



THE MEMPHIS DEPOT TENNESSEE

ADMINISTRATIVE RECORD COVER SHEET

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ANNUAL OPERATIONS REPORT – 2007
DUNN FIELD GROUNDWATER INTERIM REMEDIAL
ACTION – YEAR NINE

Defense Depot Memphis, Tennessee



Defense Logistics Agency



Air Force Center for Engineering and the
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LIST OF ACRONYMS AND ABBREVIATIONS

AFCEE	Air Force Center for Environmental Excellence
bgs	below ground surface
BRAC	Base Realignment and Closure
BCT	BRAC Cleanup Team
cDCE	cis-1,2-Dichloroethene
CF	Chloroform
CT	Carbon tetrachloride
CVOCs	Chlorinated Volatile Organic Compounds
DCE	1,1-Dichloroethene
DDMT	Defense Depot Memphis, Tennessee
DLA	Defense Logistics Agency
DoD	Department of Defense
DQE	Data quality evaluation
DQO	Data quality objectives
gpm	Gallons per minute
IRA	Interim Remedial Action
MCL	Maximum contaminant level
MDL	Method Detection Limit
MI	Main Installation
ml	milliliter
msl	mean seal level
MS/MSD	Matrix Spike/Matrix Spike Duplicate
MW	Monitoring Well
O&M	Operation and maintenance
PCA	1,1,2,2-Tetrachloroethane
PCE	Tetrachloroethene
PDB	Passive diffusion bag samplers
QC	Quality control
RA SAP	Remedial Action Sampling and Analysis Plan
RL	Reporting Limit
ROD	Record of Decision
RW	Recovery Well

LIST OF ACRONYMS AND ABBREVIATIONS
(Continued)

SVOCs	Semi-volatile organic compounds
TC	Target Concentrations
TCA	1,1,2-Trichloethane
TCE	Trichloroethene
tDCE	trans-1,2-Dichloroethene
USEPA	United States Environmental Protection Agency
µg/L	Micrograms per liter
VC	Vinyl Chloride
VOCs	Volatile organic compounds

1.0 INTRODUCTION

engineering-environmental Management, Inc (e²M) has prepared this Annual Operations Report for the Groundwater Interim Remedial Action (IRA) under Contract FA8903-04-D-8722, Task Order 19 to the Air Force Center for Engineering and the Environment (AFCEE). This report summarizes the operations and maintenance activities for the groundwater recovery system and the results of system monitoring for 2007 (Year Nine) of the IRA on Dunn Field at the Defense Depot Memphis, Tennessee (DDMT).

1.1 SITE DESCRIPTION AND BACKGROUND

DDMT, which originated as a military facility in the early 1940s, received, warehoused, and distributed supplies common to all U.S. military services and some civil agencies located primarily in the southeastern United States, Puerto Rico, and Panama. Stocked items included food, clothing, petroleum products, construction materials, and industrial, medical, and general supplies. In 1995, DDMT was placed on the list of the Department of Defense (DoD) facilities to be closed under Base Realignment and Closure (BRAC). Storage and distribution of material continued until the facility closed in September 1997.

DDMT is located in southeastern Memphis, Shelby County, Tennessee approximately 5 miles east of the Mississippi River and just northeast of Interstate 240. The property consists of approximately 642 acres and includes the Main Installation (MI) and Dunn Field. The MI contains approximately 578 acres with open storage areas, warehouses, military family housing, and outdoor recreational areas. Dunn Field contains approximately 64 acres and includes former mineral storage and waste disposal areas. Dunn Field is located across Dunn Avenue from the north-northwest portion of the MI. Figure 1-1 shows locations of the monitoring and recovery wells at Dunn Field.

In 1992, DDMT was added to the National Priorities List. The lead agency for environmental restoration activities at DDMT is the Defense Logistics Agency (DLA). The regulatory oversight agencies are the United States Environmental Protection Agency Region 4 (USEPA) and the Tennessee Department of Environmental Conservation. DDMT's USEPA Identification Number is TN4210020570.

1.2 GEOLOGY AND HYDROGEOLOGY

The geologic units of interest at Dunn Field are (from youngest to oldest) loess, including surface soil; fluvial deposits; Jackson Formation/Upper Claiborne Group; and Memphis Sand.

The Quaternary-aged loess consists of wind-blown deposits, brown to reddish-brown, and low-plasticity clayey silt to silty clay. The loess deposits are about 20 to 30 feet thick and are continuous throughout the Dunn Field area.

The Quaternary- and possibly Pliocene-aged fluvial (terrace) deposits are composed of two general layers. The upper layer is a silty, sandy clay that transitions to a clayey sand and ranges from about 10 feet to 36 feet thick. The lower layer is composed of interlayered sand, sandy gravel, and gravelly sand, and has an average thickness of approximately 40 feet.

The late Eocene-aged Jackson Formation/Upper Claiborne Group consists of clays, silts, and sands. The upper clay unit appears to be continuous except in the southwestern area of Dunn Field. Offsite, to the west and northwest of Dunn Field, there are possible gaps in the clay. Where present, these gaps possibly create connections to the underlying intermediate aquifer from the fluvial deposits.

The Early to Middle Eocene-aged Memphis Sand is composed primarily of thick-bedded, white to brown or gray, very fine-grained to gravelly, partly argillaceous and micaceous sand. Lignitic clay beds constitute a small percentage of the total thickness. Regionally, the Memphis Sand ranges from 500 to 890 feet in thickness and is at a depth of approximately 120 to 300 feet below ground surface (bgs). The only monitoring well completed in the Memphis Sand at DDMT is MW-67. The top of the Memphis Sand was identified at a depth of 255 feet bgs (elevation of 21 feet above mean sea level [msl]).

Three aquifers of interest underlying Dunn Field correspond to the geologic units described previously. The uppermost aquifer is an unconfined fluvial aquifer consisting of saturated sands and gravelly sands in the lower portion of the fluvial deposits. Recharge is primarily from the infiltration of rainfall. Discharge is generally directed toward underlying units in hydraulic communication with the fluvial deposits or laterally into adjacent stream channels. The saturated thickness of the fluvial aquifer near Dunn Field ranges from 0 (dry) to 50 feet and is controlled by the configuration of the uppermost clay in the Jackson Formation/Upper Claiborne Group. Water level elevations range from approximately 235 feet msl northeast of Dunn Field to 200 feet msl west of Dunn Field.

The intermediate aquifer is locally developed in deposits of the Jackson Formation/Upper Claiborne Group, which contain laterally extensive, thick deposits of clay. Water level elevations in the intermediate aquifer, away from areas of recharge from the fluvial aquifer, are approximately 160 feet msl.

The Memphis aquifer contains groundwater under strong artesian (confined) conditions regionally. The City of Memphis obtains the majority of its drinking water from this unit; the Allen Well Field is located approximately 2 miles west of Dunn Field. The Memphis aquifer is confined by overlying clays and silts in the Cook Mountain Formation (part of the Jackson/Upper Claiborne Group). This aquifer receives most of its recharge from an outcrop area several miles east of Memphis. Some recharge is derived from overlying or hydraulically communicating units. The top of the Memphis aquifer potentiometric surface at MW-67 is approximately 150 feet msl.

1.3 GROUNDWATER CONTAMINATION

Nine volatile organic compounds (VOCs) have been persistently detected in the fluvial aquifer during past sampling events: carbon tetrachloride (CT); chloroform (CF); 1,1-dichloroethene (DCE); cis-1,2-dichloroethene (cDCE); trans-1,2-dichloroethene (tDCE); 1,1,2-trichloroethane (TCA); trichloroethene (TCE); tetrachloroethene (PCE) and 1,1,1,2-tetrachloroethane (PCA). Three primary VOC plumes underlie Dunn Field: a northern plume, a west-northwest (central) plume, and west-southwest (southern) plume. Mixing and intermingling of the plumes has occurred due to the active groundwater extraction system and natural groundwater flow; the plumes appear to merge west of Dunn Field.

The primary constituents in the northern plume are PCE, TCE, and DCE. There is an apparent offsite source(s) of these compounds northeast of Dunn Field; however, the disposal sites in the northwest corner of Dunn Field are also apparent source areas. The central plume contains high concentrations of PCA and TCE and also contains PCE, cDCE, tDCE, TCA, CT, and CF. The southern plume is principally composed of PCA, CT, TCA, and CF, although TCE, tDCE, PCE, and cDCE are also present. The central and southern plumes appear to result from disposal sites on Dunn Field.

1.4 SYSTEM DESCRIPTION

The IRA Record of Decision (ROD) for groundwater at Dunn Field was signed in April 1996 with the objectives of hydraulic containment to: (1) prevent further contaminant plume migration; and (2) reduce contaminant mass in groundwater. The final design for Phase 1 of this groundwater extraction system was completed in August 1997 and included the installation of seven groundwater extraction wells (RW-3 through RW-9), one pre-cast concrete building, an underground conveyance system, and flow measurement and control systems. The system was constructed from January 1998 through October 1998 and began operation in November 1998.

The Phase II design was completed in January 2000 and included four additional extraction wells and associated electrical, mechanical, and instrumentation/controls components. The Phase II system update was due to the detection of additional groundwater contamination in the southern portion of Dunn Field. Installation of new recovery wells (RW-1, RW-1A, RW-1B and RW-2) south of recovery well RW-03 and construction of other components was completed by March 2001. The expanded system was in full operation in June 2001.

The *Five Year Review for Dunn Field* (CH2M HILL, 2003) concluded that over 300 pounds of VOCs had been removed by the IRA from 1998 to 2002. However, the extraction system did not adequately control groundwater flow and plume migration in the fluvial aquifer. Potentiometric surface maps indicated that groundwater was captured in the immediate vicinity of each recovery well, but the capture zones were not connected between wells, and portions of the groundwater plume were able to pass through the voids in the extraction well capture zones. An increase in chlorinated volatile organic compounds (CVOC) concentrations was observed in monitoring wells west of Dunn Field.

The IRA was found to be protective in the short term, because there is no current or planned use of the fluvial aquifer as a drinking water supply and local ordinances restrict installation of private wells. The Five Year Review stated that monitoring data from the IRA and the remedial investigation suggested that aquifer restoration could be accomplished effectively by other technologies rather than expanding the groundwater extraction system. Fully protective remedies for all media were selected in the *Dunn Field Record of Decision* (CH2M HILL, 2004). The *Second Five Year Review* (e²M, 2008) was finalized in January 2008. The findings relative to the protectiveness of the IRA were not changed.

1.5 SCOPE OF WORK

e²M assumed the operation and maintenance (O&M) activities for the Groundwater IRA system on 01 October 2006. The goals for O&M are to:

- Maintain system operations through regular field inspections, maintenance, and repairs; and
- Monitor system effectiveness through the measurement of water levels and the collection and analysis of system effluent samples and groundwater samples from monitoring wells and recovery wells.

The following sections briefly describe the field activities performed to support these objectives. During the performance of the O&M activities, e²M reviewed the *Operations and Maintenance Manual* for

Instrumentation and Controls (OHM Remediation Services, 1999) and the *Construction Report* (Jacobs Engineering Group, 2001) prepared following Phase II system construction.

The scope for the Groundwater IRA included the following activities:

- Weekly system inspections with repair or replacement of components, as required;
- Annual system calibration;
- Monthly discharge reports to document O&M activities, system status, and performance;
- Water levels measured weekly in recovery wells and semiannually in monitoring wells. Water level data from pressure transducers in recovery wells and selected monitoring wells downloaded quarterly;
- Semi-annual groundwater samples analyzed for VOCs collected from monitoring wells using passive diffusion bag samplers (PDB) and from recovery well samples using wellhead sampling ports; and
- Quarterly effluent samples analyzed for pH and VOCs with semi-annual effluent samples analyzed for semi-volatile organic compounds (SVOCs) and metals in accordance with the wastewater discharge agreement (Appendix A).

2.0 SYSTEM OPERATIONS ACTIVITIES

System O&M requirements were evaluated during weekly visits of the IRA system throughout 2007. Observations and system data were reported in monthly discharge reports, which are included in Appendix B.

2.1 SYSTEM PERFORMANCE

The system performed well in 2007 with an average operational run time for all recovery wells of 95.3 percent. A series of power failures due to lightning strikes at a nearby transformer affected system uptime in March and April. Additional downtime in June was due to the annual system inspection and calibration. Damage to electrical power and system control wiring during the Source Areas RA caused temporary shutdowns to individual wells in November. Percentage uptimes for individual wells are presented in the following table.

Recovery Well ID	January – December 2007 Operational Run Times (Percent)												
	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Average
RW-1	94.6	73.2	83.1	95.7	100	91.3	100	100	100	100	99.2	100	94.8
RW-1A	69.6	64.2	92.2	100	100	69.7	100	100	100	100	99.2	100	91.2
RW-1B	100	100	92.2	100	84.8	58.7	100	100	100	100	99.2	100	94.6
RW-2	69.6	100	92.2	100	100	96.8	100	100	100	100	99.2	100	96.5
RW-3	100	100	92.2	100	100	100	100	100	100	100	99.2	100	99.3
RW-4	100	100	66.0	95.4	100	72.1	100	100	94.9	87.6	98.8	100	92.9
RW-5	100	100	81.0	95.4	100	73.1	100	100	91.0	81.7	99.2	100	93.5
RW-6	100	100	81.0	95.4	100	93.9	100	100	100	100	96.0	100	97.2
RW-7	100	100	81.0	100	100	92.5	100	100	91.9	82.4	98.7	95.3	95.2
RW-8	100	100	81.0	94.7	100	90.8	100	100	100	100	98.6	100	97.1
RW-9	100	100	81.0	100	100	93.9	79.4	97.8	100	100	98.8	100	95.9

Approximately 32,251,534 gallons of groundwater from the IRA system was discharged to the sanitary sewer from 1 January through 31 December 2007. Individual RW totalizer data collected during weekly visits were used to calculate the groundwater recovery rates. The average monthly pumping rate for each recovery well is shown below.

Recovery Well ID	January – December 2007 Average Monthly Pumping Rate and Total Volume													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average	Total Volume
	gallons per minute (gpm)													gallons
RW-1	0.4	0.5	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.3	157,750
RW-1A	1.2	1.4	1.2	1.5	0.7	1.6	2.5	2.2	1.8	1.6	1.6	1.6	1.6	769,044
RW-1B	3.4	3.3	3.1	3.0	2.9	2.8	2.7	2.4	2.3	2.2	2.3	2.2	2.7	1,341,830
RW-2	1.0	0.9	0.9	2.7	2.3	2.2	2.2	1.6	2.0	1.9	2.1	1.7	1.8	920,838
RW-3	3.2	4.4	4.3	4.5	5.4	5.1	4.4	3.8	2.9	2.5	2.5	1.9	3.7	1,942,735
RW-4	9.0	5.0	4.6	3.1	3.2	3.5	3.4	3.6	3.4	3.5	3.4	3.3	4.1	1,971,026
RW-5	1.0	0.7	0.8	0.8	0.6	0.9	1.1	1.0	1.0	1.7	1.7	1.1	1.0	503,693
RW-6	9.0	7.9	9.4	9.5	9.4	9.1	8.3	7.2	7.5	7.3	6.6	6.3	8.1	4,136,234
RW-7	6.8	6.8	6.5	7.3	7.1	8.1	8.1	6.5	6.2	5.9	5.7	5.3	6.7	3,374,033
RW-8	13.6	13.6	13.1	14.3	14.4	14.5	14.7	14.7	14.7	14.6	14.5	14.7	14.3	7,303,661
RW-9	20.0	20.0	20.0	20.3	20.0	20.0	20.0	20.0	20.0	19.9	19.8	20.0	20.0	10,075,988

2.2 RECOVERY WELL MAINTENANCE

System maintenance is performed weekly by e²M personnel. Regular maintenance activities include tracking flowrates and water levels, adjustments to system components to maintain flowrates from individual recovery wells (RWs), and general housekeeping of RW housings. A cracked ball valve at the effluent main line was replaced in April. An annual calibration and inspection of RW components was conducted in June 2007.

Maintenance activities in 2007 at individual recovery wells are described below.

- RW-1 was 95 percent operational for the year. The pressure transducer was replaced in February. The pump leads were replaced and the flowmeter, pressure transducer, and relays were calibrated in June.
- RW-1A was 91 percent operational for the year. In January, the galvanized coupling connecting the pump to the flex house was replaced with a stainless steel coupling. The lead wires were replaced in February. The flowmeter, pressure transducer, and relays were calibrated in June.
- RW-1B was 95 percent operational for the year. Operations in May and June were disrupted due to an inoperable pressure transducer; the transducer was replaced in June. The flowmeter and relays were also recalibrated in June.

- RW-2 was 97 percent operational for the year. In January, the galvanized coupling connecting the pump to the flex house was replaced with a stainless steel coupling. The flowmeter, pressure transducer, and level relay were calibrated in June.
- RW-3 was 99 percent operational for the year. The flowmeter, pressure transducer, and level relay were calibrated in June.
- RW-4 was 93 percent operational for the year. Impeller was replaced on the flowmeter and pressure transducer, and relays were calibrated in June. The pressure transducer was reset to adjust to lower water levels and the level relay was recalibrated in October. .
- RW-5 was 94 percent operational for the year. The pump leads were replaced and the flowmeter, pressure transducer, and relays were calibrated in June. One of the leads to the pump was repaired in September after a tear was discovered. The level relay was recalibrated to limit pump cycling in September and November. The totalizer impeller was replaced in December.
- RW-6 was 97 percent operational for the year. The actuator valve, level relay, and timer were found to be inoperable and were replaced in June. Also in June, the flowmeter and pressure transducer were recalibrated.
- RW-7 was 95 percent operational for the year. The level relay was replaced and the flowmeter pressure transducer and relays were recalibrated in June. The level relay was calibrated in September. The pressure transducer was reset to adjust to lower water levels and the level relay was re-calibrated in October. .
- RW-8 was 97 percent operational for the year. The pump leads were replaced and the flowmeter, pressure transducer, and relays were calibrated in June.
- RW-9 was 96 percent operational for the year. The actuator valve was removed and was placed in at RW-6. RW-9 can function without the actuator due to its high groundwater yields (i.e. well does not cycle). The flowmeter, pressure transducer, and relays were calibrated in June. The level relay was replaced in September.

3.0 SYSTEM MONITORING ACTIVITIES

The system monitoring activities consist of water level measurements, sampling and analysis of groundwater samples from recovery wells and monitoring wells, and analysis of effluent samples from the recovery system discharge. The activities are performed in accordance with past practice and the *Remedial Action Sampling and Analysis Plan* (RA SAP) (MACTEC, 2004). The wells included in the monitoring program are listed on Table 3-1.

3.1 WATER LEVEL MEASUREMENTS

Water level measurements were collected to evaluate the capture zone of the recovery system and groundwater flow direction. Water level measurements were made in 110 monitoring wells and one piezometer on 6 April and 27 September 2007 using a Solinst Model 101 water level meter with an electronic sensor and tape graduated in 0.01-foot increments. Water levels for recovery wells were taken from pressure transducer measurements recorded 11 April and 27 September 2007. The water level measurements are shown on Table 3-2.

3.2 GROUNDWATER SAMPLING

3.2.1 Monitoring Wells

Groundwater samples were collected from monitoring wells to evaluate system effectiveness in restricting plume migration. Sampling procedures were performed in general accordance with the *User's Guide for Polyethylene-based Passive Diffusion Bag Samplers to Obtain Volatile Organic Compound Concentrations in Wells* (U.S. Geological Survey, 2001) and the RA SAP. Groundwater samples from monitoring wells have been collected using PDBs since October 2001. Prior to that time, the samples are believed to have been collected using low-flow sampling methods.

A total of 66 PDB samples were collected from 50 wells in each of the two 2007 sampling events. During each sampling event, two samples were collected from the 16 wells indicated on Table 3-1 to evaluate variations in concentrations over the screened aquifer thickness. In wells with a single sample, the PDB is placed near the center of the saturated screen. In wells with two samples, the upper PDB is placed approximately 1 foot below the top of the screen (or water level if not fully saturated), and the lower PDB is placed approximately 3 feet above the bottom of the screen. PDB midpoint depths for the April and October 2007 sampling events are shown on Tables 3-3 and 3-4, respectively.

Upon removal from each monitoring well, a sample of water from the PDB was transferred to 40-milliliter (ml) vials preserved with hydrochloric acid and submitted for VOC analysis by USEPA Method SW8260B. Following sample collection, new PDBs were filled with deionized water and placed in the wells. Groundwater samples were sent to Kemron Environmental Laboratories

3.2.2 Recovery Wells

Groundwater samples were collected from recovery wells for comparison to monitoring well sample results and for evaluation of system effectiveness in reducing contaminant mass. Samples from recovery wells were collected on 11 April and 5 October 2007 and analyzed for VOCs by EPA Method 8260B.

For each sampling event, the recovery well pumps were shut down prior to sample collection to prevent the pumps from cycling. During sampling each pump was restarted, allowed to run for a few minutes prior to sample collection and shut down after sampling. Samples were collected from the sample port on the recovery well heads. The valve was slowly opened and the extracted groundwater was allowed to slowly fill 40-ml vials preserved with hydrochloric acid. After sampling was completed, all recovery well pumps were re-started. The samples were sent to Kemron Environmental Laboratories for VOC analysis by USEPA method SW8260B.

3.3 EFFLUENT SAMPLING

Effluent samples were collected to comply with the discharge permit requirements and to estimate contaminant mass removal. The effluent samples were collected from the groundwater extraction system at the discharge loop located adjacent to Person Avenue at the north property line of DDMT. The valve on the sample port was slowly opened and the system discharge allowed to slowly fill the required sample containers.

Effluent samples were collected quarterly on 19 February, 11 April, 9 July and 9 October 2007. All samples were submitted to Kemron Environmental Laboratories for VOC analysis by USEPA method SW8260B. The April and October effluent samples were also analyzed for SVOCs by USEPA Method SW8270C and metals by USEPA Method SW6010B.

3.4 QUALITY ASSURANCE/QUALITY CONTROL SAMPLES

Field and laboratory quality control (QC) samples were collected during each sampling event. Although groundwater was the only matrix analyzed, samples were collected from three sources: monitoring wells, recovery wells, and effluent discharge.

QC samples consisted of duplicates, and matrix spikes and matrix spike duplicates (MS/MSD). Trip blanks were included in coolers delivered from the laboratory. One duplicate was collected for approximately every 10 samples (10%) and 1 MS/MSD was collected for every 20 samples (5%). Laboratory QA/QC samples included surrogate spikes, method blanks, and laboratory control samples, in addition to MS/MSD analysis. The sampling and analytical methods are described in the RA SAP.

Documentation was completed in the field to ensure that the samples collected, labels, chain-of-custody, and request for analysis were in agreement. Custody seals were placed on each cooler before shipment by common carrier. Samples were typically shipped the day collected for overnight delivery to the laboratory.

4.0 SUMMARY OF MONITORING RESULTS

Water level measurements and discussion on the groundwater and effluent sample analyses are discussed below.

4.1 WATER LEVEL MEASUREMENTS

Water level measurements collected on 6 April and 27 September 2007 are shown with resulting groundwater elevations on Table 3-2. Groundwater elevations in the fluvial aquifer are highest northeast of Dunn Field (MW-130: 235.7 feet msl in April and 235.4 feet msl in September) and generally decrease to the southwest (MW-156: 211.9 feet msl in April and 211.1 feet msl in September). The spatial variation in water levels in the fluvial aquifer monitoring wells is primarily due to the elevation of the underlying clay of the Jackson Formation/Upper Claiborne Group. Groundwater elevations throughout most of Dunn Field decreased 1-2 feet from April to September.

The groundwater elevations for the intermediate aquifer in April ranged from approximately 166.4 feet msl in MW-34 to 161.5 feet msl in MW-37, while in September the same wells had groundwater elevations of 159.4 feet msl and 150.8 feet msl, respectively. Groundwater elevation in MW-67, which is screened in the Memphis Sand, was 162 feet msl in April and 150 feet msl in September.

Groundwater elevation contour maps for the April and September 2007 water level measurements are on Figures 4-1 and 4-2, respectively. Groundwater flow is generally to the west in the area of the Groundwater IRA system. The drawdown in water levels at the recovery wells can be seen on the maps. As noted in previous reports, the recovery wells do not provide complete capture of groundwater flowing west from Dunn Field.

4.2 ANALYTICAL RESULTS

Analytical results for groundwater samples from monitoring wells and recovery wells and effluent samples collected during the April and October 2007 events are presented in Appendix C. Positive results summaries for groundwater samples, including analytical results for all constituents detected above the reporting limit in one or more samples are shown on Tables 4-1 (April 2007) and 4-2 (October 2007) for monitoring wells and for recovery wells are on Tables 4-3 (April 2007) and 4-4 (October 2007). Analytical results for IRA system effluent samples, with the applicable discharge permit limits, are shown on Table 4-5.

e²M performed data quality evaluation (DQE) of the laboratory data packages for the samples collected in 2007 to qualify the data relative to the data quality objectives (DQOs) described in the RA SAP. Data qualifiers are provided in the analytical tables. The DQE is summarized in the following sections and the DQE narratives are presented in Appendix D.

4.2.1 Groundwater

The following discussion of groundwater analytical results focuses on concentrations detected above the reporting limit for the nine CVOCs detected persistently at Dunn Field: CT, CF, DCE, tDCE, cDCE, PCA, PCE, TCA, and TCE. Vinyl chloride (VC), a significant CVOC degradation product, is also discussed. The analytical results were compared to the maximum contaminant levels (MCLs) and groundwater target concentrations (TCs) from Table 2-21G of the *Dunn Field Record of Decision* (CH2M HILL, 2004), as listed on Tables 4-1 through 4-4. Historical results for these nine VOCs in all the wells in the current sampling program are included in Appendix E. Total CVOC concentrations for the wells sampled in April and October 2007 are shown on Figures 4-3 and 4-4, respectively.

4.2.1.1 Monitoring Wells

During each of the two 2007 sampling events, 66 groundwater samples were collected from 50 monitoring wells. Samples were analyzed for VOCs only. The April and October 2007 data are usable with the qualifications as described below (refer to Tables 4-1, 4-2, C-1, and C-2).

- The 1,2-dichloroethane-d4 surrogate was recovered high in two April VOC sample analyses. These samples were reanalyzed at a dilution due to high-level detections and the recovery of the same surrogate was in control. The detections reported were qualified as estimated J. Since this is an indication of possible high bias, no qualifiers are added to nondetect results.
- Based on MS/MSD performance in the April and October VOC analyses, several low recoveries, both non-detects and detects in the parent sample are qualified as estimated J. For high recoveries, only detected results in the parent sample are so qualified.
- There were 2 target compounds (bromodichloromethane and 2-butanone), with elevated recoveries in the LCS associated with two batches in the April VOC analyses. Since there were no detections of these compounds in the corresponding samples, no qualifications were necessary.
- 2-butanone was recovered high in the LCS of one October VOC analytical batch. Since there were no detections in the corresponding samples, no qualifiers were added based on LCS recoveries.
- Lab contaminants were observed in some method blanks from the October event. Whenever methylene chloride or acetone is detected in associated samples at a level less than 10x the

method blank (corrected for dilution), the result is qualified as UB. Such results are usable as nondetects.

- Any result reported below the reporting limit (RL) but above the method detection limit (MDL) was considered an estimated result and flagged “J” (unless overridden by other QC flags).

Analytical results for groundwater samples from monitoring wells with concentrations above the reporting limit are summarized below.

- Carbon Tetrachloride (CT)
 - April 2007: CT was reported in 12 monitoring wells, with a maximum concentration of 24.8 micrograms per liter ($\mu\text{g/L}$) in MW-164. The MCL ($5 \mu\text{g/L}$) was exceeded in 11 wells. The TC ($3 \mu\text{g/L}$) was also exceeded in 11 wells.
 - October 2007: CT was reported in 29 monitoring wells, with a maximum concentration of 26 micrograms per liter ($\mu\text{g/L}$) in MW-157. The MCL ($5 \mu\text{g/L}$) was exceeded in 15 wells. The TC ($3 \mu\text{g/L}$) was exceeded in 18 wells.
- Chloroform (CF)
 - April 2007: CF was reported in 32 monitoring wells, with a maximum concentration of $247 \mu\text{g/L}$ in MW-164. The MCL for trihalomethanes ($80 \mu\text{g/L}$) was exceeded in three wells. The TC ($12 \mu\text{g/L}$) was exceeded in seven wells.
 - October 2007: CF was reported in 38 monitoring wells, with a maximum concentration of $235 \mu\text{g/L}$ in MW-157. The MCL for trihalomethanes ($80 \mu\text{g/L}$) was exceeded in four wells. The TC ($12 \mu\text{g/L}$) was exceeded in twelve wells.
- 1,1-Dichloroethene (DCE)
 - April 2007: DCE was detected in 12 monitoring wells, with a maximum concentration of $70 \mu\text{g/L}$ at MW-130. The MCL and TC (both $7 \mu\text{g/L}$) was exceeded in 6 wells.
 - October 2007: DCE was detected in 5 monitoring wells, with a maximum concentration of $74 \mu\text{g/L}$ at MW-130. The MCL and TC (both $7 \mu\text{g/L}$) was exceeded in 6 wells.
- Trans-1,2-Dichloroethene (tDCE)
 - April 2007: tDCE was detected in 21 monitoring wells, with a maximum concentration of $39.6 \mu\text{g/L}$ at MW-147. The detected concentrations did not exceed the MCL of $100 \mu\text{g/L}$ or TC of $50 \mu\text{g/L}$.
 - October 2007: tDCE was detected in 27 monitoring wells, with a maximum concentration of $28.9 \mu\text{g/L}$ at MW-147. The detected concentrations did not exceed the MCL of $100 \mu\text{g/L}$ or TC of $50 \mu\text{g/L}$.
- Cis-1,2-Dichloroethene (cDCE)
 - April 2007: cDCE was detected in 28 monitoring wells, with a maximum concentration of $156 \mu\text{g/L}$ at MW-159. The MCL ($70 \mu\text{g/L}$) was exceeded in six wells. The TC ($35 \mu\text{g/L}$) were exceeded in eight wells.

- October 2007: cDCE was detected in 40 monitoring wells, with a maximum concentration of 392 µg/L at MW-159. The MCL (70 µg/L) was exceeded in seven wells. The TC (35 µg/L) were exceeded in twelve wells.
- 1,1,2,2-Tetrachloroethane (PCA)
 - April 2007: PCA was detected in 29 monitoring wells, with a maximum concentration of 8,800 µg/L at MW-77. An MCL has not been set for PCA. The TC (2.2 µg/L) was exceeded in 22 wells.
 - October 2007: PCA was detected in 33 monitoring wells, with a maximum concentration of 7,210 µg/L at MW-162. An MCL has not been set for PCA. The TC (2.2 µg/L) was exceeded in 33 wells.
- Tetrachloroethene (PCE)
 - April 2007: PCE was detected in 24 monitoring wells, with a maximum concentration of 154 µg/L at MW-130. The MCL (5 µg/L) was exceeded in 18 wells. The TC (2.5 µg/L) was exceeded in 19 wells.
 - October 2007: PCE was detected in 38 monitoring wells, with a maximum concentration of 147 µg/L at MW-130. The MCL (5 µg/L) was exceeded in 15 wells. The TC (2.5 µg/L) was exceeded in 15 wells.
- 1,1,2-Trichloroethane (TCA)
 - April 2007: TCA was detected in eleven monitoring wells, with a maximum concentration of 147 µg/L in MW-155. The MCL (5 µg/L) was exceeded in eight wells. The TC (1.9 µg/L) was exceeded in nine wells.
 - October 2007: TCA was detected in 15 monitoring wells, with a maximum concentration of 87.2 µg/L in MW-150. The MCL (5 µg/L) was exceeded in eleven wells. The TC (1.9 µg/L) was exceeded in 14 wells.
- Trichloroethene (TCE)
 - April 2007: TCE was detected in 36 monitoring wells, with a maximum concentration of 3,330 µg/L at MW-77. The MCL (5 µg/L) was exceeded in 33 wells. The TC is also 5 µg/L.
 - October 2007: TCE was detected in 45 monitoring wells, with a maximum concentration of 2,700 µg/L at MW-159. The MCL (5 µg/L) was exceeded in 42 wells. The TC is also 5 µg/L.
- Vinyl Chloride (VC)
 - April 2007: VC was detected in two monitoring wells (MW-70 and MW-155) at concentrations of 94.3 and 1.15 µg/L, respectively. The MCL (2 µg/L) was exceeded in both wells. A TC has not been set for VC.
 - October 2007: VC was detected in four monitoring wells, with a maximum concentration of 42.3 µg/L in MW-70. The MCL (2 µg/L) was exceeded two wells.

Review of the analytical data revealed an apparent sample labeling error in wells MW-32 and MW-37. These are adjacent wells located approximately 400 feet west of Dunn Field with MW-32 screened in the fluvial aquifer and MW-37 in the intermediate aquifer. Groundwater at MW-37 has not had CVOCs

present above reporting limits in past samples, yet several CVOCs were detected in the October 2007 samples, while the opposite was seen in MW-32. The sampling crew is believed to have mis-labeled the sample containers for the two wells, thereby switching the analytical results. Careful attention will be paid to this and other wells during the next sampling event in April 2008.

4.2.1.2 Recovery Wells

Eleven groundwater samples were collected from eleven recovery wells in April and October 2007. Samples were analyzed for VOCs only. The data are usable with the following qualifications (refer to Tables 4-3, 4-4, C-3, and C-4):

- 2-butanone was recovered high in one October VOC analytical batch. There were no detections of corresponding analytes, so no qualifiers were added based on LCS.
- Any result reported below RL but above MDL was considered an estimated result and flagged “J” (unless overridden by other QC flags).

Analytical results from recovery wells samples with concentrations above the reporting limits are summarized below.

- Carbon Tetrachloride (CT)
 - April 2007: CT was detected in six recovery wells, with a maximum concentration of 33.9 µg/L in RW-01. The MCL (5 µg/L) and TC (3 µg/L) was exceeded in five recovery wells.
 - October 2007: CT was exceeded in eight recovery wells, with a maximum concentration of 32.5 µg/L in RW-01. The MCL (5 µg/L) in four recovery wells. The TC (3 µg/L) was exceeded in five recovery wells.
- Chloroform (CF)
 - April 2007: CF was detected in all eleven recovery wells, with a maximum concentration of 479 µg/L in RW-01A. The MCL for trihalomethanes (80 µg/L) was exceeded in four wells. The TC (12 µg/L) was also exceeded in four recovery wells.
 - October 2007: CF was detected in all eleven recovery wells, with a maximum concentration of 413 µg/L in RW-01A. The MCL for trihalomethanes (80 µg/L) was exceeded in five recovery wells. The TC (12 µg/L) was also exceeded in five recovery wells.
- 1,1-dichloroethene (DCE)
 - April 2007: DCE was detected in two recovery wells, with a maximum concentration of 25.4 µg/L in RW-09. The MCL (7 µg/L) and TC (also 7 µg/L) was exceeded only in RW-09.

- October 2007: DCE was detected in two recovery wells, with a maximum concentration of 19 µg/L in RW-09. The MCL (7 µg/L) and TC (also 7 µg/L) was in two recovery wells.
- Trans,1-2-Dichloroethene (tDCE)
 - April 2007: DCE was detected in nine recovery wells, with a maximum concentration of 67.6 µg/L in RW-08. The detected concentrations did not exceed the MCL of 100 µg/L. The TC of 50 µg/L was exceeded only in RW-08.
 - October 2007: DCE was detected in nine recovery wells, with a maximum concentration of 67.6 µg/L in RW-08. The detected concentrations did not exceed the MCL of 100 µg/L. The TC of 50 µg/L was exceeded only in RW-08.
- Cis-1,2-Dichloroethene (cDCE).
 - April 2007: cDCE was detected in all eleven recovery wells, with a maximum concentration of 95 µg/L in RW-08. The MCL (70 µg/L) was exceeded only in RW-08. The TC (35 µg/L) was exceed in two recovery wells.
 - October 2007: cDCE was detected in ten recovery wells, with a maximum concentration of 20 µg/L in RW-02. The MCL (70 µg/L) TC (35 µg/L) were not exceeded in any of the eleven recovery wells.
- 1,1,2,2-Tetrachloroethane (PCA)
 - April 2007: PCA was detected in ten recovery wells, with a maximum concentration of 158 µg/L in RW-08. An MCL has not been set for PCA. The TC (2.2 µg/L) was exceeded in nine wells.
 - October 2007: PCA was detected in ten recovery wells, with a maximum concentration of 179 µg/L in RW-01A. An MCL has not been set for PCA. The TC (2.2 µg/L) was exceeded in nine wells.
- Tetrachloroethene (PCE).
 - April 2007: PCE was detected in all eleven recovery wells, with a maximum concentration of 22.6 µg/L in RW-09. All detected concentrations exceeded the MCL (5 µg/L) and TC (2.5 µg/L).
 - October 2007: PCE was detected in ten recovery wells, with a maximum concentration of 19.8 µg/L in RW-09. All detected concentrations exceeded the MCL (5 µg/L) and TC (2.5 µg/L).
- 1,1,2-trichloroethane (TCA)
 - April 2007: TCA was detected in five recovery wells, with a maximum concentration of 3.8 µg/L in RW-08. The MCL (5 µg/L) was not exceeded. The TC (1.9 µg/L) was exceeded in four wells.
 - October 2007: TCA was detected in four recovery wells, with a maximum concentration of 4.18 µg/L in RW-01A. The MCL (5 µg/L) was not exceeded. The TC (1.9 µg/L) was exceeded in three wells.
- Trichloroethene (TCE)
 - Spring 2007: TCE was detected in all eleven recovery wells, with a maximum concentration of 743 µg/L in RW-04. All detected concentrations were above the MCL and TC (both at 5 µg/L).

- Fall 2007: TCE was detected in all eleven recovery wells, with a maximum concentration of 784 µg/L in RW-04. All detected concentrations were above the MCL and TC (both at 5 µg/L).
- VC was not detected in any of the recovery wells sampled.

4.2.2 Effluent Samples

Effluent discharge samples were collected on 2 February, 11 April, 9 July, and 5 October 2007. All four effluent samples were analyzed for VOCs. The April and October samples were also analyzed for total metals, SVOCs and pH. The data are usable with the following qualifications (refer to Tables 4-5 and C-5):

- There were 11 target compounds recovered low in the LCS associated with the effluent sample reported for the April SVOC analysis. Corresponding analytes were qualified estimated J and since all of these compounds were nondetects in this case, they may have a higher probability than normal for false negatives. None of the non-detected qualified SVOC analytes are considered to be a concern for the effluent samples.
- Based on MS/MSD performance in the VOC and SVOC analyses with low recoveries, both non-detects and detects in the parent sample are qualified as estimated J. For high recoveries, only detected results in the parent sample are so qualified
- Iron and copper may be biased high proportional to the recovery of the MS/MSD analyte recoveries and low precision for the April effluent sample. Spike recovery may be due to inhomogeneity of the matrix. Associated results were qualified estimated J for iron and copper.
- Based on low recoveries of the MS/MSD in the February effluent analysis, cis-DCE has been qualified estimated as J in the parent sample. The low recoveries were apparently due to high concentrations. No other qualifications were necessary.

The analytical results are compared with the permit discharge limits in Table 4-5. All results were below the permit limits with the exception of bis(2-ethylhexyl)phthalate which was detected at 11.6 µg/L (October 2007 sample only) and above the monthly average permit limit of 10 µg/L, but below the one-day maximum limit (20 µg/L). However, bis(2-ethylhexyl)phthalate was detected in the duplicate sample at 3.79 µg/L, for an average of 7.70 µg/L in the two samples. The presence of bis(2-ethylhexyl)phthalate is considered due to laboratory contamination.

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 SYSTEM OPERATIONS

The system operated as intended during 2007 with an average operational run time for all recovery wells of 95.3 percent. System repairs are summarized in Table 5-1.

The average system extraction/effluent discharge rate ranged from 52.6 gallons per minute (gpm) in March and April to 66.1 gpm in May. The total discharge from the IRA system in 2007 was approximately 32.25 million gallons, based on weekly recorded flowrates from individual wells. Approved one-time discharges from well installation/development and sampling activities at DDMT totaled 46,568 additional gallons.

Figure 5-1 shows the TCE and total VOC concentrations measured at the effluent metering station since 1998. VOC concentrations remained near historical averages for most of 2007, but declined in October 2007. The decline is attributed to startup of fluvial SVE operations in July 2007. Permit discharge limits were exceeded for one analyte in the October 2007 sample and the exceedance is considered to result from laboratory contamination. Approximately 39.7 pounds of TCE and 87.4 pounds of total VOCs were removed from the fluvial aquifer in 2007, based on effluent concentrations and system flowrates. This compares with 40.5 pounds of TCE and 96.4 pounds of total VOCs calculated as removed during 2006. The slight decrease in mass removal is due to the decrease in VOC concentrations, particularly in October 2007.

Time trend plots for concentrations of TCE and other CVOCs in each recovery well through October 2007 are presented in Appendix F. Large decreases in CVOC concentrations were seen in the October 2007 samples from the four recovery wells in the northern end of Dunn Field (RW-6, RW-7, RW-8, and RW-9). Increases in CVOC concentrations were seen in four wells in the southern section of the IRA (RW-01, RW-01B, RW-02, and RW-04). Since the wells at the north end of the IRA produce over 75% of the total flow, CVOC concentrations in the combined discharge decreased.

5.2 SYSTEM MONITORING

The analytical results for the monitoring wells are summarized in Tables 5-2 (April 2007) and 5-3 (October 2007), which shows the nine persistent CVOCs detected above the reporting limit for PDBs in each well. Of the 50 wells sampled in April 2007, 38 wells contained one or more of the nine CVOCs

above reporting limits and 33 wells had concentrations above the MCL or TC. For October 2007, 38 wells contained one or more of the nine CVOCs above reporting limits and 32 wells had concentrations above the MCL or TC. Total CVOC concentrations for the wells sampled in April and October 2007 are shown on Figures 4-3 and 4-4, respectively.

Tables 5-2 and 5-3 show the variation in concentrations in the wells with multiple PDBs for the April and October 2007 events, respectively. Multiple PDB samplers were limited to 16 wells that previously had observable variation in concentration with depth. Ten wells (MW-68, MW-69, MW-145, MW-153, MW-154, MW-156, MW-167, MW-168, MW-169 and MW-171) were reduced to single PDB sampling following the October 2006 sampling event. Six of the wells with two PDBs had little variation between the sample results (MW-149, MW-152, MW-155, MW-158, MW-159, MW-165 and MW-166); eight wells had noticeable differences in reported concentrations, but the CVOCs present and concentrations, relative to MCLs, were similar (MW-31, MW-70, MW-148, MW-150, MW-155, MW-158A, MW-165A and MW-170); and two wells had very different results between the two samples (MW-151 and MW-168A).

Time trend plots are included in Appendix F for monitoring wells in the current sampling program where constituents have been detected above MCLs or TCs. Where multiple sample results were available for a sampling event (i.e., for wells with multiple PDS samplers), the higher result was plotted.

Remedial activities and remedial design investigation at Dunn Field have impacted the IRA system monitoring:

- Implementation of the Source Areas RA began with construction of the Fluvial SVE system and start-up in July 2007.
- Nine monitoring wells (MW-11, MW-73, MW-131, MW-133, MW-135, MW-173, MW-177, MW-181, and MW-188) were abandoned and nine monitoring wells (MW-220 through MW-228) were installed on the west side of Dunn Field in preparation for the thermal-enhanced SVE system in the loess. None of these wells were used in IRA system monitoring.
- Four monitoring wells (MW-9, MW-36, MW-49 and MW-84) were abandoned on the east side of Dunn Field as part of the FOST 4 property transfer. Two of the wells (MW-9 and MW-36) were used for water level measurements but none of the wells were sampled for IRA system monitoring. Two replacement wells were installed on Dunn Field, MW-229 for MW-36 and MW-230 for MW-9.
- Ten monitoring wells were installed on Dunn Field and to the west for the Intermediate Aquifer Investigation (IAI), with four wells (MW-233, MW-235, MW-236 and MW-240) screened in the fluvial aquifer and six wells (MW-231, MW-232, MW-234, MW-237, MW-238 and MW-239) screened in the intermediate aquifer.

The following changes to the IRA system monitoring are planned for 2008:

- The fluvial SVE system appears to be having a significant impact in reducing CVOC concentrations in groundwater based on IRA groundwater samples collected in October and IAI samples collected by CH2M HILL in November 2007. In order to provide additional data for evaluation of the Source Areas RA, the 26 wells included in the planned Source Areas groundwater program will be added to the IRA system monitoring for April and October 2008.
- Well MW-230, the replacement for MW-9, was installed to monitor the groundwater plume entering Dunn Field from the northeast. The well was installed a few hundred feet to the northeast from MW-9 and has only been sampled once. MW-230 will be added to the IRA system monitoring until four sample results are available to develop a trend.
- The ten wells installed for the IAI will be added to the IRA system monitoring for 2008 in order to provide additional data on CVOC concentrations in the fluvial and intermediate aquifers. These wells are expected to be included in the long-term monitoring program for the Off Depot RA and will be removed from IRA system monitoring when that is implemented.
- These additional monitoring wells will be sampled using low-flow sampling method rather than PDBs because of implementation of the thermal-enhanced SVE and the limited time the wells may be included in the IRA monitoring program.
- The use of multiple PDBs in the remaining 16 monitoring wells will be discontinued. Significant variation in analytical results for the samples is limited to a few wells. The data is not needed to develop the planned remedial actions. The extent of stratification of contaminants in groundwater has been sufficiently documented by previous sample results. If warranted, multiple samples depths could be implemented during compliance monitoring.

The monitoring wells to be added to the IRA monitoring system are shown on Figure 5-2.

6.0 REFERENCES

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Annual Operations Report – 2007
Dunn Field Groundwater IRA – Year Nine

March 2008
Revision 0

TABLES

TABLE 3-1
WELL ACTIVITY SUMMARY
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

Well	Aquifer Screened	Water Level Measurement	Groundwater Samples	Groundwater Samples
			9-11 April 2007	5-8 October 2007
MW-03	Fluvial	X		
MW-04**	Fluvial	X		
MW-05	Fluvial	X		
MW-06	Fluvial	X		
MW-07	Fluvial	X	S	S
MW-08	Fluvial	X		
MW-10	Fluvial	X		
MW-12	Fluvial	X		
MW-13**	Fluvial	X		
MW-14	Fluvial	X		
MW-15	Fluvial	X		
MW-19	Fluvial	X		
MW-28	Fluvial	X		
MW-29	Fluvial	X		
MW-30	Fluvial	X		
MW-31	Fluvial	X	M	M
MW-32	Fluvial	X	S	S
MW-33	Fluvial	X	S	S
MW-34	Intermediate	X		
MW-35	Fluvial	X		
MW-37	Intermediate	X	S	S
MW-38	Intermediate	X		
MW-40 ⁽¹⁾	Transitional	X	S	S
MW-42	Fluvial	X		
MW-43	Intermediate	X	S	S
MW-44	Fluvial	X	S	S
MW-45**	Fluvial	X		
MW-51	Fluvial	X		
MW-53	Fluvial	X		
MW-54	Fluvial	X	S	S
MW-56	Fluvial	X		
MW-57	Fluvial	X	S	S
MW-58	Fluvial	X		
MW-59	Fluvial	X		
MW-60	Fluvial	X		
MW-61	Fluvial	X		
MW-65	Fluvial	X		
MW-67	Memphis	X	S	S
MW-68	Fluvial	X	S	S
MW-69	Fluvial	X	S	S
MW-70	Fluvial	X	M	M
MW-71	Fluvial	X	S	S
MW-74	Fluvial	X		
MW-75	Fluvial	X		
MW-76	Fluvial	X	S	S
MW-77	Fluvial	X	S	S
MW-78	Fluvial	X		
MW-79	Fluvial	X	S	S

TABLE 3-1
WELL ACTIVITY SUMMARY
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

Well	Aquifer Screened	Water Level Measurement	Groundwater Samples	
			9-11 April 2007	5-8 October 2007
MW-80	Fluvial	X		
MW-87	Fluvial	X		
MW-89	Intermediate	X		
MW-90	Intermediate	X		
MW-91	Fluvial	X		
MW-95**	Fluvial	X		
MW-126	Fluvial	X		
MW-127	Fluvial	X		
MW-128	Fluvial	X		
MW-129	Fluvial	X		
MW-130	Fluvial	X	S	S
MW-134	Fluvial	X		
MW-144	Fluvial	X	S	S
MW-145	Fluvial	X	S	S
MW-147	Fluvial	X	S	S
MW-148	Fluvial	X	M	M
MW-149	Fluvial	X	M	M
MW-150	Fluvial	X	M	M
MW-151	Fluvial	X	M	M
MW-152	Fluvial	X	M	M
MW-153	Fluvial	X	S	S
MW-154	Fluvial	X	S	S
MW-155	Fluvial	X	M	M
MW-156	Fluvial	X	S	S
MW-157	Fluvial	X	S	S
MW-158	Fluvial	X	M	M
MW-158A	Fluvial	X	M	M
MW-159	Fluvial	X	M	M
MW-160	Fluvial	X	S	S
MW-161	Fluvial	X	S	S
MW-162	Fluvial	X	S	S
MW-163	Fluvial	X	S	S
MW-164	Fluvial	X	S	S
MW-165	Fluvial	X	M	M
MW-165A	Fluvial	X	M	M
MW-166	Fluvial	X	M	M
MW-166A	Fluvial	X	S	S
MW-167	Fluvial	X	S	S
MW-168	Fluvial	X	S	S
MW-168A	Fluvial	X	M	M
MW-169 ⁽¹⁾	Transitional	X	S	S
MW-170	Fluvial	X	M	M
MW-171	Fluvial	X	S	S
MW-172	Fluvial	X		
MW-174	Fluvial	X		
MW-175	Fluvial	X		
MW-176	Fluvial	X		
MW-178	Fluvial	X		

TABLE 3-1
WELL ACTIVITY SUMMARY
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

Well	Aquifer Screened	Water Level Measurement	Groundwater Samples	
			9-11 April 2007	5-8 October 2007
MW-179	Fluvial	X		
MW-180	Fluvial	X		
MW-182	Fluvial	X		
MW-183	Fluvial/Intermediate	X		
MW-184	Fluvial	X		
MW-185	Fluvial	X		
MW-186	Fluvial	X		
MW-187	Fluvial	X		
MW-193	Fluvial	X		
MW-194	Fluvial	X		
PZ-02	Fluvial	X		
RW-01	Fluvial	X	G	G
RW-01A	Fluvial	X	G	G
RW-01B	Fluvial	X	G	G
RW-02	Fluvial	X	G	G
RW-03	Fluvial	X	G	G
RW-04	Fluvial	X	G	G
RW-05	Fluvial	X	G	G
RW-06	Fluvial	X	G	G
RW-07	Fluvial	X	G	G
RW-08	Fluvial	X	G	G
RW-09	Fluvial	X	G	G
MW-1 TDEC	Fluvial	X		
MW-2 TDEC	Fluvial	X		
MW-3 TDEC	Fluvial	X		
MW-4 TDEC	Fluvial	X		

Notes:

- ** Indicates a pressure transducer is installed in the monitoring well.
- G Grab samples from recovery well
- M Multiple samples; Permeable Diffusion Bag (PDB) samplers at top and bottom of saturated screened interval (two samples per well).
- S Single sample; one PDB sampler at mid-point of saturated screened intervals
- X Water level measurement obtained
- (1) Aquifer screened at MW-40 and MW-169 listed as "transitional" to indicate the transitional area between the fluvial and intermediate aquifers.

