4-Dioxane	ppb v/v	--	<0.32	<0.32	<0.32	<3.2
2-Butanone (MEK)	ppb v/v	--	0.58 F	1 F	0.15 F	<20
2-Hexanone	ppb v/v	--	0.12 F	0.12 F	<0.28	<2.8
2-Propanol (Isopropyl Alcohol)	ppb v/v	--	0.45 F	2.3	<0.46	<4.7
Acetone	ppb v/v	--	2.6	9.4	2.3 F	<24
Benzene	ppb v/v	--	0.41	1.5	<0.36	0.8 F
Bromomethane	ppb v/v	--	0.068 F	0.42	<0.29	<3
Carbon Disulfide	ppb v/v	--	0.88 F	0.96 F	0.16 F	1.4 F
Chloromethane	ppb v/v	--	1.8	1	<0.55	<5.6
Dichlorodifluoromethane (CFC 12)	ppb v/v	--	0.51	0.5	0.52	0.62 F
Ethanol	ppb v/v	--	2.1 F	1.6 F	1.5 F	<31
Ethyl Acetate	ppb v/v	--	2.5	<0.32	0.22 F	<3.2
m,p-Xylenes	ppb v/v	--	0.29	0.22 F	<0.26	<2.6
n-Heptane	ppb v/v	--	0.088 F	0.057 F	<0.28	<2.8
n-Hexane	ppb v/v	--	0.23 F	0.25 F	<0.32	<3.3
n-Nonane	ppb v/v	--	<0.22	0.056 F	<0.22	<2.2
n-Octane	ppb v/v	--	<0.25	<0.25	<0.24	<2.5
Propene	ppb v/v	--	2.2	10	0.26 F	<6.7
Tetrahydrofuran (THF)	ppb v/v	--	0.57	0.91	0.099 F	<3.9
Toluene	ppb v/v	--	0.78	0.38	<0.3	<3.1
Trichlorofluoromethane	ppb v/v	--	1	0.45	0.38	0.47 F
Total VOCs**			**169**	**428**	**29.6**	**888**

Notes:
F: Estimate, detected below RL
NA: Not Applicable
ppb v/v: parts per billion volume per volume
<: Analyte not detected above RL
--: Not Analyzed
* Detected above RL
** Sum of CVOCs and Additional VOCs detected above RL

FIGURES

N E S W

Figure 1

FLUVIAL SVE SYSTEM

REBOUND TEST AND
CONFIRMATION SOIL SAMPLING
FLUVIAL SOIL VAPOR
EXTRACTION SYSTEM

DUNN FIELD
DEFENSE DEPOT
MEMPHIS, TENNESSEE

Projection: NAD 1927 StatePlane Tennessee
Datum : WGS 84
Units: Feet

0 50 100 150 200 Feet

Installation Location
Memphis, Tennessee

Date: February 2011
Edition: Rev 0

HDR

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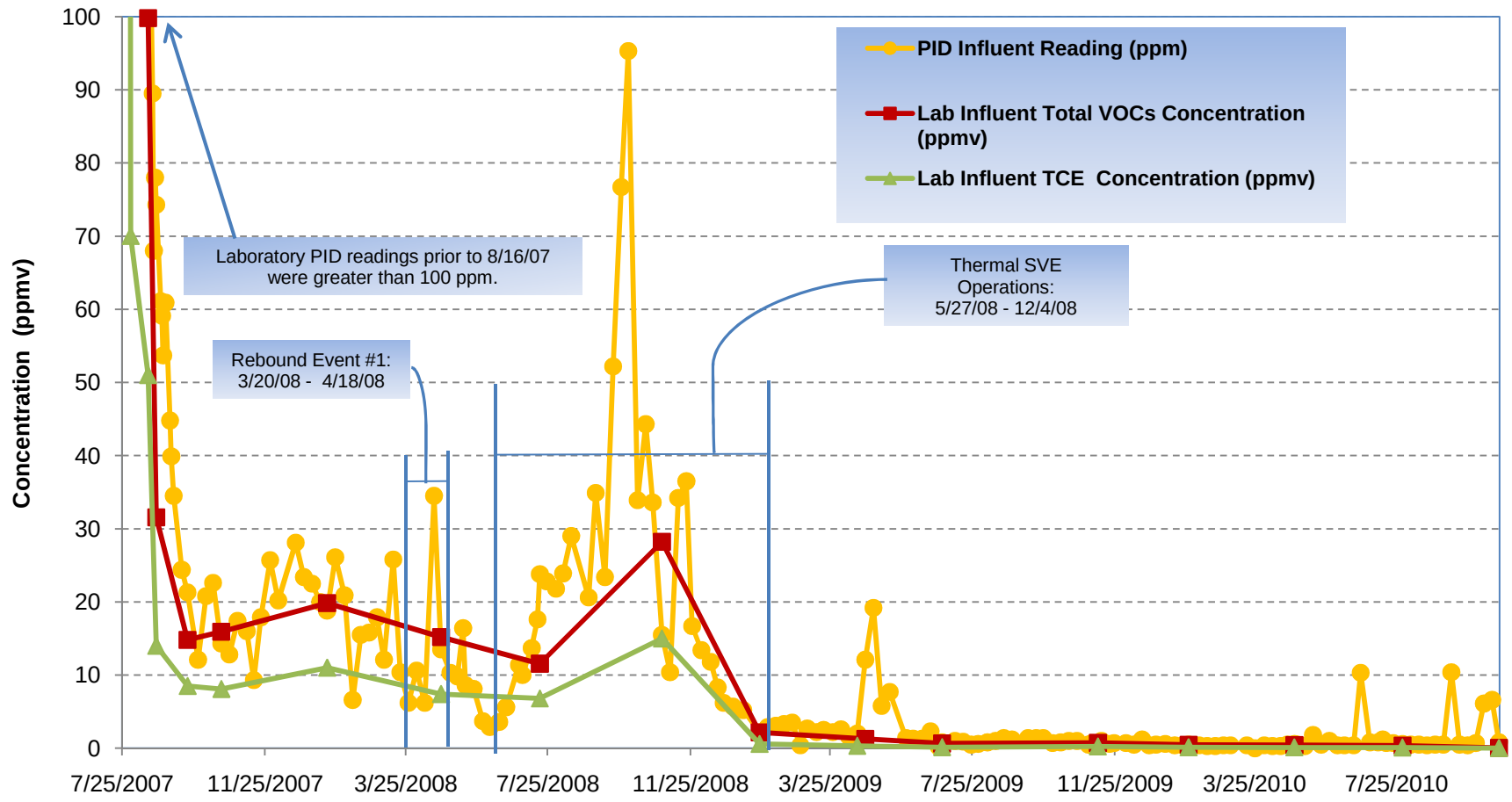

Figure 2
INFLUENT CONCENTRATION TREND - ANALYTICAL RESULTS AND FIELD PID MEASUREMENTS
REBOUND TEST AND CONFIRMATION SOIL SAMPLING
FLUVIAL SOIL VAPOR EXTRACTION SYSTEM
Dunn Field - Defense Depot Memphis, Tennessee

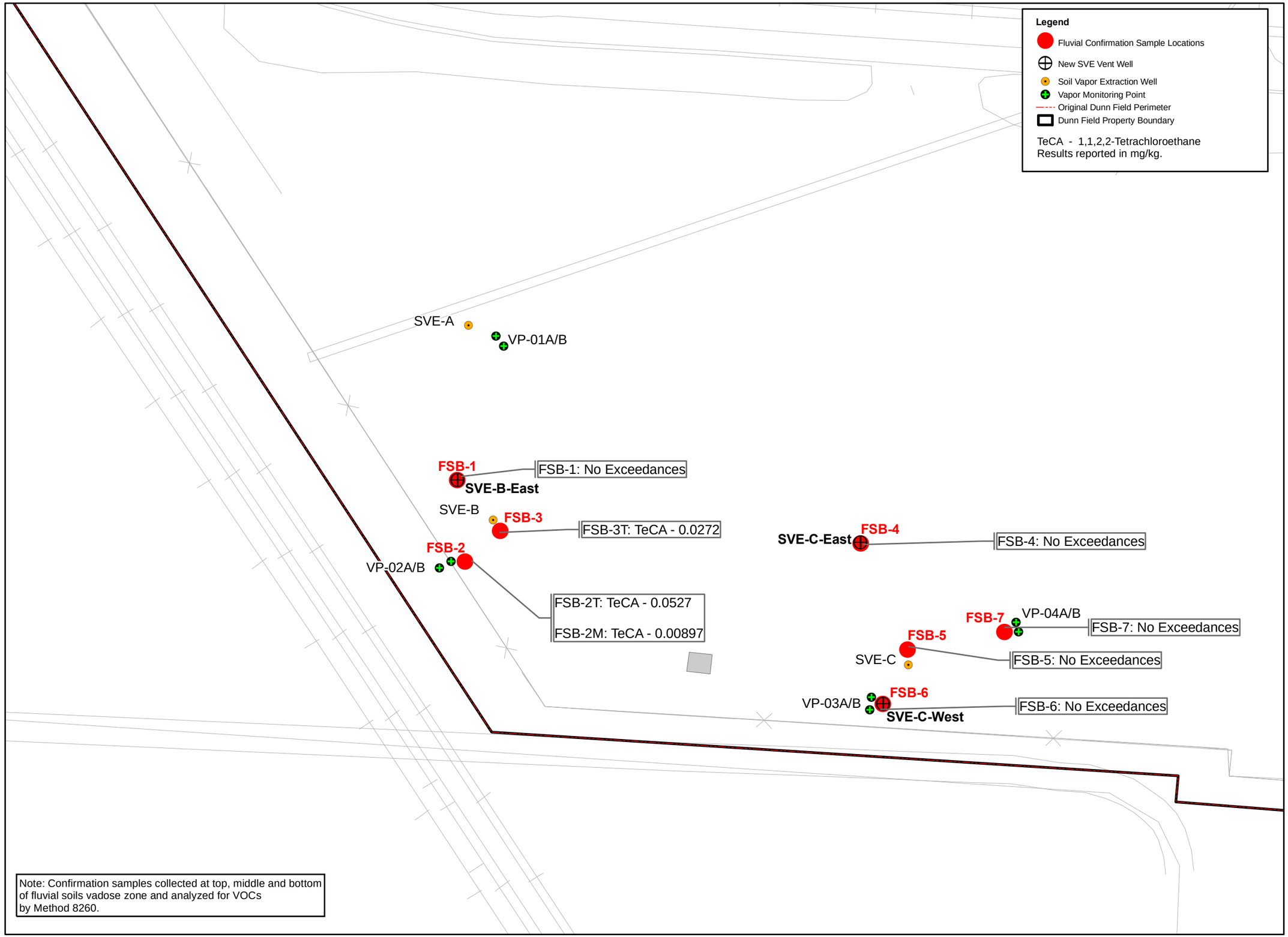

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Figure 3

FLUVIAL SOIL SAMPLE LOCATIONS, TA-1

REBOUND TEST AND CONFIRMATION SOIL SAMPLING FLUVIAL SOIL VAPOR EXTRACTION SYSTEM

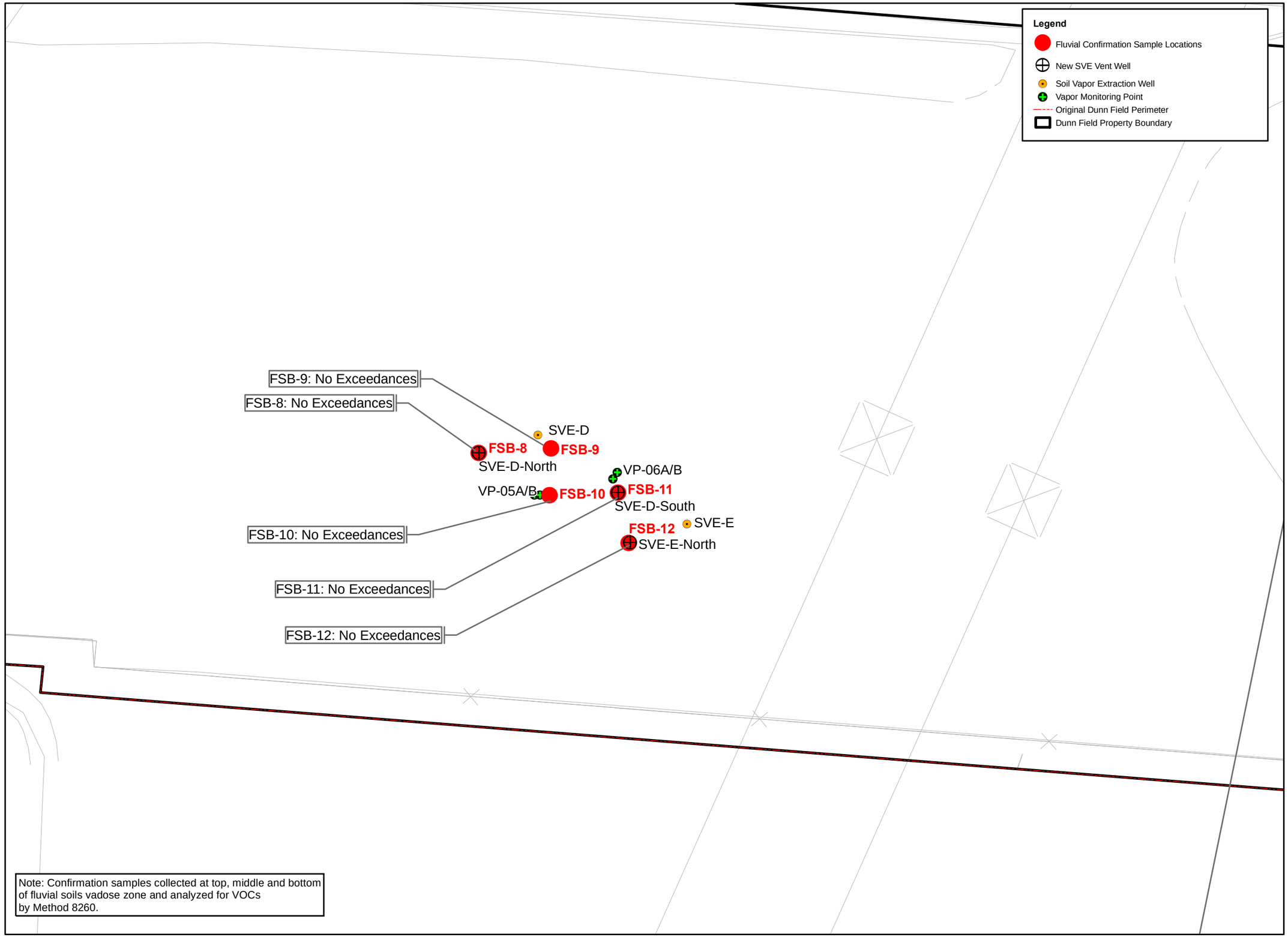
DUNN FIELD
DEFENSE DEPOT
MEMPHIS, TENNESSEE

Projection: NAD 1927 StatePlane Tennessee
Datum : WGS 84
Units: Feet

0 20 40 60 80 Feet

Installation Location
Memphis, Tennessee

Date: February 2011
Edition: Rev 0



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N E S W

Figure 4

FLUVIAL SOIL SAMPLE LOCATIONS, TA-2

REBOUND TEST AND
CONFIRMATION SOIL SAMPLING
FLUVIAL SOIL VAPOR
EXTRACTION SYSTEM

DUNN FIELD
DEFENSE DEPOT
MEMPHIS, TENNESSEE

Projection: NAD 1927 StatePlane Tennessee
Datum : WGS 84
Units: Feet

0 20 40 60 80 Feet

Installation Location
Memphis, Tennessee

Date: February 2011
Edition: Rev 0

HDR

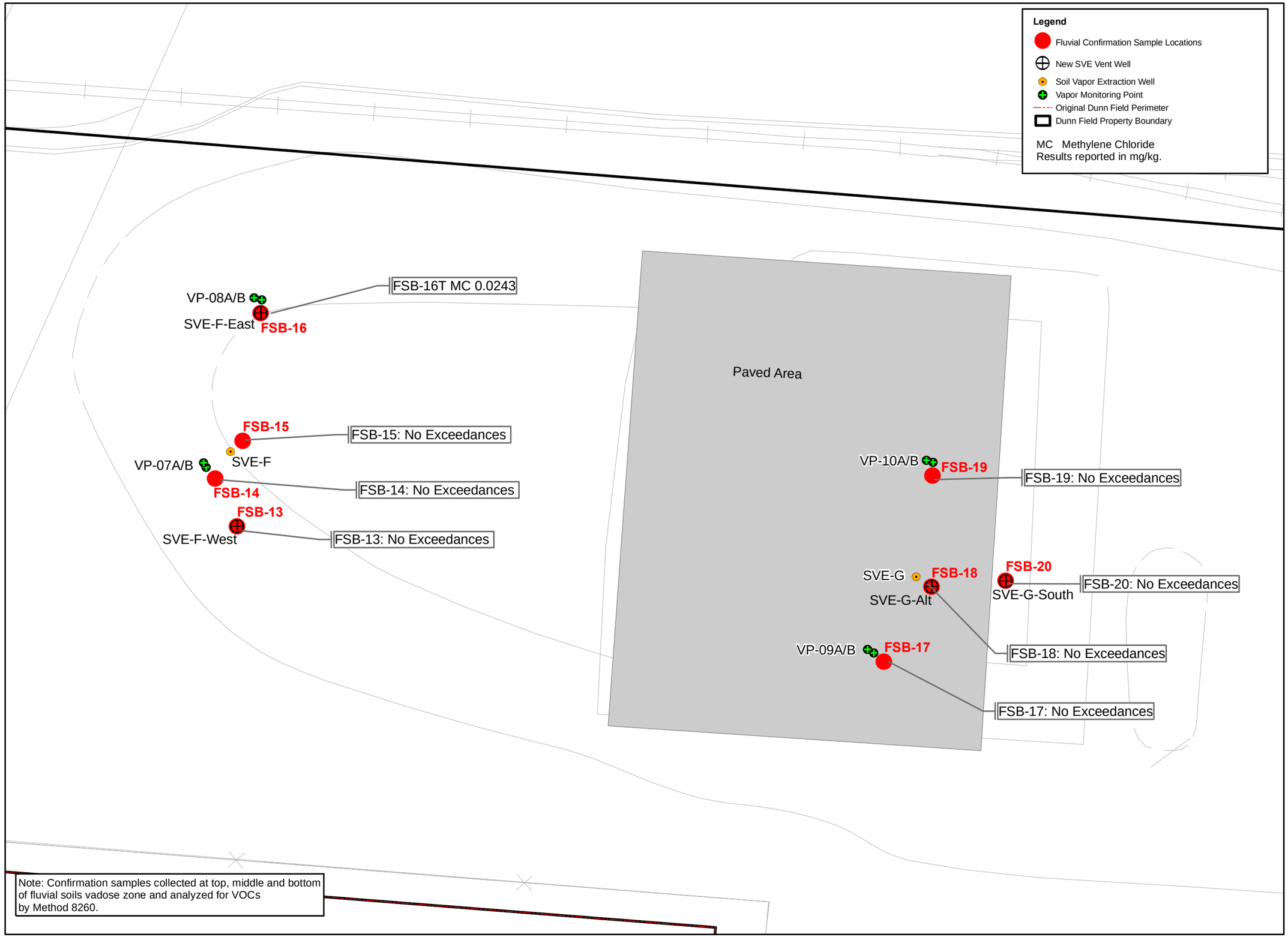


Figure 5

FLUVIAL SOIL SAMPLE LOCATIONS, TA-3 AND TA-4

REBOUND TEST AND CONFIRMATION SOIL SAMPLING
FLUVIAL SOIL VAPOR EXTRACTION SYSTEM

DUNN FIELD
DEFENSE DEPOT
MEMPHIS, TENNESSEE

Projection: NAD 1927 StatePlane Tennessee
Datum : WGS 84
Units: Feet

0 20 40 60 80 Feet

Installation Location
Memphis, Tennessee

Date: February 2011
Edition: Rev 0

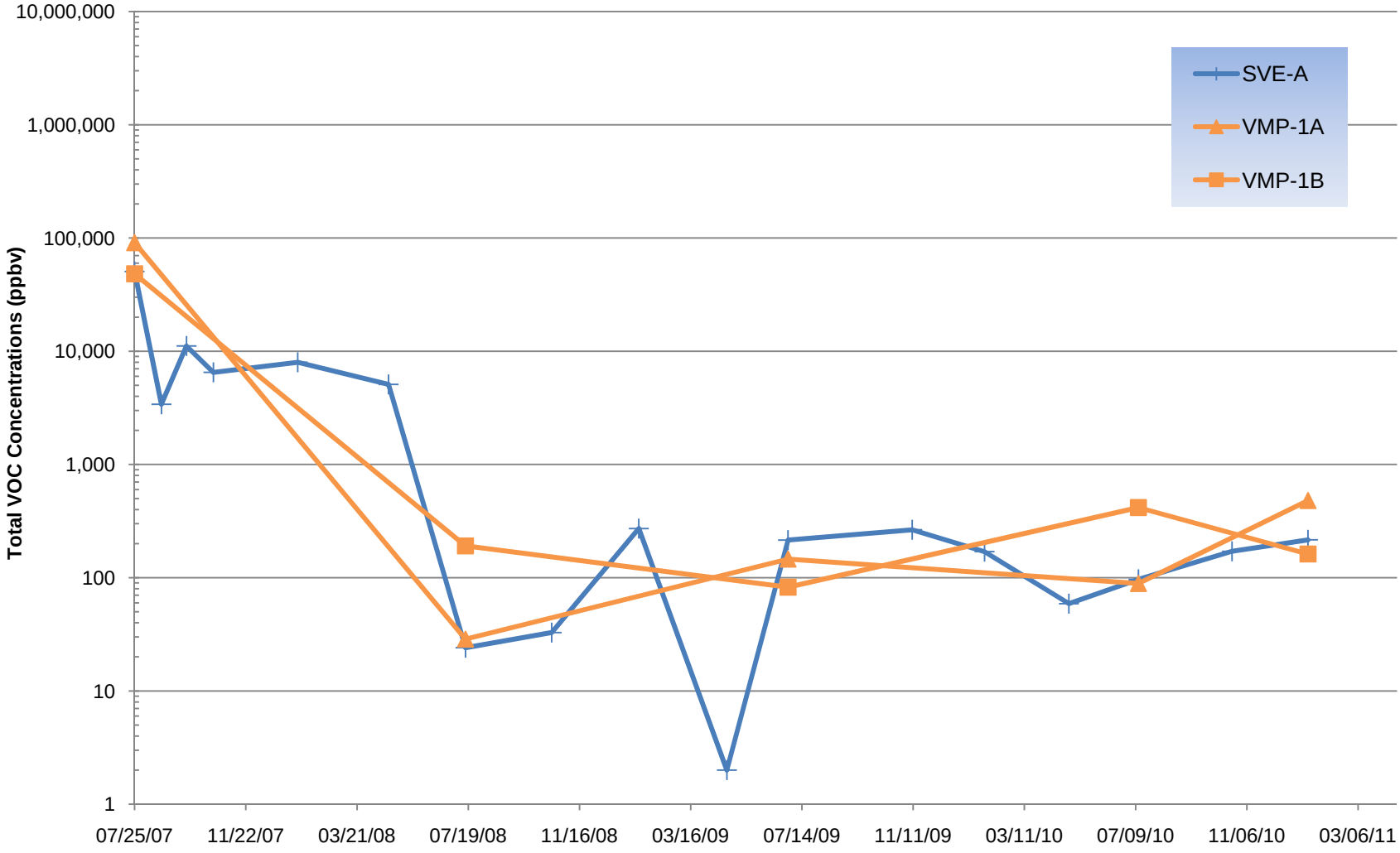


Figure 6
TREND OF TOTAL VOC CONCENTRATIONS AT TA-1B SVE WELL AND VMPs
REBOUND TEST AND CONFIRMATION SOIL SAMPLING
FLUVIAL SOIL VAPOR EXTRACTION SYSTEM
Dunn Field - Defense Depot Memphis, Tennessee

Figure 7
TREND OF TOTAL VOC CONCENTRATIONS AT TA-1C SVE WELL AND VMPs
REBOUND TEST AND CONFIRMATION SOIL SAMPLING
FLUVIAL SOIL VAPOR EXTRACTION SYSTEM
Dunn Field - Defense Depot Memphis, Tennessee

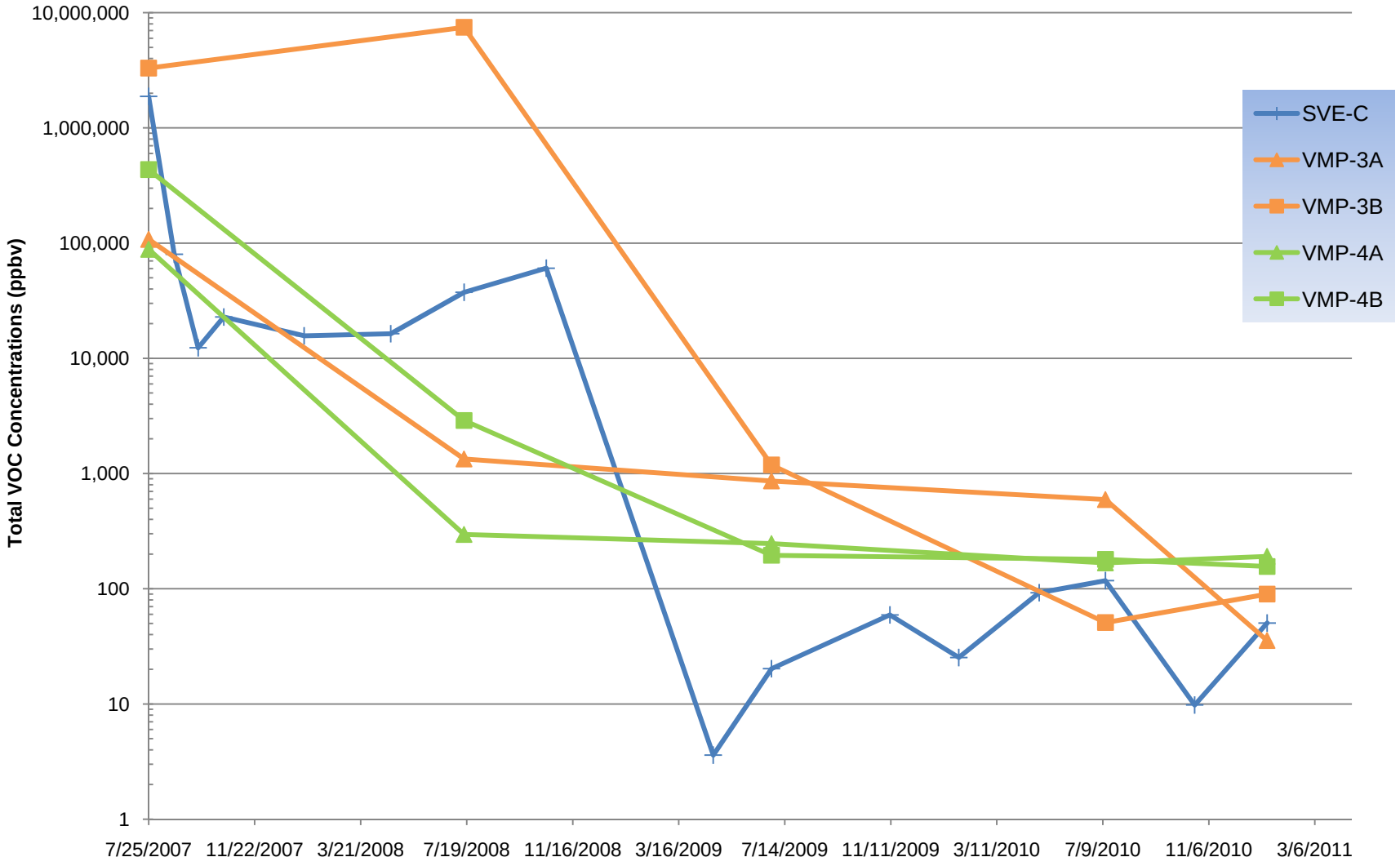


Figure 8
TREND OF TOTAL VOC CONCENTRATIONS AT TA-1E SVE WELL AND VMPs
REBOUND TEST AND CONFIRMATION SOIL SAMPLING
FLUVIAL SOIL VAPOR EXTRACTION SYSTEM
Dunn Field - Defense Depot Memphis, Tennessee

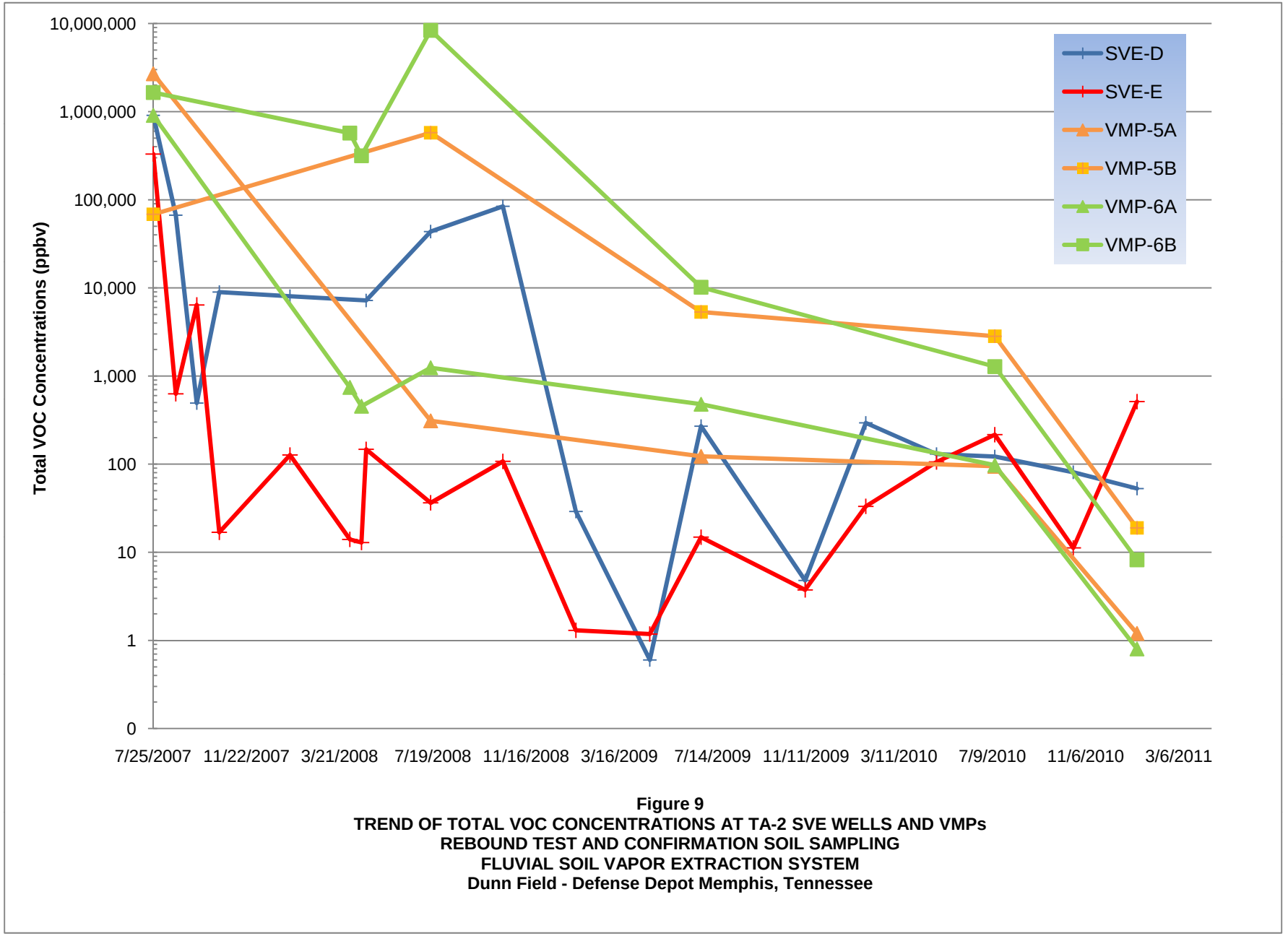


Figure 9
TREND OF TOTAL VOC CONCENTRATIONS AT TA-2 SVE WELLS AND VMPs
REBOUND TEST AND CONFIRMATION SOIL SAMPLING
FLUVIAL SOIL VAPOR EXTRACTION SYSTEM
Dunn Field - Defense Depot Memphis, Tennessee

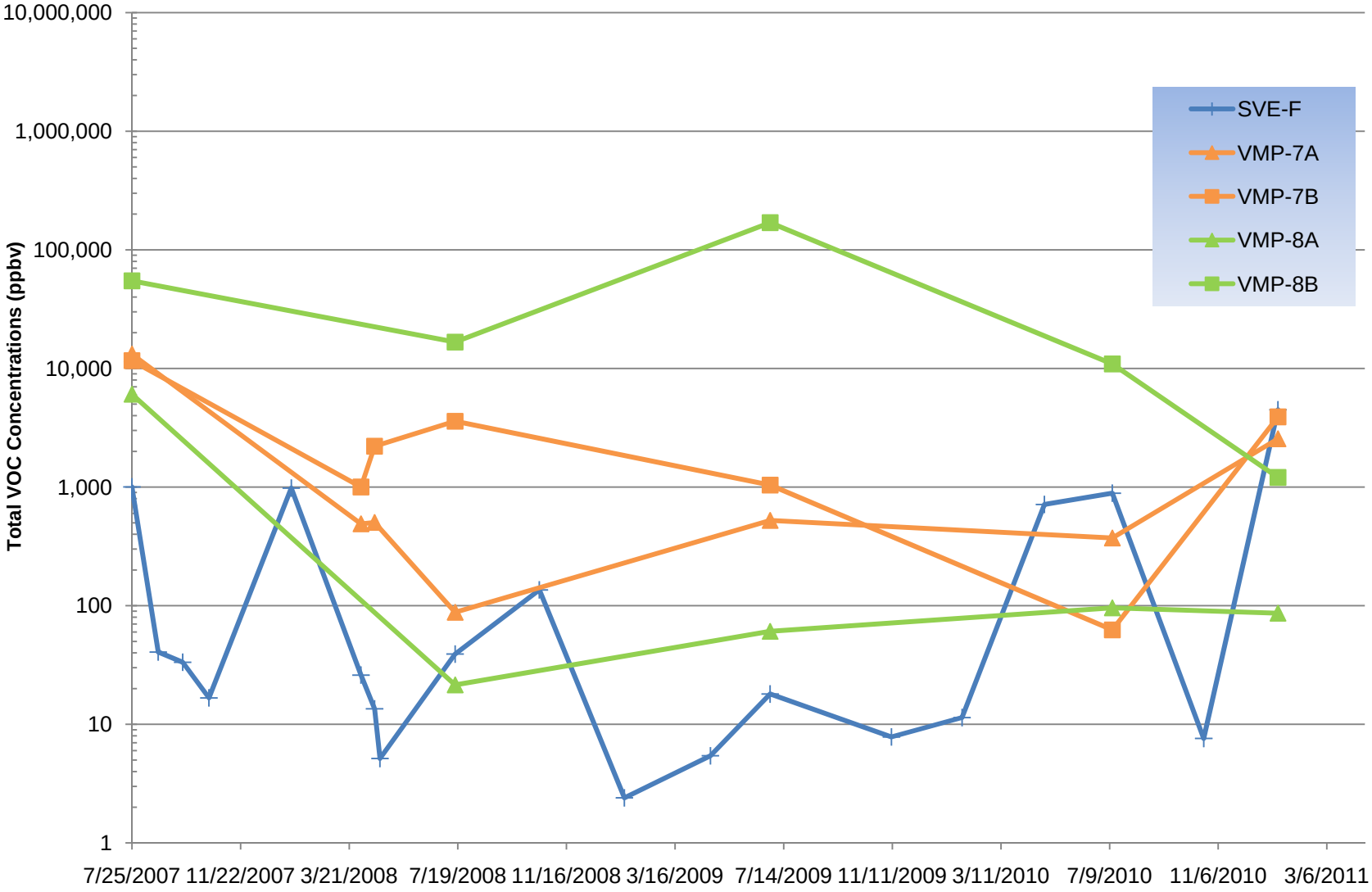


Figure 10
TREND OF TOTAL VOC CONCENTRATIONS AT TA-3 SVE WELL AND VMPs
REBOUND TEST AND CONFIRMATION SOIL SAMPLING
FLUVIAL SOIL VAPOR EXTRACTION SYSTEM
Dunn Field - Defense Depot Memphis, Tennessee

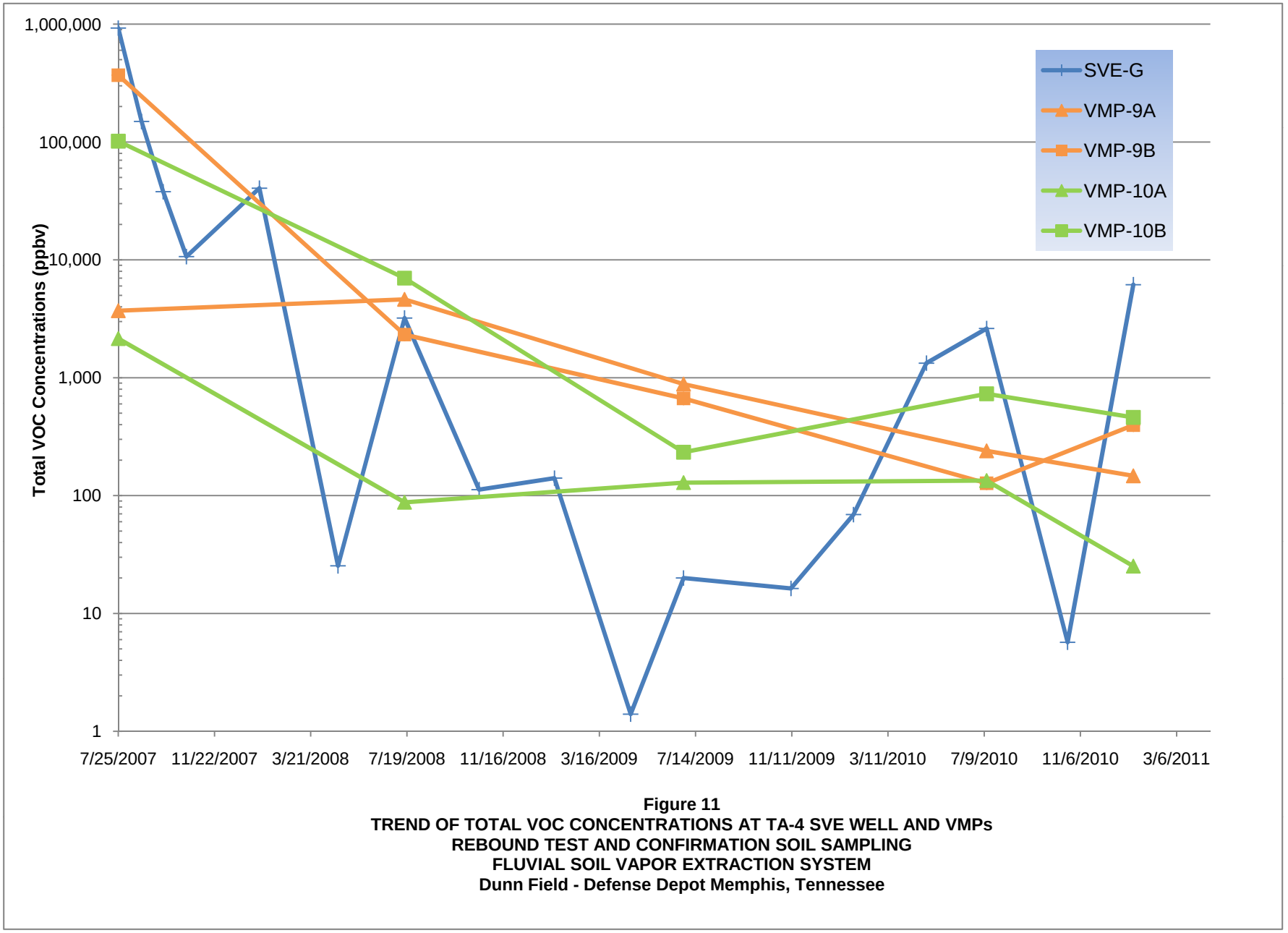


Figure 11
TREND OF TOTAL VOC CONCENTRATIONS AT TA-4 SVE WELL AND VMPs
REBOUND TEST AND CONFIRMATION SOIL SAMPLING
FLUVIAL SOIL VAPOR EXTRACTION SYSTEM
Dunn Field - Defense Depot Memphis, Tennessee

Appendix A

Soil Boring Logs and Well Diagrams

FIELD BOREHOLE LOG

BOREHOLE NO.: FSB-1 SVEID: SVE-B-EAST
TOTAL DEPTH: 60

PROJECT INFORMATION

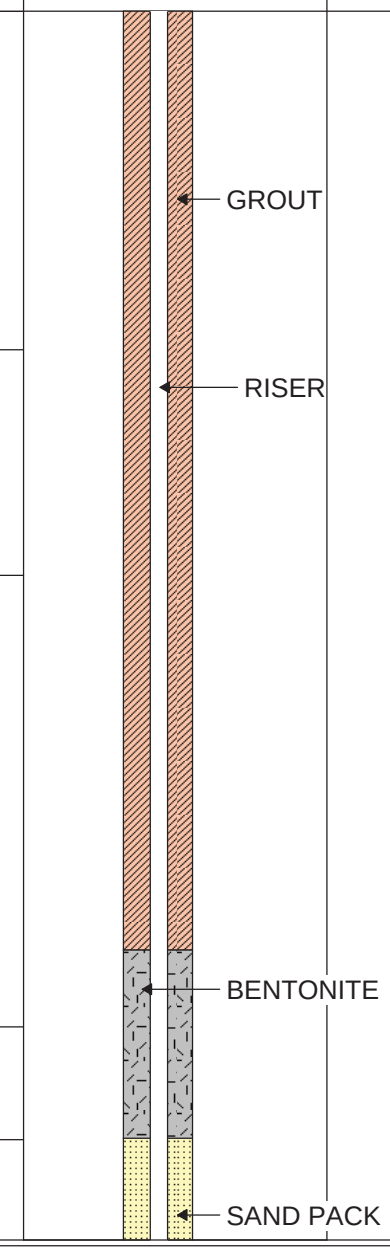
PROJECT: Dunn Field FSB
PROJECT NO.: 121842-004
SITE LOCATION: DUNN FIELD
PROJECT MANAGER: T. HOLMES
FIELD STAFF: J. SPERRY
BOREHOLE STARTED: 11/12/2010 07:00
BOREHOLE FINISHED: 11/12/2010 12:30

DRILLING INFORMATION

DRILLING CO.: WDC
DRILLER: Sam Rivera
DRILLING METHOD/RIG: SONIC
BOREHOLE DIAMETER: 6-INCH
GROUND SURFACE ELEVATION (FT MSL): 291.0
WATER DEPTH/ DATE: N/A
BOREHOLE USE: SOIL SAMPLING AND SVE WELL

NOTES: SVE well installed 11/12/10 with new 2-inch diameter Sched 40 PVC riser and a 25-foot section of 0.006-inch slot screen. Riser extended 2 feet above the ground surface and completed with a threaded coupling.

Depth (ft, bgs)	Soil Symbol	Soil Description	Well Completion	Well Description
		ML Clayey Silt, 10YR 4/6 (Dark Yellowish Brown), Moist, Stiff, Low Plasticity.		
10		**CL** Silty Clay, 10YR 4/1 (Dark Gray), Moist, Stiff, Low Plasticity, Smells Burned.		
		CL Silty Clay, 10YR 4/6 (Dark Yellowish Brown), Moist, Softer, Medium Plasticity.		
20				
		SC Silty Clay, 5YR 5/8 (Yellowish Red), Stiff, Trace Medium to Fine Grained Sand.		
30				



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Checked By: JBS

FIELD BOREHOLE LOG

BOREHOLE NO.: FSB-1 SVEID: SVE-B-EAST
TOTAL DEPTH: 60

Depth	Soil Symbol	Soil Description	Well Completion	Well Description
		SW Clayey Sand 2.5 YR 3/6 (Dark Red), Highly Oxidized, Medium to Fine Grained Sand, Trace Gravel.	SAND PACK	
42		**SW** Sand, 10YR 7/8 (Yellow), Moist, Soft, Medium to Fine Grained Sand, Trace Coarse Grained Sand, Trace Gravel (Angular).	SCREEN	
52			END CAP	
		End of Log		
62				

Created By: WTR
Checked By: JBS

FIELD BOREHOLE LOG

BOREHOLE NO.: FSB-2
TOTAL DEPTH: 56

PROJECT INFORMATION

PROJECT: Dunn Field FSB
PROJECT NO.: 121842-004
SITE LOCATION: DUNN FIELD
PROJECT MANAGER: T. HOLMES
FIELD STAFF: J. SPERRY
BOREHOLE STARTED: 11/12/2010 16:00
BOREHOLE FINISHED: 11/13/2010 08:47

DRILLING INFORMATION

DRILLING CO.: WDC
DRILLER: Sam Rivera
DRILLING METHOD/RIG: SONIC
BOREHOLE DIAMETER: 6-INCH
GROUND SURFACE ELEVATION (FT MSL): 290.4
WATER DEPTH/ DATE: N/A
BOREHOLE USE: SOIL SAMPLING

NOTES: After samples collected, boring was filled with bentonite-cement grout from the bottom to ground surface using a side-discharge tremie pipe.

Depth (ft, bgs)	Soil Symbol	Soil Description	Well Completion	Well Description
10		**ML** Clayey Silt, 7.5YR 5/4 (Brown), Moist, Stiff, Low Plasticity, Slight Odor.	N/A	
		CL Silty Clay, 7.5YR 4/1 (Dark Gray), Moist Stiff, Medium Plasticity.		
20		**CL** Silty Clay, 7.5YR 5/4 (Brown), Moist Stiff, Medium to High Plasticity.		
30		**CL** Gravelly Clay, 5YR 5/8 (Yellowish Red, Moist, Loose, Trace Sand, Gravel is Angular, Low Plasticity, Oxidized.		

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FIELD BOREHOLE LOG

BOREHOLE NO.: FSB-2
TOTAL DEPTH: 56

Depth	Soil Symbol	Soil Description	Well Completion	Well Description
		SW Sand, 2.5YR 5/8 (Red), Moist, Soft, Fine to Medium Grained, Highly Oxidized.		
42		**SW** Sand, 5YR 5/8 (Yellowish Red), Moist, Soft, Fine to Medium Grained Sand, Trace Gravel.		
52				
		End of Log		
62				

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Checked By: JBS

FIELD BOREHOLE LOG

BOREHOLE NO.: FSB-3
TOTAL DEPTH: 55

PROJECT INFORMATION

PROJECT: Dunn Field FSB
PROJECT NO.: 121842-004
SITE LOCATION: DUNN FIELD
PROJECT MANAGER: T. HOLMES
FIELD STAFF: J. SPERRY
BOREHOLE STARTED: 11/13/2010 09:20
BOREHOLE FINISHED: 11/13/2010 12:30

DRILLING INFORMATION

DRILLING CO.: WDC
DRILLER: Sam Rivera
DRILLING METHOD/RIG: SONIC
BOREHOLE DIAMETER: 6-INCH
GROUND SURFACE ELEVATION (FT MSL): 291.1
WATER DEPTH/ DATE: N/A
BOREHOLE USE: SOIL SAMPLING

NOTES: After samples collected, boring was filled with bentonite-cement grout from the bottom to ground surface using a side-discharge tremie pipe.

Depth (ft, bgs)	Soil Symbol	Soil Description	Well Completion	Well Description
		Fill Material, 7.5YR 3/1 (Very Dark Gray), Burned Debris, Rusty Nails.	N/A	
10		**ML** Clayey Silt, 7.5YR 5/1 (Gray), Dry, Soft, Smells Burned, Low Plasticity.		
20		**ML** Clayey Silt, 7.5YR 5/4 (Brown), Moist, Stiff, Low Plasticity.		
30		**SW** Gravelly Sand, 7.5YR 7/8 (Reddish Yellow), Moist, Gravel is Angular, Fine to Medium Grained.		

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FIELD BOREHOLE LOG

BOREHOLE NO.: FSB-3
TOTAL DEPTH: 55

Depth	Soil Symbol	Soil Description	Well Completion	Well Description
		SW Sand, 2.5YR 5/8 (Red), Moist, Soft, Trace Gravel and Clay, Gravel is Angular.		
42		**SW** Sand, 7.5YR 8/6 (Reddish Yellow), Moist, Soft, Fine Grained, Trace Angular Gravel.		
52		**SW** Sand. 5YR 6/8 (Reddish Yellow), Moist, Soft, Medium to Coarse Grained, Trace Rounded Gravel.		
62		End of Log		

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Checked By: JBS

FIELD BOREHOLE LOG

BOREHOLE NO.: FSB-4 SVEID: SVE-C-EAST
TOTAL DEPTH: 62

PROJECT INFORMATION

PROJECT: Dunn Field FSB
PROJECT NO.: 121842-004
SITE LOCATION: DUNN FIELD
PROJECT MANAGER: T. HOLMES
FIELD STAFF: J. SPERRY
BOREHOLE STARTED: 11/11/2010 17:00
BOREHOLE FINISHED: 11/12/2010 12:30

DRILLING INFORMATION

DRILLING CO.: WDC
DRILLER: Sam Rivera
DRILLING METHOD/RIG: SONIC
BOREHOLE DIAMETER: 6-INCH
GROUND SURFACE ELEVATION (FT MSL): 299.1
WATER DEPTH/ DATE: N/A
BOREHOLE USE: SOIL SAMPLING AND SVE WELL

NOTES: SVE Well installed 11/12/10 with new 2-inch diameter Sched 40 PVC riser and a 25-foot section of 0.006-inch slot screen. Riser extended 2 feet above the ground surface and completed with a threaded coupling.

Depth (ft, bgs)	Soil Symbol	Soil Description	Well Completion	Well Description
10		**ML** Clayey Silt, 7/5YR 4/4 (Brown), Moist, Soft, Low Plasticity.	GROUT, RISER	
20				
30		**CL** Silty Clay, 7.5YR 4/4 (Brown), Moist Stiff, Trace Sand, Medium Plasticity.	BENTONITE	
		CL Silty Clay, 2.5YR 4/6 (Red), Moist, Trace Sand, Low Plasticity, Oxidized.		

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FIELD BOREHOLE LOG

BOREHOLE NO.: FSB-4 SVEID: SVE-C-EAST
TOTAL DEPTH: 62

Depth	Soil Symbol	Soil Description	Well Completion	Well Description
		SC Clayey Sand, 2.5YR 4/6 (Red), Sand is Fine to Medium Grained, Trace Clay and Gravel, Highly Oxidized.	SAND PACK	
42			SCREEN	
		SW Sand, 7.5YR 8/8 (Yellowish Brown), Fine to Coarse Grained, Trace Angular Gravel.		
52				
62		End of Log	END CAP	

Created By: WTR
Checked By: JBS

FIELD BOREHOLE LOG

BOREHOLE NO.: FSB-5
TOTAL DEPTH: 62

PROJECT INFORMATION

PROJECT: Dunn Field FSB
PROJECT NO.: 121842-004
SITE LOCATION: DUNN FIELD
PROJECT MANAGER: T. HOLMES
FIELD STAFF: J. SPERRY
BOREHOLE STARTED: 11/13/2010 12:30
BOREHOLE FINISHED: 11/13/2010 14:00

DRILLING INFORMATION

DRILLING CO.: WDC
DRILLER: Sam Rivera
DRILLING METHOD/RIG: SONIC
BOREHOLE DIAMETER: 6-INCH
GROUND SURFACE ELEVATION (FT MSL): 298.9
WATER DEPTH/ DATE: N/A
BOREHOLE USE: SOIL SAMPLING

NOTES: After samples collected, boring was filled with bentonite-cement grout from the bottom to ground surface using a side-discharge tremie pipe.

Depth (ft, bgs)	Soil Symbol	Soil Description	Well Completion	Well Description
10		**ML** Clayey Silt, 10YR 5/6 (Yellowish Brown), Moist, Stiff, Low Plasticity.	N/A	
20		**CL** Silty Clay, 7.5YR 5/4 (Brown), Moist, Stiff, Medium Plasticity.		
30		**CL** Sandy Clay, 2.5YR 3/6 (Dark Red), Very Oxidized, Fine Grained Sand.		

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FIELD BOREHOLE LOG

BOREHOLE NO.: FSB-5
TOTAL DEPTH: 62

Depth	Soil Symbol	Soil Description	Well Completion	Well Description
		SC Clayey Sand, 2.5YR 4/8 (Red), Soft, Medium to Fine Grained Sand, Trace Angular Gravel.		
42				
		SW Sand, 10YR 6/8 (Brownish Yellow), Soft, Moist with Dry Places, Fine to Coarse Grained Sand, with Trace Rounded Gravel.		
52				
62		End of Log		

Created By: WTR
Checked By: JBS

FIELD BOREHOLE LOG

BOREHOLE NO.: FSB-6 SVEID: SVE-C-WEST
TOTAL DEPTH: 62

PROJECT INFORMATION

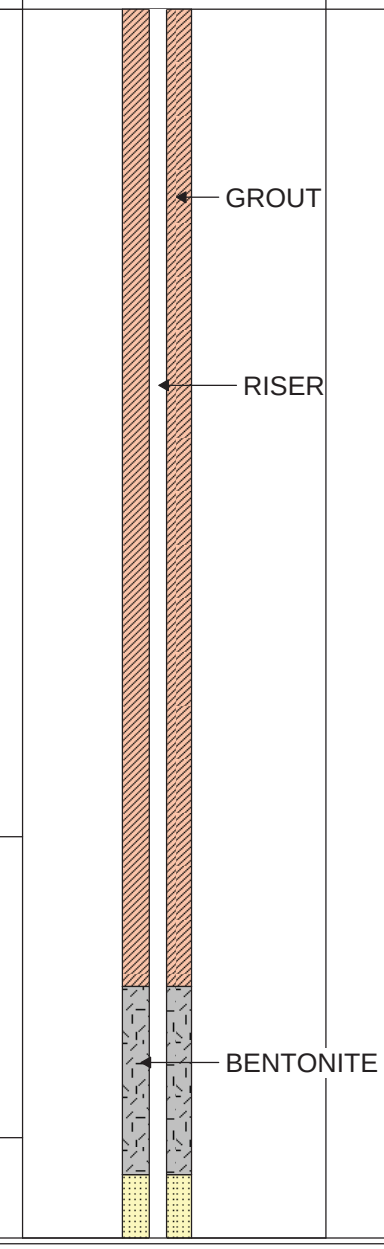
PROJECT: Dunn Field FSB
PROJECT NO.: 121842-004
SITE LOCATION: DUNN FIELD
PROJECT MANAGER: T. HOLMES
FIELD STAFF: J. SPERRY
BOREHOLE STARTED: 11/11/2010 09:30
BOREHOLE FINISHED: 11/11/2010 15:30

DRILLING INFORMATION

DRILLING CO.: WDC
DRILLER: Sam Rivera
DRILLING METHOD/RIG: SONIC
BOREHOLE DIAMETER: 6-INCH
GROUND SURFACE ELEVATION (FT MSL): 299.1
WATER DEPTH/ DATE: N/A
BOREHOLE USE: SOIL SAMPLING AND SVE WELL

NOTES: SVE well installed 11/11/10 with new 2-inch diameter Sched 40 PVC riser and a 25-foot section of 0.006-inch slot screen. Riser extended 2 feet above the ground surface and completed with a threaded coupling.

Depth (ft, bgs)	Soil Symbol	Soil Description	Well Completion	Well Description
10		**ML** Clayey Silt, 7.5YR 5/4 (Brown), Moist, Stiff, Low Plasticity.	GROUT, RISER	
20		**CL** Silty Clay, 7.5YR 4/4 (Brown), Stiff, Medium Plasticity, Fine Grained Sand.	BENTONITE	
30		**CL** Silty Clay, 7.5YR 4/6 (Red), Low Plasticity, Highly Oxidized, Trace Fine Sand.		



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FIELD BOREHOLE LOG

BOREHOLE NO.: FSB-6 SVEID: SVE-C-WEST
TOTAL DEPTH: 62

Depth	Soil Symbol	Soil Description	Well Completion	Well Description
		SC Clayey Sand, 2.5YR 4/6 (Red), Stiff, Highly Oxidized, Medium to Fine Grained Sand.	SAND PACK	
			SCREEN	
42		**SP** Gravelly Sand, 2.5YR 4/6 (Red), Loose, Trace Clay, Angular Gravel.		
		SW Sand, 7.5YR 7/8 (Reddish Yellow), Moist, Loose, Angular Gravel, Medium to Fine Grained Sand.		
52				
62		End of Log	END CAP	

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Checked By: JBS

FIELD BOREHOLE LOG

BOREHOLE NO.: FSB-7
TOTAL DEPTH: 61

PROJECT INFORMATION

PROJECT: Dunn Field FSB
PROJECT NO.: 121842-004
SITE LOCATION: DUNN FIELD
PROJECT MANAGER: T. HOLMES
FIELD STAFF: J. SPERRY
BOREHOLE STARTED: 11/10/2010 15:30
BOREHOLE FINISHED: 11/11/2010 10:00

DRILLING INFORMATION

DRILLING CO.: WDC
DRILLER: Sam Rivera
DRILLING METHOD/RIG: SONIC
BOREHOLE DIAMETER: 6-INCH
GROUND SURFACE ELEVATION (FT MSL): 300.3
WATER DEPTH/ DATE: N/A
BOREHOLE USE: SOIL SAMPLING

NOTES: After samples collected, boring was filled with bentonite-cement grout from the bottom to ground surface using a side-discharge tremie pipe.

Depth (ft, bgs)	Soil Symbol	Soil Description	Well Completion	Well Description
10		**ML** Clayey Silt, 7.5YR 4/4 (Brown), Moist, Soft, Low Plasticity.	N/A	
20		**CL** Silty Clay, 7.5YR 4/4 (Brown), Moist, Stiff, Medium Plasticity, Trace Sand.		
30		**CL** Silty Clay, 2.5YR 4/6 (Red), Moist, Low Plasticity, Trace Sand, Oxidized.		

Created By: WTR
Checked By: JBS

FIELD BOREHOLE LOG

BOREHOLE NO.: FSB-7
TOTAL DEPTH: 61

Depth	Soil Symbol	Soil Description	Well Completion	Well Description
		SC Clayey Sand, 2.5YR 4/6 (Red), Moist, Stiff, Fine to Medium Grained Sand, Highly Oxidized.		
42		**SW** Gravelly Sand, 2.5YR 4/6 (Red), Moist, Trace Clay, Gravel is Angular, Oxidized.		
52		**SW** Sand, 7.5YR 8/8 (Yellow), Moist, Loose, Trace Gravel, Sand is Medium to Fine Grained.		
62		End of Log		

Created By: WTR
Checked By: JBS

FIELD BOREHOLE LOG

BOREHOLE NO.: FSB-8 SVEID: SVE-D-NORTH
TOTAL DEPTH: 61

PROJECT INFORMATION

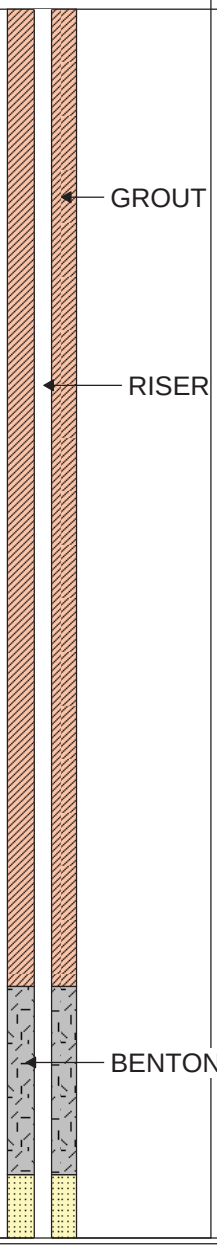
PROJECT: Dunn Field FSB
PROJECT NO.: 121842-004
SITE LOCATION: DUNN FIELD
PROJECT MANAGER: T. HOLMES
FIELD STAFF: J. SPERRY
BOREHOLE STARTED: 11/10/2010 11:30
BOREHOLE FINISHED: 11/10/2010 17:30

DRILLING INFORMATION

DRILLING CO.: WDC
DRILLER: Sam Rivera
DRILLING METHOD/RIG: SONIC
BOREHOLE DIAMETER: 6-INCH
GROUND SURFACE ELEVATION (FT MSL): 301.8
WATER DEPTH/ DATE: N/A
BOREHOLE USE: SOIL SAMPLING AND SVE WELL

NOTES: SVE well installed 11/10/10 with new 2-inch diameter Sched 40 PVC riser and a 25-foot section of 0.006-inch slot screen. Riser extended 2 feet above the ground surface and completed with a threaded coupling.