TABLE 3-2
WATER LEVEL MEASUREMENTS
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

Well ID	Aquifer Screened	Top of Casing Elevation (ft, msl)	Groundwater		Groundwater	
			Depth to Water	Elevation	Depth to Water	Elevation
			April 6, 2007		September 27, 2007	
			(ft, btoc)	(ft, msl)	(ft, btoc)	(ft, msl)
MW-03	Fluvial	292.35	70.53	221.82	71.95	220.40
MW-04	Fluvial	301.61	76.74	224.87	77.15	224.46
MW-05	Fluvial	304.64	dry	--	79.19	225.45
MW-06	Fluvial	289.11	65.00	224.11	65.67	223.44
MW-07	Fluvial	295.10	68.42	226.68	68.76	226.34
MW-08	Fluvial	292.59	63.79	228.80	64.90	227.69
MW-10	Fluvial	288.79	65.62	223.17	64.48	224.31
MW-12	Fluvial	301.30	78.00	223.30	78.47	222.83
MW-13	Fluvial	300.01	74.78	225.23	75.69	224.32
MW-14	Fluvial	302.22	74.93	227.29	75.34	226.88
MW-15	Fluvial	295.12	70.31	224.81	70.91	224.21
MW-19	Fluvial	290.57	85.92	204.65	86.45	204.12
MW-28	Fluvial	294.79	79.74	215.05	59.20	235.59
MW-29	Fluvial	273.22	40.54	232.68	41.57	231.65
MW-30	Fluvial	275.14	48.28	226.86	49.29	225.85
MW-31	Fluvial	290.37	71.76	218.61	72.92	217.45
MW-32	Fluvial	285.38	63.99	221.39	64.29	221.09
MW-33	Fluvial	280.71	56.75	223.96	57.02	223.69
MW-34	Intermediate	299.97	133.55	166.42	140.61	159.36
MW-35	Fluvial	300.46	78.49	221.97	79.30	221.16
MW-37	Intermediate	284.91	123.39	161.52	134.16	150.75
MW-38	Intermediate	307.45	129.76	177.69	133.62	173.83
MW-40	Intermediate	262.23	80.62	181.61	85.10	177.13
MW-42	Fluvial	274.83	55.41	219.42	56.35	218.48
MW-43	Intermediate	284.99	121.99	163.00	137.30	147.69
MW-44	Fluvial	269.07	55.74	213.33	56.59	212.48
MW-45	Fluvial	293.22	56.16	237.06	56.79	236.43
MW-51	Fluvial	275.23	42.39	232.84	43.71	231.52
MW-53	Fluvial	306.38	73.84	232.54	73.94	232.44
MW-54	Fluvial	295.35	81.42	213.93	82.30	213.05
MW-56	Fluvial	293.60	67.80	225.80	68.06	225.54
MW-57	Fluvial	290.77	64.41	226.36	64.93	225.84
MW-58	Fluvial	290.51	63.86	226.65	64.28	226.23
MW-59	Fluvial	300.13	76.13	224.00	77.12	223.01
MW-60	Fluvial	296.86	72.63	224.23	73.79	223.07
MW-61	Fluvial	294.04	69.32	224.72	70.48	223.56
MW-65	Fluvial	263.22	9.43	253.79	17.08	246.14
MW-67	Memphis	278.21	115.87	162.34	127.75	150.46
MW-68	Fluvial	291.69	69.89	221.80	71.18	220.51
MW-69	Fluvial	307.02	84.64	222.38	86.47	220.55
MW-70	Fluvial	304.99	82.09	222.90	82.91	222.08
MW-71	Fluvial	294.40	70.89	223.51	71.56	222.84
MW-74	Fluvial	303.68	80.44	223.24	81.18	222.50
MW-75	Fluvial	303.61	80.60	223.01	81.30	222.31
MW-76	Fluvial	302.71	85.55	217.16	86.33	216.38
MW-77	Fluvial	304.42	82.94	221.48	83.59	220.83
MW-78	Fluvial	275.00	49.48	225.52	50.28	224.72
MW-79	Fluvial	285.03	72.12	212.91	72.91	212.12
MW-80	Fluvial	273.81	60.75	213.06	61.52	212.29
MW-87	Fluvial	294.93	71.34	223.59	72.02	222.91
MW-89	Intermediate	303.98	113.99	189.99	116.22	187.76
MW-90	Intermediate	304.19	114.43	189.76	116.32	187.87
MW-91	Fluvial	291.99	67.99	224.00	68.60	223.39
MW-95	Fluvial	259.23	28.97	230.46	--	--
MW-126	Fluvial	252.22	19.74	232.48	22.12	230.10
MW-127	Fluvial	268.71	59.20	209.51	59.20	209.51
MW-128	Fluvial	284.14	42.96	241.18	45.17	238.97
MW-129	Fluvial	293.01	55.65	237.36	58.93	234.08
MW-130	Fluvial	293.20	57.52	235.68	57.85	235.35
MW-134	Fluvial	300.81	76.78	224.03	78.00	222.81
MW-144	Fluvial	291.60	73.14	218.46	73.30	218.30
MW-145	Fluvial	284.72	71.12	213.60	71.97	212.75
MW-147	Fluvial	289.72	72.51	217.21	73.27	216.45
MW-148	Fluvial	294.71	79.56	215.15	80.50	214.21

TABLE 3-2
WATER LEVEL MEASUREMENTS
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

Well ID	Aquifer Screened	Top of Casing Elevation (ft, msl)	Groundwater		Groundwater	
			Depth to Water	Elevation	Depth to Water	Elevation
			April 6, 2007	September 27, 2007		
		(ft, msl)	(ft, btoc)	(ft, msl)	(ft, btoc)	(ft, msl)
MW-149	Fluvial	287.18	73.56	213.62	74.42	212.76
MW-150	Fluvial	296.81	82.47	214.34	82.85	213.96
MW-151	Fluvial	284.27	70.78	213.49	71.59	212.68
MW-152	Fluvial	289.59	76.34	213.25	77.15	212.44
MW-153	Fluvial	279.17	66.28	212.89	67.00	212.17
MW-154	Fluvial	273.81	57.39	216.42	58.00	215.81
MW-155	Fluvial	291.65	77.17	214.48	77.64	214.01
MW-156	Fluvial	269.15	57.28	211.87	58.07	211.08
MW-157	Fluvial	286.78	71.64	215.14	72.62	214.16
MW-158	Fluvial	294.07	80.67	213.40	81.55	212.52
MW-158A	Fluvial	293.95	80.47	213.48	80.45	213.50
MW-159	Fluvial	286.33	72.88	213.45	73.68	212.65
MW-160	Fluvial	294.00	79.74	214.26	80.71	213.29
MW-161	Fluvial	296.40	77.81	218.59	78.70	217.70
MW-162	Fluvial	299.70	82.61	217.09	--	--
MW-163	Fluvial	290.63	74.68	215.95	74.79	215.84
MW-164	Fluvial	287.48	70.64	216.84	69.93	217.55
MW-165	Fluvial	287.06	73.52	213.54	74.67	212.39
MW-165A	Fluvial	287.26	73.94	213.32	73.45	213.81
MW-166	Fluvial	283.44	69.97	213.47	70.83	212.61
MW-166A	Fluvial	283.45	69.96	213.49	70.83	212.62
MW-167	Fluvial	284.82	71.77	213.05	72.59	212.23
MW-168	Fluvial	283.95	70.81	213.14	71.63	212.32
MW-168A	Fluvial	283.20	70.04	213.16	70.90	212.30
MW-169	Fluvial/Intermediate	261.90	75.91	185.99	79.94	181.96
MW-170	Fluvial	273.75	59.23	214.52	60.09	213.66
MW-171	Fluvial	270.69	56.80	213.89	57.64	213.05
MW-172	Fluvial	300.28	73.65	226.63	74.22	226.06
MW-174	Fluvial	296.56	71.02	225.54	71.71	224.85
MW-175	Fluvial	291.63	66.60	225.03	67.42	224.21
MW-176	Fluvial	299.68	76.14	223.54	76.96	222.72
MW-178	Fluvial	300.26	75.86	224.40	76.85	223.41
MW-179	Fluvial	301.16	77.29	223.87	78.21	222.95
MW-180	Fluvial	296.14	73.46	222.68	74.72	221.42
MW-182	Fluvial	275.40	62.80	212.60	63.27	212.13
MW-183	Fluvial/Intermediate	275.59	113.74	161.85	123.72	151.87
MW-184	Fluvial	283.12	66.47	216.65	67.22	215.90
MW-185	Fluvial	256.71	75.35	181.36	79.69	177.02
MW-186	Fluvial	256.31	81.45	174.86	86.30	170.01
MW-187	Fluvial	302.74	76.38	226.36	77.12	225.62
MW-193	Fluvial	293.28	77.08	216.20	77.96	215.32
MW-194	Fluvial	293.26	75.90	217.36	76.75	216.51
PZ-02	Fluvial	284.39	42.86	241.53	45.20	239.19
RW-01	Fluvial	295.71	64.30	231.41	73.51	222.20
RW-01A	Fluvial	295.42	70.19	225.23	69.80	225.62
RW-01B	Fluvial	289.17	66.87	222.30	69.06	220.11
RW-02	Fluvial	289.92	69.12	220.80	69.84	220.08
RW-03	Fluvial	299.34	77.85	221.49	77.68	221.66
RW-04	Fluvial	305.11	82.79	222.32	84.37	220.74
RW-05	Fluvial	307.13	90.13	217.00	87.21	219.92
RW-06	Fluvial	304.56	85.15	219.41	81.90	222.66
RW-07	Fluvial	297.44	77.27	220.17	77.51	219.93
RW-08	Fluvial	292.99	73.42	219.57	75.55	217.44
RW-09	Fluvial	290.67	69.96	220.71	71.89	218.78
MW-1 TDEC	Fluvial	275.83	30.79	245.04	33.50	242.33
MW-2 TDEC	Fluvial	272.13	28.27	243.86	30.62	241.51
MW-3 TDEC	Fluvial	265.28	14.90	250.38	19.80	245.48
MW-4 TDEC	Fluvial	263.81	14.40	249.41	18.80	245.01

Notes:

ft, msl feet mean sea level
ft, btoc feet below top of casing
-- Not Measured

TABLE 3-3
PDB SAMPLE INTERVALS - APRIL 2007
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

Monitoring Well	Date Collected	Measured Well Depth (ft bgs)	Depth to Water (feet btoc)	Sample Depth Interval - 1 (feet btoc)	Sample Depth Interval - 2 (feet btoc)
MW-07	4/9/2007	73.18	68.42	68.9	NI
MW-31	4/9/2007	83.28	71.76	71.6	77.1
MW-32	4/9/2007	68.08	63.99	65.6	NI
MW-33	4/9/2007	62.70	56.75	58.0	NI
MW-37	4/9/2007	184.68	123.39	173.2	NI
MW-40	4/9/2007	95.53	80.62	90.0	NI
MW-43	4/10/2007	171.71	121.99	165.5	NI
MW-44	4/9/2007	74.36	55.74	69.0	NI
MW-54	4/9/2007	97.18	81.42	89.5	NI
MW-57	4/10/2007	70.21	64.41	66.6	NI
MW-67	4/10/2007	>200	115.87	267.5	NI
MW-68	4/11/2007	81.56	69.89	77.5	NI
MW-69	4/11/2007	95.58	84.64	88.2	NI
MW-70	4/11/2007	93.73	82.09	83.3	88.8
MW-71	4/11/2007	78.10	70.89	72.3	NI
MW-76	4/10/2007	93.98	85.55	88.2	NI
MW-77	4/10/2007	89.18	82.94	84.9	NI
MW-79	4/10/2007	104.78	72.12	92.0	NI
MW-130	4/10/2007	81.02	57.52	69.5	NI
MW-144	4/10/2007	76.28	73.14	74.9	NI
MW-145	4/9/2007	96.66	71.12	86.6	NI
MW-147	4/10/2007	77.91	72.51	73.7	NI
MW-148	4/10/2007	87.87	79.56	80.0	85.5
MW-149	4/9/2007	99.96	73.56	83.6	98.5
MW-150	4/9/2007	91.57	82.47	83.2	90.5
MW-151	4/10/2007	96.69	70.78	78.5	94.5
MW-152	4/10/2007	108.82	76.34	92.9	107.9
MW-153	4/10/2007	96.03	66.28	87.1	NI
MW-154	4/10/2007	66.84	57.39	61.6	NI
MW-155	4/10/2007	95.07	77.17	77.0	93.5
MW-156	4/11/2007	69.41	57.28	62.0	NI
MW-157	4/10/2007	77.11	71.64	74.8	NI
MW-158	4/10/2007	106.60	80.67	93.1	104.1
MW-158A	4/10/2007	93.28	80.47	81.5	91.4
MW-159	4/9/2007	99.31	72.88	81.1	97.1
MW-160	4/10/2007	85.77	79.74	80.8	NI
MW-161	4/10/2007	81.39	77.81	80.4	NI
MW-162	4/10/2007	86.69	82.61	83.7	NI
MW-163	4/10/2007	76.77	74.68	74.9	NI
MW-164	4/10/2007	75.28	70.64	72.6	NI
MW-165	4/10/2007	103.01	73.52	89.9	100.4
MW-165A	4/10/2007	86.40	73.94	73.9	84.5
MW-166	4/9/2007	100.05	69.97	87.3	97.8
MW-166A	4/9/2007	83.29	69.96	75.3	NI
MW-167	4/9/2007	82.68	71.77	76.5	NI
MW-168	4/9/2007	120.50	70.81	113.9	NI
MW-168A	4/9/2007	88.22	70.04	76.4	86.9
MW-169	4/9/2007	88.15	75.91	81.8	NI
MW-170	4/9/2007	79.78	59.23	61.7	77.7
MW-171	4/9/2007	68.32	56.80	62.4	NI

Notes:

NI Not installed
PDB passive diffusion bag samplers
bgs Below ground surface
btoc Below top of casing

TABLE 3-4
PDB SAMPLE INTERVALS - OCTOBER 2007
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

Monitoring Well	Date Collected	Measured Well Depth (ft bgs)	Depth to Water (feet btoc)	Sample Depth Interval - 1 (feet btoc)	Sample Depth Interval - 2 (feet btoc)
MW-07	10/8/2007	73.18	68.76	68.9	NI
MW-31	10/5/2007	83.28	72.92	71.6	77.1
MW-32	10/8/2007	68.08	64.29	65.6	NI
MW-33	10/8/2007	62.70	57.02	58.0	NI
MW-37	10/8/2007	184.68	134.16	173.2	NI
MW-40	10/8/2007	95.53	85.10	90.0	NI
MW-43	10/5/2007	171.71	137.30	165.5	NI
MW-44	10/5/2007	74.36	56.59	69.0	NI
MW-54	10/8/2007	97.18	82.30	89.5	NI
MW-57	10/5/2007	70.21	64.93	66.6	NI
MW-67	10/5/2007	>200	127.75	267.5	NI
MW-68	10/8/2007	81.56	71.18	77.5	NI
MW-69	10/8/2007	95.58	86.47	88.2	NI
MW-70	10/8/2007	93.73	82.91	83.3	88.8
MW-71	10/8/2007	78.10	71.56	72.3	NI
MW-76	10/8/2007	93.98	86.33	88.2	NI
MW-77	10/8/2007	89.18	83.59	84.9	NI
MW-79	10/8/2007	104.78	72.91	92.0	NI
MW-130	10/5/2007	81.02	57.85	69.5	NI
MW-144	10/8/2007	76.28	73.30	74.9	NI
MW-145	10/8/2007	96.66	71.97	86.6	NI
MW-147	10/5/2007	77.91	73.27	73.7	NI
MW-148	10/5/2007	87.87	80.50	80.0	85.5
MW-149	10/5/2007	99.96	74.42	83.6	98.5
MW-150	10/8/2007	91.57	82.85	83.2	92.0
MW-151	10/5/2007	96.69	71.59	78.5	94.5
MW-152	10/8/2007	108.82	77.15	92.9	107.9
MW-153	10/8/2007	96.03	67.00	87.1	NI
MW-154	10/5/2007	66.84	58.00	61.6	NI
MW-155	10/8/2007	95.07	77.64	77.0	93.5
MW-156	10/5/2007	69.41	58.07	62.0	NI
MW-157	10/8/2007	77.11	72.62	74.8	NI
MW-158	10/8/2007	106.60	81.55	93.1	104.1
MW-158A	10/8/2007	93.28	80.45	81.5	91.4
MW-159	10/8/2007	99.31	73.68	81.1	97.1
MW-160	10/8/2007	85.77	80.71	80.8	NI
MW-161	10/8/2007	81.39	78.70	81.9	NI
MW-162	10/8/2007	86.69	NR	83.7	NI
MW-163	10/8/2007	76.77	74.79	74.9	NI
MW-164	10/8/2007	75.28	69.93	72.6	NI
MW-165	10/8/2007	103.01	74.67	89.9	100.4
MW-165A	10/8/2007	86.40	73.45	73.9	84.5
MW-166	10/8/2007	100.05	70.83	87.3	97.8
MW-166A	10/5/2007	83.29	70.83	75.3	NI
MW-167	10/5/2007	82.68	72.59	76.5	NI
MW-168	10/8/2007	120.50	71.63	113.9	NI
MW-168A	10/8/2007	88.22	70.90	76.4	86.9
MW-169	10/8/2007	88.15	79.94	81.8	NI
MW-170	10/8/2007	79.78	60.09	61.7	77.7
MW-171	10/8/2007	68.32	57.64	62.4	NI

Notes:

NI Not installed
PDB passive diffusion bag samplers
bgs Below ground surface
btoc Below top of casing
NR No Reading

TABLE 4-1
 POSITIVE RESULTS SUMMARY - MONITORING WELLS - APRIL 2007
 ANNUAL OPERATIONS REPORT - 2007
 DUNN FIELD GROUNDWATER IRA - YEAR NINE
 Defense Depot Memphis, Tennessee

WELL ID	Maximum Contaminant Levels ^a	Target Concentration	MW-07	MW-31	MW-31	MW-32	MW-33	MW-37	MW-40
Sample ID	Contaminant	Concentration	MW-07-68.9	MW-31-71.6	MW-31-77.1	MW-32-65.6	MW-33-58	MW-37-173.2	MW-40-90
Lab ID			L0704220-01	L0704220-02	L0704220-03	L0704220-04	L0704220-05	L0704220-06	L0704220-07
Date			4/9/2007	4/9/2007	4/9/2007	4/9/2007	4/9/2007	4/9/2007	4/9/2007
Analyte	units								
1,1,1-Trichloroethane	ug/L	200	0.737 J	0.61 J	0.292 J	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	--	<0.5	<0.5	<0.5	1.59	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	ug/L	5	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	--	1.06	0.237 J	0.22 J	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	7	22.8	11.6	12.5	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acetone	ug/L	--	8.81 J	11.4	10.7	<10	5.3 J	3.27 J	<10
Carbon tetrachloride	ug/L	5	0.641 J	0.451 J	<1	3.95	0.457 J	<1	<1
Chlorobenzene	ug/L	100	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.05
Chloroform	ug/L	80	20	0.458	0.311	8.63	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	ug/L	70	0.326 J	7.32	0.579 J	1.14	<1	<1	<1
Tetrachloroethene	ug/L	5	39.4	0.904 J	1.45	0.82 J	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	100	<1	5.44	0.287 J	<1	<1	<1	<1
Trichloroethene	ug/L	5	24.7	30.2	3.27	6.47	<1	<1	<1
Vinyl chloride	ug/L	2	<1	<1	<1	<1	<1	<1	<1

Notes:

^a Drinking Water Standards and Health Advisories (USEPA, 2004)

Target Concentration (TC) from Dunn Field ROD, Table 2-21G

ug/L micrograms per liter

-- Not listed

< Results detected at or above reporting limits shown in bold

< Not detected above laboratory reporting limit.

DOE Flags:

J Estimated result based on QC data or reported below RL

Methods:

8260B Volatile Organic Compounds

TABLE 4-1
POSITIVE RESULTS SUMMARY - MONITORING WELLS - APRIL 2007
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

WELL ID	Maximum Contaminant Levels ^a	Target Concentration	MW-43	MW-43	MW-44	MW-54	MW-57	MW-67	MW-68
Sample ID	Contaminant	Concentration	MW-43-165.5	MW-43-165.5 DUP	MW-44-69	MW-54-89.5	MW-57-66.6	MW-67-267.5	MW-68-77.5
Lab ID			L0704287-01	L0704287-36	L0704220-08	L0704220-09	L0704287-02	L0704287-03	L0704275-01
Date			4/10/2007	4/10/2007	4/9/2007	4/9/2007	4/10/2007	4/10/2007	4/11/2007
Analyte	units								
1,1,1-Trichloroethane	ug/L	--	<1	<1	<1	<2.5	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	2.2	<0.5	<0.5	<0.5	160	<0.5	<0.5	1.45
1,1,2-Trichloroethane	ug/L	5	<1	<1	<1	0.968 J	<1	<1	<1
1,1-Dichloroethane	ug/L	--	<1	<1	<1	<2.5	<1	<1	<1
1,1-Dichloroethene	ug/L	7	<1	<1	<1	<2.5	<1	<1	<1
1,2-Dichloroethane	ug/L	5	<0.5	<0.5	<0.5	<1.25	<0.5	<0.5	<0.5
Acetone	ug/L	--	3.97 J	3.23 J	<10	<2.5	<10	<10	<10
Carbon tetrachloride	ug/L	3	<1	<1	1.24	2.34 J	29.6	<1	<1
Chlorobenzene	ug/L	--	<0.5	<0.5	<0.5	<1.25	<0.5	<0.5	<0.5
Chloroform	ug/L	12	<0.3	<0.3	0.694	2	6.6	<0.3	0.263 J
cis-1,2-Dichloroethene	ug/L	35	<1	<1	<1	18.9	0.325 J	<1	0.473 J
Tetrachloroethene	ug/L	2.5	<1	<1	<1	3.58	5.06	<1	0.506 J
trans-1,2-Dichloroethene	ug/L	50	<1	<1	<1	4.2	0.684 J	<1	0.261 J
Trichloroethene	ug/L	5	<1	<1	0.688 J	405	34.6	<1	2.58
Vinyl chloride	ug/L	--	<1	<1	<1	<2.5	<1	<1	<1

Notes:

^a Drinking Water Standards and Health Advisories (USEPA, 2004)

Target Concentration (TC) from Dunn Field ROD, Table 2-21G

ug/L micrograms per liter

-- Not listed

< Results detected at or above reporting limits shown in bold

Not detected above laboratory reporting limit.

DOE Flags:

J Estimated result based on QC data or reported below RL

Methods:

8260B Volatile Organic Compounds

TABLE 4-1
POSITIVE RESULTS SUMMARY - MONITORING WELLS - APRIL 2007
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

WELL ID	Maximum Contaminant Levels ^a	Target Concentration	MW-69	MW-70	MW-70	MW-71	MW-76	MW-77	MW-79
Sample ID	Lab ID	Date	4/11/2007	4/11/2007	4/11/2007	4/11/2007	4/10/2007	4/10/2007	4/10/2007
Analyte	units								
1,1,1-Trichloroethane	ug/L	200	<1	<1	<1	<1	<1	<50	<1
1,1,2,2-Tetrachloroethane	ug/L	--	<0.5	1460	627	4.66	3.82	8800	<0.5
1,1,2-Trichloroethane	ug/L	5	<1	2.17	19.5	<1	<1	<50	<1
1,1-Dichloroethane	ug/L	--	<1	<1	<1	<1	<1	<50	0.19 J
1,1-Dichloroethene	ug/L	7	<1	<1	1.75	<1	<1	<50	11.2
1,2-Dichloroethane	ug/L	5	<0.5	<0.5	0.355 J	<0.5	<0.5	<25	<0.5
Acetone	ug/L	--	<10	12.6	12.9	5.12 J	5.51 J	<500	16.6
Carbon tetrachloride	ug/L	5	<1	<1	<1	16.5	<1	<50	<1
Chlorobenzene	ug/L	100	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<0.5
Chloroform	ug/L	80	0.144 J	1.08	0.338	59.2	0.359	<15	<0.3
cis-1,2-Dichloroethene	ug/L	70	<1	26.7	58.5	1.89	3.08	67.5	<1
Tetrachloroethene	ug/L	5	0.898 J	8.16	2.89	3.03	2.74	21 J	1.06
trans-1,2-Dichloroethene	ug/L	100	<1	4.83	5.48	0.59 J	1.41	<50	<1
Trichloroethene	ug/L	5	0.879 J	750	329	36.2	26.4	3330	1.9
Vinyl chloride	ug/L	2	<1	<1	94.3	<1	<1	<50	<1

Notes:

^a Drinking Water Standards and Health Advisories (USEPA, 2004)

Target Concentration (TC) from Dunn Field ROD, Table 2-21G

ug/L micrograms per liter

-- Not listed

< Results detected at or above reporting limits shown in bold

< Not detected above laboratory reporting limit.

DOE Flags:

J Estimated result based on QC data or reported below RL

Methods:

8260B Volatile Organic Compounds

TABLE 4-1
POSITIVE RESULTS SUMMARY - MONITORING WELLS - APRIL 2007
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
 Defense Depot Memphis, Tennessee

WELL ID	Maximum	Target	MW-130	MW-144	MW-145	MW-147	MW-148	MW-148	MW-148
Sample ID	Contaminant	Concentration	MW-130-69.5	MW-144-74.9	MW-145-86.6	MW-147-73.7	MW-148-80.0	MW-148-80.0	MW-148-85.5
Lab ID	Levels ^a		L0704287-09	L0704287-10	L0704220-10	L0704287-11	L0704287-12	L0704287-37	L0704287-13
Date			4/10/2007	4/10/2007	4/9/2007	4/10/2007	4/10/2007	4/10/2007	4/10/2007
Analyte	units								
1,1,1-Trichloroethane	ug/L	200	3.39	<10	<1	0.666 J	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	--	<0.5	1350	<0.5	634	0.179 J	0.165 J	1.75
1,1,2-Trichloroethane	ug/L	5	<1	20.4	<1	9.28	<1	<1	<1
1,1-Dichloroethane	ug/L	--	3.88	<10	<1	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	7	70	<10	<1	1.49	<1	<1	<1
1,2-Dichloroethane	ug/L	5	1.03	<5	<0.5	1.43	<0.5	<0.5	<0.5
Acetone	ug/L	--	7.65 J	<100	12	14.6	17.7	14.3	14.9
Carbon tetrachloride	ug/L	5	<1	<10	<1	0.83 J	<1	<1	<1
Chlorobenzene	ug/L	100	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroform	ug/L	80	0.315	<3	<0.3	7.24	0.473	0.577	0.247 J
cis-1,2-Dichloroethene	ug/L	70	0.818 J	33.5	<1	155	5.04	8.11	1.97
Tetrachloroethene	ug/L	5	154	4.11 J	<1	12.2	4.18	5.4	0.89 J
trans-1,2-Dichloroethene	ug/L	100	<1	3.39 J	<1	39.6	1.82	3.3	0.686 J
Trichloroethene	ug/L	5	71.2	694	<1	278	17.6	29.3	7.7
Vinyl chloride	ug/L	2	<1	<10	<1	<1	<1	<1	<1

Notes:

^a Drinking Water Standards and Health Advisories (USEPA, 2004)

Target Concentration (TC) from Dunn Field ROD, Table 2-21G

ug/L micrograms per liter

-- Not listed

< Results detected at or above reporting limits shown in bold

< Not detected above laboratory reporting limit.

DOE Flags:

J Estimated result based on QC data or reported below RL

Methods:

8260B Volatile Organic Compounds

TABLE 4-1
 POSITIVE RESULTS SUMMARY - MONITORING WELLS - APRIL 2007
 ANNUAL OPERATIONS REPORT - 2007
 DUNN FIELD GROUNDWATER IRA - YEAR NINE
 Defense Depot Memphis, Tennessee

WELL ID	Maximum Contaminant Levels ^a	Target Concentration	MW-149	MW-149-83.6	MW-149-98.5	MW-150	MW-150-83.2	MW-150-90.5	MW-151	MW-151-78.5	MW-151-94.5	MW-151
Sample ID	Contaminant	Concentration	MW-149-83.6	MW-149-98.5	MW-150-83.2	MW-150-90.5	MW-151-78.5	MW-151-94.5	MW-151-94.5	MW-151-94.5	MW-151-94.5	MW-151-94.5
Lab ID	Date	units	4/9/2007	4/9/2007	4/9/2007	4/9/2007	4/9/2007	4/9/2007	4/9/2007	4/9/2007	4/9/2007	4/9/2007
Analyte												
1,1,1-Trichloroethane	ug/L	200	<1	<1	<25	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	--	37.2	33.3	3030	4620	<0.5	0.68	0.682	<1	<1	<1
1,1,2-Trichloroethane	ug/L	5	1.29	1.23	10.2 J	27	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	--	<1	<1	<25	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	7	<1	<1	<25	0.687 J	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	5	0.349 J	0.343 J	<12.5	0.386 J	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acetone	ug/L	--	<10	11.8	<250	33.4	15.4	14.9	15.4	14.9	15.4	15.4
Carbon tetrachloride	ug/L	5	19.8	19.6	<25	<1	<0.5	5.53	5.11	5.53	5.11	5.11
Chlorobenzene	ug/L	100	<0.5	<0.5	<12.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroform	ug/L	80	155	141	<7.5	1.92	0.327	12.5	12.6	12.5	12.6	12.6
cis-1,2-Dichloroethene	ug/L	70	8.02	9.02	56.2	109	<1	1.24	1.28	1.24	1.28	1.28
Tetrachloroethene	ug/L	5	3.81	2.99	6.54 J	16.8	<1	0.588 J	0.58 J	0.588 J	0.58 J	0.58 J
trans-1,2-Dichloroethene	ug/L	100	1.52	1.59	11.1 J	24.3	<1	0.274 J	0.264 J	0.274 J	0.264 J	0.264 J
Trichloroethene	ug/L	5	80.9	77.2	1350	3060	0.562 J	11.1	11.2	11.1	11.2	11.2
Vinyl chloride	ug/L	2	<1	<1	<25	0.83 J	<1	<1	<1	<1	<1	<1

Notes:

^a Drinking Water Standards and Health Advisories (USEPA, 2004)

Target Concentration (TC) from Dunn Field ROD, Table 2-21G

μg/L micrograms per liter

-- Not listed

< Results detected at or above reporting limits shown in bold

< Not detected above laboratory reporting limit.

DOE Flags:

J Estimated result based on QC data or reported below RL

Methods:

8260B Volatile Organic Compounds

TABLE 4-1
POSITIVE RESULTS SUMMARY - MONITORING WELLS - APRIL 2007
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
 Defense Depot Memphis, Tennessee

WELL ID	Maximum	Target	MW-152	MW-152	MW-152	MW-153	MW-154	MW-155	MW-155	MW-155
Sample ID	Contaminant	Concentration	MW-152-107.9	MW-152-92.9	MW-153-87.1	MW-154-61.6	MW-155-77.0	MW-155-93.5	MW-155-93.5	MW-155-93.5
Lab ID	Levels ^a		L0704287-15	L0704287-14	L0704287-16	L0704287-17	L0704287-18	L0704287-19	L0704287-38	L0704287-38
Date			4/10/2007	4/10/2007	4/10/2007	4/10/2007	4/10/2007	4/10/2007	4/10/2007	4/10/2007
Analyte	units									
1,1,1-Trichloroethane	ug/L	--	<1	<1	1.77	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	2.2	8.67	15.7	<0.5	<0.5	2880	3180	2920	2920
1,1,2-Trichloroethane	ug/L	5	<1	<1	<1	<1	147	120 J	112	112
1,1-Dichloroethane	ug/L	--	<1	<1	0.643 J	<1	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	7	<1	<1	5.91	<1	0.966 J	0.928 J	0.82 J	0.82 J
1,2-Dichloroethane	ug/L	5	<0.5	<0.5	<0.5	<0.5	0.409 J	0.367 J	<0.5	<0.5
Acetone	ug/L	--	15.5	14.3	17	<10	17.7	16.8 J	12.3	12.3
Carbon tetrachloride	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	ug/L	100	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroform	ug/L	80	1.31	1.84	<0.3	<0.3	1.45	1.69 J	1.39	1.39
cis-1,2-Dichloroethene	ug/L	70	14.7	21.8	0.334 J	<1	105	86 J	77.5	77.5
Tetrachloroethene	ug/L	5	9.65	12.7	0.332 J	<1	11.6	12.4 J	12.9	12.9
trans-1,2-Dichloroethene	ug/L	100	6.32	9.23	<1	<1	35.3	27.2 J	25.7	25.7
Trichloroethene	ug/L	5	130	185	0.251 J	<1	1560	1650	1460	1460
Vinyl chloride	ug/L	2	<1	<1	<1	<1	1.15	0.619 J	0.293 J	0.293 J

Notes:

^a Drinking Water Standards and Health Advisories (USEPA, 2004)

Target Concentration (TC) from Dunn Field ROD, Table 2-21G

ug/L micrograms per liter

-- Not listed

< Results detected at or above reporting limits shown in bold

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DOE Flags:

J Estimated result based on QC data or reported below RL

Methods:

8260B Volatile Organic Compounds

TABLE 4-1
 POSITIVE RESULTS SUMMARY - MONITORING WELLS - APRIL 2007
 ANNUAL OPERATIONS REPORT - 2007
 DUNN FIELD GROUNDWATER IRA - YEAR NINE
 Defense Depot Memphis, Tennessee

WELL ID	Maximum Contaminant Levels ^a	Target Concentration	MW-156	MW-157	MW-158	MW-158	MW-158A	MW-158A
Sample ID	Contaminant	Concentration	MW-156-62.0	MW-157-74.8	MW-158-104.1	MW-158-93.1	MW-158A-81.5	MW-158A-91.4
Lab ID			L0704275-06	L0704287-20	L0704287-22	L0704287-21	L0704287-23	L0704287-24
Date			4/11/2007	4/10/2007	4/10/2007	4/10/2007	4/10/2007	4/10/2007
Analyte	units							
1,1,1-Trichloroethane	ug/L	--	<1	<1	<1	<1	<1	<2
1,1,2,2-Tetrachloroethane	ug/L	--	<0.5	25.2	1.86	0.933	268	50.3
1,1,2-Trichloroethane	ug/L	5	<1	1.04	<1	<1	28.8 J	3.49
1,1-Dichloroethane	ug/L	--	<1	<1	<1	<1	<1	<2
1,1-Dichloroethene	ug/L	7	<1	<1	<1	<1	0.592 J	<2
1,2-Dichloroethane	ug/L	5	<0.5	<0.5	<0.5	<0.5	0.589 J	<1
Acetone	ug/L	--	2.84 J	19.1	14.5	14.7	12.6 J	16.5 J
Carbon tetrachloride	ug/L	5	<1	17.2	<1	<1	<1	<2
Chlorobenzene	ug/L	100	<0.5	<0.5	<0.5	<0.5	<0.5	<1
Chloroform	ug/L	80	<0.3	153	0.404	0.31	0.858 J	1.44
cis-1,2-Dichloroethene	ug/L	70	<1	16.8	2.9	2.82	95.3 J	21.4
Tetrachloroethene	ug/L	5	<1	4.1	7.83	8.13	3.77 J	10.4
trans-1,2-Dichloroethene	ug/L	100	<1	3	1.56	1.39	15.2 J	7.78
Trichloroethene	ug/L	5	<1	162	54	53.2	514	240
Vinyl chloride	ug/L	2	<1	<1	<1	<1	0.663 J	<2

Notes:

^a Drinking Water Standards and Health Advisories (USEPA, 2004)

Target Concentration (TC) from Dunn Field ROD, Table 2-21G

ug/L micrograms per liter

-- Not listed

< Results detected at or above reporting limits shown in bold

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DOE Flags:

J Estimated result based on QC data or reported below RL

Methods:

8260B Volatile Organic Compounds

TABLE 4-1
POSITIVE RESULTS SUMMARY - MONITORING WELLS - APRIL 2007
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
 Defense Depot Memphis, Tennessee

WELL ID	Maximum	Target	MW-158A	MW-159	MW-159	MW-160	MW-161	MW-162	MW-163
Sample ID	Contaminant	Concentration	MW-158A-91.4 DUP	MW-159-81.1	MW-159-97.1	MW-160-80.8	MW-161-80.4	MW-162-83.7	MW-163-74.9
Lab ID	Levels ^a		L0704287-39	L0704220-17	L0704220-18	L0704287-25	L0704287-26	L0704287-27	L0704287-28
Date			4/10/2007	4/9/2007	4/9/2007	4/10/2007	4/10/2007	4/10/2007	4/10/2007
Analyte	units								
1,1,1-Trichloroethane	ug/L	--	<1	<1	<1	<1	<10	<20	<5
1,1,2,2-Tetrachloroethane	ug/L	2.2	59	248	272	24.9	1170	3030	642
1,1,2-Trichloroethane	ug/L	1.9	3.74	37.4	32.9	<1	<10	<20	61.2
1,1-Dichloroethane	ug/L	--	<1	<1	<1	<1	<10	<20	<5
1,1-Dichloroethene	ug/L	7	<1	1.16	1.12	0.708 J	<10	<20	<5
1,2-Dichloroethane	ug/L	5	<0.5	0.287 J	<0.5	<0.5	<5	<10	2.35 J
Acetone	ug/L	--	12	14.1	14.3	17.9	<100	<200	13 J
Carbon tetrachloride	ug/L	5	<1	<1	<1	0.781 J	5.68 J	<20	<5
Chlorobenzene	ug/L	100	<0.5	<0.5	<0.5	<0.5	<5	<10	<2.5
Chloroform	ug/L	80	1.37	0.967	1.03	1.68	2.1 J	<6	0.883 J
cis-1,2-Dichloroethene	ug/L	70	23.6	156	152	22.6	42.5	45.5	113
Tetrachloroethene	ug/L	5	12.2	3.75	3.81	14.5	6.49 J	13.2 J	3.5 J
trans-1,2-Dichloroethene	ug/L	100	9.03	17.9	16.8	8.63	5.77 J	9.93 J	14.8
Trichloroethene	ug/L	5	170	1660	1580	191	1400	1470	485
Vinyl chloride	ug/L	2	<1	0.504 J	0.514 J	<1	<10	<20	3.91 J

Notes:

^a Drinking Water Standards and Health Advisories (USEPA, 2004)

Target Concentration (TC) from Dunn Field ROD, Table 2-21G

ug/L micrograms per liter

-- Not listed

< Results detected at or above reporting limits shown in bold

< Not detected above laboratory reporting limit.

DOE Flags:

J Estimated result based on QC data or reported below RL

Methods:

8260B Volatile Organic Compounds

TABLE 4-1
 POSITIVE RESULTS SUMMARY - MONITORING WELLS - APRIL 2007
 ANNUAL OPERATIONS REPORT - 2007
 DUNN FIELD GROUNDWATER IRA - YEAR NINE
 Defense Depot Memphis, Tennessee

WELL ID	Maximum Contaminant Levels ^a	Target Concentration	MW-164	MW-165	MW-165-100.4	MW-165-100.4 DUP	MW-165	MW-165A	MW-165A
Sample ID	Lab ID	Date	4/10/2007	4/10/2007	4/10/2007	4/10/2007	4/10/2007	4/10/2007	4/10/2007
Analyte	units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
1,1,1-Trichloroethane	200	--	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	--	2.2	45	1.82	2.05	1.9	<1	<1	2
1,1,2-Trichloroethane	5	1.9	1.75	0.3 J	0.322 J	<1	<1	<1	<1
1,1-Dichloroethane	--	--	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	7	7	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	5	--	0.507	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acetone	--	--	17.3	13.3	13.4	14.1	14	<10	6.23
Carbon tetrachloride	5	3	24.8	<1	<1	3.9	0.449 J	<0.5	<0.5
Chlorobenzene	100	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	18
Chloroform	80	12	247	1.89	1.92	7.6	0.835	2.16	9.46
cis-1,2-Dichloroethene	70	35	18.1	11.6	11.6	9.31	1.35	0.36 J	1.57
Tetrachloroethene	5	2.5	3.62	1.36	1.49	2.5	2	0.627 J	1.96
trans-1,2-Dichloroethene	100	50	2.66	2.44	2.5	134	49.6	<1	131
Trichloroethene	5	5	136 J	153	152	<1	<1	<1	<1
Vinyl chloride	2	--	<1	<1	<1	<1	<1	<1	<1

Notes:

^a Drinking Water Standards and Health Advisories (USEPA, 2004)

Target Concentration (TC) from Dunn Field ROD, Table 2-21G

µg/L micrograms per liter

-- Not listed

< Results detected at or above reporting limits shown in bold

Not detected above laboratory reporting limit.

DQE Flags:

J Estimated result based on QC data or reported below RL

Methods:

8260B Volatile Organic Compounds

TABLE 4-1
POSITIVE RESULTS SUMMARY - MONITORING WELLS - APRIL 2007
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
 Defense Depot Memphis, Tennessee

WELL ID	Maximum	Target	MW-166	MW-166	MW-166A	MW-167	MW-168
Sample ID	Contaminant	Concentration	MW-166-87.3 DUP	MW-166-87.3	MW-166-97.8	MW-167-76.5	MW-168-113.9
Lab ID	Levels ^a		L0704220-30	L0704220-19	L0704220-20	L0704220-22	L0704220-23
Date			4/9/2007	4/9/2007	4/9/2007	4/9/2007	4/9/2007
Analyte	units						
1,1,1-Trichloroethane	ug/L	--	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	2.2	5.32	5.46	5.47	<0.5	<0.5
1,1,2-Trichloroethane	ug/L	5	<1	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	--	<1	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	7	<1	<1	<1	<1	1.04
1,2-Dichloroethane	ug/L	5	<0.5	<0.5	<0.5	<0.5	<0.5
Acetone	ug/L	--	11	9.32 J	<10	13.1	13.8
Carbon tetrachloride	ug/L	5	6.32	8	12.5	7.29	<1
Chlorobenzene	ug/L	100	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroform	ug/L	80	21.4	25.3	33.1	30.1	<0.3
cis-1,2-Dichloroethene	ug/L	70	2.7	2.69	2.49	2.42	<1
Tetrachloroethene	ug/L	5	0.854 J	1	1.28	0.854 J	<1
trans-1,2-Dichloroethene	ug/L	100	0.7 J	0.685 J	0.547 J	0.527 J	<1
Trichloroethene	ug/L	5	24.2	25.6	23.2	25.7	0.66 J
Vinyl chloride	ug/L	2	<1	<1	<1	<1	<1

Notes:

^a Drinking Water Standards and Health Advisories (USEPA, 2004)

Target Concentration (TC) from Dunn Field ROD, Table 2-21G

ug/L micrograms per liter

-- Not listed

< Results detected at or above reporting limits shown in bold

< Not detected above laboratory reporting limit.

DOE Flags:

J Estimated result based on QC data or reported below RL

Methods:

8260B Volatile Organic Compounds

TABLE 4-1
 POSITIVE RESULTS SUMMARY - MONITORING WELLS - APRIL 2007
 ANNUAL OPERATIONS REPORT - 2007
 DUNN FIELD GROUNDWATER IRA - YEAR NINE
 Defense Depot Memphis, Tennessee

WELL ID	Maximum Contaminant Levels ^a	Target Concentration	MW-168A	MW-168A	MW-169	MW-170	MW-170	MW-170	MW-171
Sample ID	Contaminant	Concentration	MW-168A-76.4	MW-168A-86.9	MW-169-81.8	MW-170-61.7	MW-170-61.7	MW-170-61.7	MW-171-62.4
Lab ID			L0704220-24	L0704220-25	L0704220-26	L0704220-27	L0704220-31	L0704220-28	L0704220-29
Date			4/9/2007	4/9/2007	4/9/2007	4/9/2007	4/9/2007	4/9/2007	4/9/2007
Analyte	units								
1,1,1-Trichloroethane	ug/L	200	13.5	1.68	<1	0.833 J	1.03	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	ug/L	5	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	--	0.512 J	<1	<1	1.81	1.83	<1	<1
1,1-Dichloroethene	ug/L	7	22.9	4.85	<1	3.67	3.89	<1	<1
1,2-Dichloroethane	ug/L	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acetone	ug/L	--	9.85 J	<10	12.3	9.02 J	8.54 J	12.8	13
Carbon tetrachloride	ug/L	5	0.276 J	<1	<1	<1	<1	<1	<1
Chlorobenzene	ug/L	100	<0.5	<0.5	2.15	<0.5	<0.5	<0.5	<0.5
Chloroform	ug/L	80	0.71	0.171 J	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	ug/L	70	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	5	0.887 J	0.464 J	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	100	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	ug/L	5	1.08	0.565 J	<1	<1	<1	<1	<1
Vinyl chloride	ug/L	2	<1	<1	<1	<1	<1	<1	<1

Notes:

^a Drinking Water Standards and Health Advisories (USEPA, 2004)

Target Concentration (TC) from Dunn Field ROD, Table 2-21G

ug/L micrograms per liter

-- Not listed

< Results detected at or above reporting limits shown in bold

< Not detected above laboratory reporting limit.

DOE Flags:

J Estimated result based on QC data or reported below RL

Methods:

8260B Volatile Organic Compounds

TABLE 4-2
POSITIVE RESULTS SUMMARY - MONITORING WELLS - OCTOBER 2007
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

WELL ID	Maximum Contaminant Levels*	Target Concentration	MW-07	MW-31	MW-31	MW-32	MW-33	MW-37	MW-37
Sample ID	Lab ID	Date	10/8/2007	10/5/2007	10/5/2007	10/8/2007	10/8/2007	10/8/2007	10/8/2007
Analyte	units								
1,1,1,2-Tetrachloroethane	ug/L	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	ug/L	200	0.282 J	0.893 J	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	--	<0.5	0.262 J	<0.5	<0.5	<0.5	0.788	0.737
1,1,2-Trichloroethane	ug/L	5	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	--	0.559 J	0.282 J	<1	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	7	12.8	4.69	7.73	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	ug/L	--	<0.5	<0.5	<0.5	<0.5	<0.5	0.173 J	0.191 J
Acetone	ug/L	--	14.5 B	9.92 J	12	11.8 B	12.5 B	8.49 B	10.4
Carbon tetrachloride	ug/L	5	0.48 J	0.48 J	<1	<1	1.5	4.12	4.15
Chlorobenzene	ug/L	100	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroform	ug/L	80	13.8	0.398	0.249 J	<0.3	<0.3	6.01	6.23
Chloromethane	ug/L	--	0.69 J	<1	0.373 J	0.44 J	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	70	<1	8.45	0.779 J	<1	<1	0.29 J	0.331 J
MEK (2-Butanone)	ug/L	--	<10	<10	<10	<10	<10	<10	<10
Methylene chloride	ug/L	--	<1	<1	<1	<1	<1	<1	<1
Naphthalene	ug/L	--	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	5	24.3	0.887 J	0.661 J	<1	<1	0.637 J	0.693 J
Toluene	ug/L	1000	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	100	<1	5.23	0.847 J	<1	<1	<1	<1
Trichloroethene	ug/L	5	16	34.2	5.87	<1	<1	2.71	2.91
Vinyl chloride	ug/L	2	<1	<1	<1	<1	<1	<1	<1

Notes:

* Drinking Water Standards and Health Advisories (USEPA, 2004)

µg/L Target Concentration (TC) from Dunn Field ROD, Table 2-21G

micrograms per liter

-- Not listed

Results detected at or above reporting limits shown in bold

DOE Flags:

J Estimated result based on QC data or reported below RL

B Estimated result possibly biased high or false positive

based on blank data

< Analyte not detected above RL

Methods:

8260B Volatile Organic Compounds

TABLE 4-2
POSITIVE RESULTS SUMMARY - MONITORING WELLS - OCTOBER 2007
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

WELL ID	Maximum Contaminant Levels*	Target Concentration	MW-40	MW-43	MW-44	MW-54	MW-57	MW-67	MW-68
Sample ID	Lab ID	Date	Analyte	units	ug/L	ug/L	ug/L	ug/L	ug/L
1,1,1,2-Tetrachloroethane	200	10/8/2007	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	2.2	10/8/2007	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5
1,1,2,2-Tetrachloroethane	5	10/8/2007	<0.5	<0.5	<0.5	80	<0.5	<0.5	1.51
1,1,2-Trichloroethane	7	10/8/2007	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5
1,1-Dichloroethane	7	10/8/2007	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5
1,2-Dichloroethane	5	10/8/2007	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	5	10/8/2007	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5
Acetone	5	10/8/2007	8.91 B	10.2	11.9	<50	13.8	8.52 J	9.62 B
Carbon tetrachloride	100	10/8/2007	<0.5	<0.5	<0.5	5.74	22.9	<0.5	<0.5
Chlorobenzene	80	10/8/2007	1.26	<0.3	0.63	<2.5	<0.5	<0.5	<0.5
Chloroform	70	10/8/2007	<0.5	<0.5	0.584 J	3.17	6.29	<0.3	0.775
cis-1,2-Dichloroethene	35	10/8/2007	<0.5	<0.5	<0.5	<5	0.454 J	<0.3	0.449 J
MEK (2-Butanone)	35	10/8/2007	<0.5	<0.5	<0.5	19.2	0.371 J	<0.3	2.36
Methylene chloride	35	10/8/2007	<0.5	<0.5	<0.5	<50	<10	<0.3	<0.3
Naphthalene	2.5	10/8/2007	<0.5	<0.5	<0.5	3.85 B	<10	<0.3	<0.3
Tetrachloroethene	5	10/8/2007	<0.5	<0.5	<0.5	<5	<0.5	<0.3	<0.3
Toluene	1000	10/8/2007	<0.5	<0.5	<0.5	5.06	4.48	<0.3	<0.3
trans-1,2-Dichloroethene	50	10/8/2007	<0.5	<0.5	<0.5	<5	<0.3	<0.3	<0.3
Trichloroethene	5	10/8/2007	<0.5	<0.5	<0.5	4.48 J	0.719 J	<0.3	0.585 J
Vinyl chloride	2	10/8/2007	<0.5	<0.5	0.467 J	474	31.2	<0.3	4.73

Notes:

* Drinking Water Standards and Health Advisories (USEPA, 2004)

Target Concentration (TC) from Dunn Field ROD, Table 2-21G

µg/L

micrograms per liter

Not listed

Results detected at or above reporting limits shown in bold

DOE Flags:

J Estimated result based on QC data or reported below RL

B Estimated result possibly biased high or false positive

< based on blank data

< Analyte not detected above RL

Methods:

8260B Volatile Organic Compounds

TABLE 4-2
POSITIVE RESULTS SUMMARY - MONITORING WELLS - OCTOBER 2007
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

WELL ID	Maximum Contaminant Levels ^a	Target Concentration	MW-69	MW-70	MW-70	MW-70	MW-70	MW-71	MW-76	MW-76
Sample ID	Contaminant	Concentration	MW-69-88.2-IS-3	MW-70-83.3-IS-3	MW-70-88.8-IS-3	MW-70-88.8-DUP	MW-71-72.3-IS-3	MW-76-88.2-IS-3	MW-76-88.2-DUP	MW-76-88.2-DUP
Lab ID	Analyte	units	L0710237-17	L0710237-18	L0710237-19	L0710238-09	L0710237-03	L0710237-04	L0710238-01	L0710238-01
Date			10/8/2007	10/8/2007	10/8/2007	10/8/2007	10/8/2007	10/8/2007	10/8/2007	10/8/2007
1,1,1,2-Tetrachloroethane	ug/L	--	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	ug/L	200	<1	<2	<2	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	--	<0.5	237	455	448	2.21	18.4	22.8	22.8
1,1,2-Trichloroethane	ug/L	5	<1	14.7	1.31 J	1.14	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	--	<1	<2	<2	<1	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	7	<1	2.48	<2	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	5	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	ug/L	--	<0.5	0.787 J	<1	<0.5	<0.5	0.203 J	0.273 J	0.273 J
Acetone	ug/L	--	6.98 B	9.31 B	9.7 B	11.8	10.1 B	11.6 B	10.5	10.5
Carbon tetrachloride	ug/L	5	<1	<2	<2	<1	12.6	<1	1.51	1.51
Chlorobenzene	ug/L	100	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroform	ug/L	80	0.136 J	0.256 J	0.461 J	0.434	32.6	0.978	1.06	1.06
Chloromethane	ug/L	--	<1	<2	<2	<1	0.302 J	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	70	<1	61.1	8.01	8.3	1.65	11.8	12.2	12.2
MEK (2-Butanone)	ug/L	--	<10	<20	<20	<10	<10	<10	<10	<10
Methylene chloride	ug/L	--	<1	<2	<2	<1	<1	<1	<1	<1
Naphthalene	ug/L	--	<1	<2	0.543 J	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	5	1.03	1.31 J	4.44	3.91	1.52	4.82	4.7	4.7
Toluene	ug/L	1000	<1	<2	<2	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	100	<1	11.5	1.38 J	1.41	0.36 J	5.79	5.51	5.51
Trichloroethene	ug/L	5	<1	119	308	306	21	132	172 J	172 J
Vinyl chloride	ug/L	2	<1	42.3	<2	<1	<1	<1	<1	<1

Notes:

^a Drinking Water Standards and Health Advisories (USEPA, 2004)

Target Concentration (TC) from Dunn Field ROD, Table 2-21G

ug/L micrograms per liter

-- Not listed

Results detected at or above reporting limits shown in bold

DOE Flags:

J Estimated result based on QC data or reported below RL

B Estimated result possibly biased high or false positive

based on blank data

< Analyte not detected above RL

Methods:

8260B Volatile Organic Compounds

TABLE 4-2
POSITIVE RESULTS SUMMARY - MONITORING WELLS - OCTOBER 2007
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

WELL ID	Maximum Contaminant Levels ^a	Target Concentration	MW-77	MW-79	MW-130	MW-144	MW-144	MW-145	MW-147
Sample ID	Contaminant	Concentration	MW-77-84.9-IS-3	MW-79-92-IS-3	MW-130-69.5-IS-3	MW-144-74.9-IS-3	MW-144-74.9-DUP	MW-145-86.6-IS-3	MW-147-73.7-IS-3
Lab ID			L0710237-05	L0710237-21	L0710210-05	L0710237-06	L0710238-05	L0710237-22	L0710210-18
Date			10/8/2007	10/8/2007	10/5/2007	10/8/2007	10/8/2007	10/8/2007	10/5/2007
Analyte	units								
1,1,1,2-Tetrachloroethane	ug/L	—	0.297 J	<0.5	<0.5	0.372 J	0.359 J	<0.5	<0.5
1,1,1-Trichloroethane	ug/L	200	<1	<1	2.28	<1	<1	<1	5.13
1,1,2,2-Tetrachloroethane	ug/L	—	1980	<0.5	<0.5	841	966	<0.5	198
1,1,2-Trichloroethane	ug/L	5	2.59	<1	<1	8.75	10.1	<1	4.47
1,1-Dichloroethane	ug/L	—	<1	0.23 J	3.88	<1	<1	<1	0.229 J
1,1-Dichloroethene	ug/L	7	<1	13.7	74	<1	<1	<1	5.65
1,2-Dichloroethane	ug/L	5	<0.5	<0.5	0.932	0.625	0.602	<0.5	0.686
1,4-Dichlorobenzene	ug/L	—	0.157 J	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acetone	ug/L	—	11.1 B	3.43 B	9.13 J	9.29 B	10.7	5.08 B	7.12 J
Carbon tetrachloride	ug/L	5	<1	<1	<1	1.59	1.4	<1	2.3
Chlorobenzene	ug/L	100	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroform	ug/L	80	0.822	<0.3	0.291 J	1.7	1.71	<0.3	4.6
Chloromethane	ug/L	—	0.295 J	<1	0.308 J	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	70	22.1	<1	0.82 J	26.3	27.8	<1	120 J
MEK (2-Butanone)	ug/L	—	<10	<10	<10	<10	<10	<10	<10
Methylene chloride	ug/L	—	<1	<1	<1	<1	<1	<1	<1
Naphthalene	ug/L	—	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	5	17	1.14	147	3.49	3.15	<1	8.97
Toluene	ug/L	1000	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	100	2.16	<1	<1	2.24	2.2	<1	28.9
Trichloroethene	ug/L	5	1290	3.27	67.4	464	416	<1	169
Vinyl chloride	ug/L	2	<1	<1	<1	<1	<1	<1	<1

Notes:

^a Drinking Water Standards and Health Advisories (USEPA, 2004)

Target Concentration (TC) from Dunn Field ROD, Table 2-21G

ug/L micrograms per liter

— Not listed

Results detected at or above reporting limits shown in bold

DOE Flags:

J Estimated result based on QC data or reported below RL

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based on blank data

< Analyte not detected above RL

Methods:

8260B Volatile Organic Compounds

TABLE 4-2
POSITIVE RESULTS SUMMARY - MONITORING WELLS - OCTOBER 2007
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

WELL ID	Maximum Contaminant Levels ^a	Target Concentration	MW-148 L0710210-21 10/5/2007	MW-148 L0710210-22 10/5/2007	MW-149 L0710210-12 10/5/2007	MW-149 L0710210-13 10/5/2007	MW-150 L0710237-23 10/8/2007	MW-150 L0710237-24 10/8/2007
Analyte	Date	units						
1,1,1,2-Tetrachloroethane	ug/L	--	<0.5	<0.5	<0.5	<0.5	<12.5	<12.5
1,1,1-Trichloroethane	ug/L	200	<1	<1	<1	<1	<25	<25
1,1,2,2-Tetrachloroethane	ug/L	--	3.43	2.67	6.03	9.78	26.40	3960
1,1,2-Trichloroethane	ug/L	5	<1	<1	<1	0.346 J	54.4	87.2
1,1-Dichloroethane	ug/L	--	<1	<1	<1	<1	<25	<25
1,1-Dichloroethene	ug/L	7	<1	<1	<1	<1	<25	<25
1,2-Dichloroethane	ug/L	5	<0.5	<0.5	<0.5	<0.5	<12.5	<12.5
1,4-Dichlorobenzene	ug/L	--	<0.5	<0.5	<0.5	0.247 J	<12.5	<12.5
Acetone	ug/L	--	8.34 J	11.6	11.6	7 J	<250	<250
Carbon tetrachloride	ug/L	5	<1	<1	6.59	8.05	<25	<25
Chlorobenzene	ug/L	100	<0.5	<0.5	<0.5	<0.5	<12.5	<12.5
Chloroform	ug/L	80	1.09	0.398	38.6	54	<7.5	<7.5
Chloromethane	ug/L	--	<1	<1	<1	<1	<25	<25
cis-1,2-Dichloroethene	ug/L	70	18.8	4.58	1.61	3.1	81.3	104
MEK (2-Butanone)	ug/L	--	<10	<10	<10	<10	<250	<250
Methylene chloride	ug/L	--	<1	<1	<1	<1	20.9 B	9.34 B
Naphthalene	ug/L	--	<1	<1	<1	<1	<25	<25
Tetrachloroethene	ug/L	5	3.78	1.24	1.23	1.84	15.4 J	18.9 J
Toluene	ug/L	1000	<1	<1	<1	<1	<25	<25
trans-1,2-Dichloroethene	ug/L	100	6.68	1.83	0.356 J	0.536 J	10 J	11.6 J
Trichloroethene	ug/L	5	123	22.7	19.2	30.1	1720	2470
Vinyl chloride	ug/L	2	<1	<1	<1	<1	<25	<25

Notes:

^a Drinking Water Standards and Health Advisories (USEPA, 2004)

Target Concentration (TC) from Dunn Field ROD, Table 2-21G

ug/L micrograms per liter

-- Not listed

Results detected at or above reporting limits shown in bold

DOE Flags:

J Estimated result based on QC data or reported below RL

B Estimated result possibly biased high or false positive

based on blank data

< Analyte not detected above RL

Methods:

8260B Volatile Organic Compounds

TABLE 4-2
POSITIVE RESULTS SUMMARY - MONITORING WELLS - OCTOBER 2007
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

WELL ID	Maximum	Target	MW-151	MW-151	MW-152	MW-152	MW-152	MW-153	MW-154
Sample ID	Contaminant	Concentration	MW-151-78.5-IS-3	MW-151-94.5-IS-3	MW-152-92.9-IS-3	MW-152-107.9-IS-3	MW-153-87.1-IS-3		
Lab ID	Levels ^a		L0710210-14	L0710210-15	L0710237-25	L0710237-26	L0710237-27		
Date			10/5/2007	10/5/2007	10/8/2007	10/8/2007	10/8/2007		10/5/2007
Analyte	units								
1,1,1,2-Tetrachloroethane	ug/L	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	ug/L	200	<1	<1	<1	<1	1.39	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	—	<0.5	0.408 J	4.85	2.39	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	ug/L	5	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	—	<1	<1	<1	<1	0.64 J	<1	<1
1,1-Dichloroethene	ug/L	7	<1	<1	<1	<1	5.61	<1	<1
1,2-Dichloroethane	ug/L	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	ug/L	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acetone	ug/L	—	8.88 J	10.4	7.58 B	9.82 B	7.96 B	9.13 J	
Carbon tetrachloride	ug/L	5	0.615 J	3.9	<1	<1	<1	<1	<1
Chlorobenzene	ug/L	100	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroform	ug/L	80	0.292 J	12.4	1.03	0.709	<0.3	<0.3	<0.3
Chloromethane	ug/L	—	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	70	<1	1.29	14	7.71	0.302 J	<1	<1
MEK (2-Butanone)	ug/L	—	<10	<10	<10	<10	<10	<10	<10
Methylene chloride	ug/L	—	<1	<1	<1	<1	<1	<1	<1
Naphthalene	ug/L	—	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	5	<1	0.859 J	6.87	7.69	0.714 J	0.437 J	
Toluene	ug/L	1000	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	100	<1	0.304 J	5.18	2.89	<1	<1	<1
Trichloroethene	ug/L	5	0.422 J	16.8	145	95	0.272 J	<1	<1
Vinyl chloride	ug/L	2	<1	<1	<1	<1	<1	<1	<1

Notes:

Drinking Water Standards and Health Advisories (USEPA, 2004)

Target Concentration (TC) from Dunn Field ROD, Table 2-21G

ug/L

Not listed

Results detected at or above reporting limits shown in bold

DOE Flags:

J Estimated result based on QC data or reported below RL

B Estimated result possibly biased high or false positive

based on blank data

< Analyte not detected above RL

Methods:

8260B Volatile Organic Compounds

TABLE 4-2
POSITIVE RESULTS SUMMARY - MONITORING WELLS - OCTOBER 2007
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

WELL ID	Maximum Contaminant Levels*	Target Concentration	MW-155	MW-155	MW-156	MW-157	MW-157	MW-157	MW-158
Sample ID	Contaminant	Concentration	MW-155-77.0-IS-3	MW-155-93.5-IS-3	MW-156-62.0-IS-3	MW-157-74.8-IS-3	MW-157-74.8-DUP	MW-157-74.8-DUP	MW-158-93.1-IS-3
Lab ID	Levels*		L0710237-28	L0710237-29	L0710210-07	L0710237-07	L0710238-06	L0710237-30	L0710237-30
Date			10/8/2007	10/8/2007	10/5/2007	10/8/2007	10/8/2007	10/8/2007	10/8/2007
Analyte	units								
1,1,1,2-Tetrachloroethane	ug/L	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	ug/L	200	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	--	1430	3400	<0.5	27	34	1.26	1.26
1,1,2-Trichloroethane	ug/L	5	45.1	80.3	<1	1.22	1.46	<1	<1
1,1-Dichloroethane	ug/L	--	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	7	1.68	2.84	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	5	<0.5	0.287 J	<0.5	0.5	0.517	<0.5	<0.5
1,4-Dichlorobenzene	ug/L	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acetone	ug/L	--	6.85 B	6.77 B	12.7	10.9 B	11.5	6.61 B	6.61 B
Carbon tetrachloride	ug/L	5	<1	<1	<1	26	17.9	<1	<1
Chlorobenzene	ug/L	100	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroform	ug/L	80	0.705	1.65	<0.3	235	234	0.175 J	0.175 J
Chloromethane	ug/L	--	<1	<1	1.05	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	70	64.1	116	<1	12.5	12.7	1.09	1.09
MEK (2-Butanone)	ug/L	--	11.1	<10	<10	<10	<10	<10	<10
Methylene chloride	ug/L	--	<1	<1	<1	<1	<1	<1	<1
Naphthalene	ug/L	--	1.38	<1	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	5	4.3	16.3	<1	7.43	5.81	3.87	3.87
Toluene	ug/L	1000	<1	1.26	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	100	12.8	23.6	<1	3.06	2.9	0.505 J	0.505 J
Trichloroethene	ug/L	5	794	2220	<1	151	168	18.5	18.5
Vinyl chloride	ug/L	2	0.525 J	0.971 J	<1	<1	<1	<1	<1

Notes:

* Drinking Water Standards and Health Advisories (USEPA, 2004)

Target Concentration (TC) from Dunn Field ROD, Table 2-21G

ug/L micrograms per liter

-- Not listed

Results detected at or above reporting limits shown in bold

DOE Flags:

J Estimated result based on QC data or reported below RL

B Estimated result possibly biased high or false positive

based on blank data

< Analyte not detected above RL

Methods:

8260B Volatile Organic Compounds

TABLE 4-2
POSITIVE RESULTS SUMMARY - MONITORING WELLS - OCTOBER 2007
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

WELL ID	Maximum Contaminant Levels ^a	Target Concentration	MW-158	MW-158A	MW-158A-81.5-3	MW-158A-91.4-3	MW-159	MW-159-81.1-3	MW-159-97.1-3	MW-160
Sample ID	Lab ID	Date	Analyte	units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
1,1,1,2-Tetrachloroethane	—	—	—	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	200	—	—	—	<1	<1	<1	<1	<1	1.14
1,1,2,2-Tetrachloroethane	—	2.2	1.25	102	3.7	501	436	175	0.555 J	175
1,1,2-Trichloroethane	5	1.9	<1	2.65	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	—	—	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	7	7	<1	<1	<1	1.98	1.72	1.05	0.437 J	1.05
1,2-Dichloroethane	5	—	<0.5	<0.5	<0.5	0.461 J	0.437 J	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	—	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acetone	—	—	7.38 B	8.89 B	8.34 B	9.72 B	11 B	<10	<10	<10
Carbon tetrachloride	5	3	<1	<1	1.54	<1	<1	1.91	<1	1.91
Chlorobenzene	100	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroform	80	12	0.194 J	<0.3	1.36	1.69	1.72	3.53	<1	3.53
Chloroethane	—	—	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	70	35	1.4	1.98	14.6	392	312	56.1	<10	56.1
MEK (2-Butanone)	—	—	<10	<10	<10	<10	<10	<10	<10	<10
Methylene chloride	—	—	<1	<1	<1	<1	<1	<1	<1	<1
Naphthalene	—	—	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	5	2.5	3.5	0.252 J	13.7	9.33	8.29	18.8	<1	18.8
Toluene	1000	—	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	100	50	0.697 J	<1	6.22	28	23.9	15.6	<1	15.6
Trichloroethene	5	5	20.6	42	156	2700	2420	695	<1	695
Vinyl chloride	2	—	<1	<1	<1	1.14	1.04	<1	<1	<1