Depth (ft, bgs)	Soil Symbol	Soil Description	Well Completion	Well Description
10		**ML** Clayey Silt, 7.5YR 5/8 (Strong Brown), Moist, Stiff, Medium Plasticity.	GROUT, RISER	
20		**CL** Silty Clay, 7.5YR 5/8 (Strong Brown), Moist, Stiff, Medium Plasticity.		
30		**CL** Silty Clay, 2.5YR 4/6 (Red), Moist, Stiff, Trace Sand.	BENTONITE	



Created By: WTR
Checked By: JBS

FIELD BOREHOLE LOG

BOREHOLE NO.: FSB-8 SVEID: SVE-D-NORTH
TOTAL DEPTH: 61

Depth	Soil Symbol	Soil Description	Well Completion	Well Description
		SC Clayey Sand, 2.5YR 4/6 (Red), Moist, Stiff, Medium to Fine Grained Sand, Trace Gravel.	SAND PACK	
42			SCREEN	
		SP Fine Sand, 10YR 7/8 (Yellow), Soft, Loose, Some Coarse Grained Sand.		
52			END CAP	
		End of Log		
62				

Created By: WTR

Checked By: JBS

FIELD BOREHOLE LOG

BOREHOLE NO.: FSB-9
TOTAL DEPTH: 59

PROJECT INFORMATION

PROJECT: Dunn Field FSB
PROJECT NO.: 121842-004
SITE LOCATION: DUNN FIELD
PROJECT MANAGER: T. HOLMES
FIELD STAFF: J. SPERRY
BOREHOLE STARTED: 11/9/2010 16:00
BOREHOLE FINISHED: 11/10/2010 10:00

DRILLING INFORMATION

DRILLING CO.: WDC
DRILLER: Sam Rivera
DRILLING METHOD/RIG: SONIC
BOREHOLE DIAMETER: 6-INCH
GROUND SURFACE ELEVATION (FT MSL): 301.2
WATER DEPTH/ DATE: N/A
BOREHOLE USE: SOIL SAMPLING

NOTES: After samples collected, boring was filled with bentonite-cement grout from the bottom to ground surface using a side-discharge tremie pipe.

Depth (ft, bgs)	Soil Symbol	Soil Description	Well Completion	Well Description
10		**ML** Clayey Silt, 7.5YR 5/8 (Strong Brown), Moist, Stiff, Medium to Low Plasticity.	N/A	
20		**CL** Silty Clay, 7.5YR 5/8 (Strong Brown), Moist, Medium to High Plasticity.		
30		**CL** Silty Clay, 2.5YR 4/6 (Red), Moist, Stiff, Oxidized, Trace of Medium to Fine Grained Sand.		

Created By: WTR
Checked By: JBS

FIELD BOREHOLE LOG

BOREHOLE NO.: FSB-9
TOTAL DEPTH: 59

Depth	Soil Symbol	Soil Description	Well Completion	Well Description
42		**SC** Clayey Sand, 2.5 YR 4/6 (Red), Moist, Stiff, Oxidized, Medium to Fine Grained Sand.		
52		**SP** Fine Sand, 10YR 7/8 (Yellow), Soft, Loose, Trace Coarse Grained Sand.		
		SW Sand, 10YR 7/8 (Yellow), Soft Loose, Medium to Coarse Grained, Some Fines, Trace Gravel.		
62		End of Log		

Created By: WTR
Checked By: JBS

FIELD BOREHOLE LOG

BOREHOLE NO.: FSB-10
TOTAL DEPTH: 61

PROJECT INFORMATION

PROJECT: Dunn Field FSB
PROJECT NO.: 121842-004
SITE LOCATION: DUNN FIELD
PROJECT MANAGER: T. HOLMES
FIELD STAFF: J. SPERRY
BOREHOLE STARTED: 11/9/2010 12:30
BOREHOLE FINISHED: 11/9/2010 16:00

DRILLING INFORMATION

DRILLING CO.: WDC
DRILLER: Sam Rivera
DRILLING METHOD/RIG: SONIC
BOREHOLE DIAMETER: 6-INCH
GROUND SURFACE ELEVATION (FT MSL): 301.3
WATER DEPTH/ DATE: N/A
BOREHOLE USE: SOIL SAMPLING

NOTES: After samples collected, boring was filled with bentonite-cement grout from the bottom to ground surface using a side-discharge tremie pipe.

Depth (ft, bgs)	Soil Symbol	Soil Description	Well Completion	Well Description
10		**ML** Clayey Silt, 7.5YR 4/4 (Brown), Moist, Stiff, Low Plasticity.	N/A	
20		**CL** Silty Clay, 7.5YR 4/4 (Brown), Moist, Stiff, Medium to High Plasticity.		
30		**CL** Silty Clay, 2.5YR 4/6 (Red), Stiff, Low Plasticity, Highly Oxidized, Trace Sand.		

Created By: WTR
Checked By: JBS

FIELD BOREHOLE LOG

BOREHOLE NO.: FSB-10
TOTAL DEPTH: 61

Depth	Soil Symbol	Soil Description	Well Completion	Well Description
42		**SC** Clayey Sand, 2.5YR 4/6 (Red), Moist, Stiff, Oxidized, Medium to Fine Grained Sand, Trace Gravel.		
52		**SW** Sand, 5YR 5/8 (Yellowish Red), Moist, Soft, Medium to Coarse Grained Sand, Trace Angular Gravel.		
62		End of Log		

Created By: WTR
Checked By: JBS

FIELD BOREHOLE LOG

BOREHOLE NO.: FSB-11 SVEID: SVE-D-SOUTH
TOTAL DEPTH: 58

PROJECT INFORMATION

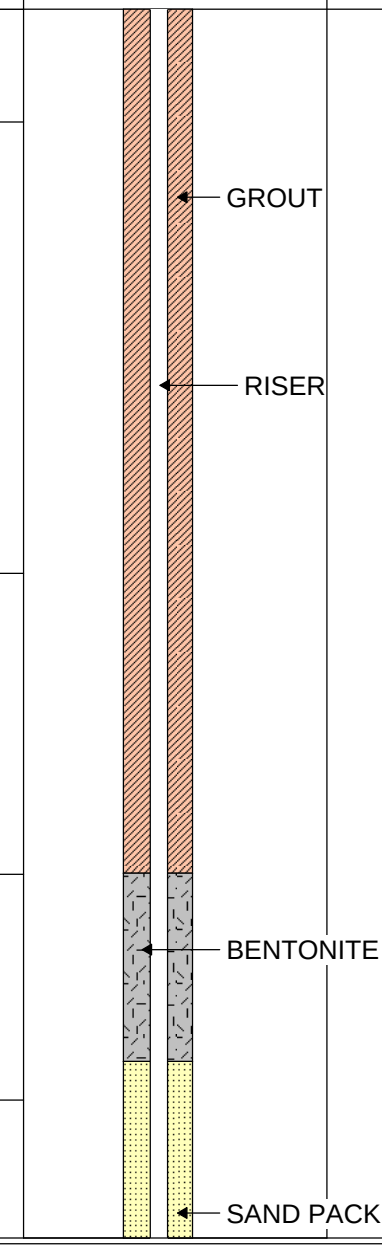
PROJECT: Dunn Field FSB
PROJECT NO.: 121842-004
SITE LOCATION: DUNN FIELD
PROJECT MANAGER: T. HOLMES
FIELD STAFF: J. SPERRY
BOREHOLE STARTED: 11/8/2010 17:00
BOREHOLE FINISHED: 11/9/2010 17:00

DRILLING INFORMATION

DRILLING CO.: WDC
DRILLER: Sam Rivera
DRILLING METHOD/RIG: SONIC
BOREHOLE DIAMETER: 6-INCH
GROUND SURFACE ELEVATION (FT MSL): 301.2
WATER DEPTH/ DATE: N/A
BOREHOLE USE: SOIL SAMPLING AND SVE WELL

NOTES: SVE well installed 11/9/10 with new 2-inch diameter Sched 40 PVC riser and a 25-foot section of 0.006-inch slot screen. Riser extended 2 feet above the ground surface and completed with a threaded coupling.

Depth (ft, bgs)	Soil Symbol	Soil Description	Well Completion	Well Description
		Fill Material, Rock Clay Gravel Limestone.		
		ML Clayey Silt, 7.5YR 5/8 (Strong Brown), Stiff Medium Plasticity.	GROUT	
10			RISER	
		CL Silty Clay, 7.5 YR 5/8 (Strong Brown), Moist, Stiff, Medium Plasticity.		
20				
		CL Silty Clay, 2.5YR 4/6 (Red), Low to Medium Plasticity, Oxidized, Trace Sand.	BENTONITE	
30		**SC** Clayey Sand, 2.5YR 4/6 (Red), Moist, Stiff, Medium to Fine Grained Sand, Trace Gravel.	SAND PACK	



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FIELD BOREHOLE LOG

BOREHOLE NO.: FSB-11 SVEID: SVE-D-SOUTH
TOTAL DEPTH: 58

Depth	Soil Symbol	Soil Description	Well Completion	Well Description
			SAND PACK	
			SCREEN	
42				
		SW Fine Sand, 10YR 7/8 (Yellow), Soft, Loose, Moist, Trace Silt and Clay, Some Gravel.		
52		**SW** Sand, 10YR 6/8 (Yellowish Brown), Moist, Loose, Medium to Coarse Grained, Trace Gravel and Silt.		
			END CAP	
		End of Log		
62				

Created By: WTR

Checked By: JBS

FIELD BOREHOLE LOG

BOREHOLE NO.: FSB-12 SVEID: SVE-E-NORTH
TOTAL DEPTH: 59

PROJECT INFORMATION

PROJECT: Dunn Field FSB
PROJECT NO.: 121842-004
SITE LOCATION: DUNN FIELD
PROJECT MANAGER: T. HOLMES
FIELD STAFF: J. SPERRY
BOREHOLE STARTED: 11/8/2010 11:30
BOREHOLE FINISHED: 11/8/2010 17:00

DRILLING INFORMATION

DRILLING CO.: WDC
DRILLER: Sam Rivera
DRILLING METHOD/RIG: SONIC
BOREHOLE DIAMETER: 6-INCH
GROUND SURFACE ELEVATION (FT MSL): 301.2
WATER DEPTH/ DATE: N/A
BOREHOLE USE: SOIL SAMPLING AND SVE WELL

NOTES: SVE well installed 11/8/10 with new 2-inch diameter Sched 40 PVC riser and a 25-foot section of 0.006-inch slot screen. Riser extended 2 feet above the ground surface and completed with a threaded coupling.

Depth (ft, bgs)	Soil Symbol	Soil Description	Well Completion	Well Description
10		**ML** Clayey Silt, 7.5YR 4/6 (Strong Brown), Moist, Stiff, Low Plasticity.	GROUT; RISER	
20		**CL** Silty Clay, 7.5YR 5/8 (Strong Brown), Stiff, Medium Plasticity.		
		CL Silty Clay, 2.5YR 4/6 (Red), Stiff, Highly Oxidized, Low Plasticity, Trace Fine Sand.	BENTONITE	
30		**SC** Clayey Sand, 2.5YR 5/8 (Red), Moist, Stiff, Highly Oxidized, Medium to Fine Grained Sand, Trace Gravel.	SAND PACK	

Created By: WTR
Checked By: JBS

FIELD BOREHOLE LOG

BOREHOLE NO.: FSB-12 SVEID: SVE-E-NORTH
TOTAL DEPTH: 59

Depth	Soil Symbol	Soil Description	Well Completion	Well Description
			SAND PACK	
			SCREEN	
42				
		SW Fine Sand, 10YR 7/8 (Yellow), Soft, Loose, Trace Silt, Clay, Gravel.		
52				
		SW Sand, 10YR 6/8 (Yellowish Brown), Medium to Coarse Grained, Some Silt, Trace Gravel.		
			END CAP	
		End of Log		
62				

Created By: WTR

Checked By: JBS

FIELD BOREHOLE LOG

BOREHOLE NO.: FSB-13 SVEID: SVE-F-WEST
TOTAL DEPTH: 55

PROJECT INFORMATION

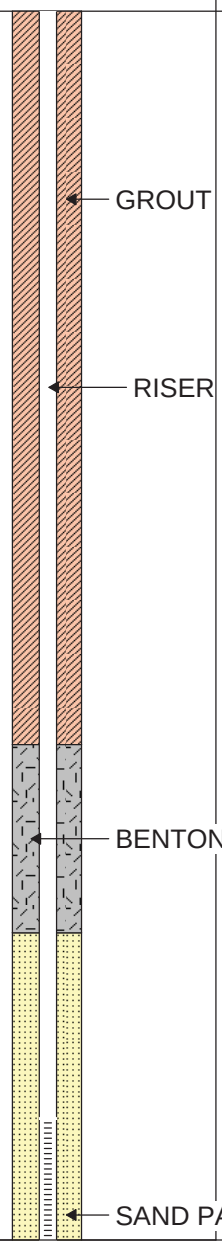
PROJECT: Dunn Field FSB
PROJECT NO.: 121842-004
SITE LOCATION: DUNN FIELD
PROJECT MANAGER: T. HOLMES
FIELD STAFF: J. SPERRY
BOREHOLE STARTED: 11/6/2010 07:30
BOREHOLE FINISHED: 11/6/2010 17:30

DRILLING INFORMATION

DRILLING CO.: WDC
DRILLER: Sam Rivera
DRILLING METHOD/RIG: SONIC
BOREHOLE DIAMETER: 6-INCH
GROUND SURFACE ELEVATION (FT MSL): 292
WATER DEPTH/ DATE: N/A
BOREHOLE USE: SOIL SAMPLING AND SVE WELL

NOTES: SVE well installed 11/6/10 with new 2-inch diameter Sched 40 PVC riser and a 25-foot section of 0.006-inch slot screen. Riser extended 2 feet above the ground surface and completed with a threaded coupling.

Depth (ft, bgs)	Soil Symbol	Soil Description	Well Completion	Well Description
		SP Sand, 5YR 4/1 (Dark Gray), Fill Material, Soft, Fine Sand, Trace Silt.		
10		**ML** Clayey Silt, 7.5 YR 5/8 (Strong Brown), Moist, Soft, Low Plasticity, Trace Oxidation.		
20		**ML** Clayey Silt, 5YR 5/6 (Yellowish Red), Moist, Stiff, Trace Fine Sand,		
		SC Clayey Sand, 5YR 5/6 (Yellowish Red), Trace Gravel, Oxidized.		
30				



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FIELD BOREHOLE LOG

BOREHOLE NO.: FSB-13 SVEID: SVE-F-WEST
TOTAL DEPTH: 55

Depth	Soil Symbol	Soil Description	Well Completion	Well Description
		SW Sand, 2.5YR 4/8 (Red), Moist, Soft, Fine to Medium Grained, Trace Gravel and Fines, Highly Oxidized.	SAND PACK SCREEN END CAP	
42				
52				
		End of Log		
62				

Created By: WTR
Checked By: JBS

FIELD BOREHOLE LOG

BOREHOLE NO.: FSB-14
TOTAL DEPTH: 52

PROJECT INFORMATION

PROJECT: Dunn Field FSB
PROJECT NO.: 121842-004
SITE LOCATION: DUNN FIELD
PROJECT MANAGER: T. HOLMES
FIELD STAFF: J. SPERRY
BOREHOLE STARTED: 11/6/2010 14:30
BOREHOLE FINISHED: 11/7/2010 09:00

DRILLING INFORMATION

DRILLING CO.: WDC
DRILLER: Sam Rivera
DRILLING METHOD/RIG: SONIC
BOREHOLE DIAMETER: 6-INCH
GROUND SURFACE ELEVATION (FT MSL): 292.8
WATER DEPTH/ DATE: N/A
BOREHOLE USE: SOIL SAMPLING

NOTES: After samples collected, boring was filled with bentonite-cement grout from the bottom to ground surface using a side-discharge tremie pipe.

Depth (ft, bgs)	Soil Symbol	Soil Description	Well Completion	Well Description
		ML Clayey Silt, 7.5YR 5/3 (Brown), Dry, Soft, Low Plasticity, Possible Fill Material.	N/A	
10		**ML** Clayey Silt, 7.5YR 3/4 (Dark Brown), Moist, Stiff, Medium Plasticity, Some Organics.		
		ML Slayey Silt, 7.5YR 3/4 (Dark Brown), Moist, Stiff, Medium Plasticity, Some Organics		
20		**CL** Silty Clay, 2.5YR 4/6 (Red), Moist, Stiff, Medium Plasticity, Oxidized, Trace Fine Sand.		
30		**SC** Clayey Sand, 2.5 YR 4/6 (Red), Moist, Stiff, Highly Oxidized, Some Mottles, Trace Gravel.		

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FIELD BOREHOLE LOG

BOREHOLE NO.: FSB-14
TOTAL DEPTH: 52

Depth	Soil Symbol	Soil Description	Well Completion	Well Description
42		**SC** Clayey Sand, 2.5 YR 4/6 (Red), Moist, Stiff, Highly Oxidized, Some Mottles, Trace Gravel.		
52		**SM** Sand, 7.5YR 7/8 (Reddish Yellow), Fine to Medium Grained, Soft, Some Oxidation, Trace Fines.		
62		End of Log		

Created By: WTR
Checked By: JBS

FIELD BOREHOLE LOG

BOREHOLE NO.: FSB-15
TOTAL DEPTH: 55

PROJECT INFORMATION

PROJECT: Dunn Field FSB
PROJECT NO.: 121842-004
SITE LOCATION: DUNN FIELD
PROJECT MANAGER: T. HOLMES
FIELD STAFF: J. SPERRY
BOREHOLE STARTED: 11/7/2010 09:00
BOREHOLE FINISHED: 11/7/2010 14:00

DRILLING INFORMATION

DRILLING CO.: WDC
DRILLER: Sam Rivera
DRILLING METHOD/RIG: SONIC
BOREHOLE DIAMETER: 6-INCH
GROUND SURFACE ELEVATION (FT MSL): 294.8
WATER DEPTH/ DATE: N/A
BOREHOLE USE: SOIL SAMPLING

NOTES: After samples collected, boring was filled with bentonite-cement grout from the bottom to ground surface using a side-discharge tremie pipe.

Depth (ft, bgs)	Soil Symbol	Soil Description	Well Completion	Well Description
		ML Clayey Silt, 7.5 5/6 (Strong Brown), Moist, Soft, Possible Fill Material, Medium Plasticity.	N/A	
10		**ML** Clayey Silt, 7.5YR 4/6 (Strong Brown), Moist, Stiff, Medium Plasticity.		
20		**CL** Silty Clay, 7.5YR 5/4 (Brown), Moist, Stiff, Medium to High Plasticity		
		CL Silty Clay, 7.5YR 5/4 (Brown), Moist, Stiff, Medium to High Plasticity, Trace Fine Grained Sand.		
30		**SC** Clayey Sand, 2.5YR 5/6 (Red), Moist, Stiff, Fine to Medium Grained, Trace Gravel, Highly Oxidized.		

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FIELD BOREHOLE LOG

BOREHOLE NO.: FSB-15
TOTAL DEPTH: 55

Depth	Soil Symbol	Soil Description	Well Completion	Well Description
42		**SM** Sandy Silt, 10YR 8/8 (Yellow), Dry, Hard, Sand is Fine Grained.		
		SW Sand, 2.5YR 5/8 (Red), Moist, Trace Gravel, Sand in Fine to Medium Grained, Highly Oxidized.		
52		**SW** Sand. 7.5YR 6/8 (Reddish Yellow), Moist, Soft, Fine to Coarse Grained, Trace Gravel.		
		End of Log		
62				

Created By: WTR
Checked By: JBS

FIELD BOREHOLE LOG

BOREHOLE NO.: FSB-16 SVEID: SVE-F-EAST
TOTAL DEPTH: 61

PROJECT INFORMATION

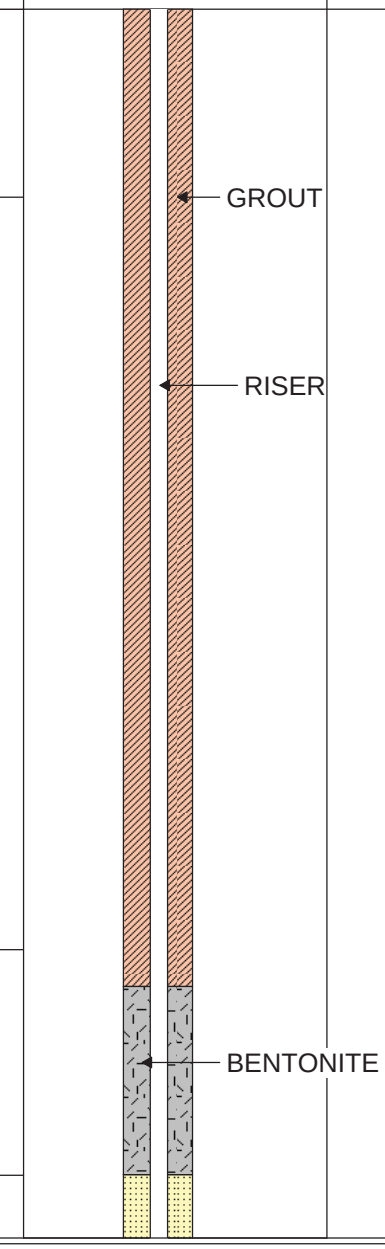
PROJECT: Dunn Field FSB
PROJECT NO.: 121842-004
SITE LOCATION: DUNN FIELD
PROJECT MANAGER: T. HOLMES
FIELD STAFF: J. SPERRY
BOREHOLE STARTED: 11/7/2010 12:30
BOREHOLE FINISHED: 11/8/2010 11:30

DRILLING INFORMATION

DRILLING CO.: WDC
DRILLER: Sam Rivera
DRILLING METHOD/RIG: SONIC
BOREHOLE DIAMETER: 6-INCH
GROUND SURFACE ELEVATION (FT MSL): 301.6
WATER DEPTH/ DATE: N/A
BOREHOLE USE: SOIL SAMPLING AND SVE WELL

NOTES: SVE well installed 11/8/10 with new 2-inch diameter Sched 40 PVC riser and a 25-foot section of 0.006-inch slot screen. Riser extended 2 feet above the ground surface and completed with a threaded coupling.

Depth (ft, bgs)	Soil Symbol	Soil Description	Well Completion	Well Description
		Fill Material, Asphalt, Gravel, Clay		
		ML Clayey Silt, 10YR 5/8 (Yellowish Brown), Moist, Soft, Low Plasticity	GROUT, RISER	
10				
20				
		CL Silty Clay, 7.5YR 5/8 (Strong Brown), Soft, Medium Plasticity	BENTONITE	
30				



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Checked By: JBS

FIELD BOREHOLE LOG

BOREHOLE NO.: FSB-16 SVEID: SVE-F-EAST
TOTAL DEPTH: 61

Depth	Soil Symbol	Soil Description	Well Completion	Well Description
		SC Clayey Sand, 5YR 4/6 (Yellowish Red), Hard, Fine to Medium Grained Sand, Trace Gravel	SAND PACK	
		SP Sand, 5YR 4/6 (Yellowish Red), Soft, Highly Oxidized, Medium Grained Sand, Some Fines, Trace Gravel	SCREEN	
42				
52		**SW** Sand, 7.5YR 7/6 (Reddish Yellow), Soft, Medium to Fine Grained Sand, Some Fines	END CAP	
62		End of Log		

Created By: WTR
Checked By: JBS

FIELD BOREHOLE LOG

BOREHOLE NO.: FSB-17
TOTAL DEPTH: 56

PROJECT INFORMATION

PROJECT: Dunn Field FSB
PROJECT NO.: 121842-004
SITE LOCATION: DUNN FIELD
PROJECT MANAGER: T. HOLMES
FIELD STAFF: J. SPERRY
BOREHOLE STARTED: 11/4/2010 13:45
BOREHOLE FINISHED: 11/4/2010 16:30

DRILLING INFORMATION

DRILLING CO.: WDC
DRILLER: Sam Rivera
DRILLING METHOD/RIG: SONIC
BOREHOLE DIAMETER: 6-INCH
GROUND SURFACE ELEVATION (FT MSL): 297.0
WATER DEPTH/ DATE: N/A
BOREHOLE USE: SOIL SAMPLING

NOTES: After samples collected, boring was filled with bentonite-cement grout from the bottom to ground surface using a side-discharge tremie pipe.

Depth (ft, bgs)	Soil Symbol	Soil Description	Well Completion	Well Description
		ML Silt, 7.5 YR5/4 (Brown), Moist, Low Plasticity, Stiff, Slight Mottling.	N/A	
10		**ML** Silt, 7.5YR 4/4 (Dark Yellowish Brown), Softer, Slight Plasticity.		
20		**CL** Clayey Silt, 7.5YR 4/4 (Dark Yellowish Brown), Moist, Stiff, Moderate Plasticity.		
		SL Clayey Sand, 2.5YR 4/8 (Red) Medium to Fine Grained, Trace Rounded Pebbles, Moist.		
30		**SL** Clayey Sand, 2.5YR 4/8 (Red) Medium to Fine Grained, Moist.		

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Checked By: JBS

FIELD BOREHOLE LOG

BOREHOLE NO.: FSB-17
TOTAL DEPTH: 56

Depth	Soil Symbol	Soil Description	Well Completion	Well Description
42		**SW** Sand, 5YR 7/6 (Reddish Yellow), Medium to Fine Grained, Trace Fines.		
52		**SW** Sand, 5YR 8/4 (Pink), Medium to Fine Grained, Trace Rounded Gravel, Some Fines.		
62		End of Log		

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Checked By: JBS

FIELD BOREHOLE LOG

BOREHOLE NO.: FSB-18 SVEID: SVE-G-ALT
TOTAL DEPTH: 60

PROJECT INFORMATION

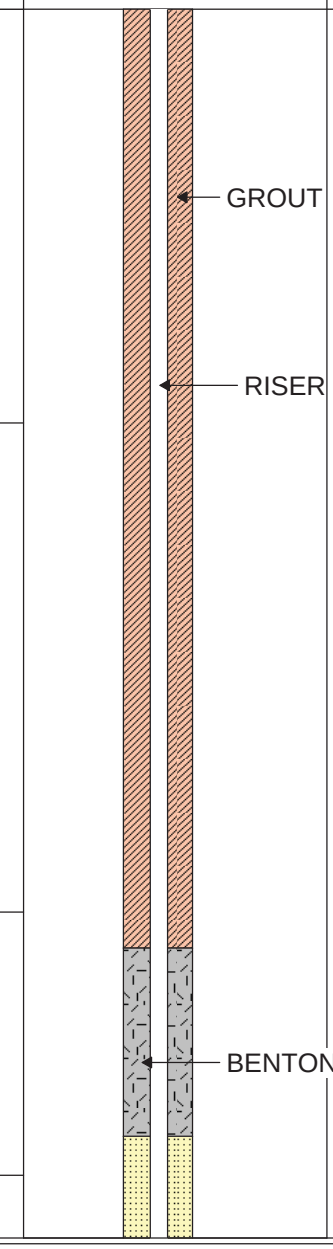
PROJECT: Dunn Field FSB
PROJECT NO.: 121842-004
SITE LOCATION: DUNN FIELD
PROJECT MANAGER: T. HOLMES
FIELD STAFF: J. SPERRY
BOREHOLE STARTED: 11/4/2010 07:00
BOREHOLE FINISHED: 11/4/2010 13:45

DRILLING INFORMATION

DRILLING CO.: WDC
DRILLER: Sam Rivera
DRILLING METHOD/RIG: SONIC
BOREHOLE DIAMETER: 6-INCH
GROUND SURFACE ELEVATION (FT MSL): 297.9
WATER DEPTH/ DATE: N/A
BOREHOLE USE: SOIL SAMPLING AND SVE WELL

NOTES: SVE well installed 11/4/10 with new 2-inch diameter Sched 40 PVC riser and a 25-foot section of 0.006-inch slot screen. Riser extended 2 feet above the ground surface and completed with a threaded coupling.

Depth (ft, bgs)	Soil Symbol	Soil Description	Well Completion	Well Description
10		**ML** Clayey Silt, 7.5YR 4/4 (Brown), Moist, Stiff, Medium Plasticity.	GROUT, RISER	
20		**CL** Silty Clay, 7.5YR 4/4 (Brown), Moist, Stiff, High Plasticity.		
30		**CL** Silty Clay, 7.5YR 4/4 (Brown), Moist, Stiff, High Plasticity, Trace Sand.	BENTONITE	



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Checked By: JBS

FIELD BOREHOLE LOG

BOREHOLE NO.: FSB-18 SVEID: SVE-G-ALT
TOTAL DEPTH: 60

Depth	Soil Symbol	Soil Description	Well Completion	Well Description
		SC Clayey Sand, 2.5YR 5/8 (Red), Moist, Stiff, Low Plasticity, Fine to Medium Grained Sand, Some Odor.		SAND PACK
		SC Clayey Sand, 2.5YR 5/8 (Red), Moist, Fine to medium grained, Some odor.		
		SP Gravelly Sand, 5YR 5/6 (Yellowish Red), Dry, Medium Grained, Trace Clay.		SCREEN
42		**SW** Sand, 7.5YR 7/8 (Reddish Yellow), Dry, Medium Grained, Soft.		
		SP Sand, 10YR 7/8 (Yellow), Moist, Fine to Medium Grained, Loose, Trace Clay.		
52				END CAP
		End of Log		
62				

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FIELD BOREHOLE LOG

BOREHOLE NO.: FSB-19
TOTAL DEPTH: 59

PROJECT INFORMATION

PROJECT: Dunn Field FSB
PROJECT NO.: 121842-004
SITE LOCATION: DUNN FIELD
PROJECT MANAGER: T. HOLMES
FIELD STAFF: J. SPERRY
BOREHOLE STARTED: 11/5/2010 13:00
BOREHOLE FINISHED: 11/6/2010 14:30

DRILLING INFORMATION

DRILLING CO.: WDC
DRILLER: Sam Rivera
DRILLING METHOD/RIG: SONIC
BOREHOLE DIAMETER: 6-INCH
GROUND SURFACE ELEVATION (FT MSL): 299.8
WATER DEPTH/ DATE: N/A
BOREHOLE USE: SOIL SAMPLING

NOTES: After samples collected, boring was filled with bentonite-cement grout from the bottom to ground surface using a side-discharge tremie pipe.

Depth (ft, bgs)	Soil Symbol	Soil Description	Well Completion	Well Description
10		**ML** Silt, 7.5YR 4/4 (Brown), Moist, Stiff, Low Plasticity, Trace Clay.	N/A	
20		**CL** Silty Clay, 10YR 4/4 (Dark Yellowish Brown), Moist , Stiff, Medium Plasticity.		
30		**CL** Silty Clay, 2.5YR 4/8 (Red), Moist, Stiff, Trace Fine Sand, Medium to High Plasticity, Oxidized.		