Notes:^a Drinking Water Standards and Health Advisories (USEPA, 2004)

Target Concentration (TC) from Dunn Field ROD, Table 2-21G

µg/L micrograms per liter

— Not listed

Results detected at or above reporting limits shown in bold

DOE Flags:

J Estimated result based on QC data or reported below RL

B Estimated result possibly biased high or false positive

< based on blank data

— Analyte not detected above RL

Methods:

8260B Volatile Organic Compounds

TABLE 4-2
POSITIVE RESULTS SUMMARY - MONITORING WELLS - OCTOBER 2007
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

WELL ID	Maximum Contaminant Levels ^a	Target Concentration	MW-160 L0710238-08 10/8/2007	MW-161 MW-161-80.4-IS-3 L0710237-08 10/8/2007	MW-162 MW-162-83.7-IS-3 L0710237-09 10/8/2007	MW-163 MW-163-74.9-IS-3 L0710237-10 10/8/2007	MW-164 MW-164-72.6-IS-3 L0710237-11 10/8/2007	MW-164 MW-164-72.6 DUP L0710238-04 10/8/2007
Analyte	units							
1,1,1,2-Tetrachloroethane	ug/L	--	<0.5	1.21	0.644	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	ug/L	200	0.274 J	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	--	185	1850	7210	860	17.7	19.3
1,1,2-Trichloroethane	ug/L	5	0.608 J	6.46	6.73	23.8	0.719 J	0.677 J
1,1-Dichloroethane	ug/L	--	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	7	0.727 J	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	5	<0.5	<0.5	<0.5	2	<0.5	<0.5
1,4-Dichlorobenzene	ug/L	--	<0.5	<0.5	<0.5	<0.5	0.197 J	0.212 J
Acetone	ug/L	--	2.86 J	<10	11.1 B	9.92 B	10.4 B	11.3
Carbon tetrachloride	ug/L	5	0.734 J	2.13	<1	0.683 J	9.87	5.52
Chlorobenzene	ug/L	100	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroform	ug/L	80	3.21	2.79	1.65	1.59	126	115
Chloromethane	ug/L	--	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	70	50.7	55	41	59	438	3.6
MEK (2-Butanone)	ug/L	--	<10	<10	<10	<10	<10	<10
Methylene chloride	ug/L	--	<1	<1	<1	<1	<1	<1
Naphthalene	ug/L	--	<1	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	5	13.4	10.2	6.24	4.93	2.13	1.57
Toluene	ug/L	1000	<1	<1	<1	<1	0.738 J	0.567 J
trans-1,2-Dichloroethene	ug/L	100	14.2	7.87	5.28	10.9	1.39	1.05
Trichloroethene	ug/L	5	626	818	1120	699	61.1	48.4
Vinyl chloride	ug/L	2	<1	<1	<1	2.15	<1	<1

Notes:

^a Drinking Water Standards and Health Advisories (USEPA, 2004)

Target Concentration (TC) from Dunn Field ROD, Table 2-21G

ug/L
micrograms per liter

--
Not listed

Results detected at or above reporting limits shown in bold

DOE Flags:

J Estimated result based on QC data or reported below RL

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based on blank data

< Analyte not detected above RL

Methods:

8260B Volatile Organic Compounds

TABLE 4-2
POSITIVE RESULTS SUMMARY - MONITORING WELLS - OCTOBER 2007
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

WELL ID	Maximum Contaminant Levels ^a	Target Concentration	MW-165 L0710237-37 10/8/2007	MW-165 L0710237-40 10/8/2007	MW-165A L0710237-41 10/8/2007	MW-165A L0710238-07 10/8/2007	MW-165A L0710237-42 10/8/2007	MW-166 L0710210-08 10/5/2007
Analyte	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
1,1,1,2-Tetrachloroethane	—	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	200	—	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	—	2.2	2.31	2	<0.5	0.29 J	2.98	22.3
1,1,2-Trichloroethane	5	1.9	<1	0.3 J	<1	<1	<1	0.893 J
1,1-Dichloroethane	—	—	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	7	7	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	—	—	0.396 J	0.367 J	<0.5	<0.5	0.134 J	0.561
Acetone	—	—	9.28 B	7.77 B	8.54 B	9.68 J	7.38 B	9.54 J
Carbon tetrachloride	5	3	8.5	1.49	2.62	0.861 J	16.4	8.81
Chlorobenzene	100	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroform	80	12	38.3	8.57	5.79	3.26	66.9	115
Chloromethane	—	—	0.423 J	0.26 J	<1	<1	<1	<1
cis-1,2-Dichloroethene	70	35	7.25	10.3	1.92	1.81	7.63	4.58
MEK (2-Butanone)	—	—	<10	<10	<10	<10	<10	<10
Methylene chloride	—	—	<1	<1	<1	<1	<1	<1
Naphthalene	—	—	<1	<1	<1	<1	<1	<1
Tetrachloroethene	5	2.5	1.29	1.42	0.439 J	0.557 J	2.49	1.91
Toluene	1000	—	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	100	50	1.4	2.03	0.511 J	0.424 J	1.57	1.13
Trichloroethene	5	5	82.8 J	128	53.1	37.1	133	54.1
Vinyl chloride	2	—	<1	<1	<1	<1	<1	<1

Notes:

^a Drinking Water Standards and Health Advisories (USEPA, 2004)

Target Concentration (TC) from Dunn Field ROD, Table 2-21G

ug/L micrograms per liter

— Not listed

Results detected at or above reporting limits shown in bold

DOE Flags:

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based on blank data

< Analyte not detected above RL

Methods:

8260B Volatile Organic Compounds

TABLE 4-2
POSITIVE RESULTS SUMMARY - MONITORING WELLS - OCTOBER 2007
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

WELL ID	Maximum Contaminant Levels ^a	Target Concentration	MW-166	MW-166A	MW-166A-75.3 DUP	MW-167	MW-168	MW-168A
Sample ID			MW-166-97.8-1S-3	MW-166A-75.3-1S-3	MW-166A-75.3-1S-3	MW-167-76.5-1S-3	MW-168-113.9-1S-3	MW-168A-76.4-1S-3
Lab ID			L0710210-09	L0710210-10	L0710210-45	L0710210-11	L0710238-13	L0710238-14
Date			10/5/2007	10/5/2007	10/5/2007	10/5/2007	10/8/2007	10/8/2007
Analyte	units							
1,1,1,2-Tetrachloroethane	ug/L	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	ug/L	200	<1	<1	<1	<1	<1	9.08
1,1,2,2-Tetrachloroethane	ug/L	--	28.5	12.6	12	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	ug/L	5	0.946 J	0.417 J	0.398 J	<1	<1	<1
1,1-Dichloroethane	ug/L	--	<1	<1	<1	<1	<1	0.55 J
1,1-Dichloroethene	ug/L	7	<1	<1	<1	<1	0.836 J	15.9
1,2-Dichloroethane	ug/L	5	0.26 J	<0.5	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	ug/L	--	0.228 J	<0.5	<0.5	0.313 J	<0.5	<0.5
Acetone	ug/L	--	11.5	13.5	11.6	12.2	7.24 J	<10
Carbon tetrachloride	ug/L	5	13.3	5.62	5.87	<1	<1	0.446 J
Chlorobenzene	ug/L	100	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroform	ug/L	80	140	65.5	65.9	<0.3	<0.3	0.615
Chloromethane	ug/L	--	<1	0.324 J	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	70	5.44	3.54	3.66	<1	<1	<1
MEK (2-Butanone)	ug/L	--	<10	<10	<10	<10	<10	<10
Methylene chloride	ug/L	--	<1	<1	<1	<1	<1	<1
Naphthalene	ug/L	--	<1	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	5	2.47	1.57	1.7	<1	0.384 J	1.09
Toluene	ug/L	1000	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	100	1.15	1.04	1.07	<1	<1	<1
Trichloroethene	ug/L	5	63.9	81.5	83.4	<1	<1	0.627 J
Vinyl chloride	ug/L	2	<1	<1	<1	<1	<1	<1

Notes:

^a Drinking Water Standards and Health Advisories (USEPA, 2004)

Target Concentration (TC) from Dunn Field ROD, Table 2-21G

ug/L micrograms per liter

-- Not listed

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Methods:

8260B Volatile Organic Compounds

TABLE 4-2
POSITIVE RESULTS SUMMARY - MONITORING WELLS - OCTOBER 2007
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

WELL ID	Maximum Contaminant Levels ^a	Target Concentration	MW-168A	MW-169	MW-170	MW-170	MW-170	MW-170	MW-171	MW-171
Sample ID			MW168A-86.9-IS-3	MW169-81.8-IS-3	MW170-61.7-IS-3	MW170-61.7-DUP	MW170-77.7-IS-3	MW170-238-18	MW171-IS-3	MW-171-62.4 DUP
Lab ID			L0710238-15	L0710238-16	L0710238-17	L0710238-20	L0710238-18	L0710238-19	L0710238-21	L0710238-21
Date			10/8/2007	10/8/2007	10/8/2007	10/8/2007	10/8/2007	10/8/2007	10/8/2007	10/8/2007
Analyte	units									
1,1,1,2-Tetrachloroethane	ug/L	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	ug/L	200	0.681 J	<1	0.864 J	0.781 J	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	--	<1	<1	1.38	1.36	0.161 J	<1	<1	<1
1,1-Dichloroethene	ug/L	7	2.2	<1	3.06	2.93	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	ug/L	--	<0.5	<0.5	<0.5	<0.5	<0.5	0.147 J	<0.5	<0.5
Acetone	ug/L	--	8.57 J	7.32 J	6.92 J	6.66 J	7.78 J	7.13 J	6.55 J	6.55 J
Carbon tetrachloride	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	ug/L	100	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroform	ug/L	80	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chloromethane	ug/L	--	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	70	<1	<1	<1	<1	<1	<1	<1	<1
MEK (2-Butanone)	ug/L	--	<10	<10	<10	<10	<10	<10	<10	<10
Methylene chloride	ug/L	--	<1	<1	<1	<1	<1	<1	<1	<1
Naphthalene	ug/L	--	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	5	0.699 J	<1	0.485 J	0.46 J	<1	<1	<1	<1
Toluene	ug/L	1000	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	100	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	ug/L	5	0.294 J	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	ug/L	2	<1	<1	<1	<1	<1	<1	<1	<1

Notes:

^a Drinking Water Standards and Health Advisories (USEPA, 2004)

Target Concentration (TC) from Dunn Field ROD, Table 2-21G

ug/L micrograms per liter

-- Not listed

Results detected at or above reporting limits shown in bold

DOE Flags:

J Estimated result based on QC data or reported below RL

B Estimated result possibly biased high or false positive

based on blank data

< Analyte not detected above RL

Methods:

8260B Volatile Organic Compounds

TABLE 4-3
POSITIVE RESULTS SUMMARY - RECOVERY WELLS - APRIL 2007
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

WELL ID	Maximum	Target	RW-01	RW-01 DUP	RW-01A	RW-01B	RW-02	RW-03	RW-04
Sample ID	Contaminant	Concentration	RW-1-RW-2	RW-01 DUP	RW-1A-RW-2	RW-1B-RW-2	RW-2-RW-2	RW-3-RW-2	RW-4-RW-2
Lab ID	Levels ^a		L0704275-07	L0704275-21	L0704275-08	L0704275-09	L0704275-10	L0704275-11	L0704275-12
Date			4/11/2007	4/11/2007	4/11/2007	4/11/2007	4/11/2007	4/11/2007	4/11/2007
Analyte	units								
1,1,2,2-Tetrachloroethane	ug/L	2.2	1.3	69.9	113	1.76	56.6	29.5	127
1,1,2-Trichloroethane	ug/L	5	<1	2.79	3.56	<1	2.17	1.29	3.43
1,1-Dichloroethene	ug/L	7	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	5	<0.5	0.258 J	0.855	<0.5	0.301 J	<0.5	<0.5
Bromodichloromethane	ug/L	--	<0.5	<0.5	0.506	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	ug/L	5	33.9	8.45	18.9	13.7	12.5	4.49	1.23
Chloroform	ug/L	80	146	11.3	479	56.6	118	2.15	1.74
cis-1,2-Dichloroethene	ug/L	70	4.75	66.7	8.63	2.74	39	25.3	19.6
MEK (2-Butanone)	ug/L	--	<10	181	<10	<10	<10	<10	<10
Tetrachloroethene	ug/L	5	8.23	1.14	7.91	2.88	3.12	1.21	8.99
trans-1,2-Dichloroethene	ug/L	100	2.54	4.21	2.34	0.677 J	2.84	1.81	4.6
Trichloroethene	ug/L	5	109	50.7	159	39.2	72.3	59.8	743
Vinyl chloride	ug/L	2	<1	<1	<1	<1	<1	<1	<1

Notes:

^a Drinking Water Standards and Health Advisories (USEPA, 2004)

Target Concentration (TC) from Dunn Field ROD, Table 2-21G

ug/L micrograms per liter

-- Not listed

< Results detected at or above reporting limits shown in bold

Not detected above laboratory reporting limit

DOE Flags:

J Estimated result based on QC data or reported below RL

Methods:

8260B Volatile Organic Compounds

TABLE 4-3
POSITIVE RESULTS SUMMARY - RECOVERY WELLS - APRIL 2007
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

WELL ID	Maximum Contaminant Levels ^a	Target Concentration	RW-05 RW-5-RW-2 L0704275-13 4/11/2007	RW-06 RW-6-RW-2 L0704275-14 4/11/2007	RW-07 RW-7-RW-2 L0704275-15 4/11/2007	RW-08 RW-8-RW-2 L0704275-16 4/11/2007	RW-09 RW-9-RW-2 L0704275-17 4/11/2007
Analyte	units						
1,1,2,2-Tetrachloroethane	ug/L	2.2	5.79	0.448 J	45.1	158	2.85
1,1,2-Trichloroethane	ug/L	1.9	<1	<1	0.921 J	3.8	<1
1,1-Dichloroethane	ug/L	7	<1	<1	<1	4.46	25.4
1,2-Dichloroethane	ug/L	5	<0.5	<0.5	<0.5	<0.5	0.266 J
Bromodichloromethane	ug/L	--	<0.5	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	ug/L	3	0.727 J	<1	<1	0.813 J	<1
Chloroform	ug/L	12	0.642	2.85	1.66	8.93	2.74
cis-1,2-Dichloroethane	ug/L	35	2.71	21.4	36.7	95	5.93
MEK (2-Butanone)	ug/L	--	<10	<10	<10	<10	<10
Tetrachloroethene	ug/L	5	3.03	21.9	3.19	5.27	22.6
trans-1,2-Dichloroethene	ug/L	50	0.929 J	8.77	9.68	67.6	2.15
Trichloroethene	ug/L	5	93.7	88.5	106	187	32
Vinyl chloride	ug/L	2	<1	<1	<1	<1	<1

Notes:

^a Drinking Water Standards and Health Advisories (USEPA, 2004)
 Target Concentration (TC) from Dunn Field ROD, Table 2-21G

ug/L micrograms per liter

-- Not listed

< Results detected at or above reporting limits shown in bold

< Not detected above laboratory reporting limit

DOE Flags:

J Estimated result based on QC data or reported below RL

Methods:

8260B Volatile Organic Compounds

TABLE 4-4
POSITIVE RESULTS SUMMARY - RECOVERY WELLS - OCTOBER 2007
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

Analyte	WELL ID	Maximum	Target	RW-01A	RW-01B	RW-01	RW-02	RW-02	RW-02 DUP	RW-03	RW-04
	Sample ID	Contaminant	Concentration	RW-1A-RW-2	RW-1B-RW-2	RW-1-RW-2	RW-2-RW-2	RW-2-RW-2	RW-2 DUP	RW-3-RW-2	RW-4-RW-2
	Lab ID	Levels ^a		L0710210-39	L0710210-42	L0710210-37	L0710210-43	L0710210-35	L0710210-34	L0710210-36	
	Date	units		10/5/2007	10/5/2007	10/5/2007	10/5/2007	10/5/2007	10/5/2007	10/5/2007	10/5/2007
I,1,1-Trichloroethane	ug/L	200	--	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	--	2.2	179	43.7	1.3	77.5	109	16.1	288	
1,1,2-Trichloroethane	ug/L	5	1.9	4.18	1.21	<1	2.31	3.39	0.718 J	3.99	
1,1-Dichloroethene	ug/L	7	7	<1	<1	<1	<1	<1	<1	<1	
1,2-Dichloroethane	ug/L	5	--	1.02	0.274 J	<0.5	0.436 J	0.511	<0.5	<0.5	
Carbon tetrachloride	ug/L	5	3	10.5	10.8	32.5	11.3	12.9	4.07	2.48	
Chloroform	ug/L	80	12	413	187	180	212	147	9.65	1.68	
cis-1,2-Dichloroethene	ug/L	70	35	6.97	4.52	4.81	20	71.3	9.8	14.2	
Tetrachloroethene	ug/L	5	2.5	4.8	3.88	8.35	4.03	3.18	0.807 J	8.02	
trans-1,2-Dichloroethene	ug/L	100	50	1.37	1	2.34	1.91	3.55	0.729 J	2.98	
Trichloroethene	ug/L	5	5	141	74.8	143	95.6	105	31	784	

Notes:

- ^a Drinking Water Standards
- Target Concentration (TC) from Dunn Field ROD, Table 2-21G
- µg/L
-
- Not listed
- Results detected at or above reporting limits shown in bold

DOE Flags:

- J Estimated result based on QC data or reported below RL
- < Analyte not detected above RL

Methods:

8260B Volatile Organic Compounds

TABLE 4-4
POSITIVE RESULTS SUMMARY - RECOVERY WELLS - OCTOBER 2007
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

WELL ID	Maximum	Target	RW-05	RW-06	RW-07	RW-08	RW-09
Sample ID	Contaminant	Concentration	RW-5-RW-2	RW-6-RW-2	RW-7-RW-2	RW-8-RW-2	RW-9-RW-2
Lab ID	Levels ^a		L0710210-33	L0710210-41	L0710210-44	L0710210-40	L0710210-38
Date			10/5/2007	10/5/2007	10/5/2007	10/5/2007	10/5/2007
Analyte	units						
1,1,1-Trichloroethane	ug/L	--	<1	<1	<1	<1	1.25
1,1,2,2-Tetrachloroethane	ug/L	2.2	23.3	<0.5	44.5	19.1	2.34
1,1,2-Trichloroethane	ug/L	1.9	<1	<1	0.325 J	0.982 J	<1
1,1-Dichloroethene	ug/L	7	<1	<1	<1	3.18	19
1,2-Dichloroethane	ug/L	--	<0.5	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	ug/L	3	1.46	0.385 J	0.34 J	0.532 J	1.6
Chloroform	ug/L	12	0.627	1.69	2.44	5.4	5.55
cis-1,2-Dichloroethene	ug/L	35	5.55	4.54	3.55	7.3	0.3 J
Tetrachloroethene	ug/L	2.5	3.37	14.1	4.35	2.77	19.8
trans-1,2-Dichloroethene	ug/L	50	1.2	1.3	0.529 J	1.59	<1
Trichloroethene	ug/L	5	159	35.5	7.42	16.3	18.5

Notes:

- ^a Drinking Water Standards
- Target Concentration (TC) from Dunn Field ROD, Table 2-21G
- µg/L micrograms per liter
- Not listed
- Results detected at or above reporting limits shown in bold

DOE Flags:

- J Estimated result based on QC data or reported below RL
- < Analyte not detected above RL

Methods:

8260B Volatile Organic Compounds

TABLE 4-5
EFFLUENT SAMPLE RESULTS
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

Sample Site ID Date and Time Collected	Industrial Permit Discharge Limits		EFFLUENT- 2/19/2007 09:09	EFFLUENT- 4/11/2007 13:47	EFFLUENT- 7/9/2007 11:00	EFFLUENT- 10/5/2007 14:32
	Monthly Average Maximum Level	Instantaneous Daily Maximum				
<u>pH - E150.1</u>						
pH			6.2	6.37	-	6.04
<u>Volatile Organic Compounds - SW8260B µg/L</u>						
1,1,1-Trichloroethane	10	20	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	500	1000	77.1	45.4	70.2	57.3 J
1,1,2-Trichloroethane	50	100	1.41	1.13	1.56	0.923 J
1,1-Dichloroethane	NA	NA	0.226 J	0.209	ND	ND
1,1-Dichloroethene	50	100	8.66	7.38	7.76	3.69
1,2-Dichlorobenzene	NA	NA	ND	ND	0.266 J	ND
Carbon tetrachloride	20	40	2	3.42	3.06	2.09
Chloroform	100	200	10.8	40.5 J	50 J	30.1
cis-1,2-Dichloroethene	80	100	65.8	42.7 J	69 J	10.3
Methylene Chloride	10	20	ND	ND	0.383 J	ND
Tetrachloroethene	60	120	13.4	13.2	12.2	7.2
trans-1,2-Dichloroethene	50	100	18.3	12.4	17.5	1.58
Trichloroethene	400	800	187	150	174 J	95.6 J
<u>Total Metals - SW6010B µg/L</u>						
Aluminum	1000	2000	-	ND	-	ND
Arsenic	40	100	-	ND	-	ND
Barium	NA	NA	-	101	-	106
Cadmium	10	20	-	ND	-	ND
Calcium	NA	NA	-	21,200 J	-	21000
Chromium	200	400	-	ND	-	3.05 J
Copper	200	400	-	21 J	-	ND
Iron	10,000	20,000	-	355 J	-	1140
Lead	150	300	-	7.59	-	10.2
Magnesium	NA	NA	-	10,600	-	11,400
Manganese	NA	NA	-	32.6	-	27.5
Mercury	1	2	-	ND	-	ND
Nickel	100	300	-	ND	-	9.18 J
Potassium	NA	NA	-	747 J	-	800 J
Selenium	NA	NA	-	1.4 J	-	4.71
Sodium	NA	NA	-	20,600	-	21,300
Thallium	NA	NA	-	0.0555 J	-	0.358
Zinc	300	1000	-	47.7	-	65
<u>Semi-volatile Organic Compounds - SW8270B µg/L</u>						
Bis (2-ethylhexyl) Phthalate	10	20	-	ND	-	11.6
Di-n-butyl Phthalate	30	60	-	ND	-	ND
Naphthalene	10	20	-	ND	-	ND
Phenol	10	20	-	ND	-	ND

Notes:

- J Estimated quantitation: result below the reporting limit or estimated based on the QC data
 ND Not detected above the reporting limit
 NA Discharge limit not established in agreement
 - Not Collected

TABLE S-1
 SYSTEM REPAIRS, 2003 THROUGH 2007
 ANNUAL OPERATIONS REPORT - 2007
 DUNN FIELD GROUNDWATER IRA - YEAR EIGHT
 Defense Depot Memphis, Tennessee

Recovery Well	Year	Percent Operational	REPAIRS/REPLACEMENT							
			Pump	Pump Leads ⁽¹⁾	Flowmeter	Flowmeter Actuator	Pressure Transducer	Level Relay	Flow Relay	Controller
RW-1	2003	67	1		1					
	2004	95			1					
	2005	100	1			1	1	1	1	
	2006	100								
	2007	95		1			1			
RW-1A	2003	100								
	2004	97								
	2005	100	1			1	1	1		
	2006	99			1					
	2007	91		1			1			
RW-1B	2003	100								
	2004	85								
	2005	52	1		1	1	1	1		
	2006	94	1							
	2007	95					1			
RW-2	2003	100								
	2004	83								
	2005	42	2		1		1	1		3
	2006	92			1					
	2007	97								
RW-3	2003	100								
	2004	98			1					2
	2005	100				1	1	1		
	2006	100			2					
	2007	99								
RW-4	2003	75								
	2004	78	1							2
	2005	87	1		2			1		
	2006	81			1					
	2007	93			1			1		
RW-5	2003	100			2					
	2004	95			1					
	2005	55	1		1	2	1	1		1
	2006	96	1		1					
	2007	94		2	1			1		
RW-6	2003	100								
	2004	97								
	2005	100								
	2006	100								
	2007	97				1		1		
RW-7	2003	100								
	2004	92	1							
	2005	80	2		2	1				
	2006	84	2		1					
	2007	95					1	1		
RW-8	2003	100								
	2004	88	1							
	2005	100								
	2006	95	1		1					
	2007	97		1						
RW-9	2003	100	1							
	2004	98			1					
	2005	96	1		2					
	2006	100			1	1				
	2007	96						1		

Notes:

(1) Information on pump leads only tracked since 2007.

TABLE 5-2
ANALYTICAL RESULTS BY SAMPLE INTERVAL - APRIL 2007
ANNUAL OPERATIONS REORT -2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

Well	Constituent (µg/L)	PDB Sample Interval ⁽¹⁾	
		TOP	BOTTOM
MW-07	PCE	39.4	--
	TCE	24.7	--
	DCE	22.8	--
	CF	20	-
MW-31	PCE	0.904 J	1.45
	TCE	30.2	3.27
	cDCE	7.32	0.579
	tDCE	5.44	0.287
	DCE	11.6	12.5
	CF	0.458	0.311
MW-32	TCE	6.47	--
	cDCE	1.14	--
	PCA	1.59	--
	CT	3.95	--
	CF	8.63	--
MW-33	None	ND	--
MW-37	None	ND	--
MW-40	None	ND	--
MW-43	None	ND	--
MW-44	CT	1.24	--
	CF	0.694	--
MW-54	PCE	3.58	--
	TCE	405	--
	cDCE	18.9	--
	tDCE	4.2	--
	PCA	160	--
	CF	2	--
MW-57	PCE	5.06	--
	TCE	34.6	--
	CT	29.6	--
	CF	6.6	--
MW-67	None	ND	--
MW-68	TCE	2.58	--
	PCA	1.45	--
MW-69	None	ND	--

TABLE 5-2
ANALYTICAL RESULTS BY SAMPLE INTERVAL - APRIL 2007
ANNUAL OPERATIONS REORT -2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

Well	Constituent (µg/L)	PDB Sample Interval ⁽¹⁾	
		TOP	BOTTOM
MW-70	PCE	8.16	2.89
	TCE	750	329
	cDCE	26.7	58.5
	tDCE	4.83	5.48
	DCE	ND	1.75
	VC	ND	94.3
	PCA	1460	627
	TCA	2.17	19.5
	CF	1.08	0.338
MW-71	PCE	3.03	--
	TCE	36.2	--
	cDCE	1.89	--
	PCA	4.66	--
	CT	16.5	--
	CF	59.2	--
MW-76	PCE	2.74	--
	TCE	26.4	--
	cDCE	3.08	--
	tDCE	1.41	--
	PCA	3.82	--
	CF	0.359	--
MW-77	PCE	21 J	--
	TCE	3330	--
	cDCE	67.5	--
	PCA	8800	--
MW-79	PCE	1.06	--
	TCE	1.9	--
	DCE	11.2	--
MW-130	PCE	154	--
	TCE	71.2	--
	DCE	70	--
	CF	0.315	--
MW-144	TCE	694	--
	cDCE	33.5	--
	PCA	1350	--
	TCA	20.4	--
MW-145	None	ND	--

TABLE 5-2
ANALYTICAL RESULTS BY SAMPLE INTERVAL - APRIL 2007
ANNUAL OPERATIONS REORT -2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

Well	Constituent (µg/L)	PDB Sample Interval ⁽¹⁾	
		TOP	BOTTOM
MW-147	PCE	12.2	-
	TCE	278	-
	cDCE	155	-
	tDCE	39.6	-
	DCE	1.49	-
	PCA	634	-
	TCA	9.28	-
	CF	7.24	-
MW-148	PCE	4.18	0.89 J
	TCE	17.6	7.7
	cDCE	5.04	1.97
	tDCE	1.82	0.686 J
	PCA	0.179 J	1.75
	CF	0.473	0.247 J
MW-149	PCE	3.81	2.99
	TCE	80.9	77.2
	cDCE	8.02	9.02
	tDCE	1.52	1.59
	PCA	37.2	33.3
	TCA	1.29	1.23
	CT	19.8	19.6
	CF	155	141
MW-150	PCE	6.54 J	16.8
	TCE	1350	3060
	cDCE	56.2	109
	tDCE	11.1 J	24.3
	PCA	3030	4620
	TCA	10.2 J	27
	CF	ND	1.92
MW-151	TCE	0.562 J	11.1
	cDCE	ND	1.24
	PCA	ND	0.68
	CT	0.493 J	5.53
	CF	0.327	12.5

TABLE 5-2
ANALYTICAL RESULTS BY SAMPLE INTERVAL - APRIL 2007
ANNUAL OPERATIONS REORT -2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

Well	Constituent (µg/L)	PDB Sample Interval ⁽¹⁾	
		TOP	BOTTOM
MW-152	PCE	12.7	9.65
	TCE	185	130
	cDCE	21.8	14.7
	tDCE	9.23	6.32
	PCA	15.7	8.67
	CF	1.84	1.31
MW-153	DCE	5.91	-
MW-154	None	ND	--
MW-155	PCE	11.6	12.4 J
	TCE	1560	1650
	cDCE	105	86 J
	tDCE	35.3	27.2 J
	VC	1.15	0.619 J
	PCA	2880	3180
	TCA	147	120 J
	CF	1.45	1.69 J
MW-156	None	ND	--
MW-157	PCE	4.1	--
	TCE	162	--
	cDCE	16.8	--
	tDCE	3	--
	PCA	25.2	--
	TCA	1.04	--
	CT	17.2	--
	CF	153	--
MW-158	PCE	8.13	7.83
	TCE	53.2	54
	cDCE	2.82	2.9
	tDCE	1.39	1.56
	PCA	0.933	1.86
	CF	0.31	0.404
MW-158A	PCE	3.77 J	10.4
	TCE	514	240
	cDCE	95.3 J	21.4
	tDCE	15.2 J	7.78
	PCA	268	50.3
	TCA	28.8 J	3.49
	CF	0.858 J	1.44

TABLE 5-2
ANALYTICAL RESULTS BY SAMPLE INTERVAL - APRIL 2007
ANNUAL OPERATIONS REORT -2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

Well	Constituent (µg/L)	PDB Sample Interval ⁽¹⁾	
		TOP	BOTTOM
MW-159	PCE	3.75	3.81
	TCE	1660	1580
	cDCE	156	152
	tDCE	17.9	16.8
	DCE	1.16	1.12
	PCA	248	272
	TCA	37.4	32.9
	CF	0.967	1.03
MW-160	PCE	14.5	--
	TCE	191	--
	cDCE	22.6	--
	tDCE	8.63	--
	PCA	24.9	--
	CF	1.68	--
MW-161	PCE	6.49 J	--
	TCE	1400	--
	cDCE	42.5	--
	PCA	1170	--
	CT	5.68 J	--
MW-162	PCE	13.2 J	--
	TCE	1470	--
	cDCE	45.5	--
	tDCE	9.93	--
	PCA	3030	--
MW-163	PCE	3.5 J	--
	TCE	485	--
	cDCE	113	--
	tDCE	14.8	--
	PCA	642	--
	TCA	61.2	--
MW-164	PCE	3.62	--
	TCE	136 J	--
	cDCE	18.1	--
	tDCE	2.66	--
	PCA	45	--
	TCA	1.75	--
	CT	24.8	--
	CF	247	--

TABLE 5-2
ANALYTICAL RESULTS BY SAMPLE INTERVAL - APRIL 2007
ANNUAL OPERATIONS REPORT -2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

Well	Constituent (µg/L)	PDB Sample Interval ⁽¹⁾	
		TOP	BOTTOM
MW-165	PCE	1.35	1.36
	TCE	134	153
	cDCE	9.31	11.6
	tDCE	2	2.44
	PCA	1.9	0.3 J
	CT	3.9	ND
	CF	7.6	1.89
MW-165A	PCE	0.36 J	1.57
	TCE	49.6	131
	cDCE	2.16	9.46
	tDCE	0.627 J	1.96
	PCA	ND	2
	CT	0.449 J	6.23
	CF	0.835	18
MW-166	PCE	1	1.28
	TCE	25.6	23.2
	cDCE	2.69	2.49
	PCA	5.46	5.47
	CT	8	12.5
	CF	25.3	33.1
MW-166A	PCE	0.854 J	--
	TCE	25.7	--
	cDCE	2.42	--
	PCA	5.38	--
	CT	7.29	--
	CF	30.1	--
MW-167	None	ND	--
MW-168	DCE	1.04	--
MW-168A	TCE	1.08	0.565 J
	DCE	22.9	4.85
	CF	0.71	0.171 J
MW-169	None	ND	--
MW-170	DCE	3.67	ND
MW-171	None	ND	--

(1) Passive Diffusion Bag Sample Interval, refer to Table 3-3 for depth

ND - No COCs detected above reporting limits

Bold Concentrations above MCL or Target Concentration (PCA only)

TABLE 5-3
ANALYTICAL RESULTS BY SAMPLE INTERVAL - OCTOBER 2007
ANNUAL OPERATIONS REORT -2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

Well	Constituent (µg/L)	PDB Sample Interval ⁽¹⁾	
		TOP	BOTTOM
MW-07	DCE	12.8	--
	CF	13.8	--
	PCE	24.3	--
	TCE	16	--
MW-31	DCE	4.69	7.73
	cDCE	8.45	ND
	tDCE	5.23	ND
	TCE	34.2	5.87
MW-32	None	ND	--
MW-33	CT	1.5	--
MW-37	PCA	0.788	--
	CT	4.12	--
	CF	6.01	--
	TCE	2.71	--
MW-40	None	ND	--
MW-43	None	ND	--
MW-44	CT	1.2	--
	CF	0.63	--
MW-54	PCA	80	--
	CT	5.74	--
	CF	3.17	--
	cDCE	19.2	--
	PCE	5.06	--
	tDCE	4.48 J	--
	TCE	474	--
MW-57	CT	22.9	--
	CF	6.29	--
	PCE	4.48	--
	TCE	31.2	--
MW-67	None	ND	--
MW-68	PCA	1.51	--
	CF	0.775	--
	cDCE	2.36	--
	TCE	4.73	--
MW-69	PCE	1.03	--

TABLE 5-3
ANALYTICAL RESULTS BY SAMPLE INTERVAL - OCTOBER 2007
ANNUAL OPERATIONS REORT -2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

Well	Constituent (µg/L)	PDB Sample Interval ⁽¹⁾	
		TOP	BOTTOM
MW-70	PCA	237	455
	TCA	14.7	1.31 J
	DCE	2.48	ND
	cDCE	61.1	8.01
	PCE	1.31 J	4.44
	tDCE	11.5	1.38 J
	TCE	119	308
	VC	42.3	ND
MW-71	PCA	2.21	--
	CT	12.6	--
	CF	32.6	--
	cDCE	1.65	--
	PCE	1.52	--
	TCE	21	--
MW-76	PCA	18.4	--
	CF	0.978	--
	cDCE	11.8	--
	PCE	4.82	--
	tDCE	5.79	--
	TCE	132	--
MW-77	PCA	1980	--
	TCA	2.59	--
	CF	0.822	--
	cDCE	22.1	--
	PCE	17	--
	tDCE	2.16	--
	TCE	1290	--
MW-79	DCE	13.7	--
	PCE	1.14	--
	TCE	3.27	--
MW-130	DCE	74	--
	PCE	147	--
	TCE	67.4	--

TABLE 5-3
ANALYTICAL RESULTS BY SAMPLE INTERVAL - OCTOBER 2007
ANNUAL OPERATIONS REORT -2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

Well	Constituent (µg/L)	PDB Sample Interval ⁽¹⁾	
		TOP	BOTTOM
MW-144	PCA	841	--
	TCA	8.75	--
	CT	1.59	--
	CF	1.7	--
	cDCE	26.3	--
	PCE	3.49	--
	tDCE	2.24	--
	TCE	464	--
MW-145	None	ND	--
MW-147	PCA	198	--
	TCA	4.47	--
	DCE	5.65	--
	CT	2.3	--
	CF	4.6	--
	cDCE	120 J	--
	PCE	8.97	--
	tDCE	28.9	--
MW-148	TCE	169	--
	PCA	3.43	2.67
	CF	1.09	0.398
	cDCE	18.8	4.58
	PCE	3.78	1.24
	tDCE	6.68	1.83
MW-149	TCE	123	22.7
	PCA	6.03	9.78
	CT	6.59	8.05
	CF	38.6	54
	cDCE	1.61	3.1
	PCE	1.23	1.84
MW-150	TCE	19.2	30.1
	PCA	2640	3960
	TCA	54.4	87.2
	cDCE	81.3	104
	PCE	15.4 J	18.9 J
	tDCE	10 J	11.6 J
MW-150	TCE	1720	2470

TABLE 5-3
ANALYTICAL RESULTS BY SAMPLE INTERVAL - OCTOBER 2007
ANNUAL OPERATIONS REORT -2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

Well	Constituent (µg/L)	PDB Sample Interval ⁽¹⁾	
		TOP	BOTTOM
MW-151	CT	ND	3.9
	CF	ND	12.4
	cDCE	ND	1.29
	TCE	ND	16.8
MW-152	PCA	4.85	2.39
	CF	1.03	0.709
	cDCE	14	7.71
	PCE	6.87	7.69
	tDCE	5.18	2.89
	TCE	145	95
MW-153	DCE	5.61	--
MW-154	None	ND	--
MW-155	PCA	1430	3400
	TCA	45.1	80.3
	DCE	1.68	2.84
	CF	0.705	1.65
	cDCE	64.1	116
	PCE	4.3	16.3
	tDCE	12.8	23.6
	TCE	794	2220
MW-156	None	ND	--
MW-157	PCA	27	--
	TCA	1.22	--
	CT	26	--
	CF	235	--
	cDCE	12.5	--
	PCE	7.43	--
	tDCE	3.06	--
	TCE	151	--
MW-158	PCA	1.26	1.25
	cDCE	1.09	1.4
	PCE	3.87	3.5
	TCE	18.5	20.6

TABLE 5-3
ANALYTICAL RESULTS BY SAMPLE INTERVAL - OCTOBER 2007
ANNUAL OPERATIONS REORT -2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

Well	Constituent (µg/L)	PDB Sample Interval ⁽¹⁾	
		TOP	BOTTOM
MW-158A	PCA	102	3.7
	TCA	2.65	ND
	CT	ND	1.54
	CF	ND	1.36
	cDCE	1.98	14.6
	PCE	ND	13.7
	tDCE	ND	6.22
	TCE	42	156
MW-159	PCA	501	436
	TCA	66.4	57.3
	DCE	1.98	1.72
	CF	1.69	1.72
	cDCE	392	312
	PCE	9.33	8.29
	tDCE	28	23.9
	TCE	2700	2420
MW-160	PCA	175	--
	DCE	1.05	--
	CT	1.91	--
	CF	3.53	--
	cDCE	56.1	--
	PCE	18.8	--
	tDCE	15.6	--
	TCE	695	--
MW-161	PCA	1850	--
	TCA	6.46	--
	CT	2.13	--
	CF	2.79	--
	cDCE	55	--
	PCE	10.2	--
	tDCE	7.87	--
	TCE	818	--
MW-162	PCA	7210	--
	TCA	6.73	--
	CF	1.65	--
	cDCE	41	--
	PCE	6.24	--
	tDCE	5.28	--
	TCE	1120	--

TABLE 5-3
ANALYTICAL RESULTS BY SAMPLE INTERVAL - OCTOBER 2007
ANNUAL OPERATIONS REORT -2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

Well	Constituent (µg/L)	PDB Sample Interval ⁽¹⁾	
		TOP	BOTTOM
MW-163	PCA	860	--
	TCA	23.8	--
	CF	1.59	--
	cDCE	59	--
	PCE	4.93	--
	tDCE	10.9	--
	TCE	699	--
MW-164	PCA	17.7	--
	CT	9.87	--
	CF	126	--
	cDCE	4.38	--
	PCE	2.13	--
	tDCE	1.39	--
	TCE	61.1	--
MW-165	PCA	2.31	2
	CT	8.5	1.49
	CF	38.3	8.57
	cDCE	7.25	10.3
	PCE	1.29	1.42
	tDCE	1.4	2.03
	TCE	82.8 J	128
MW-165A	PCA	ND	2.98
	CT	2.62	16.4
	CF	5.79	66.9
	cDCE	1.92	7.63
	PCE	ND	2.49
	tDCE	ND	1.57
	TCE	53.1	133
MW-166	PCA	22.3	28.5
	CT	8.81	13.3
	CF	115	140
	cDCE	4.58	5.44
	PCE	1.91	2.47
	tDCE	1.13	1.15
	TCE	54.1	63.9

TABLE 5-3
ANALYTICAL RESULTS BY SAMPLE INTERVAL - OCTOBER 2007
ANNUAL OPERATIONS REPORT -2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

Well	Constituent (µg/L)	PDB Sample Interval ⁽¹⁾	
		TOP	BOTTOM
MW-166A	PCA	12.6	--
	CT	5.62	--
	CF	65.5	--
	cDCE	3.54	--
	PCE	1.57	--
	tDCE	1.04	--
	TCE	81.5	--
MW-167	None	ND	--
MW-168	None	ND	--
MW-168A	DCE	15.9	2.2
	CF	0.615	ND
	PCE	1.09	ND
MW-169	None	ND	--
MW-170	DCE	3.06	ND
MW-171	None	ND	--

(1) Passive Diffusion Bag Sample Interval, refer to Table 3-3 for depth

ND - No COCs detected above reporting limits

Bold Concentrations above MCL or Target Concentration (PCA only)

FIGURES



Figure 1-1

MONITORING AND RECOVERY WELL LOCATION MAP

ANNUAL OPERATIONS
REPORT 2007

DUNN FIELD
GROUNDWATER IRA
YEAR NINE

DEFENSE DEPOT
MEMPHIS, TENNESSEE



Feet



Date: March 2008
Edition: Rev 0





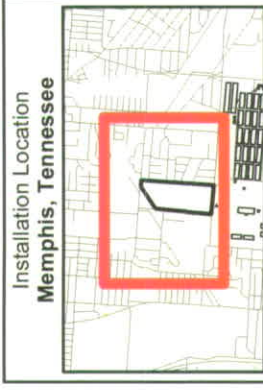
Figure 4-1
GROUNDWATER
ELEVATION CONTOUR
MAP

6 APRIL 2007

ANNUAL OPERATIONS
REPORT 2007

DUNN FIELD
GROUNDWATER IRA
YEAR NINE

DEFENSE DEPOT
MEMPHIS, TENNESSEE



Date: March, 2008
Edition: Rev 0

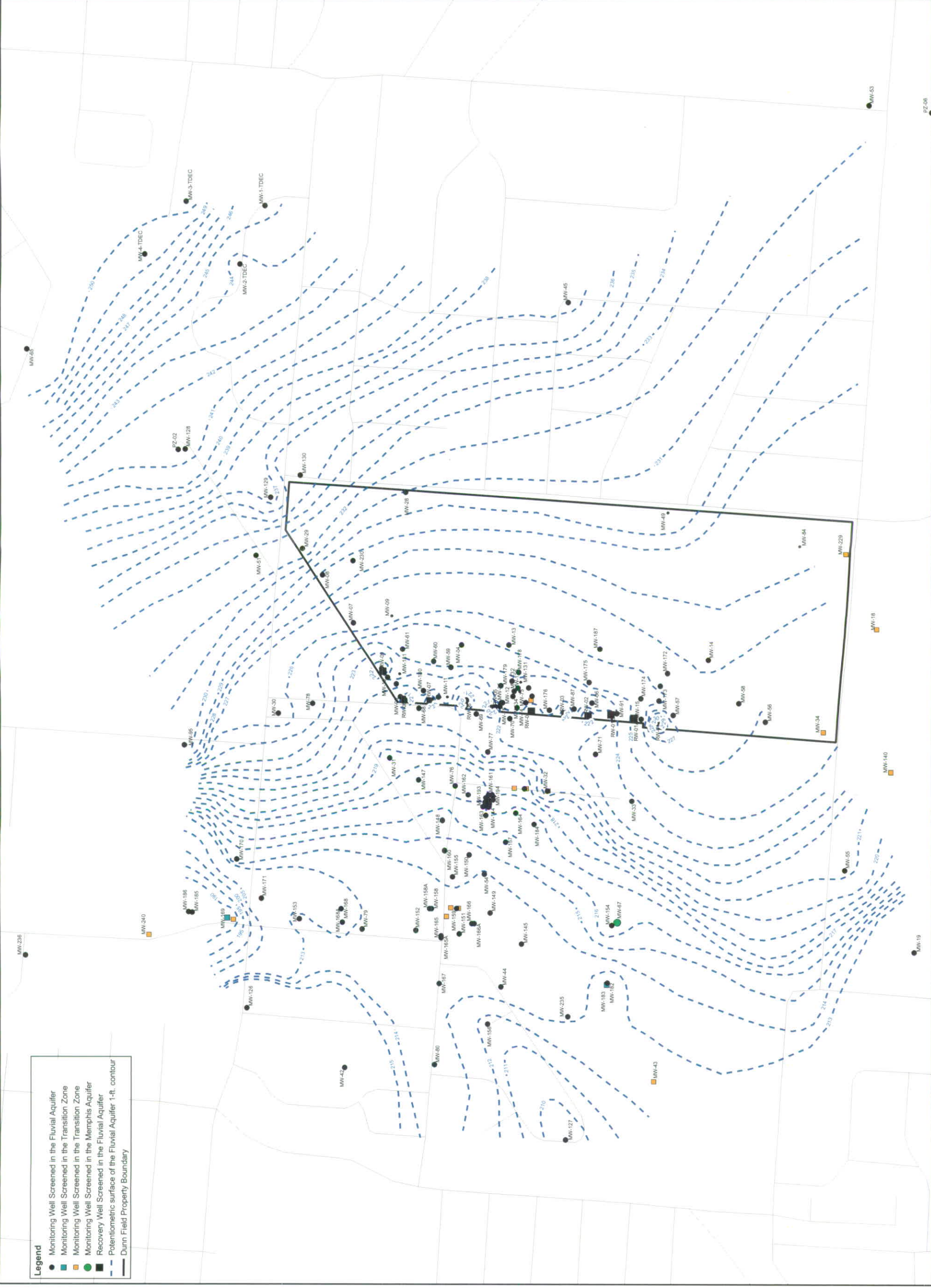




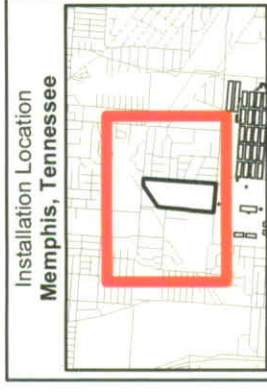
Figure 4-2
GROUNDWATER
ELEVATION CONTOUR
MAP

27 SEPTEMBER 2007

ANNUAL OPERATIONS
REPORT 2007

DUNN FIELD
GROUNDWATER IRA
YEAR NINE

DEFENSE DEPOT
MEMPHIS, TENNESSEE



Date: March 2008
Edition: Rev 0

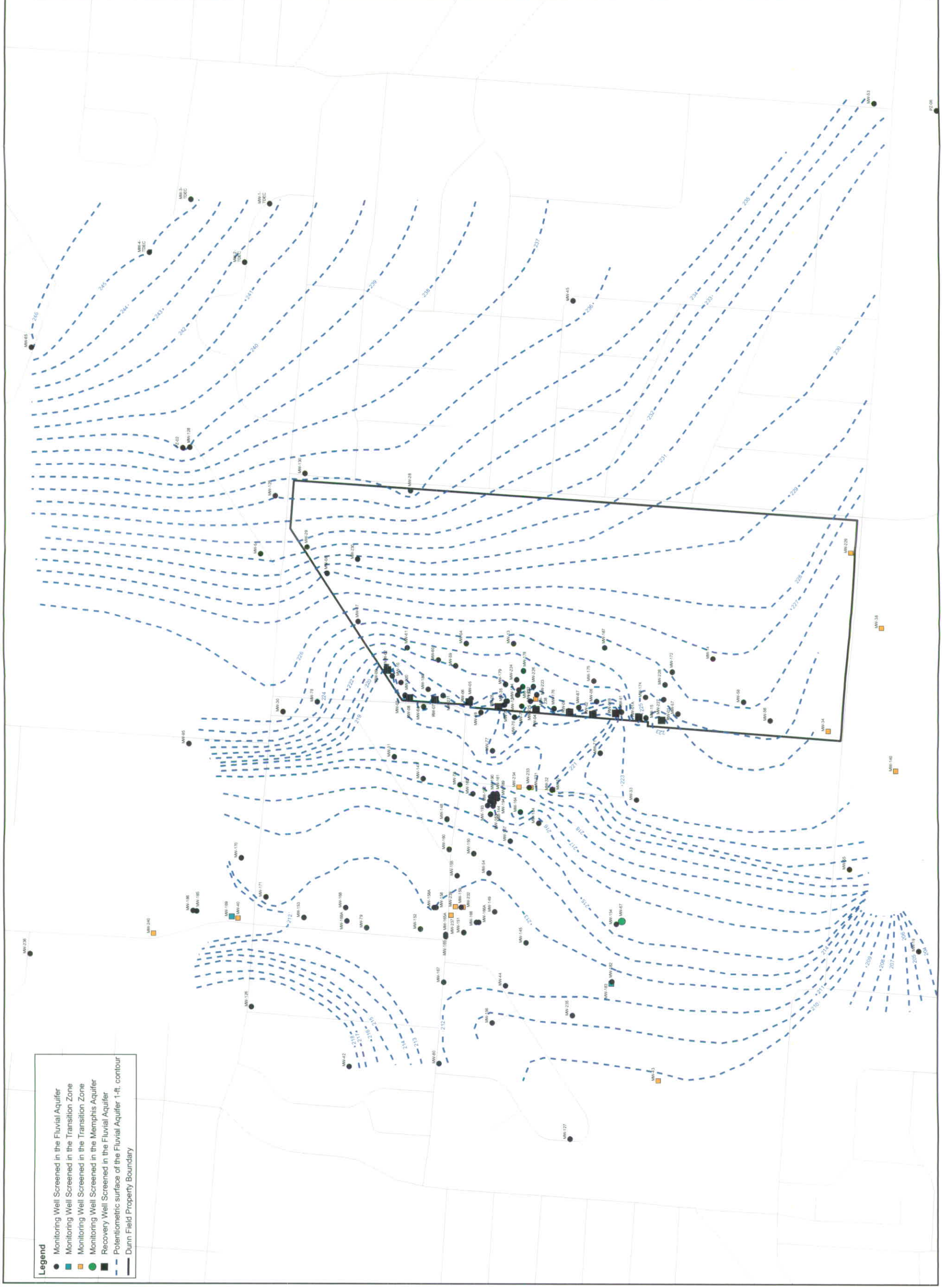




Figure 4-3
TOTAL CVOC
CONCENTRATIONS,
APRIL 2007

ANNUAL OPERATIONS
REPORT 2007

DUNN FIELD
GROUNDWATER IRA
YEAR NINE

DEFENSE DEPOT
MEMPHIS, TENNESSEE

- Notes:
- 1. Highest concentration at well pairs used for contour.
 - 2. Total CVOCs include: CT, CF, DCE, cDCE, tDCE, TCA, TCE, PCE, PCA and VC.
 - 3. Analytical results for groundwater samples collected by e2M from 4/9/2007 to 4/11/2007.

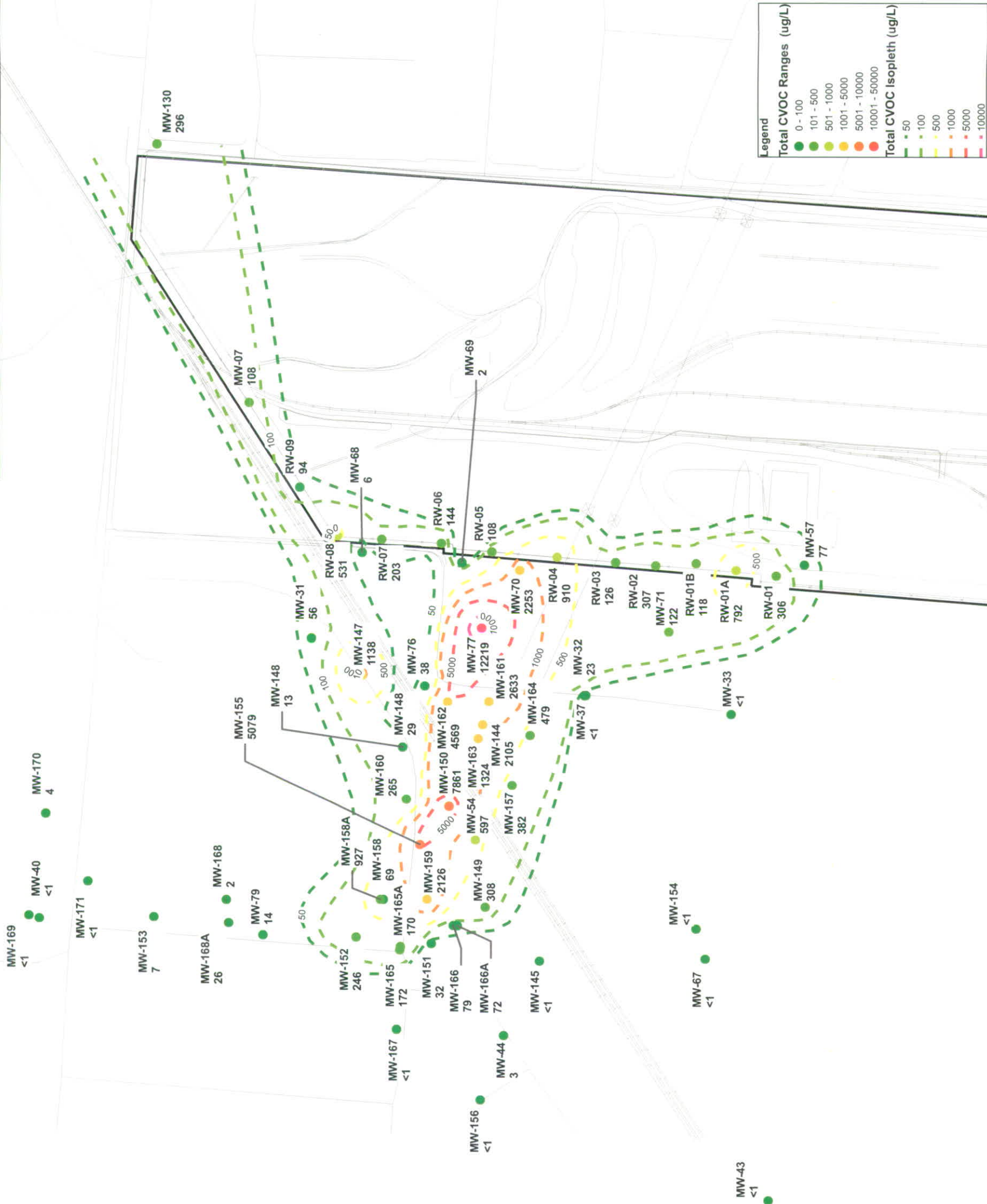


FIGURE 5-1

TCE AND TOTAL VOC CONCENTRATIONS IN EFFLUENT
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

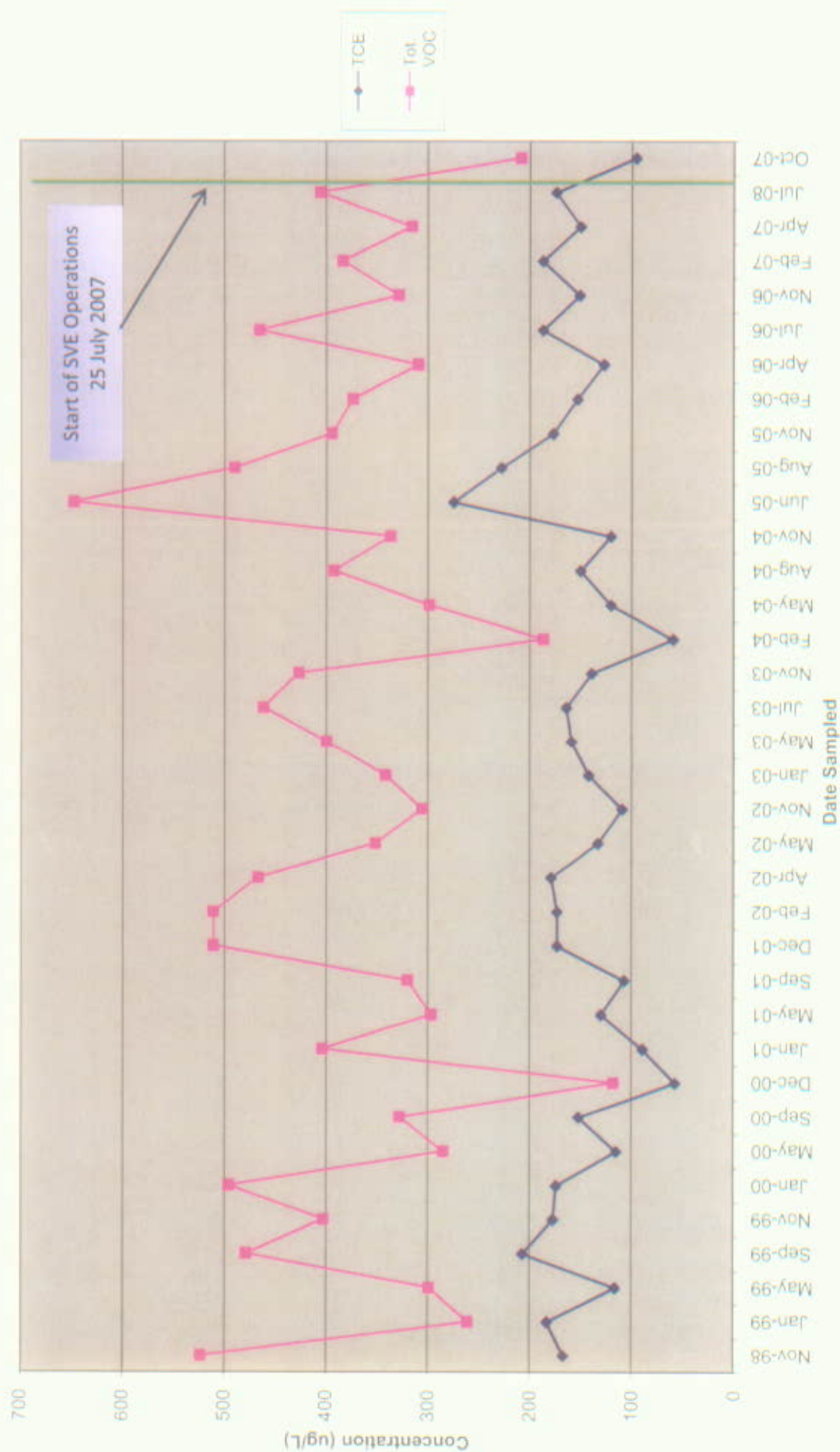




Figure 5-2

2008 IRA SYSTEM
MONITORING MAPANNUAL OPERATIONS
REPORT 2007

DUNN FIELD
GROUNDWATER IRA
YEAR NINE

DEFENSE DEPOT
MEMPHIS, TENNESSEE

- Monitoring Well Screened in the Fluvial Aquifer
- Recovery Well Screened in the Fluvial Aquifer
- Monitoring Well Screened in the Intermediate Aquifer
- Monitoring Well Screened in the Transition Zone
- Monitoring Well Screened in the Memphis Aquifer
- Wells to added to IRA monitoring program
- MW-220 New Well Location
- MW-11 Abandoned
- MW-33 Semi-Annual Sample Location April 2007
- Dunn Field Boundary



Date: March 2008
Edition: Rev 0



APPENDIX A

INDUSTRIAL WASTEWATER DISCHARGE PERMIT AGREEMENT NUMBER S-NN3-097



DR. WILLIE W. HERENTON - Mayor
KEITH L. McGEE - Chief Administrative Officer
DIVISION OF PUBLIC WORKS
JERRY R. COLLINS JR. - Director
Maynard C. Stiles Wastewater Treatment Plant

TENNESSEE

Wednesday, July 19, 2006

Mr. Michael A. Dobbs
Chief Environmental, Safety and Occupational Health Office
Defense Logistics Agency
2001 Mission Drive
New Cumberland, Pennsylvania 17070-5000

RE: Revised Industrial Wastewater Discharge Agreement Permit No. S-NN3-097
DES-DDC-EE (Memphis) @ 2163 Airways Blvd., Memphis, Tennessee

Dear Mr. Dobbs:

Please find enclosed copy of the revised sections (Intent & Purpose and A) of DES-DDC-EE (Memphis) 's Industrial Wastewater Discharge Agreement for your record keeping.