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Checked By: JBS

FIELD BOREHOLE LOG

BOREHOLE NO.: FSB-19
TOTAL DEPTH: 59

Depth	Soil Symbol	Soil Description	Well Completion	Well Description
		CL Sandy Clay, 2.5YR 4/8 (Red), Moist, Stiff, Medium Plasticity, Fine to Medium Grained Sand.		
		SC Clayey Sand, 7.5YR 6/8 (Reddish Yellow), Moist, Stiff, Fine Grained, Oxidized.		
		SC Clayey Sand, 2.5YR 5/6 (Red), Stiff, Fine to Medium Grained, Highly Oxidized.		
42		**SC** Clayey Sand, 2.5YR 5/6 (Red), Stiff, Fine to Medium Grained, Trace Gravel, Highly Oxidized.		
52		**SW** Sand, 7.5YR 6/8 (Reddish Yellow), Soft, Trace Gravel, Some Oxidiation.		
62		End of Log		

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Checked By: JBS

FIELD BOREHOLE LOG

BOREHOLE NO.: FSB-20 SVEID: SVE-G-SOUTH
TOTAL DEPTH: 60

PROJECT INFORMATION

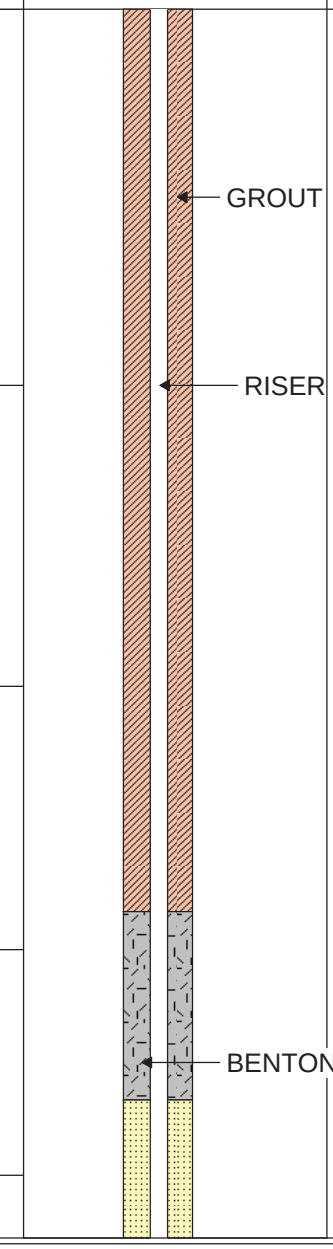
PROJECT: Dunn Field FSB
PROJECT NO.: 121842-004
SITE LOCATION: DUNN FIELD
PROJECT MANAGER: T. HOLMES
FIELD STAFF: J. SPERRY
BOREHOLE STARTED: 11/5/2010 14:30
BOREHOLE FINISHED: 11/5/2010 07:30

DRILLING INFORMATION

DRILLING CO.: WDC
DRILLER: Sam Rivera
DRILLING METHOD/RIG: SONIC
BOREHOLE DIAMETER: 6-INCH
GROUND SURFACE ELEVATION (FT MSL): 297.2
WATER DEPTH/ DATE: N/A
BOREHOLE USE: SOIL SAMPLING AND SVE WELL

NOTES: SVE well installed 11/5/10 with new 2-inch diameter Sched 40 PVC riser and a 25-foot section of 0.006-inch slot screen. Riser extended 2 feet above the ground surface and completed with a threaded coupling.

Depth (ft, bgs)	Soil Symbol	Soil Description	Well Completion	Well Description
0		**CL** Silty Clay, 7.5YR 4/6 (Strong Brown), Dry, Loose, Medium Plasticity.	GROUT	
10		**ML** Clayey Silt, 7.5YR 4/3 (Brown), Moist, Stiff, Low Plasticity	RISER	
20		**CL** Silty Clay, 7.5YR 5/4 (Brown), Moist, Stiff, Medium Plasticity, Mottles.t		
		CL Silty Clay, 7.5 YR 5/4 (Brown), Moist, Stiff, Trace Medium Grained Sand, Medium Plasticity.	BENTONITE	
30				



Created By: WTR
Checked By: JBS

FIELD BOREHOLE LOG

BOREHOLE NO.: FSB-20 SVEID: SVE-G-SOUTH
TOTAL DEPTH: 60

Depth	Soil Symbol	Soil Description	Well Completion	Well Description
		SC Clayey Sand, 2.5YR 5/8 (Red), Moist, Stiff, Fine to Medium Grained Sand, Trace Gravel, Low Plasticity, Oxidized.	SAND PACK	
		SC Clayey Sand, 2.5YR 4/8 (Red), Moist, Stiff, Fine to Medium Grained Sand, low Plasticity, Trace Gravel, Heavily Oxidized.	SCREEN	
42		**SW** Sand, 7.5YR 7/8 (Reddish Yellow), Moist, Fine to Coarse Grained, Well Sorted.		
		SW Sand, 7.5YR 6/8 (Reddish Yellow), Moist, Medium to Coarse Grained, Trace Rounded Gravel, Well Graded.		
52			END CAP	
		End of Log		
62				

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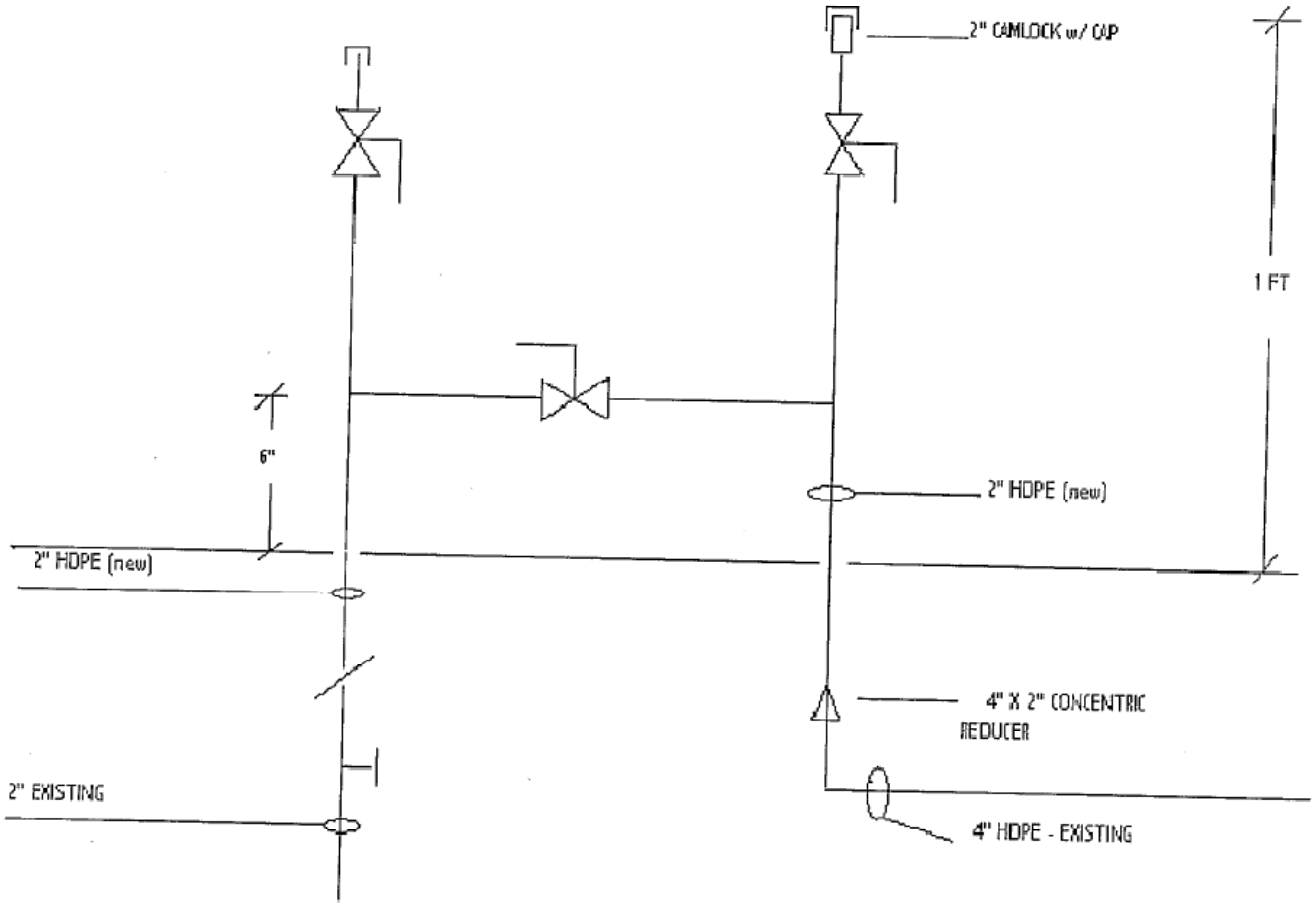
Appendix B

SVE Well Modification

Schematic for Modification to Existing SVE Well Connection



Photograph 1: Two-inch well head “T”-fitting with connection for conveyance line capped.

Photograph 2: Four-inch conveyance line with reducing fitting and elbow attached.

Photograph 3: Four-inch conveyance line with riser and “T”-fitting for aboveground connection to SVE well.

Photograph 4: Finished connection. SVE well is on the left. Valves on each line and fitting on conveyance line riser to connect new SVE wells.

Photograph 5: P-traps were installed on new SVE wells to keep out rain and dirt/debris. P-traps can be removed to attach wells to conveyance piping via flexible hose.

Photograph 6: Vents were installed on SVE-G line to aid condensate removal.

Appendix C

Analytical Results

TABLE C-1
SOIL ANALYTICAL RESULTS
REBOUND TEST AND CONFIRMATION SOIL SAMPLING
FLUVIAL SOIL VAPOR EXTRACTION SYSTEM
Dunn Field - Defense Depot Memphis, Tennessee

	Location	FSB-01T	FSB-01M	FSB-01B	FSB-02T	FSB-02M	FSB-02B	FSB-03T
	Date	11/12/2010	11/12/2010	11/12/2010	11/13/2010	11/13/2010	11/13/2010	11/13/2010
	Id	TA1-FSB-01T	TA1-FSB-01M	TA1-FSB-01B	TA1-FSB-02T	TA1-FSB-02M	TA1-FSB-02B	TA1-FSB-03T
	Lab ID	L10110451-01	L10110451-02	L10110451-03	L10110500-01	L10110500-02	L10110500-03	L10110500-04
Analyte	**units**							
1,1,1,2-Tetrachloroethane	mg/kg	<0.00275	<0.00323	<0.00338	<0.00293	<0.00339	<0.00322	<0.00308
1,1,1-Trichloroethane	mg/kg	<0.00459	<0.00539	<0.00564	<0.00489	<0.00565	<0.00537	<0.00514
1,1,2,2-Tetrachloroethane	mg/kg	<0.00275	<0.00323	<0.00338	0.0527	0.00897	0.00144 F	0.0272
1,1,2-Trichloroethane	mg/kg	<0.00459	<0.00539	<0.00564	0.00107 F	<0.00565	<0.00537	<0.00514
1,1-Dichloroethane	mg/kg	<0.00459	<0.00539	<0.00564	<0.00489	<0.00565	<0.00537	<0.00514
1,1-Dichloroethene	mg/kg	<0.00551	<0.00647	<0.00676	<0.00587	<0.00678	<0.00645	<0.00617
1,1-Dichloropropene	mg/kg	<0.00459	<0.00539	<0.00564	<0.00489	<0.00565	<0.00537	<0.00514
1,2,3-Trichlorobenzene	mg/kg	<0.00459	<0.00539	<0.00564	<0.00489	<0.00565	<0.00537	<0.00514
1,2,3-Trichloropropane	mg/kg	<0.00459	<0.00539	<0.00564	<0.00489	<0.00565	<0.00537	<0.00514
1,2,4-Trichlorobenzene	mg/kg	<0.00459	<0.00539	<0.00564	<0.00489	<0.00565	<0.00537	<0.00514
1,2,4-Trimethylbenzene	mg/kg	<0.00551	<0.00647	<0.00676	<0.00587	<0.00678	<0.00645	<0.00617
1,2-Dibromo-3-chloropropane	mg/kg	<0.00918	<0.0108	<0.0113	<0.00978	<0.0113	<0.0107	<0.0103
1,2-Dibromoethane	mg/kg	<0.00459	<0.00539	<0.00564	<0.00489	<0.00565	<0.00537	<0.00514
1,2-Dichlorobenzene	mg/kg	<0.00459	<0.00539	<0.00564	<0.00489	<0.00565	<0.00537	<0.00514
1,2-Dichloroethane	mg/kg	<0.00275	<0.00323	<0.00338	<0.00293	<0.00339	<0.00322	<0.00308
1,2-Dichloropropane	mg/kg	<0.00459	<0.00539	<0.00564	<0.00489	<0.00565	<0.00537	<0.00514
1,3,5-Trimethylbenzene	mg/kg	<0.00459	<0.00539	<0.00564	<0.00489	<0.00565	<0.00537	<0.00514
1,3-Dichlorobenzene	mg/kg	<0.00551	<0.00647	<0.00676	<0.00587	<0.00678	<0.00645	<0.00617
1,3-Dichloropropane	mg/kg	<0.00184	<0.00216	<0.00225	<0.00196	<0.00226	<0.00215	<0.00206
1,4-Dichlorobenzene	mg/kg	<0.00184	<0.00216	<0.00225	<0.00196	<0.00226	<0.00215	<0.00206
1-Chlorohexane	mg/kg	<0.00459	<0.00539	<0.00564	<0.00489	<0.00565	<0.00537	<0.00514
2,2-Dichloropropane	mg/kg	<0.00459	<0.00539	<0.00564	<0.00489	<0.00565	<0.00537	<0.00514
2-Chlorotoluene	mg/kg	<0.00459	<0.00539	<0.00564	<0.00489	<0.00565	<0.00537	<0.00514
2-Hexanone	mg/kg	<0.0184	<0.0216	<0.0225	<0.0196	<0.0226	<0.0215	<0.0206
4-Chlorotoluene	mg/kg	<0.00459	<0.00539	<0.00564	<0.00489	<0.00565	<0.00537	<0.00514
Acetone	mg/kg	0.012 F	0.0177 F	0.0197 F	<0.0196	0.0125 F	<0.0215	0.00941 F
Benzene	mg/kg	<0.00184	<0.00216	<0.00225	<0.00196	<0.00226	<0.00215	<0.00206
Bromobenzene	mg/kg	<0.00459	<0.00539	<0.00564	<0.00489	<0.00565	<0.00537	<0.00514
Bromochloromethane	mg/kg	<0.00459	<0.00539	<0.00564	<0.00489	<0.00565	<0.00537	<0.00514
Bromodichloromethane	mg/kg	<0.00184	<0.00216	<0.00225	<0.00196	<0.00226	<0.00215	<0.00206
Bromoform	mg/kg	<0.00459	<0.00539	<0.00564	<0.00489	<0.00565	<0.00537	<0.00514
Bromomethane	mg/kg	<0.00459	<0.00539	<0.00564	<0.00489	<0.00565	<0.00537	<0.00514
Carbon disulfide	mg/kg	<0.00459	<0.00539	<0.00564	<0.00489	<0.00565	<0.00537	<0.00514
Carbon tetrachloride	mg/kg	<0.00459	<0.00539	<0.00564	<0.00489	<0.00565	<0.00537	<0.00514
Chlorobenzene	mg/kg	<0.00184	<0.00216	<0.00225	<0.00196	<0.00226	<0.00215	<0.00206
Chloroethane	mg/kg	<0.00459	<0.00539	<0.00564	<0.00489	<0.00565	<0.00537	<0.00514
Chloroform	mg/kg	<0.00184	<0.00216	<0.00225	<0.00196	<0.00226	<0.00215	<0.00206
Chloromethane	mg/kg	<0.00459	<0.00539	<0.00564	<0.00489	<0.00565	<0.00537	<0.00514
cis-1,2-Dichloroethene	mg/kg	<0.00459	<0.00539	<0.00564	0.00319 F	<0.00565	<0.00537	0.000765 F
cis-1,3-Dichloropropene	mg/kg	<0.00275	<0.00323	<0.00338	<0.00293	<0.00339	<0.00322	<0.00308
Dibromochloromethane	mg/kg	<0.00275	<0.00323	<0.00338	<0.00293	<0.00339	<0.00322	<0.00308
Dibromomethane	mg/kg	<0.00459	<0.00539	<0.00564	<0.00489	<0.00565	<0.00537	<0.00514
Dichlorodifluoromethane	mg/kg	<0.00459	<0.00539	<0.00564	<0.00489	<0.00565	<0.00537	<0.00514
Ethylbenzene	mg/kg	<0.00459	<0.00539	<0.00564	<0.00489	<0.00565	<0.00537	<0.00514
Hexachlorobutadiene	mg/kg	<0.00275	<0.00323	<0.00338	<0.00293	<0.00339	<0.00322	<0.00308
Isopropylbenzene	mg/kg	<0.00459	<0.00539	<0.00564	<0.00489	<0.00565	<0.00537	<0.00514
m-,p-Xylene	mg/kg	<0.00459	<0.00539	<0.00564	<0.00489	<0.00565	<0.00537	<0.00514
MEK (2-Butanone)	mg/kg	<0.0184	<0.0216	<0.0225	<0.0196	<0.0226	<0.0215	<0.0206
Methyl t-butyl ether (MTBE)	mg/kg	<0.0184	<0.0216	<0.0225	<0.0196	<0.0226	<0.0215	<0.0206
Methylene chloride	mg/kg	0.00164 F	0.00292 F	0.00228 F	0.00808	0.00262 F	0.0121	0.00198 F
MIBK (methyl isobutyl ketone)	mg/kg	<0.0184	<0.0216	<0.0225	<0.0196	<0.0226	<0.0215	<0.0206
Naphthalene	mg/kg	<0.00459	<0.00539	<0.00564	<0.00489	<0.00565	<0.00537	<0.00514
n-Butylbenzene	mg/kg	<0.00459	<0.00539	<0.00564	<0.00489	<0.00565	<0.00537	<0.00514
n-Propylbenzene	mg/kg	<0.00459	<0.00539	<0.00564	<0.00489	<0.00565	<0.00537	<0.00514
o-Xylene	mg/kg	<0.00459	<0.00539	<0.00564	<0.00489	<0.00565	<0.00537	<0.00514
p-Isopropyltoluene	mg/kg	<0.00551	<0.00647	<0.00676	<0.00587	<0.00678	<0.00645	<0.00617
sec-Butylbenzene	mg/kg	<0.00459	<0.00539	<0.00564	<0.00489	<0.00565	<0.00537	<0.00514
Styrene	mg/kg	<0.00459	<0.00539	<0.00564	<0.00489	<0.00565	<0.00537	<0.00514
tert-Butylbenzene	mg/kg	<0.00459	<0.00539	<0.00564	<0.00489	<0.00565	<0.00537	<0.00514
Tetrachloroethene	mg/kg	<0.00459	<0.00539	<0.00564	<0.00489	<0.00565	<0.00537	<0.00514
Toluene	mg/kg	<0.00459	<0.00539	<0.00564	<0.00489	<0.00565	<0.00537	<0.00514
Total Xylenes	mg/kg	<0.00459	<0.00539	<0.00564	<0.00489	<0.00565	<0.00537	<0.00514
trans-1,2-Dichloroethene	mg/kg	<0.00459	<0.00539	<0.00564	0.000534 F	<0.00565	<0.00537	<0.00514
trans-1,3-Dichloropropene	mg/kg	<0.00459	<0.00539	<0.00564	<0.00489	<0.00565	<0.00537	<0.00514
Trichloroethene	mg/kg	<0.00459	<0.00539	<0.00564	0.0133	<0.00565	<0.00537	0.00191 F
Trichlorofluoromethane	mg/kg	<0.00459	<0.00539	<0.00564	<0.00489	<0.00565	<0.00537	<0.00514
Vinyl acetate	mg/kg	<0.00918	<0.0108	<0.0113	<0.00978	<0.0113	<0.0107	<0.0103
Vinyl chloride	mg/kg	<0.00459	<0.00539	<0.00564	<0.00489	<0.00565	<0.00537	<0.00514

DQE Flags:
F: Concentration below RL but above MDL
J: Analyte identified, but quantitation estimated.
Q: QC criteria failed, further review required
M: Concentration estimated due to matrix effect
<: Analyte not detected above RL

TABLE C-1
SOIL ANALYTICAL RESULTS
REBOUND TEST AND CONFIRMATION SOIL SAMPLING
FLUVIAL SOIL VAPOR EXTRACTION SYSTEM
Dunn Field - Defense Depot Memphis, Tennessee

	Location	FSB-03M	FSB-03B	FSB-04T	FSB-04M	FSB-04B	FSB-04T DUP	FSB-05T
	Date	11/13/2010	11/13/2010	11/12/2010	11/12/2010	11/12/2010	11/12/2010	11/13/2010
	Id	TA1-FSB-03M	TA1-FSB-03B	TA1-FSB-04T	TA1-FSB-04M	TA1-FSB-04B	TA1-FSB-04T	TA1-FSB-05T
	Lab ID	L10110500-05	L10110500-06	L10110451-04	L10110451-05	L10110451-06	L10110451-07	L10110500-07
Analyte	**units**							
1,1,1,2-Tetrachloroethane	mg/kg	<0.00313	<0.00315	<0.00317	<0.00356	<0.00302	<0.00298	<0.00273
1,1,1-Trichloroethane	mg/kg	<0.00522	<0.00524	<0.00528	<0.00594	<0.00504	<0.00497	<0.00454
1,1,2,2-Tetrachloroethane	mg/kg	0.0029 F	0.000737 F	<0.00317	<0.00356	<0.00302	<0.00298	<0.00273
1,1,2-Trichloroethane	mg/kg	<0.00522	<0.00524	<0.00528	<0.00594	<0.00504	<0.00497	<0.00454
1,1-Dichloroethane	mg/kg	<0.00522	<0.00524	<0.00528	<0.00594	<0.00504	<0.00497	<0.00454
1,1-Dichloroethene	mg/kg	<0.00627	<0.00629	<0.00634	<0.00713	<0.00605	<0.00596	<0.00545
1,1-Dichloropropene	mg/kg	<0.00522	<0.00524	<0.00528	<0.00594	<0.00504	<0.00497	<0.00454
1,2,3-Trichlorobenzene	mg/kg	<0.00522	<0.00524	<0.00528	<0.00594	<0.00504	<0.00497	<0.00454
1,2,3-Trichloropropane	mg/kg	<0.00522	<0.00524	<0.00528	<0.00594	<0.00504	<0.00497	<0.00454
1,2,4-Trichlorobenzene	mg/kg	<0.00522	<0.00524	<0.00528	<0.00594	<0.00504	<0.00497	<0.00454
1,2,4-Trimethylbenzene	mg/kg	<0.00627	<0.00629	<0.00634	<0.00713	<0.00605	<0.00596	<0.00545
1,2-Dibromo-3-chloropropane	mg/kg	<0.0104	<0.0105	<0.0106	<0.0119	<0.0101	<0.00994	<0.00909
1,2-Dibromoethane	mg/kg	<0.00522	<0.00524	<0.00528	<0.00594	<0.00504	<0.00497	<0.00454
1,2-Dichlorobenzene	mg/kg	<0.00522	<0.00524	<0.00528	<0.00594	<0.00504	<0.00497	<0.00454
1,2-Dichloroethane	mg/kg	<0.00313	<0.00315	<0.00317	<0.00356	<0.00302	<0.00298	<0.00273
1,2-Dichloropropane	mg/kg	<0.00522	<0.00524	<0.00528	<0.00594	<0.00504	<0.00497	<0.00454
1,3,5-Trimethylbenzene	mg/kg	<0.00522	<0.00524	<0.00528	<0.00594	<0.00504	<0.00497	<0.00454
1,3-Dichlorobenzene	mg/kg	<0.00627	<0.00629	<0.00634	<0.00713	<0.00605	<0.00596	<0.00545
1,3-Dichloropropane	mg/kg	<0.00209	<0.0021	<0.00211	<0.00238	<0.00202	<0.00199	<0.00182
1,4-Dichlorobenzene	mg/kg	<0.00209	<0.0021	<0.00211	<0.00238	<0.00202	<0.00199	<0.00182
1-Chlorohexane	mg/kg	<0.00522	<0.00524	<0.00528	<0.00594	<0.00504	<0.00497	<0.00454
2,2-Dichloropropane	mg/kg	<0.00522	<0.00524	<0.00528	<0.00594	<0.00504	<0.00497	<0.00454
2-Chlorotoluene	mg/kg	<0.00522	<0.00524	<0.00528	<0.00594	<0.00504	<0.00497	<0.00454
2-Hexanone	mg/kg	<0.0209	<0.021	<0.0211	<0.0238	<0.0202	<0.0199	<0.0182
4-Chlorotoluene	mg/kg	<0.00522	<0.00524	<0.00528	<0.00594	<0.00504	<0.00497	<0.00454
Acetone	mg/kg	0.0148 F	0.0149 F	0.0215	0.0273	0.0237	0.0161 F	0.00594 F
Benzene	mg/kg	<0.00209	<0.0021	<0.00211	<0.00238	<0.00202	<0.00199	<0.00182
Bromobenzene	mg/kg	<0.00522	<0.00524	<0.00528	<0.00594	<0.00504	<0.00497	<0.00454
Bromochloromethane	mg/kg	<0.00522	<0.00524	<0.00528	<0.00594	<0.00504	<0.00497	<0.00454
Bromodichloromethane	mg/kg	<0.00209	<0.0021	<0.00211	<0.00238	<0.00202	<0.00199	<0.00182
Bromoform	mg/kg	<0.00522	<0.00524	<0.00528	<0.00594	<0.00504	<0.00497	<0.00454
Bromomethane	mg/kg	<0.00522	<0.00524	<0.00528	<0.00594	<0.00504	<0.00497	<0.00454
Carbon disulfide	mg/kg	<0.00522	<0.00524	<0.00528	<0.00594	<0.00504	<0.00497	<0.00454
Carbon tetrachloride	mg/kg	<0.00522	<0.00524	<0.00528	<0.00594	<0.00504	<0.00497	<0.00454
Chlorobenzene	mg/kg	<0.00209	<0.0021	<0.00211	<0.00238	<0.00202	<0.00199	<0.00182
Chloroethane	mg/kg	<0.00522	<0.00524	<0.00528	<0.00594	<0.00504	<0.00497	<0.00454
Chloroform	mg/kg	<0.00209	<0.0021	<0.00211	<0.00238	<0.00202	<0.00199	<0.00182
Chloromethane	mg/kg	<0.00522	<0.00524	<0.00528	<0.00594	<0.00504	<0.00497	<0.00454
cis-1,2-Dichloroethene	mg/kg	<0.00522	<0.00524	<0.00528	<0.00594	<0.00504	<0.00497	<0.00454
cis-1,3-Dichloropropene	mg/kg	<0.00313	<0.00315	<0.00317	<0.00356	<0.00302	<0.00298	<0.00273
Dibromochloromethane	mg/kg	<0.00313	<0.00315	<0.00317	<0.00356	<0.00302	<0.00298	<0.00273
Dibromomethane	mg/kg	<0.00522	<0.00524	<0.00528	<0.00594	<0.00504	<0.00497	<0.00454
Dichlorodifluoromethane	mg/kg	<0.00522	<0.00524	<0.00528	<0.00594	<0.00504	<0.00497	<0.00454
Ethylbenzene	mg/kg	<0.00522	<0.00524	<0.00528	<0.00594	<0.00504	<0.00497	<0.00454
Hexachlorobutadiene	mg/kg	<0.00313	<0.00315	<0.00317	<0.00356	<0.00302	<0.00298	<0.00273
Isopropylbenzene	mg/kg	<0.00522	<0.00524	<0.00528	<0.00594	<0.00504	<0.00497	<0.00454
m-,p-Xylene	mg/kg	<0.00522	<0.00524	<0.00528	<0.00594	<0.00504	<0.00497	0.000456 F
MEK (2-Butanone)	mg/kg	<0.0209	<0.021	<0.0211	<0.0238	<0.0202	<0.0199	<0.0182
Methyl t-butyl ether (MTBE)	mg/kg	<0.0209	<0.021	<0.0211	<0.0238	<0.0202	<0.0199	<0.0182
Methylene chloride	mg/kg	0.00208 F	0.00306 F	0.0017 F	0.00679	0.00265 F	0.00237 F	0.0142
MIBK (methyl isobutyl ketone)	mg/kg	<0.0209	<0.021	<0.0211	<0.0238	<0.0202	<0.0199	<0.0182
Naphthalene	mg/kg	<0.00522	<0.00524	<0.00528	<0.00594	<0.00504	<0.00497	<0.00454
n-Butylbenzene	mg/kg	<0.00522	<0.00524	<0.00528	<0.00594	<0.00504	<0.00497	<0.00454
n-Propylbenzene	mg/kg	<0.00522	<0.00524	<0.00528	<0.00594	<0.00504	<0.00497	<0.00454
o-Xylene	mg/kg	<0.00522	<0.00524	<0.00528	<0.00594	<0.00504	<0.00497	<0.00454
p-Isopropyltoluene	mg/kg	<0.00627	<0.00629	<0.00634	<0.00713	<0.00605	<0.00596	<0.00545
sec-Butylbenzene	mg/kg	<0.00522	<0.00524	<0.00528	<0.00594	<0.00504	<0.00497	<0.00454
Styrene	mg/kg	<0.00522	<0.00524	<0.00528	<0.00594	<0.00504	<0.00497	<0.00454
tert-Butylbenzene	mg/kg	<0.00522	<0.00524	<0.00528	<0.00594	<0.00504	<0.00497	<0.00454
Tetrachloroethene	mg/kg	<0.00522	<0.00524	<0.00528	<0.00594	<0.00504	<0.00497	<0.00454
Toluene	mg/kg	<0.00522	<0.00524	<0.00528	0.000782 F	<0.00504	<0.00497	<0.00454
Total Xylenes	mg/kg	<0.00522	<0.00524	<0.00528	<0.00594	<0.00504	<0.00497	0.000456 F
trans-1,2-Dichloroethene	mg/kg	<0.00522	<0.00524	<0.00528	<0.00594	<0.00504	<0.00497	<0.00454
trans-1,3-Dichloropropene	mg/kg	<0.00522	<0.00524	<0.00528	<0.00594	<0.00504	<0.00497	<0.00454
Trichloroethene	mg/kg	0.00164 F	<0.00524	<0.00528	<0.00594	<0.00504	<0.00497	<0.00454
Trichlorofluoromethane	mg/kg	<0.00522	<0.00524	<0.00528	<0.00594	<0.00504	<0.00497	<0.00454
Vinyl acetate	mg/kg	<0.0104	<0.0105	<0.0106	<0.0119	<0.0101	<0.00994	<0.00909
Vinyl chloride	mg/kg	<0.00522	<0.00524	<0.00528	<0.00594	<0.00504	<0.00497	<0.00454

DQE Flags:
F: Concentration below RL but above MDL
J: Analyte identified, but quantitation estimated.
Q: QC criteria failed, further review required
M: Concentration estimated due to matrix effect
<: Analyte not detected above RL

TABLE C-1
SOIL ANALYTICAL RESULTS
REBOUND TEST AND CONFIRMATION SOIL SAMPLING
FLUVIAL SOIL VAPOR EXTRACTION SYSTEM
Dunn Field - Defense Depot Memphis, Tennessee

	Location	FSB-05M	FSB-05B	FSB-06T	FSB-06M	FSB-06B	FSB-07T	FSB-07M
	Date	11/13/2010	11/13/2010	11/11/2010	11/11/2010	11/11/2010	11/11/2010	11/11/2010
	Id	TA1-FSB-05M	TA1-FSB-05B	TA1-FSB-06T	TA1-FSB-06M	TA1-FSB-06B	TA1-FSB-07T	TA1-FSB-07M
	Lab ID	L10110500-08	L10110500-09	L10110431-01	L10110431-02	L10110431-03	L10110431-04	L10110431-05
Analyte	**units**							
1,1,1,2-Tetrachloroethane	mg/kg	<0.00321	<0.00318	<0.00304	<0.00333	<0.00326	<0.00343	<0.00314 M
1,1,1-Trichloroethane	mg/kg	<0.00535	<0.00529	<0.00506	<0.00555	<0.00543	<0.00571	<0.00523 M
1,1,2,2-Tetrachloroethane	mg/kg	<0.00321	<0.00318	<0.00304	<0.00333	<0.00326	<0.00343	<0.00314 M
1,1,2-Trichloroethane	mg/kg	<0.00535	<0.00529	<0.00506	<0.00555	<0.00543	<0.00571	<0.00523 M
1,1-Dichloroethane	mg/kg	<0.00535	<0.00529	<0.00506	<0.00555	<0.00543	<0.00571	<0.00523 M
1,1-Dichloroethene	mg/kg	<0.00641	<0.00635	<0.00608	<0.00666	<0.00651	<0.00686	<0.00628 M
1,1-Dichloropropene	mg/kg	<0.00535	<0.00529	<0.00506	<0.00555	<0.00543	<0.00571	<0.00523 M
1,2,3-Trichlorobenzene	mg/kg	<0.00535	<0.00529	<0.00506	<0.00555	<0.00543	<0.00571	<0.00523 M
1,2,3-Trichloropropane	mg/kg	<0.00535	<0.00529	<0.00506	<0.00555	<0.00543	<0.00571	<0.00523 M
1,2,4-Trichlorobenzene	mg/kg	<0.00535	<0.00529	<0.00506	<0.00555	<0.00543	<0.00571	<0.00523 M
1,2,4-Trimethylbenzene	mg/kg	<0.00641	<0.00635	<0.00608	<0.00666	<0.00651	<0.00686	<0.00628 M
1,2-Dibromo-3-chloropropane	mg/kg	<0.0107	<0.0106	<0.0101	<0.0111	<0.0109	<0.0114	<0.0105 M
1,2-Dibromoethane	mg/kg	<0.00535	<0.00529	<0.00506	<0.00555	<0.00543	<0.00571	<0.00523 M
1,2-Dichlorobenzene	mg/kg	<0.00535	<0.00529	<0.00506	<0.00555	<0.00543	<0.00571	<0.00523 M
1,2-Dichloroethane	mg/kg	<0.00321	<0.00318	<0.00304	<0.00333	<0.00326	<0.00343	<0.00314 M
1,2-Dichloropropane	mg/kg	<0.00535	<0.00529	<0.00506	<0.00555	<0.00543	<0.00571	<0.00523 M
1,3,5-Trimethylbenzene	mg/kg	<0.00535	<0.00529	<0.00506	<0.00555	<0.00543	<0.00571	<0.00523 M
1,3-Dichlorobenzene	mg/kg	<0.00641	<0.00635	<0.00608	<0.00666	<0.00651	<0.00686	<0.00628 M
1,3-Dichloropropane	mg/kg	<0.00214	<0.00212	<0.00203	<0.00222	<0.00217	<0.00229	<0.00209 M
1,4-Dichlorobenzene	mg/kg	<0.00214	<0.00212	<0.00203	<0.00222	<0.00217	<0.00229	<0.00209 M
1-Chlorohexane	mg/kg	<0.00535	<0.00529	<0.00506	<0.00555	<0.00543	<0.00571	<0.00523 M
2,2-Dichloropropane	mg/kg	<0.00535	<0.00529	<0.00506	<0.00555	<0.00543	<0.00571	<0.00523 M
2-Chlorotoluene	mg/kg	<0.00535	<0.00529	<0.00506	<0.00555	<0.00543	<0.00571	<0.00523 M
2-Hexanone	mg/kg	<0.0214	<0.0212	<0.0203 Q	<0.0222 Q	<0.0217 Q	<0.0229 Q	<0.0209 Q
4-Chlorotoluene	mg/kg	<0.00535	<0.00529	<0.00506	<0.00555	<0.00543	<0.00571	<0.00523 M
Acetone	mg/kg	<0.0214	0.00748 F	<0.0203 Q	0.00777 Q	<0.0217 Q	<0.0229 Q	<0.0209 Q
Benzene	mg/kg	<0.00214	<0.00212	<0.00203	<0.00222	<0.00217	<0.00229	<0.00209 M
Bromobenzene	mg/kg	<0.00535	<0.00529	<0.00506	<0.00555	<0.00543	<0.00571	<0.00523 M
Bromochloromethane	mg/kg	<0.00535	<0.00529	<0.00506	<0.00555	<0.00543	<0.00571	<0.00523 M
Bromodichloromethane	mg/kg	<0.00214	<0.00212	<0.00203	<0.00222	<0.00217	<0.00229	<0.00209 M
Bromoform	mg/kg	<0.00535	<0.00529	<0.00506	<0.00555	<0.00543	<0.00571	<0.00523 M
Bromomethane	mg/kg	<0.00535	<0.00529	<0.00506	<0.00555	<0.00543	<0.00571	<0.00523 M
Carbon disulfide	mg/kg	<0.00535	<0.00529	<0.00506	<0.00555	<0.00543	<0.00571	<0.00523 M
Carbon tetrachloride	mg/kg	<0.00535	<0.00529	<0.00506	<0.00555	<0.00543	<0.00571	<0.00523 M
Chlorobenzene	mg/kg	<0.00214	<0.00212	<0.00203	<0.00222	<0.00217	<0.00229	<0.00209 M
Chloroethane	mg/kg	<0.00535	<0.00529	<0.00506	<0.00555	<0.00543	<0.00571	<0.00523 M
Chloroform	mg/kg	<0.00214	<0.00212	<0.00203	<0.00222	<0.00217	<0.00229	<0.00209 M
Chloromethane	mg/kg	<0.00535	<0.00529	<0.00506	<0.00555	<0.00543	<0.00571	<0.00523 M
cis-1,2-Dichloroethene	mg/kg	<0.00535	<0.00529	<0.00506	<0.00555	<0.00543	<0.00571	<0.00523 M
cis-1,3-Dichloropropene	mg/kg	<0.00321	<0.00318	<0.00304	<0.00333	<0.00326	<0.00343	<0.00314 M
Dibromochloromethane	mg/kg	<0.00321	<0.00318	<0.00304	<0.00333	<0.00326	<0.00343	<0.00314 M
Dibromomethane	mg/kg	<0.00535	<0.00529	<0.00506	<0.00555	<0.00543	<0.00571	<0.00523 M
Dichlorodifluoromethane	mg/kg	<0.00535	<0.00529	<0.00506	<0.00555	<0.00543	<0.00571	<0.00523 M
Ethylbenzene	mg/kg	<0.00535	<0.00529	<0.00506	<0.00555	<0.00543	<0.00571	<0.00523 M
Hexachlorobutadiene	mg/kg	<0.00321	<0.00318	<0.00304	<0.00333	<0.00326	<0.00343	<0.00314 M
Isopropylbenzene	mg/kg	<0.00535	<0.00529	<0.00506	<0.00555	<0.00543	<0.00571	<0.00523 M
m-,p-Xylene	mg/kg	<0.00535	<0.00529	<0.00506	<0.00555	<0.00543	<0.00571	<0.00523 M
MEK (2-Butanone)	mg/kg	<0.0214	<0.0212	<0.0203	<0.0222	<0.0217	<0.0229	<0.0209 M
Methyl t-butyl ether (MTBE)	mg/kg	<0.0214	<0.0212	<0.0203	<0.0222	<0.0217	<0.0229	<0.0209 M
Methylene chloride	mg/kg	0.00972	0.0101	0.0061	0.00484 F	0.00822	0.0132	0.0103 M
MIBK (methyl isobutyl ketone)	mg/kg	<0.0214	<0.0212	<0.0203	<0.0222	<0.0217	<0.0229	<0.0209 M
Naphthalene	mg/kg	<0.00535	<0.00529	<0.00506	<0.00555	<0.00543	<0.00571	<0.00523 M
n-Butylbenzene	mg/kg	<0.00535	<0.00529	<0.00506	<0.00555	<0.00543	<0.00571	<0.00523 M
n-Propylbenzene	mg/kg	<0.00535	<0.00529	<0.00506	<0.00555	<0.00543	<0.00571	<0.00523 M
o-Xylene	mg/kg	<0.00535	<0.00529	<0.00506	<0.00555	<0.00543	<0.00571	<0.00523 M
p-Isopropyltoluene	mg/kg	<0.00641	<0.00635	<0.00608	<0.00666	<0.00651	<0.00686	<0.00628 M
sec-Butylbenzene	mg/kg	<0.00535	<0.00529	<0.00506	<0.00555	<0.00543	<0.00571	<0.00523 M
Styrene	mg/kg	<0.00535	<0.00529	<0.00506	<0.00555	<0.00543	<0.00571	<0.00523 M
tert-Butylbenzene	mg/kg	<0.00535	<0.00529	<0.00506	<0.00555	<0.00543	<0.00571	<0.00523 M
Tetrachloroethene	mg/kg	<0.00535	<0.00529	<0.00506	<0.00555	<0.00543	<0.00571	<0.00523 M
Toluene	mg/kg	<0.00535	<0.00529	<0.00506	<0.00555	<0.00543	<0.00571	0.000632 M
Total Xylenes	mg/kg	<0.00535	<0.00529	<0.00506	<0.00555	<0.00543	<0.00571	<0.00523 M
trans-1,2-Dichloroethene	mg/kg	<0.00535	<0.00529	<0.00506	<0.00555	<0.00543	<0.00571	<0.00523 M
trans-1,3-Dichloropropene	mg/kg	<0.00535	<0.00529	<0.00506	<0.00555	<0.00543	<0.00571	<0.00523 M
Trichloroethene	mg/kg	<0.00535	<0.00529	<0.00506	<0.00555	<0.00543	<0.00571	<0.00523 M
Trichlorofluoromethane	mg/kg	<0.00535	<0.00529	<0.00506	<0.00555	<0.00543	<0.00571	<0.00523 M
Vinyl acetate	mg/kg	<0.0107	<0.0106	<0.0101 Q	<0.0111 Q	<0.0109 Q	<0.0114 Q	<0.0105 Q
Vinyl chloride	mg/kg	<0.00535	<0.00529	<0.00506	<0.00555	<0.00543	<0.00571	<0.00523 M

DQE Flags:
F: Concentration below RL but above MDL
J: Analyte identified, but quantitation estimated.
Q: QC criteria failed, further review required
M: Concentration estimated due to matrix effect
<: Analyte not detected above RL

TABLE C-1
SOIL ANALYTICAL RESULTS
REBOUND TEST AND CONFIRMATION SOIL SAMPLING
FLUVIAL SOIL VAPOR EXTRACTION SYSTEM
Dunn Field - Defense Depot Memphis, Tennessee

	Location	FSB-07B	FSB-07B DUP	FSB-08T	FSB-08M	FSB-08B	FSB-09T	FSB-09M
	Date	11/11/2010	11/11/2010	11/10/2010	11/10/2010	11/10/2010	11/10/2010	11/10/2010
	Id	TA1-FSB-07B	TA1-FSB-07B	TA1-FSB-08T	TA1-FSB-08M	TA1-FSB-08B	TA1-FSB-09T	TA1-FSB-09M
	Lab ID	L10110431-08	L10110431-09	L10110394-01	L10110394-02	L10110394-03	L10110394-04	L10110394-05
Analyte	**units**							
1,1,1,2-Tetrachloroethane	mg/kg	<0.0035	<0.00345	<0.00317	<0.00338	<0.00289	<0.00291	<0.0034
1,1,1-Trichloroethane	mg/kg	<0.00583	<0.00575	<0.00528	<0.00563	<0.00482	<0.00486	<0.00567
1,1,2,2-Tetrachloroethane	mg/kg	<0.0035	<0.00345	<0.00317	<0.00338 Q	0.0011 F	<0.00291	0.00135 F
1,1,2-Trichloroethane	mg/kg	<0.00583	<0.00575	<0.00528	<0.00563	<0.00482	<0.00486	<0.00567
1,1-Dichloroethane	mg/kg	<0.00583	<0.00575	<0.00528	<0.00563	<0.00482	<0.00486	<0.00567
1,1-Dichloroethene	mg/kg	<0.007	<0.0069	<0.00633	<0.00676	<0.00578	<0.00583	<0.00681
1,1-Dichloropropene	mg/kg	<0.00583	<0.00575	<0.00528	<0.00563	<0.00482	<0.00486	<0.00567
1,2,3-Trichlorobenzene	mg/kg	<0.00583	<0.00575	<0.00528	<0.00563	<0.00482	<0.00486	<0.00567
1,2,3-Trichloropropane	mg/kg	<0.00583	<0.00575	<0.00528	<0.00563 Q	<0.00482	<0.00486	<0.00567
1,2,4-Trichlorobenzene	mg/kg	<0.00583	<0.00575	<0.00528	<0.00563	<0.00482	<0.00486	<0.00567
1,2,4-Trimethylbenzene	mg/kg	<0.007	<0.0069	<0.00633	<0.00676	<0.00578	<0.00583	<0.00681
1,2-Dibromo-3-chloropropane	mg/kg	<0.0117	<0.0115	<0.0106	<0.0113	<0.00964	<0.00971	<0.0113
1,2-Dibromoethane	mg/kg	<0.00583	<0.00575	<0.00528	<0.00563	<0.00482	<0.00486	<0.00567
1,2-Dichlorobenzene	mg/kg	<0.00583	<0.00575	<0.00528	<0.00563	<0.00482	<0.00486	<0.00567
1,2-Dichloroethane	mg/kg	<0.0035	<0.00345	<0.00317	<0.00338	<0.00289	<0.00291	<0.0034
1,2-Dichloropropane	mg/kg	<0.00583	<0.00575	<0.00528	<0.00563	<0.00482	<0.00486	<0.00567
1,3,5-Trimethylbenzene	mg/kg	<0.00583	<0.00575	<0.00528	<0.00563	<0.00482	<0.00486	<0.00567
1,3-Dichlorobenzene	mg/kg	<0.007	<0.0069	<0.00633	<0.00676	<0.00578	<0.00583	<0.00681
1,3-Dichloropropane	mg/kg	<0.00233	<0.0023	<0.00211	<0.00225	<0.00193	<0.00194	<0.00227
1,4-Dichlorobenzene	mg/kg	<0.00233	<0.0023	<0.00211	<0.00225	<0.00193	<0.00194	<0.00227
1-Chlorohexane	mg/kg	<0.00583	<0.00575	<0.00528	<0.00563	<0.00482	<0.00486	<0.00567
2,2-Dichloropropane	mg/kg	<0.00583	<0.00575	<0.00528	<0.00563	<0.00482	<0.00486	<0.00567
2-Chlorotoluene	mg/kg	<0.00583	<0.00575	<0.00528	<0.00563	<0.00482	<0.00486	<0.00567
2-Hexanone	mg/kg	<0.0233 Q	<0.023 Q	<0.0211 Q	<0.0225 Q	<0.0193	<0.0194	<0.0227
4-Chlorotoluene	mg/kg	<0.00583	<0.00575	<0.00528	<0.00563	<0.00482	<0.00486	<0.00567
Acetone	mg/kg	0.00901 Q	<0.023 Q	<0.0211 Q	0.0202 F	<0.0193	<0.0194	0.0067 F
Benzene	mg/kg	<0.00233	<0.0023	<0.00211	<0.00225	<0.00193	<0.00194	<0.00227
Bromobenzene	mg/kg	<0.00583	<0.00575	<0.00528	<0.00563	<0.00482	<0.00486	<0.00567
Bromochloromethane	mg/kg	<0.00583	<0.00575	<0.00528	<0.00563	<0.00482	<0.00486	<0.00567
Bromodichloromethane	mg/kg	<0.00233	<0.0023	<0.00211	<0.00225	<0.00193	<0.00194	<0.00227
Bromoform	mg/kg	<0.00583	<0.00575	<0.00528	<0.00563	<0.00482	<0.00486	<0.00567
Bromomethane	mg/kg	<0.00583	<0.00575	<0.00528	<0.00563	<0.00482	<0.00486	<0.00567
Carbon disulfide	mg/kg	<0.00583	<0.00575	<0.00528	<0.00563	<0.00482	<0.00486	<0.00567
Carbon tetrachloride	mg/kg	<0.00583	<0.00575	<0.00528	<0.00563	<0.00482	<0.00486	<0.00567
Chlorobenzene	mg/kg	<0.00233	<0.0023	<0.00211	<0.00225	<0.00193	<0.00194	<0.00227
Chloroethane	mg/kg	<0.00583	<0.00575	<0.00528	<0.00563	<0.00482	<0.00486	<0.00567
Chloroform	mg/kg	<0.00233	<0.0023	<0.00211	<0.00225	<0.00193	<0.00194	<0.00227
Chloromethane	mg/kg	<0.00583	<0.00575	<0.00528	<0.00563	<0.00482	<0.00486	<0.00567
cis-1,2-Dichloroethene	mg/kg	<0.00583	<0.00575	<0.00528	<0.00563	<0.00482	<0.00486	<0.00567
cis-1,3-Dichloropropene	mg/kg	<0.0035	<0.00345	<0.00317	<0.00338	<0.00289	<0.00291	<0.0034
Dibromochloromethane	mg/kg	<0.0035	<0.00345	<0.00317	<0.00338	<0.00289	<0.00291	<0.0034
Dibromomethane	mg/kg	<0.00583	<0.00575	<0.00528	<0.00563	<0.00482	<0.00486	<0.00567
Dichlorodifluoromethane	mg/kg	<0.00583	<0.00575	<0.00528	<0.00563	<0.00482	<0.00486	<0.00567
Ethylbenzene	mg/kg	<0.00583	<0.00575	<0.00528	<0.00563	<0.00482	<0.00486	<0.00567
Hexachlorobutadiene	mg/kg	<0.0035	<0.00345	<0.00317	<0.00338	<0.00289	<0.00291	<0.0034
Isopropylbenzene	mg/kg	<0.00583	<0.00575	<0.00528	<0.00563	<0.00482	<0.00486	<0.00567
m-,p-Xylene	mg/kg	0.000591 F	<0.00575	<0.00528	<0.00563	<0.00482	<0.00486	<0.00567
MEK (2-Butanone)	mg/kg	<0.0233	<0.023	<0.0211	<0.0225	<0.0193	<0.0194	<0.0227
Methyl t-butyl ether (MTBE)	mg/kg	<0.0233	<0.023	<0.0211	<0.0225	<0.0193	<0.0194	<0.0227
Methylene chloride	mg/kg	0.0157	0.0108	0.0107	0.00746	0.00578	0.00224 F	0.00266 F
MIBK (methyl isobutyl ketone)	mg/kg	<0.0233	<0.023	<0.0211	<0.0225	<0.0193	<0.0194	<0.0227
Naphthalene	mg/kg	<0.00583	<0.00575	<0.00528	<0.00563	<0.00482	<0.00486	<0.00567
n-Butylbenzene	mg/kg	<0.00583	<0.00575	<0.00528	<0.00563	<0.00482	<0.00486	<0.00567
n-Propylbenzene	mg/kg	<0.00583	<0.00575	<0.00528	<0.00563	<0.00482	<0.00486	<0.00567
o-Xylene	mg/kg	<0.00583	<0.00575	<0.00528	<0.00563	<0.00482	<0.00486	<0.00567
p-Isopropyltoluene	mg/kg	<0.007	<0.0069	<0.00633	<0.00676	<0.00578	<0.00583	<0.00681
sec-Butylbenzene	mg/kg	<0.00583	<0.00575	<0.00528	<0.00563	<0.00482	<0.00486	<0.00567
Styrene	mg/kg	<0.00583	<0.00575	<0.00528	<0.00563	<0.00482	<0.00486	<0.00567
tert-Butylbenzene	mg/kg	<0.00583	<0.00575	<0.00528	<0.00563	<0.00482	<0.00486	<0.00567
Tetrachloroethene	mg/kg	<0.00583	<0.00575	<0.00528	<0.00563	<0.00482	<0.00486	<0.00567
Toluene	mg/kg	<0.00583	<0.00575	<0.00528	0.000585 F	<0.00482	<0.00486	<0.00567
Total Xylenes	mg/kg	0.000591 F	<0.00575	<0.00528	<0.00563	<0.00482	<0.00486	<0.00567
trans-1,2-Dichloroethene	mg/kg	<0.00583	<0.00575	<0.00528	<0.00563	<0.00482	<0.00486	<0.00567
trans-1,3-Dichloropropene	mg/kg	<0.00583	<0.00575	<0.00528	<0.00563	<0.00482	<0.00486	<0.00567
Trichloroethene	mg/kg	<0.00583	<0.00575	<0.00528	<0.00563	<0.00482	0.0011 F	<0.00567
Trichlorofluoromethane	mg/kg	<0.00583	<0.00575	<0.00528	<0.00563	<0.00482	<0.00486	<0.00567
Vinyl acetate	mg/kg	<0.0117 Q	<0.0115 Q	<0.0106 Q	<0.0113 Q	<0.00964 Q	<0.00971 Q	<0.0113 Q
Vinyl chloride	mg/kg	<0.00583	<0.00575	<0.00528	<0.00563	<0.00482	<0.00486	<0.00567

DQE Flags:
F: Concentration below RL but above MDL
J: Analyte identified, but quantitation estimated.
Q: QC criteria failed, further review required
M: Concentration estimated due to matrix effect
<: Analyte not detected above RL

TABLE C-1
SOIL ANALYTICAL RESULTS
REBOUND TEST AND CONFIRMATION SOIL SAMPLING
FLUVIAL SOIL VAPOR EXTRACTION SYSTEM
Dunn Field - Defense Depot Memphis, Tennessee

	Location	FSB-09B	FSB-10T	FSB-10M	FSB-10M DUP	FSB-10B	FSB-11T	FSB-11M
	Date	11/10/2010	11/9/2010	11/9/2010	11/9/2010	11/9/2010	11/9/2010	11/9/2010
	Id	TA1-FSB-09B	TA1-FSB-10T	TA1-FSB-10M	TA2-FSB-10M	TA1-FSB-10B	TA1-FSB-11T	TA1-FSB-11M
	Lab ID	L10110394-06	L10110356-01	L10110356-02	L10110356-07	L10110356-03	L10110356-04	L10110356-05
Analyte	**units**							
1,1,1,2-Tetrachloroethane	mg/kg	<0.00305	<0.00298	<0.00347	<0.00338	<0.00313	<0.00306	<0.00297
1,1,1-Trichloroethane	mg/kg	<0.00509	<0.00496	<0.00579	<0.00563	<0.00522	<0.00511	<0.00495
1,1,2,2-Tetrachloroethane	mg/kg	<0.00305	0.00272 Q	<0.00347 Q	<0.00338 Q	<0.00313 Q	<0.00306 Q	<0.00297 Q
1,1,2-Trichloroethane	mg/kg	<0.00509	<0.00496	<0.00579	<0.00563	<0.00522	<0.00511	<0.00495
1,1-Dichloroethane	mg/kg	<0.00509	<0.00496	<0.00579	<0.00563	<0.00522	<0.00511	<0.00495
1,1-Dichloroethene	mg/kg	<0.0061	<0.00595	<0.00695	<0.00676	<0.00626	<0.00613	<0.00594
1,1-Dichloropropene	mg/kg	<0.00509	<0.00496	<0.00579	<0.00563	<0.00522	<0.00511	<0.00495
1,2,3-Trichlorobenzene	mg/kg	<0.00509	<0.00496	<0.00579	<0.00563	<0.00522	<0.00511	<0.00495
1,2,3-Trichloropropane	mg/kg	<0.00509	<0.00496 Q	<0.00579 Q	<0.00563 Q	<0.00522 Q	<0.00511 Q	<0.00495 Q
1,2,4-Trichlorobenzene	mg/kg	<0.00509	<0.00496	<0.00579	<0.00563	<0.00522	<0.00511	<0.00495
1,2,4-Trimethylbenzene	mg/kg	<0.0061	<0.00595	<0.00695	<0.00676	<0.00626	<0.00613	<0.00594
1,2-Dibromo-3-chloropropane	mg/kg	<0.0102	<0.00992	<0.0116	<0.0113	<0.0104	<0.0102	<0.0099
1,2-Dibromoethane	mg/kg	<0.00509	<0.00496	<0.00579	<0.00563	<0.00522	<0.00511	<0.00495
1,2-Dichlorobenzene	mg/kg	<0.00509	<0.00496	<0.00579	<0.00563	<0.00522	<0.00511	<0.00495
1,2-Dichloroethane	mg/kg	<0.00305	<0.00298	<0.00347	<0.00338	<0.00313	<0.00306	<0.00297
1,2-Dichloropropane	mg/kg	<0.00509	<0.00496	<0.00579	<0.00563	<0.00522	<0.00511	<0.00495
1,3,5-Trimethylbenzene	mg/kg	<0.00509	<0.00496	<0.00579	<0.00563	<0.00522	<0.00511	<0.00495
1,3-Dichlorobenzene	mg/kg	<0.0061	<0.00595	<0.00695	<0.00676	<0.00626	<0.00613	<0.00594
1,3-Dichloropropane	mg/kg	<0.00203	<0.00198	<0.00232	<0.00225	<0.00209	<0.00204	<0.00198
1,4-Dichlorobenzene	mg/kg	<0.00203	<0.00198	<0.00232	<0.00225	<0.00209	<0.00204	<0.00198
1-Chlorohexane	mg/kg	<0.00509	<0.00496	<0.00579	<0.00563	<0.00522	<0.00511	<0.00495
2,2-Dichloropropane	mg/kg	<0.00509	<0.00496	<0.00579	<0.00563	<0.00522	<0.00511	<0.00495
2-Chlorotoluene	mg/kg	<0.00509	<0.00496	<0.00579	<0.00563	<0.00522	<0.00511	<0.00495
2-Hexanone	mg/kg	<0.0203	<0.0198	<0.0232	<0.0225	<0.0209	<0.0204	<0.0198
4-Chlorotoluene	mg/kg	<0.00509	<0.00496 Q	<0.00579 Q	<0.00563 Q	<0.00522 Q	<0.00511 Q	<0.00495 Q
Acetone	mg/kg	0.0107 F	0.00974 F	0.00767 F	0.0103 F	0.0175 F	0.0129 F	0.00557 F
Benzene	mg/kg	<0.00203	<0.00198	<0.00232	<0.00225	<0.00209	<0.00204	<0.00198
Bromobenzene	mg/kg	<0.00509	<0.00496	<0.00579	<0.00563	<0.00522	<0.00511	<0.00495
Bromochloromethane	mg/kg	<0.00509	<0.00496	<0.00579	<0.00563	<0.00522	<0.00511	<0.00495
Bromodichloromethane	mg/kg	<0.00203	<0.00198	<0.00232	<0.00225	<0.00209	<0.00204	<0.00198
Bromoform	mg/kg	<0.00509	<0.00496	<0.00579	<0.00563	<0.00522	<0.00511	<0.00495
Bromomethane	mg/kg	<0.00509	<0.00496	<0.00579	<0.00563	<0.00522	<0.00511	<0.00495
Carbon disulfide	mg/kg	<0.00509	<0.00496	<0.00579	<0.00563	<0.00522	<0.00511	<0.00495
Carbon tetrachloride	mg/kg	<0.00509	<0.00496	<0.00579	<0.00563	<0.00522	<0.00511	<0.00495
Chlorobenzene	mg/kg	<0.00203	<0.00198	<0.00232	<0.00225	<0.00209	<0.00204	<0.00198
Chloroethane	mg/kg	<0.00509	<0.00496	<0.00579	<0.00563	<0.00522	<0.00511	<0.00495
Chloroform	mg/kg	<0.00203	<0.00198	<0.00232	<0.00225	<0.00209	<0.00204	<0.00198
Chloromethane	mg/kg	<0.00509	<0.00496	<0.00579	<0.00563	<0.00522	<0.00511	<0.00495
cis-1,2-Dichloroethene	mg/kg	<0.00509	0.000729 F	<0.00579	<0.00563	<0.00522	<0.00511	<0.00495
cis-1,3-Dichloropropene	mg/kg	<0.00305	<0.00298	<0.00347	<0.00338	<0.00313	<0.00306	<0.00297
Dibromochloromethane	mg/kg	<0.00305	<0.00298	<0.00347	<0.00338	<0.00313	<0.00306	<0.00297
Dibromomethane	mg/kg	<0.00509	<0.00496	<0.00579	<0.00563	<0.00522	<0.00511	<0.00495
Dichlorodifluoromethane	mg/kg	<0.00509	<0.00496	<0.00579	<0.00563	<0.00522	<0.00511	<0.00495
Ethylbenzene	mg/kg	<0.00509	<0.00496	<0.00579	<0.00563	<0.00522	<0.00511	<0.00495
Hexachlorobutadiene	mg/kg	<0.00305	<0.00298	<0.00347	<0.00338	<0.00313	<0.00306	<0.00297
Isopropylbenzene	mg/kg	<0.00509	<0.00496	<0.00579	<0.00563	<0.00522	<0.00511	<0.00495
m-,p-Xylene	mg/kg	<0.00509	<0.00496	<0.00579	<0.00563	<0.00522	<0.00511	<0.00495
MEK (2-Butanone)	mg/kg	<0.0203	<0.0198	<0.0232	<0.0225	<0.0209	<0.0204	<0.0198
Methyl t-butyl ether (MTBE)	mg/kg	<0.0203	<0.0198	<0.0232	<0.0225	<0.0209	<0.0204	<0.0198
Methylene chloride	mg/kg	0.00435 F	0.00255 F	0.00407 F	0.00383 F	0.00204 F	0.0145	0.00825
MIBK (methyl isobutyl ketone)	mg/kg	<0.0203	<0.0198	<0.0232	<0.0225	<0.0209	<0.0204	<0.0198
Naphthalene	mg/kg	<0.00509	<0.00496	<0.00579	<0.00563	<0.00522	<0.00511	<0.00495
n-Butylbenzene	mg/kg	<0.00509	<0.00496	<0.00579	<0.00563	<0.00522	<0.00511	<0.00495
n-Propylbenzene	mg/kg	<0.00509	<0.00496 Q	<0.00579 Q	<0.00563 Q	<0.00522 Q	<0.00511 Q	<0.00495 Q
o-Xylene	mg/kg	<0.00509	<0.00496	<0.00579	<0.00563	<0.00522	<0.00511	<0.00495
p-Isopropyltoluene	mg/kg	<0.0061	<0.00595	<0.00695	<0.00676	<0.00626	<0.00613	<0.00594
sec-Butylbenzene	mg/kg	<0.00509	<0.00496	<0.00579	<0.00563	<0.00522	<0.00511	<0.00495
Styrene	mg/kg	<0.00509	<0.00496	<0.00579	<0.00563	<0.00522	<0.00511	<0.00495
tert-Butylbenzene	mg/kg	<0.00509	<0.00496	<0.00579	<0.00563	<0.00522	<0.00511	<0.00495
Tetrachloroethene	mg/kg	<0.00509	<0.00496	<0.00579	<0.00563	<0.00522	<0.00511	<0.00495
Toluene	mg/kg	<0.00509	<0.00496	<0.00579	<0.00563	<0.00522	0.000586 F	<0.00495
Total Xylenes	mg/kg	<0.00509	<0.00496	<0.00579	<0.00563	<0.00522	<0.00511	<0.00495
trans-1,2-Dichloroethene	mg/kg	<0.00509	<0.00496	<0.00579	<0.00563	<0.00522	<0.00511	<0.00495
trans-1,3-Dichloropropene	mg/kg	<0.00509	<0.00496	<0.00579	<0.00563	<0.00522	<0.00511	<0.00495
Trichloroethene	mg/kg	0.0046 F	0.0016 F	<0.00579	<0.00563	<0.00522	<0.00511	<0.00495
Trichlorofluoromethane	mg/kg	<0.00509	<0.00496	<0.00579	<0.00563	<0.00522	<0.00511	<0.00495
Vinyl acetate	mg/kg	<0.0102 Q	<0.00992 Q	<0.0116 Q	<0.0113 Q	<0.0104 Q	<0.0102 Q	<0.0099 Q
Vinyl chloride	mg/kg	<0.00509	<0.00496	<0.00579	<0.00563	<0.00522	<0.00511	<0.00495