If you should have any questions, please feel free to contact me at (901) 576-4337.

Sincerely,

Akil AL-Chokhachi
Environmental Engineer



Division of Public Works

**Industrial Wastewater Discharge
Agreement**

**made by and between the
City of Memphis
and**

D E S - D D C - E E (Memphis)

on

May 01, 2003

Approved by: _____

**Jerry Collins, Director
Public Works**



City Of Memphis
Industrial Wastewater Discharge
Agreement

ORIGINAL

S-NN3-097

DES-DDC-EE

» » » Intent and Purpose « « «

The City of Memphis in enacting the revised Sewer Use Ordinance deemed it necessary to identify certain significant contributors to the municipal sewer system and regulate the significant contributors on the discharge quantity and characteristics which would be permitted to be discharged into the municipal wastewater system. The basis for the values shown in the following sections are primarily to comply with the State of Tennessee and the Environmental Protection Agency regulations and to preserve the integrity of the publicly owned treatment works.

The agreement serves as a firm understanding between the user and the City for a specified period of time not to exceed five (5) years. The parameters which have been identified in this document reflect the best estimate of the user as to the characteristics of his discharge and will remain in effect until modified by amendments to the discharge agreement. The allowable levels for each parameter are determined by limitations imposed by the Sewer Use Ordinance and for compounds, not specifically limited by the Sewer Use Ordinance or EPA Categorical limitations, the best professional judgement of the City staff engineers and chemists. Primary in the determination is the protection of the integrity of the publicly owned treatment works. Accordingly, tables of guidance for criteria influent levels for specific incompatible wastes have been developed and are part of the Sewer Use Ordinance.

Willful failure of an industrial user to report significant changes in operations which affect wastewater constituents and characteristics can result in the revoking of his discharge agreement. If a public sewer becomes obstructed or damaged because of any substances improperly discharged into it, D E S- D D C- E E (Memphis) if responsible for such discharge shall be billed and shall pay for all the expenses incurred by the City in cleaning out, repairing, or rebuilding the sewer.

According to Section 33-173 of the Sewer Use Ordinance, violations of the Discharge Agreement and the Sewer Use Ordinance requirements may result in civil penalties up to ten thousand dollars (\$10,000) for each day during which the acts or omission continues or occurs.

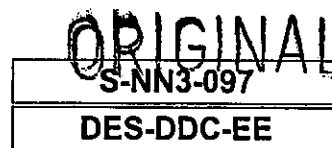
Any person who willfully or negligently violates any section of this Ordinance including, but not limited to the Federal Pretreatment Program Standards, Wastewater Discharge Agreement Permit Conditions may be subject to criminal penalties imposed by the State of Tennessee and/or the United States.

Each industrial user discharging compounds regulated by the pretreatment program or other programs identified by the Environmental Protection Agency (EPA) must also pretreat to the point as required by the EPA. In addition to this, the State of Tennessee has identified certain allowable levels for incompatibles entering a publicly owned treatment works. The pretreatment values set by the City are listed in Table 1 and Table 2, Section 33-104 of the Sewer Use Ordinance.

Wastewater discharge agreements are issued to a specific user for a specific operation. A wastewater discharge agreement shall not be reassigned or transferred or sold to a new owner, new user different premises, or a new or changed operation which will significantly affect wastewater characteristics, Section 33-85 of the Sewer Use Ordinance.



**City Of Memphis
Industrial Wastewater Discharge
Agreement**



» » » Intent and Purpose « « «

The industrial user shall comply with the record-keeping requirements outlined in the general pretreatment Standards in part 403.12 (o) of the Federal Regulations and Section 33-83(f) of the Sewer Use ordinance.

According to Section 33-110 of the Sewer Use Ordinance, the Industrial User shall notify the Control Authority immediately in the event of spill, bypass, upset and slug or accidental discharges, including any discharges that would violate a prohibition under Section 33-103, with procedures for the follow-up written notification within five days. The Control Authority will evaluate the Industrial User every two years or as needed for slug discharge control plan, if not required then, the Industrial User shall submit a signed statement stating that there is no potential nor any need for developing such a plan. However, if required then the Control Authority will attach a copy of the plan to this Agreement.

Whereas, Chapter 33 of the Code of Ordinances of the City of Memphis requires that "dischargers to the municipal wastewater treatment facilities designated by the approving authority as requiring agreements shall not discharge to the system without said agreement"; and

Whereas, D E S- D D C- E E (Memphis) located at 2163 Airways Blvd, Bldg 144 desires to discharge to the Memphis sewer system; and

Whereas, D E S- D D C- E E (Memphis) agrees to comply with all requirements specified in Chapter 33 of the Code of Ordinances and any revision thereof.

Now therefore, D E S- D D C- E E (Memphis) is granted the right to discharge the wastewater of such characteristics and volume as described in this wastewater discharge permit into the City of Memphis sewer system from May 01, 2003 to April 30, 2008.

Signed by:

Robney Thomas

Authorized Industrial User Representative:

[Signature]

City of Memphis

D E S- D D C- E E (Memphis)



**City Of Memphis
Industrial Wastewater Discharge
Agreement**

S	N	N	3	-	097
DES-DDC-EE					

Start Date

May 01, 2003

Expiration Date

April 30, 2008

A.1 Corporate Name	DES-DDC-EE (Memphis)		
Corporate Address	2163 Airways Blvd, Bldg 144		
	Memphis	TN	38114
A.2 Company Name	DES-DDC-EE (Memphis)		
Mailing Address	2163 Airways Blvd, Bldg 144		
	Memphis	TN	38114
A.3 Facility Name	DES-DDC-EE (Memphis)		
Facility Address	2163 Airways Blvd, Bldg 144		
	Memphis	TN	38114
A.4 Contact Official	Michael A. Dobbs		
Title	Chief ES & OH Office		
Phone	(717) 770-6950		
A.5 Signing Official	Michael A. Dobbs		
Title	Chief ES & OH Office		
Signee Address	DDC, Whs 1, Bay 3, 2001 Mission Dr.		
	New Cumberland	PA	17070-5000

- A.6 I certify that the information contained in this industrial wastewater discharge agreement consisting of twenty two pages (and any appendices) is familiar to me and to the best of my knowledge and belief, such information is true, complete and correct.

Michael A. Dobbs 7/6/14, 2006

Authorized Industrial User Representative: Signature/Date

City Of Memphis
Industrial Wastewater Discharge
Agreement

S-NN3-097
DDSP-D MEMPHIS

SECTION B - FACILITY OPERATIONAL CHARACTERISTICS

B.1 Description of manufacturing or service activities

The operation to be permitted is a ground water recovery system located in an open area, Dunn Field, adjacent to the northern perimeter of the DDMT main installation. The DDMT facility is currently being closed with the intent of transferring much of the facility to private ownership. Manufacturing of goods does not occur in the Dunn Field portion of the facility.

*Note: The ground water (GW) recovery and discharge system will operate on a continual basis once the system is completely operational. The federal government will operate and maintain the system.

B.2 Standard Industrial Classification(s)

a. b. c. d. e. f.

B.3 Weekly days of operation are

B.4 The hours of operation and the number of employees per shift.

Shift	Times		Number of Employees		
	Start	Stop	Weekday	Saturday	Sunday
Day	8:00 am	5:00 pm	1		
Evening					
Night					

B.5 Is production operation subject to seasonal variation?

If so, complete the following:

a. Seasonal maximum wastewater discharged into the municipal sewer system is

gallons/day, during the months of

b. Seasonal minimum wastewater discharged into the municipal sewer system is

gallons/day, during the months of

City Of Memphis
Industrial Wastewater Discharge
Agreement

S-NN3-097

DDSP-D MEMPHIS

B.6 Description of other operational schedule characteristics / scheduled shutdown

No operational variations are currently planned. The pumping rate may be altered based on the hydraulic capacity of the city sewer collection system, if required.

This discharge agreement application is for the following groundwater recovery system:

- * One 40 - gpm wells
- * One 50 - gpm wells
- * Five 60 - gpm wells

This seven well groundwater recovery system will result in a total estimated discharge flow of 390 gpm (0.562 mgd) .

Requests for permits for additional wells beyond the seven identified may be submitted in the future, if required. The ground water design currently requires up to seventeen total wells to be installed in up to two phases.

B.7 Description of operational variables and frequency of occurrences which may result in unusual discharges

Fluctuations in the discharge of the system may occur due to changes in ground water conditions. The discharges described in section B.6 are expected to be maximum discharges.

**City Of Memphis
Industrial Wastewater Discharge
Agreement**

S-NN3-097

DDSP-D MEMPHIS

B.8 Raw Materials

[illegible]

S-NN3-097
DDSP-D MEMPHIS

B.9 Catalysts, Intermediates

[illegible]

DDSP-D MEMPHIS

[illegible]

[illegible]

***City Of Memphis
Industrial Wastewater Discharge
Agreement***

S-NN3-097

DDSP-D MEMPHIS

B.12 Components of Non-contact Cooling Water

[illegible]

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B.13 The person (or position) on the plant site who shall be contacted for emergency situations during plant operating hours.

Name	John De Back
Title	B R A C Environmental Coordinator
Phone	(901)-544-0622

B.14 The person(s) who shall be contacted at any time during emergency situations.

Name	Phone
John De Back - B R A C Environ. Coordinator	(901)-544-0622

B.15 Description of spill prevention controls and counter measure plans / accidental and slug discharges

A spill of any material or contaminated stormwater run-off as a result of an excavation of hazardous materials or any wastewater other than recovered groundwater shall not be discharged into the sanitary sewer without a written approval from the City of Memphis.

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SECTION C - WATER USAGE CHARACTERISTICS

C.1 MLG&W Account number(s)

124708000

C.4 f. & C.5 a. - Recovered ground
water only

C.2 MLG&W Billing address (if different from A.3)

C.3 Annual water usage by source:

From

Million Gallons Per Year

- a. Public water supply
b. Private well
c. Surface stream

C.4 Daily average water consumption:

In

Gallons Per Day

- a. Process (industrial)
b. Non-contact cooling
c. Boiler Feed
d. Product
e. Domestic/Sanitary
f. Other

561,600

C.5 Daily average water discharge:

To

Gallons Per Day

- a. Wastewater sewer
b. Storm drain
c. Waste hauler
d. Evaporative loss
e. Product

561,600

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SECTION D - WASTEWATER CHARACTERISTICS

PAGE 1 OF 2 Ground Water

with a flow of 561,600 gallons / day

D.1 Analysis of wastewater discharged into the municipal sewer system

Parameter	Daily Average		Instantaneous	
	(Monthly Average)		(One Day)	
	Maximum Level		Maximum Level	
	mg/l	lbs/day	mg/l	lbs/day
Biochemical Oxygen Demand (BOD ₅)	250.000	1,170.936	400.000	1,873.498
Total Suspended Solids	300.000	1,405.123	500.000	2,341.872
Total Solids				
Oil & Grease (Hydrocarbons)				
Oil & Grease (Total)	10.000	46.837	10.000	46.837
Ammonia Nitrogen (NH ₃ - N)				
Total Kjeldahl Nitrogen (TKN)				

	Pounds
Alkalinity (Pounds of 100% sulfuric acid per day. See Attachment)	
Acidity (Pounds of 100% sodium hydroxide per day. See Attachment)	
	Minimum Maximum
Maximum Temperature (Degrees Fahrenheit)	
pH Range (Standard Units) (See Attachment)	5.5 10.0

D.2 Description of wastewater sampling location. Method of sample collection see attachment.

Sampling point is at the final discharge prior to the City Sanitary Sewer.
No Priority Pollutants or other substances listed in Appendix A are being discharged into the sanitary sewer.

Note: Blank = parameters not quantified.

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D.3 Priority Pollutants and other substances that may be present in the wastewater discharge

(See Appendix A for complete listing.)

PAGE 1 OF 2 Ground Water

with a flow of 561,600 gallons / day

Daily Average

Instantaneous

(Monthly Average)

(One Day)

Maximum Level

Maximum Level

Parameter	PPNClass	mg/l	lbs/day	mg/l	lbs/day
1,1,1-trichloroethane	11 Volat	0.010	0.047	0.020	0.094
1,1,2,2-tetrachloroethane	15 Volat	0.500	2.342	1.000	4.684
1,1,2-trichloroethane	14 Volat	0.050	0.234	0.100	0.468
1,1-dichloroethene	Volat	0.050	0.234	0.100	0.468
Aluminum	Metal	1.000	4.684	2.000	9.367
Arsenic	115 Metal	0.040	0.187	0.100	0.468
Bis (2-ethylhexyl) Phthalate	66 Semiv	0.010	0.047	0.020	0.094
Cadmium (total)	118 Metal	0.010	0.047	0.020	0.094
Carbon Tetrachloride (tetrachlor-)	6 Volat	0.020	0.094	0.040	0.187
Chloroform (trichloromethane)	23 Volat	0.100	0.468	0.200	0.937
Chromium (total)	119 Metal	0.200	0.937	0.400	1.873
Cis-1,2-dichloroethene	Volat	0.080	0.375	0.100	0.468
Copper (total)	120 Metal	0.200	0.937	0.400	1.873
Di-n-butyl Phthalate	68 Semiv	0.030	0.141	0.060	0.281
Iron	Metal	10.000	46.837	20.000	93.675
Lead (total)	122 Metal	0.150	0.703	0.300	1.405
Mercury	123 Metal	0.001	0.005	0.002	0.009
Methylene Chloride (dichlorometh-)	44 Volat	0.010	0.047	0.020	0.094
Naphthalene	55 Semiv	0.010	0.047	0.020	0.094
Nickel (total)	124 Metal	0.100	0.468	0.300	1.405
Phenol	65 Semiv	0.010	0.047	0.020	0.094
Tetrachloroethylene (perc- & Tet-)	85 Semiv	0.060	0.281	0.120	0.562
Toluene	86 Volat	0.020	0.094	0.040	0.187
Trans-1,2-dichloroethene	Volat	0.050	0.234	0.100	0.468
Trichloroethylene (trichloroethe-)	87 Volat	0.400	1.873	0.800	3.747

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SECTION D - WASTEWATER CHARACTERISTICS

PAGE 2 OF 2 Ground Water

with a flow of 561,600 gallons / day

D.1 Analysis of wastewater discharged into the municipal sewer system

Parameter	Daily Average		Instantaneous	
	(Monthly Average)		(One Day)	
	Maximum Level		Maximum Level	
	mg/l	lbs/day	mg/l	lbs/day
Biochemical Oxygen Demand (BOD ₅)				
Total Suspended Solids				
Total Solids				
Oil & Grease (Hydrocarbons)				
Oil & Grease (Total)				
Ammonia Nitrogen (NH ₃ - N)				
Total Kjeldahl Nitrogen (TKN)				

Pounds

Alkalinity (Pounds of 100% sulfuric acid per day. See Attachment)

Acidity (Pounds of 100% sodium hydroxide per day. See Attachment)

Minimum Maximum

Maximum Temperature (Degrees Fahrenheit)

pH Range (Standard Units) (See Attachment)

D.2 Description of wastewater sampling location. Method of sample collection see attachment.

This page is inserted due to additional space required for priority pollutants (Page 13-2).

**City Of Memphis
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DDSP-D MEMPHIS

D.3 Priority Pollutants and other substances that may be present in the wastewater discharge

(See Appendix A for complete listing.)

PAGE 2 OF 2 Ground Water

with a flow of 561,600 gallons / day

Daily Average

Instantaneous

(Monthly Average)

(One Day)

Maximum Level

Maximum Level

Parameter

PPNClass

mg/l

lbs/day

mg/l

lbs/day

[illegible]

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D.4 The person or laboratory responsible for wastewater sampling and analysis

The name of the laboratory will be provided once a contract is in place, the groundwater recovery system (described in B . 6) is installed, and sampling begins.

D.5 Type and description of wastewater metering and sampling facilities

A continuous direct reading meter, flow totalizer, and sampling tap will be provided just prior to the discharge pipe leaving DDMT property.

D.6 Any batch wastewater discharges?

No

If yes, describe type, volume, strength and time of discharges

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D.7 Is wastewater treated prior to discharge into the municipal sewer system? ☐ No

If yes, complete the following:

a. Description of unit processes used and wastewater quality before and after treatment

b. Description of production characteristics and any persistent or normal operational problems which may affect treatment system operations

c. Description of quality testing or process control methodology which shall ensure acceptable treatment levels

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SECTION E - SEWER FLOW PLAN, SITE PLAN AND PROCESS SCHEMATICS

E.1 The area of plant site in acres 64.11

E 2 Sewer flow plan or list of outlets, size and flow

PART 1 OF 3

The proposed layout of the groundwater recovery wells and piping system are shown on the figure provided in Attachment 2. Groundwater from the recovery wells will be combined into a common pipeline, conveyed and discharged (i.e., single discharge) into the sewer manhole located at Rozelle Street on the South side of Cane Creek (as shown on the Attachment 2 figure).

Initially, the groundwater discharge rates will be approximately 830 gpm. Each well will be brought on line by discharging flow from an 8-hour period into a holding tank. The groundwater in the holding tank will be analyzed to confirm concentrations are below the proposed discharge limits, prior to discharge to the sewer system.

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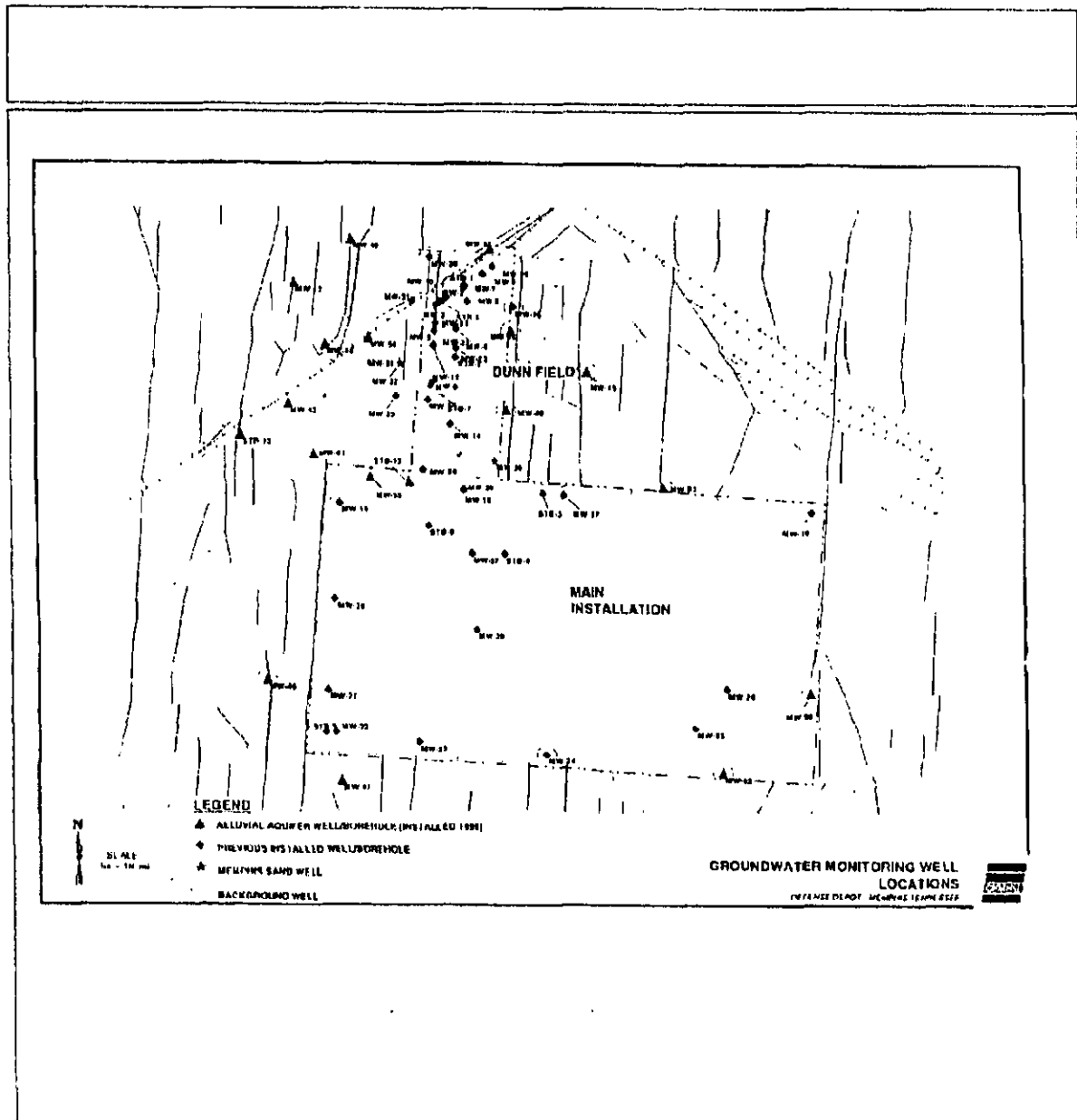
DDSP-D MEMPHIS

SECTION E - SEWER FLOW PLAN, SITE PLAN AND PROCESS SCHEMATICS

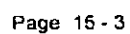
E.1 The area of plant site in acres 64.11

E.2 Sewer flow plan or list of outlets, size and flow

PART 2 OF 3



PART 3 OF 3



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E.3 Plan indicating major structures and locations of hazardous materials and certain sewer appurtenances

PART 1 OF 1

See attached plan.

932 111

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E.4 Flow diagram of materials or processes

PART 1 OF 1

N/A

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E.5 Diagram and description of areas with quantified acreage where storm waters (run-off) are discharged into the municipal sewer system

Storm water total acreage

PART 1 OF 1

No storm water is being discharged into the sanitary sewer.

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SECTION F - SELF-MONITORING SCHEDULE

PART 1 OF 1

F.1 The self monitoring requirements to be performed and/or reported to the City of Memphis.

All monitoring records should be kept on file for a minimum of 3 years.

According to Section 33-83 of the Sewer Use Ordinance, if sampling performed by an Industrial User indicates a violation, the User shall notify the Control Authority within 24 hours of becoming aware of the violation. The User shall repeat the sampling and analysis and submit the results of the repeated analysis to the City within 30 days after becoming aware of the violation or sooner if so directed by the City Authorized representatives.

If any pollutant is monitored more frequently than required, using EPA approved methods, the results of this monitoring shall be included in the report.

A. SELF-MONITORING REQUIREMENT:

- 1) Continuous flow monitoring of the final discharge (Groundwater).
- 2) One (1) grab sample shall be collected semi-annually in May and November with analyses for:
 - pH
 - VOCs (SW846 Method 8240)
 - SVOCs (SW846 Method 8270)
 - TAL Metals (EPA 200 Series)

B. REPORTING REQUIREMENT:

1. Monthly reports include the total volume discharged be sent by the 10th of each month.
2. Semi-annual Reports detailing all analyses of samples collected shall be submitted in June & December.

The above reports shall be submitted to:

Mr. Akil AL-Chokhachi
 City of Memphis
 2303 North Second Street
 Memphis, Tennessee 38127-7500

The Monthly volumes discharged shall be sent to :

Sewer Fee Billing Department
 Room 622, City Hall
 125 Mid-America Mall
 Memphis, TN 38103

A spill of any material or contaminated stormwater run-off as a result of an excavation of hazardous materials or any wastewater other than recovered groundwater shall not be discharged into the sanitary sewer without a written approval from the City of Memphis.

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SECTION G - COMPLIANCE SCHEDULE

PART 1 OF 1

G.1 The compliance schedule as required to meet categorical pretreatment standards and other requirements required by the City of Memphis pretreatment program.

None required

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SECTION H - HAZARDOUS MATERIALS

PART 1 OF 1

H.1 All hazardous, toxic, noxious or malodorous materials used, produced or formed
as by-product or waste.

NOT APPLICABLE FOR DDMT INSTALLATION

DUNN FIELD:

Historically, Dunn Field was used as a burial area on DDMT. The individual
burial sites within Dunn Field have the following suspected buried
contaminants:

- thiodiglycol
- arsenic
- chloroform
- ammonia hydroxide
- acetic acid
- ammonia salts
- metals
- orthotoluidine dihydrochloride
- VOCs
- SVOCs
- methyl bromide
- nitric acid PAHs
- trichloroacetic acid
- sulphuric acid
- hydrochloric acid
- lead
- pesticides

City Of Memphis
Industrial Wastewater Discharge
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SECTION I - ATTACHMENTS

PART 1 OF 1

I.1 Summary of Attachments

Appendix A, B, C, & D
Sewer Use Ordinance Table 1 & 2

Sara 312 Tier Two Emergency and Hazardous Chemical Inventory

APPENDIX B

2007 MONTHLY DISCHARGE REPORTS

**January 2007 Monthly Discharge Report
Groundwater Recovery System
Dunn Field, Memphis Depot, Tennessee
e2M Project Number 3202-019-01-14**

Groundwater Recovery System (GWRS) Operation - January 2007																																																		
Duration of System Operation:																																																		
		1-Jan-07 31-Jan-07																																																
Site visits During Month:																																																		
Site visits were performed by e ² M on 5 January, 11 January, 19 January, and 26 January 2007. Tasks included collection of flowrates, reviewing system operations and performing system maintenance and repair.																																																		
System Operational Notes:																																																		
All recovery wells (RWs) were continuously online during January 2007 with exceptions noted below.																																																		
System Maintenance and Repairs Summary:																																																		
As reported last month, RW-1A and RW-2 shutdown in late December. Troubleshooting activities were completed and the wells were back on-line on 10 January. As part of troubleshooting activities, the galvanized coupling connecting the pump to the flex hose was replaced with a stainless steel coupling. The stainless steel will minimize future rusting. The exact cause of the shutdowns are unknown as the electrical diagnosis did not pinpoint the problem. However following the coupling replacement, both wells restarted and continue to operate. RW-1 was taken offline on 30 January after it was discovered the level transducer was relaying incorrect water levels. RW-1 was kept offline to prevent the well from pumping dry. A replacement transducer has been ordered. RW-1 is expected to be online early February 2007.																																																		
Alarm Summary:																																																		
No alarms noted																																																		
Upcoming Activities																																																		
Weekly site visits to the groundwater recovery system for operations and maintenance are scheduled for February 2007. A quarterly effluent discharge sample will be collected in February 2007 with analysis for volatile organic compounds only.																																																		
January 2007 GWRS Discharge (gallons).	3,031,776																																																	
Approved One-Time Discharges (gallons)	812																																																	
January 2007 Effluent Discharge Volume (gallons):	<u>3,032,588</u>																																																	
January 2007 Average Discharge Flow Rate (GPM)	66.1																																																	
January 2007 Maximum Discharge Flow Rate (GPM)	69.6																																																	
January 2007 Minimum Discharge Flow Rate (GPM)	67.9																																																	
Explanations for deviations from 100% recovery well operation run times are provided in the above "System Maintenance Summary". On-site recordings were compiled to estimate each well's performance using recorded flow rates, totalized discharged volumes and low level cycling to yield the following recovery well operational run time percentages <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th align="left"><u>Well I.D.</u></th> <th align="left"><u>%Run Time</u></th> <th align="left"><u>Average Operating Flow Rate (GPM)</u></th> <th align="left"><u>Total Flow (Gallons) - Based on Average Flow Rate During Operational Period</u></th> </tr> </thead> <tbody> <tr><td>RW-1*</td><td>94.6</td><td>0.4</td><td>15,275</td></tr> <tr><td>RW-1A*</td><td>69.6</td><td>1.2</td><td>37,505</td></tr> <tr><td>RW-1B</td><td>100</td><td>3.4</td><td>150,379</td></tr> <tr><td>RW-2*</td><td>69.6</td><td>1.0</td><td>31,558</td></tr> <tr><td>RW-3*</td><td>100</td><td>3.2</td><td>140,616</td></tr> <tr><td>RW-4</td><td>100</td><td>9.0</td><td>375,166</td></tr> <tr><td>RW-5*</td><td>100</td><td>1.0</td><td>43,315</td></tr> <tr><td>RW-6</td><td>100</td><td>9.0</td><td>402,566</td></tr> <tr><td>RW-7</td><td>100</td><td>6.8</td><td>303,106</td></tr> <tr><td>RW-8</td><td>100</td><td>13.6</td><td>608,933</td></tr> <tr><td>RW-9</td><td>100</td><td>20.0</td><td>894,931</td></tr> </tbody> </table> * Pump cycling (non-continuous flow), therefore average flowrates for these wells were calculated from totalized flow readings for the month of January 2007.			<u>Well I.D.</u>	<u>%Run Time</u>	<u>Average Operating Flow Rate (GPM)</u>	<u>Total Flow (Gallons) - Based on Average Flow Rate During Operational Period</u>	RW-1*	94.6	0.4	15,275	RW-1A*	69.6	1.2	37,505	RW-1B	100	3.4	150,379	RW-2*	69.6	1.0	31,558	RW-3*	100	3.2	140,616	RW-4	100	9.0	375,166	RW-5*	100	1.0	43,315	RW-6	100	9.0	402,566	RW-7	100	6.8	303,106	RW-8	100	13.6	608,933	RW-9	100	20.0	894,931
<u>Well I.D.</u>	<u>%Run Time</u>	<u>Average Operating Flow Rate (GPM)</u>	<u>Total Flow (Gallons) - Based on Average Flow Rate During Operational Period</u>																																															
RW-1*	94.6	0.4	15,275																																															
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RW-8	100	13.6	608,933																																															
RW-9	100	20.0	894,931																																															
System Effluent Samples Collected:																																																		
The most recent effluent analytical results are from November 2006.																																																		
Mass removal is calculated based on daily flow rates and the most recent analytical data.																																																		
Cumulative amounts reflect contaminant removal since initial system startup.																																																		
Contaminant Mass Removal:																																																		
January 2007: 3.82 lbs TCE; 8.34 lbs Total VOCs																																																		
Cumulative: 329.77 lbs TCE; 826.42 lbs Total VOCs																																																		
Total System Effluent through 31 January 2007:	265,271,005	Gallons																																																

Prepared by SH 02/08/07
Checked by TH 02/08/07

February 2007 Monthly Discharge Report
Groundwater Recovery System
Dunn Field, Memphis Depot, Tennessee
e2M Project Number 3202-019-01-14

Groundwater Recovery System (GWRS) Operation - February 2007

Duration of System Operation.

1-Feb-07
28-Feb-07Site visits During Month.

Site visits were performed by e2M on 2 February, 10 February, 16 February, and 23 February 2007. Tasks included collection of flowrates, reviewing system operations and performing system maintenance and repair. A sample of the system effluent was collected on 19 February 2007 and analyzed for volatile organic compounds (VOCs) and pH. The new VOC results were used to system calculate mass removal.

System Operational Notes.

All recovery wells (RWs) were continuously online during February 2007 with exceptions noted below.

System Maintenance and Repairs Summary:

As reported last month, the transducer in RW-1 failed. A new transducer was installed on 8 February 2007 and RW-1 was restarted. RW-1A was offline for a 10-day period. Troubleshooting activities indicated that the lead wire had been compromised. The lead wire was replaced and RW-1A restarted. All wells are now operating without interruption. A couple of holes under the perimeter fence were discovered during weekly inspections. All holes were filled with rock/debris. Inspections of the fence line will continue on a weekly basis.

Alarm Summary.

No alarms noted.

Upcoming Activities

Weekly site visits to the groundwater recovery system for operations and maintenance are scheduled for March 2007.

February 2007 GWRS Discharge (gallons): 2,574,115

Approved One-Time Discharges (gallons): 0

February 2007 Effluent Discharge Volume (gallons): 2,574,115

February 2007 Average Discharge Flow Rate (GPM) 63.8

February 2007 Maximum Discharge Flow Rate (GPM) 75.5

February 2007 Minimum Discharge Flow Rate (GPM) 56.7

Explanations for deviations from 100% recovery well operation run times are provided in the above "System Maintenance Summary". On-site recordings were compiled to estimate each well's performance using recorded flow rates, totalized discharged volumes and low level cycling to yield the following recovery well operational run time percentages.

Well I.D.	%Run Time	Average Operating Flow Rate (GPM)	Total Flow (Gallons) - Based on Average Flow Rate
			During Operational Period
RW-1*	73.2	0.5	13,978
RW-1A*	64.2	1.4	35,038
RW-1B	100	3.3	134,832
RW-2	100	0.9	36,850
RW-3	100	4.4	176,589
RW-4	100	5.0	199,640
RW-5*	100	0.7	28,745
RW-6	100	7.9	317,935
RW-7	100	6.8	273,549
RW-8	100	13.6	549,775
RW-9	100	20.0	804,843

* Pump cycling (non-continuous flow), therefore average flowrates for these wells were calculated from totalized flow readings for the month of February 2007.

System Effluent Samples Collected.

The most recent effluent analytical results are from February 2006.

Mass removal is calculated based on daily flow rates and the most recent analytical data. Cumulative amounts reflect contaminant removal since initial system startup.

Contaminant Mass Removal:

February 2007: 3.74 lbs TCE; 7.96 lbs Total VOCs
Cumulative: 333.51 lbs TCE; 834.37 lbs Total VOCs

Total System Effluent through 28 February 2007:

267,845,120

Gallons

Prepared by: SH 03/07/07

Checked by: GT 03/08/07

March 2007 Monthly Discharge Report
Groundwater Recovery System
Dunn Field, Memphis Depot, Tennessee
e2M Project Number 3202-019-01-14

Groundwater Recovery System (GWRs) Operation - March 2007

Duration of System Operation: 1-Mar-07
31-Mar-07

Site visits During Month:

Site visits were performed by e2M on 2 March, 9 March, 16 March, and 22 March 2007. Tasks included collection of flowrates, reviewing system operations and performing system maintenance and repair.

System Operational Notes:

All recovery wells (RWs) were continuously online during March 2007 with exceptions noted below

System Maintenance and Repairs Summary:

System uptime this month was affected by a series of power failures occurred over a 4 day period between 26 - 29 March 2007. Evidence suggests that the transformer was struck by lightning. MLGW was contacted and transformer repairs were completed on 29 March. About half of the RWs restated automatically on 29 March. Others required the resetting of the motor starters. All RW repairs were completed on 2 April and are functioning normally. Water levels were collected from all RWs as part of LTM sampling. Additional holes under the perimeter fence were discovered during weekly inspections. All holes were filled with rock/debris. Inspections of the fence line will continue on a weekly basis. Also, a new sign was added to the Dunn Field access gate. The sign reads "LOCK YOU LOCK TO OTHER LOCKS SO ALL HAVE ACCESS. IF ACCESS REQUIRED CALL 901-287-9309". The EPA has mobilized a contractor to restage drums of drilling IDW from previous Dunn Field events. The drums interfered with upcoming Remedial Action activities. All drums were restaged near the access road and samples collected for profile purposes.

Alarm Summary:

No alarms noted.

Upcoming Activities

Weekly site visits to the groundwater recovery system for operations and maintenance are scheduled for April 2007.

March 2007 GWRs Discharge (gallons):	2,349,303
Approved One-Time Discharges (gallons)	0

March 2007 Effluent Discharge Volume (gallons):	<u>2,349,303</u>

March 2007 Average Discharge Flow Rate (GPM)	52.6
March 2007 Maximum Discharge Flow Rate (GPM)	65.3
March 2007 Minimum Discharge Flow Rate (GPM)	0.0

Explanations for deviations from 100% recovery well operation run times are provided in the above "System Maintenance Summary". On-site recordings were compiled to estimate each well's performance using recorded flow rates, totalized discharged volumes and low level cycling to yield the following recovery well operational run time percentages.

<u>Well I.D.</u>	<u>Percent Uptime</u>	<u>Average Operating Flow Rate (GPM)</u>	<u>Total Flow (Gallons) - Based on Average Flow Rate During Operational Period</u>
RW-1	83.1	0.4	14,822
RW-1A*	92.2	1.2	48,797
RW-1B	92.2	3.1	126,563
RW-2*	92.2	0.9	34,988
RW-3	92.2	4.3	174,971
RW-4	66.0	4.6	136,223
RW-5*	81.0	0.8	29,606
RW-6	81.0	9.4	340,695
RW-7	87.2	6.5	252,774
RW-8	81.0	13.1	472,295
RW-9	81.0	20.0	723,688

* Pump cycling (non-continuous flow), therefore average flowrates for these wells were calculated from totalized flow readings for the month of March 2007.

System Effluent Samples Collected:

The most recent effluent analytical results are from March 2006.

Mass removal is calculated based on daily
Cumulative amounts reflect contaminant removal since initial system startup.

Contaminant Mass Removal:

March 2007: 3.55 lbs TCE; 7.54 lbs Total VOCs
Cumulative: 337.06 lbs TCE; 841.91 lbs Total VOCs

<u>Total System Effluent through 28 March 2007 (gallons):</u>	270,194,423

Prepared by: SH 04/06/07
Checked by: TH 04/07/07

April 2007 Monthly Discharge Report
Groundwater Recovery System
Dunn Field, Memphis Depot, Tennessee
e2M Project Number 3202-019-01-14

Groundwater Recovery System (GWRS) Operation - April 2007

Duration of System Operation: 1-Apr-07
30-Apr-07

Site visits During Month:

Site visits were performed by e2M on 2 April, 5 April, 13 April, 19 April, and 27 April 2007. Tasks included collection of flowrates, reviewing system operations and performing system maintenance and repair. A sample of the system effluent was collected on 11 April 2007 and analyzed for volatile organic compounds (VOCs), semi-volatile VOCs, metals and pH.

System Operational Notes:

All recovery wells (RWs) were continuously online during April 2007 with exceptions noted below.

System Maintenance and Repairs Summary:

As reported last month, system uptime was affected by a series of power outages at the end of March 2007. Restarting of the RWs continued into the beginning of April 2007. All RWs were online on 2 April 2007. All RWs ran without interruption the remainder of the month.

Alarm Summary:

No alarms noted.

Upcoming Activities:

Weekly site visits to the groundwater recovery system for operations and maintenance are scheduled for May 2007.

April 2007 GWRS Discharge (gallons):	2,869,566
Approved One-Time Discharges (gallons)	0
April 2007 Effluent Discharge Volume (gallons):	<u>2,869,566</u>
April 2007 Average Discharge Flow Rate (GPM)	52.6
April 2007 Maximum Discharge Flow Rate (GPM)	65.3
April 2007 Minimum Discharge Flow Rate (GPM)	39.7

Explanations for deviations from 100% recovery well operation run times are provided in the above "System Maintenance Summary". On-site recordings were compiled to estimate each well's performance using recorded flow rates, totalized discharged volumes and low level cycling to yield the following recovery well operational run time percentages:

Well I.D.	Percent Uptime	Average Operating Flow Rate (GPM)	Total Flow (Gallons) - Based on Average Flow Rate During Operational Period
RW-1	95.7	0.4	16,315
RW-1A*	100	1.5	65,690
RW-1B	100	3.0	128,161
RW-2*	100	2.7	114,664
RW-3	100	4.5	194,932
RW-4*	95.4	3.1	126,368
RW-5*	95.4	0.8	30,989
RW-6	95.4	9.5	392,910
RW-7	100	7.3	315,017
RW-8	94.7	14.3	585,958
RW-9	100	20.3	878,922

* Pump cycling (non-continuous flow), therefore average flowrates for these wells were calculated from totalized flow readings for the month of April 2007.

System Effluent Samples Collected:

The most recent effluent analytical results are from April 2007.

Mass removal is calculated based on daily
Cumulative amounts reflect contaminant removal since initial system startup.

Contaminant Mass Removal:

April 2007: 3.59 lbs TCE; 7.58 lbs Total VOCs
Cumulative: 340.65 lbs TCE; 849.49 lbs Total VOCs

Total System Effluent through 30 April 2007 (gallons):	273,063,989

Prepared by: SH 05/08/07
Checked by: TH 05/09/07

Duration of System Operation.	1-May-07
	31-May-07

Site visits were performed by δM on 4 May, 10 May, 18 May and 24 May 2007. Tasks included collection of flowrates, reviewing system operations and performing system maintenance and repair.

All recovery wells (RWs) were continuously online during May 2007 with exceptions noted below.

Per the datalogger, RW-1B shutdown on 28 May due to unknown reasons. Troubleshooting activities are currently ongoing and the well is expected to be online the week of 11 June 2007. All other RWs were operational in May 2007 without interruption.

No alarms noted.

Weekly site visits to the groundwater recovery system for operations and maintenance are scheduled for June 2007.

May 2007 GWRS Discharge (gallons):	2,950,794
Approved One-Time Discharges (gallons)	20,152
May 2007 Effluent Discharge Volume (gallons):	<u>2,970,946</u>
May 2007 Average Discharge Flow Rate (GPM)	66.1
May 2007 Maximum Discharge Flow Rate (GPM)	66.9
May 2007 Minimum Discharge Flow Rate (GPM)	63.3

Explanations for deviations from 100% recovery well operation run times are provided in the above "System Maintenance Summary". On-site recordings were compiled to estimate each well's performance using recorded flow rates, totalized discharged volumes and low level cycling to yield the following recovery well operational run time percentages:

<u>Well I.D.</u>	<u>Percent Uptime</u>	<u>Average Operating Flow Rate (GPM)</u>	<u>Total Flow (Gallons) - Based on Average Flow Rate During Operational Period</u>
RW-1	100	0.4	17,304
RW-1A*	100	0.7	29,663
RW-1B	84.8	2.9	108,820
RW-2*	100	2.3	102,830
RW-3	100	5.4	240,698
RW-4*	100	3.2	144,743
RW-5*	100	0.6	27,765
RW-6	100	9.4	419,250
RW-7	100	7.1	316,989
RW-8	100	14.4	643,236
RW-9	100	20.0	892,410

* Pump cycling (non-continuous flow), therefore average flowrates for these wells were calculated from totalized flow readings for the month of May 2007.

The most recent effluent analytical results are from April 2007.

Mass removal is calculated based on daily
Cumulative amounts reflect contaminant removal since initial system startup.

May 2007: 3.69 lbs TCE; 7.79 lbs Total VOCs
Cumulative: 344.34 lbs TCE; 857.28 lbs Total VOCs

Total System Effluent through 31 May 2007 (gallons): 2,950,794

Prepared by: SH 06/08/07
Checked by: AMC 06/09/07

June 2007 Monthly Discharge Report
Groundwater Recovery System
Dunn Field, Memphis Depot, Tennessee
e²M Project Number 3202-019-01-14

Groundwater Recovery System (GWRS) Operation - June 2007

Duration of System Operation: 1-Jun-07
30-Jun-07

Site visits During Month:

Site visits were performed by e²M on 2 June, 7 June, 15 June, 21 June and 29 June 2007. Also, a semi-annual inspection and calibration of system components was completed from 11 -14 June 2007. Tasks included collection of flowrates, reviewing system operations, reprogramming of well controllers, calibration of the relays, pressure transducers, timers, flowmeters, actuator valves and data logger

System Operational Notes:

All recovery wells (RWs) were continuously online during June 2007 with exceptions noted below.

System Maintenance and Repairs Summary:

The majority of RW shutdowns were attributed to the semi-annual system maintenance, inspection and calibration activities. As a result of the inspection, it was discovered that the pump leads in RW-1A, RW-5, and RW-8 had been compromised. New Teflon coated leads were installed on the three wells. The relay (level) was replaced in RW-6 and RW-7. All other relays were re-calibrated. The pressure transducers were inspected. The transducer at RW-1B was found to be inoperable and a new transducer was installed. All flowmeters were inspected. The turbine was replaced in the flowmeter at RW-4. The actuator valve from RW-9 was removed to replace the actuator valve on RW-6 that had been disabled from a lightning strike earlier this year. RW-9 can function without an actuator valve due to its high groundwater yields (i.e. well does not cycle). Finally, the timer at RW-6 was replaced. Adjustments were made to the other well timers to minimize well cycling. All RWs are currently functioning.

Alarm Summary

No alarms noted.

Upcoming Activities

Weekly site visits to the groundwater recovery system for operations and maintenance are scheduled for July 2007. Also, the a system effluent sample will be collected and analyzed for VOCs.

June 2007 GWRS Discharge (gallons):	2,649,227
Approved One-Time Discharges (gallons)	0
June 2007 Effluent Discharge Volume (gallons):	<u>2,649,227</u>
June 2007 Average Discharge Flow Rate (GPM)	61.3
June 2007 Maximum Discharge Flow Rate (GPM)	68.9
June 2007 Minimum Discharge Flow Rate (GPM)	28.4

Explanations for deviations from 100% recovery well operation run times are provided in the above "System Maintenance Summary". On-site recordings were compiled to estimate each well's performance using recorded flow rates, totalized discharged volumes and low level cycling to yield the following recovery well operational run time percentages:

<u>Well I.D.</u>	<u>Percent Uptime</u>	<u>Average Operating Flow Rate (GPM)</u>	<u>Total Flow (Gallons) - Based on Average Flow Rate During Operational Period</u>
RW-1	91.3	0.4	14,739
RW-1A	69.7	1.6	48,678
RW-1B	58.7	2.8	70,647
RW-2	96.8	2.2	91,923
RW-3	100	5.1	222,464
RW-4	72.1	3.5	108,262
RW-5*	73.1	0.9	28,449
RW-6	93.9	9.1	368,785
RW-7	92.5	8.1	323,658
RW-8	90.8	14.5	570,643
RW-9	93.9	20.0	811,298

* Pump cycling (non-continuous flow), therefore average flowrates for these wells were calculated from totalized flow readings for the month of June 2007

System Effluent Samples Collected

The most recent effluent analytical results are from April 2007.

Mass removal is calculated based on daily
Cumulative amounts reflect contaminant removal since initial system startup.

Contaminant Mass Removal:

June 2007 3.29 lbs TCE, 6.94 lbs Total VOCs
Cumulative: 347.63 lbs TCE; 864.22 lbs Total VOCs

<u>Total System Effluent through 30 June 2007 (gallons)</u>	278,664,011

Prepared by: SLH 7/10/07
Checked by: TH 7/10/07

July 2007 Monthly Discharge Report
Groundwater Recovery System
Dunn Field, Memphis Depot, Tennessee
e²M Project Number 3202-019-01-14

Groundwater Recovery System (GWRS) Operation - July 2007

Duration of System Operation: 1-Jul-07
31-Jul-07

Site visits During Month:

Site visits were performed by dM on 5 July, 12 July, 19 July and 26 July 2007. Tasks included collection of flowrates, reviewing system operations and performing system maintenance and repair. A sample of the system effluent was collected on 9 July 2007 and analyzed for volatile organic compounds (VOCs).

System Operational Notes:

All recovery wells (RWs) were continuously online during July 2007 with exceptions noted below.

System Maintenance and Repairs Summary:

RW-9 shutdown on 26 July for unknown reasons and restarted on its own on 2 August. RW-9 is currently running without interruption

Alarm Summary:

No alarms noted.

Upcoming Activities

Weekly site visits to the groundwater recovery system for operations and maintenance are scheduled for August 2007.

July 2007 GWRS Discharge (gallons):	2,780,682
Approved One-Time Discharges (gallons)	0
July 2007 Effluent Discharge Volume (gallons):	<u>2,780,682</u>
July 2007 Average Discharge Flow Rate (GPM)	62.3
July 2007 Maximum Discharge Flow Rate (GPM)	66.7
July 2007 Minimum Discharge Flow Rate (GPM)	44.2

Explanations for deviations from 100% recovery well operation run times are provided in the above "System Maintenance Summary". On-site recordings were compiled to estimate each well's performance using recorded flow rates, totalized discharged volumes and low level cycling to yield the following recovery well operational run time percentages:

<u>Well I.D.</u>	<u>Percent Uptime</u>	<u>Average Operating Flow Rate (GPM)</u>	<u>Total Flow (Gallons) - Based on Average Flow Rate During Operational Period</u>
RW-1	100	0.3	12,798
RW-1A	100	2.5	112,109
RW-1B	100	2.7	119,502
RW-2*	100	2.2	98,128
RW-3	100	4.4	196,309
RW-4	100	3.4	153,926
RW-5*	100	1.1	47,006
RW-6	100	8.3	370,542
RW-7	100	8.1	361,564
RW-8	100	14.7	654,068
RW-9	79.4	20.0	707,945

* Pump cycling (non-continuous flow), therefore average flowrates for these wells were calculated from totalized flow readings for the month of July 2007.

System Effluent Samples Collected:

The most recent effluent analytical results are from July 2007.

Mass removal is calculated based on daily flow rates and the most recent analytical data. Cumulative amounts reflect contaminant removal since initial system startup.

Contaminant Mass Removal:

July 2007: 4.04 lbs TCE; 9.42 lbs Total VOCs

Cumulative: 351.67 lbs TCE, 873.64 lbs Total VOCs

<u>Total System Effluent through 31 July 2007 (gallons):</u>	281,444,692

Prepared by: SLH 7/11/07
Checked by: TH 7/13/07

Duration of System Operation	1-Aug-07
	31-Aug-07

Site visits were performed by e²M on 2 August, 9 August, 17 August, 23 August, and 30 August 2007. Tasks included collection of flowrates, reviewing system operations and performing system maintenance and repair. A sample of the system effluent was collected on 9 July 2007 and analyzed for volatile organic compounds (VOCs).

All recovery wells (RWs) were continuously online during August 2007 with exceptions noted below

As reported last month, RW-9 was offline through 2 August 2007. All wells are currently online.

No alarms noted.

Weekly site visits to the groundwater recovery system for operations and maintenance are scheduled for September 2007.

August 2007 GWRS Discharge (gallons):	2,701,875
Approved One-Time Discharges (gallons)	0
August 2007 Effluent Discharge Volume (gallons).	<u>2,701,875</u>
August 2007 Average Discharge Flow Rate (GPM)	61.9
August 2007 Maximum Discharge Flow Rate (GPM)	63.5
August 2007 Minimum Discharge Flow Rate (GPM)	43.2

Explanations for deviations from 100% recovery well operation run times are provided in the above "System Maintenance Summary". On-site recordings were compiled to estimate each well's performance using recorded flow rates, totalized discharged volumes and low level cycling to yield the following recovery well operational run time percentages:

<u>Well I.D.</u>	<u>Percent Uptime</u>	<u>Average Operating Flow Rate (GPM)</u>	<u>Total Flow (Gallons) - Based on Average Flow Rate During Operational Period</u>
RW-1	100	0.3	11,334
RW-1A	100	2.2	98,654
RW-1B	100	2.4	107,582
RW-2*	100	1.6	70,085
RW-3	100	3.8	167,846
RW-4	100	3.6	160,931
RW-5*	100	1.0	45,979
RW-6	100	7.2	319,622
RW-7	100	6.5	291,499
RW-8	100	14.7	656,654
RW-9	97.8	20.0	871,849

* Pump cycling (non-continuous flow), therefore average flowrates for these wells were calculated from totalized flow readings for the month of August 2007.

The most recent effluent analytical results are from July 2007.

Mass removal is calculated based on daily flow rates and the most recent analytical data
Cumulative amounts reflect contaminant removal since initial system startup.

August 2007: 3.92 lbs TCE; 9.15 lbs Total VOCs
Cumulative: 355.60 lbs TCE; 882.79 lbs Total VOCs

Total System Effluent through 31 August 2007 (gallons): 284,208,753

Prepared by: SLH 8/11/07
Checked by: TH 8/11/07

September 2007 Monthly Discharge Report
Groundwater Recovery System
Dunn Field, Memphis Depot, Tennessee
e²M Project Number 3202-019-01-14

Groundwater Recovery System (GWRS) Operation - September 2007	
Duration of System Operation	1-Sep-07 30-Sep-07
<u>Site visits During Month:</u> Site visits were performed by e ² M on 7 September, 15 September, 20 September and 27 September. Tasks included collection of flowrates, reviewing system operations and performing system maintenance and repair.	
<u>System Operational Notes:</u> All recovery wells (RWs) were continuously online during September 2007 with exceptions noted below.	
<u>System Maintenance and Repairs Summary:</u> RW-5 was offline 4-6 September. Upon inspection a tear was discovered in one of the electrical leads. The wire was patched on 6 September and RW-6 was restarted. RW-7 was noted to be offline at intervals between 12 - 15 September. The level relay was recalibrated on 15 September and RW-7 was restarted. RW-4 was offline from 17 - 19 September. The well restarted on its own and the problem could not be identified. RW-4 will continue to be closely monitored. Other tasks included replacing the level relay in RW-9 and recalibrating the level relay at RW-5 to limit cycling.	
<u>Alarm Summary:</u> No alarms noted.	
<u>Upcoming Activities</u> Weekly site visits to the groundwater recovery system for operations and maintenance are scheduled for October 2007. Semi-annual samples will be collected from monitoring wells, recovery wells and effluent discharge. The groundwater samples from monitoring and recovery wells will be analyzed for VOCs. The effluent sample will also be analyzed for VOCs, metals and pH.	
September 2007 GWRS Discharge (gallons):	2,648,050
<u>Approved One-Time Discharges (gallons)</u>	0
September 2007 Effluent Discharge Volume (gallons):	<u>2,648,050</u>
September 2007 Average Discharge Flow Rate (GPM)	61.3
September 2007 Maximum Discharge Flow Rate (GPM)	62.3
September 2007 Minimum Discharge Flow Rate (GPM)	56.0
Explanations for deviations from 100% recovery well operation run times are provided in the above "System Maintenance Summary". On-site recordings were compiled to estimate each well's performance using recorded flow rates, totalized discharged volumes and low level cycling to yield the following recovery well operational run time percentages:	
<u>Well I.D.</u>	<u>Percent Uptime</u>
<u>Average Operating Flow Rate (GPM)</u>	<u>Total Flow (Gallons) - Based on Average Flow Rate During Operational Period</u>
RW-1	100
RW-1A	100
RW-1B	100
RW-2*	100
RW-3*	100
RW-4	94.9
RW-5*	91.0
RW-6*	100
RW-7	91.9
RW-8	100
RW-9	100
	0.3
	1.8
	2.3
	2.0
	2.9
	3.4
	1.0
	7.5
	6.2
	14.7
	20.0
	11,179
	79,603
	100,648
	86,955
	124,014
	138,499
	37,740
	323,568
	247,760
	633,823
	863,098
* Pump cycling (non-continuous flow), therefore average flowrates for these wells were calculated from totalized flow readings for the month of September 2007.	
<u>System Effluent Samples Collected:</u>	The most recent effluent analytical results are from July 2007. Mass removal is calculated based on daily flow rates and the most recent analytical data. Cumulative amounts reflect contaminant removal since initial system startup.
<u>Contaminant Mass Removal:</u>	September 2007: 3.85 lbs TCE, 8.97 lbs Total VOCs Cumulative: 359.43 lbs TCE; 891.76 lbs Total VOCs
<u>Total System Effluent through 30 September 2007 (gallons).</u>	286,856,803

Prepared by: SLH 8/8/07
Checked by: TH 8/9/07

October 2007 Monthly Discharge Report
Groundwater Recovery System
Dunn Field, Memphis Depot, Tennessee
e²M Project Number 3202-019-01-14

Groundwater Recovery System (GWRS) Operation - October 2007

Duration of System Operation: 1-Oct-07
31-Oct-07

Site visits During Month:

Site visits were performed by e²M on 5 October, 11 October, 18 October, and 25 October. Tasks included collection of flowrates, reviewing system operations and performing system maintenance and repair. A sample of the system effluent was collected on 5 October 2007 and analyzed for volatile organic compounds, semi-volatile organic compounds, and metals.

System Operational Notes:

All recovery wells were continuously online during October 2007 with the exceptions noted below.

System Maintenance and Repairs Summary:

RW-5 was not operating from 14 - 19 October due to a tear in the pump lead. The lead was replaced and the well was restarted. RW-4 and RW-7 were offline at various times during the month. Lower water levels in these wells may have caused the pressure transducer to relay incorrect water levels and thus affecting the pump operation. The transducers in both wells were lowered and the relays re-calibrated. Both RW-4 and RW-7 are now online

Alarm Summary:

No alarms noted.

Upcoming Activities

Weekly site visits to the groundwater recovery system for operations and maintenance are scheduled for November 2007.

October 2007 GWRS Discharge (gallons):	2,689,474
Approved One-Time Discharges (gallons)	2,320
September 2007 Effluent Discharge Volume (gallons):	<u>2,691,794</u>
October 2007 Average Discharge Flow Rate (GPM)	60.2
October 2007 Maximum Discharge Flow Rate (GPM)	63.0
October 2007 Minimum Discharge Flow Rate (GPM)	51.3

Explanations for deviations from 100% recovery well operation run times are provided in the above "System Maintenance Summary". On-site recordings were compiled to estimate each well's performance using recorded flow rates, totalized discharged volumes and low level cycling to yield the following recovery well operational run time percentages.

<u>Well I.D.</u>	<u>Percent Uptime</u>	<u>Average Operating Flow Rate (GPM)</u>	<u>Total Flow (Gallons) - Based on Average Flow Rate During Operational Period</u>
RW-1	100	0.2	10,904
RW-1A	100	1.6	73,007
RW-1B	100	2.2	100,385
RW-2*	100	1.9	86,088
RW-3*	100	2.5	112,389
RW-4	87.6	3.5	136,111
RW-5*	81.7	1.7	62,730
RW-6	100	7.3	325,038
RW-7	82.4	5.9	217,891
RW-8	100	14.6	652,094
RW-9	100	19.9	888,467

* Pump cycling (non-continuous flow), therefore average flowrates for these wells were calculated from totalized flow readings for the month of October 2007

System Effluent Samples Collected.

The most recent effluent analytical results are from October 2007.

Mass removal is calculated based on daily flow rates and the most recent analytical data. Cumulative amounts reflect contaminant removal since initial system startup.

Contaminant Mass Removal

October 2007 2.15 lbs TCE; 4.69 lbs Total VOCs
Cumulative: 361.59 lbs TCE, 896.45 lbs Total VOCs

<u>Total System Effluent through 31 October 2007 (gallons)</u>	289,546,277

Prepared by: SLH 11/5/07
Checked by: TH 11/7/07

Duration of System Operation: 1-Nov-07
30-Nov-07

Site visits were performed by e²M on 1 November, 9 November, 15 November, 19 November, and 29 November. Tasks included collection of flowrates, reviewing system operations and performing system maintenance and repair.

All recovery wells were continuously online during November 2007 with the exceptions noted below.

System uptime was impacted when power conduits were hit during RA activities on 14 November 2007. Repairs were made on 14 and 15 November; upon completion, all wells were online and operating at normal flowrates. The relay was also RW-5 was re-calibrated.

No alarms noted.

Weekly site visits to the groundwater recovery system for operations and maintenance are scheduled for December 2007.

November 2007 Minimum Discharge Flow Rate (GPM)	52.4

Total System Effluent through 30 November 2007 (gallons): 292,160.904

**December 2007 Monthly Discharge Report
Groundwater Recovery System
Dunn Field, Memphis Depot, Tennessee
e²M Project Number 3202-019-01-14**

Groundwater Recovery System (GWRs) Operation - December 2007																																																	
Duration of System Operation:	1-Dec-07 31-Dec-07																																																
Site visits During Month: Site visits were performed by e ² M on 6 December, 21 December and 28 December. Tasks included collection of flowrates, reviewing system operations, and performing system maintenance and repair.																																																	
System Operational Notes: All recovery wells were continuously online during December 2008 with the exceptions noted below.																																																	
System Maintenance and Repairs Summary: RW-7 was offline for a two day period on 26-27 December, the well restarted on its own and will be monitored. Repairs to the totalizer at RW-5 were completed and it is functioning normally.																																																	
Alarm Summary: No alarms noted																																																	
Upcoming Activities Weekly site visits to the groundwater recovery system for operations and maintenance are scheduled for January 2008. Also, a quarterly system effluent sample will be collected and analyzed for VOCs.																																																	
<table style="width: 100%;"> <tr> <td style="width: 60%;">December 2007 GWRs Discharge (gallons):</td> <td style="text-align: right;">2,586,364</td> </tr> <tr> <td>Approved One-Time Discharges (gallons)</td> <td style="text-align: right;">0</td> </tr> <tr> <td>November 2007 Effluent Discharge Volume (gallons):</td> <td style="text-align: right;"><u>2,586,364</u></td> </tr> </table>		December 2007 GWRs Discharge (gallons):	2,586,364	Approved One-Time Discharges (gallons)	0	November 2007 Effluent Discharge Volume (gallons):	<u>2,586,364</u>																																										
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<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"><u>Well I.D.</u></th> <th style="text-align: center;"><u>Percent Uptime</u></th> <th style="text-align: center;"><u>Average Operating Flow Rate (GPM)</u></th> <th style="text-align: center;"><u>Total Flow (Gallons) - Based on Average Flow Rate During Operational Period</u></th> </tr> </thead> <tbody> <tr><td>RW-1</td><td style="text-align: center;">100</td><td style="text-align: center;">0.2</td><td style="text-align: right;">9,059</td></tr> <tr><td>RW-1A</td><td style="text-align: center;">100</td><td style="text-align: center;">1.6</td><td style="text-align: right;">72,069</td></tr> <tr><td>RW-1B</td><td style="text-align: center;">100</td><td style="text-align: center;">2.2</td><td style="text-align: right;">96,998</td></tr> <tr><td>RW-2*</td><td style="text-align: center;">100</td><td style="text-align: center;">1.7</td><td style="text-align: right;">75,150</td></tr> <tr><td>RW-3*</td><td style="text-align: center;">100</td><td style="text-align: center;">1.9</td><td style="text-align: right;">84,170</td></tr> <tr><td>RW-4</td><td style="text-align: center;">100</td><td style="text-align: center;">3.3</td><td style="text-align: right;">145,823</td></tr> <tr><td>RW-5*</td><td style="text-align: center;">100</td><td style="text-align: center;">1.1</td><td style="text-align: right;">49,690</td></tr> <tr><td>RW-6</td><td style="text-align: center;">100</td><td style="text-align: center;">6.3</td><td style="text-align: right;">280,714</td></tr> <tr><td>RW-7</td><td style="text-align: center;">95.3</td><td style="text-align: center;">5.3</td><td style="text-align: right;">225,695</td></tr> <tr><td>RW-8</td><td style="text-align: center;">100</td><td style="text-align: center;">14.7</td><td style="text-align: right;">657,651</td></tr> <tr><td>RW-9</td><td style="text-align: center;">100</td><td style="text-align: center;">20.0</td><td style="text-align: right;">892,621</td></tr> </tbody> </table>		<u>Well I.D.</u>	<u>Percent Uptime</u>	<u>Average Operating Flow Rate (GPM)</u>	<u>Total Flow (Gallons) - Based on Average Flow Rate During Operational Period</u>	RW-1	100	0.2	9,059	RW-1A	100	1.6	72,069	RW-1B	100	2.2	96,998	RW-2*	100	1.7	75,150	RW-3*	100	1.9	84,170	RW-4	100	3.3	145,823	RW-5*	100	1.1	49,690	RW-6	100	6.3	280,714	RW-7	95.3	5.3	225,695	RW-8	100	14.7	657,651	RW-9	100	20.0	892,621
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Prepared by: SLH 1/8/08
Checked by: TH 1/8/08

APPENDIX C

RESULTS OF LABORATORY ANALYSIS

Table C-1	Monitoring Well Analytical Results – VOCs – April 2007
Table C-2	Monitoring Well Analytical Results – VOCs – October 2007
Table C-3	Recovery Well Analytical Results – VOCs – April 2007
Table C-4	Recovery Well Analytical Results – VOCs – October 2007
Table C-5	IRA System Effluent Sample Analytical Results
Table C-6	Monitoring Well QC Analytical Results – VOCs – April 2007
Table C-7	Monitoring Well QC Analytical Results – VOCs – October 2007
Table C-8	IRA System Effluent QC Analytical Results

TABLE C-1
 MONITORING WELL SAMPLE ANALYTICAL RESULTS - VOCs - APRIL 2007
 ANNUAL OPERATIONS REPORT - 2007
 DUNN FIELD GROUNDWATER IRA - YEAR NINE
 Defense Depot Memphis, Tennessee

Analyte	Sample ID LabSample ID Date units	MW-07-68.9 L0704220-01 4/9/2007	MW-31-71.6 L0704220-02 4/9/2007	MW-31-77.1 L0704220-03 4/9/2007	MW-32-65.6 L0704220-04 4/9/2007
1,1,1,2-Tetrachloroethane	ug/L	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	ug/L	0.737 J	0.61 J	0.292 J	<1
1,1,2,2-Tetrachloroethane	ug/L	<0.5	<0.5	<0.5	1.59
1,1,2-Trichloroethane	ug/L	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	1.06	0.237 J	0.22 J	<1
1,1-Dichloroethene	ug/L	22.8	11.6	12.5	<1
1,1-Dichloropropene	ug/L	<1	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	<2	<2	<2	<2
1,2-Dibromoethane	ug/L	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	ug/L	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	<1	<1	<1	<1
1,3-Dichloropropane	ug/L	<1	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	ug/L	<1	<1	<1	<1
2,2-Dichloropropane	ug/L	<1	<1	<1	<1
2-Chlorotoluene	ug/L	<1	<1	<1	<1
4-Chlorotoluene	ug/L	<1	<1	<1	<1
Acetone	ug/L	8.81 J	11.4	10.7	<10
Benzene	ug/L	<0.4	<0.4	<0.4	<0.4
Bromobenzene	ug/L	<1	<1	<1	<1
Bromochloromethane	ug/L	<1	<1	<1	<1
Bromodichloromethane	ug/L	<0.5	<0.5	<0.5	<0.5
Bromoform	ug/L	<1	<1	<1	<1
Bromomethane	ug/L	<3	<3	<3	<3
Carbon tetrachloride	ug/L	0.641 J	0.451 J	<1	3.95
Chlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5
Chloroethane	ug/L	<1	<1	<1	<1
Chloroform	ug/L	20	0.458	0.311	8.63
Chloromethane	ug/L	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	0.326 J	7.32	0.579 J	1.14
cis-1,3-Dichloropropene	ug/L	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	ug/L	<0.5	<0.5	<0.5	<0.5
Dibromomethane	ug/L	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	<1	<1	<1	<1
Ethylbenzene	ug/L	<1	<1	<1	<1
Hexachlorobutadiene	ug/L	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	ug/L	<1	<1	<1	<1
m,p-Xylene	ug/L	<2	<2	<2	<2
MEK (2-Butanone)	ug/L	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	ug/L	<5	<5	<5	<5
Methylene chloride	ug/L	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	ug/L	<10	<10	<10	<10
Naphthalene	ug/L	<1	<1	<1	<1
n-Butylbenzene	ug/L	<1	<1	<1	<1
n-Propylbenzene	ug/L	<1	<1	<1	<1
o-Xylene	ug/L	<1	<1	<1	<1
p-Isopropyltoluene	ug/L	<1	<1	<1	<1
sec-Butylbenzene	ug/L	<1	<1	<1	<1
Styrene	ug/L	<1	<1	<1	<1
tert-Butylbenzene	ug/L	<1	<1	<1	<1
Tetrachloroethene	ug/L	39.4	0.904 J	1.45	0.82 J
Toluene	ug/L	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	<1	5.44	0.287 J	<1
trans-1,3-Dichloropropene	ug/L	<1	<1	<1	<1
Trichloroethene	ug/L	24.7	30.2	3.27	6.47
Trichlorofluoromethane	ug/L	<1	<1	<1	<1
Vinyl chloride	ug/L	<1	<1	<1	<1

Notes

µg/L micrograms per liter

< Analyte not detected above RL

J Estimated result based on QC data or reported below RL

Method:

SW8260B - Volatile Organic Compounds

TABLE C-1
 MONITORING WELL SAMPLE ANALYTICAL RESULTS - VOCs - APRIL 2007
 ANNUAL OPERATIONS REPORT - 2007
 DUNN FIELD GROUNDWATER IRA - YEAR NINE
 Defense Depot Memphis, Tennessee

Analyte	Sample ID LabSample ID Date units	MW-33-58 L0704220-05 4/9/2007	MW-37-173.2 L0704220-06 4/9/2007	MW-40-90 L0704220-07 4/9/2007	MW-43-165.5 L0704287-01 4/10/2007
1,1,1,2-Tetrachloroethane	ug/L	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	ug/L	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	ug/L	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	<1	<1	<1	<1
1,1-Dichloropropene	ug/L	<1	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	<2	<2	<2	<2
1,2-Dibromoethane	ug/L	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	ug/L	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	<1	<1	<1	<1
1,3-Dichloropropane	ug/L	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	ug/L	<1	<1	<1	<1
2,2-Dichloropropane	ug/L	<1	<1	<1	<1
2-Chlorotoluene	ug/L	<1	<1	<1	<1
4-Chlorotoluene	ug/L	<1	<1	<1	<1
Acetone	ug/L	5.3 J	3.27 J	<10	3.97 J
Benzene	ug/L	<0.4	<0.4	<0.4	<0.4
Bromobenzene	ug/L	<1	<1	<1	<1
Bromochloromethane	ug/L	<1	<1	<1	<1
Bromodichloromethane	ug/L	<0.5	<0.5	<0.5	<0.5
Bromoform	ug/L	<1	<1	<1	<1
Bromomethane	ug/L	<3	<3	<3	<3
Carbon tetrachloride	ug/L	0.457 J	<1	<1	<1
Chlorobenzene	ug/L	<0.5	<0.5	1.05	<0.5
Chloroethane	ug/L	<1	<1	<1	<1
Chloroform	ug/L	<0.3	<0.3	<0.3	<0.3
Chloromethane	ug/L	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	<1	<1	<1	<1
cis-1,3-Dichloropropene	ug/L	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	ug/L	<0.5	<0.5	<0.5	<0.5
Dibromomethane	ug/L	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	<1	<1	<1	<1
Ethylbenzene	ug/L	<1	<1	<1	<1
Hexachlorobutadiene	ug/L	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	ug/L	<1	<1	<1	<1
m-,p-Xylene	ug/L	<2	<2	<2	<2
MEK (2-Butanone)	ug/L	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	ug/L	<5	<5	<5	<5
Methylene chloride	ug/L	<1	<1	<1	<1
MIBK (methyl Isobutyl ketone)	ug/L	<10	<10	<10	<10
Naphthalene	ug/L	<1	<1	<1	<1
n-Butylbenzene	ug/L	<1	<1	<1	<1
n-Propylbenzene	ug/L	<1	<1	<1	<1
o-Xylene	ug/L	<1	<1	<1	<1
p-Isopropyltoluene	ug/L	<1	<1	<1	<1
sec-Butylbenzene	ug/L	<1	<1	<1	<1
Styrene	ug/L	<1	<1	<1	<1
tert-Butylbenzene	ug/L	<1	<1	<1	<1
Tetrachloroethene	ug/L	<1	<1	<1	<1
Toluene	ug/L	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	<1	<1	<1	<1
trans-1,3-Dichloropropene	ug/L	<1	<1	<1	<1
Trichloroethane	ug/L	<1	<1	<1	<1
Trichlorofluoromethane	ug/L	<1	<1	<1	<1
Vinyl chloride	ug/L	<1	<1	<1	<1

Notes:

µg/L micrograms per liter

< Analyte not detected above RL

J Estimated result based on QC data or reported below RL

Method:

SW8260B - Volatile Organic Compounds

TABLE C-1
 MONITORING WELL SAMPLE ANALYTICAL RESULTS - VOCs - APRIL 2007
 ANNUAL OPERATIONS REPORT - 2007
 DUNN FIELD GROUNDWATER IRA - YEAR NINE
 Defense Depot Memphis, Tennessee

Analyte	Sample ID LabSample ID Date units	MW-44-69 L0704220-08 4/9/2007	MW-54-89 5 L0704220-09 4/9/2007	MW-57-66.6 L0704287-02 4/10/2007	MW-67-267 5 L0704287-03 4/10/2007
1,1,1,2-Tetrachloroethane	ug/L	<0.5	<1.25	<0.5	<0.5
1,1,1-Trichloroethane	ug/L	<1	<2.5	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	<0.5	160	<0.5	<0.5
1,1,2-Trichloroethane	ug/L	<1	0.968 J	<1	<1
1,1-Dichloroethane	ug/L	<1	<2.5	<1	<1
1,1-Dichloroethene	ug/L	<1	<2.5	<1	<1
1,1-Dichloropropene	ug/L	<1	<2.5	<1	<1
1,2,3-Trichlorobenzene	ug/L	<1	<2.5	<1	<1
1,2,3-Trichloropropane	ug/L	<1	<2.5	<1	<1
1,2,4-Trichlorobenzene	ug/L	<1	<2.5	<1	<1
1,2,4-Trimethylbenzene	ug/L	<1	<2.5	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	<2	<5	<2	<2
1,2-Dibromoethane	ug/L	<1	<2.5	<1	<1
1,2-Dichlorobenzene	ug/L	<1	<2.5	<1	<1
1,2-Dichloroethane	ug/L	<0.5	<1.25	<0.5	<0.5
1,2-Dichloropropane	ug/L	<1	<2.5	<1	<1
1,3,5-Trimethylbenzene	ug/L	<1	<2.5	<1	<1
1,3-Dichlorobenzene	ug/L	<1	<2.5	<1	<1
1,3-Dichloropropane	ug/L	<0.4	<1	<0.4	<0.4
1,4-Dichlorobenzene	ug/L	<0.5	<1.25	<0.5	<0.5
1-Chlorohexane	ug/L	<1	<2.5	<1	<1
2,2-Dichloropropane	ug/L	<1	<2.5	<1	<1
2-Chlorotoluene	ug/L	<1	<2.5	<1	<1
4-Chlorotoluene	ug/L	<1	<2.5	<1	<1
Acetone	ug/L	<10	<25	<10	<10
Benzene	ug/L	<0.4	<1	<0.4	<0.4
Bromobenzene	ug/L	<1	<2.5	<1	<1
Bromochloromethane	ug/L	<1	<2.5	<1	<1
Bromodichloromethane	ug/L	<0.5	<1.25	<0.5	<0.5
Bromoform	ug/L	<1	<2.5	<1	<1
Bromomethane	ug/L	<3	<7.5	<3	<3
Carbon tetrachloride	ug/L	1.24	2.34 J	29.6	<1
Chlorobenzene	ug/L	<0.5	<1.25	<0.5	<0.5
Chloroethane	ug/L	<1	<2.5	<1	<1
Chloroform	ug/L	0.694	2	6.6	<0.3
Chloromethane	ug/L	<1	<2.5	<1	<1
cis-1,2-Dichloroethene	ug/L	<1	18.9	0.325 J	<1
cis-1,3-Dichloropropene	ug/L	<0.5	<1.25	<0.5	<0.5
Dibromochloromethane	ug/L	<0.5	<1.25	<0.5	<0.5
Dibromomethane	ug/L	<1	<2.5	<1	<1
Dichlorodifluoromethane	ug/L	<1	<2.5	<1	<1
Ethylbenzene	ug/L	<1	<2.5	<1	<1
Hexachlorobutadiene	ug/L	<0.6	<1.5	<0.6	<0.6
Isopropylbenzene	ug/L	<1	<2.5	<1	<1
m-,p-Xylene	ug/L	<2	<5	<2	<2
MEK (2-Butanone)	ug/L	<10	<25	<10	<10
Methyl t-butyl ether (MTBE)	ug/L	<5	<12.5	<5	<5
Methylene chloride	ug/L	<1	<2.5	<1	<1
MIBK (methyl isobutyl ketone)	ug/L	<10	<25	<10	<10
Naphthalene	ug/L	<1	<2.5	<1	<1
n-Butylbenzene	ug/L	<1	<2.5	<1	<1
n-Propylbenzene	ug/L	<1	<2.5	<1	<1
o-Xylene	ug/L	<1	<2.5	<1	<1
p-Isopropyltoluene	ug/L	<1	<2.5	<1	<1
sec-Butylbenzene	ug/L	<1	<2.5	<1	<1
Styrene	ug/L	<1	<2.5	<1	<1
tert-Butylbenzene	ug/L	<1	<2.5	<1	<1
Tetrachloroethane	ug/L	<1	3.58	5.06	<1
Toluene	ug/L	<1	<2.5	<1	<1
trans-1,2-Dichloroethene	ug/L	<1	4.2	0.684 J	<1
trans-1,3-Dichloropropene	ug/L	<1	<2.5	<1	<1
Trichloroethene	ug/L	0.688 J	405	34.6	<1
Trichlorofluoromethane	ug/L	<1	<2.5	<1	<1
Vinyl chloride	ug/L	<1	<2.5	<1	<1

Notes:

µg/L micrograms per liter

< Analyte not detected above RL

J Estimated result based on QC data or reported below RL

Method:

SW8260B - Volatile Organic Compounds

TABLE C-1
 MONITORING WELL SAMPLE ANALYTICAL RESULTS - VOCs - APRIL 2007
 ANNUAL OPERATIONS REPORT - 2007
 DUNN FIELD GROUNDWATER IRA - YEAR NINE
 Defense Depot Memphis, Tennessee

Analyte	Sample ID LabSample ID Date units	MW-68-77.5 L0704275-01 4/11/2007	MW-69-88.2 L0704275-02 4/11/2007	MW-70-83.3 L0704275-03 4/11/2007	MW-70-88.8 L0704275-04 4/11/2007
1,1,1,2-Tetrachloroethane	ug/L	<0.5	<0.5	0.33 J	<0.5
1,1,1-Trichloroethane	ug/L	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	1.45	<0.5	1460	627
1,1,2-Trichloroethane	ug/L	<1	<1	2.17	19.5
1,1-Dichloroethane	ug/L	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	<1	<1	<1	1.75
1,1-Dichloropropene	ug/L	<1	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	<1	<1	<1	<1
1,2,3-Trichloropropene	ug/L	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	<2	<2	<2	<2
1,2-Dibromoethane	ug/L	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	<0.5	<0.5	<0.5	0.355 J
1,2-Dichloropropene	ug/L	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	<1	<1	<1	<1
1,3-Dichloropropene	ug/L	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	ug/L	<1	<1	<1	<1
2,2-Dichloropropene	ug/L	<1	<1	<1	<1
2-Chlorotoluene	ug/L	<1	<1	<1	<1
4-Chlorotoluene	ug/L	<1	<1	<1	<1
Acetone	ug/L	<10	<10	12.6	12.9
Benzene	ug/L	<0.4	<0.4	<0.4	<0.4
Bromobenzene	ug/L	<1	<1	<1	<1
Bromochloromethane	ug/L	<1	<1	<1	<1
Bromodichloromethane	ug/L	<0.5	<0.5	<0.5	<0.5
Bromoform	ug/L	<1	<1	<1	<1
Bromomethane	ug/L	<3	<3	<3	<3
Carbon tetrachloride	ug/L	<1	<1	<1	<1
Chlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5
Chloroethane	ug/L	<1	<1	<1	<1
Chloroform	ug/L	0.263 J	0.144 J	1.08	0.338
Chloromethane	ug/L	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	0.473 J	<1	26.7	58.5
cis-1,3-Dichloropropene	ug/L	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	ug/L	<0.5	<0.5	<0.5	<0.5
Dibromomethane	ug/L	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	<1	<1	<1	<1
Ethylbenzene	ug/L	<1	<1	<1	<1
Hexachlorobutadiene	ug/L	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	ug/L	<1	<1	<1	<1
m-,p-Xylene	ug/L	<2	<2	<2	0.875 J
MEK (2-Butanone)	ug/L	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	ug/L	<5	<5	<5	<5
Methylene chloride	ug/L	<1	<1	<1	0.262 J
MIBK (methyl isobutyl ketone)	ug/L	<10	<10	<10	<10
Naphthalene	ug/L	<1	<1	<1	<1
n-Butylbenzene	ug/L	<1	<1	<1	<1
n-Propylbenzene	ug/L	<1	<1	<1	<1
o-Xylene	ug/L	<1	<1	<1	0.439 J
p-Isopropyltoluene	ug/L	<1	<1	<1	<1
sec-Butylbenzene	ug/L	<1	<1	<1	<1
Styrene	ug/L	<1	<1	<1	<1
tert-Butylbenzene	ug/L	<1	<1	<1	<1
Tetrachloroethane	ug/L	0.506 J	0.898 J	8.16	2.89
Toluene	ug/L	<1	<1	<1	0.458 J
trans-1,2-Dichloroethene	ug/L	0.261 J	<1	4.83	5.48
trans-1,3-Dichloropropene	ug/L	<1	<1	<1	<1
Trichloroethene	ug/L	2.58	0.879 J	750	329
Trichlorofluoromethane	ug/L	<1	<1	<1	<1
Vinyl chloride	ug/L	<1	<1	<1	94.3

Notes:

µg/L micrograms per liter

< Analyte not detected above RL

J Estimated result based on QC data or reported below RL

Method:

SW8260B - Volatile Organic Compounds

TABLE C-1
 MONITORING WELL SAMPLE ANALYTICAL RESULTS - VOCs - APRIL 2007
 ANNUAL OPERATIONS REPORT - 2007
 DUNN FIELD GROUNDWATER IRA - YEAR NINE
 Defense Depot Memphis, Tennessee

Analyte	Sample ID LabSample ID Date units	MW-71-72 3 L0704275-05 4/11/2007	MW-76-88.2 L0704287-04 4/10/2007	MW-77-84 9 L0704287-07 4/10/2007	MW-79-92 L0704287-08 4/10/2007
1,1,1,2-Tetrachloroethane	ug/L	<0.5	<0.5	<25	<0.5
1,1,1-Trichloroethane	ug/L	<1	<1	<50	<1
1,1,2,2-Tetrachloroethane	ug/L	4.66	3.82	8800	<0.5
1,1,2-Trichloroethane	ug/L	<1	<1	<50	<1
1,1-Dichloroethane	ug/L	<1	<1	<50	0.19 J
1,1-Dichloroethene	ug/L	<1	<1	<50	11.2
1,1-Dichloropropene	ug/L	<1	<1	<50	<1
1,2,3-Trichlorobenzene	ug/L	<1	<1	<50	<1
1,2,3-Trichloropropane	ug/L	<1	<1	<50	<1
1,2,4-Trichlorobenzene	ug/L	<1	<1	<50	<1
1,2,4-Trimethylbenzene	ug/L	<1	<1	<50	<1
1,2-Dibromo-3-chloropropane	ug/L	<2	<2	<100	<2
1,2-Dibromoethane	ug/L	<1	<1	<50	<1
1,2-Dichlorobenzene	ug/L	<1	<1	<50	<1
1,2-Dichloroethane	ug/L	<0.5	<0.5	<25	<0.5
1,2-Dichloropropane	ug/L	<1	<1	<50	<1
1,3,5-Trimethylbenzene	ug/L	<1	<1	<50	<1
1,3-Dichlorobenzene	ug/L	<1	<1	<50	<1
1,3-Dichloropropane	ug/L	<0.4	<0.4	<20	<0.4
1,4-Dichlorobenzene	ug/L	<0.5	<0.5	<25	<0.5
1-Chlorohexane	ug/L	<1	<1	<50	<1
2,2-Dichloropropane	ug/L	<1	<1	<50	<1
2-Chlorotoluene	ug/L	<1	<1	<50	<1
4-Chlorotoluene	ug/L	<1	<1	<50	<1
Acetone	ug/L	5.12 J	5.51 J	<500	16.6
Benzene	ug/L	<0.4	<0.4	<20	<0.4
Bromobenzene	ug/L	<1	<1	<50	<1
Bromochloromethane	ug/L	<1	<1	<50	<1
Bromodichloromethane	ug/L	<0.5	<0.5	<25	<0.5
Bromoform	ug/L	<1	<1	<50	<1
Bromomethane	ug/L	<3	<3	<150	<3
Carbon tetrachloride	ug/L	16.5	<1	<50	<1
Chlorobenzene	ug/L	<0.5	<0.5	<25	<0.5
Chloroethane	ug/L	<1	<1	<50	<1
Chloroform	ug/L	59.2	0.359	<15	<0.3
Chloromethane	ug/L	<1	<1	<50	<1
cis-1,2-Dichloroethene	ug/L	1.89	3.08	67.5	<1
cis-1,3-Dichloropropene	ug/L	<0.5	<0.5	<25	<0.5
Dibromochloromethane	ug/L	<0.5	<0.5	<25	<0.5
Dibromomethane	ug/L	<1	<1	<50	<1
Dichlorodifluoromethane	ug/L	<1	<1	<50	<1
Ethylbenzene	ug/L	<1	<1	<50	<1
Hexachlorobutadiene	ug/L	<0.6	<0.6	<30	<0.6
Isopropylbenzene	ug/L	<1	<1	<50	<1
m,p-Xylene	ug/L	<2	<2	<100	<2
MEK (2-Butanone)	ug/L	<10	<10	<500	<10
Methyl t-butyl ether (MTBE)	ug/L	<5	<5	<250	<5
Methylene chloride	ug/L	<1	<1	<50	<1
MIBK (methyl isobutyl ketone)	ug/L	<10	<10	<500	<10
Naphthalene	ug/L	<1	<1	<50	<1
n-Butylbenzene	ug/L	<1	<1	<50	<1
n-Propylbenzene	ug/L	<1	<1	<50	<1
o-Xylene	ug/L	<1	<1	<50	<1
p-Isopropyltoluene	ug/L	<1	<1	<50	<1
sec-Butylbenzene	ug/L	<1	<1	<50	<1
Styrene	ug/L	<1	<1	<50	<1
tert-Butylbenzene	ug/L	<1	<1	<50	<1
Tetrachloroethene	ug/L	3.03	2.74	21 J	1.06
Toluene	ug/L	<1	<1	<50	<1
trans-1,2-Dichloroethene	ug/L	0.59 J	1.41	<50	<1
trans-1,3-Dichloropropene	ug/L	<1	<1	<50	<1
Trichloroethene	ug/L	36.2	26.4	3330	1.9
Trichlorofluoromethane	ug/L	<1	<1	<50	<1
Vinyl chloride	ug/L	<1	<1	<50	<1

Notes

µg/L: micrograms per liter

< Analyte not detected above RL

J Estimated result based on QC data or reported below RL

Method:

SW8260B - Volatile Organic Compounds

TABLE C-1
 MONITORING WELL SAMPLE ANALYTICAL RESULTS - VOCs - APRIL 2007
 ANNUAL OPERATIONS REPORT - 2007
 DUNN FIELD GROUNDWATER IRA - YEAR NINE
 Defense Depot Memphis, Tennessee

	Sample ID	MW-130-69.5	MW-144-74.9	MW-145-86.6	MW-147-73.7
	LabSample ID	L0704287-09	L0704287-10	L0704220-10	L0704287-11
Analyte	Date	4/10/2007	4/10/2007	4/9/2007	4/10/2007
units					
1,1,1,2-Tetrachloroethane	ug/L	<0.5	<5	<0.5	<0.5
1,1,1-Trichloroethane	ug/L	3.39	<10	<1	0.666 J
1,1,2,2-Tetrachloroethane	ug/L	<0.5	1350	<0.5	634
1,1,2-Trichloroethane	ug/L	<1	20.4	<1	9.28
1,1-Dichloroethane	ug/L	3.88	<10	<1	<1
1,1-Dichloroethene	ug/L	70	<10	<1	1.49
1,1-Dichloropropene	ug/L	<1	<10	<1	<1
1,2,3-Trichlorobenzene	ug/L	<1	<10	<1	<1
1,2,3-Trichloropropane	ug/L	<1	<10	<1	<1
1,2,4-Trichlorobenzene	ug/L	<1	<10	<1	<1
1,2,4-Trimethylbenzene	ug/L	<1	<10	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	<2	<20	<2	<2
1,2-Dibromoethane	ug/L	<1	<10	<1	<1
1,2-Dichlorobenzene	ug/L	<1	<10	<1	<1
1,2-Dichloroethane	ug/L	1.03	<5	<0.5	1.43
1,2-Dichloropropane	ug/L	<1	<10	<1	<1
1,3,5-Trimethylbenzene	ug/L	<1	<10	<1	<1
1,3-Dichlorobenzene	ug/L	<1	<10	<1	<1
1,3-Dichloropropane	ug/L	<0.4	<4	<0.4	<0.4
1,4-Dichlorobenzene	ug/L	<0.5	<5	<0.5	<0.5
1-Chlorohexane	ug/L	<1	<10	<1	<1
2,2-Dichloropropane	ug/L	<1	<10	<1	<1
2-Chlorotoluene	ug/L	<1	<10	<1	<1
4-Chlorotoluene	ug/L	<1	<10	<1	<1
Acetone	ug/L	7.65 J	<100	12	14.6
Benzene	ug/L	<0.4	<4	<0.4	<0.4
Bromobenzene	ug/L	<1	<10	<1	<1
Bromochloromethane	ug/L	<1	<10	<1	<1
Bromodichloromethane	ug/L	<0.5	<5	<0.5	<0.5
Bromoform	ug/L	<1	<10	<1	<1
Bromomethane	ug/L	<3	<30	<3	<3
Carbon tetrachloride	ug/L	<1	<10	<1	0.83 J
Chlorobenzene	ug/L	<0.5	<5	<0.5	<0.5
Chloroethane	ug/L	<1	<10	<1	<1
Chloroform	ug/L	0.315	<3	<0.3	7.24
Chloromethane	ug/L	<1	<10	<1	<1
cis-1,2-Dichloroethene	ug/L	0.818 J	33.5	<1	155
cis-1,3-Dichloropropene	ug/L	<0.5	<5	<0.5	<0.5
Dibromochloromethane	ug/L	<0.5	<5	<0.5	<0.5
Dibromomethane	ug/L	<1	<10	<1	<1
Dichlorodifluoromethane	ug/L	<1	<10	<1	<1
Ethylbenzene	ug/L	<1	<10	<1	<1
Hexachlorobutadiene	ug/L	<0.6	<6	<0.6	<0.6
Isopropylbenzene	ug/L	<1	<10	<1	<1
m,p-Xylene	ug/L	<2	<20	<2	<2
MEK (2-Butanone)	ug/L	<10	<100	<10	<10
Methyl t-butyl ether (MTBE)	ug/L	<5	<50	<5	<5
Methylene chloride	ug/L	<1	<10	<1	0.296 J
MIBK (methyl isobutyl ketone)	ug/L	<10	<100	<10	<10
Naphthalene	ug/L	<1	<10	<1	<1
n-Butylbenzene	ug/L	<1	<10	<1	<1
n-Propylbenzene	ug/L	<1	<10	<1	<1
o-Xylene	ug/L	<1	<10	<1	<1
p-Isopropyltoluene	ug/L	<1	<10	<1	<1
sec-Butylbenzene	ug/L	<1	<10	<1	<1
Styrene	ug/L	<1	<10	<1	<1
tert-Butylbenzene	ug/L	<1	<10	<1	<1
Tetrachloroethane	ug/L	154	4.11 J	<1	12.2
Toluene	ug/L	<1	<10	<1	0.305 J
trans-1,2-Dichloroethane	ug/L	<1	3.39 J	<1	39.6
trans-1,3-Dichloropropene	ug/L	<1	<10	<1	<1
Trichloroethene	ug/L	71.2	694	<1	278
Trichlorofluoromethane	ug/L	<1	<10	<1	<1
Vinyl chloride	ug/L	<1	<10	<1	<1

Notes:

µg/L micrograms per liter

< Analyte not detected above RL

J Estimated result based on QC data or reported below RL

Method:

SW8260B - Volatile Organic Compounds

TABLE C-1
MONITORING WELL SAMPLE ANALYTICAL RESULTS - VOCs - APRIL 2007
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

Analyte	Sample ID LabSample ID Date units	MW-148-80.0 L0704287-12 4/10/2007	MW-148-85.5 L0704287-13 4/10/2007	MW-149-83.6 L0704220-11 4/9/2007	MW-149-98.5 L0704220-12 4/9/2007
1,1,1,2-Tetrachloroethane	ug/L	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	ug/L	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	0.179 J	1.75	37.2	33.3
1,1,2-Trichloroethane	ug/L	<1	<1	1.29	1.23
1,1-Dichloroethane	ug/L	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	<1	<1	<1	<1
1,1-Dichloropropene	ug/L	<1	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	<2	<2	<2	<2
1,2-Dibromoethane	ug/L	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	<0.5	<0.5	0.349 J	0.343 J
1,2-Dichloropropane	ug/L	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	<1	<1	<1	<1
1,3-Dichloropropane	ug/L	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	ug/L	<1	<1	<1	<1
2,2-Dichloropropane	ug/L	<1	<1	<1	<1
2-Chlorotoluene	ug/L	<1	<1	<1	<1
4-Chlorotoluene	ug/L	<1	<1	<1	<1
Acetone	ug/L	17.7	14.9	<10	11.8
Benzene	ug/L	<0.4	<0.4	<0.4	<0.4
Bromobenzene	ug/L	<1	<1	<1	<1
Bromochloromethane	ug/L	<1	<1	<1	<1
Bromodichloromethane	ug/L	<0.5	<0.5	<0.5	<0.5
Bromoform	ug/L	<1	<1	<1	<1
Bromomethane	ug/L	<3	<3	<3	<3
Carbon tetrachloride	ug/L	<1	<1	19.8	19.6
Chlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5
Chloroethane	ug/L	<1	<1	<1	<1
Chloroform	ug/L	0.473	0.247 J	155	141
Chloromethane	ug/L	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	5.04	1.97	8.02	9.02
cis-1,3-Dichloropropene	ug/L	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	ug/L	<0.5	<0.5	<0.5	<0.5
Dibromomethane	ug/L	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	<1	<1	<1	<1
Ethylbenzene	ug/L	<1	<1	<1	<1
Hexachlorobutadiene	ug/L	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	ug/L	<1	<1	<1	<1
m-,p-Xylene	ug/L	<2	<2	<2	<2
MEK (2-Butanone)	ug/L	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	ug/L	<5	<5	<5	<5
Methylene chloride	ug/L	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	ug/L	<10	<10	<10	<10
Naphthalene	ug/L	<1	<1	<1	<1
n-Butylbenzene	ug/L	<1	<1	<1	<1
n-Propylbenzene	ug/L	<1	<1	<1	<1
o-Xylene	ug/L	<1	<1	<1	<1
p-Isopropyltoluene	ug/L	<1	<1	<1	<1
sec-Butylbenzene	ug/L	<1	<1	<1	<1
Styrene	ug/L	<1	<1	<1	<1
tert-Butylbenzene	ug/L	<1	<1	<1	<1
Tetrachloroethene	ug/L	4.18	0.89 J	3.81	2.99
Toluene	ug/L	<1	0.375 J	<1	<1
trans-1,2-Dichloroethene	ug/L	1.82	0.686 J	1.52	1.59
trans-1,3-Dichloropropene	ug/L	<1	<1	<1	<1
Trichloroethene	ug/L	17.6	7.7	80.9	77.2
Trichlorofluoromethane	ug/L	<1	<1	<1	<1
Vinyl chloride	ug/L	<1	<1	<1	<1

Notes:

µg/L. micrograms per liter

< Analyte not detected above RL

J Estimated result based on QC data or reported below RL

Method:

SW8260B - Volatile Organic Compounds

TABLE C-1
 MONITORING WELL SAMPLE ANALYTICAL RESULTS - VOCs - APRIL 2007
 ANNUAL OPERATIONS REPORT - 2007
 DUNN FIELD GROUNDWATER IRA - YEAR NINE
 Defense Depot Memphis, Tennessee

Analyte	Sample ID LabSample ID Date units	MW-150-83.2 L0704220-13 4/9/2007	MW-150-90.5 L0704220-14 4/9/2007	MW-151-78.5 L0704220-15 4/9/2007	MW-151-94.5 L0704220-16 4/9/2007
1,1,1,2-Tetrachloroethane	ug/L	<12.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	ug/L	<25	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	3030	4620	<0.5	0.68
1,1,2-Trichloroethane	ug/L	10.2 J	27	<1	<1
1,1-Dichloroethane	ug/L	<25	<1	<1	<1
1,1-Dichloroethene	ug/L	<25	0.687 J	<1	<1
1,1-Dichloropropene	ug/L	<25	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	3.82 J	<1	<1	<1
1,2,3-Trichloropropane	ug/L	<25	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	<25	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	<25	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	<50	<2	<2	<2
1,2-Dibromoethane	ug/L	<25	<1	<1	<1
1,2-Dichlorobenzene	ug/L	<25	<1	<1	<1
1,2-Dichloroethane	ug/L	<12.5	0.386 J	<0.5	<0.5
1,2-Dichloropropene	ug/L	<25	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	<25	<1	<1	<1
1,3-Dichlorobenzene	ug/L	<25	<1	<1	<1
1,3-Dichloropropane	ug/L	<10	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	ug/L	<12.5	<0.5	<0.5	<0.5
1-Chlorohexane	ug/L	<25	<1	<1	<1
2,2-Dichloropropane	ug/L	<25	<1	<1	<1
2-Chlorotoluene	ug/L	<25	<1	<1	<1
4-Chlorotoluene	ug/L	<25	<1	<1	<1
Acetone	ug/L	<250	33.4	15.4	14.9
Benzene	ug/L	<10	<0.4	<0.4	<0.4
Bromobenzene	ug/L	<25	<1	<1	<1
Bromochloromethane	ug/L	<25	<1	<1	<1
Bromodichloromethane	ug/L	<12.5	<0.5	<0.5	<0.5
Bromoform	ug/L	<25	<1	<1	<1
Bromomethane	ug/L	<75	<3	<3	<3
Carbon tetrachloride	ug/L	<25	<1	0.493 J	5.53
Chlorobenzene	ug/L	<12.5	<0.5	<0.5	<0.5
Chloroethane	ug/L	<25	<1	<1	<1
Chloroform	ug/L	<7.5	1.92	0.327	12.5
Chloromethane	ug/L	<25	<1	<1	<1
cis-1,2-Dichloroethane	ug/L	56.2	109	<1	1.24
cis-1,3-Dichloropropene	ug/L	<12.5	<0.5	<0.5	<0.5
Dibromochloromethane	ug/L	<12.5	<0.5	<0.5	<0.5
Dibromomethane	ug/L	<25	<1	<1	<1
Dichlorodifluoromethane	ug/L	<25	<1	<1	<1
Ethylbenzene	ug/L	<25	<1	<1	<1
Hexachlorobutadiene	ug/L	<15	<0.6	<0.6	<0.6
Isopropylbenzene	ug/L	<25	<1	<1	<1
m-,p-Xylene	ug/L	<50	<2	<2	<2
MEK (2-Butanone)	ug/L	<250	3.94 J	<10	<10
Methyl t-butyl ether (MTBE)	ug/L	<125	<5	<5	<5
Methylene chloride	ug/L	<25	<1	<1	<1
MIBK (methyl isobutyl ketone)	ug/L	<250	<10	<10	<10
Naphthalene	ug/L	<25	<1	<1	<1
n-Butylbenzene	ug/L	<25	<1	<1	<1
n-Propylbenzene	ug/L	<25	<1	<1	<1
o-Xylene	ug/L	<25	<1	<1	<1
p-Isopropyltoluene	ug/L	<25	<1	<1	<1
sec-Butylbenzene	ug/L	<25	<1	<1	<1
Styrene	ug/L	<25	<1	<1	<1
tert-Butylbenzene	ug/L	<25	<1	<1	<1
Tetrachloroethene	ug/L	6.54 J	16.8	<1	0.588 J
Toluene	ug/L	<25	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	11.1 J	24.3	<1	0.274 J
trans-1,3-Dichloropropane	ug/L	<25	<1	<1	<1
Trichloroethene	ug/L	1350	3060	0.562 J	11.1
Trichlorofluoromethane	ug/L	<25	<1	<1	<1
Vinyl chloride	ug/L	<25	0.83 J	<1	<1

Notes:

µg/L micrograms per liter

< Analyte not detected above RL

J Estimated result based on QC data or reported below RL

Method:

SW8260B - Volatile Organic Compounds

TABLE C-1
 MONITORING WELL SAMPLE ANALYTICAL RESULTS - VOCs - APRIL 2007
 ANNUAL OPERATIONS REPORT - 2007
 DUNN FIELD GROUNDWATER IRA - YEAR NINE
 Defense Depot Memphis, Tennessee

Analyte	Sample ID LabSample ID Date units	MW-152-107.9 L0704287-15 4/10/2007	MW-152-92.9 L0704287-14 4/10/2007	MW-153-87.1 L0704287-16 4/10/2007	MW-154-61.6 L0704287-17 4/10/2007
1,1,1,2-Tetrachloroethane	ug/L	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	ug/L	<1	<1	1.77	<1
1,1,2,2-Tetrachloroethane	ug/L	8.67	15.7	<0.5	<0.5
1,1,2-Trichloroethane	ug/L	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	<1	<1	0.643 J	<1
1,1-Dichloroethene	ug/L	<1	<1	5.91	<1
1,1-Dichloropropene	ug/L	<1	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	<2	<2	<2	<2
1,2-Dibromoethane	ug/L	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	ug/L	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	<1	<1	<1	<1
1,3-Dichloropropane	ug/L	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	ug/L	<1	<1	<1	<1
2,2-Dichloropropane	ug/L	<1	<1	<1	<1
2-Chlorotoluene	ug/L	<1	<1	<1	<1
4-Chlorotoluene	ug/L	<1	<1	<1	<1
Acetone	ug/L	15.5	14.3	17	<10
Benzene	ug/L	<0.4	<0.4	<0.4	<0.4
Bromobenzene	ug/L	<1	<1	<1	<1
Bromochloromethane	ug/L	<1	<1	<1	<1
Bromodichloromethane	ug/L	<0.5	<0.5	<0.5	<0.5
Bromoform	ug/L	<1	<1	<1	<1
Bromomethane	ug/L	<3	<3	<3	<3
Carbon tetrachloride	ug/L	<1	<1	<1	<1
Chlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5
Chloroethane	ug/L	<1	<1	<1	<1
Chloroform	ug/L	1.31	1.84	<0.3	<0.3
Chloromethane	ug/L	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	14.7	21.8	0.334 J	<1
cis-1,3-Dichloropropene	ug/L	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	ug/L	<0.5	<0.5	<0.5	<0.5
Dibromomethane	ug/L	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	<1	<1	<1	<1
Ethylbenzene	ug/L	<1	<1	<1	<1
Hexachlorobutadiene	ug/L	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	ug/L	<1	<1	<1	<1
m,p-Xylene	ug/L	<2	<2	<2	<2
MEK (2-Butanone)	ug/L	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	ug/L	<5	<5	<5	<5
Methylene chloride	ug/L	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	ug/L	<10	<10	<10	<10
Naphthalene	ug/L	<1	<1	<1	<1
n-Butylbenzene	ug/L	<1	<1	<1	<1
n-Propylbenzene	ug/L	<1	<1	<1	<1
o-Xylene	ug/L	<1	<1	<1	<1
p-Isopropyltoluene	ug/L	<1	<1	<1	<1
sec-Butylbenzene	ug/L	<1	<1	<1	<1
Styrene	ug/L	<1	<1	<1	<1
tert-Butylbenzene	ug/L	<1	<1	<1	<1
Tetrachloroethene	ug/L	9.65	12.7	0.332 J	<1
Toluene	ug/L	<1	0.619 J	<1	<1
trans-1,2-Dichloroethene	ug/L	6.32	9.23	<1	<1
trans-1,3-Dichloropropene	ug/L	<1	<1	<1	<1
Trichloroethene	ug/L	130	185	0.251 J	<1
Trichlorofluoromethane	ug/L	<1	<1	<1	<1
Vinyl chloride	ug/L	<1	<1	<1	<1

Notes

µg/L micrograms per liter

< Analyte not detected above RL

J Estimated result based on QC data or reported below RL

Method:

SW8260B - Volatile Organic Compounds

TABLE C-1
 MONITORING WELL SAMPLE ANALYTICAL RESULTS - VOCs - APRIL 2007
 ANNUAL OPERATIONS REPORT - 2007
 DUNN FIELD GROUNDWATER IRA - YEAR NINE
 Defense Depot Memphis, Tennessee

Analyte	Sample ID Lab Sample ID Date units	MW-155-77.0 L0704287-18 4/10/2007	MW-155-93.5 L0704287-19 4/10/2007	MW-156-62.0 L0704275-06 4/11/2007	MW-157-74.8 L0704287-20 4/10/2007
1,1,1,2-Tetrachloroethane	ug/L	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	ug/L	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	2880	3180	<0.5	25.2
1,1,2-Trichloroethane	ug/L	147	120 J	<1	1.04
1,1-Dichloroethane	ug/L	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	0.966 J	0.928 J	<1	<1
1,1-Dichloropropene	ug/L	<1	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	<2	<2	<2	<2
1,2-Dibromoethane	ug/L	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	0.409 J	0.367 J	<0.5	<0.5
1,2-Dichloropropane	ug/L	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	<1	<1	<1	<1
1,3-Dichloropropane	ug/L	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	ug/L	<1	<1	<1	<1
2,2-Dichloropropane	ug/L	<1	<1	<1	<1
2-Chlorotoluene	ug/L	<1	<1	<1	<1
4-Chlorotoluene	ug/L	<1	<1	<1	<1
Acetone	ug/L	17.7	16.8 J	2.84 J	19.1
Benzene	ug/L	<0.4	<0.4	<0.4	<0.4
Bromobenzene	ug/L	<1	<1	<1	<1
Bromochloromethane	ug/L	<1	<1	<1	<1
Bromodichloromethane	ug/L	<0.5	<0.5	<0.5	<0.5
Bromoform	ug/L	<1	<1	<1	<1
Bromomethane	ug/L	<3	<3	<3	<3
Carbon tetrachloride	ug/L	<1	<1	<1	17.2
Chlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5
Chloroethane	ug/L	<1	<1	<1	<1
Chloroform	ug/L	1.45	1.69 J	<0.3	153
Chloromethane	ug/L	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	105	86 J	<1	16.8
cis-1,3-Dichloropropene	ug/L	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	ug/L	<0.5	<0.5	<0.5	<0.5
Dibromomethane	ug/L	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	<1	<1	<1	<1
Ethylbenzene	ug/L	<1	<1	<1	<1
Hexachlorobutadiene	ug/L	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	ug/L	<1	<1	<1	<1
m-,p-Xylene	ug/L	<2	<2	<2	<2
MEK (2-Butanone)	ug/L	2.51 J	<10	<10	<10
Methyl t-butyl ether (MTBE)	ug/L	<5	<5	<5	<5
Methylene chloride	ug/L	0.31 J	0.288 J	<1	<1
MIBK (methyl isobutyl ketone)	ug/L	<10	<10	<10	<10
Naphthalene	ug/L	<1	<1	<1	<1
n-Butylbenzene	ug/L	<1	<1	<1	<1
n-Propylbenzene	ug/L	<1	<1	<1	<1
o-Xylene	ug/L	<1	<1	<1	<1
p-Isopropyltoluene	ug/L	<1	<1	<1	<1
sec-Butylbenzene	ug/L	<1	<1	<1	<1
Styrene	ug/L	<1	<1	<1	<1
tert-Butylbenzene	ug/L	<1	<1	<1	<1
Tetrachloroethene	ug/L	11.6	12.4 J	<1	4.1
Toluene	ug/L	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	35.3	27.2 J	<1	3
trans-1,3-Dichloropropene	ug/L	<1	<1	<1	<1
Trichloroethane	ug/L	1560	1650	<1	162
Trichlorofluoromethane	ug/L	<1	<1	<1	<1
Vinyl chloride	ug/L	1.15	0.619 J	<1	<1

Notes:

µg/L micrograms per liter

< Analyte not detected above RL

J Estimated result based on QC data or reported below RL

Method:

SW8260B - Volatile Organic Compounds

TABLE C-1
MONITORING WELL SAMPLE ANALYTICAL RESULTS - VOCs - APRIL 2007
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

Analyte	Sample ID LabSample ID Date units	MW-158-104.1 L0704287-22 4/10/2007	MW-158-93.1 L0704287-21 4/10/2007	MW-158A-81.5 L0704287-23 4/10/2007	MW-158A-91.4 L0704287-24 4/10/2007
1,1,1,2-Tetrachloroethane	ug/L	<0.5	<0.5	<0.5	<1
1,1,1-Trichloroethane	ug/L	<1	<1	<1	<2
1,1,2,2-Tetrachloroethane	ug/L	1.86	0.933	268	50.3
1,1,2-Trichloroethane	ug/L	<1	<1	28.8 J	3.49
1,1-Dichloroethane	ug/L	<1	<1	<1	<2
1,1-Dichloroethene	ug/L	<1	<1	0.592 J	<2
1,1-Dichloropropene	ug/L	<1	<1	<1	<2
1,2,3-Trichlorobenzene	ug/L	<1	<1	<1	<2
1,2,3-Trichloropropane	ug/L	<1	<1	<1	<2
1,2,4-Trichlorobenzene	ug/L	<1	<1	<1	<2
1,2,4-Trimethylbenzene	ug/L	<1	<1	<1	<2
1,2-Dibromo-3-chloropropane	ug/L	<2	<2	<2	<4
1,2-Dibromoethane	ug/L	<1	<1	<1	<2
1,2-Dichlorobenzene	ug/L	<1	<1	<1	<2
1,2-Dichloroethane	ug/L	<0.5	<0.5	0.589 J	<1
1,2-Dichloropropane	ug/L	<1	<1	<1	<2
1,3,5-Trimethylbenzene	ug/L	<1	<1	<1	<2
1,3-Dichlorobenzene	ug/L	<1	<1	<1	<2
1,3-Dichloropropane	ug/L	<0.4	<0.4	<0.4	<0.8
1,4-Dichlorobenzene	ug/L	<0.5	<0.5	<0.5	<1
1-Chlorohexane	ug/L	<1	<1	<1	<2
2,2-Dichloropropane	ug/L	<1	<1	<1	<2
2-Chlorotoluene	ug/L	<1	<1	<1	<2
4-Chlorotoluene	ug/L	<1	<1	<1	<2
Acetone	ug/L	14.5	14.7	12.6 J	16.5 J
Benzene	ug/L	<0.4	<0.4	<0.4	<0.8
Bromobenzene	ug/L	<1	<1	<1	<2
Bromochloromethane	ug/L	<1	<1	<1	<2
Bromodichloromethane	ug/L	<0.5	<0.5	<0.5	<1
Bromoform	ug/L	<1	<1	<1	<2
Bromomethane	ug/L	<3	<3	<3	<6
Carbon tetrachloride	ug/L	<1	<1	<1	<2
Chlorobenzene	ug/L	<0.5	<0.5	<0.5	<1
Chloroethane	ug/L	<1	<1	<1	<2
Chloroform	ug/L	0.404	0.31	0.858 J	1.44
Chloromethane	ug/L	<1	<1	<1	<2
cis-1,2-Dichloroethene	ug/L	2.9	2.82	95.3 J	21.4
cis-1,3-Dichloropropene	ug/L	<0.5	<0.5	<0.5	<1
Dibromochloromethane	ug/L	<0.5	<0.5	<0.5	<1
Dibromomethane	ug/L	<1	<1	<1	<2
Dichlorodifluoromethane	ug/L	<1	<1	<1	<2
Ethylbenzene	ug/L	<1	<1	<1	<2
Hexachlorobutadiene	ug/L	<0.6	<0.6	<0.6	<1.2
Isopropylbenzene	ug/L	<1	<1	<1	<2
m-,p-Xylene	ug/L	<2	<2	<2	<4
MEK (2-Butanone)	ug/L	<10	<10	<10	<20
Methyl t-butyl ether (MTBE)	ug/L	<5	<5	<5	<10
Methylene chloride	ug/L	<1	<1	<1	<2
MIBK (methyl isobutyl ketone)	ug/L	<10	<10	<10	<20
Naphthalene	ug/L	<1	<1	<1	<2
n-Butylbenzene	ug/L	<1	<1	<1	<2
n-Propylbenzene	ug/L	<1	<1	<1	<2
o-Xylene	ug/L	<1	<1	<1	<2
p-Isopropyltoluene	ug/L	<1	<1	<1	<2
sec-Butylbenzene	ug/L	<1	<1	<1	<2
Styrene	ug/L	<1	<1	<1	<2
tert-Butylbenzene	ug/L	<1	<1	<1	<2
Tetrachloroethene	ug/L	7.83	8.13	3.77 J	10.4
Toluene	ug/L	<1	<1	<1	<2
trans-1,2-Dichloroethene	ug/L	1.56	1.39	15.2 J	7.78
trans-1,3-Dichloropropene	ug/L	<1	<1	<1	<2
Trichloroethene	ug/L	54	53.2	514	240
Trichlorofluoromethane	ug/L	<1	<1	<1	<2
Vinyl chloride	ug/L	<1	<1	0.663 J	<2

Notes

µg/L micrograms per liter

< Analyte not detected above RL

J Estimated result based on QC data or reported below RL

Method

SW8260B - Volatile Organic Compounds

TABLE C-1
 MONITORING WELL SAMPLE ANALYTICAL RESULTS - VOCs - APRIL 2007
 ANNUAL OPERATIONS REPORT - 2007
 DUNN FIELD GROUNDWATER IRA - YEAR NINE
 Defense Depot Memphis, Tennessee

Analyte	Sample ID LabSample ID Date units	MW-159-81 1 L0704220-17 4/9/2007	MW-159-97.1 L0704220-18 4/9/2007	MW-160-80 8 L0704287-25 4/10/2007	MW-161-80 4 L0704287-26 4/10/2007
1,1,1,2-Tetrachloroethane	ug/L	<0.5	<0.5	<0.5	<5
1,1,1-Trichloroethane	ug/L	<1	<1	<1	<10
1,1,2,2-Tetrachloroethane	ug/L	248	272	24.9	1170
1,1,2-Trichloroethane	ug/L	37.4	32.9	<1	<10
1,1-Dichloroethane	ug/L	<1	<1	<1	<10
1,1-Dichloroethene	ug/L	1.16	1.12	0.708 J	<10
1,1-Dichloropropene	ug/L	<1	<1	<1	<10
1,2,3-Trichlorobenzene	ug/L	<1	<1	0.129 J	<10
1,2,3-Trichloropropane	ug/L	<1	<1	<1	<10
1,2,4-Trichlorobenzene	ug/L	<1	<1	<1	<10
1,2,4-Trimethylbenzene	ug/L	<1	<1	<1	<10
1,2-Dibromo-3-chloropropane	ug/L	<2	<2	<2	<20
1,2-Dibromoethane	ug/L	<1	<1	<1	<10
1,2-Dichlorobenzene	ug/L	<1	<1	<1	<10
1,2-Dichloroethane	ug/L	0.287 J	<0.5	<0.5	<5
1,2-Dichloropropane	ug/L	<1	<1	<1	<10
1,3,5-Trimethylbenzene	ug/L	<1	<1	<1	<10
1,3-Dichlorobenzene	ug/L	<1	<1	<1	<10
1,3-Dichloropropane	ug/L	<0.4	<0.4	<0.4	<4
1,4-Dichlorobenzene	ug/L	<0.5	<0.5	<0.5	<5
1-Chlorohexane	ug/L	<1	<1	<1	<10
2,2-Dichloropropane	ug/L	<1	<1	<1	<10
2-Chlorotoluene	ug/L	<1	<1	<1	<10
4-Chlorotoluene	ug/L	<1	<1	<1	<10
Acetone	ug/L	14.1	14.3	17.9	<100
Benzene	ug/L	<0.4	<0.4	<0.4	<4
Bromobenzene	ug/L	<1	<1	<1	<10
Bromochloromethane	ug/L	<1	<1	<1	<10
Bromodichloromethane	ug/L	<0.5	<0.5	<0.5	<5
Bromoform	ug/L	<1	<1	<1	<10
Bromomethane	ug/L	<3	<3	<3	<30
Carbon tetrachloride	ug/L	<1	<1	0.781 J	5.68 J
Chlorobenzene	ug/L	<0.5	<0.5	<0.5	<5
Chloroethane	ug/L	<1	<1	<1	<10
Chloroform	ug/L	0.967	1.03	1.68	2.1 J
Chloromethane	ug/L	<1	<1	<1	<10
cis-1,2-Dichloroethene	ug/L	156	152	22.6	42.5
cis-1,3-Dichloropropene	ug/L	<0.5	<0.5	<0.5	<5
Dibromochloromethane	ug/L	<0.5	<0.5	<0.5	<5
Dibromomethane	ug/L	<1	<1	<1	<10
Dichlorodifluoromethane	ug/L	<1	<1	<1	<10
Ethylbenzene	ug/L	<1	<1	<1	<10
Hexachlorobutadiene	ug/L	<0.6	<0.6	<0.6	<6
Isopropylbenzene	ug/L	<1	<1	<1	<10
m-,p-Xylene	ug/L	<2	<2	<2	<20
MEK (2-Butanone)	ug/L	<10	<10	<10	<100
Methyl i-butyl ether (MTBE)	ug/L	<5	<5	<5	<50
Methylene chloride	ug/L	0.316 J	0.295 J	<1	<10
MIBK (methyl isobutyl ketone)	ug/L	<10	<10	<10	<100
Naphthalene	ug/L	<1	<1	<1	<10
n-Butylbenzene	ug/L	<1	<1	<1	<10
n-Propylbenzene	ug/L	<1	<1	<1	<10
o-Xylene	ug/L	<1	<1	<1	<10
p-Isopropyltoluene	ug/L	<1	<1	<1	<10
sec-Butylbenzene	ug/L	<1	<1	<1	<10
Styrene	ug/L	<1	<1	<1	<10
tert-Butylbenzene	ug/L	<1	<1	<1	<10
Tetrachloroethene	ug/L	3.75	3.81	14.5	6.49 J
Toluene	ug/L	0.298 J	<1	<1	<10
trans-1,2-Dichloroethene	ug/L	17.9	16.8	8.63	5.77 J
trans-1,3-Dichloropropene	ug/L	<1	<1	<1	<10
Trichloroethene	ug/L	1660	1580	191	1400
Trichlorofluoromethane	ug/L	<1	<1	<1	<10
Vinyl chloride	ug/L	0.504 J	0.514 J	<1	<10