DQE Flags:
F: Concentration below RL but above MDL
J: Analyte identified, but quantitation estimated.
Q: QC criteria failed, further review required
M: Concentration estimated due to matrix effect
<: Analyte not detected above RL

TABLE C-1
SOIL ANALYTICAL RESULTS
REBOUND TEST AND CONFIRMATION SOIL SAMPLING
FLUVIAL SOIL VAPOR EXTRACTION SYSTEM
Dunn Field - Defense Depot Memphis, Tennessee

	Location	FSB-11B	FSB-12T	FSB-12M	FSB-12B	FSB-13T	FSB-13M	FSB-13B
	Date	11/9/2010	11/8/2010	11/8/2010	11/8/2010	11/6/2010	11/6/2010	11/6/2010
	Id	TA1-FSB-11B	TA1-FSB-12T	TA1-FSB-12M	TA1-FSB-12B	TA1-FSB-13T	TA1-FSB-13M	TA1-FSB-13B
	Lab ID	L10110356-06	L10110297-19	L10110297-20	L10110297-21	L10110297-01	L10110297-02	L10110297-03
Analyte	**units**							
1,1,1,2-Tetrachloroethane	mg/kg	<0.00294	<0.00292	<0.00312	<0.00277	<0.00302	<0.00314	<0.00265
1,1,1-Trichloroethane	mg/kg	<0.00489	<0.00487	<0.0052	<0.00462	<0.00504	<0.00524	<0.00442
1,1,2,2-Tetrachloroethane	mg/kg	<0.00294 Q	<0.00292	<0.00312	<0.00277	<0.00302	<0.00314	<0.00265
1,1,2-Trichloroethane	mg/kg	<0.00489	<0.00487	<0.0052	<0.00462	<0.00504	<0.00524	<0.00442
1,1-Dichloroethane	mg/kg	<0.00489	<0.00487	<0.0052	<0.00462	<0.00504	<0.00524	<0.00442
1,1-Dichloroethene	mg/kg	<0.00587	<0.00584	<0.00624	<0.00554	<0.00604	<0.00629	<0.0053
1,1-Dichloropropene	mg/kg	<0.00489	<0.00487	<0.0052	<0.00462	<0.00504	<0.00524	<0.00442
1,2,3-Trichlorobenzene	mg/kg	<0.00489	<0.00487	<0.0052	<0.00462	<0.00504	<0.00524	<0.00442
1,2,3-Trichloropropane	mg/kg	<0.00489 Q	<0.00487	<0.0052	<0.00462	<0.00504	<0.00524	<0.00442
1,2,4-Trichlorobenzene	mg/kg	<0.00489	<0.00487	<0.0052	<0.00462	<0.00504	<0.00524	<0.00442
1,2,4-Trimethylbenzene	mg/kg	<0.00587	<0.00584	<0.00624	<0.00554	<0.00604	<0.00629	<0.0053
1,2-Dibromo-3-chloropropane	mg/kg	<0.00979	<0.00974	<0.0104	<0.00924	<0.0101	<0.0105	<0.00883
1,2-Dibromoethane	mg/kg	<0.00489	<0.00487	<0.0052	<0.00462	<0.00504	<0.00524	<0.00442
1,2-Dichlorobenzene	mg/kg	<0.00489	<0.00487	<0.0052	<0.00462	<0.00504	<0.00524	<0.00442
1,2-Dichloroethane	mg/kg	<0.00294	<0.00292	<0.00312	<0.00277	<0.00302	<0.00314	<0.00265
1,2-Dichloropropane	mg/kg	<0.00489	<0.00487	<0.0052	<0.00462	<0.00504	<0.00524	<0.00442
1,3,5-Trimethylbenzene	mg/kg	<0.00489	<0.00487	<0.0052	<0.00462	<0.00504	<0.00524	<0.00442
1,3-Dichlorobenzene	mg/kg	<0.00587	<0.00584	<0.00624	<0.00554	<0.00604	<0.00629	<0.0053
1,3-Dichloropropane	mg/kg	<0.00196	<0.00195	<0.00208	<0.00185	<0.00201	<0.0021	<0.00177
1,4-Dichlorobenzene	mg/kg	<0.00196	<0.00195	<0.00208	<0.00185	<0.00201	<0.0021	<0.00177
1-Chlorohexane	mg/kg	<0.00489	<0.00487	<0.0052	<0.00462	<0.00504	<0.00524	<0.00442
2,2-Dichloropropane	mg/kg	<0.00489	<0.00487	<0.0052	<0.00462	<0.00504	<0.00524	<0.00442
2-Chlorotoluene	mg/kg	<0.00489	<0.00487	<0.0052	<0.00462	<0.00504 Q	<0.00524 Q	<0.00442 Q
2-Hexanone	mg/kg	<0.0196	<0.0195	<0.0208	<0.0185	<0.0201	<0.021	<0.0177
4-Chlorotoluene	mg/kg	<0.00489 Q	<0.00487	<0.0052	<0.00462	<0.00504	<0.00524	<0.00442
Acetone	mg/kg	0.0153 F	<0.0195	0.012 F	<0.0185	0.0179 F	0.0122 F	0.0164 F
Benzene	mg/kg	<0.00196	<0.00195	<0.00208	<0.00185	<0.00201	<0.0021	<0.00177
Bromobenzene	mg/kg	<0.00489	<0.00487	<0.0052	<0.00462	<0.00504	<0.00524	<0.00442
Bromochloromethane	mg/kg	<0.00489	<0.00487	<0.0052	<0.00462	<0.00504	<0.00524	<0.00442
Bromodichloromethane	mg/kg	<0.00196	<0.00195	<0.00208	<0.00185	<0.00201	<0.0021	<0.00177
Bromoform	mg/kg	<0.00489	<0.00487	<0.0052	<0.00462	<0.00504	<0.00524	<0.00442
Bromomethane	mg/kg	<0.00489	<0.00487	<0.0052	<0.00462	<0.00504	<0.00524	<0.00442
Carbon disulfide	mg/kg	<0.00489	<0.00487	<0.0052	<0.00462	<0.00504	<0.00524	<0.00442
Carbon tetrachloride	mg/kg	<0.00489	<0.00487	<0.0052	<0.00462	<0.00504	<0.00524	<0.00442
Chlorobenzene	mg/kg	<0.00196	<0.00195	<0.00208	<0.00185	<0.00201	<0.0021	<0.00177
Chloroethane	mg/kg	<0.00489	<0.00487	<0.0052	<0.00462	<0.00504	<0.00524	<0.00442
Chloroform	mg/kg	<0.00196	<0.00195	<0.00208	<0.00185	<0.00201	<0.0021	<0.00177
Chloromethane	mg/kg	<0.00489	<0.00487	<0.0052	<0.00462	<0.00504 Q	<0.00524 Q	<0.00442 Q
cis-1,2-Dichloroethene	mg/kg	<0.00489	<0.00487	<0.0052	<0.00462	<0.00504	<0.00524	<0.00442
cis-1,3-Dichloropropene	mg/kg	<0.00294	<0.00292	<0.00312	<0.00277	<0.00302	<0.00314	<0.00265
Dibromochloromethane	mg/kg	<0.00294	<0.00292	<0.00312	<0.00277	<0.00302	<0.00314	<0.00265
Dibromomethane	mg/kg	<0.00489	<0.00487	<0.0052	<0.00462	<0.00504	<0.00524	<0.00442
Dichlorodifluoromethane	mg/kg	<0.00489	<0.00487	<0.0052	<0.00462	<0.00504	<0.00524	<0.00442
Ethylbenzene	mg/kg	<0.00489	<0.00487	<0.0052	<0.00462	<0.00504	<0.00524	<0.00442
Hexachlorobutadiene	mg/kg	<0.00294	<0.00292	<0.00312	<0.00277	<0.00302	<0.00314	<0.00265
Isopropylbenzene	mg/kg	<0.00489	<0.00487	<0.0052	<0.00462	<0.00504	<0.00524	<0.00442
m-,p-Xylene	mg/kg	<0.00489	<0.00487	<0.0052	<0.00462	<0.00504	<0.00524	<0.00442
MEK (2-Butanone)	mg/kg	<0.0196	<0.0195	<0.0208	<0.0185	<0.0201	<0.021	<0.0177
Methyl t-butyl ether (MTBE)	mg/kg	<0.0196	<0.0195	<0.0208	<0.0185	<0.0201	<0.021	<0.0177
Methylene chloride	mg/kg	0.00834	0.00838	0.00144 F	0.00674	0.00296 F	0.00325 F	0.00183 F
MIBK (methyl isobutyl ketone)	mg/kg	<0.0196	<0.0195	<0.0208	<0.0185	<0.0201	<0.021	<0.0177
Naphthalene	mg/kg	<0.00489	<0.00487	<0.0052	<0.00462	<0.00504	<0.00524	<0.00442
n-Butylbenzene	mg/kg	<0.00489	<0.00487	<0.0052	<0.00462	<0.00504	<0.00524	<0.00442
n-Propylbenzene	mg/kg	<0.00489 Q	<0.00487	<0.0052	<0.00462	<0.00504	<0.00524	<0.00442
o-Xylene	mg/kg	<0.00489	<0.00487	<0.0052	<0.00462	<0.00504	<0.00524	<0.00442
p-Isopropyltoluene	mg/kg	<0.00587	<0.00584	<0.00624	<0.00554	<0.00604	<0.00629	<0.0053
sec-Butylbenzene	mg/kg	<0.00489	<0.00487	<0.0052	<0.00462	<0.00504	<0.00524	<0.00442
Styrene	mg/kg	<0.00489	<0.00487	<0.0052	<0.00462	<0.00504	<0.00524	<0.00442
tert-Butylbenzene	mg/kg	<0.00489	<0.00487	<0.0052	<0.00462	<0.00504	<0.00524	<0.00442
Tetrachloroethene	mg/kg	<0.00489	<0.00487	<0.0052	<0.00462	<0.00504	<0.00524	<0.00442
Toluene	mg/kg	<0.00489	<0.00487	<0.0052	<0.00462	<0.00504	<0.00524	<0.00442
Total Xylenes	mg/kg	<0.00489	<0.00487	<0.0052	<0.00462	<0.00504	<0.00524	<0.00442
trans-1,2-Dichloroethene	mg/kg	<0.00489	<0.00487	<0.0052	<0.00462	<0.00504	<0.00524	<0.00442
trans-1,3-Dichloropropene	mg/kg	<0.00489	<0.00487	<0.0052	<0.00462	<0.00504	<0.00524	<0.00442
Trichloroethene	mg/kg	<0.00489	<0.00487	<0.0052	<0.00462	<0.00504	<0.00524	<0.00442
Trichlorofluoromethane	mg/kg	<0.00489	<0.00487	<0.0052	<0.00462	<0.00504	<0.00524	<0.00442
Vinyl acetate	mg/kg	<0.00979 Q	<0.00974	<0.0104	<0.00924	<0.0101 Q	<0.0105 Q	<0.00883 Q
Vinyl chloride	mg/kg	<0.00489	<0.00487	<0.0052	<0.00462	<0.00504	<0.00524	<0.00442

DQE Flags:
F: Concentration below RL but above MDL
J: Analyte identified, but quantitation estimated.
Q: QC criteria failed, further review required
M: Concentration estimated due to matrix effect
<: Analyte not detected above RL

TABLE C-1
SOIL ANALYTICAL RESULTS
REBOUND TEST AND CONFIRMATION SOIL SAMPLING
FLUVIAL SOIL VAPOR EXTRACTION SYSTEM
Dunn Field - Defense Depot Memphis, Tennessee

	Location	FSB-13B DUP	FSB-14T	FSB-14M	FSB-14B	FSB-15T	FSB-15M	FSB-15B
	Date	11/6/2010	11/6/2010	11/6/2010	11/7/2010	11/7/2010	11/7/2010	11/7/2010
	Id	TA3-FSB-13B	TA1-FSB-14T	TA1-FSB-14M	TA1-FSB-14B	TA1-FSB-15T	TA1-FSB-15M	TA1-FSB-15B
	Lab ID	L10110297-09	L10110297-04	L10110297-07	L10110297-11	L10110297-12	L10110297-13	L10110297-14
Analyte	**units**							
1,1,1,2-Tetrachloroethane	mg/kg	<0.0028	<0.00298	<0.00288	<0.00325	<0.00282	<0.00317	<0.00295
1,1,1-Trichloroethane	mg/kg	<0.00466	<0.00496	<0.00481	<0.00542	<0.0047	<0.00529	<0.00491
1,1,2,2-Tetrachloroethane	mg/kg	<0.0028	<0.00298	<0.00288	<0.00325	<0.00282	<0.00317	<0.00295
1,1,2-Trichloroethane	mg/kg	<0.00466	<0.00496	<0.00481	<0.00542	<0.0047	<0.00529	<0.00491
1,1-Dichloroethane	mg/kg	<0.00466	<0.00496	<0.00481	<0.00542	<0.0047	<0.00529	<0.00491
1,1-Dichloroethene	mg/kg	<0.00559	<0.00595	<0.00577	<0.0065	<0.00565	<0.00635	<0.00589
1,1-Dichloropropene	mg/kg	<0.00466	<0.00496	<0.00481	<0.00542	<0.0047	<0.00529	<0.00491
1,2,3-Trichlorobenzene	mg/kg	<0.00466	<0.00496	<0.00481	<0.00542	<0.0047	<0.00529	<0.00491
1,2,3-Trichloropropane	mg/kg	<0.00466	<0.00496	<0.00481	<0.00542	<0.0047	<0.00529	<0.00491
1,2,4-Trichlorobenzene	mg/kg	<0.00466	<0.00496	<0.00481	<0.00542	<0.0047	<0.00529	<0.00491
1,2,4-Trimethylbenzene	mg/kg	<0.00559	<0.00595	<0.00577	<0.0065	<0.00565	<0.00635	<0.00589
1,2-Dibromo-3-chloropropane	mg/kg	<0.00932	<0.00992	<0.00961	<0.0108	<0.00941	<0.0106	<0.00982
1,2-Dibromoethane	mg/kg	<0.00466	<0.00496	<0.00481	<0.00542	<0.0047	<0.00529	<0.00491
1,2-Dichlorobenzene	mg/kg	<0.00466	<0.00496	<0.00481	<0.00542	<0.0047	<0.00529	<0.00491
1,2-Dichloroethane	mg/kg	<0.0028	<0.00298	<0.00288	<0.00325	<0.00282	<0.00317	<0.00295
1,2-Dichloropropane	mg/kg	<0.00466	<0.00496	<0.00481	<0.00542	<0.0047	<0.00529	<0.00491
1,3,5-Trimethylbenzene	mg/kg	<0.00466	<0.00496	<0.00481	<0.00542	<0.0047	<0.00529	<0.00491
1,3-Dichlorobenzene	mg/kg	<0.00559	<0.00595	<0.00577	<0.0065	<0.00565	<0.00635	<0.00589
1,3-Dichloropropane	mg/kg	<0.00186	<0.00198	<0.00192	<0.00217	<0.00188	<0.00212	<0.00196
1,4-Dichlorobenzene	mg/kg	<0.00186	<0.00198	<0.00192	<0.00217	<0.00188	<0.00212	<0.00196
1-Chlorohexane	mg/kg	<0.00466	<0.00496	<0.00481	<0.00542	<0.0047	<0.00529	<0.00491
2,2-Dichloropropane	mg/kg	<0.00466	<0.00496	<0.00481	<0.00542	<0.0047	<0.00529	<0.00491
2-Chlorotoluene	mg/kg	<0.00466 Q	<0.00496	<0.00481 Q	<0.00542	<0.0047	<0.00529	<0.00491
2-Hexanone	mg/kg	<0.0186	0.00258 F	<0.0192	<0.0217	<0.0188	<0.0212	<0.0196
4-Chlorotoluene	mg/kg	<0.00466	<0.00496	<0.00481	<0.00542	<0.0047	<0.00529	<0.00491
Acetone	mg/kg	0.0112 F	<0.0198 M	<0.0192	0.00984 F	<0.0188	<0.0212	<0.0196
Benzene	mg/kg	<0.00186	<0.00198	<0.00192	<0.00217	<0.00188	<0.00212	<0.00196
Bromobenzene	mg/kg	<0.00466	<0.00496	<0.00481	<0.00542	<0.0047	<0.00529	<0.00491
Bromochloromethane	mg/kg	<0.00466	<0.00496	<0.00481	<0.00542	<0.0047	<0.00529	<0.00491
Bromodichloromethane	mg/kg	<0.00186	<0.00198	<0.00192	<0.00217	<0.00188	<0.00212	<0.00196
Bromoform	mg/kg	<0.00466	<0.00496	<0.00481	<0.00542	<0.0047	<0.00529	<0.00491
Bromomethane	mg/kg	<0.00466	<0.00496	<0.00481	<0.00542	<0.0047	<0.00529	<0.00491
Carbon disulfide	mg/kg	<0.00466	<0.00496	<0.00481	<0.00542	<0.0047	<0.00529	<0.00491
Carbon tetrachloride	mg/kg	<0.00466	<0.00496	<0.00481	<0.00542	<0.0047	<0.00529	<0.00491
Chlorobenzene	mg/kg	<0.00186	<0.00198	<0.00192	<0.00217	<0.00188	<0.00212	<0.00196
Chloroethane	mg/kg	<0.00466	<0.00496	<0.00481	<0.00542	<0.0047	<0.00529	<0.00491
Chloroform	mg/kg	0.000773 F	<0.00198	<0.00192	<0.00217	0.00807	<0.00212	<0.00196
Chloromethane	mg/kg	<0.00466 Q	<0.00496	<0.00481 Q	<0.00542	<0.0047	<0.00529	<0.00491
cis-1,2-Dichloroethene	mg/kg	<0.00466	<0.00496	<0.00481	<0.00542	<0.0047	<0.00529	<0.00491
cis-1,3-Dichloropropene	mg/kg	<0.0028	<0.00298	<0.00288	<0.00325	<0.00282	<0.00317	<0.00295
Dibromochloromethane	mg/kg	<0.0028	<0.00298	<0.00288	<0.00325	<0.00282	<0.00317	<0.00295
Dibromomethane	mg/kg	<0.00466	<0.00496	<0.00481	<0.00542	<0.0047	<0.00529	<0.00491
Dichlorodifluoromethane	mg/kg	<0.00466	<0.00496	<0.00481	<0.00542	<0.0047	<0.00529	<0.00491
Ethylbenzene	mg/kg	<0.00466	<0.00496	<0.00481	<0.00542	<0.0047	<0.00529	<0.00491
Hexachlorobutadiene	mg/kg	<0.0028	<0.00298	<0.00288	<0.00325	<0.00282	<0.00317	<0.00295
Isopropylbenzene	mg/kg	<0.00466	<0.00496	<0.00481	<0.00542	<0.0047	<0.00529	<0.00491
m-,p-Xylene	mg/kg	<0.00466	<0.00496	<0.00481	<0.00542	<0.0047	<0.00529	<0.00491
MEK (2-Butanone)	mg/kg	<0.0186	<0.0198	<0.0192	<0.0217	<0.0188	<0.0212	<0.0196
Methyl t-butyl ether (MTBE)	mg/kg	<0.0186	<0.0198	<0.0192	<0.0217	<0.0188	<0.0212	<0.0196
Methylene chloride	mg/kg	0.00163 F	0.0113 M	0.00894	0.00192 F	0.00706	0.00147 F	0.00193 F
MIBK (methyl isobutyl ketone)	mg/kg	<0.0186	<0.0198	<0.0192	<0.0217	<0.0188	<0.0212	<0.0196
Naphthalene	mg/kg	<0.00466	<0.00496	<0.00481	<0.00542	<0.0047	<0.00529	<0.00491
n-Butylbenzene	mg/kg	<0.00466	<0.00496	<0.00481	<0.00542	<0.0047	<0.00529	<0.00491
n-Propylbenzene	mg/kg	<0.00466	<0.00496	<0.00481	<0.00542	<0.0047	<0.00529	<0.00491
o-Xylene	mg/kg	<0.00466	<0.00496	<0.00481	<0.00542	<0.0047	<0.00529	<0.00491
p-Isopropyltoluene	mg/kg	<0.00559	<0.00595	<0.00577	<0.0065	<0.00565	<0.00635	<0.00589
sec-Butylbenzene	mg/kg	<0.00466	<0.00496	<0.00481	<0.00542	<0.0047	<0.00529	<0.00491
Styrene	mg/kg	<0.00466	<0.00496	<0.00481	<0.00542	<0.0047	<0.00529	<0.00491
tert-Butylbenzene	mg/kg	<0.00466	<0.00496	<0.00481	<0.00542	<0.0047	<0.00529	<0.00491
Tetrachloroethene	mg/kg	<0.00466	<0.00496	<0.00481	<0.00542	<0.0047	<0.00529	<0.00491
Toluene	mg/kg	<0.00466	<0.00496	<0.00481	<0.00542	<0.0047	<0.00529	<0.00491
Total Xylenes	mg/kg	<0.00466	<0.00496	<0.00481	<0.00542	<0.0047	<0.00529	<0.00491
trans-1,2-Dichloroethene	mg/kg	<0.00466	<0.00496	<0.00481	<0.00542	<0.0047	<0.00529	<0.00491
trans-1,3-Dichloropropene	mg/kg	<0.00466	<0.00496	<0.00481	<0.00542	<0.0047	<0.00529	<0.00491
Trichloroethene	mg/kg	<0.00466	<0.00496	<0.00481	<0.00542	<0.0047	<0.00529	<0.00491
Trichlorofluoromethane	mg/kg	<0.00466	<0.00496	<0.00481	<0.00542	<0.0047	<0.00529	<0.00491
Vinyl acetate	mg/kg	<0.00932 Q	<0.00992	<0.00961 Q	<0.0108	<0.00941	<0.0106	<0.00982
Vinyl chloride	mg/kg	<0.00466	<0.00496	<0.00481	<0.00542	<0.0047	<0.00529	<0.00491

DQE Flags:
F: Concentration below RL but above MDL
J: Analyte identified, but quantitation estimated.
Q: QC criteria failed, further review required
M: Concentration estimated due to matrix effect
<: Analyte not detected above RL

TABLE C-1
SOIL ANALYTICAL RESULTS
REBOUND TEST AND CONFIRMATION SOIL SAMPLING
FLUVIAL SOIL VAPOR EXTRACTION SYSTEM
Dunn Field - Defense Depot Memphis, Tennessee

	Location	FSB-16T	FSB-16M	FSB-16B	FSB-17T	FSB-17T DUP	FSB-17M	FSB-17B
	Date	11/7/2010	11/7/2010	11/7/2010	11/4/2010	11/4/2010	11/4/2010	11/4/2010
	Id	TA1-FSB-16T	TA1-FSB-16M	TA1-FSB-16B	TA1-FSB-17T	TA4-FSB-17T	TA1-FSB-17M	TA1-FSB-17B
	Lab ID	L10110297-15	L10110297-16	L10110297-17	L10110228-01	L10110228-07	L10110228-02	L10110228-03
Analyte	**units**							
1,1,1,2-Tetrachloroethane	mg/kg	<0.00256	<0.0029	<0.00288	<0.00284	<0.00285	<0.00323	<0.00264
1,1,1-Trichloroethane	mg/kg	<0.00427	<0.00484	<0.0048	<0.00473	<0.00475	<0.00538	<0.0044
1,1,2,2-Tetrachloroethane	mg/kg	<0.00256	<0.0029	<0.00288	<0.00284	<0.00285	<0.00323	<0.00264
1,1,2-Trichloroethane	mg/kg	0.00201 F	<0.00484	<0.0048	<0.00473	<0.00475	<0.00538	<0.0044
1,1-Dichloroethane	mg/kg	<0.00427	<0.00484	<0.0048	<0.00473	<0.00475	<0.00538	<0.0044
1,1-Dichloroethene	mg/kg	<0.00513	<0.00581	<0.00576	<0.00568	<0.0057	<0.00645	<0.00528
1,1-Dichloropropene	mg/kg	<0.00427	<0.00484	<0.0048	<0.00473	<0.00475	<0.00538	<0.0044
1,2,3-Trichlorobenzene	mg/kg	<0.00427	<0.00484	<0.0048	<0.00473	<0.00475	<0.00538	<0.0044
1,2,3-Trichloropropane	mg/kg	<0.00427	<0.00484	<0.0048	<0.00473	<0.00475	<0.00538	<0.0044
1,2,4-Trichlorobenzene	mg/kg	<0.00427	<0.00484	<0.0048	<0.00473	<0.00475	<0.00538	<0.0044
1,2,4-Trimethylbenzene	mg/kg	<0.00513	<0.00581	<0.00576	<0.00568	<0.0057	<0.00645	<0.00528
1,2-Dibromo-3-chloropropane	mg/kg	<0.00854	<0.00968	<0.0096	<0.00946	<0.00951	<0.0108	<0.00881
1,2-Dibromoethane	mg/kg	<0.00427	<0.00484	<0.0048	<0.00473	<0.00475	<0.00538	<0.0044
1,2-Dichlorobenzene	mg/kg	<0.00427	<0.00484	<0.0048	<0.00473	<0.00475	<0.00538	<0.0044
1,2-Dichloroethane	mg/kg	<0.00256	<0.0029	<0.00288	<0.00284	<0.00285	<0.00323	<0.00264
1,2-Dichloropropane	mg/kg	<0.00427	<0.00484	<0.0048	<0.00473	<0.00475	<0.00538	<0.0044
1,3,5-Trimethylbenzene	mg/kg	<0.00427	<0.00484	<0.0048	<0.00473	<0.00475	<0.00538	<0.0044
1,3-Dichlorobenzene	mg/kg	<0.00513	<0.00581	<0.00576	<0.00568	<0.0057	<0.00645	<0.00528
1,3-Dichloropropane	mg/kg	<0.00171	<0.00194	<0.00192	<0.00189	<0.0019	<0.00215	<0.00176
1,4-Dichlorobenzene	mg/kg	<0.00171	<0.00194	<0.00192	<0.00189	<0.0019	<0.00215	<0.00176
1-Chlorohexane	mg/kg	<0.00427	<0.00484	<0.0048	<0.00473	<0.00475	<0.00538	<0.0044
2,2-Dichloropropane	mg/kg	<0.00427	<0.00484	<0.0048	<0.00473	<0.00475	<0.00538	<0.0044
2-Chlorotoluene	mg/kg	<0.00427	<0.00484	<0.0048	<0.00473	<0.00475	<0.00538	<0.0044
2-Hexanone	mg/kg	<0.0171	<0.0194	<0.0192	<0.0189	<0.019	<0.0215	<0.0176
4-Chlorotoluene	mg/kg	<0.00427	<0.00484	<0.0048	<0.00473	<0.00475	<0.00538	<0.0044
Acetone	mg/kg	<0.0171	0.0146 F	0.00482 F	0.0142 F	0.0101 F	0.0223	0.219
Benzene	mg/kg	<0.00171	<0.00194	<0.00192	<0.00189	<0.0019	<0.00215	<0.00176
Bromobenzene	mg/kg	<0.00427	<0.00484	<0.0048	<0.00473	<0.00475	<0.00538	<0.0044
Bromochloromethane	mg/kg	<0.00427	<0.00484	<0.0048	<0.00473	<0.00475	<0.00538	<0.0044
Bromodichloromethane	mg/kg	<0.00171	<0.00194	<0.00192	<0.00189	<0.0019	<0.00215	<0.00176
Bromoform	mg/kg	<0.00427	<0.00484	<0.0048	<0.00473	<0.00475	<0.00538	<0.0044
Bromomethane	mg/kg	<0.00427	<0.00484	<0.0048	<0.00473	<0.00475	<0.00538	<0.0044
Carbon disulfide	mg/kg	<0.00427	<0.00484	<0.0048	<0.00473	<0.00475	<0.00538	<0.0044
Carbon tetrachloride	mg/kg	<0.00427	<0.00484	<0.0048	<0.00473	<0.00475	<0.00538	<0.0044
Chlorobenzene	mg/kg	<0.00171	<0.00194	<0.00192	<0.00189	<0.0019	<0.00215	<0.00176
Chloroethane	mg/kg	<0.00427	<0.00484	<0.0048	<0.00473	<0.00475	<0.00538	<0.0044
Chloroform	mg/kg	0.317	<0.00194	<0.00192	<0.00189	<0.0019	<0.00215	<0.00176
Chloromethane	mg/kg	<0.00427	<0.00484	<0.0048	<0.00473	<0.00475	<0.00538	<0.0044
cis-1,2-Dichloroethene	mg/kg	0.0037 F	<0.00484	<0.0048	<0.00473	<0.00475	<0.00538	<0.0044
cis-1,3-Dichloropropene	mg/kg	<0.00256	<0.0029	<0.00288	<0.00284	<0.00285	<0.00323	<0.00264
Dibromochloromethane	mg/kg	<0.00256	<0.0029	<0.00288	<0.00284	<0.00285	<0.00323	<0.00264
Dibromomethane	mg/kg	<0.00427	<0.00484	<0.0048	<0.00473	<0.00475	<0.00538	<0.0044
Dichlorodifluoromethane	mg/kg	<0.00427	<0.00484	<0.0048	<0.00473	<0.00475	<0.00538	<0.0044
Ethylbenzene	mg/kg	<0.00427	<0.00484	<0.0048	<0.00473	<0.00475	<0.00538	<0.0044
Hexachlorobutadiene	mg/kg	<0.00256	<0.0029	<0.00288	<0.00284	<0.00285	<0.00323	<0.00264
Isopropylbenzene	mg/kg	<0.00427	<0.00484	<0.0048	<0.00473	<0.00475	<0.00538	<0.0044
m-,p-Xylene	mg/kg	<0.00427	<0.00484	<0.0048	<0.00473	<0.00475	<0.00538	<0.0044
MEK (2-Butanone)	mg/kg	<0.0171	<0.0194	<0.0192	<0.0189	<0.019	<0.0215	0.00697 F
Methyl t-butyl ether (MTBE)	mg/kg	<0.0171	<0.0194	<0.0192	<0.0189	<0.019	<0.0215	<0.0176
Methylene chloride	mg/kg	0.0243	0.00141 F	0.0026 F	0.00189 F	0.00216 F	0.00398 F	0.00222 F
MIBK (methyl isobutyl ketone)	mg/kg	<0.0171	<0.0194	<0.0192	<0.0189	<0.019	<0.0215	0.00355 F
Naphthalene	mg/kg	<0.00427	<0.00484	<0.0048	<0.00473	<0.00475	<0.00538	<0.0044
n-Butylbenzene	mg/kg	<0.00427	<0.00484	<0.0048	<0.00473	<0.00475	<0.00538	<0.0044
n-Propylbenzene	mg/kg	<0.00427	<0.00484	<0.0048	<0.00473	<0.00475	<0.00538	<0.0044
o-Xylene	mg/kg	<0.00427	<0.00484	<0.0048	<0.00473	<0.00475	<0.00538	<0.0044
p-Isopropyltoluene	mg/kg	<0.00513	<0.00581	<0.00576	<0.00568	<0.0057	<0.00645	<0.00528
sec-Butylbenzene	mg/kg	<0.00427	<0.00484	<0.0048	<0.00473	<0.00475	<0.00538	<0.0044
Styrene	mg/kg	<0.00427	<0.00484	<0.0048	<0.00473	<0.00475	<0.00538	<0.0044
tert-Butylbenzene	mg/kg	<0.00427	<0.00484	<0.0048	<0.00473	<0.00475	<0.00538	<0.0044
Tetrachloroethene	mg/kg	0.00109 F	<0.00484	<0.0048	<0.00473	<0.00475	<0.00538	<0.0044
Toluene	mg/kg	<0.00427	<0.00484	<0.0048	<0.00473	<0.00475	<0.00538	<0.0044
Total Xylenes	mg/kg	<0.00427	<0.00484	<0.0048	<0.00473	<0.00475	<0.00538	<0.0044
trans-1,2-Dichloroethene	mg/kg	<0.00427	<0.00484	<0.0048	<0.00473	<0.00475	<0.00538	<0.0044
trans-1,3-Dichloropropene	mg/kg	<0.00427	<0.00484	<0.0048	<0.00473	<0.00475	<0.00538	<0.0044
Trichloroethene	mg/kg	0.00453	<0.00484	<0.0048	<0.00473	<0.00475	<0.00538	<0.0044
Trichlorofluoromethane	mg/kg	<0.00427	<0.00484	<0.0048	<0.00473	<0.00475	<0.00538	<0.0044
Vinyl acetate	mg/kg	<0.00854	<0.00968	<0.0096	<0.00946 Q	<0.00951 Q	<0.0108 Q	<0.00881 Q
Vinyl chloride	mg/kg	<0.00427	<0.00484	<0.0048	<0.00473	<0.00475	<0.00538	<0.0044