Notes:

µg/L, micrograms per liter

< Analyte not detected above RL

J Estimated result based on QC data or reported below RL

Method:

SW8260B - Volatile Organic Compounds

TABLE C-1
MONITORING WELL SAMPLE ANALYTICAL RESULTS - VOCs - APRIL 2007
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

Analyte	Sample ID	MW-162-83.7	MW-163-74.9	MW-164-72.6	MW-165-100.4
	LabSample ID	L0704287-27	L0704287-28	L0704287-29	L0704287-33
	Date	4/10/2007	4/10/2007	4/10/2007	4/10/2007
Analyte	units				
1,1,1,2-Tetrachloroethane	ug/L	<10	<2.5	<0.5	<0.5
1,1,1-Trichloroethane	ug/L	<20	<5	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	3030	642	45	1.82
1,1,2-Trichloroethane	ug/L	<20	61.2	1.75	0.3 J
1,1-Dichloroethane	ug/L	<20	<5	<1	<1
1,1-Dichloroethene	ug/L	<20	<5	<1	<1
1,1-Dichloropropene	ug/L	<20	<5	<1	<1
1,2,3-Trichlorobenzene	ug/L	<20	<5	<1	<1
1,2,3-Trichloropropane	ug/L	<20	<5	<1	<1
1,2,4-Trichlorobenzene	ug/L	<20	<5	<1	<1
1,2,4-Trimethylbenzene	ug/L	<20	<5	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	<40	<10	<2	<2
1,2-Dibromoethane	ug/L	<20	<5	<1	<1
1,2-Dichlorobenzene	ug/L	<20	<5	<1	<1
1,2-Dichloroethane	ug/L	<10	2.35 J	0.507	<0.5
1,2-Dichloropropane	ug/L	<20	<5	<1	<1
1,3,5-Trimethylbenzene	ug/L	<20	<5	<1	<1
1,3-Dichlorobenzene	ug/L	<20	<5	<1	<1
1,3-Dichloropropane	ug/L	<8	<2	<0.4	<0.4
1,4-Dichlorobenzene	ug/L	<10	<2.5	<0.5	<0.5
1-Chlorohexane	ug/L	<20	<5	<1	<1
2,2-Dichloropropane	ug/L	<20	<5	<1	<1
2-Chlorotoluene	ug/L	<20	<5	<1	<1
4-Chlorotoluene	ug/L	<20	<5	<1	<1
Acetone	ug/L	<200	13 J	17.3	13.3
Benzene	ug/L	<8	<2	<0.4	<0.4
Bromobenzene	ug/L	<20	<5	<1	<1
Bromochloromethane	ug/L	<20	<5	<1	<1
Bromodichloromethane	ug/L	<10	<2.5	<0.5	<0.5
Bromoform	ug/L	<20	<5	<1	<1
Bromomethane	ug/L	<60	<15	<3	<3
Carbon tetrachloride	ug/L	<20	<5	24.8	<1
Chlorobenzene	ug/L	<10	<2.5	<0.5	<0.5
Chloroethane	ug/L	<20	<5	<1	<1
Chloroform	ug/L	<6	0.883 J	247	1.89
Chloromethane	ug/L	<20	<5	<1	<1
cis-1,2-Dichloroethene	ug/L	45.5	113	18.1	11.6
cis-1,3-Dichloropropene	ug/L	<10	<2.5	<0.5	<0.5
Dibromochloromethane	ug/L	<10	<2.5	<0.5	<0.5
Dibromomethane	ug/L	<20	<5	<1	<1
Dichlorodifluoromethane	ug/L	<20	<5	<1	<1
Ethylbenzene	ug/L	<20	<5	<1	<1
Hexachlorobutadiene	ug/L	<12	<3	<0.6	<0.6
Isopropylbenzene	ug/L	<20	<5	<1	<1
m,p-Xylene	ug/L	<40	<10	<2	0.504 J
MEK (2-Butanone)	ug/L	<200	<50	<10	<10
Methyl t-butyl ether (MTBE)	ug/L	<100	<25	<5	<5
Methylene chloride	ug/L	<20	<5	<1	<1
MIBK (methyl isobutyl ketone)	ug/L	<200	<50	<10	<10
Naphthalene	ug/L	<20	<5	<1	<1
n-Butylbenzene	ug/L	<20	<5	<1	<1
n-Propylbenzene	ug/L	<20	<5	<1	<1
o-Xylene	ug/L	<20	<5	<1	0.37 J
p-Isopropyltoluene	ug/L	<20	<5	<1	<1
sec-Butylbenzene	ug/L	<20	<5	<1	<1
Styrene	ug/L	<20	<5	<1	<1
tert-Butylbenzene	ug/L	<20	<5	<1	<1
Tetrachloroethene	ug/L	13.2 J	3.5 J	3.62	1.36
Toluene	ug/L	<20	<5	<1	<1
trans-1,2-Dichloroethene	ug/L	9.93 J	14.8	2.66	2.44
trans-1,3-Dichloropropene	ug/L	<20	<5	<1	<1
Trichloroethane	ug/L	1470	485	136 J	153
Trichlorofluoromethane	ug/L	<20	<5	<1	<1
Vinyl chloride	ug/L	<20	3.91 J	<1	<1

Notes

ug/L micrograms per liter

< Analyte not detected above RL

J Estimated result based on QC data or reported below RL

Method:

SW8260B - Volatile Organic Compounds

TABLE C-1
 MONITORING WELL SAMPLE ANALYTICAL RESULTS - VOCs - APRIL 2007
 ANNUAL OPERATIONS REPORT - 2007
 DUNN FIELD GROUNDWATER IRA - YEAR NINE
 Defense Depot Memphis, Tennessee

Analyte	Sample ID LabSample ID Date units	MW-165-89.9 L0704287-32 4/10/2007	MW-165A-73.9 L0704287-34 4/10/2007	MW-165A-84.5 L0704287-35 4/10/2007	MW-166-87.3 L0704220-19 4/9/2007
1,1,1,2-Tetrachloroethane	ug/L	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	ug/L	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	1.9	<0.5	2	5.46
1,1,2-Trichloroethane	ug/L	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	<1	<1	<1	<1
1,1-Dichloropropene	ug/L	<1	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	<2	<2	<2	<2
1,2-Dibromoethane	ug/L	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	ug/L	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	<1	<1	<1	<1
1,3-Dichloropropane	ug/L	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	ug/L	<1	<1	<1	<1
2,2-Dichloropropane	ug/L	<1	<1	<1	<1
2-Chlorotoluene	ug/L	<1	<1	<1	<1
4-Chlorotoluene	ug/L	<1	<1	<1	<1
Acetone	ug/L	14.1	14	<10	9.32 J
Benzene	ug/L	<0.4	<0.4	<0.4	<0.4
Bromobenzene	ug/L	<1	<1	<1	<1
Bromochloromethane	ug/L	<1	<1	<1	<1
Bromodichloromethane	ug/L	<0.5	<0.5	<0.5	<0.5
Bromoform	ug/L	<1	<1	<1	<1
Bromomethane	ug/L	<3	<3	<3	<3
Carbon tetrachloride	ug/L	3.9	0.449 J	6.23	8
Chlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5
Chloroethane	ug/L	<1	<1	<1	<1
Chloroform	ug/L	7.6	0.835	18	25.3
Chloromethane	ug/L	<1	<1	<1	<1
cis-1,2-Dichloroethane	ug/L	9.31	2.16	9.46	2.69
cis-1,3-Dichloropropene	ug/L	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	ug/L	<0.5	<0.5	<0.5	<0.5
Dibromomethane	ug/L	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	<1	<1	<1	<1
Ethylbenzene	ug/L	<1	<1	<1	<1
Hexachlorobutadiene	ug/L	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	ug/L	<1	<1	<1	<1
m,p-Xylene	ug/L	<2	<2	<2	<2
MEK (2-Butanone)	ug/L	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	ug/L	<5	<5	<5	<5
Methylene chloride	ug/L	0.36 J	<1	0.256 J	0.352 J
MIBK (methyl isobutyl ketone)	ug/L	<10	<10	<10	<10
Naphthalene	ug/L	<1	<1	<1	<1
n-Butylbenzene	ug/L	<1	<1	<1	<1
n-Propylbenzene	ug/L	<1	<1	<1	<1
o-Xylene	ug/L	0.317 J	<1	<1	<1
p-Isopropyltoluene	ug/L	<1	<1	<1	<1
sec-Butylbenzene	ug/L	<1	<1	<1	<1
Styrene	ug/L	<1	<1	<1	<1
tert-Butylbenzene	ug/L	<1	<1	<1	<1
Tetrachloroethane	ug/L	1.35	0.36 J	1.57	1
Toluene	ug/L	<1	<1	<1	<1
trans-1,2-Dichloroethane	ug/L	2	0.627 J	1.96	0.685 J
trans-1,3-Dichloropropene	ug/L	<1	<1	<1	<1
Trichloroethane	ug/L	134	49.6	131	25.6
Trichlorofluoromethane	ug/L	<1	<1	<1	<1
Vinyl chloride	ug/L	<1	<1	<1	<1

Notes:

ug/L micrograms per liter

< Analyte not detected above RL

J Estimated result based on QC data or reported below RL

Method:

SW8260B - Volatile Organic Compounds

TABLE C-1
 MONITORING WELL SAMPLE ANALYTICAL RESULTS - VOCs - APRIL 2007
 ANNUAL OPERATIONS REPORT - 2007
 DUNN FIELD GROUNDWATER IRA - YEAR NINE
 Defense Depot Memphis, Tennessee

Analyte	Sample ID LabSample ID Date units	MW-166-97.8 L0704220-20 4/9/2007	MW-166A-75.3 L0704220-21 4/9/2007	MW-167-76.5 L0704220-22 4/9/2007	MW-168-113.9 L0704220-23 4/9/2007
1,1,1,2-Tetrachloroethane	ug/L	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	ug/L	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	5.47	5.38	<0.5	<0.5
1,1,2-Trichloroethane	ug/L	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	<1	<1	<1	1.04
1,1-Dichloropropene	ug/L	<1	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	<2	<2	<2	<2
1,2-Dibromoethane	ug/L	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	ug/L	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	<1	<1	<1	<1
1,3-Dichloropropane	ug/L	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	ug/L	<1	<1	<1	<1
2,2-Dichloropropane	ug/L	<1	<1	<1	<1
2-Chlorotoluene	ug/L	<1	<1	<1	<1
4-Chlorotoluene	ug/L	<1	<1	<1	<1
Acetone	ug/L	<10	<10	13.1	13.8
Benzene	ug/L	<0.4	<0.4	<0.4	<0.4
Bromobenzene	ug/L	<1	<1	<1	<1
Bromochloromethane	ug/L	<1	<1	<1	<1
Bromodichloromethane	ug/L	<0.5	<0.5	<0.5	<0.5
Bromoform	ug/L	<1	<1	<1	<1
Bromomethane	ug/L	<3	<3	<3	<3
Carbon tetrachloride	ug/L	12.5	7.29	<1	<1
Chlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5
Chloroethane	ug/L	<1	<1	<1	<1
Chloroform	ug/L	33.1	30.1	<0.3	<0.3
Chloromethane	ug/L	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	2.49	2.42	<1	<1
cis-1,3-Dichloropropene	ug/L	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	ug/L	<0.5	<0.5	<0.5	<0.5
Dibromomethane	ug/L	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	<1	<1	<1	<1
Ethylbenzene	ug/L	<1	<1	<1	<1
Hexachlorobutadiene	ug/L	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	ug/L	<1	<1	<1	<1
m,p-Xylene	ug/L	<2	<2	<2	<2
MEK (2-Butanone)	ug/L	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	ug/L	<5	<5	<5	<5
Methylene chloride	ug/L	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	ug/L	<10	<10	<10	<10
Naphthalene	ug/L	<1	<1	<1	<1
n-Butylbenzene	ug/L	<1	<1	<1	<1
n-Propylbenzene	ug/L	<1	<1	<1	<1
o-Xylene	ug/L	<1	<1	<1	<1
p-Isopropyltoluene	ug/L	<1	<1	<1	<1
sec-Butylbenzene	ug/L	<1	<1	<1	<1
Styrene	ug/L	<1	<1	<1	<1
tert-Butylbenzene	ug/L	<1	<1	<1	<1
Tetrachloroethene	ug/L	1.28	0.854 J	<1	<1
Toluene	ug/L	<1	<1	<1	0.258 J
trans-1,2-Dichloroethene	ug/L	0.547 J	0.527 J	<1	<1
trans-1,3-Dichloropropene	ug/L	<1	<1	<1	<1
Trichloroethene	ug/L	23.2	25.7	<1	0.66 J
Trichlorofluoromethane	ug/L	<1	<1	<1	<1
Vinyl chloride	ug/L	<1	<1	<1	<1

Notes

µg/L micrograms per liter

< Analyte not detected above RL

J Estimated result based on QC data or reported below RL

Method

SW8260B - Volatile Organic Compounds

TABLE C-1
 MONITORING WELL SAMPLE ANALYTICAL RESULTS - VOCs - APRIL 2007
 ANNUAL OPERATIONS REPORT - 2007
 DUNN FIELD GROUNDWATER IRA - YEAR NINE
 Defense Depot Memphis, Tennessee

Analyte	Sample ID Lab Sample ID Date units	MW-168A-76.4 L0704220-24 4/9/2007	MW-168A-86.9 L0704220-25 4/9/2007	MW-169-81.8 L0704220-26 4/9/2007	MW-170-61.7 L0704220-27 4/9/2007
1,1,1,2-Tetrachloroethane	ug/L	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	ug/L	13.5	1.68	<1	0.833 J
1,1,2,2-Tetrachloroethane	ug/L	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	ug/L	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	0.512 J	<1	<1	1.81
1,1-Dichloroethene	ug/L	22.9	4.85	<1	3.67
1,1-Dichloropropene	ug/L	<1	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	<2	<2	<2	<2
1,2-Dibromoethane	ug/L	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	ug/L	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	<1	<1	<1	<1
1,3-Dichloropropane	ug/L	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	ug/L	<0.5	<0.5	0.316 J	<0.5
1-Chlorohexane	ug/L	<1	<1	<1	<1
2,2-Dichloropropane	ug/L	<1	<1	<1	<1
2-Chlorotoluene	ug/L	<1	<1	<1	<1
4-Chlorotoluene	ug/L	<1	<1	<1	<1
Acetone	ug/L	9.85 J	<10	12.3	9.02 J
Benzene	ug/L	<0.4	<0.4	<0.4	<0.4
Bromobenzene	ug/L	<1	<1	<1	<1
Bromochloromethane	ug/L	<1	<1	<1	<1
Bromodichloromethane	ug/L	<0.5	<0.5	<0.5	<0.5
Bromoform	ug/L	<1	<1	<1	<1
Bromomethane	ug/L	<3	<3	<3	<3
Carbon tetrachloride	ug/L	0.276 J	<1	<1	<1
Chlorobenzene	ug/L	<0.5	<0.5	2.15	<0.5
Chloroethane	ug/L	<1	<1	<1	<1
Chloroform	ug/L	0.71	0.171 J	<0.3	<0.3
Chloromethane	ug/L	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	<1	<1	<1	<1
cis-1,3-Dichloropropene	ug/L	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	ug/L	<0.5	<0.5	<0.5	<0.5
Dibromomethane	ug/L	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	<1	<1	<1	<1
Ethylbenzene	ug/L	<1	<1	<1	<1
Hexachlorobutadiene	ug/L	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	ug/L	<1	<1	<1	<1
m,p-Xylene	ug/L	<2	<2	<2	<2
MEK (2-Butanone)	ug/L	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	ug/L	<5	<5	<5	<5
Methylene chloride	ug/L	<1	<1	0.269 J	<1
MIBK (methyl isobutyl ketone)	ug/L	<10	<10	<10	<10
Naphthalene	ug/L	<1	<1	<1	<1
n-Butylbenzene	ug/L	<1	<1	<1	<1
n-Propylbenzene	ug/L	<1	<1	<1	<1
o-Xylene	ug/L	<1	<1	<1	<1
p-Isopropyltoluene	ug/L	<1	<1	<1	<1
sec-Butylbenzene	ug/L	<1	<1	<1	<1
Styrene	ug/L	<1	<1	<1	<1
tert-Butylbenzene	ug/L	<1	<1	<1	<1
Tetrachloroethane	ug/L	0.887 J	0.464 J	<1	<1
Toluene	ug/L	<1	0.342 J	<1	<1
trans-1,2-Dichloroethene	ug/L	<1	<1	<1	<1
trans-1,3-Dichloropropene	ug/L	<1	<1	<1	<1
Trichloroethene	ug/L	1.08	0.565 J	<1	<1
Trichlorofluoromethane	ug/L	<1	<1	<1	<1
Vinyl chloride	ug/L	<1	<1	<1	<1

Notes:

µg/L micrograms per liter

< Analyte not detected above RL

J Estimated result based on QC data or reported below RL

Method:

SW8260B - Volatile Organic Compounds

TABLE C-1
 MONITORING WELL SAMPLE ANALYTICAL RESULTS - VOCs - APRIL 2007
 ANNUAL OPERATIONS REPORT - 2007
 DUNN FIELD GROUNDWATER IRA - YEAR NINE
 Defense Depot Memphis, Tennessee

Analyte	Sample ID LabSample ID Date units	MW-170-77.7 L0704220-28 4/9/2007	MW-171-62.4 L0704220-29 4/9/2007
1,1,1,2-Tetrachloroethane	ug/L	<0.5	<0.5
1,1,1-Trichloroethane	ug/L	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	<0.5	<0.5
1,1,2-Trichloroethane	ug/L	<1	<1
1,1-Dichloroethane	ug/L	<1	<1
1,1-Dichloroethene	ug/L	<1	<1
1,1-Dichloropropene	ug/L	<1	<1
1,2,3-Trichlorobenzene	ug/L	<1	<1
1,2,3-Trichloropropane	ug/L	<1	<1
1,2,4-Trichlorobenzene	ug/L	<1	<1
1,2,4-Trimethylbenzene	ug/L	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	<2	<2
1,2-Dibromoethane	ug/L	<1	<1
1,2-Dichlorobenzene	ug/L	<1	<1
1,2-Dichloroethane	ug/L	<0.5	<0.5
1,2-Dichloropropane	ug/L	<1	<1
1,3,5-Trimethylbenzene	ug/L	<1	<1
1,3-Dichlorobenzene	ug/L	<1	<1
1,3-Dichloropropane	ug/L	<0.4	<0.4
1,4-Dichlorobenzene	ug/L	<0.5	<0.5
1-Chlorohexane	ug/L	<1	<1
2,2-Dichloropropane	ug/L	<1	<1
2-Chlorotoluene	ug/L	<1	<1
4-Chlorotoluene	ug/L	<1	<1
Acetone	ug/L	12.8	13
Benzene	ug/L	<0.4	<0.4
Bromobenzene	ug/L	<1	<1
Bromochloromethane	ug/L	<1	<1
Bromodichloromethane	ug/L	<0.5	<0.5
Bromoform	ug/L	<1	<1
Bromomethane	ug/L	<3	<3
Carbon tetrachloride	ug/L	<1	<1
Chlorobenzene	ug/L	<0.5	<0.5
Chloroethane	ug/L	<1	<1
Chloroform	ug/L	<0.3	<0.3
Chloromethane	ug/L	<1	<1
cis-1,2-Dichloroethene	ug/L	<1	<1
cis-1,3-Dichloropropene	ug/L	<0.5	<0.5
Dibromochloromethane	ug/L	<0.5	<0.5
Dibromomethane	ug/L	<1	<1
Dichlorodifluoromethane	ug/L	<1	<1
Ethylbenzene	ug/L	<1	<1
Hexachlorobutadiene	ug/L	<0.6	<0.6
Isopropylbenzene	ug/L	<1	<1
m,p-Xylene	ug/L	<2	<2
MEK (2-Butanone)	ug/L	<10	<10
Methyl t-butyl ether (MTBE)	ug/L	<5	<5
Methylene chloride	ug/L	<1	<1
MIBK (methyl isobutyl ketone)	ug/L	<10	<10
Naphthalene	ug/L	<1	<1
n-Butylbenzene	ug/L	<1	<1
n-Propylbenzene	ug/L	<1	<1
o-Xylene	ug/L	<1	<1
p-Isopropyltoluene	ug/L	<1	<1
sec-Butylbenzene	ug/L	<1	<1
Styrene	ug/L	<1	<1
tert-Butylbenzene	ug/L	<1	<1
Tetrachloroethene	ug/L	<1	<1
Toluene	ug/L	0.271 J	0.261 J
trans-1,2-Dichloroethene	ug/L	<1	<1
trans-1,3-Dichloropropene	ug/L	<1	<1
Trichloroethene	ug/L	<1	<1
Trichlorofluoromethane	ug/L	<1	<1
Vinyl chloride	ug/L	<1	<1

Notes:

µg/L micrograms per liter

< Analyte not detected above RL

J Estimated result based on QC data or reported below RL

Method:

SW8260B - Volatile Organic Compounds

TABLE C-2
MONITORING WELL SAMPLE ANALYTICAL RESULTS - VOCs - OCTOBER 2007
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

Analyte	Sample ID Lab Sample ID Date	MW-07-68 9 L0710237-12 10/8/2007	MW-31-71 6 L0710210-16 10/5/2007	MW-31-77 1 L0710210-17 10/5/2007	MW-32-65 6 L0710237-13 10/8/2007	MW-33-58 L0710237-14 10/8/2007
units						
1,1,1,2-Tetrachloroethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	ug/L	0.282 J	0.893 J	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	<0.5	0.262 J	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	ug/L	<1	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	0.559 J	0.282 J	<1	<1	<1
1,1-Dichloroethene	ug/L	12.8	4.69	7.73	<1	<1
1,1-Dichloropropene	ug/L	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	<1	<2	<2	<2	<2
1,2-Dibromoethane	ug/L	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,3-Dichloropropane	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	ug/L	<1	<1	<1	<1	<1
2,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1
2-Chlorotoluene	ug/L	<1	<1	<1	<1	<1
2-Hexanone	ug/L	<10	<10	<10	<10	<10
4-Chlorotoluene	ug/L	<1	<1	<1	<1	<1
Acetone	ug/L	14.5 B	9.92 J	12	11.8 B	12.5 B
Benzene	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	ug/L	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	ug/L	<1	<1	<1	<1	<1
Bromomethane	ug/L	<1	<1	<1	<1	<1
Carbon disulfide	ug/L	<1	<1	<1	<1	<1
Carbon tetrachloride	ug/L	0.48 J	0.48 J	<1	<1	1.5
Chlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	ug/L	<1	<1	<1	<1	<1
Chloroform	ug/L	13.8	0.398	0.249 J	<0.3	<0.3
Chloromethane	ug/L	0.69 J	<1	0.373 J	0.44 J	<1
cis-1,2-Dichloroethene	ug/L	<1	8.45	0.779 J	<1	<1
cis-1,3-Dichloropropene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	ug/L	<1	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	<1	<1	<1	<1	<1
Ethylbenzene	ug/L	<1	<1	<1	<1	<1
Hexachlorobutadiene	ug/L	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	ug/L	<1	<1	<1	<1	<1
m,p-Xylene	ug/L	<2	<2	<2	<2	<2
MEK (2-Butanone)	ug/L	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	ug/L	<5	<5	<5	<5	<5
Methylene chloride	ug/L	<1	<1	<1	<1	<1
MIBK (methyl isohexyl ketone)	ug/L	<10	<10	<10	<10	<10
Naphthalene	ug/L	<1	<1	<1	<1	<1
n-Butylbenzene	ug/L	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	<1	<1	<1	<1	<1
o-Xylene	ug/L	<1	<1	<1	<1	<1
p-Isopropyltoluene	ug/L	<1	<1	<1	<1	<1
sec-Butylbenzene	ug/L	<1	<1	<1	<1	<1
Styrene	ug/L	<1	<1	<1	<1	<1
tert-Butylbenzene	ug/L	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	24.3	0.887 J	0.661 J	<1	<1
Toluene	ug/L	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	<1	5.23	0.847 J	<1	<1
trans-1,3-Dichloropropene	ug/L	<1	<1	<1	<1	<1
Trichloroethene	ug/L	16	34.2	5.87	<1	<1
Trichlorofluoromethane	ug/L	<1	<1	<1	<1	<1
Vinyl acetate	ug/L	<5	<5	<5	<5	<5
Vinyl chloride	ug/L	<1	<1	<1	<1	<1

Notes:

μg/L micrograms per liter

< Analyte not detected above RL

J Estimated result based on QC data or reported below RL

B Estimated result biased high or false positive based on blank data

Method:

SW8260B - Volatile Organic Compounds

TABLE C-2
MONITORING WELL SAMPLE ANALYTICAL RESULTS - VOCs - OCTOBER 2007
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

Analyte	Sample ID LabSample ID Date	MW-37-173 2 L0710237-15 10/8/2007	MW-37-173 2 DUP L0710238-10 10/8/2007	MW-40-90 L0710237-01 10/8/2007	MW-43-165 5 L0710210-01 10/5/2007	MW-44-69 L0710210-02 10/5/2007
units						
1,1,1,2-Tetrachloroethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	ug/L	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	0.788	0.737	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	ug/L	<1	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	<1	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	<1	<1	<1	<1	<1
1,1-Dichloropropene	ug/L	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	<2	<2	<2	<2	<2
1,2-Dibromochloroethane	ug/L	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,3-Dichloropropane	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	ug/L	0.173 J	0.191 J	<0.5	<0.5	<0.5
1-Chlorohexane	ug/L	<1	<1	<1	<1	<1
2,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1
2-Chlorotoluene	ug/L	<1	<1	<1	<1	<1
2-Hexanone	ug/L	<10	<10	<10	<10	<10
4-Chlorotoluene	ug/L	<1	<1	<1	<1	<1
Acetone	ug/L	8.49 B	10.4	8.91 B	10.2	11.9
Benzene	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	ug/L	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoforn	ug/L	<1	<1	<1	<1	<1
Bromomethane	ug/L	<1	<1	<1	<1	<1
Carbon disulfide	ug/L	<1	<1	<1	0.588 J	<1
Carbon tetrachloride	ug/L	4.12	4.15	<1	<1	1.2
Chlorobenzene	ug/L	<0.5	<0.5	1.26	<0.5	<0.5
Chloroethane	ug/L	<1	<1	<1	<1	<1
Chloroform	ug/L	6.01	6.23	<0.3	<0.3	0.63
Chloromethane	ug/L	<1	<1	<1	<1	0.584 J
cis-1,2-Dichloroethene	ug/L	0.29 J	0.33 J	<1	<1	<1
cis-1,3-Dichloropropene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	ug/L	<1	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	<1	<1	<1	<1	<1
Ethylbenzene	ug/L	<1	<1	<1	<1	<1
Hexachlorobutadiene	ug/L	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	ug/L	<1	<1	<1	<1	<1
m,p-Xylene	ug/L	<2	<2	<2	<2	<2
MEK (2-Butanone)	ug/L	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	ug/L	<5	<5	<5	<5	<5
Methylene chloride	ug/L	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	ug/L	<10	<10	<10	<10	<10
Naphthalene	ug/L	<1	<1	<1	<1	<1
n-Butylbenzene	ug/L	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	<1	<1	<1	<1	<1
o-Xylene	ug/L	<1	<1	<1	<1	<1
p-Isopropyltoluene	ug/L	<1	<1	<1	<1	<1
sec-Butylbenzene	ug/L	<1	<1	<1	<1	<1
Styrene	ug/L	<1	<1	<1	<1	<1
tert-Butylbenzene	ug/L	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	0.637 J	0.693 J	<1	<1	<1
Toluene	ug/L	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	ug/L	<1	<1	<1	<1	<1
Trichloroethene	ug/L	2.71	2.91	<1	<1	0.467 J
Trichlorofluoromethane	ug/L	<1	<1	<1	<1	<1
Vinyl acetate	ug/L	<5	<5	<5	<5	<5
Vinyl chloride	ug/L	<1	<1	<1	<1	<1

Notes:

µg/L micrograms per liter
 < Analyte not detected above RL
 J Estimated result based on QC data or reported below RL
 B Estimated result biased high or false positive based on blank data
Method:
 SW8260B - Volatile Organic Compounds

TABLE C-2
MONITORING WELL SAMPLE ANALYTICAL RESULTS - VOCs - OCTOBER 2007
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

Analyte	Sample ID	MW-54-89.5	MW-57-66.6	MW-67-267.5	MW-68-77.5	MW-69-88.2
	Lab Sample ID	L0710237-20	L0710210-03	L0710210-04	L0710237-16	L0710237-17
	Date	10/8/2007	10/5/2007	10/5/2007	10/8/2007	10/8/2007
Analyte	units					
1,1,1,2-Tetrachloroethane	ug/L	<2.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	ug/L	<5	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	80	<0.5	<0.5	1.51	<0.5
1,1,2-Trichloroethane	ug/L	<5	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	<5	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	<5	<1	<1	<1	<1
1,1-Dichloropropene	ug/L	<5	<1	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	<5	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	<5	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	<5	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	<5	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	<10	<2	<2	<2	<2
1,2-Dibromoethane	ug/L	<5	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	<5	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	<2.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	ug/L	<5	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	<5	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	<5	<1	<1	<1	<1
1,3-Dichloropropane	ug/L	<2	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	ug/L	<2.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	ug/L	<5	<1	<1	<1	<1
2,2-Dichloropropane	ug/L	<5	<1	<1	<1	<1
2-Chlorotoluene	ug/L	<5	<1	<1	<1	<1
2-Hexanone	ug/L	<50	<10	<10	<10	<10
4-Chlorotoluene	ug/L	<5	<1	<1	<1	<1
Acetone	ug/L	<50	13.8	8.52 J	9.62 B	6.98 B
Benzene	ug/L	<2	<0.4	<0.4	<0.4	<0.4
Bromobenzene	ug/L	<5	<1	<1	<1	<1
Bromochloromethane	ug/L	<5	<1	<1	<1	<1
Bromodichloromethane	ug/L	<2.5	<0.5	<0.5	<0.5	<0.5
Bromoform	ug/L	<5	<1	<1	<1	<1
Bromomethane	ug/L	<5	<1	<1	<1	<1
Carbon disulfide	ug/L	<5	<1	<1	<1	<1
Carbon tetrachloride	ug/L	5.74	22.9	<1	<1	<1
Chlorobenzene	ug/L	<2.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	ug/L	<5	<1	<1	<1	<1
Chloroform	ug/L	3.17	6.29	<0.3	0.775	0.136 J
Chloromethane	ug/L	<5	0.454 J	<1	0.449 J	<1
cis-1,2-Dichloroethene	ug/L	19.2	0.371 J	<1	2.36	<1
cis-1,3-Dichloropropene	ug/L	<2.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	ug/L	<2.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	ug/L	<5	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	<5	<1	<1	<1	<1
Ethylbenzene	ug/L	<5	<1	<1	<1	<1
Hexachlorobutadiene	ug/L	<3	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	ug/L	<5	<1	<1	<1	<1
m,p-Xylene	ug/L	<10	<2	<2	<2	<2
MEK (2-Butanone)	ug/L	<50	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	ug/L	<25	<5	<5	<5	<5
Methylene chloride	ug/L	3.85 B	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	ug/L	<50	<10	<10	<10	<10
Naphthalene	ug/L	<5	<1	<1	<1	<1
n-Butylbenzene	ug/L	<5	<1	<1	<1	<1
n-Propylbenzene	ug/L	<5	<1	<1	<1	<1
o-Xylene	ug/L	<5	<1	<1	<1	<1
p-Isopropyltoluene	ug/L	<5	<1	<1	<1	<1
sec-Butylbenzene	ug/L	<5	<1	<1	<1	<1
Styrene	ug/L	<5	<1	<1	<1	<1
tert-Butylbenzene	ug/L	<5	<1	<1	<1	<1
Tetrachloroethene	ug/L	5.06	4.48	<1	0.738 J	1.03
Toluene	ug/L	<5	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	4.48 J	0.719 J	<1	0.585 J	<1
trans-1,3-Dichloropropene	ug/L	<5	<1	<1	<1	<1
Trichloroethene	ug/L	474	31.2	<1	4.73	<1
Trichlorofluoromethane	ug/L	<5	<1	<1	<1	<1
Vinyl acetate	ug/L	<25	<5	<5	<5	<5
Vinyl chloride	ug/L	<5	<1	<1	<1	<1

Notes:

µg/L micrograms per liter

< Analyte not detected above RL

J Estimated result based on QC data or reported below RL

B Estimated result biased high or false positive based on blank data

Method:

SW8260B - Volatile Organic Compounds

TABLE C-2
MONITORING WELL SAMPLE ANALYTICAL RESULTS - VOCs - OCTOBER 2007
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

Analyte	Sample ID LabSample ID Date units	MW-70-83 3 L0710237-18 10/8/2007	MW-70-88 8 L0710237-19 10/8/2007	MW-70-88 8 DUP L0710238-09 10/8/2007	MW-71-72 3 L0710237-03 10/8/2007	MW-76-88 2 L0710237-04 10/8/2007
1,1,1,2-Tetrachloroethane	ug/L	<1	<1	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	ug/L	<2	<2	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	237	455	448	2.21	22.8
1,1,2-Trichloroethane	ug/L	14.7	1.31 J	1.14	<1	<1
1,1-Dichloroethane	ug/L	<2	<2	<1	<1	<1
1,1-Dichloroethene	ug/L	2.48	<2	<1	<1	<1
1,1-Dichloropropene	ug/L	<2	<2	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	<2	0.602 B	<1	<1	<1
1,2,3-Trichloropropane	ug/L	<2	<2	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	<2	<2	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	<2	<2	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	<4	<4	<2	<2	<2
1,2-Dibromoethane	ug/L	<2	<2	<1	<1	<1
1,2-Dichlorobenzene	ug/L	<2	<2	<1	<1	<1
1,2-Dichloroethane	ug/L	<1	<1	<0.5	<0.5	<0.5
1,2-Dichloropropane	ug/L	<2	<2	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	<2	<2	<1	<1	<1
1,3-Dichlorobenzene	ug/L	<2	<2	<1	<1	<1
1,3-Dichloropropane	ug/L	<0.8	<0.8	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	ug/L	0.787 J	<1	<0.5	<0.5	0.273 J
1-Chlorohexane	ug/L	<2	<2	<1	<1	<1
2,2-Dichloropropane	ug/L	<2	<2	<1	<1	<1
2-Chlorotoluene	ug/L	<2	<2	<1	<1	<1
2-Hexanone	ug/L	<20	<20	<10	<10	<10
4-Chlorotoluene	ug/L	<2	<2	<1	<1	<1
Acetone	ug/L	9.31 B	9.7 B	11.8	10.1 B	10.5
Benzene	ug/L	<0.8	<0.8	<0.4	<0.4	<0.4
Bromobenzene	ug/L	<2	<2	<1	<1	<1
Bromochloromethane	ug/L	<2	<2	<1	<1	<1
Bromodichloromethane	ug/L	<1	<1	<0.5	<0.5	<0.5
Bromoform	ug/L	<2	<2	<1	<1	<1
Bromomethane	ug/L	<2	<2	<1	<1	<1
Carbon disulfide	ug/L	<2	<2	<1	<1	<1
Carbon tetrachloride	ug/L	<2	<2	<1	12.6	1.51
Chlorobenzene	ug/L	<1	<1	<0.5	<0.5	<0.5
Chloroethane	ug/L	<2	<2	<1	<1	<1
Chloroform	ug/L	0.256 J	0.461 J	0.434	32.6	1.06
Chloromethane	ug/L	<2	<2	<1	0.302 J	<1
cis-1,2-Dichloroethene	ug/L	61.1	8.01	8.3	1.65	12.2
cis-1,3-Dichloropropene	ug/L	<1	<1	<0.5	<0.5	<0.5
Dibromochloromethane	ug/L	<1	<1	<0.5	<0.5	<0.5
Dibromomethane	ug/L	<2	<2	<1	<1	<1
Dichlorodifluoromethane	ug/L	<2	<2	<1	<1	<1
Ethylbenzene	ug/L	<2	<2	<1	<1	<1
Hexachlorobutadiene	ug/L	<1.2	1.19 J	<0.6	<0.6	<0.6
Isopropylbenzene	ug/L	<2	<2	<1	<1	<1
m,p-Xylene	ug/L	<4	<4	<2	<2	<2
MEK (2-Butanone)	ug/L	<20	<20	<10	<10	<10
Methyl t-butyl ether (MTBE)	ug/L	<10	<10	<5	<5	<5
Methylene chloride	ug/L	<2	<2	<1	<1	<1
MIBK (methyl isobutyl ketone)	ug/L	<20	<20	<10	<10	<10
Naphthalene	ug/L	<2	0.543 J	<1	<1	<1
n-Butylbenzene	ug/L	<2	<2	<1	<1	<1
n-Propylbenzene	ug/L	<2	<2	<1	<1	<1
o-Xylene	ug/L	<2	<2	<1	<1	<1
p-Isopropyltoluene	ug/L	<2	<2	<1	<1	<1
sec-Butylbenzene	ug/L	<2	<2	<1	<1	<1
Styrene	ug/L	<2	<2	<1	<1	<1
tert-Butylbenzene	ug/L	<2	<2	<1	<1	<1
Tetrachloroethene	ug/L	1.31 J	4.44	3.91	1.52	4.7
Toluene	ug/L	<2	<2	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	11.5	1.38 J	1.41	0.36 J	5.51
trans-1,3-Dichloropropene	ug/L	<2	<2	<1	<1	<1
Trichloroethene	ug/L	119	308	306	21	172 J
Trichlorofluoromethane	ug/L	<2	<2	<1	<1	<1
Vinyl acetate	ug/L	<10	<10	<5	<5	<5
Vinyl chloride	ug/L	42.3	<2	<1	<1	<1

Notes:

- µg/L micrograms per liter
 < Analyte not detected above RL
 J Estimated result based on QC data or reported below RL
 B Estimated result biased high or false positive based on blank data

Method:

SW8260B - Volatile Organic Compounds

TABLE C-2
MONITORING WELL SAMPLE ANALYTICAL RESULTS - VOCs - OCTOBER 2007
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

Analyte	Sample ID Lab Sample ID Date	MW-76-88.2 DUP L0710238-01 10/8/2007	MW-77-84.9 L0710237-05 10/8/2007	MW-79-92 L0710237-21 10/8/2007	MW-130-69.5 L0710210-05 10/5/2007	MW-144-74.9 L0710237-06 10/8/2007
units						
1,1,1,2-Tetrachloroethane	ug/L	<0.5	0.297 J	<0.5	<0.5	0.372 J
1,1,1-Trichloroethane	ug/L	<1	<1	<1	2.28	<1
1,1,2,2-Tetrachloroethane	ug/L	18.4	1980	<0.5	<0.5	841
1,1,2-Trichloroethane	ug/L	<1	2.59	<1	<1	8.75
1,1-Dichloroethane	ug/L	<1	<1	0.23 J	3.88	<1
1,1-Dichloroethene	ug/L	<1	<1	13.7	74	<1
1,1-Dichloropropene	ug/L	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	<2	<2	<2	<2	<2
1,2-Dibromoethane	ug/L	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	<0.5	<0.5	<0.5	0.932	0.625
1,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,3-Dichloropropane	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	ug/L	0.203 J	0.157 J	<0.5	<0.5	<0.5
1-Chlorohexane	ug/L	<1	<1	<1	<1	<1
2,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1
2-Chlorotoluene	ug/L	<1	<1	<1	<1	<1
2-Hexanone	ug/L	<10	<10	<10	<10	<10
4-Chlorotoluene	ug/L	<1	<1	<1	<1	<1
Acetone	ug/L	11.6 B	11.1 B	3.43 B	9.13 J	9.29 B
Benzene	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	ug/L	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoforn	ug/L	<1	<1	<1	<1	<1
Bromomethane	ug/L	<1	<1	<1	<1	<1
Carbon disulfide	ug/L	<1	<1	<1	<1	<1
Carbon tetrachloride	ug/L	<1	<1	<1	<1	1.59
Chlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	ug/L	<1	<1	<1	<1	<1
Chloroform	ug/L	0.978	0.822	<0.3	0.291 J	1.7
Chloromethane	ug/L	<1	0.295 J	<1	0.308 J	<1
cis-1,2-Dichloroethene	ug/L	11.8	22.1	<1	0.82 J	26.3
cis-1,3-Dichloropropene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	ug/L	<1	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	<1	<1	<1	<1	<1
Ethylbenzene	ug/L	<1	<1	<1	<1	<1
Hexachlorobutadiene	ug/L	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	ug/L	<1	<1	<1	<1	<1
m-,p-Xylene	ug/L	<2	<2	<2	<2	<2
MEK (2-Butanone)	ug/L	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	ug/L	<5	<5	<5	<5	<5
Methylene chloride	ug/L	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	ug/L	<10	<10	<10	<10	<10
Naphthalene	ug/L	<1	<1	<1	<1	<1
n-Butylbenzene	ug/L	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	<1	<1	<1	<1	<1
o-Xylene	ug/L	<1	<1	<1	<1	<1
p-Isopropyltoluene	ug/L	<1	<1	<1	<1	<1
sec-Butylbenzene	ug/L	<1	<1	<1	<1	<1
Styrene	ug/L	<1	<1	<1	<1	<1
tert-Butylbenzene	ug/L	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	4.82	17	1.14	147	3.49
Toluene	ug/L	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	5.79	2.16	<1	<1	2.24
trans-1,3-Dichloropropene	ug/L	<1	<1	<1	<1	<1
Trichloroethene	ug/L	132	1290	3.27	67.4	464
Trichlorofluoromethane	ug/L	<1	<1	<1	<1	<1
Vinyl acetate	ug/L	<5	<5	<5	<5	<5
Vinyl chloride	ug/L	<1	<1	<1	<1	<1

Notes:

µg/L micrograms per liter

< Analyte not detected above RL

J Estimated result based on QC data or reported below RL

B Estimated result biased high or false positive based on blank data

Method:

SW8260B - Volatile Organic Compounds

TABLE C-2
MONITORING WELL SAMPLE ANALYTICAL RESULTS - VOCs - OCTOBER 2007
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

Analyte	Sample ID LabSample ID Date	MW-144-74 9 DUP L0710238-05 10/8/2007	MW-145-86 6 L0710237-22 10/8/2007	MW-147-73 7 L0710210-18 10/5/2007	MW-148-80 0 L0710210-21 10/5/2007	MW-148-85 5 L0710210-22 10/5/2007
		units				
1,1,1,2-Tetrachloroethane	ug/L	0 359 J	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	ug/L	<1	<1	5.13	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	966	<0.5	198	3.43	2.67
1,1,2-Trichloroethane	ug/L	10.1	<1	4.47	<1	<1
1,1-Dichloroethane	ug/L	<1	<1	0.229 J	<1	<1
1,1-Dichloroethene	ug/L	<1	<1	5.65	<1	<1
1,1-Dichloropropene	ug/L	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	<2	<2	<2	<2	<2
1,2-Dibromoethane	ug/L	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	0.602	<0.5	0.686	<0.5	<0.5
1,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,3-Dichloropropane	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5	0.5
1-Chlorohexane	ug/L	<1	<1	<1	<1	<1
2,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1
2-Chlorotoluene	ug/L	<1	<1	<1	<1	<1
2-Hexanone	ug/L	<10	<10	<10	<10	<10
4-Chlorotoluene	ug/L	<1	<1	<1	<1	<1
Acetone	ug/L	10.7	5.08 B	7.12 J	8.34 J	11.6
Benzene	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	ug/L	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoforn	ug/L	<1	<1	<1	<1	<1
Bromomethane	ug/L	<1	<1	<1	<1	<1
Carbon disulfide	ug/L	<1	<1	<1	<1	<1
Carbon tetrachloride	ug/L	1.4	<1	2.3	<1	<1
Chlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	ug/L	<1	<1	<1	<1	<1
Chloroform	ug/L	1.71	<0.3	4.6	1.09	0.398
Chloromethane	ug/L	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	27.8	<1	120 J	18.8	4.58
cis-1,3-Dichloropropene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	ug/L	<1	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	<1	<1	<1	<1	<1
Ethylbenzene	ug/L	<1	<1	<1	<1	<1
Hexachlorobutadiene	ug/L	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	ug/L	<1	<1	<1	<1	<1
m-,p-Xylene	ug/L	<2	<2	<2	<2	<2
MEK (2-Butanone)	ug/L	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	ug/L	<5	<5	<5	<5	<5
Methylene chloride	ug/L	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	ug/L	<10	<10	<10	<10	<10
Naphthalene	ug/L	<1	<1	<1	<1	<1
n-Butylbenzene	ug/L	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	<1	<1	<1	<1	<1
o-Xylene	ug/L	<1	<1	<1	<1	<1
p-Isopropyltoluene	ug/L	<1	<1	<1	<1	<1
sec-Butylbenzene	ug/L	<1	<1	<1	<1	<1
Styrene	ug/L	<1	<1	<1	<1	<1
tert-Butylbenzene	ug/L	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	3.15	<1	8.97	3.78	1.24
Toluene	ug/L	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	2.2	<1	28.9	6.68	1.83
trans-1,3-Dichloropropene	ug/L	<1	<1	<1	<1	<1
Trichloroethene	ug/L	416	<1	169	123	22.7
Trichlorofluoromethane	ug/L	<1	<1	<1	<1	<1
Vinyl acetate	ug/L	<5	<5	<5	<5	<5
Vinyl chloride	ug/L	<1	<1	<1	<1	<1

Notes:

- µg/L micrograms per liter
 < Analyte not detected above RL
 J Estimated result based on QC data or reported below RL
 B Estimated result based high or false positive based on blank data

Method:

SW8260B - Volatile Organic Compounds

TABLE C-2
MONITORING WELL SAMPLE ANALYTICAL RESULTS - VOCs - OCTOBER 2007
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

Analyte	Sample ID Lab Sample ID Date	MW-149-83 6 L0710210-12 10/5/2007	MW-149-98 5 L0710210-13 10/5/2007	MW-150-83 2 L0710237-23 10/8/2007	MW-150-90 5 L0710237-24 10/8/2007	MW-151-78 5 L0710210-14 10/5/2007
Units						
1,1,1,2-Tetrachloroethane	ug/L	<0.5	<0.5	<12.5	<12.5	<0.5
1,1,1-Trichloroethane	ug/L	<1	<1	<25	<25	<1
1,1,2,2-Tetrachloroethane	ug/L	6.03	9.78	2640	3960	<0.5
1,1,2-Trichloroethane	ug/L	<1	0.346 J	54.4	87.2	<1
1,1-Dichloroethane	ug/L	<1	<1	<25	<25	<1
1,1-Dichloroethene	ug/L	<1	<1	<25	<25	<1
1,1-Dichloropropene	ug/L	<1	<1	<25	<25	<1
1,2,3-Trichlorobenzene	ug/L	<1	<1	<25	<25	<1
1,2,3-Trichloropropane	ug/L	<1	<1	<25	<25	<1
1,2,4-Trichlorobenzene	ug/L	<1	<1	<25	<25	<1
1,2,4-Trimethylbenzene	ug/L	<1	<1	<25	<25	<1
1,2-Dibromo-3-chloropropane	ug/L	<2	<2	<50	<50	<2
1,2-Dibromoethane	ug/L	<1	<1	<25	<25	<1
1,2-Dichlorobenzene	ug/L	<1	<1	<25	<25	<1
1,2-Dichloroethane	ug/L	<0.5	<0.5	<12.5	<12.5	<0.5
1,2-Dichloropropane	ug/L	<1	<1	<25	<25	<1
1,3,5-Trimethylbenzene	ug/L	<1	<1	<25	<25	<1
1,3-Dichlorobenzene	ug/L	<1	<1	<25	<25	<1
1,3-Dichloropropane	ug/L	<0.4	<0.4	<10	<10	<0.4
1,4-Dichlorobenzene	ug/L	<0.5	0.247 J	<12.5	<12.5	<0.5
1-Chlorohexane	ug/L	<1	<1	<25	<25	<1
2,2-Dichloropropane	ug/L	<1	<1	<25	<25	<1
2-Chlorotoluene	ug/L	<1	<1	<25	<25	<1
2-Hexanone	ug/L	<10	<10	<250	<250	<10
4-Chlorotoluene	ug/L	<1	<1	<25	<25	<1
Acetone	ug/L	11.6	7.3	<250	<250	8.88 J
Benzene	ug/L	<0.4	<0.4	<10	<10	<0.4
Bromobenzene	ug/L	<1	<1	<25	<25	<1
Bromochloromethane	ug/L	<1	<1	<25	<25	<1
Bromodichloromethane	ug/L	<0.5	<0.5	<12.5	<12.5	<0.5
Bromoforn	ug/L	<1	<1	<25	<25	<1
Bromomethane	ug/L	<1	<1	<25	<25	<1
Carbon disulfide	ug/L	<1	<1	<25	<25	<1
Carbon tetrachloride	ug/L	6.59	8.05	<25	<25	0.615 J
Chlorobenzene	ug/L	<0.5	<0.5	<12.5	<12.5	<0.5
Chloroethane	ug/L	<1	<1	<25	<25	<1
Chloroform	ug/L	38.6	54	<7.5	<7.5	0.292 J
Chloromethane	ug/L	<1	<1	<25	<25	<1
cis-1,2-Dichloroethene	ug/L	1.61	3.1	81.3	104	<1
cis-1,3-Dichloropropene	ug/L	<0.5	<0.5	<12.5	<12.5	<0.5
Dibromochloromethane	ug/L	<0.5	<0.5	<12.5	<12.5	<0.5
Dibromomethane	ug/L	<1	<1	<25	<25	<1
Dichlorodifluoromethane	ug/L	<1	<1	<25	<25	<1
Ethylbenzene	ug/L	<1	<1	<25	<25	<1
Hexachlorobutadiene	ug/L	<0.6	<0.6	<15	<15	<0.6
Isopropylbenzene	ug/L	<1	<1	<25	<25	<1
m-,p-Xylene	ug/L	<2	<2	<50	<50	<2
MEK (2-Butanone)	ug/L	<10	<10	<250	<250	<10
Methyl t-butyl ether (MTBE)	ug/L	<5	<5	<125	<125	<5
Methylene chloride	ug/L	<1	<1	20.9 B	9.34 B	<1
MIBK (methyl isobutyl ketone)	ug/L	<10	<10	<250	<250	<10
Naphthalene	ug/L	<1	<1	<25	<25	<1
n-Butylbenzene	ug/L	<1	<1	<25	<25	<1
n-Propylbenzene	ug/L	<1	<1	<25	<25	<1
o-Xylene	ug/L	<1	<1	<25	<25	<1
p-Isopropyltoluene	ug/L	<1	<1	<25	<25	<1
sec-Butylbenzene	ug/L	<1	<1	<25	<25	<1
Styrene	ug/L	<1	<1	<25	<25	<1
tert-Butylbenzene	ug/L	<1	<1	<25	<25	<1
Tetrachloroethene	ug/L	1.23	1.84	15.4 J	18.9 J	<1
Toluene	ug/L	<1	<1	<25	<25	<1
trans-1,2-Dichloroethene	ug/L	0.356 J	0.536 J	10.1	11.6 J	<1
trans-1,3-Dichloropropene	ug/L	<1	<1	<25	<25	<1
Trichloroethene	ug/L	19.2	30.1	1720	2470	0.422 J
Trichlorofluoromethane	ug/L	<1	<1	<25	<25	<1
Vinyl acetate	ug/L	<5	<5	<125	<125	<5
Vinyl chloride	ug/L	<1	<1	<25	<25	<1

Notes:

µg/L micrograms per liter

< Analyte not detected above RL

J Estimated result based on QC data or reported below RL

B Estimated result biased high or false positive based on blank data

Method:

SW8260B - Volatile Organic Compounds

TABLE C-2
MONITORING WELL SAMPLE ANALYTICAL RESULTS - VOCs - OCTOBER 2007
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

Analyte	Sample ID Lab Sample ID Date	MW-151-94.5 L0710210-15 10/5/2007	MW-152-107.9 L0710237-26 10/8/2007	MW-152-92.9 L0710237-25 10/8/2007	MW-153-87.1 L0710237-27 10/8/2007	MW-154-61.6 L0710210-06 10/5/2007
units						
1,1,1,2-Tetrachloroethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	ug/L	<1	<1	<1	1.39	<1
1,1,2,2-Tetrachloroethane	ug/L	0.408 J	2.39	4.85	<0.5	<0.5
1,1,2-Trichloroethane	ug/L	<1	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	<1	<1	<1	0.64 J	<1
1,1-Dichloroethene	ug/L	<1	<1	<1	5.61	<1
1,1-Dichloropropene	ug/L	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	<2	<2	<2	<2	<2
1,2-Dibromoethane	ug/L	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,3-Dichloropropane	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	ug/L	<1	<1	<1	<1	<1
2,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1
2-Chlorotoluene	ug/L	<1	<1	<1	<1	<1
2-Hexanone	ug/L	<10	<10	<10	<10	<10
4-Chlorotoluene	ug/L	<1	<1	<1	<1	<1
Acetone	ug/L	10.4	9.82 B	7.58 B	7.96 B	9.13 J
Benzene	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	ug/L	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoforn	ug/L	<1	<1	<1	<1	<1
Bromomethane	ug/L	<1	<1	<1	<1	<1
Carbon disulfide	ug/L	<1	<1	<1	<1	<1
Carbon tetrachloride	ug/L	3.9	<1	<1	<1	<1
Chlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	ug/L	<1	<1	<1	<1	<1
Chloroform	ug/L	12.4	0.709	1.03	<0.3	<0.3
Chloromethane	ug/L	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	1.29	7.71	14	0.302 J	<1
cis-1,3-Dichloropropene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	ug/L	<1	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	<1	<1	<1	<1	<1
Ethylbenzene	ug/L	<1	<1	<1	<1	<1
Hexachlorobutadiene	ug/L	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	ug/L	<1	<1	<1	<1	<1
m-,p-Xylene	ug/L	<2	<2	<2	<2	<2
MEK (2-Butanone)	ug/L	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	ug/L	<5	<5	<5	<5	<5
Methylene chloride	ug/L	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	ug/L	<10	<10	<10	<10	<10
Naphthalene	ug/L	<1	<1	<1	<1	<1
n-Butylbenzene	ug/L	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	<1	<1	<1	<1	<1
o-Xylene	ug/L	<1	<1	<1	<1	<1
p-Isopropyltoluene	ug/L	<1	<1	<1	<1	<1
sec-Butylbenzene	ug/L	<1	<1	<1	<1	<1
Styrene	ug/L	<1	<1	<1	<1	<1
tert-Butylbenzene	ug/L	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	0.859 J	7.69	6.87	0.714 J	0.437 J
Toluene	ug/L	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	0.304 J	2.89	5.18	<1	<1
trans-1,3-Dichloropropene	ug/L	<1	<1	<1	<1	<1
Trichloroethene	ug/L	16.8	95	145	0.272 J	<1
Trichlorofluoromethane	ug/L	<1	<1	<1	<1	<1
Vinyl acetate	ug/L	<5	<5	<5	<5	<5
Vinyl chloride	ug/L	<1	<1	<1	<1	<1

Notes:

µg/L micrograms per liter
 < Analyte not detected above RL
 J Estimated result based on QC data or reported below RL
 B Estimated result biased high or false positive based on blank data

Method:
 SW8260B - Volatile Organic Compounds

TABLE C-2
MONITORING WELL SAMPLE ANALYTICAL RESULTS - VOCs - OCTOBER 2007
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

Analyte	Sample ID LabSample ID Date	MW-155-77.0 L0710237-28 10/8/2007	MW-155-93.5 L0710237-29 10/8/2007	MW-156-62.0 L0710210-07 10/5/2007	MW-157-74.8 L0710237-07 10/8/2007	MW-157-74.8 DUP L0710238-06 10/8/2007
	units					
1,1,1,2-Tetrachloroethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	ug/L	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	1430	3400	<0.5	27	34
1,1,2-Trichloroethane	ug/L	45.1	80.3	<1	1.22	1.46
1,1-Dichloroethane	ug/L	<1	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	1.68	2.84	<1	<1	<1
1,1-Dichloropropene	ug/L	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	<2	<2	<2	<2	<2
1,2-Dibromoethane	ug/L	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	<0.5	0.287 J	<0.5	0.5	0.517
1,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,3-Dichloropropane	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	ug/L	<1	<1	<1	<1	<1
2,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1
2-Chlorotoluene	ug/L	<1	<1	<1	<1	<1
2-Hexanone	ug/L	<10	<10	<10	<10	<10
4-Chlorotoluene	ug/L	<1	<1	<1	<1	<1
Acetone	ug/L	6.85 B	6.77 B	12.7	10.9 B	11.5
Benzene	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	ug/L	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoforn	ug/L	<1	<1	<1	<1	<1
Bromomethane	ug/L	<1	<1	<1	<1	<1
Carbon disulfide	ug/L	<1	<1	<1	<1	<1
Carbon tetrachloride	ug/L	<1	<1	<1	26	17.9
Chlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	ug/L	<1	<1	<1	<1	<1
Chloroforn	ug/L	0.705	1.65	<0.3	235	234
Chloromethane	ug/L	<1	<1	1.05	<1	<1
cis-1,2-Dichloroethene	ug/L	64.1	116	<1	12.5	12.7
cis-1,3-Dichloropropene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	ug/L	<1	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	<1	<1	<1	<1	<1
Ethylbenzene	ug/L	<1	<1	<1	<1	<1
Hexachlorobutadiene	ug/L	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	ug/L	<1	<1	<1	<1	<1
m,p-Xylene	ug/L	<2	<2	<2	<2	<2
Mf K (2-Butanone)	ug/L	11.1	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	ug/L	<5	<5	<5	<5	<5
Methylene chloride	ug/L	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	ug/L	<10	<10	<10	<10	<10
Naphthalene	ug/L	1.38	<1	<1	<1	<1
n-Butylbenzene	ug/L	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	<1	<1	<1	<1	<1
o-Xylene	ug/L	<1	<1	<1	<1	<1
p-Isopropyltoluene	ug/L	<1	<1	<1	<1	<1
sec-Butylbenzene	ug/L	<1	<1	<1	<1	<1
Styrene	ug/L	<1	<1	<1	<1	<1
tert-Butylbenzene	ug/L	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	4.3	16.3	<1	7.43	5.81
Toluene	ug/L	<1	1.26	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	12.8	23.6	<1	3.06	2.9
trans-1,3-Dichloropropene	ug/L	<1	<1	<1	<1	<1
Trichloroethene	ug/L	794	2220	<1	151	168
Trichlorofluoromethane	ug/L	<1	<1	<1	<1	<1
Vinyl acetate	ug/L	<5	<5	<5	<5	<5
Vinyl chloride	ug/L	0.525 J	0.971 J	<1	<1	<1