DQE Flags:
F: Concentration below RL but above MDL
J: Analyte identified, but quantitation estimated.
Q: QC criteria failed, further review required
M: Concentration estimated due to matrix effect
<: Analyte not detected above RL

TABLE C-1
SOIL ANALYTICAL RESULTS
REBOUND TEST AND CONFIRMATION SOIL SAMPLING
FLUVIAL SOIL VAPOR EXTRACTION SYSTEM
Dunn Field - Defense Depot Memphis, Tennessee

	Location	FSB-18T	FSB-18M	FSB-18B	FSB-19T	FSB-19M	FSB-19B	FSB-20T
	Date	11/4/2010	11/4/2010	11/4/2010	11/5/2010	11/5/2010	11/6/2010	11/5/2010
	Id	TA1-FSB-18T	TA1-FSB-18M	TA1-FSB-18B	TA1-FSB-19T	TA1-FSB-19M	TA1-FSB-19B	TA1-FSB-20T
	Lab ID	L10110228-04	L10110228-05	L10110228-06	L10110245-01	L10110245-02	L10110297-08	L10110245-03
Analyte	**units**							
1,1,1,2-Tetrachloroethane	mg/kg	<0.00295	<0.00291	<0.00291	<0.0028	<0.00318	<0.00278	<0.00256
1,1,1-Trichloroethane	mg/kg	<0.00491	<0.00485	<0.00485	<0.00467	<0.0053	<0.00463	<0.00427
1,1,2,2-Tetrachloroethane	mg/kg	<0.00295	<0.00291	<0.00291	<0.0028	<0.00318	<0.00278	<0.00256
1,1,2-Trichloroethane	mg/kg	<0.00491	<0.00485	<0.00485	<0.00467	<0.0053	<0.00463	<0.00427
1,1-Dichloroethane	mg/kg	<0.00491	<0.00485	<0.00485	<0.00467	<0.0053	<0.00463	<0.00427
1,1-Dichloroethene	mg/kg	<0.00589	<0.00582	<0.00582	<0.00561	<0.00636	<0.00556	<0.00513
1,1-Dichloropropene	mg/kg	<0.00491	<0.00485	<0.00485	<0.00467	<0.0053	<0.00463	<0.00427
1,2,3-Trichlorobenzene	mg/kg	<0.00491	<0.00485	<0.00485	<0.00467	<0.0053	<0.00463	<0.00427
1,2,3-Trichloropropane	mg/kg	<0.00491	<0.00485	<0.00485	<0.00467	<0.0053	<0.00463	<0.00427
1,2,4-Trichlorobenzene	mg/kg	<0.00491	<0.00485	<0.00485	<0.00467	<0.0053	<0.00463	<0.00427
1,2,4-Trimethylbenzene	mg/kg	<0.00589	<0.00582	<0.00582	<0.00561	<0.00636	<0.00556	<0.00513
1,2-Dibromo-3-chloropropane	mg/kg	<0.00982	<0.0097	<0.0097	<0.00934	<0.0106	<0.00927	<0.00855
1,2-Dibromoethane	mg/kg	<0.00491	<0.00485	<0.00485	<0.00467	<0.0053	<0.00463	<0.00427
1,2-Dichlorobenzene	mg/kg	<0.00491	<0.00485	<0.00485	<0.00467	<0.0053	<0.00463	<0.00427
1,2-Dichloroethane	mg/kg	<0.00295	<0.00291	<0.00291	<0.0028	<0.00318	<0.00278	<0.00256
1,2-Dichloropropane	mg/kg	<0.00491	<0.00485	<0.00485	<0.00467	<0.0053	<0.00463	<0.00427
1,3,5-Trimethylbenzene	mg/kg	<0.00491	<0.00485	<0.00485	<0.00467	<0.0053	<0.00463	<0.00427
1,3-Dichlorobenzene	mg/kg	<0.00589	<0.00582	<0.00582	<0.00561	<0.00636	<0.00556	<0.00513
1,3-Dichloropropane	mg/kg	<0.00196	<0.00194	<0.00194	<0.00187	<0.00212	<0.00185	<0.00171
1,4-Dichlorobenzene	mg/kg	<0.00196	<0.00194	<0.00194	<0.00187	<0.00212	<0.00185	<0.00171
1-Chlorohexane	mg/kg	<0.00491	<0.00485	<0.00485	<0.00467	<0.0053	<0.00463	<0.00427
2,2-Dichloropropane	mg/kg	<0.00491	<0.00485	<0.00485	<0.00467	<0.0053	<0.00463	<0.00427
2-Chlorotoluene	mg/kg	<0.00491	<0.00485	<0.00485	<0.00467 Q	<0.0053 Q	<0.00463 Q	<0.00427 Q
2-Hexanone	mg/kg	<0.0196	<0.0194	<0.0194	<0.0187	<0.0212	<0.0185	<0.0171
4-Chlorotoluene	mg/kg	<0.00491	<0.00485	<0.00485	<0.00467	<0.0053	<0.00463	<0.00427
Acetone	mg/kg	0.0236	0.0136 F	0.0158 F	0.00961 F	0.013 F	<0.0185	0.338 J
Benzene	mg/kg	<0.00196	<0.00194	<0.00194	<0.00187	<0.00212	<0.00185	<0.00171
Bromobenzene	mg/kg	<0.00491	<0.00485	<0.00485	<0.00467	<0.0053	<0.00463	<0.00427
Bromochloromethane	mg/kg	<0.00491	<0.00485	<0.00485	<0.00467	<0.0053	<0.00463	<0.00427
Bromodichloromethane	mg/kg	<0.00196	<0.00194	<0.00194	<0.00187	<0.00212	<0.00185	<0.00171
Bromoform	mg/kg	<0.00491	<0.00485	<0.00485	<0.00467	<0.0053	<0.00463	<0.00427
Bromomethane	mg/kg	<0.00491	<0.00485	<0.00485	<0.00467	<0.0053	<0.00463	<0.00427
Carbon disulfide	mg/kg	<0.00491	<0.00485	<0.00485	<0.00467	<0.0053	<0.00463	<0.00427
Carbon tetrachloride	mg/kg	<0.00491	<0.00485	<0.00485	<0.00467	<0.0053	<0.00463	<0.00427
Chlorobenzene	mg/kg	<0.00196	<0.00194	<0.00194	<0.00187	<0.00212	<0.00185	<0.00171
Chloroethane	mg/kg	<0.00491	<0.00485	<0.00485	<0.00467	<0.0053	<0.00463	<0.00427
Chloroform	mg/kg	0.000528 F	<0.00194	<0.00194	0.00051 F	<0.00212	<0.00185	<0.00171
Chloromethane	mg/kg	<0.00491	<0.00485	<0.00485	<0.00467 Q	<0.0053 Q	<0.00463 Q	<0.00427 Q
cis-1,2-Dichloroethene	mg/kg	<0.00491	<0.00485	<0.00485	<0.00467	<0.0053	<0.00463	<0.00427
cis-1,3-Dichloropropene	mg/kg	<0.00295	<0.00291	<0.00291	<0.0028	<0.00318	<0.00278	<0.00256
Dibromochloromethane	mg/kg	<0.00295	<0.00291	<0.00291	<0.0028	<0.00318	<0.00278	<0.00256
Dibromomethane	mg/kg	<0.00491	<0.00485	<0.00485	<0.00467	<0.0053	<0.00463	<0.00427
Dichlorodifluoromethane	mg/kg	<0.00491	<0.00485	<0.00485	<0.00467	<0.0053	<0.00463	<0.00427
Ethylbenzene	mg/kg	<0.00491	<0.00485	<0.00485	<0.00467	<0.0053	<0.00463	<0.00427
Hexachlorobutadiene	mg/kg	<0.00295	<0.00291	<0.00291	<0.0028	<0.00318	<0.00278	<0.00256
Isopropylbenzene	mg/kg	<0.00491	<0.00485	<0.00485	<0.00467	<0.0053	<0.00463	<0.00427
m-,p-Xylene	mg/kg	<0.00491	<0.00485	<0.00485	<0.00467	<0.0053	<0.00463	<0.00427
MEK (2-Butanone)	mg/kg	<0.0196	<0.0194	<0.0194	<0.0187	<0.0212	<0.0185	0.00763 F
Methyl t-butyl ether (MTBE)	mg/kg	<0.0196	<0.0194	<0.0194	<0.0187	<0.0212	<0.0185	<0.0171
Methylene chloride	mg/kg	0.0039 F	0.00219 F	0.00635	0.00211 F	0.00182 F	0.00225 F	0.00997
MIBK (methyl isobutyl ketone)	mg/kg	<0.0196	<0.0194	<0.0194	<0.0187	<0.0212	<0.0185	<0.0171
Naphthalene	mg/kg	<0.00491	<0.00485	<0.00485	<0.00467	<0.0053	<0.00463	<0.00427
n-Butylbenzene	mg/kg	<0.00491	<0.00485	<0.00485	<0.00467	<0.0053	<0.00463	<0.00427
n-Propylbenzene	mg/kg	<0.00491	<0.00485	<0.00485	<0.00467	<0.0053	<0.00463	<0.00427
o-Xylene	mg/kg	<0.00491	<0.00485	<0.00485	<0.00467	<0.0053	<0.00463	<0.00427
p-Isopropyltoluene	mg/kg	<0.00589	<0.00582	<0.00582	<0.00561	<0.00636	<0.00556	<0.00513
sec-Butylbenzene	mg/kg	<0.00491	<0.00485	<0.00485	<0.00467	<0.0053	<0.00463	<0.00427
Styrene	mg/kg	<0.00491	<0.00485	<0.00485	<0.00467	<0.0053	<0.00463	<0.00427
tert-Butylbenzene	mg/kg	<0.00491	<0.00485	<0.00485	<0.00467	<0.0053	<0.00463	<0.00427
Tetrachloroethene	mg/kg	<0.00491	<0.00485	<0.00485	<0.00467	<0.0053	<0.00463	<0.00427
Toluene	mg/kg	<0.00491	<0.00485	<0.00485	<0.00467	<0.0053	<0.00463	<0.00427
Total Xylenes	mg/kg	<0.00491	<0.00485	<0.00485	<0.00467	<0.0053	<0.00463	<0.00427
trans-1,2-Dichloroethene	mg/kg	<0.00491	<0.00485	<0.00485	<0.00467	<0.0053	<0.00463	<0.00427
trans-1,3-Dichloropropene	mg/kg	<0.00491	<0.00485	<0.00485	<0.00467	<0.0053	<0.00463	<0.00427
Trichloroethene	mg/kg	0.000978 F	<0.00485	<0.00485	<0.00467	<0.0053	<0.00463	<0.00427
Trichlorofluoromethane	mg/kg	<0.00491	<0.00485	<0.00485	<0.00467	<0.0053	<0.00463	<0.00427
Vinyl acetate	mg/kg	<0.00982 Q	<0.0097 Q	<0.0097 Q	<0.00934 Q	<0.0106 Q	<0.00927 Q	<0.00855 Q
Vinyl chloride	mg/kg	<0.00491	<0.00485	<0.00485	<0.00467	<0.0053	<0.00463	<0.00427

DQE Flags:
F: Concentration below RL but above MDL
J: Analyte identified, but quantitation estimated.
Q: QC criteria failed, further review required
M: Concentration estimated due to matrix effect
<: Analyte not detected above RL

TABLE C-1
SOIL ANALYTICAL RESULTS
REBOUND TEST AND CONFIRMATION SOIL SAMPLING
FLUVIAL SOIL VAPOR EXTRACTION SYSTEM
Dunn Field - Defense Depot Memphis, Tennessee

	Location	FSB-20M	FSB-20B	TA4-FSB-20M DUP
	Date	11/5/2010	11/5/2010	11/5/2010
	Id	TA1-FSB-20M	TA1-FSB-20B	TA4-FSB-20M
	Lab ID	L10110245-04	L10110245-05	L10110245-08
Analyte	**units**			
1,1,1,2-Tetrachloroethane	mg/kg	<0.00272	<0.00333	<0.00269
1,1,1-Trichloroethane	mg/kg	<0.00453	<0.00554	<0.00449
1,1,2,2-Tetrachloroethane	mg/kg	<0.00272	<0.00333	<0.00269
1,1,2-Trichloroethane	mg/kg	<0.00453	<0.00554	<0.00449
1,1-Dichloroethane	mg/kg	<0.00453	<0.00554	<0.00449
1,1-Dichloroethene	mg/kg	<0.00543	<0.00665	<0.00539
1,1-Dichloropropene	mg/kg	<0.00453	<0.00554	<0.00449
1,2,3-Trichlorobenzene	mg/kg	<0.00453	<0.00554	<0.00449
1,2,3-Trichloropropane	mg/kg	<0.00453	<0.00554	<0.00449
1,2,4-Trichlorobenzene	mg/kg	<0.00453	<0.00554	<0.00449
1,2,4-Trimethylbenzene	mg/kg	<0.00543	<0.00665	<0.00539
1,2-Dibromo-3-chloropropane	mg/kg	<0.00905	<0.0111	<0.00898
1,2-Dibromoethane	mg/kg	<0.00453	<0.00554	<0.00449
1,2-Dichlorobenzene	mg/kg	<0.00453	<0.00554	<0.00449
1,2-Dichloroethane	mg/kg	<0.00272	<0.00333	<0.00269
1,2-Dichloropropane	mg/kg	<0.00453	<0.00554	<0.00449
1,3,5-Trimethylbenzene	mg/kg	<0.00453	<0.00554	<0.00449
1,3-Dichlorobenzene	mg/kg	<0.00543	<0.00665	<0.00539
1,3-Dichloropropane	mg/kg	<0.00181	<0.00222	<0.0018
1,4-Dichlorobenzene	mg/kg	<0.00181	<0.00222	<0.0018
1-Chlorohexane	mg/kg	<0.00453	<0.00554	<0.00449
2,2-Dichloropropane	mg/kg	<0.00453	<0.00554	<0.00449
2-Chlorotoluene	mg/kg	<0.00453 Q	<0.00554 Q	<0.00449 Q
2-Hexanone	mg/kg	<0.0181	<0.0222	<0.018
4-Chlorotoluene	mg/kg	<0.00453	<0.00554	<0.00449
Acetone	mg/kg	0.0392	0.0167 M	0.0143 F
Benzene	mg/kg	<0.00181	<0.00222	<0.0018
Bromobenzene	mg/kg	<0.00453	<0.00554	<0.00449
Bromochloromethane	mg/kg	<0.00453	<0.00554	<0.00449
Bromodichloromethane	mg/kg	<0.00181	<0.00222	<0.0018
Bromoform	mg/kg	<0.00453	<0.00554	<0.00449
Bromomethane	mg/kg	<0.00453	<0.00554	<0.00449
Carbon disulfide	mg/kg	0.00123 F	<0.00554	0.00658
Carbon tetrachloride	mg/kg	<0.00453	<0.00554	<0.00449
Chlorobenzene	mg/kg	<0.00181	<0.00222	<0.0018
Chloroethane	mg/kg	<0.00453	<0.00554	<0.00449
Chloroform	mg/kg	<0.00181	<0.00222	<0.0018
Chloromethane	mg/kg	<0.00453 Q	<0.00554 Q	<0.00449 Q
cis-1,2-Dichloroethene	mg/kg	<0.00453	<0.00554	<0.00449
cis-1,3-Dichloropropene	mg/kg	<0.00272	<0.00333	<0.00269
Dibromochloromethane	mg/kg	<0.00272	<0.00333	<0.00269
Dibromomethane	mg/kg	<0.00453	<0.00554	<0.00449
Dichlorodifluoromethane	mg/kg	<0.00453	<0.00554 M	<0.00449
Ethylbenzene	mg/kg	<0.00453	<0.00554	<0.00449
Hexachlorobutadiene	mg/kg	<0.00272	<0.00333	<0.00269
Isopropylbenzene	mg/kg	<0.00453	<0.00554	<0.00449
m-,p-Xylene	mg/kg	<0.00453	<0.00554	<0.00449
MEK (2-Butanone)	mg/kg	<0.0181	<0.0222	<0.018
Methyl t-butyl ether (MTBE)	mg/kg	<0.0181	<0.0222	<0.018
Methylene chloride	mg/kg	0.00957	0.00344 F	0.0155
MIBK (methyl isobutyl ketone)	mg/kg	<0.0181	<0.0222	<0.018
Naphthalene	mg/kg	<0.00453	<0.00554	<0.00449
n-Butylbenzene	mg/kg	<0.00453	<0.00554	<0.00449
n-Propylbenzene	mg/kg	<0.00453	<0.00554	<0.00449
o-Xylene	mg/kg	<0.00453	<0.00554	<0.00449
p-Isopropyltoluene	mg/kg	<0.00543	<0.00665	<0.00539
sec-Butylbenzene	mg/kg	<0.00453	<0.00554	<0.00449
Styrene	mg/kg	<0.00453	<0.00554	<0.00449
tert-Butylbenzene	mg/kg	<0.00453	<0.00554	<0.00449
Tetrachloroethene	mg/kg	<0.00453	<0.00554	<0.00449
Toluene	mg/kg	<0.00453	<0.00554	<0.00449
Total Xylenes	mg/kg	<0.00453	<0.00554	<0.00449
trans-1,2-Dichloroethene	mg/kg	<0.00453	<0.00554	<0.00449
trans-1,3-Dichloropropene	mg/kg	<0.00453	<0.00554	<0.00449
Trichloroethene	mg/kg	<0.00453	<0.00554	<0.00449
Trichlorofluoromethane	mg/kg	<0.00453	<0.00554	<0.00449
Vinyl acetate	mg/kg	<0.00905 Q	<0.0111 Q	<0.00898 Q
Vinyl chloride	mg/kg	<0.00453	<0.00554 M	<0.00449

DQE Flags:
F: Concentration below RL but above MDL
J: Analyte identified, but quantitation estimated.
Q: QC criteria failed, further review required
M: Concentration estimated due to matrix effect
<: Analyte not detected above RL

TABLE C-2
VAPOR ANALYTICAL RESULTS, SVE WELLS
REBOUND TEST AND CONFIRMATION SOIL SAMPLING
FLUVIAL SOIL VAPOR EXTRACTION SYSTEM
Dunn Field - Defense Depot Memphis, Tennessee

	Location ID	SVE-A	SVE-A DUP	SVE-B	SVE-C	SVE-D
	Date	1/11/2011	1/11/2011	1/11/2011	1/11/2011	1/11/2011
	Event	FSVE_RB10	FSVE_RB10	FSVE_RB10	FSVE_RB10	FSVE_RB10
	Lab ID	P1100117-001	P1100117-002	P1100117-003	P1100117-004	P1100117-005
Analyte	**Units**					
1,1,1-Trichloroethane	ppb v/v	<1.3	<2.6	<0.77	<0.24	<0.23
1,1,2,2-Tetrachloroethane	ppb v/v	0.65 F	0.55 F	0.24 F	0.34	1.4
1,1,2-Trichloroethane	ppb v/v	0.46 F	<2.6	<0.77	0.14 F	0.4
1,1,2-Trichlorotrifluoroethane	ppb v/v	<0.91	<1.8	<0.55	0.1 F	0.09 F
1,1-Dichloroethane	ppb v/v	<1.7	<3.5	<1	<0.33	<0.31
1,1-Dichloroethene	ppb v/v	<1.8	<3.5	<1.1	<0.34	<0.32
1,2,4-Trichlorobenzene	ppb v/v	<0.94	<1.9	<0.57	<0.18	<0.17
1,2,4-Trimethylbenzene	ppb v/v	<1.4	<2.8	<0.85	<0.27	<0.26
1,2-Dichlorobenzene	ppb v/v	<1.2	<2.3	<0.7	<0.22	<0.21
1,2-Dichloroethane	ppb v/v	<1.7	<3.5	<1	<0.33	<0.31
1,2-Dichloropropane	ppb v/v	<1.5	<3	<0.91	<0.29	<0.27
1,3-Butadiene	ppb v/v	<3.2	<6.3	<1.9	<0.6	<0.57
1,3-Dichlorobenzene	ppb v/v	<1.2	<2.3	<0.7	<0.22	<0.21
1,4-Dichlorobenzene	ppb v/v	<1.2	<2.3	<0.7	<0.22	<0.21
1,4-Dioxane	ppb v/v	<1.9	<3.9	<1.2	<0.37	<0.35
2-Butanone (MEK)	ppb v/v	<12	<24	0.8 F	0.38 F	0.24 F
2-Hexanone	ppb v/v	<1.7	<3.4	<1	<0.32	<0.31
2-Propanol (Isopropyl Alcohol)	ppb v/v	<2.8	<5.7	1.4 F	<0.54	<0.52
4-Methyl-2-pentanone	ppb v/v	<1.7	<3.4	<1	<0.32	<0.31
Acetone	ppb v/v	<15	<29	3 F	2.3 F	1.9 F
Acetonitrile	ppb v/v	<4.2	<8.3	<2.5	<0.79	<0.76
Acrolein	ppb v/v	<6.1	<12	<3.7	0.32 F	0.14 F
alpha-Pinene	ppb v/v	<1.3	<2.5	<0.75	<0.24	<0.23
Benzene	ppb v/v	0.44 F	<4.4	1.4	0.25 F	0.24 F
Bromodichloromethane	ppb v/v	<1	<2.1	<0.63	<0.2	<0.19
Bromomethane	ppb v/v	<1.8	<3.6	<1.1	0.073 F	<0.33
Carbon Disulfide	ppb v/v	0.88 F	<22	0.35 F	2.4	0.11 F
Carbon Tetrachloride	ppb v/v	1.2	1.4 F	0.22 F	0.22	0.12 F
Chlorobenzene	ppb v/v	<1.5	<3	<0.91	<0.29	<0.28
Chloroform	ppb v/v	26	33	7.3	15	12
Chloromethane	ppb v/v	<3.4	<6.8	0.72 F	0.68	0.29 F
cis-1,2-Dichloroethene	ppb v/v	3.3	4.6	7.3	1.3	0.64
Cyclohexane	ppb v/v	<2	<4.1	0.59 F	<0.39	<0.37
Dichlorodifluoromethane (CFC 12)	ppb v/v	0.57 F	0.63 F	0.63 F	0.67	0.6
Ethanol	ppb v/v	<19	<37	4.9 F	<3.5	<3.4
Ethyl Acetate	ppb v/v	<1.9	<3.9	200	0.63	<0.35
Ethylbenzene	ppb v/v	<1.6	<3.2	<0.97	<0.31	<0.29
m,p-Xylenes	ppb v/v	<1.6	<3.2	<0.97	<0.31	<0.29
Methyl Methacrylate	ppb v/v	<1.7	<3.4	16	<0.32	<0.31
Methylene Chloride	ppb v/v	0.83 F	1.2 F	0.45 F	0.43	0.39
Naphthalene	ppb v/v	<1.3	<2.7	<0.8	<0.25	<0.24
n-Butyl Acetate	ppb v/v	<1.5	<2.9	<0.88	<0.28	<0.27
n-Heptane	ppb v/v	<1.7	<3.4	0.58 F	<0.32	<0.31
n-Hexane	ppb v/v	<2	<4	4.2	0.13 F	0.64
n-Nonane	ppb v/v	<1.3	<2.7	<0.8	<0.25	<0.24
n-Octane	ppb v/v	<1.5	<3	<0.9	<0.28	0.062 F
o-Xylene	ppb v/v	<1.6	<3.2	<0.97	<0.31	<0.29
Propene	ppb v/v	<4.1	<8.1	1.1 F	0.33 F	0.44 F
Tetrachloroethene	ppb v/v	140	210	5.8	13	1.1
Tetrahydrofuran (THF)	ppb v/v	<2.4	<4.7	<1.4	0.09 F	<0.43
Toluene	ppb v/v	<1.9	<3.7	12	0.2 F	0.2 F
trans-1,2-Dichloroethene	ppb v/v	1.9	2.9 F	3.3	0.31 F	0.17 F
Trichloroethene	ppb v/v	42	63	24	15	35
Trichlorofluoromethane	ppb v/v	<1.2	<2.5	0.27 F	0.32	0.29
Vinyl Acetate	ppb v/v	<9.9	<20	<6	<1.9	<1.8
Vinyl Chloride	ppb v/v	<2.7	<5.5	<1.6	<0.52	<0.5

Notes:
F: Estimate, detected below RL
ppb v/v: parts per billion volume per volume
SVE: soil vapor extraction
<: Analyte not detected above RL

TABLE C-2
VAPOR ANALYTICAL RESULTS, SVE WELLS
REBOUND TEST AND CONFIRMATION SOIL SAMPLING
FLUVIAL SOIL VAPOR EXTRACTION SYSTEM
Dunn Field - Defense Depot Memphis, Tennessee

	Location ID	SVE-E	SVE-F	SVE-G
	Date	1/11/2011	1/11/2011	1/11/2011
	Event	FSVE_RB10	FSVE_RB10	FSVE_RB10
	Lab ID	P1100117-006	P1100117-007	P1100117-008
Analyte	**Units**			
1,1,1-Trichloroethane	ppb v/v	<2.3	<35	<45
1,1,2,2-Tetrachloroethane	ppb v/v	9.8	16 F	51
1,1,2-Trichloroethane	ppb v/v	5.4	<35	44 F
1,1,2-Trichlorotrifluoroethane	ppb v/v	<1.6	<25	<32
1,1-Dichloroethane	ppb v/v	<3.1	<47	<60
1,1-Dichloroethene	ppb v/v	<3.2	<48	20 F
1,2,4-Trichlorobenzene	ppb v/v	<1.7	<25	<33
1,2,4-Trimethylbenzene	ppb v/v	<2.6	<38	<50
1,2-Dichlorobenzene	ppb v/v	<2.1	<31	<40
1,2-Dichloroethane	ppb v/v	<3.1	<47	<60
1,2-Dichloropropane	ppb v/v	<2.7	<41	<53
1,3-Butadiene	ppb v/v	<5.7	<85	<110
1,3-Dichlorobenzene	ppb v/v	<2.1	<31	<40
1,4-Dichlorobenzene	ppb v/v	<2.1	<31	<40
1,4-Dioxane	ppb v/v	<3.5	<52	<68
2-Butanone (MEK)	ppb v/v	<21	<320	<410
2-Hexanone	ppb v/v	<3.1	<46	<59
2-Propanol (Isopropyl Alcohol)	ppb v/v	<5.1	<77	<99
4-Methyl-2-pentanone	ppb v/v	<3.1	<46	<59
Acetone	ppb v/v	<27	<400	<510
Acetonitrile	ppb v/v	<7.5	<110	<140
Acrolein	ppb v/v	<11	<160	<210
alpha-Pinene	ppb v/v	<2.3	<34	<44
Benzene	ppb v/v	<3.9	<59	<76
Bromodichloromethane	ppb v/v	<1.9	<28	<36
Bromomethane	ppb v/v	<3.2	<49	<63
Carbon Disulfide	ppb v/v	4 F	<300	<390
Carbon Tetrachloride	ppb v/v	1.4 F	26 F	14 F
Chlorobenzene	ppb v/v	<2.7	<41	<53
Chloroform	ppb v/v	270	3300	2400
Chloromethane	ppb v/v	1.2 F	<91	<120
cis-1,2-Dichloroethene	ppb v/v	14	130	76
Cyclohexane	ppb v/v	<3.7	<55	<71
Dichlorodifluoromethane (CFC 12)	ppb v/v	0.99 F	<38	<49
Ethanol	ppb v/v	<33	<500	<650
Ethyl Acetate	ppb v/v	<3.5	<52	<68
Ethylbenzene	ppb v/v	<2.9	<43	<56
m,p-Xylenes	ppb v/v	<2.9	<43	<56
Methyl Methacrylate	ppb v/v	<3.1	<46	<59
Methylene Chloride	ppb v/v	10	100	58 F
Naphthalene	ppb v/v	<2.4	<36	<46
n-Butyl Acetate	ppb v/v	<2.7	<40	<51
n-Heptane	ppb v/v	<3.1	<46	<59
n-Hexane	ppb v/v	<3.6	<54	<69
n-Nonane	ppb v/v	<2.4	<36	<46
n-Octane	ppb v/v	<2.7	<40	<52
o-Xylene	ppb v/v	<2.9	<43	<56
Propene	ppb v/v	<7.3	<110	<140
Tetrachloroethene	ppb v/v	7.6	160	70
Tetrahydrofuran (THF)	ppb v/v	0.88 F	<64	<83
Toluene	ppb v/v	<3.3	<50	<65
trans-1,2-Dichloroethene	ppb v/v	3.4	29 F	24 F
Trichloroethene	ppb v/v	190	720	3400
Trichlorofluoromethane	ppb v/v	<2.2	<34	<43
Vinyl Acetate	ppb v/v	<18	<270	<350
Vinyl Chloride	ppb v/v	<4.9	<74	<95