Notes:

µg/L micrograms per liter

< Analyte not detected above RL

J Estimated result based on QC data or reported below RL

B Estimated result biased high or false positive based on blank data

Method:

SW8260B - Volatile Organic Compounds

TABLE C-2
MONITORING WELL SAMPLE ANALYTICAL RESULTS - VOCs - OCTOBER 2007
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

Analyte	Sample ID LabSample ID Date units	MW-158-104 J L0710237-31 10/8/2007	MW-158-93 J L0710237-30 10/8/2007	MW-158A-81.5 L0710237-32 10/8/2007	MW-158A-91.4 L0710237-33 10/8/2007	MW-159-81.1 L0710237-34 10/8/2007
1,1,1,2-Tetrachloroethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	ug/L	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	1.25	1.26	102	3.7	501
1,1,2-Trichloroethane	ug/L	<1	<1	2.65	<1	66.4
1,1-Dichloroethane	ug/L	<1	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	<1	<1	<1	<1	1.98
1,1-Dichloropropene	ug/L	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	<2	<2	<2	<2	<2
1,2-Dibromoethane	ug/L	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	<0.5	<0.5	<0.5	<0.5	0.461 J
1,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,3-Dichloropropane	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	ug/L	<1	<1	<1	<1	<1
2,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1
2-Chlorotoluene	ug/L	<1	<1	<1	<1	<1
2-Hexanone	ug/L	<10	<10	<10	<10	<10
4-Chlorotoluene	ug/L	<1	<1	<1	<1	<1
Acetone	ug/L	7.38 B	6.61 B	8.89 B	8.34 B	9.72 B
Benzene	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	ug/L	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	ug/L	<1	<1	<1	<1	<1
Bromomethane	ug/L	<1	<1	<1	<1	<1
Carbon disulfide	ug/L	<1	<1	<1	<1	<1
Carbon tetrachloride	ug/L	<1	<1	<1	1.54	<1
Chlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	ug/L	<1	<1	<1	<1	<1
Chloroform	ug/L	0.194 J	0.175 J	<0.3	1.36	1.69
Chloromethane	ug/L	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	1.4	1.09	1.98	14.6	392
cis-1,3-Dichloropropene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	ug/L	<1	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	<1	<1	<1	<1	<1
Ethylbenzene	ug/L	<1	<1	<1	<1	<1
Hexachlorobutadiene	ug/L	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	ug/L	<1	<1	<1	<1	<1
m,p-Xylene	ug/L	<2	<2	<2	<2	<2
MEK (2-Butanone)	ug/L	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	ug/L	<5	<5	<5	<5	<5
Methylene chloride	ug/L	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	ug/L	<10	<10	<10	<10	<10
Naphthalene	ug/L	<1	<1	<1	<1	<1
n-Butylbenzene	ug/L	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	<1	<1	<1	<1	<1
o-Xylene	ug/L	<1	<1	<1	<1	<1
p-Isopropyltoluene	ug/L	<1	<1	<1	<1	<1
sec-Butylbenzene	ug/L	<1	<1	<1	<1	<1
Styrene	ug/L	<1	<1	<1	<1	<1
tert-Butylbenzene	ug/L	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	3.5	3.87	0.252 J	13.7	9.33
Toluene	ug/L	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	0.697 J	0.505 J	<1	6.22	28
trans-1,3-Dichloropropene	ug/L	<1	<1	<1	<1	<1
Trichloroethene	ug/L	20.6	18.5	42	156	2700
Trichlorofluoromethane	ug/L	<1	<1	<1	<1	<1
Vinyl acetate	ug/L	<5	<5	<5	<5	<5
Vinyl chloride	ug/L	<1	<1	<1	<1	1.14

Notes:

µg/L micrograms per liter
 < Analyte not detected above RL
 J Estimated result based on QC data or reported below RL
 B Estimated result biased high or false positive based on blank data
Method:
 SW8260B - Volatile Organic Compounds

TABLE C-2
MONITORING WELL SAMPLE ANALYTICAL RESULTS - VOCs - OCTOBER 2007
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

Analyte	Sample ID	MW-159-97 1	MW-160-80 8	MW-160-80 8 DUP	MW-161-80 4	MW-162-83 7
	Lab Sample ID Date	L0710237-35 10/8/2007	L0710237-36 10/8/2007	L0710238-08 10/8/2007	L0710237-08 10/8/2007	L0710237-09 10/8/2007
units						
1,1,1,2-Tetrachloroethane	ug/L	<0.5	<0.5	<0.5	1.21	0.644
1,1,1-Trichloroethane	ug/L	<1	1.14	0.274 J	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	436	175	185	1850	7210
1,1,2-Trichloroethane	ug/L	57.3	0.555 J	0.608 J	6.46	6.73
1,1-Dichloroethane	ug/L	<1	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	1.72	1.05	0.727 J	<1	<1
1,1-Dichloropropene	ug/L	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	<2	<2	<2	<2	<2
1,2-Dibromoethane	ug/L	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	0.437 J	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,3-Dichloropropane	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	ug/L	<1	<1	<1	<1	<1
2,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1
2-Chlorotoluene	ug/L	<1	<1	<1	<1	<1
2-Hexanone	ug/L	<10	<10	<10	<10	<10
4-Chlorotoluene	ug/L	<1	<1	<1	<1	<1
Acetone	ug/L	11 B	<10	2.86 J	<10	11.1 B
Benzene	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	ug/L	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	ug/L	<1	<1	<1	<1	<1
Bromomethane	ug/L	<1	<1	<1	<1	<1
Carbon disulfide	ug/L	<1	<1	<1	<1	<1
Carbon tetrachloride	ug/L	<1	1.91	0.734 J	2.13	<1
Chlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	ug/L	<1	<1	<1	<1	<1
Chloroform	ug/L	1.72	3.53	3.21	2.79	1.65
Chloromethane	ug/L	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	312	56.1	50.7	55	41
cis-1,3-Dichloropropene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	ug/L	<1	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	<1	<1	<1	<1	<1
Ethylbenzene	ug/L	<1	<1	<1	<1	<1
Hexachlorobutadiene	ug/L	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	ug/L	<1	<1	<1	<1	<1
m,p-Xylene	ug/L	<2	<2	<2	<2	<2
MEK (2-Butanone)	ug/L	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	ug/L	<5	<5	<5	<5	<5
Methylene chloride	ug/L	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	ug/L	<10	<10	<10	<10	<10
Naphthalene	ug/L	<1	<1	<1	<1	<1
n-Butylbenzene	ug/L	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	<1	<1	<1	<1	<1
o-Xylene	ug/L	<1	<1	<1	<1	<1
p-Isopropyltoluene	ug/L	<1	<1	<1	<1	<1
sec-Butylbenzene	ug/L	<1	<1	<1	<1	<1
Styrene	ug/L	<1	<1	<1	<1	<1
tert-Butylbenzene	ug/L	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	8.29	18.8	13.4	10.2	6.24
Toluene	ug/L	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	23.9	15.6	14.2	7.87	5.28
trans-1,3-Dichloropropene	ug/L	<1	<1	<1	<1	<1
Trichloroethene	ug/L	2420	695	626	818	1120
Trichlorofluoromethane	ug/L	<1	<1	<1	<1	<1
Vinyl acetate	ug/L	<5	<5	<5	<5	<5
Vinyl chloride	ug/L	1.04	<1	<1	<1	<1

Notes:

ug/L: micrograms per liter

< Analyte not detected above RL

J Estimated result based on QC data or reported below RL

B Estimated result biased high or false positive based on blank data

Method:

SW8260B - Volatile Organic Compounds

TABLE C-2
MONITORING WELL SAMPLE ANALYTICAL RESULTS - VOCs - OCTOBER 2007
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

Analyte	Sample ID LabSample ID Date	MW-163-74 9 L0710237-10 10/8/2007	MW-164-72 6 L0710237-11 10/8/2007	MW-164-72 6 DUP L0710238-04 10/8/2007	MW-165-100 4 L0710237-40 10/8/2007	MW-165-89 9 L0710237-37 10/8/2007
units						
1,1,1,2-Tetrachloroethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	ug/L	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	860	19.3	17.7	2	2.31
1,1,2-Trichloroethane	ug/L	23.8	0.677 J	0.719 J	0.3 J	<1
1,1-Dichloroethane	ug/L	<1	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	<1	<1	<1	<1	<1
1,1-Dichloropropene	ug/L	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	<2	<2	<2	<2	<2
1,2-Dibromooethane	ug/L	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	2	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,3-Dichloropropane	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	ug/L	<0.5	0.212 J	0.197 J	0.367 J	0.396 J
1-Chlorohexane	ug/L	<1	<1	<1	<1	<1
2,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1
2-Chlorotoluene	ug/L	<1	<1	<1	<1	<1
2-Hexanone	ug/L	<10	<10	<10	<10	<10
4-Chlorotoluene	ug/L	<1	<1	<1	<1	<1
Acetone	ug/L	9.92 B	11.3	10.4 B	7.77 B	9.28 B
Benzene	ug/L	0.142 J	<0.4	<0.4	<0.4	<0.4
Bromobenzene	ug/L	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	ug/L	<1	<1	<1	<1	<1
Bromomethane	ug/L	<1	<1	<1	<1	<1
Carbon disulfide	ug/L	<1	<1	<1	<1	<1
Carbon tetrachloride	ug/L	0.683 J	5.52	9.87	1.49	8.5
Chlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	ug/L	<1	<1	<1	<1	<1
Chloroform	ug/L	1.59	115	126	8.57	38.3
Chloromethane	ug/L	<1	<1	<1	0.26 J	0.423 J
cis-1,2-Dichloroethene	ug/L	59	3.6	4.38	10.3	7.25
cis-1,3-Dichloropropene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	ug/L	<1	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	<1	<1	<1	<1	<1
Ethylbenzene	ug/L	<1	<1	<1	<1	<1
Hexachlorobutadiene	ug/L	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	ug/L	<1	<1	<1	<1	<1
m,p-Xylene	ug/L	<2	<2	<2	<2	<2
MEK (2-Butanone)	ug/L	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	ug/L	<5	<5	<5	<5	<5
Methylene chloride	ug/L	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	ug/L	<10	<10	<10	<10	<10
Naphthalene	ug/L	<1	<1	<1	<1	<1
n-Butylbenzene	ug/L	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	<1	<1	<1	<1	<1
o-Xylene	ug/L	<1	<1	<1	<1	<1
p-Isopropyltoluene	ug/L	<1	<1	<1	<1	<1
sec-Butylbenzene	ug/L	<1	<1	<1	<1	<1
Styrene	ug/L	<1	<1	<1	<1	<1
tert-Butylbenzene	ug/L	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	4.93	1.57	2.13	1.42	1.29
Toluene	ug/L	<1	0.567 J	0.738 J	<1	<1
trans-1,2-Dichloroethene	ug/L	10.9	1.05	1.39	2.03	1.4
trans-1,3-Dichloropropene	ug/L	<1	<1	<1	<1	<1
Trichloroethene	ug/L	699	48.4	61.1	128	82.8 J
Trichlorofluoromethane	ug/L	<1	<1	<1	<1	<1
Vinyl acetate	ug/L	<5	<5	<5	<5	<5
Vinyl chloride	ug/L	2.15	<1	<1	<1	<1

Notes:

µg/L micrograms per liter
 < Analyte not detected above RL
 J Estimated result based on QC data or reported below RL
 B Estimated result biased high or false positive based on blank data

Method:
 SW8260B - Volatile Organic Compounds

TABLE C-2
MONITORING WELL SAMPLE ANALYTICAL RESULTS - VOCs - OCTOBER 2007
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

Analyte	Sample ID Lab Sample ID Date	MW-165A-73 9 1.0710237-41 10/8/2007	MW-165A-73 9 DUP 1.0710238-07 10/8/2007	MW-165A-84 5 1.0710237-42 10/8/2007	MW-166-87 3 1.0710210-08 10/5/2007	MW-166-97 8 1.0710210-09 10/5/2007
		units				
1,1,1,2-Tetrachloroethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	ug/L	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	<0.5	0.29 J	2.98	22.3	28.5
1,1,2-Trichloroethane	ug/L	<1	<1	<1	0.893 J	0.946 J
1,1-Dichloroethane	ug/L	<1	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	<1	<1	<1	<1	<1
1,1-Dichloropropene	ug/L	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	<2	<2	<2	<2	<2
1,2-Dibromoethane	ug/L	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	<0.5	<0.5	<0.5	<0.5	0.26 J
1,2-Dichloropropene	ug/L	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,3-Dichloropropane	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	ug/L	<0.5	<0.5	0.134 J	0.561	0.228 J
1-Chlorohexane	ug/L	<1	<1	<1	<1	<1
2,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1
2-Chlorotoluene	ug/L	<1	<1	<1	<1	<1
2-Hexanone	ug/L	<10	<10	<10	<10	<10
4-Chlorotoluene	ug/L	<1	<1	<1	<1	<1
Acetone	ug/L	8.54 B	9.68 J	7.38 B	9.54 J	11.5
Benzene	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	ug/L	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	ug/L	<1	<1	<1	<1	<1
Bromomethane	ug/L	<1	<1	<1	<1	<1
Carbon disulfide	ug/L	<1	<1	<1	<1	<1
Carbon tetrachloride	ug/L	2.62	0.861 J	16.4	8.81	13.3
Chlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	ug/L	<1	<1	<1	<1	<1
Chloroform	ug/L	5.79	3.26	66.9	115	140
Chloromethane	ug/L	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	1.92	1.81	7.63	4.58	5.44
cis-1,3-Dichloropropene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	ug/L	<1	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	<1	<1	<1	<1	<1
Ethylbenzene	ug/L	<1	<1	<1	<1	<1
Hexachlorobutadiene	ug/L	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	ug/L	<1	<1	<1	<1	<1
m-,p-Xylene	ug/L	<2	<2	<2	<2	<2
MEK (2-Butanone)	ug/L	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	ug/L	<5	<5	<5	<5	<5
Methylene chloride	ug/L	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	ug/L	<10	<10	<10	<10	<10
Naphthalene	ug/L	<1	<1	<1	<1	<1
n-Butylbenzene	ug/L	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	<1	<1	<1	<1	<1
o-Xylene	ug/L	<1	<1	<1	<1	<1
p-Isopropyltoluene	ug/L	<1	<1	<1	<1	<1
sec-Butylbenzene	ug/L	<1	<1	<1	<1	<1
Styrene	ug/L	<1	<1	<1	<1	<1
tert-Butylbenzene	ug/L	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	0.439 J	0.557 J	2.49	1.91	2.47
Toluene	ug/L	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	0.511 J	0.424 J	1.57	1.13	1.15
trans-1,3-Dichloropropene	ug/L	<1	<1	<1	<1	<1
Trichloroethene	ug/L	53.1	37.1	133	54.1	63.9
Trichlorofluoromethane	ug/L	<1	<1	<1	<1	<1
Vinyl acetate	ug/L	<5	<5	<5	<5	<5
Vinyl chloride	ug/L	<1	<1	<1	<1	<1

Notes:

µg/L. micrograms per liter

< Analyte not detected above RL

J Estimated result based on QC data or reported below RL

B Estimated result biased high or false positive based on blank data

Method:

SW8260B - Volatile Organic Compounds

TABLE C-2
MONITORING WELL SAMPLE ANALYTICAL RESULTS - VOCs - OCTOBER 2007
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

Analyte	Sample ID LabSample ID Date	MW-166A-75.3 L0710210-10 10/5/2007	MW-166A-75.3 DUP L0710210-45 10/5/2007	MW-167-76.5 L0710210-11 10/5/2007	MW168-113.9 L0710238-13 10/8/2007	MW168A-76.4 L0710238-14 10/8/2007
		units				
1,1,1,2-Tetrachloroethane		ug/L	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane		ug/L	<1	<1	<1	9.08
1,1,2,2-Tetrachloroethane		ug/L	12.6	12	<0.5	<0.5
1,1,2-Trichloroethane		ug/L	0.417 J	0.398 J	<1	<1
1,1-Dichloroethane		ug/L	<1	<1	<1	0.55 J
1,1-Dichloroethene		ug/L	<1	<1	0.836 J	15.9
1,1-Dichloropropene		ug/L	<1	<1	<1	<1
1,2,3-Trichlorobenzene		ug/L	<1	<1	<1	<1
1,2,3-Trichloropropane		ug/L	<1	<1	<1	<1
1,2,4-Trichlorobenzene		ug/L	<1	<1	<1	<1
1,2,4-Trimethylbenzene		ug/L	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane		ug/L	<2	<2	<2	<2
1,2-Dibromoethane		ug/L	<1	<1	<1	<1
1,2-Dichlorobenzene		ug/L	<1	<1	<1	<1
1,2-Dichloroethane		ug/L	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane		ug/L	<1	<1	<1	<1
1,3,5-Trimethylbenzene		ug/L	<1	<1	<1	<1
1,3-Dichlorobenzene		ug/L	<1	<1	<1	<1
1,3-Dichloropropane		ug/L	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene		ug/L	<0.5	<0.5	0.313 J	<0.5
1-Chlorohexane		ug/L	<1	<1	<1	<1
2,2-Dichloropropane		ug/L	<1	<1	<1	<1
2-Chlorotoluene		ug/L	<1	<1	<1	<1
2-Hexanone		ug/L	<10	<10	<10	<10
4-Chlorotoluene		ug/L	<1	<1	<1	<1
Acetone		ug/L	13.5	11.6	12.2	7.24 J
Benzene		ug/L	<0.4	<0.4	<0.4	<0.4
Bromobenzene		ug/L	<1	<1	<1	<1
Bromochloromethane		ug/L	<1	<1	<1	<1
Bromodichloromethane		ug/L	<0.5	<0.5	<0.5	<0.5
Bromoform		ug/L	<1	<1	<1	<1
Bromomethane		ug/L	<1	<1	<1	<1
Carbon disulfide		ug/L	<1	<1	<1	<1
Carbon tetrachloride		ug/L	5.62	5.87	<1	0.446 J
Chlorobenzene		ug/L	<0.5	<0.5	<0.5	<0.5
Chloroethane		ug/L	<1	<1	<1	<1
Chloroform		ug/L	65.5	65.9	<0.3	0.615
Chloromethane		ug/L	0.324 J	<1	<1	<1
cis-1,2-Dichloroethene		ug/L	3.54	3.66	<1	<1
cis-1,3-Dichloropropene		ug/L	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane		ug/L	<0.5	<0.5	<0.5	<0.5
Dibromomethane		ug/L	<1	<1	<1	<1
Dichlorodifluoromethane		ug/L	<1	<1	<1	<1
Ethylbenzene		ug/L	<1	<1	<1	<1
Hexachlorobutadiene		ug/L	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene		ug/L	<1	<1	<1	<1
m,p-Xylene		ug/L	<2	<2	<2	<2
MEK (2-Butanone)		ug/L	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)		ug/L	<5	<5	<5	<5
Methylene chloride		ug/L	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)		ug/L	<10	<10	<10	<10
Naphthalene		ug/L	<1	<1	<1	<1
n-Butylbenzene		ug/L	<1	<1	<1	<1
n-Propylbenzene		ug/L	<1	<1	<1	<1
o-Xylene		ug/L	<1	<1	<1	<1
p-Isopropyltoluene		ug/L	<1	<1	<1	<1
sec-Butylbenzene		ug/L	<1	<1	<1	<1
Styrene		ug/L	<1	<1	<1	<1
tert-Butylbenzene		ug/L	<1	<1	<1	<1
Tetrachloroethene		ug/L	1.57	1.7	0.384 J	1.09
Toluene		ug/L	<1	<1	<1	<1
trans-1,2-Dichloroethene		ug/L	1.04	1.07	<1	<1
trans-1,3-Dichloropropene		ug/L	<1	<1	<1	<1
Trichloroethene		ug/L	81.5	83.4	<1	0.627 J
Trichlorofluoromethane		ug/L	<1	<1	<1	<1
Vinyl acetate		ug/L	<5	<5	<5	<5
Vinyl chloride		ug/L	<1	<1	<1	<1

Notes:

- ug/L micrograms per liter
 < Analyte not detected above RL
 J Estimated result based on QC data or reported below RL
 B Estimated result biased high or false positive based on blank data

Method:

SW8260B - Volatile Organic Compounds

TABLE C-2
MONITORING WELL SAMPLE ANALYTICAL RESULTS - VOCs - OCTOBER 2007
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

Analyte	Sample ID LabSample ID Date	MW168A-86.9 L0710238-15 10/8/2007	MW169-81-8 L0710238-16 10/8/2007	MW170-61.7 L0710238-17 10/8/2007	MW-170-61.7 DUP L0710238-20 10/8/2007	MW170 L0710238-18 10/8/2007
	units					
1,1,1,2-Tetrachloroethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	ug/L	0.681 J	<1	0.864 J	0.781 J	<1
1,1,2,2-Tetrachloroethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	ug/L	<1	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	<1	<1	1.38	1.36	0.161 J
1,1-Dichloroethene	ug/L	2.2	<1	3.06	2.93	<1
1,1-Dichloropropene	ug/L	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	<2	<2	<2	<2	<2
1,2-Dibromoethane	ug/L	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,3-Dichloropropane	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	ug/L	<1	<1	<1	<1	<1
2,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1
2-Chlorotoluene	ug/L	<1	<1	<1	<1	<1
2-Hexanone	ug/L	<10	<10	<10	<10	<10
4-Chlorotoluene	ug/L	<1	<1	<1	<1	<1
Acetone	ug/L	8.57 J	7.32 J	6.92 J	6.66 J	7.78 J
Benzene	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	ug/L	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	ug/L	<1	<1	<1	<1	<1
Bromomethane	ug/L	<1	<1	<1	<1	<1
Carbon disulfide	ug/L	<1	<1	<1	<1	<1
Carbon tetrachloride	ug/L	<1	<1	<1	<1	<1
Chlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	ug/L	<1	<1	<1	<1	<1
Chloroform	ug/L	<0.3	<0.3	<0.3	<0.3	<0.3
Chloromethane	ug/L	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	ug/L	<1	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	<1	<1	<1	<1	<1
Ethylbenzene	ug/L	<1	<1	<1	<1	<1
Hexachlorobutadiene	ug/L	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	ug/L	<1	<1	<1	<1	<1
m,p-Xylene	ug/L	<2	<2	<2	<2	<2
MEK (2-Butanone)	ug/L	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	ug/L	<5	<5	<5	<5	<5
Methylene chloride	ug/L	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	ug/L	<10	<10	<10	<10	<10
Naphthalene	ug/L	<1	<1	<1	<1	<1
n-Butylbenzene	ug/L	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	<1	<1	<1	<1	<1
o-Xylene	ug/L	<1	<1	<1	<1	<1
p-Isopropyltoluene	ug/L	<1	<1	<1	<1	<1
sec-Butylbenzene	ug/L	<1	<1	<1	<1	<1
Styrene	ug/L	<1	<1	<1	<1	<1
tert-Butylbenzene	ug/L	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	0.699 J	<1	0.485 J	0.46 J	<1
Toluene	ug/L	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	ug/L	<1	<1	<1	<1	<1
Trichloroethene	ug/L	0.294 J	<1	<1	<1	<1
Trichlorofluoromethane	ug/L	<1	<1	<1	<1	<1
Vinyl acetate	ug/L	<5	<5	<5	<5	<5
Vinyl chloride	ug/L	<1	<1	<1	<1	<1

Notes:

ug/L micrograms per liter

< Analyte not detected above RL

J Estimated result based on QC data or reported below RL

B Estimated result biased high or false positive based on blank data

Method:

SW8260B - Volatile Organic Compounds

TABLE C-2
MONITORING WELL SAMPLE ANALYTICAL RESULTS - VOCs - OCTOBER 2007
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

Analyte	Sample ID	MW171	MW-171-62.4 DUP
	LabSample ID	L0710238-19	L0710238-21
	Date	10/8/2007	10/8/2007
	units		
1,1,1,2-Tetrachloroethane	ug/L	<0.5	<0.5
1,1,1-Trichloroethane	ug/L	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	<0.5	<0.5
1,1,2-Trichloroethane	ug/L	<1	<1
1,1-Dichloroethane	ug/L	<1	<1
1,1-Dichloroethene	ug/L	<1	<1
1,1-Dichloropropene	ug/L	<1	<1
1,2,3-Trichlorobenzene	ug/L	<1	<1
1,2,3-Trichloropropane	ug/L	<1	<1
1,2,4-Trichlorobenzene	ug/L	<1	<1
1,2,4-Trimethylbenzene	ug/L	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	<2	<2
1,2-Dibromoethane	ug/L	<1	<1
1,2-Dichlorobenzene	ug/L	<1	<1
1,2-Dichloroethane	ug/L	<0.5	<0.5
1,2-Dichloropropane	ug/L	<1	<1
1,3,5-Trimethylbenzene	ug/L	<1	<1
1,3-Dichlorobenzene	ug/L	<1	<1
1,3-Dichloropropane	ug/L	<0.4	<0.4
1,4-Dichlorobenzene	ug/L	0.147 J	<0.5
1-Chlorohexane	ug/L	<1	<1
2,2-Dichloropropane	ug/L	<1	<1
2-Chlorotoluene	ug/L	<1	<1
2-Hexanone	ug/L	<10	<10
4-Chlorotoluene	ug/L	<1	<1
Acetone	ug/L	7.13 J	6.55 J
Benzene	ug/L	<0.4	<0.4
Bromobenzene	ug/L	<1	<1
Bromochloromethane	ug/L	<1	<1
Bromodichloromethane	ug/L	<0.5	<0.5
Bromoform	ug/L	<1	<1
Bromomethane	ug/L	<1	<1
Carbon disulfide	ug/L	<1	<1
Carbon tetrachloride	ug/L	<1	<1
Chlorobenzene	ug/L	<0.5	<0.5
Chloroethane	ug/L	<1	<1
Chloroform	ug/L	<0.3	<0.3
Chloromethane	ug/L	<1	<1
cis-1,2-Dichloroethene	ug/L	<1	<1
cis-1,3-Dichloropropene	ug/L	<0.5	<0.5
Dibromochloromethane	ug/L	<0.5	<0.5
Dibromomethane	ug/L	<1	<1
Dichlorodifluoromethane	ug/L	<1	<1
Ethylbenzene	ug/L	<1	<1
Hexachlorobutadiene	ug/L	<0.6	<0.6
Isopropylbenzene	ug/L	<1	<1
m,p-Xylene	ug/L	<2	<2
MEK (2-Butanone)	ug/L	<10	<10
Methyl t-butyl ether (MTBE)	ug/L	<5	<5
Methylene chloride	ug/L	<1	<1
MIBK (methyl isobutyl ketone)	ug/L	<10	<10
Naphthalene	ug/L	<1	<1
n-Butylbenzene	ug/L	<1	<1
n-Propylbenzene	ug/L	<1	<1
o-Xylene	ug/L	<1	<1
p-Isopropyltoluene	ug/L	<1	<1
sec-Butylbenzene	ug/L	<1	<1
Styrene	ug/L	<1	<1
tert-Butylbenzene	ug/L	<1	<1
Tetrachloroethene	ug/L	<1	<1
Toluene	ug/L	<1	<1
trans-1,2-Dichloroethene	ug/L	<1	<1
trans-1,3-Dichloropropene	ug/L	<1	<1
Trichloroethene	ug/L	<1	<1
Trichlorofluoromethane	ug/L	<1	<1
Vinyl acetate	ug/L	<5	<5
Vinyl chloride	ug/L	<1	<1

Notes:

- µg/L micrograms per liter
 < Analyte not detected above RL
 J Estimated result based on QC data or reported below RL
 B Estimated result biased high or false positive based on blank data

Method:

SW8260B - Volatile Organic Compounds

TABLE C-3
RECOVERY WELL SAMPLE ANALYTICAL RESULTS - VOCs - APRIL 2007
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

Analyte	Sample ID	RW-01	RW-1A	RW-1B	RW-02	RW-03	RW-04
	Lab Sample ID	L0704275-07	L0704275-08	L0704275-09	L0704275-10	L0704275-11	L0704275-12
	Date	4/11/2007	4/11/2007	4/11/2007	4/11/2007	4/11/2007	4/11/2007
Analyte	units						
1,1,1,2-Tetrachloroethane	ug/L	<0.5	0.268 J	<0.5	<0.5	<0.5	0.287 J
1,1,1-Trichloroethane	ug/L	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	1.3	113	1.76	56.6	29.5	127
1,1,2-Trichloroethane	ug/L	<1	3.56	<1	2.17	1.29	3.43
1,1-Dichloroethane	ug/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	<1	<1	<1	<1	<1	<1
1,1-Dichloropropene	ug/L	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane	ug/L	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	<0.5	0.855	<0.5	0.301 J	<0.5	<0.5
1,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	ug/L	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	ug/L	<1	<1	<1	<1	<1	<1
4-Chlorotoluene	ug/L	<1	<1	<1	<1	<1	<1
Acetone	ug/L	<10	<10	<10	<10	<10	<10
Benzene	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	ug/L	<1	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	<0.5	0.506	<0.5	<0.5	<0.5	<0.5
Bromoforn	ug/L	<1	<1	<1	<1	<1	<1
Bromomethane	ug/L	<3	<3	<3	<3	<3	<3
Carbon tetrachloride	ug/L	33.9	18.9	13.7	12.5	4.49	1.23
Chlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	ug/L	<1	<1	<1	<1	<1	<1
Chloroform	ug/L	146	479	56.6	118	2.15	1.74
Chloromethane	ug/L	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	4.75	8.63	2.74	39	25.3	19.6
cis-1,3-Dichloropropene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	ug/L	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	<1	<1	<1	<1	<1	<1
Ethylbenzene	ug/L	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	ug/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	ug/L	<1	<1	<1	<1	<1	<1
m-,p-Xylene	ug/L	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	ug/L	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	ug/L	<5	<5	<5	<5	<5	<5
Methylene chloride	ug/L	<1	<1	0.269 J	<1	<1	<1
MIBK (methyl isobutyl ketone)	ug/L	<10	<10	<10	<10	<10	<10
Naphthalene	ug/L	<1	<1	<1	<1	<1	<1
n-Butylbenzene	ug/L	<1	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	<1	<1	<1	<1	<1	<1
o-Xylene	ug/L	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	ug/L	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	ug/L	<1	<1	<1	<1	<1	<1
Styrene	ug/L	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	ug/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	8.23	7.91	2.88	3.12	1.21	8.99
Toluene	ug/L	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	2.54	2.34	0.677 J	2.84	1.81	4.6
trans-1,3-Dichloropropene	ug/L	<1	<1	<1	<1	<1	<1
Trichloroethene	ug/L	109	159	39.2	72.3	59.8	743
Trichlorofluoromethane	ug/L	<1	<1	<1	<1	<1	<1
Vinyl chloride	ug/L	<1	<1	<1	<1	<1	<1

Notes:

µg/L: micrograms per liter

< Analyte not detected above RL

J Estimated result based on QC data or reported below RL

Method:

SW8260B - Volatile Organic Compounds

TABLE C-3
RECOVERY WELL SAMPLE ANALYTICAL RESULTS - VOCs - APRIL 2007
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

Analyte	Sample ID LabSample ID Date	RW-05 L0704275-13 4/11/2007	RW-06 L0704275-14 4/11/2007	RW-07 L0704275-15 4/11/2007	RW-08 L0704275-16 4/11/2007	RW-09 L0704275-17 4/11/2007
	units					
1,1,1,2-Tetrachloroethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	ug/L	<1	<1	<1	<1	0.498 J
1,1,2,2-Tetrachloroethane	ug/L	5.79	0.448 J	45.1	158	2.85
1,1,2-Trichloroethane	ug/L	<1	<1	0.921 J	3.8	<1
1,1-Dichloroethane	ug/L	<1	<1	<1	<1	0.689 J
1,1-Dichloroethene	ug/L	<1	<1	<1	4.46	25.4
1,1-Dichloropropene	ug/L	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	<2	<2	<2	<2	<2
1,2-Dibromoethane	ug/L	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	<0.5	<0.5	<0.5	<0.5	0.266 J
1,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,3-Dichloropropane	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	ug/L	<1	<1	<1	<1	<1
2,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1
2-Chlorotoluene	ug/L	<1	<1	<1	<1	<1
4-Chlorotoluene	ug/L	<1	<1	<1	<1	<1
Acetone	ug/L	<10	<10	<10	<10	<10
Benzene	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	ug/L	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	ug/L	<1	<1	<1	<1	<1
Bromomethane	ug/L	<3	<3	<3	<3	<3
Carbon tetrachloride	ug/L	0.727 J	<1	<1	0.813 J	<1
Chlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	ug/L	<1	<1	<1	<1	<1
Chloroform	ug/L	0.642	2.85	1.66	8.93	2.74
Chloromethane	ug/L	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	2.71	21.4	36.7	95	5.93
cis-1,3-Dichloropropene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	ug/L	<1	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	<1	<1	<1	<1	<1
Ethylbenzene	ug/L	<1	<1	<1	<1	<1
Hexachlorobutadiene	ug/L	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	ug/L	<1	<1	<1	<1	<1
m,p-Xylene	ug/L	<2	<2	<2	<2	<2
MEK (2-Butanone)	ug/L	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	ug/L	<5	<5	<5	<5	<5
Methylene chloride	ug/L	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	ug/L	<10	<10	<10	<10	<10
Naphthalene	ug/L	<1	<1	<1	<1	<1
n-Butylbenzene	ug/L	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	<1	<1	<1	<1	<1
o-Xylene	ug/L	<1	<1	<1	<1	<1
p-Isopropyltoluene	ug/L	<1	<1	<1	<1	<1
sec-Butylbenzene	ug/L	<1	<1	<1	<1	<1
Styrene	ug/L	<1	<1	<1	<1	<1
tert-Butylbenzene	ug/L	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	3.03	21.9	3.19	5.27	22.6
Toluene	ug/L	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	0.929 J	8.77	9.68	67.6	2.15
trans-1,3-Dichloropropene	ug/L	<1	<1	<1	<1	<1
Trichloroethene	ug/L	93.7	88.5	106	187	32
Trichlorofluoromethane	ug/L	<1	<1	<1	<1	<1
Vinyl chloride	ug/L	<1	<1	<1	<1	<1

Notes:

ug/L micrograms per liter

< Analyte not detected above RL

J Estimated result based on QC data or reported below RL

Method:

SW8260B - Volatile Organic Compounds

TABLE C-4
RECOVERY WELL SAMPLE ANALYTICAL RESULTS - VOCs - OCTOBER 2007
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

Analyte	Sample ID LabSample ID	RW-01 10/5/2007	RW-01A 10/5/2007	RW-01B 10/5/2007	RW-02 10/5/2007	RW-02 10/5/2007	RW-03 10/5/2007
units	Date						
1,1,1,2-Tetrachloroethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	ug/L	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	1.3	179	43.7	77.5	109	16.1
1,1,2-Trichloroethane	ug/L	<1	4.18	1.21	2.31	3.39	0.718 J
1,1-Dichloroethane	ug/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	<1	<1	<1	<1	<1	<1
1,1-Dichloropropene	ug/L	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane	ug/L	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	<0.5	1.02	0.274 J	0.436 J	0.511	<0.5
1,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	ug/L	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	ug/L	<1	<1	<1	<1	<1	<1
2-Hexanone	ug/L	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	ug/L	<1	<1	<1	<1	<1	<1
Acetone	ug/L	<10	<10	<10	<10	<10	<10
Benzene	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	ug/L	<1	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	<0.5	0.46 J	<0.5	<0.5	<0.5	<0.5
Bromoform	ug/L	<1	<1	<1	<1	<1	<1
Bromomethane	ug/L	<1	<1	<1	<1	<1	<1
Carbon disulfide	ug/L	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	ug/L	32.5	10.5	10.8	11.3	12.9	4.07
Chlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	ug/L	<1	<1	<1	<1	<1	<1
Chloroform	ug/L	180	413	187	212	147	9.65
Chloromethane	ug/L	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	4.81	6.97	4.52	20	71.3	9.8
cis-1,3-Dichloropropene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	ug/L	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	<1	<1	<1	<1	<1	<1
Ethylbenzene	ug/L	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	ug/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	ug/L	<1	<1	<1	<1	<1	<1
m,p-Xylene	ug/L	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	ug/L	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	ug/L	<5	<5	<5	<5	<5	<5
Methylene chloride	ug/L	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	ug/L	<10	<10	<10	<10	<10	<10
Naphthalene	ug/L	<1	<1	<1	<1	<1	<1
n-Butylbenzene	ug/L	<1	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	<1	<1	<1	<1	<1	<1
o-Xylene	ug/L	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	ug/L	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	ug/L	<1	<1	<1	<1	<1	<1
Styrene	ug/L	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	ug/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	8.35	4.8	3.88	4.03	3.18	0.807 J
Toluene	ug/L	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	2.34	1.37	1	1.91	3.55	0.729 J
trans-1,3-Dichloropropene	ug/L	<1	<1	<1	<1	<1	<1
Trichloroethene	ug/L	143	141	74.8	95.6	105	31
Trichlorofluoromethane	ug/L	<1	<1	<1	<1	<1	<1
Vinyl acetate	ug/L	<5	<5	<5	<5	<5	<5
Vinyl chloride	ug/L	<1	<1	<1	<1	<1	<1

Notes:

µg/L micrograms per liter

< Analyte not detected above RL

J Estimated result based on QC data or reported below RL

Method:

SW8260B - Volatile Organic Compounds

TABLE C-4
RECOVERY WELL SAMPLE ANALYTICAL RESULTS - VOCs - OCTOBER 2007
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

Analyte	Sample ID Lab Sample ID Date units	RW-04 L0710210-36 10/5/2007	RW-05 L0710210-33 10/5/2007	RW-06 L0710210-41 10/5/2007	RW-07 L0710210-44 10/5/2007	RW-08 L0710210-40 10/5/2007	RW-09 L0710210-38 10/5/2007
1,1,1,2-Tetrachloroethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	ug/L	<1	<1	<1	<1	<1	1.25
1,1,2,2-Tetrachloroethane	ug/L	288	23.3	<0.5	44.5	19.1	2.34
1,1,2-Trichloroethane	ug/L	3.99	<1	<1	0.325 J	0.982 J	<1
1,1-Dichloroethane	ug/L	<1	<1	<1	<1	<1	0.567 J
1,1-Dichloroethene	ug/L	<1	<1	<1	<1	3.18	19
1,1-Dichloropropene	ug/L	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane	ug/L	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	ug/L	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	ug/L	<1	<1	<1	<1	<1	<1
2-Hexanone	ug/L	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	ug/L	<1	<1	<1	<1	<1	<1
Acetone	ug/L	<10	<10	2.73 J	<10	3.69 J	<10
Benzene	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	ug/L	<1	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	ug/L	<1	<1	<1	<1	<1	<1
Bromomethane	ug/L	<1	<1	<1	<1	<1	<1
Carbon disulfide	ug/L	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	ug/L	2.48	1.46	0.385 J	0.34 J	0.532 J	1.6
Chlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	ug/L	<1	<1	<1	<1	<1	<1
Chloroform	ug/L	1.68	0.627	1.69	2.44	5.4	5.55
Chloromethane	ug/L	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	14.2	5.55	4.54	3.55	7.3	0.3 J
cis-1,3-Dichloropropene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	ug/L	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	<1	<1	<1	<1	<1	<1
Ethylbenzene	ug/L	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	ug/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	ug/L	<1	<1	<1	<1	<1	<1
m,p-Xylene	ug/L	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	ug/L	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	ug/L	<5	<5	<5	<5	<5	<5
Methylene chloride	ug/L	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	ug/L	<10	<10	<10	<10	<10	<10
Naphthalene	ug/L	<1	<1	<1	<1	<1	<1
n-Butylbenzene	ug/L	<1	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	<1	<1	<1	<1	<1	<1
o-Xylene	ug/L	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	ug/L	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	ug/L	<1	<1	<1	<1	<1	<1
Styrene	ug/L	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	ug/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	8.02	3.37	14.1	4.35	2.77	19.8
Toluene	ug/L	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	2.98	1.2	1.3	0.529 J	1.59	<1
trans-1,3-Dichloropropene	ug/L	<1	<1	<1	<1	<1	<1
Trichloroethene	ug/L	784	159	35.5	7.42	16.3	18.5
Trichlorofluoromethane	ug/L	<1	<1	<1	<1	<1	<1
Vinyl acetate	ug/L	<5	<5	<5	<5	<5	<5
Vinyl chloride	ug/L	<1	<1	<1	<1	<1	<1

Notes:

ug/L micrograms per liter

< Analyte not detected above RL.

J Estimated result based on QC data or reported below RL.

Method:

SW8260B - Volatile Organic Compounds

TABLE C-5
EFFLUENT SAMPLE ANALYTICAL RESULTS
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

Sample Site ID Date and Time Collected	EFFLUENT- 2/19/2007 09:09	EFFLUENT- 4/11/2007 13:47	EFFLUENT- 7/9/2007 11:00	EFFLUENT- 10/5/2007 14:32
pH - E150.1	6.2	6.37	-	6.04
Volatiles Organic Compounds - SW8260B µg/L				
Analyte				
1,1,1,2-Tetrachloroethane	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	77.1	45.4	70.2	57.3 J
1,1,2-Trichloroethane	1.41	1.13	1.56	0.923 J
1,1-Dichloroethane	0.226 J	0.209	<1	<1
1,1-Dichloroethene	8.66	7.38	7.76	3.69
1,1-Dichloropropene	<1	<1	<1	<1
1,2,3-Trichlorobenzene	<1	<1	<1	<1
1,2,3-Trichloropropane	<1	<1	<1	<1
1,2,4-Trichlorobenzene	<1	<1	<1	<1
1,2,4-Trimethylbenzene	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	<2	<2	<2	<2
1,2-Dibromoethane	<1	<1	<1	<1
1,2-Dichlorobenzene	<1	<1	<1	<1
1,2-Dichloroethane	<0.5	<0.5	0.266 J	<0.5
1,2-Dichloropropane	<1	<1	<1	<1
1,3,5-Trimethylbenzene	<1	<1	<1	<1
1,3-Dichlorobenzene	<1	<1	<1	<1
1,3-Dichloropropane	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	<1	<1	<1	<1
2,2-Dichloropropane	<1	<1	<1	<1
2-Chlorotoluene	<1	<1	<1	<1
2-Hexanone				<10
4-Chlorotoluene	<1	<1	<1	<1
Acetone	<10	<10	<10	<10
Benzene	<0.4	<0.4	<0.4	<0.4
Bromobenzene	<1	<1	<1	<1
Bromochloromethane	<1	<1	<1	<1
Bromodichloromethane	<0.5	<0.5	<0.5	<0.5
Bromoform	<1	<1	<1	<1
Bromomethane	<3	<3	<3	<1
Carbon disulfide				<1
Carbon tetrachloride	2	3.42	3.06	2.09
Chlorobenzene	<0.5	<0.5	<0.5	<0.5
Chloroethane	<1	<1	<1	<1
Chloroform	10.8	40.5 J	50 J	30.1
Chloromethane	<1	<1	<1	<1
cis-1,2-Dichloroethene	65.8	42.7 J	69 J	10.3
cis-1,3-Dichloropropene	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	<0.5	<0.5	<0.5	<0.5
Dibromomethane	<1	<1	<1	<1
Dichlorodifluoromethane	<1	<1	<1	<1
Ethylbenzene	<1	<1	<1	<1
Hexachlorobutadiene	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	<1	<1	<1	<1
m,p-Xylene	<2	<2	<2	<2
MIBK (2-Butanone)	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	<5	<5	<5	<5
Methylene chloride	<1	<1	0.383 J	<1
MIBK (methyl isobutyl ketone)	<10	<10	<10	<10
Naphthalene	<1	<1	<1	<1
n-Butylbenzene	<1	<1	<1	<1
n-Propylbenzene	<1	<1	<1	<1
o-Xylene	<1	<1	<1	<1
p-Isopropyltoluene	<1	<1	<1	<1
sec-Butylbenzene	<1	<1	<1	<1
Styrene	<1	<1	<1	<1
tert-Butylbenzene	<1	<1	<1	<1
Tetrachloroethene	13.4	13.2	12.2	7.2
Toluene	<1	<1	<1	<1
trans-1,2-Dichloroethene	18.3	12.4	17.5	1.58
trans-1,3-Dichloropropene	<1	<1	<1	<1
Trichloroethene	187	150	174 J	95.6 J
Trichlorofluoromethane	<1	<1	<1	<1
Vinyl acetate				<5
Vinyl chloride	<1	<1	<1	<1

TABLE C-5
EFFLUENT SAMPLE ANALYTICAL RESULTS
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

Sample Site ID Date and Time Collected	EFFLUENT- 2/19/2007 09:09	EFFLUENT- 4/11/2007 13:47	EFFLUENT- 7/9/2007 11:00	EFFLUENT- 10/5/2007 14:32
<u>Semi-volatile Organic Compounds - SW8270B µg/L</u>				
Analyte				
1,2,4-Trichlorobenzene	-	<10.5J	-	<10
1,2-Dichlorobenzene	-	<10.5	-	<10
1,3-Dichlorobenzene	-	<10.5	-	<10
1,4-Dichlorobenzene	-	<10.5	-	<10
2,4,5-Trichlorophenol	-	<52.6	-	<10
2,4,6-Trichlorophenol	-	<10.5J	-	<10
2,4-Dichlorophenol	-	<10.5J	-	<10
2,4-Dimethylphenol	-	<10.5	-	<10
2,4-Dinitrophenol	-	<52.6	-	<50
2,4-Dinitrotoluene	-	<10.5	-	<10
2,6-Dinitrotoluene	-	<10.5	-	<10
2-Chloronaphthalene	-	<10.5J	-	<10
2-Chlorophenol	-	<10.5	-	<10
2-Methylnaphthalene	-	<10.5J	-	<10
2-Methylphenol	-	<10.5	-	<10
2-Nitroaniline	-	<52.6	-	<50
2-Nitrophenol	-	<10.5	-	<10
3,3'-Dichlorobenzidine	-	<21.1	-	<20
3-,4-Methylphenol	-	<52.6	-	<50
3-Nitroaniline	-	<52.6	-	<50
4,6-Dinitro-2-methylphenol	-	<52.6	-	<50
4-Bromophenyl-phenylether	-	<10.5	-	<10
4-Chloro-3-methylphenol	-	<21.1J	-	<10
4-Chloroaniline	-	<21.1	-	<20
4-Chlorophenyl-phenyl ether	-	<10.5	-	<10
4-Nitroaniline	-	<52.6	-	<50
4-Nitrophenol	-	<52.6	-	<50
Acenaphthene	-	<10.5	-	<10
Acenaphthylene	-	<10.5J	-	<10
Anthracene	-	<10.5	-	<10
Benzo(a)anthracene	-	<10.5	-	<10
Benzo(a)pyrene	-	<10.5	-	<10
Benzo(b)fluoranthene	-	<10.5	-	<10
Benzo(g,h,i)Perylene	-	<10.5	-	<10
Benzo(k)fluoranthene	-	<10.5	-	<10
Benzoic acid	-	<105	-	<50
Benzyl alcohol	-	<21.1	-	<10
Bis(2-Chloroethoxy)Methane	-	<10.5J	-	<10
Bis(2-Chloroethyl)ether	-	<10.5	-	<10
bis(2-Chloroisopropyl)ether	-	<10.5	-	<10
bis(2-Ethylhexyl)phthalate	-	<10.5	-	11.6
Butylbenzylphthalate	-	<10.5	-	<10
Chrysene	-	<10.5	-	<10
Dibenzo(a,h)Anthracene	-	<10.5	-	<10
Dibenzofuran	-	<10.5J	-	<10
Diethylphthalate	-	<10.5	-	<10
Dimethylphthalate	-	<10.5	-	<10
Di-N-Butylphthalate	-	<10.5	-	<10
Di-n-octylphthalate	-	<10.5	-	<10
Fluoranthene	-	<10.5	-	<10
Fluorene	-	<10.5	-	<10
Hexachlorobenzene	-	<10.5	-	<10
Hexachlorobutadiene	-	<10.5	-	<10
Hexachlorocyclopentadiene	-	-	-	<10
Hexachloroethane	-	<10.5	-	<10
Indeno(1,2,3-cd)pyrene	-	<10.5	-	<10
Isophorone	-	<10.5J	-	<10
Naphthalene	-	<10.5	-	<10
Nitrobenzene	-	<10.5J	-	<10
N-Nitroso-di-n-propylamine	-	<10.5	-	<10
N-Nitrosodiphenylamine	-	<10.5	-	<10
Pentachlorophenol	-	<52.6	-	<50
Phenanthrene	-	<10.5	-	<10
Phenol	-	<10.5	-	<10
Pyrene	-	<10.5	-	<10

TABLE C-5
EFFLUENT SAMPLE ANALYTICAL RESULTS
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

	Sample Site ID Date and Time Collected	EFFLUENT- 2/19/2007 09:09	EFFLUENT- 4/11/2007 13:47	EFFLUENT- 7/9/2007 11:00	EFFLUENT- 10/5/2007 14:32
<u>Total Metals - SW6010B mg/L</u>					
Analyte					
Aluminum, Total	-	<0.1	-	<0.1	
Arsenic, Total	-	<0.01	-	<0.01	
Barium, Total	-	0.101	-	0.106	
Beryllium, Total	-	<0.01	-	<0.01	
Cadmium, Total	-	<0.01	-	<0.01	
Calcium, Total	-	21.2 J	-	21	
Chromium, Total	-	<0.02	-	0.00305 J	
Cobalt, Total	-	<0.02	-	<0.02	
Copper, Total	-	0.021 J	-	<0.02	
Iron, Total	-	0.355 J	-	1.14 J	
Lead, Total	-	0.00759	-	0.0102	
Magnesium, Total	-	10.6	-	11.4	
Manganese, Total	-	0.0326	-	0.0275	
Nickel, Total	-	<0.040	-	0.00918 J	
Potassium, Total	-	0.747 J	-	0.8 J	
Silver, Total	-	<0.01	-	<0.01	
Sodium, Total	-	20.6	-	21.3	
Vanadium, Total	-	<0.01	-	<0.01	
Zinc, Total	-	0.0477	-	0.065	
Antimony, Total	-	<0.001	-	0.000266 J	
Selenium, Total	-	0.0014 J	-	0.00471	
Thallium, Total	-	0.000355 J	-	0.000358	
Mercury	-	<0.0002	-	<0.0002	

Notes:

- µg/L. micrograms per liter
 mg/L. milligrams per liter
 < Analyte not detected above RL
 J Estimated result based on QC data or reported below RL
 - Not collected

TABLE C-6
MONITORING WELL QA SAMPLE ANALYTICAL RESULTS - VOCs - APRIL 2007
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

Analyte	Sample ID Lab Sample ID Date units	MW-43-165.5 DUP L0704287-36 4/10/2007	MW-148-80.0 DUP L0704287-37 4/10/2007	MW-151-94.5 DUP L0704220-32 4/9/2007	MW-155-93.5 DUP L0704287-38 4/10/2007
1,1,1,2-Tetrachloroethane	ug/L	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	ug/L	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	<0.5	0.165 J	0.682	2920
1,1,2-Trichloroethane	ug/L	<1	<1	<1	112
1,1-Dichloroethane	ug/L	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	<1	<1	<1	0.82 J
1,1-Dichloropropene	ug/L	<1	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	<2	<2	<2	<2
1,2-Dibromoethane	ug/L	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	ug/L	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	<1	<1	<1	<1
1,3-Dichloropropane	ug/L	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	ug/L	<1	<1	<1	<1
2,2-Dichloropropane	ug/L	<1	<1	<1	<1
2-Chlorotoluene	ug/L	<1	<1	<1	<1
4-Chlorotoluene	ug/L	<1	<1	<1	<1
Acetone	ug/L	3.23 J	14.3	15.4	12.3
Benzene	ug/L	<0.4	<0.4	<0.4	<0.4
Bromobenzene	ug/L	<1	<1	<1	<1
Bromochloromethane	ug/L	<1	<1	<1	<1
Bromodichloromethane	ug/L	<0.5	<0.5	<0.5	<0.5
Bromoform	ug/L	<1	<1	<1	<1
Bromomethane	ug/L	<3	<3	<3	<3
Carbon tetrachloride	ug/L	<1	<1	5.11	<1
Chlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5
Chloroethane	ug/L	<1	<1	<1	<1
Chloroform	ug/L	<0.3	0.577	12.6	1.39
Chloromethane	ug/L	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	<1	8.11	1.28	77.5
cis-1,3-Dichloropropene	ug/L	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	ug/L	<0.5	<0.5	<0.5	<0.5
Dibromomethane	ug/L	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	<1	<1	<1	<1
Ethylbenzene	ug/L	<1	<1	<1	<1
Hexachlorobutadiene	ug/L	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	ug/L	<1	<1	<1	<1
m-p-Xylene	ug/L	<2	<2	<2	<2
MCK (2-Butanone)	ug/L	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	ug/L	<5	<5	<5	<5
Methylene chloride	ug/L	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	ug/L	<10	<10	<10	<10
Naphthalene	ug/L	<1	<1	<1	<1
n-Butylbenzene	ug/L	<1	<1	<1	<1
n-Propylbenzene	ug/L	<1	<1	<1	<1
o-Xylene	ug/L	<1	<1	<1	<1
p-Isopropyltoluene	ug/L	<1	<1	<1	<1
sec-Butylbenzene	ug/L	<1	<1	<1	<1
Styrene	ug/L	<1	<1	<1	<1
tert-Butylbenzene	ug/L	<1	<1	<1	<1
Tetrachloroethene	ug/L	<1	5.4	0.58 J	12.9
Toluene	ug/L	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	<1	3.3	0.264 J	25.7
trans-1,3-Dichloropropene	ug/L	<1	<1	<1	<1
Trichloroethene	ug/L	<1	29.3	11.2	1460
Trichlorofluoromethane	ug/L	<1	<1	<1	<1
Vinyl chloride	ug/L	<1	<1	<1	0.293 J

Notes:

ug/L micrograms per liter

< Analyte not detected above RL

J Estimated result based on QC data or reported below RL

Method:

SW8260B - Volatile Organic Compounds

TABLE C-6
MONITORING WELL QA SAMPLE ANALYTICAL RESULTS - VOCs - APRIL 2007
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

Analyte	Sample ID Lab Sample ID Date units	MW-158A-91.4 DUP L0704287-39 4/10/2007	MW-165-100.4 DUP L0704287-40 4/10/2007	MW-166-87.3 DUP L0704220-30 4/9/2007	MW-170-61.7 DUP L0704220-31 4/9/2007	RW-01 DUP L0704275-21 4/11/2007
1,1,1,2-Tetrachloroethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	ug/L	<1	<1	<1	1.03	<1
1,1,2,2-Tetrachloroethane	ug/L	59	2.05	5.32	<0.5	69.9
1,1,2-Trichloroethane	ug/L	3.74	0.322 J	<1	<1	2.79
1,1-Dichloroethane	ug/L	<1	<1	<1	1.83	<1
1,1-Dichloroethene	ug/L	<1	<1	<1	3.89	<1
1,1-Dichloropropene	ug/L	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	<2	<2	<2	<2	<2
1,2-Dibromoethane	ug/L	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	<0.5	<0.5	<0.5	<0.5	0.258 J
1,2-Dichloropropene	ug/L	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,3-Dichloropropane	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	ug/L	<1	<1	<1	<1	<1
2,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1
2-Chlorotoluene	ug/L	<1	<1	<1	<1	<1
4-Chlorotoluene	ug/L	<1	<1	<1	<1	<1
Acetone	ug/L	12	13.4	11	8.54 J	<10
Benzene	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	ug/L	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoforn	ug/L	<1	<1	<1	<1	<1
Bromomethane	ug/L	<3	<3	<3	<3	<3
Carbon tetrachloride	ug/L	<1	<1	6.32	<1	8.45
Chlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	ug/L	<1	<1	<1	<1	<1
Chloroform	ug/L	1.37	1.92	21.4	<0.3	11.3
Chloromethane	ug/L	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	23.6	11.6	2.7	<1	66.7
cis-1,3-Dichloropropene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	ug/L	<1	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	<1	<1	<1	<1	<1
Ethylbenzene	ug/L	<1	<1	<1	<1	<1
Hexachlorobutadiene	ug/L	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	ug/L	<1	<1	<1	<1	<1
m-p-Xylene	ug/L	<2	<2	<2	<2	<2
MEK (2-Butanone)	ug/L	<10	<10	<10	<10	181
Methyl t-butyl ether (MTBE)	ug/L	<5	<5	<5	<5	<5
Methylene chloride	ug/L	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	ug/L	<10	<10	<10	<10	<10
Naphthalene	ug/L	<1	<1	<1	<1	<1
n-Butylbenzene	ug/L	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	<1	<1	<1	<1	<1
o-Xylene	ug/L	<1	0.366 J	<1	<1	<1
p-Isopropyltoluene	ug/L	<1	<1	<1	<1	<1
sec-Butylbenzene	ug/L	<1	<1	<1	<1	<1
Styrene	ug/L	<1	<1	<1	<1	<1
tert-Butylbenzene	ug/L	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	12.2	1.49	0.854 J	<1	1.14
Toluene	ug/L	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	9.03	2.5	0.7 J	<1	4.21
trans-1,3-Dichloropropene	ug/L	<1	<1	<1	<1	<1
Trichloroethene	ug/L	170	152	24.2	<1	50.7
Trichlorofluoromethane	ug/L	<1	<1	<1	<1	<1
Vinyl chloride	ug/L	<1	<1	<1	<1	<1

Notes:

ug/L micrograms per liter

< Analyte not detected above RL

J Estimated result based on QC data or reported below RL

Methods:

SW8260B - Volatile Organic Compounds

TABLE C-6
MONITORING WELL QA SAMPLE ANALYTICAL RESULTS - VOCs - APRIL 2007
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

Analyte	Sample ID	Trp Blank	Trp Blank	Trp Blank	Trp Blank
	Lab Sample ID Date units	4/9/2007	4/10/2007	4/11/2007	2/19/2007
1,1,1,2-Tetrachloroethane	ug/L	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	ug/L	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	ug/L	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	<1	<1	<1	<1
1,1-Dichloropropene	ug/L	<1	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	<2	<2	<2	<2
1,2-Dibromoethane	ug/L	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	ug/L	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	<1	<1	<1	<1
1,3-Dichloropropane	ug/L	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	ug/L	<1	<1	<1	<1
2,2-Dichloropropane	ug/L	<1	<1	<1	<1
2-Chlorotoluene	ug/L	<1	<1	<1	<1
4-Chlorotoluene	ug/L	<1	<1	<1	<1
Acetone	ug/L	<10	<10	<10	<10
Benzene	ug/L	<0.4	<0.4	<0.4	<0.4
Bromobenzene	ug/L	<1	<1	<1	<1
Bromochloromethane	ug/L	<1	<1	<1	<1
Bromodichloromethane	ug/L	<0.5	<0.5	<0.5	<0.5
Bromoform	ug/L	<1	<1	<1	<1
Bromomethane	ug/L	<3	<3	<3	<3
Carbon tetrachloride	ug/L	<1	<1	<1	<1
Chlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5
Chloroethane	ug/L	<1	<1	<1	<1
Chloroform	ug/L	<0.3	<0.3	<0.3	<0.3
Chloromethane	ug/L	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	<1	<1	<1	<1
cis-1,3-Dichloropropene	ug/L	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	ug/L	<0.5	<0.5	<0.5	<0.5
Dibromomethane	ug/L	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	<1	<1	<1	<1
Ethylbenzene	ug/L	<1	<1	<1	<1
Hexachlorobutadiene	ug/L	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	ug/L	<1	<1	<1	<1
m-p-Xylene	ug/L	<2	<2	<2	<2
MEK (2-Butanone)	ug/L	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	ug/L	<5	<5	<5	<5
Methylene chloride	ug/L	0.724	<1	0.662	<1
MIBK (methyl isobutyl ketone)	ug/L	<10	<10	<10	<10
Naphthalene	ug/L	<1	<1	<1	<1
n-Butylbenzene	ug/L	<1	<1	<1	<1
n-Propylbenzene	ug/L	<1	<1	<1	<1
o-Xylene	ug/L	<1	<1	<1	<1
p-Isopropyltoluene	ug/L	<1	<1	<1	<1
sec-Butylbenzene	ug/L	<1	<1	<1	<1
Styrene	ug/L	<1	<1	<1	<1
tert-Butylbenzene	ug/L	<1	<1	<1	<1
Tetrachloroethene	ug/L	<1	<1	<1	<1
Toluene	ug/L	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	<1	<1	<1	<1
trans-1,3-Dichloropropene	ug/L	<1	<1	<1	<1
Trichloroethene	ug/L	<1	0.282	<1	<1
Trichlorofluoromethane	ug/L	<1	<1	<1	<1
Vinyl chloride	ug/L	<1	<1	<1	<1

Notes.