Notes:
F: Estimate, detected below RL
ppb v/v: parts per billion volume per volume
SVE: soil vapor extraction
<: Analyte not detected above RL

TABLE C-3
VAPOR ANALYTICAL RESULTS, VMPS
REBOUND TEST AND CONFIRMATION SOIL SAMPLING
FLUVIAL SOIL VAPOR EXTRACTION SYSTEM
Dunn Field - Defense Depot Memphis, Tennessee

	Location ID	VMP-01A	VMP-01B	VMP-01B DUP	VMP-02A	VMP-02B
	Date	1/6/2011	1/6/2011	1/6/2011	1/6/2011	1/6/2011
	Event	FSVE_RB10	FSVE_RB10	FSVE_RB10	FSVE_RB10	FSVE_RB10
	Lab ID	P1100117-009	P1100117-010	P1100117-011	P1100117-012	P1100117-013
Analyte	**Units**					
1,1,1-Trichloroethane	ppb v/v	<1.1	<2.2	<2.8	<1.1	<15
1,1,2,2-Tetrachloroethane	ppb v/v	<0.88	<1.8	<2.2	8.7	<12
1,1,2-Trichloroethane	ppb v/v	<1.1	<2.2	<2.8	0.87 F	<15
1,1,2-Trichlorotrifluoroethane	ppb v/v	<0.79	<1.6	<2	0.66 F	<10
1,1-Dichloroethane	ppb v/v	<1.5	<3	<3.7	<1.5	<20
1,1-Dichloroethene	ppb v/v	<1.5	<3.1	<3.8	0.66 F	6.4 F
1,2,4-Trichlorobenzene	ppb v/v	<0.82	<1.6	<2	<0.82	<11
1,2,4-Trimethylbenzene	ppb v/v	0.78 F	<2.5	<3.1	<1.2	<16
1,2-Dichlorobenzene	ppb v/v	<1	<2	<2.5	<1	<13
1,2-Dichloroethane	ppb v/v	<1.5	<3	<3.7	<1.5	<20
1,2-Dichloropropane	ppb v/v	<1.3	<2.6	<3.3	<1.3	<17
1,3-Butadiene	ppb v/v	<2.7	<5.5	<6.8	<2.7	<36
1,3-Dichlorobenzene	ppb v/v	<1	<2	<2.5	<1	<13
1,4-Dichlorobenzene	ppb v/v	6.1	0.54 F	<2.5	<1	<13
1,4-Dioxane	ppb v/v	<1.7	<3.4	<4.2	<1.7	<22
2-Butanone (MEK)	ppb v/v	150	1 F	<26	1 F	<140
2-Hexanone	ppb v/v	57	<3	<3.7	<1.5	<20
2-Propanol (Isopropyl Alcohol)	ppb v/v	<2.5	<4.9	<6.2	1.6 F	<33
4-Methyl-2-pentanone	ppb v/v	0.33 F	<3	<3.7	<1.5	<20
Acetone	ppb v/v	73	<25	<32	6 F	<170
Acetonitrile	ppb v/v	<3.6	<7.2	<9	<3.6	<48
Acrolein	ppb v/v	4 F, V	<11	<13	<5.3	<70
alpha-Pinene	ppb v/v	<1.1	<2.2	<2.7	<1.1	<14
Benzene	ppb v/v	0.54 F	0.95 F	<4.7	0.72 F	<25
Bromodichloromethane	ppb v/v	<0.9	<1.8	<2.3	<0.9	<12
Bromomethane	ppb v/v	<1.6	<3.1	<3.9	<1.6	<21
Carbon Disulfide	ppb v/v	170	<19	<24	<9.7	<130
Carbon Tetrachloride	ppb v/v	0.9 F	0.91 F	0.86 F	1.8	<13
Chlorobenzene	ppb v/v	<1.3	<2.6	<3.3	<1.3	<17
Chloroform	ppb v/v	16	21	20	14	4.6 F
Chloromethane	ppb v/v	<2.9	<5.9	<7.3	<2.9	<39
cis-1,2-Dichloroethene	ppb v/v	0.38 F	7.6	8.3	55	45
Cyclohexane	ppb v/v	<1.8	<3.5	<4.4	<1.8	<23
Dichlorodifluoromethane (CFC 12)	ppb v/v	0.61 F	0.64 F	<3.1	1.7	<16
Ethanol	ppb v/v	20	<32	<40	9.3 F	<210
Ethyl Acetate	ppb v/v	<1.7	3.1 F	<4.2	<1.7	<22
Ethylbenzene	ppb v/v	<1.4	<2.8	<3.5	<1.4	<18
m,p-Xylenes	ppb v/v	1.1 F	<2.8	<3.5	<1.4	<18
Methyl Methacrylate	ppb v/v	<1.5	<3	<3.7	<1.5	<20
Methylene Chloride	ppb v/v	0.55 F	0.7 F	<4.4	0.44 F	<23
Naphthalene	ppb v/v	<1.2	<2.3	<2.9	<1.2	<15
n-Butyl Acetate	ppb v/v	0.41 F	<2.5	<3.2	<1.3	<17
n-Heptane	ppb v/v	1.1 F	<3	<3.7	<1.5	<20
n-Hexane	ppb v/v	1 F	<3.4	<4.3	0.84 F	<23
n-Nonane	ppb v/v	1.2	<2.3	<2.9	<1.2	<15
n-Octane	ppb v/v	1.8	<2.6	<3.2	<1.3	<17
o-Xylene	ppb v/v	0.49 F	<2.8	<3.5	<1.4	<18
Propene	ppb v/v	2.6 F	<7	<8.8	2.3 F	<47
Tetrachloroethene	ppb v/v	15	160	210	79	14
Tetrahydrofuran (THF)	ppb v/v	0.95 F	0.92 F	1.1 F	0.44 F	<27
Toluene	ppb v/v	0.64 F	1 F	<4	0.87 F	5.9 F
trans-1,2-Dichloroethene	ppb v/v	0.46 F	4	4.7	5.3	6.8 F
Trichloroethene	ppb v/v	6	48	51	99	1100
Trichlorofluoromethane	ppb v/v	0.28 F	<2.2	<2.7	0.32 F	<14
Vinyl Acetate	ppb v/v	<8.6	<17	<21	<8.6	<110
Vinyl Chloride	ppb v/v	<2.4	<4.7	<5.9	<2.4	<31

Notes:
F: Estimate, detected below RL
ppb v/v: parts per billion volume per volume
VMP: vapor monitoring point
<: Analyte not detected above RL

TABLE C-3
VAPOR ANALYTICAL RESULTS, VMPS
REBOUND TEST AND CONFIRMATION SOIL SAMPLING
FLUVIAL SOIL VAPOR EXTRACTION SYSTEM
Dunn Field - Defense Depot Memphis, Tennessee

	Location ID	VMP-03A	VMP-03B	VMP-04A	VMP-04A DUP	VMP-04B
	Date	1/6/2011	1/6/2011	1/7/2011	1/7/2011	1/7/2011
	Event	FSVE_RB10	FSVE_RB10	FSVE_RB10	FSVE_RB10	FSVE_RB10
	Lab ID	P1100117-014	P1100118-001	P1100118-002	P1100118-004	P1100118-003
Analyte	**Units**					
1,1,1-Trichloroethane	ppb v/v	<8.7	<0.22	<0.23	<0.65	<0.55
1,1,2,2-Tetrachloroethane	ppb v/v	<6.9	<0.17	<0.18	<0.52	<0.44
1,1,2-Trichloroethane	ppb v/v	<8.7	<0.22	<0.23	<0.65	<0.55
1,1,2-Trichlorotrifluoroethane	ppb v/v	3 F	0.073 F	0.069 F	<0.46	<0.39
1,1-Dichloroethane	ppb v/v	<12	<0.29	<0.31	<0.88	<0.75
1,1-Dichloroethene	ppb v/v	9.6 F	2.3	<0.32	<0.89	0.52 F
1,2,4-Trichlorobenzene	ppb v/v	<6.4	<0.16	<0.17	<0.48	<0.41
1,2,4-Trimethylbenzene	ppb v/v	<9.7	<0.24	<0.26	<0.72	<0.62
1,2-Dichlorobenzene	ppb v/v	<7.9	<0.2	<0.21	<0.59	<0.5
1,2-Dichloroethane	ppb v/v	<12	<0.29	<0.31	<0.88	<0.75
1,2-Dichloropropane	ppb v/v	<10	<0.26	<0.27	<0.77	<0.65
1,3-Butadiene	ppb v/v	<22	<0.54	<0.57	<1.6	<1.4
1,3-Dichlorobenzene	ppb v/v	<7.9	<0.2	<0.21	<0.59	<0.5
1,4-Dichlorobenzene	ppb v/v	<7.9	0.29	0.18 F	0.19 F	0.19 F
1,4-Dioxane	ppb v/v	<13	<0.33	<0.35	2.3	<0.84
2-Butanone (MEK)	ppb v/v	<81	0.47 F	0.31 F	1.8 F	2.9 F
2-Hexanone	ppb v/v	<12	<0.29	<0.31	<0.87	<0.74
2-Propanol (Isopropyl Alcohol)	ppb v/v	<19	11	<0.51	<1.4	<1.2
4-Methyl-2-pentanone	ppb v/v	<12	0.11 F	<0.31	<0.86	<0.74
Acetone	ppb v/v	<100	4.7	4.6	7.5	16
Acetonitrile	ppb v/v	<28	0.6 F	<0.75	<2.1	1.6 F
Acrolein	ppb v/v	<42	0.33 F	0.4 F	0.45 F	1.3 F
alpha-Pinene	ppb v/v	<8.5	<0.21	<0.23	<0.64	<0.54
Benzene	ppb v/v	<15	1.5	0.15 F	<1.1	0.57 F
Bromodichloromethane	ppb v/v	<7.1	<0.18	<0.19	<0.53	<0.45
Bromomethane	ppb v/v	<12	0.11 F	<0.32	<0.91	0.96
Carbon Disulfide	ppb v/v	<76	0.2 F	1.4 F	4.2 F	2.2 F
Carbon Tetrachloride	ppb v/v	22	0.055 F	0.044 F	<0.56	<0.48
Chlorobenzene	ppb v/v	<10	<0.26	<0.27	<0.77	<0.66
Chloroform	ppb v/v	61	0.71	1.3	0.96	20
Chloromethane	ppb v/v	<23	0.21 F	<0.61	<1.7	2.3
cis-1,2-Dichloroethene	ppb v/v	7.8 F	5.6	44	34	2.3
Cyclohexane	ppb v/v	<14	0.3 F	<0.37	<1	0.4 F
Dichlorodifluoromethane (CFC 12)	ppb v/v	6.2 F	0.59	57	45	69
Ethanol	ppb v/v	<130	9.7	<3.3	<9.4	<8
Ethyl Acetate	ppb v/v	<13	24	<0.35	<0.98	<0.84
Ethylbenzene	ppb v/v	<11	0.21 F	<0.29	<0.82	<0.7
m,p-Xylenes	ppb v/v	<11	0.65	<0.29	<0.82	<0.7
Methyl Methacrylate	ppb v/v	<12	<0.29	<0.31	<0.87	<0.74
Methylene Chloride	ppb v/v	<14	0.38	0.14 F	0.23 F	0.22 F
Naphthalene	ppb v/v	<9.1	<0.23	0.1 F	<0.68	<0.58
n-Butyl Acetate	ppb v/v	<10	<0.25	<0.27	<0.75	<0.64
n-Heptane	ppb v/v	<12	0.31	<0.31	<0.86	<0.74
n-Hexane	ppb v/v	<14	1.3	<0.36	<1	0.29 F
n-Nonane	ppb v/v	<9.1	<0.23	<0.24	<0.68	<0.58
n-Octane	ppb v/v	<10	0.075 F	<0.27	<0.76	<0.65
o-Xylene	ppb v/v	<11	0.22 F	<0.29	<0.82	<0.7
Propene	ppb v/v	<28	5.7	0.59 F	1 F	12
Tetrachloroethene	ppb v/v	62	0.54	0.68	0.51 F	3.2
Tetrahydrofuran (THF)	ppb v/v	<16	0.086 F	0.11 F	<1.2	0.34 F
Toluene	ppb v/v	<13	3.6	0.28 F	0.34 F	0.29 F
trans-1,2-Dichloroethene	ppb v/v	12 F	2.8	33	25	53
Trichloroethene	ppb v/v	830	26	52	41	55
Trichlorofluoromethane	ppb v/v	<8.5	0.24	0.2 F	0.19 F	0.17 F
Vinyl Acetate	ppb v/v	<68	<1.7	<1.8	<5	1.8 F
Vinyl Chloride	ppb v/v	6.1 F	0.31 F	<0.49	<1.4	<1.2

Notes:
F: Estimate, detected below RL
ppb v/v: parts per billion volume per volume
VMP: vapor monitoring point
<: Analyte not detected above RL

TABLE C-3
VAPOR ANALYTICAL RESULTS, VMPS
REBOUND TEST AND CONFIRMATION SOIL SAMPLING
FLUVIAL SOIL VAPOR EXTRACTION SYSTEM
Dunn Field - Defense Depot Memphis, Tennessee

	Location ID	VMP-05A	VMP-05B	VMP-06A	VMP-06B	VMP-07A
	Date	1/7/2011	1/7/2011	1/7/2011	1/7/2011	1/7/2011
	Event	FSVE_RB10	FSVE_RB10	FSVE_RB10	FSVE_RB10	FSVE_RB10
	Lab ID	P1100118-005	P1100118-006	P1100118-007	P1100118-008	P1100118-009
Analyte	**Units**					
1,1,1-Trichloroethane	ppb v/v	<4.6	<0.65	<0.75	<4.5	<4.5
1,1,2,2-Tetrachloroethane	ppb v/v	50	4.7	<0.6	45	2.5 F
1,1,2-Trichloroethane	ppb v/v	1.2 F	<0.65	<0.75	<4.5	<4.5
1,1,2-Trichlorotrifluoroethane	ppb v/v	<3.3	<0.46	<0.54	<3.2	4.4
1,1-Dichloroethane	ppb v/v	<6.2	<0.88	<1	<6.1	3 F
1,1-Dichloroethene	ppb v/v	<6.4	<0.89	<1	<6.3	7.5
1,2,4-Trichlorobenzene	ppb v/v	<3.4	<0.48	<0.55	<3.3	<3.3
1,2,4-Trimethylbenzene	ppb v/v	<5.1	<0.72	<0.83	<5	<5
1,2-Dichlorobenzene	ppb v/v	<4.2	<0.59	<0.68	<4.1	<4.1
1,2-Dichloroethane	ppb v/v	<6.2	<0.88	<1	<6.1	<6
1,2-Dichloropropane	ppb v/v	<5.5	<0.77	<0.89	<5.4	<5.3
1,3-Butadiene	ppb v/v	<11	<1.6	<1.9	<11	<11
1,3-Dichlorobenzene	ppb v/v	<4.2	<0.59	<0.68	<4.1	<4.1
1,4-Dichlorobenzene	ppb v/v	<4.2	0.35 F	0.32 F	<4.1	<4.1
1,4-Dioxane	ppb v/v	<7	<0.98	<1.1	<6.9	<6.8
2-Butanone (MEK)	ppb v/v	3 F	0.61 F	0.76 F	<42	<41
2-Hexanone	ppb v/v	<6.2	<0.87	<1	<6.1	<6
2-Propanol (Isopropyl Alcohol)	ppb v/v	<10	<1.4	<1.7	<10	<9.9
4-Methyl-2-pentanone	ppb v/v	<6.2	<0.86	<1	<6.1	<6
Acetone	ppb v/v	37 F	4.4 F	2.8 F	<52	<51
Acetonitrile	ppb v/v	<15	1.6 F	<2.4	<15	<15
Acrolein	ppb v/v	<22	<3.1	<3.6	<22	<21
alpha-Pinene	ppb v/v	<4.5	<0.64	<0.74	<4.5	<4.4
Benzene	ppb v/v	<7.9	0.71 F	<1.3	<7.8	1.6 F
Bromodichloromethane	ppb v/v	<3.8	<0.53	<0.61	<3.7	<3.6
Bromomethane	ppb v/v	<6.5	<0.91	<1.1	<6.4	<6.3
Carbon Disulfide	ppb v/v	3.9 F	2.3 F	0.62 F	<40	<39
Carbon Tetrachloride	ppb v/v	<4	<0.56	<0.65	<3.9	37
Chlorobenzene	ppb v/v	<5.5	<0.77	<0.89	<5.4	<5.3
Chloroform	ppb v/v	5.3	0.74	3.1	2.2 F	1800
Chloromethane	ppb v/v	<12	<1.7	0.58 F	3.9 F	<12
cis-1,2-Dichloroethene	ppb v/v	96	0.68 F	1.1	17	68
Cyclohexane	ppb v/v	<7.3	<1	<1.2	<7.2	<7.1
Dichlorodifluoromethane (CFC 12)	ppb v/v	<5.1	0.55 F	0.52 F	<5	17
Ethanol	ppb v/v	<67	<9.4	<11	<66	55 F
Ethyl Acetate	ppb v/v	<7	1.2	<1.1	<6.9	<6.8
Ethylbenzene	ppb v/v	<5.8	<0.82	<0.94	<5.7	<5.6
m,p-Xylenes	ppb v/v	<5.8	<0.82	<0.94	<5.7	<5.6
Methyl Methacrylate	ppb v/v	<6.2	<0.87	<1	<6.1	<6
Methylene Chloride	ppb v/v	<7.3	0.25 F	<1.2	<7.1	22
Naphthalene	ppb v/v	<4.8	<0.68	<0.78	<4.7	<4.7
n-Butyl Acetate	ppb v/v	<5.3	<0.75	<0.86	<5.2	<5.1
n-Heptane	ppb v/v	<6.2	<0.86	<1	<6.1	<6
n-Hexane	ppb v/v	<7.2	0.63 F	<1.2	<7	<6.9
n-Nonane	ppb v/v	<4.8	<0.68	<0.78	<4.7	<4.7
n-Octane	ppb v/v	<5.4	<0.76	<0.88	<5.3	<5.2
o-Xylene	ppb v/v	<5.8	<0.82	<0.94	<5.7	<5.6
Propene	ppb v/v	8.8 F	16	<2.4	4.8 F	6 F
Tetrachloroethene	ppb v/v	7.2	1.9	0.54 F	5.4	190
Tetrahydrofuran (THF)	ppb v/v	<8.5	<1.2	<1.4	<8.4	<8.3
Toluene	ppb v/v	<6.7	0.62 F	<1.1	<6.6	<6.5
trans-1,2-Dichloroethene	ppb v/v	20	0.75 F	0.28 F	6 F	27
Trichloroethene	ppb v/v	400	52	67	390	730
Trichlorofluoromethane	ppb v/v	<4.5	0.24 F	0.27 F	<4.4	<4.3
Vinyl Acetate	ppb v/v	<36	<5	<5.8	<35	<35
Vinyl Chloride	ppb v/v	<9.9	<1.4	<1.6	<9.7	12

Notes:
F: Estimate, detected below RL
ppb v/v: parts per billion volume per volume
VMP: vapor monitoring point
<: Analyte not detected above RL

TABLE C-3
VAPOR ANALYTICAL RESULTS, VMPS
REBOUND TEST AND CONFIRMATION SOIL SAMPLING
FLUVIAL SOIL VAPOR EXTRACTION SYSTEM
Dunn Field - Defense Depot Memphis, Tennessee

	Location ID	VMP-07B	VMP-08A	VMP-08B	VMP-09A	VMP-09B
	Date	1/7/2011	1/11/2011	1/11/2011	1/11/2011	1/11/2011
	Event	FSVE_RB10	FSVE_RB10	FSVE_RB10	FSVE_RB10	FSVE_RB10
	Lab ID	P1100118-010	P1100118-011	P1100118-012	P1100118-013	P1100118-014
Analyte	**Units**					
1,1,1-Trichloroethane	ppb v/v	<4.4	0.078 F	<4.4	0.053 F	<0.21
1,1,2,2-Tetrachloroethane	ppb v/v	<3.5	0.22	<3.5	4.6	0.24
1,1,2-Trichloroethane	ppb v/v	<4.4	<0.21	8.3	0.42	0.28
1,1,2-Trichlorotrifluoroethane	ppb v/v	<3.2	1.3	<3.1	0.85	0.19
1,1-Dichloroethane	ppb v/v	3.1 F	0.087 F	1.6 F	<0.29	0.15 F
1,1-Dichloroethene	ppb v/v	<6.1	0.58	<6.1	4	1.1
1,2,4-Trichlorobenzene	ppb v/v	<3.3	<0.15	<3.2	1.8	0.31
1,2,4-Trimethylbenzene	ppb v/v	<4.9	<0.23	<4.9	0.076 F	0.078 F
1,2-Dichlorobenzene	ppb v/v	<4	<0.19	<4	0.18 F	0.068 F
1,2-Dichloroethane	ppb v/v	<6	0.069 F	<5.9	1.3	3.2
1,2-Dichloropropane	ppb v/v	3.8 F	0.053 F	<5.2	0.21 F	0.19 F
1,3-Butadiene	ppb v/v	<11	0.56	<11	0.24 F	0.54
1,3-Dichlorobenzene	ppb v/v	<4	<0.19	<4	2.2	0.94
1,4-Dichlorobenzene	ppb v/v	<4	0.077 F	<4	0.71	0.23
1,4-Dioxane	ppb v/v	<6.7	<0.32	<6.7	<0.32	<0.32
2-Butanone (MEK)	ppb v/v	<41	0.61 F	<41	0.58 F	1 F
2-Hexanone	ppb v/v	<5.9	<0.28	<5.9	0.12 F	0.12 F
2-Propanol (Isopropyl Alcohol)	ppb v/v	<9.8	<0.47	<9.8	0.45 F	2.3
4-Methyl-2-pentanone	ppb v/v	<5.9	<0.28	<5.9	<0.29	0.24 F
Acetone	ppb v/v	<51	2.3 F	<51	2.6	9.4
Acetonitrile	ppb v/v	<14	<0.69	<14	0.37 F	0.47 F
Acrolein	ppb v/v	<21	0.2 F	<21	0.25 F	0.83 F
alpha-Pinene	ppb v/v	<4.3	<0.21	<4.3	<0.21	0.14 F
Benzene	ppb v/v	<7.6	0.099 F	<7.5	0.41	1.5
Bromodichloromethane	ppb v/v	<3.6	0.038 F	<3.6	0.14 F	0.077 F
Bromomethane	ppb v/v	<6.2	<0.3	<6.2	0.068 F	0.42
Carbon Disulfide	ppb v/v	5.4 F	0.86 F	<39	0.88 F	0.96 F
Carbon Tetrachloride	ppb v/v	<3.8	21	<3.8	22	12
Chlorobenzene	ppb v/v	<5.3	<0.25	<5.2	0.094 F	0.15 F
Chloroform	ppb v/v	3900	14	1200	55	240
Chloromethane	ppb v/v	<12	<0.56	3.1 F	1.8	1
cis-1,2-Dichloroethene	ppb v/v	40	0.95	52	4.9	31
Cyclohexane	ppb v/v	<7	0.14 F	<7	<0.34	0.14 F
Dichlorodifluoromethane (CFC 12)	ppb v/v	<4.9	63	1.3 F	0.51	0.5
Ethanol	ppb v/v	<64	<3.1	<64	2.1 F	1.6 F
Ethyl Acetate	ppb v/v	<6.7	<0.32	<6.7	2.5	<0.32
Ethylbenzene	ppb v/v	<5.6	<0.26	<5.5	0.085 F	0.079 F
m,p-Xylenes	ppb v/v	<5.6	<0.26	<5.5	0.29	0.22 F
Methyl Methacrylate	ppb v/v	<5.9	<0.28	<5.9	<0.29	<0.29
Methylene Chloride	ppb v/v	140	2.5	81	0.59	6.1
Naphthalene	ppb v/v	<4.6	<0.22	<4.6	<0.22	<0.22
n-Butyl Acetate	ppb v/v	<5.1	<0.24	<5.1	<0.25	<0.25
n-Heptane	ppb v/v	<5.9	<0.28	<5.9	0.088 F	0.057 F
n-Hexane	ppb v/v	<6.9	<0.33	<6.8	0.23 F	0.25 F
n-Nonane	ppb v/v	<4.6	<0.22	<4.6	<0.22	0.056 F
n-Octane	ppb v/v	<5.2	<0.25	<5.1	<0.25	<0.25
o-Xylene	ppb v/v	<5.6	<0.26	<5.5	0.11 F	0.083 F
Propene	ppb v/v	<14	0.65 F	<14	2.2	10
Tetrachloroethene	ppb v/v	22	4.1	17	5.3	57
Tetrahydrofuran (THF)	ppb v/v	<8.2	0.36 F	<8.1	0.57	0.91
Toluene	ppb v/v	<6.4	0.069 F	<6.4	0.78	0.38
trans-1,2-Dichloroethene	ppb v/v	4 F	0.16 F	4.6 F	0.66	8.6
Trichloroethene	ppb v/v	52	4.5	100	52	39
Trichlorofluoromethane	ppb v/v	<4.3	0.4	<4.3	1	0.45
Vinyl Acetate	ppb v/v	<34	<1.6	<34	<1.7	<1.7
Vinyl Chloride	ppb v/v	<9.5	<0.45	<9.4	<0.46	0.22 F

Notes:
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ppb v/v: parts per billion volume per volume
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TABLE C-3
VAPOR ANALYTICAL RESULTS, VMPS
REBOUND TEST AND CONFIRMATION SOIL SAMPLING
FLUVIAL SOIL VAPOR EXTRACTION SYSTEM
Dunn Field - Defense Depot Memphis, Tennessee

	Location ID	VMP-10A	VMP-10B
	Date	1/11/2011	1/11/2011
	Event	FSVE_RB10	FSVE_RB10
	Lab ID	P1100118-015	P1100118-016
Analyte	**Units**		
1,1,1-Trichloroethane	ppb v/v	<0.21	<2.1
1,1,2,2-Tetrachloroethane	ppb v/v	<0.17	<1.7
1,1,2-Trichloroethane	ppb v/v	<0.21	<2.1
1,1,2-Trichlorotrifluoroethane	ppb v/v	1.1	<1.5
1,1-Dichloroethane	ppb v/v	<0.28	<2.8
1,1-Dichloroethene	ppb v/v	1.7	<2.9
1,2,4-Trichlorobenzene	ppb v/v	<0.15	<1.5
1,2,4-Trimethylbenzene	ppb v/v	<0.23	<2.3
1,2-Dichlorobenzene	ppb v/v	<0.19	<1.9
1,2-Dichloroethane	ppb v/v	<0.28	<2.8
1,2-Dichloropropane	ppb v/v	<0.25	<2.5
1,3-Butadiene	ppb v/v	<0.52	<5.2
1,3-Dichlorobenzene	ppb v/v	<0.19	<1.9
1,4-Dichlorobenzene	ppb v/v	<0.19	<1.9
1,4-Dioxane	ppb v/v	<0.32	<3.2
2-Butanone (MEK)	ppb v/v	0.15 F	<20
2-Hexanone	ppb v/v	<0.28	<2.8
2-Propanol (Isopropyl Alcohol)	ppb v/v	<0.46	<4.7
4-Methyl-2-pentanone	ppb v/v	<0.28	<2.8
Acetone	ppb v/v	2.3 F	<24
Acetonitrile	ppb v/v	0.24 F	<6.9
Acrolein	ppb v/v	0.15 F	<10
alpha-Pinene	ppb v/v	<0.2	<2.1
Benzene	ppb v/v	<0.36	0.8 F
Bromodichloromethane	ppb v/v	<0.17	<1.7
Bromomethane	ppb v/v	<0.29	<3
Carbon Disulfide	ppb v/v	0.16 F	1.4 F
Carbon Tetrachloride	ppb v/v	23	20
Chlorobenzene	ppb v/v	<0.25	<2.5
Chloroform	ppb v/v	2.3	460
Chloromethane	ppb v/v	<0.55	<5.6
cis-1,2-Dichloroethene	ppb v/v	<0.29	3.6
Cyclohexane	ppb v/v	<0.33	<3.3
Dichlorodifluoromethane (CFC 12)	ppb v/v	0.52	0.62 F
Ethanol	ppb v/v	1.5 F	<31
Ethyl Acetate	ppb v/v	0.22 F	<3.2
Ethylbenzene	ppb v/v	<0.26	<2.6
m,p-Xylenes	ppb v/v	<0.26	<2.6
Methyl Methacrylate	ppb v/v	<0.28	<2.8
Methylene Chloride	ppb v/v	0.085 F	0.76 F
Naphthalene	ppb v/v	<0.22	<2.2
n-Butyl Acetate	ppb v/v	<0.24	<2.4
n-Heptane	ppb v/v	<0.28	<2.8
n-Hexane	ppb v/v	<0.32	<3.3
n-Nonane	ppb v/v	<0.22	<2.2
n-Octane	ppb v/v	<0.24	<2.5
o-Xylene	ppb v/v	<0.26	<2.6
Propene	ppb v/v	0.26 F	<6.7
Tetrachloroethene	ppb v/v	0.12 F	170
Tetrahydrofuran (THF)	ppb v/v	0.099 F	<3.9
Toluene	ppb v/v	<0.3	<3.1
trans-1,2-Dichloroethene	ppb v/v	<0.29	14
Trichloroethene	ppb v/v	0.44	220
Trichlorofluoromethane	ppb v/v	0.38	0.47 F
Vinyl Acetate	ppb v/v	<1.6	<16
Vinyl Chloride	ppb v/v	<0.45	<4.5

Notes:
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