µg/L micrograms per liter

< Analyte not detected above RL

J Estimated result based on QC data or reported below RL

Method:

SW8260B - Volatile Organic Compounds

TABLE C-7
MONITORING WELL QA SAMPLE ANALYTICAL RESULTS - VOCs - OCTOBER 2007
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

Analyte	Sample ID	MW-37-173 2 DUP	MW-70-88 8 DUP	MW-76-88 2 DUP	MW-144-74 9 DUP	MW-157-74 8 DUP
	Lab Sample ID	L0710238-10	L0710238-09	L0710238-01	L0710238-05	L0710238-06
	Date	10/8/2007	10/8/2007	10/8/2007	10/8/2007	10/8/2007
Analyte	units					
1,1,1,2-Tetrachloroethane	ug/L	<0.5	<0.5	<0.5	0.359 J	<0.5
1,1,1-Trichloroethane	ug/L	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	0.737	448	18.4	966	34
1,1,2-Trichloroethane	ug/L	<1	1.14	<1	10.1	1.46
1,1-Dichloroethane	ug/L	<1	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	<1	<1	<1	<1	<1
1,1-Dichloropropene	ug/L	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	<1	<1	<1	<1	<1
1,2,4 Trichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,2,4 Trimethylbenzene	ug/L	<1	<1	<1	<1	<1
1,2-Dibromo-1-chloropropane	ug/L	<2	<2	<2	<2	<2
1,2-Dibromoethane	ug/L	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	<0.5	<0.5	<0.5	0.602	0.517
1,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,3-Dichloropropane	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	ug/L	0.191 J	<0.5	0.203 J	<0.5	<0.5
1-Chlorohexane	ug/L	<1	<1	<1	<1	<1
2,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1
2-Chlorotoluene	ug/L	<1	<1	<1	<1	<1
2-Hexanone	ug/L	<10	<10	<10	<10	<10
4-Chlorotoluene	ug/L	<1	<1	<1	<1	<1
Acetone	ug/L	10.4	11.8	11.6 B	10.7	11.5
Benzene	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	ug/L	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	ug/L	<1	<1	<1	<1	<1
Bromomethane	ug/L	<1	<1	<1	<1	<1
Carbon disulfide	ug/L	<1	<1	<1	<1	<1
Carbon tetrachloride	ug/L	4.15	<1	<1	1.4	17.9
Chlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	ug/L	<1	<1	<1	<1	<1
Chloroform	ug/L	6.23	0.434	0.978	1.71	234
Chloromethane	ug/L	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	0.331 J	8.3	11.8	27.8	12.7
cis-1,3-Dichloropropene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	ug/L	<1	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	<1	<1	<1	<1	<1
1-Ethylbenzene	ug/L	<1	<1	<1	<1	<1
1-Hexachlorobutadiene	ug/L	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	ug/L	<1	<1	<1	<1	<1
m,p-Xylene	ug/L	<2	<2	<2	<2	<2
MEK (2-Butanone)	ug/L	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	ug/L	<5	<5	<5	<5	<5
Methylene chloride	ug/L	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	ug/L	<10	<10	<10	<10	<10
Naphthalene	ug/L	<1	<1	<1	<1	<1
n-Butylbenzene	ug/L	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	<1	<1	<1	<1	<1
o-Xylene	ug/L	<1	<1	<1	<1	<1
p-Isopropyltoluene	ug/L	<1	<1	<1	<1	<1
sec-Butylbenzene	ug/L	<1	<1	<1	<1	<1
Styrene	ug/L	<1	<1	<1	<1	<1
tert-Butylbenzene	ug/L	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	0.693 J	3.91	4.82	3.15	5.81
Toluene	ug/L	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	<1	1.41	5.79	2.2	2.9
trans-1,3-Dichloropropene	ug/L	<1	<1	<1	<1	<1
Trichloroethene	ug/L	2.91	306	132	416	168
Trichlorofluoromethane	ug/L	<1	<1	<1	<1	<1
Vinyl acetate	ug/L	<5	<5	<5	<5	<5
Vinyl chloride	ug/L	<1	<1	<1	<1	<1

Notes:

ug/L: micrograms per liter

< Analyte not detected above RL

J Estimated result based on QC data or reported below RL

B Estimated result biased high or false positive based on blank data

Methods:

SW8260B - Volatile Organic Compounds

TABLE C-7
MONITORING WELL QA SAMPLE ANALYTICAL RESULTS - VOCs - OCTOBER 2007
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

Analyte	Sample ID Lab Sample ID Date units	MW-160-80.8 DUP L0710238-08 10/8/2007	MW-164-72.6 DUP L0710238-04 10/8/2007	MW-165A-73.9 DUP L0710238-07 10/8/2007	MW-166A-75.3 DUP L0710210-45 10/5/2007	MW-170-61.7 DUP L0710238-20 10/8/2007
1,1,1,2-Tetrachloroethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	ug/L	0.274 J	<1	<1	<1	0.781 J
1,1,2,2-Tetrachloroethane	ug/L	185	17.7	0.29 J	12	<0.5
1,1,2-Trichloroethane	ug/L	0.608 J	0.719 J	<1	0.398 J	<1
1,1-Dichloroethane	ug/L	<1	<1	<1	<1	1.36
1,1-Dichloroethene	ug/L	0.727 J	<1	<1	<1	2.93
1,1-Dichloropropene	ug/L	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	<2	<2	<2	<2	<2
1,2-Dibromoethane	ug/L	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1
1,3-Dichloropropane	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	ug/L	<0.5	0.197 J	<0.5	<0.5	<0.5
1-Chlorohexane	ug/L	<1	<1	<1	<1	<1
2,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1
2-Chlorotoluene	ug/L	<1	<1	<1	<1	<1
2-Hexanone	ug/L	<10	<10	<10	<10	<10
4-Chlorotoluene	ug/L	<1	<1	<1	<1	<1
Acetone	ug/L	2.86 J	10.4 B	9.68 J	11.6	6.66 J
Benzene	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	ug/L	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoforn	ug/L	<1	<1	<1	<1	<1
Bromomethane	ug/L	<1	<1	<1	<1	<1
Carbon disulfide	ug/L	<1	<1	<1	<1	<1
Carbon tetrachloride	ug/L	0.734 J	9.87	0.861 J	5.87	<1
Chlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	ug/L	<1	<1	<1	<1	<1
Chloroform	ug/L	3.21	126	3.26	65.9	<0.3
Chloromethane	ug/L	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	50.7	4.38	1.81	3.66	<1
cis-1,3-Dichloropropene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	ug/L	<1	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	<1	<1	<1	<1	<1
Ethylbenzene	ug/L	<1	<1	<1	<1	<1
Hexachlorobutadiene	ug/L	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	ug/L	<1	<1	<1	<1	<1
m,p-Xylene	ug/L	<2	<2	<2	<2	<2
MEK (2-Butanone)	ug/L	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	ug/L	<5	<5	<5	<5	<5
Methylene chloride	ug/L	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	ug/L	<10	<10	<10	<10	<10
Naphthalene	ug/L	<1	<1	<1	<1	<1
n-Butylbenzene	ug/L	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	<1	<1	<1	<1	<1
o-Xylene	ug/L	<1	<1	<1	<1	<1
p-Isopropyltoluene	ug/L	<1	<1	<1	<1	<1
sec-Butylbenzene	ug/L	<1	<1	<1	<1	<1
Styrene	ug/L	<1	<1	<1	<1	<1
tert-Butylbenzene	ug/L	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	13.4	2.13	0.557 J	1.7	0.46 J
Toluene	ug/L	<1	0.738 J	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	14.2	1.39	0.424 J	1.07	<1
trans-1,3-Dichloropropene	ug/L	<1	<1	<1	<1	<1
Trichloroethene	ug/L	626	61.1	37.1	83.4	<1
Trichlorofluoromethane	ug/L	<1	<1	<1	<1	<1
Vinyl acetate	ug/L	<5	<5	<5	<5	<5
Vinyl chloride	ug/L	<1	<1	<1	<1	<1

Notes.

ug/L micrograms per liter

< Analyte not detected above RL

J Estimated result based on QC data or reported below RL

B Estimated result biased high or false positive based on blank data

Method:

SW8260B - Volatile Organic Compounds

TABLE C-7
MONITORING WELL QA SAMPLE ANALYTICAL RESULTS - VOCs - OCTOBER 2007
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

Analyte	Sample ID Lab Sample ID Date	MW-171-62-4 DUP L0710238-21 10/8/2007	RW-02 DUP L0710210-35 10/5/2007	TB-100507 L0710210-28 10/5/2007	TB-101107 L0710237-02 10/8/2007
	units				
1,1,1,2-Tetrachloroethane	ug/L	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	ug/L	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	<0.5	109	<0.5	<0.5
1,1,2-Trichloroethane	ug/L	<1	3.39	<1	<1
1,1-Dichloroethane	ug/L	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	<1	<1	<1	<1
1,1-Dichloropropene	ug/L	<1	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	<2	<2	<2	<2
1,2-Dibromoethane	ug/L	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	<0.5	0.511	<0.5	<0.5
1,2-Dichloropropane	ug/L	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	<1	<1	<1	<1
1,3-Dichloropropane	ug/L	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	ug/L	<1	<1	<1	<1
2,2-Dichloropropane	ug/L	<1	<1	<1	<1
2-Chlorotoluene	ug/L	<1	<1	<1	<1
2-Hexanone	ug/L	<10	<10	<10	<10
4-Chlorotoluene	ug/L	<1	<1	<1	<1
Acetone	ug/L	6.55 J	<10	<10	2.92 J
Benzene	ug/L	<0.4	<0.4	<0.4	<0.4
Bromobenzene	ug/L	<1	<1	<1	<1
Bromochloromethane	ug/L	<1	<1	<1	<1
Bromodichloromethane	ug/L	<0.5	<0.5	<0.5	<0.5
Bromoform	ug/L	<1	<1	<1	<1
Bromomethane	ug/L	<1	<1	<1	<1
Carbon disulfide	ug/L	<1	<1	<1	<1
Carbon tetrachloride	ug/L	<1	12.9	<1	<1
Chlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5
Chloroethane	ug/L	<1	<1	<1	<1
Chloroform	ug/L	<0.3	147	<0.3	<0.3
Chloromethane	ug/L	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	<1	71.3	<1	<1
cis-1,3-Dichloropropene	ug/L	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	ug/L	<0.5	<0.5	<0.5	<0.5
Dibromomethane	ug/L	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	<1	<1	<1	<1
Ethylbenzene	ug/L	<1	<1	<1	<1
Hexachlorobutadiene	ug/L	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	ug/L	<1	<1	<1	<1
m,p-Xylene	ug/L	<2	<2	<2	<2
MEK (2-Butanone)	ug/L	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	ug/L	<5	<5	<5	<5
Methylene chloride	ug/L	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	ug/L	<10	<10	<10	<10
Naphthalene	ug/L	<1	<1	<1	<1
n-Butylbenzene	ug/L	<1	<1	<1	<1
n-Propylbenzene	ug/L	<1	<1	<1	<1
o-Xylene	ug/L	<1	<1	<1	<1
p-Isopropyltoluene	ug/L	<1	<1	<1	<1
sec-Butylbenzene	ug/L	<1	<1	<1	<1
Styrene	ug/L	<1	<1	<1	<1
tert-Butylbenzene	ug/L	<1	<1	<1	<1
Tetrachloroethene	ug/L	<1	3.18	<1	<1
Toluene	ug/L	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	<1	3.55	<1	<1
trans-1,3-Dichloropropene	ug/L	<1	<1	<1	<1
Trichloroethene	ug/L	<1	105	<1	<1
Trichlorofluoromethane	ug/L	<1	<1	<1	<1
Vinyl acetate	ug/L	<5	<5	<5	<5
Vinyl chloride	ug/L	<1	<1	<1	<1

Notes:

µg/L: micrograms per liter

< Analyte not detected above RL

J Estimated result based on QC data or reported below RL

B Estimated result biased high or false positive based on blank data

Method:

SW8260B - Volatile Organic Compounds

TABLE C-8
EFFLUENT QUALITY CONTROL ANALYTICAL RESULTS – VOCs
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

Sample Site ID Date and Time Collected	EFFLUENT- 4/11/2007 13:47 DUP	EFFLUENT- 7/9/2007 11:00 DUP	EFFLUENT- 10/5/2007 14:32 DUP
pH - E150.1			
Volatile Organic Compounds - SW8260B ug/L			
Analyte			
1,1,1,2-Tetrachloroethane	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	<1	<1	1.25
1,1,2,2-Tetrachloroethane	68.3	71.1	22.8
1,1,2-Trichloroethane	1.63	1.6	0.358 J
1,1-Dichloroethane	0.165	0.184 J	0.551 J
1,1-Dichloroethene	6.78	7.73	16.7
1,1-Dichloropropene	<1	<1	<1
1,2,3-Trichlorobenzene	<1	<1	<1
1,2,3-Trichloropropane	<1	<1	<1
1,2,4-Trichlorobenzene	<1	<1	<1
1,2,4-Trimethylbenzene	<1	<1	<1
1,2-Dibromo-3-chloropropane	<2	<2	<2
1,2-Dibromoethane	<1	<1	<1
1,2-Dichlorobenzene	<1	<1	<1
1,2-Dichloroethane	<0.5	<0.5	<0.5
1,2-Dichloropropane	<1	<1	<1
1,3,5-Trimethylbenzene	<1	<1	<1
1,3-Dichlorobenzene	<1	<1	<1
1,3-Dichloropropane	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	<0.5	<0.5	<0.5
1-Chlorohexane	<1	<1	<1
2,2-Dichloropropane	<1	<1	<1
2-Chlorotoluene	<1	<1	<1
2-Hexanone	-	-	<10
4-Chlorotoluene	<1	<1	<1
Acetone	<10	<10	<10
Benzene	<0.4	<0.4	<0.4
Bromobenzene	<1	<1	<1
Bromochloromethane	<1	<1	<1
Bromodichloromethane	<0.5	<0.5	<0.5
Bromoform	<1	<1	<1
Bromomethane	<3	<3	<1
Carbon disulfide	-	-	<1
Carbon tetrachloride	2.91	2.79	2.76
Chlorobenzene	<0.5	<0.5	<0.5
Chloroethane	<1	<1	<1
Chloroform	38.1	42.8	19.3
Chloromethane	<1	<1	<1
cis-1,2-Dichloroethene	69.3	70.4	4.8
cis-1,3-Dichloropropene	<0.5	<0.5	<0.5
Dibromochloromethane	<0.5	<0.5	<0.5
Dibromomethane	<1	<1	<1
Dichlorodifluoromethane	<1	<1	<1
Ethylbenzene	<1	<1	<1
Hexachlorobutadiene	<0.6	<0.6	<0.6
Isopropylbenzene	<1	<1	<1
m-,p-Xylene	<2	<2	<2
MEK (2-Butanone)	<10	<10	<10
Methyl t-butyl ether (MTBE)	<5	<5	<5
Methylene chloride	0.283 B	0.306 J	<1
MIBK (methyl isobutyl ketone)	<10	<10	<10
Naphthalene	<1	<1	<1
n-Butylbenzene	<1	<1	<1
n-Propylbenzene	<1	<1	<1
o-Xylene	<1	<1	<1
p-Isopropyltoluene	<1	<1	<1
sec-Butylbenzene	<1	<1	<1
Styrene	<1	<1	<1
tert-Butylbenzene	<1	<1	<1
Tetrachloroethene	11.1	12.1	23.8
Toluene	<1	<1	<1
trans-1,2-Dichloroethene	19.2	18.2	0.705 J
trans-1,3-Dichloropropene	<1	<1	<1
Trichloroethene	177	175	81.3
Trichlorofluoromethane	<1	<1	<1
Vinyl acetate	-	-	<5
Vinyl chloride	<1	<1	<1

TABLE C-8
EFFLUENT QUALITY CONTROL ANALYTICAL RESULTS - VOCs
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

Sample Site ID Date and Time Collected	EFFLUENT- 4/11/2007 13:47 DUP	EFFLUENT- 7/9/2007 11:00 DUP	EFFLUENT- 10/5/2007 14:32 DUP
<u>Semi-volatile Organic Compounds - SW8270B ug/L</u>			
Analyte			
1,2,4-Trichlorobenzene	<10.9J	-	<10
1,2-Dichlorobenzene	<10.9	-	<10
1,3-Dichlorobenzene	<10.9	-	<10
1,4-Dichlorobenzene	<10.9	-	<10
2,4,5-Trichlorophenol	<54.6	-	<10
2,4,6-Trichlorophenol	<10.9J	-	<10
2,4-Dichlorophenol	<10.9J	-	<10
2,4-Dimethylphenol	<10.9	-	<10
2,4-Dinitrophenol	<54.6	-	<50
2,4-Dinitrotoluene	<10.9	-	<10
2,6-Dinitrotoluene	<10.9	-	<10
2-Chloronaphthalene	<10.9J	-	<10
2-Chlorophenol	<10.9	-	<10
2-Methylnaphthalene	<10.9J	-	<10
2-Methylphenol	<10.9	-	<10
2-Nitroaniline	<54.6	-	<50
2-Nitrophenol	<10.9	-	<10
3,3'-Dichlorobenzidine	<21.9	-	<20
3-,4-Methylphenol	<54.6	-	<50
3-Nitroaniline	<54.6	-	<50
4,6-Dinitro-2-methylphenol	<54.6	-	<50
4-Bromophenyl-phenylether	<10.9	-	<10
4-Chloro-3-methylphenol	<21.9J	-	<10
4-Chloroaniline	<21.9	-	<20
4-Chlorophenyl-phenyl ether	<10.9	-	<10
4-Nitroaniline	<54.6	-	<50
4-Nitrophenol	<54.6	-	<50
Acenaphthene	<10.9	-	<10
Acenaphthylene	<10.9J	-	<10
Anthracene	<10.9	-	<10
Benzo(a)anthracene	<10.9	-	<10
Benzo(a)pyrene	<10.9	-	<10
Benzo(b)fluoranthene	<10.9	-	<10
Benzo(g,h,i)Perylene	<10.9	-	<10
Benzo(k)fluoranthene	<10.9	-	<10
Benzoic acid	<109	-	<50
Benzyl alcohol	<21.9	-	<10
Bis(2-Chloroethoxy)Methane	<10.9J	-	<10
Bis(2-Chloroethyl)ether	<10.9	-	<10
bis(2-Chloroisopropyl)ether	<10.9	-	<10
bis(2-Ethylhexyl)phthalate	<10.9	-	3.79 J
Butylbenzylphthalate	<10.9	-	<10
Chrysene	<10.9	-	<10
Dibenzo(a,h)Anthracene	<10.9	-	<10
Dibenzofuran	<10.9J	-	<10
Diethylphthalate	<10.9	-	<10
Dimethylphthalate	<10.9	-	<10
Di-N-Butylphthalate	<10.9	-	<10
Di-n-octylphthalate	<10.9	-	<10
Fluoranthene	<10.9	-	<10
Fluorene	<10.9	-	<10
Hexachlorobenzene	<10.9	-	<10
Hexachlorobutadiene	<10.9	-	<10
Hexachlorocyclopentadiene	-	-	<10
Hexachloroethane	<10.9	-	<10
Indeno(1,2,3-cd)pyrene	<10.9	-	<10
Isophorone	<10.9J	-	<10
Naphthalene	<10.9	-	<10
Nitrobenzene	<10.9J	-	<10
N-Nitroso-di-n-propylamine	<10.9	-	<10
N-Nitrosodiphenylamine	<10.9	-	<10
Pentachlorophenol	<54.6	-	<50
Phenanthrene	<10.9	-	<10
Phenol	<10.9	-	<10
Pyrene	<10.9	-	<10

TABLE C-8
EFFLUENT QUALITY CONTROL ANALYTICAL RESULTS – VOCs
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

Sample Site ID Date and Time Collected	EFFLUENT- 4/11/2007 13:47 DUP	EFFLUENT- 7/9/2007 11:00 DUP	EFFLUENT- 10/5/2007 14:32 DUP
Total Metals - SW6010B mg/L			
Analyte			
Aluminum, Total	<0.1	-	<0.1
Arsenic, Total	<0.01	-	<0.01
Barium, Total	0.101	-	0.106
Beryllium, Total	<0.01	-	<0.01
Cadmium, Total	<0.01	-	<0.01
Calcium, Total	21.2 J	-	21
Chromium, Total	<0.02	-	0.00305 J
Cobalt, Total	<0.02	-	<0.02
Copper, Total	0.021 J	-	<0.02
Iron, Total	0.355 J	-	1.14 J
Lead, Total	0.00759	-	0.0102
Magnesium, Total	10.6	-	11.4
Manganese, Total	0.0326	-	0.0275
Nickel, Total	<0.040	-	0.00918 J
Potassium, Total	0.747 J	-	0.8 J
Silver, Total	<0.01	-	<0.01
Sodium, Total	20.6	-	21.3
Vanadium, Total	<0.01	-	<0.01
Zinc, Total	0.0477	-	0.065
Antimony, Total	<0.001	-	0.000266 J
Selenium, Total	0.0014 J	-	0.00471
Thallium, Total	0.0000555 J	-	0.000358
Mercury	<0.0002	-	<0.0002

Notes:

- µg/L micrograms per liter
 mg/L milligrams per liter
 < Analyte not detected above RL
 J Estimated result based on QC data or reported below RL
 B Estimated result possibly biased high or false positive based on blank data
 - Not collected or Not Analyzed

APPENDIX D

DATA QUALITY EVALUATION

APPENDIX D

DATA QUALITY EVALUATION

The Operations and Maintenance (O&M) semi-annual groundwater sampling of monitoring wells and recovery wells at Dunn Field was conducted during April and October 2007 by engineering-environmental Management, Inc. (e²M). Recovery well sampling was also completed in April and October. Effluent samples from the main discharge at Dunn Field were also collected in February, April, July and October 2007. All groundwater samples from monitoring wells were collected in general accordance with the *User's Guide For Polyethylene-Based Passive Diffusion Bag Samplers To Obtain Volatile Organic Compound Concentrations In Wells*, Water Resources Investigation Report 01-4060, U.S. Geological Survey, 2001. The field and laboratory procedures were consistent with the *Remedial Action Sampling and Analysis Plan, Revisions 0 and 1* (RA SAP) (MACTEC, 2005). Samples collected were sent to Kemron Environmental Services, Inc. (KES) in Marietta, Ohio for analysis.

The data quality evaluation (DQE) process involves assessment of all field and laboratory procedures, including the independent data validation completed by Diane Short and Associates, Inc (DSA) in accordance with the RA SAP. Data validation forms are attached to this appendix. This assessment is designed to evaluate any problems with the quality assurance (QA)/quality control (QC) associated with the laboratory data and potential impact to the data quality objectives (DQOs). The DQE findings are summarized in the following sections.

D.1 FIELD ACTIVITIES and FIELD QUALITY CONTROL

A total of 66 groundwater samples were collected from 50 wells in April and October 2007 using passive diffusion bag samplers (PDB). In addition, 11 samples were collected from 11 recovery wells in April and October. Effluent samples were collected on 19 February, 11 April, 12 July and 5 October 2007, respectively. The sample locations are presented in the O&M Annual Report.

The field QC program for the collection of samples for the Dunn Field O&M included specific procedures for the collection of groundwater samples as described in the PDB User's Guide (USGS, 2001) and the RA SAP (MACTEC, 2004/2005). Sample bottles met USEPA requirements for environmentally clean containers. Sample labels were pre-printed to facilitate sample tracking from the field through the laboratory to the final report.

Field QC samples were collected to evaluate sampling technique and decontamination procedures. These samples included field duplicates, trip blanks, and field equipment blanks. Documentation of the sampling was performed in the field to ensure that the sample collected, labeling, chain-of-custody, and request for analysis were in agreement. Custody seals were placed on each cooler before pickup by the laboratory.

D.2 ANALYTICAL METHODS

The groundwater samples collected from the monitoring wells and the recovery wells were analyzed for VOCs by method 8260B. The effluent samples collected during the semi-annual events were analyzed for target compound list (TCL) VOCs by method 8260B, TCL semi-VOCs (SVOCs) by method 8270C, target analyte list (TAL) metals by methods 6010B and 7470A, and

pH by method 150.1. In February and July 2007, effluent samples were collected for VOC and pH analysis only.

D.3 LABORATORY QUALITY CONTROL

The laboratory QC program, including sample handling, laboratory control, and reporting, is documented in the RA SAP. Sample handling includes documentation of sample receipt, placement in storage, lab personnel using the sample, and disposal. The laboratory control consists of instrument calibration and maintenance, laboratory control samples (LCS), method blanks and matrix spikes. Reporting of the laboratory control data was planned prior to the collection of the data, allowing the laboratory to place the appropriate information into the data package so that the DQE could be performed in a timely manner.

D.4 DATA QUALITY EVALUATION

The objective of the DQE was to provide a review of the chemical data reports submitted by the laboratory and to assess the data in relation to the data quality objectives stated in the RA SAP (MACTEC, 2004/2005). The DQE consisted of review of laboratory QC data and field QC parameters, and flagging of the data as usable, usable with qualification, or unusable in accordance with the DQE standard operating procedures (SOPs) using the criteria stated in the RA SAP for each analytical method performed. The data quality relative to laboratory analyses was evaluated using the criteria stated in the RA SAP (MACTEC, 2004/2005) for each analytical method performed. The following information was reviewed:

- Sample Integrity (Deliverables)
- Sample Completeness
- Sample Holding Times
- Laboratory Methods for Extraction and Analysis (Calibration, Internal Standards)
- Method Accuracy and Precision (Surrogates, Matrix Spike/Matrix Spike Duplicate, LCS Recoveries)
- Laboratory Performance Criteria (Blanks, Instrument Performance Check)

Field QC parameters were evaluated through field duplicates, field blanks, field documentation, and shipping criteria.

The DQE was summarized by use of flags that indicate to the reviewer that the data being considered has been qualified using the established criteria. Sample delivery group (SDG) narratives detailing the evaluation of the laboratory data by DSA are included in this attachment. The SDGs and associated groundwater samples are listed on Table D-1.

The following sections discuss only those deficiencies encountered during the evaluation that resulted in qualified and/or unusable data.

D.4.1 Data Quality Evaluation Summary

A DQE was completed on the data reported for the Semi-Annual groundwater and effluent sampling events conducted at Dunn Field in February (effluent only), April, July (effluent only) and October 2007. The following sections provide summary discussions of the required data qualifications for each event and analytical method for groundwater samples collected at DDMT.

A Level III DQE was performed and the data quality indicators (DQIs) which were evaluated included sample integrity, holding times, trip blanks, field blanks, method blanks, internal standards, surrogate recoveries, matrix spike/matrix spike duplicate (MS/MSD) recoveries, LCSs, and field duplicate precision. These DQIs are expressed in terms of precision, accuracy, representativeness, comparability, sensitivity, and completeness. The results of the DQE are summarized below.

Precision

Field duplicates were collected to assess sampling precision. They consisted of replicate grab samples collected concurrently with the associated field samples. Precision is best expressed in terms of relative percent difference (RPD). In general, the precision goals were acceptable with the following exceptions.

Field precision goals (typically RPDs of <50%) were higher for various groundwater parameters in the duplicate sample pairs collected during each semi-annual and effluent event. Specific samples and the analytes with elevated RPDs are listed below by sampling event. No analytes required qualification based on field precision.

Accuracy

Accuracy was measured through the analyses of LCSs and MS/MSDs. Sample specific accuracy is measured through surrogate recovery. Accuracy is expressed as percent recovery (%R).

In the April event there were 11 targets out low in the LCS associated with the samples reported. These are qualified as estimated J. The 1,2-dichloroethane-d4 surrogate was recovered high in two samples. These samples were reanalyzed at a dilution due to high-level detections and the recovery of the same surrogate was in control. The detections reported were qualified as estimated J. Since this is an indication of possible high bias, no qualifiers are added to nondetected results. In the October event 2-butanone is recovered high in one batch. There are no detections associated, so no qualifiers are added based on LCS.

Based on MS/MSD performance in the VOC and SVOC analyses for the April and October events, low recoveries, both non-detects and detects in the parent sample are qualified as estimated J. For high recoveries, only detected results in the parent sample are qualified J as estimated. Iron and copper may be biased high proportional to the recovery of the MS/MSD analyte recoveries and low precision for the April effluent sample. Spike recovery may be due to inhomogeneity of the matrix. Associated results were qualified estimated J based on MS/MSD results for iron and copper.

Representativeness

Representativeness refers to the degree sample data accurately and precisely describes the population of samples at a sampling point or under certain environmental conditions. Samples that are not properly preserved or are analyzed beyond holding times may not be considered representative. Review of sampling procedures, laboratory preparation, analysis holding times, trip blank and field blank analysis help in providing this assessment.

Sampling procedures followed the work plan and were considered representative of the matrices collected. Laboratory preparation and analysis followed method guidelines.

Trip blanks, field blanks, and some method blanks contained VOCs that resulted in the qualification of data as possible false positives or biased high values based on the blank data. This resulted in the “B” qualification of some of the chloroform and methylene chloride results in the water samples. The “B”-qualified data were reported at levels below MCLs and therefore should not adversely impact data quality.

Completeness

Completeness is determined for both field and analytical objectives. Field completeness is calculated from the number of samples proposed versus the actual number of samples collected. Analytical completeness is expressed in terms of usable data. The project completeness goal for DDMT is 90% as stated in the DDMT SAP (MACTEC, 2004/2005).

Total analytical completeness for the O&M groundwater 2007 semi-annual sampling events was met the completeness DQO. The groundwater data and effluent data were usable with the qualifications discussed in the sections below and the attached DQE narratives.

Comparability

The selection of standardized methods aids in the comparison of past data to recent studies. Past investigation data are comparable to recent studies. Refer to the historical data presented in Appendix E.

Sensitivity

Analytical sensitivity is the concentration at which the measurement system can quantitate target analytes in the environmental matrices of concern. The ultimate expression of analytical sensitivity is the reporting quantitation limit (RL). The analytical method RLs and MDLs were compared to groundwater protection standards and were determined to meet the overall project objectives.

D.4.1.1 Effluent Event – February 2007

The February effluent samples were analyzed for TCL VOCs and pH only

- Based on low recoveries of the MS/MSD in the February effluent analysis, cis-DCE has been qualified estimated as J in the parent sample. The low recoveries were apparently due to high concentrations. No other qualifications were necessary.
- Any result reported below RL but above MDL was considered an estimated result and flagged “J” (unless overridden by other QC flags).

D.4.1.2 Semi-Annual Event – April 2007

Monitoring Well Samples - During the April 2007 semi-annual sampling event, 81 groundwater samples were collected from 50 monitoring wells. Samples were analyzed for Target Compound List (TCL) VOCs only. The data are usable with qualifications as described below:

- The 1,2-dichloroethane-d4 surrogate was recovered high in two samples. These samples were reanalyzed at a dilution due to high-level detections and the recovery of the same surrogate was in control. The detections reported were qualified as estimated J. Since this is an indication of possible high bias, no qualifiers are added to nondetected results.
- Any result reported below the reporting limit (RL) but above the method detection limit (MDL) was flagged “J” and considered an estimated result (unless overridden by other QC flags).

Recovery Well Samples - Eleven groundwater samples were collected from 11 recovery wells in April 2007. Samples were analyzed for TCL VOCs only. The data are usable with the following qualifications:

- Any result reported below RL but above MDL was flagged “J” and considered an estimated result (unless overridden by other QC flags).

Effluent Samples - Effluent discharge samples collected in April 2007 were analyzed for TCL VOCs, TCL SVOCs Target Analyte List (TAL) Metals and pH. The data are usable with the following qualifications:

- Based on MS/MSD performance in the VOC and SVOC analyses, low recoveries, both non-detects and detects in the parent sample are qualified as estimated J. For high recoveries, only detected results in the parent sample are so qualified
- There were 11 targets out low in the LCS associated with the effluent SVOC analyses. These are qualified as estimated J. All such targets were nondetects and may have a higher probability for false negatives.
- Iron and copper may be biased high proportional to the recovery of the MS/MSD analyte recoveries and low precision for the sample. Spike recovery may be due to inhomogeneity of the matrix. Associated results were qualified estimated J based on MS/MSD results for iron and copper.
- Any result reported below RL but above MDL was flagged “J” and considered an estimated result (unless overridden by other QC flags).

D.4.1.3 Effluent Event – July 2007

The July effluent samples were analyzed for TCL VOCs only.

- There was one CCV in which bromomethane had a %D outside the 25% validation limit. Since the analyte is not detected in associated samples, no qualifiers were necessary.
- Based on MS/MSD low recoveries for cDCE and chloroform, the corresponding analytes in the parent sample were qualified estimated J.

- Any result reported below RL but above MDL was flagged “J” and considered an estimated result (unless overridden by other QC flags).

D.4.1.4 Semi-Annual Event – October 2007

Monitoring Well Samples - During the October 2007 semiannual sampling event, 78 groundwater samples were collected from 50 monitoring wells. Samples were analyzed for TCL VOCs only. The October 2006 data are usable with qualifications as described below:

- Based on MS/MSD performance in the VOC analyses, low recoveries, both non-detects and detects in the parent sample are qualified as estimated J. For high recoveries, only detected results in the parent sample are so qualified.
- 2-butanone is recovered high in one batch . There are no detections associated, so no qualifiers are added based on LCS.
- Contamination was observed in some method blanks. Whenever methylene chloride or acetone is detected in associated samples at a level less than 10x the method blank (corrected for dilution), the result is qualified as UB. Such results are usable as nondetects.
- Any result reported below the reporting limit (RL) but above the method detection limit (MDL) was flagged “J” and considered an estimated result (unless overridden by other QC flags).

Recovery Well Samples - Eleven groundwater samples were collected from 11 recovery wells in October 2007. Samples were analyzed for TCL VOCs only. The October 2007 data are usable with the following qualifications:

- 2-butanone is recovered high in one batch . There are no detections associated, so no qualifiers are added based on LCS.
- Any result reported below RL but above MDL was flagged “J” and considered an estimated result (unless overridden by other QC flags).

Effluent Sample – An effluent discharge sample was collected on 5 October 2007. This sample and duplicate were analyzed for TCL VOCs, TCL SVOCs, TAL Metals, and pH. The effluent discharge data are usable with the following qualifications:

- Based on MS/MSD performance in the VOC analyses, low recoveries, both non-detects and detects in the parent sample are qualified as estimated J. For high recoveries, only detected results in the parent sample are so qualified.
- The iron result in the Main Discharge sample was flagged “J” and qualified as estimated based on high MS recovery indicating a potential for high bias.
- Any result reported below RL but above MDL was considered an estimated result and flagged “J” (unless overridden by other QC flags).

D.5 SUMMARY

Data obtained in 2007, from the monitoring wells, the recovery wells, and the effluent discharge samples at DDMT Dunn Field were determined to be sufficient and valid for monitoring system effectiveness.

TABLE D-1
SDG SUMMARY TABLE
ANNUAL OPERATIONS REPORT - 2007
DUNN FIELD GROUNDWATER IRA - YEAR NINE
Defense Depot Memphis, Tennessee

SDG	Groundwater Samples			Quality Control Samples
Effluent Sampling February 2007 Event				TB102601
L0702363	Main Discharge			Effluent-DUP
				Effluent-MS/MSD
April 2007 Semi-Annual Event				TB-041107
L0704275	RW-1	RW-3	RW-7	RW-1 DUP
	RW-1A	RW-4	RW-8	Effluent-DUP
	RW-1B	RW-5	RW-9	Effluent-MS/MSD
	RW-2	RW-6	Effluent	
	MW-156-62 0	MW-69-88 2	MW-70-88 8	
L0704220	MW-68-77 5	MW-70-83 3	MW-71-72 3	
	MW-07-68 9	MW-166-97 8	MW-31-77 1	TB-040907
	MW-145-86 6	MW-166A-75 3	MW-32-65 6	TB-041007
	MW-149-83 6	MW-167-76 5	MW-33-58	MW-151-94 5-Dup5
	MW-149-98 5	MW-168-113 9	MW-37-173 2	MW-166-87 3-Dup1
	MW-150-83 2	MW-168A-76 4	MW-40-90	MW-170-61 7-Dup2
	MW-150-90 5	MW-168A-86 9	MW-44-69	
	MW-151-78 5	MW-169-81 8	MW-54-89 5	
	MW-151-94 5	MW-170-61 7	MW-31-71 6	
	MW-159-81 1	MW-170-77 7	MW-166-87 3	
L0704287	MW-159-97 1	MW-171-62 4		
	MW-130-69 5	MW-157-74 8	MW-165-100 4	TB-041007
	MW-144-74 9	MW-158-104 1	MW-165-89 9	MW-148-80 0-Dup4
	MW-147-73 7	MW-158-93 1	MW-165A-73 9	MW-155-93 5-Dup6
	MW-148-80 0	MW-158A-81 5	MW-165A-84 5	MW-162-83 7-Dup7
	MW-148-85 5	MW-158A-91 4	MW-43-165 5	MW-165-100 4-Dup8
	MW-152-107 9	MW-160-80 8	MW-57-66 6	MW-43-165 5-Dup3
	MW-152-92 9	MW-161-80 4	MW-67-267 5	MW-164-72 6-MS/MSD
	MW-153-87 1	MW-162-83 7	MW-76-88 2	MW-76-88 2-MS/MSD
	MW-154-61 6	MW-163-74 9	MW-77-84 9	
	MW-155-77 0	MW-164-72 6	MW-79-92	
	MW-155-93 5			
Effluent Sampling July 2007 Event				Effluent-DUP
L0707156	Main Discharge			Effluent-MS/MSD
October 2007 Semi-Annual Event				
L0710210	RW-1	RW-3	RW-7	RW-2 DUP
	RW-1A	RW-4	RW-8	Effluent-DUP
	RW-1B	RW-5	RW-9	Effluent-MS/MSD
	RW-2	RW-6	Effluent	MW-166A-75 3-Dup6
	MW-130-69 5	MW-151-94 5	MW-31-71 6	MW-147-73 7-MS/MSD
	MW-147-73 7	MW-154-61 6	MW-31-77 1	
	MW-148-80 0	MW-156-62 0	MW-43-165 5	
	MW-148-85 5	MW-166-87 3	MW-44-69	
	MW-149-83 6	MW-166-97 8	MW-57-66 6	
	MW-149-98 5	MW-166A-75 3	MW-67-267 5	
L0710237	MW-151-78 5	MW-167-76 5		
	MW-07-68 9	MW-158A-91 4	MW-33-58	TB-101107
	MW-145-86 6	MW-159-81 1	MW-37-173 2	
	MW-150-83 2	MW-159-97 1	MW-40-90	
	MW-150-90 5	MW-161-80 4	MW-54-89 5	
	MW-152-107 9	MW-162-83 7	MW-68-77 5	
	MW-152-92 9	MW-163-74 9	MW-69-88 2	
	MW-153-87 1	MW-164-72 6	MW-70-83 3	
	MW-155-77 0	MW-165-100 4	MW-71-72 3	
	MW-155-93 5	MW-165-89 9	MW-76-88 2	
	MW-158-104 1	MW-165A-84 5	MW-77-84 9	
	MW-158-93 1	MW-32-65 6	MW-79-92	
	MW-158A-81 5	MW-144-74 9	MW-165A-73 9	
L0710238	MW-160-80 8	MW-157-74 8	MW-70-88 8	
	MW-168-113 9			MW-144-74 9-Dup2
	MW-168A-76 4			MW-157-74 8-Dup4
	MW-168A-86 9			MW-160-80 8-Dup5
	MW-169-81 8			MW-165A-73 9-Dup3
	MW-170-61 7			MW-70-88 8-1S-Dup1
	MW-170-77 7			MW-37-173 2-Dup
	MW-171-62 4			MW-76-88 2-Dup
				MW-164-72 6-Dup
				MW-170-61 7-Dup7
				MW-171-62 4-Dup8
				MW-37-173 2-MS/MSD
				MW-76-88 2-MS/MSD

ORGANIC DATA QUALITY REVIEW REPORT
VOLATILE ORGANICS SW-846 METHOD 8260B/5030B

8260B/5030B

SDG: L0702363

PROJECT: Memphis Defense Depot, Main Discharge for e2m, Texas

LABORATORY: Kemron Environmental Services, Marietta, OH

SAMPLE MATRIX: Water

SAMPLING DATE (Month/Year): February, 2007

NO. OF SAMPLES: 8260B/5030B (Waters) – 1 sample 1 Trip Blank

ANALYSES REQUESTED: SW-846 8260B

SAMPLE NO.: Main Discharge, TB102601

DATA REVIEWER: Diane Short

QA REVIEWER: Diane Short and Associates Inc. INITIALS/DATE: _____

Telephone Logs included Yes___ No X___

Contractual Violations Yes___ No X___

The EPA Contract Laboratory Program National Functional Guidelines for Organic Review, 2002, and the SW-846 Method 8260B has been referenced by the reviewer to perform this data validation review. The EPA qualifiers have been expanded to include a descriptor code and value to define QC violations and their values, per the approval of the Project Manager. Per the Scope of Work, the review of these samples includes Level III validation of all chains of custody, calibrations and QC forms referencing the QC limits in the above documents.

I. DELIVERABLES

A. All deliverables were present as specified in the Statement of Work (SOW), SW-846, or in the project contract.

Yes ☒ No ☐

This is a Level III Report. Raw data are provided, but are not required for review. Data were in pdf format.

B. Chain of Custody Documentation was complete and accurate.

Yes ☐ No ☒

The project manager is informed of the following and the chain information is to be updated for the project file. There are data written over without a cross out or initials.

C. Samples were received at the required temperature, preservation and intact with no bubbles.

Yes ☒ No ☐

II. ANALYTICAL REPORT FORMS

A. The Analytical Report or Data Sheets are present and complete for all requested analyses.

Yes ☒ No ☐

B. Holding Times

1. The contract holding times were met for all analyses (Time of sample receipt to time of analysis (VOA) or extraction and from extraction to analysis).

Yes ☒ No ☐

2. The Clean Water Act (40 CFR 136) or method holding times were met for all analyses (14 days from time of sample collection to analysis or extraction).

Yes ☒ No ☐

III. INSTRUMENT CALIBRATION – GC/MS

A. Initial Calibration

1. The Response (RF) and Relative Response Factors (RRF) and average RRF for all compounds for all analyses met the contract criteria of >0.01 .

Yes ☒ No ☐ NA ☐

Per the project manager, the 2001 EPA CLP validation guidance has been applied to the common "poor responders" which include: acetone, 2-butanone, and 4-methyl-2-pentanone. No calibration response factors below 0.05 have been observed. The validation guidance used for this project allows for a response of 0.01 for these compounds if spectral integrity can be verified at low concentrations. These spectra are not commonly provided and are not part of the deliverable for these data sets. The laboratory has been tasked with providing to the client verification that the 0.01 RF is valid. Given the spectral verification is available, the data are not qualified for response $>0.01 < 0.05$. No data have been qualified.

The low-responding compounds are highly water-soluble and capable of hydrogen bonding with water. This decreases their purge efficiency and results in the relatively low response. The implication of this low purge efficiency is that a relatively low absolute recovery of such compounds is achieved in the purge step of the analysis. If this recovery is consistent, reasonable accuracy and precision can be achieved in a given matrix, which is indicated for the lab matrix by acceptable recoveries in LCS and calibration checks. However, this causes these targets to be more sensitive to matrix variations that impact purge efficiency (such as ionic strength or the presence of varying levels of soluble non-target organic material) than are the more hydrophobic compounds typically analyzed by this method, and as a result they are more likely to exhibit matrix bias. In this

case, the MS/MSD recoveries are in control for these compounds, so it appears that there is not a severe matrix bias for them.

2a. The relative standard deviation (RSD) for the five point calibration was within the 30% limit for the CCCs.
Yes ☒ No ☐ NA ☐

This is a method requirement and indicates that the analytical system is in control.

2b. The relative standard deviation (RSD) for the five point calibration was within the 30% limit for all other compounds or a linear curve was used.
Yes ☒ No ☐ NA ☐

3. The 12 hour system Performance Check was performed as required in SW-846.
Yes ☒ No ☐ NA ☐

B. Continuing Calibrations

1. The midpoint standard was analyzed for each analysis at the required frequency and the QC criteria of > 0.05 (.01 for CLP 2001) were met.
Yes ☒ No ☐ NA ☐

The CCVs were analyzed at the proper frequency and no compounds showed low responses in the continuing calibration.

2. The percent difference (%D) limits of $\pm 25\%$ were met.
Yes ☒ No ☐ NA ☐

IV. GC/MS INSTRUMENT PERFORMANCE CHECK

The BFB (VOA) performance check was injected once at the beginning of each 12-hour period and relative abundance criteria for the ions were met.

Yes ☒ No ☐ NA ☐

V. INTERNAL STANDARDS

The Internal Standards met the 100% upper and -50% lower limits criteria and the Retention times were within the required windows.

Yes ☒ No ☐ NA ☐

VI. SURROGATE

Surrogate spikes were analyzed with every sample.

Yes ☒ No ☐

And met the recovery limits defined in the current contract, which are the current laboratory limits.

Yes ☒ No ☐

VII. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A. Matrix spike (MS) and matrix spike duplicates (MSD) were analyzed for every analysis performed and for every 20 samples or for every matrix whichever is more frequent.

Yes ☒ No ☐

The Main Discharge was used for the MS/MSD.

B. The MS and MSD percent recoveries were within the limits defined in the contract, which are the current laboratory control chart limits.

Yes _____ No ☒ X _____ NA _____

The full target list has been spiked. All but one MS and one MSD recovery are in control. cis-1,2-dichloroethene was reported at 42.5 and 36.8 % recovery. Data are qualified JS36.8. There could be a low bias to the reported data for this compound. The sample result is over 3 x the spike value, but less than the 4 x limit. This high concentration of the cis DCE could impact the spike recovery, however. For trichloroethene, the sample amount is 4x the spike level or greater. In such cases, the recovery cannot realistically be calculated, because the anticipated normal analytical variability is on the order of the spike level. Thus no qualifiers are added.

C. The MSD relative percent differences (RPD) were within the defined contract limits.

Yes ☒ X _____ No _____ NA _____

D. The MS/MSD were client samples.

Yes ☒ X _____ No _____ NA _____

VIII. LABORATORY CONTROL SAMPLE

A. Laboratory Control Samples (LCS) was analyzed for every analysis performed and for every 20 samples.

Yes ☒ X _____ No _____

B. The LCS percent recoveries were within the limits defined in the contract (the MS limits are used as a reference or laboratory-specific limits for this matrix are defined).

Yes ☒ X _____ No _____

The full target list has been spiked.

IX. BLANKS

A. Method Blanks were analyzed at the required frequency and for each matrix and analysis.

Yes ☒ X _____ No _____

B. No blank contamination was found in the Method Blank.

Yes ☒ X _____ No _____

C. If Field Blanks were identified, no blank contamination was found.

Yes _____ No ☒ X _____

No field blank is in the data set.

X. FIELD QC

If Field duplicates were identified, they met guidance RPD of < 35% for water or < 50% for soils. For values reported at < 5 x the reporting limit (RL), a difference of 2 x RL is used as guidance (4 x RL for soils). Data are not qualified for field duplicates as these are evaluated for the total project by the client.

Yes _____ No ☒ X _____ NA _____

There is no field duplicate.

XI. SYSTEM PERFORMANCE

A. The RICs, chromatograms, tunes and general system performance were acceptable for all instruments and analytical systems.

Yes _____ No _____ NA ☒ X _____

Not part of this review level

B. The suggested EQLs for the sample matrices in this set were met.

Yes ☒ No ☐ NA ☐

The sample was diluted 2 fold in order to report TCE in the linear range. The reporting limit is elevated as appropriate to the dilution.

XII. TCL COMPOUNDS

A. The identification is accurate and all retention times, library spectra and reconstructed ion chromatograms (RIC) were evaluated for all detected compounds.

Yes ☐ No ☐ NA ☒

Not part of this review level

B. Quantitation was checked to determine the accuracy of calculations for representative compounds in each internal standards quantitation set.

Yes ☐ No ☐ NA ☒

Not part of this review level

XIII. TENTATIVELY IDENTIFIED COMPOUNDS

TICs were properly identified and met the library identification criteria.

Yes ☐ No ☐ NA ☒

Not part of this review level

XIV. OVERALL ASSESSMENT OF THE CASE

The laboratory has complied with the requested method. Data are fully usable after consideration of qualifiers.

The following is noted:

Chain of Custody/Deliverables:

The project manager is informed of one item to be updated for the project file.

Matrix Spikes:

The full target list has been spiked. All but one MS and one MSD recovery are in control. cis-1,2-dichloroethene was reported at 42.5 and 36.8 % recovery. Data are qualified JS36.8. There could be a low bias to the reported data for this compound. The sample result is over 3 x the spike value, but less than the 4 x limit. This high concentration of the cis-DCE could impact the spike recovery, however. For trichloroethene, the sample amount is 4x the spike level or greater. In such cases, the recovery cannot realistically be calculated, because the anticipated normal analytical variability is on the order of the spike level. Thus no qualifiers are added.

ORGANIC DATA QUALITY REVIEW REPORT

VOLATILE ORGANICS SW-846 METHOD 8260B/5030B and Method 8270C

8260B/5030B

SDG: L0704220, L0704287, L0704275 (Lab Sample # 1, 19, 20 are Main Discharge)

8270C

SDG: L0704275PROJECT: Memphis Defense Depot Interim Remedial Action IRA-2 and Recovery Well, Main Discharge for e2m, TXLABORATORY: Kemron Environmental Services, Marietta, OHSAMPLE MATRIX: WaterSAMPLING DATE (Month/Year): April 2007NO. OF SAMPLES: 8260B/5030B (Waters) – 91 samples including 3 trip blanks; Method 8270C: 2 watersANALYSES REQUESTED: SW-846 8260B, 8270CSAMPLE NO.: See attached result forms and associated eddDATA REVIEWER: Sammy Huntington and John Huntington (Gateway Enterprises)QA REVIEWER: Diane Short and Associates Inc. INITIALS/DATE: _____Telephone Logs included Yes____ No XContractual Violations Yes____ No X

The EPA Contract Laboratory Program National Functional Guidelines for Organic Review, 2001, and the SW-846 Method 8260B has been referenced by the reviewer to perform this data validation review. The EPA qualifiers have been expanded to include a descriptor code and value to define QC violations and their values, per the approval of the Project Manager. Per the Scope of Work, the review of these samples includes Level III validation of all chains of custody, calibrations and QC forms referencing the QC limits in the above documents.

I. DELIVERABLES

A. All deliverables were present as specified in the Statement of Work (SOW), SW-846, or in the project contract.

Yes ☐ No ☒

This is a Level III Report.

There was no Case Narrative for the 8270C analysis (SDG L0704275).

B. Chain of Custody Documentation was complete and accurate.

Yes ☒ No ☐

The project manager is informed of the following and the chain information is to be updated for the project file.

Most of the SDGs do not have a customary chain of custody. Those have a running list of samples with date and time collected with no relinquished and received areas at the bottom of each page. They do not have page numbers. They have been improved since we first pointed out these issues in that each page does have a printed area for the sampler name, date, time, and signature. However, there is no similar printed area for receipt signatures, dates, and times to be entered, and in this case only the first page has been so signed by the laboratory.

A few sample names are being truncated on the Chain of Custody because the field width is not sufficient to allow the full name to appear. This seems to be a relatively minor issue for this set of samples.

Our understanding is that the chain of custody is a printout of an electronic sample documentation system. We reiterate our recommendation that the printout be improved to add a printed area for the laboratory to receive the samples, and to include page numbers. Preferably, the laboratory signature should appear on each page of the Chain of Custody, but at the very least should appear each time a new COC# is applied. Alternatively, some type of electronic signature system could be used using a system compliant with EPA's proposed cross-media electronic reporting rule. The present system does not appear to meet the authentication criteria.

C. Samples were received at the required temperature, preservation and intact with no bubbles.

Yes ☒ No ☐

Cooler temperature was in some cases below 2°C but narratives noted that all samples were received in good condition. When samples are below the lower EPA limit of 2° C, as long as there is no damage to the samples, no qualifier is required.

In addition, new EPA regulations (See Federal Register, March 12, 2007, 40CFR Part 122) require only that the temperature of samples delivered to the laboratory be less than 6° C. Thus the sample receipt conditions are fully compliant with applicable regulations.

For SDG L0704287, L0704220 the Sample Receiving Checklist states "NA" for whether the correct preservatives were added to the water samples, if the pH was tested on preserved water samples and if the pH ranges acceptable. SDG L0704275 has "Yes" checked.

II. ANALYTICAL REPORT FORMS

A. The Analytical Report or Data Sheets are present and complete for all requested analyses.

Yes ☒ No ☐

B. Holding Times

1. The contract holding times were met for all analyses (Time of sample receipt to time of analysis (VOA) or extraction and from extraction to analysis).

Yes ☒ No ☐

2. The Clean Water Act (40 CFR 136) or method holding times were met for all analyses (14 days from time of sample collection to analysis or extraction).

Yes ☒ No ☐

III. INSTRUMENT CALIBRATION – GC/MS

A. Initial Calibration

1. The Response (RF) and Relative Response Factors (RRF) and average RRF for all compounds for all analyses met the contract criteria of >0.05 (> 0.01 for the 2001 guidance).

Yes ☒ No ☐ NA ☐

There were several instruments used in the analyses of these samples. In some cases, the initial calibration response factors were above 0.05 for all targets, including acetone and 2-butanone. In some cases, acetone was below 0.05, and in the case of one instrument both acetone and 2-butanone gave average response factors below 0.05. 4-methyl-2-pentanone gave average response factors above 0.05 with the exception of one instrument. All other targets are above the 0.05 level.

Per the project manager, the 2001 EPA CLP validation guidance has been applied to the common “poor responders”. The validation guidance used for this project allows for a response of 0.01 for these compounds if spectral integrity can be verified at low concentrations. These spectra are not commonly provided and are not part of the deliverable for these data sets. The laboratory has been tasked with providing to the client verification that the 0.01 RF is valid. Given the spectral verification is available, the data are not qualified for response $>0.01 < 0.05$. No data have been qualified.

The low-responding compounds are highly water-soluble and capable of hydrogen bonding with water. This decreases their purge efficiency and results in the relatively low response. The implication of this low purge efficiency is that a relatively low absolute recovery of such compounds is achieved in the purge step of the analysis. If this recovery is consistent, reasonable accuracy and precision can be achieved in a given matrix, which is indicated for the lab matrix by acceptable recoveries in LCS and calibration checks. However, this causes these targets to be more sensitive to matrix variations that impact purge efficiency (such as ionic strength or the presence of varying levels of soluble non-target organic material) than are the more hydrophobic compounds typically analyzed by this method, and as a result they are more likely to exhibit matrix bias.

2a. The relative standard deviation (RSD) for the five point calibration was within the 30% limit for the CCCs.
Yes ☒ No ☐ NA ☐

This is a method requirement and indicates that the analytical system is in control.

2b. The relative standard deviation (RSD) for the five point calibration was within the 30% limit for all other compounds or a linear curve was used.
Yes ☐ No ☒ NA ☐

The laboratory narrative states that all targets with an RSD above 15% used a regression curve. However, in the cases shown in the table below there is no r value reported in the initial calibration summary forms and no indication that a curve was used. In these cases we have assumed that the calculations were conducted using the average response rather than a regression curve.

Only in cases where there are detections or else the %RSD is so high as to suggest a possibility of false negatives are qualifiers added for %RSD outliers. In this case, no associated samples have detections of the impacted targets, and no qualifiers are added.

Method	SDG	ICAL Date	Inst.#	Analyte	%RSD	Qualifiers Added
8260B	L0704287	4/16/07 16:43	11	trichlorofluoromethane	31.1	None, ND
		4/17/07 22:24	8	1,2,3 trichlorobenzene	38.6	None, ND
	L0704220	3/14/07 21:05	6	1,2,3 trichlorobenzene	36	None, ND
		4/17/07 22:24	8	1,2,3 trichlorobenzene	38.6	None, ND
	L0704275	4/16/07 16:43	11	trichlorofluoromethane	31.1	None, ND
		4/17/07 22:24	8	1,2,3 trichlorobenzene	38.6	None, ND

3. The 12 hour system Performance Check was performed as required in SW-846.

Yes ☒ X No ☐ NA ☐

B. Continuing Calibrations

1. The midpoint standard was analyzed for each analysis at the required frequency and the QC criteria of > 0.05 (>0.01 for the 2001 validation guidance) were met.

Yes ☒ X No ☐ NA ☐

The CCVs were analyzed at the proper frequency. The same compounds showed response factors < 0.05 as did in the initial calibrations, but since all were above the 2001 validation limit of 0.01, no qualifiers have been added for this.

2. The percent difference (%D) limits of $\pm 25\%$ were met.

Yes ☒ X No ☐ NA ☐

IV. GC/MS INSTRUMENT PERFORMANCE CHECK

The BFB (VOA) or DFTPP (SVOA) performance check was injected once at the beginning of each 12-hour period and relative abundance criteria for the ions were met.

Yes ☒ X No ☐ NA ☐

V. INTERNAL STANDARDS

The Internal Standards met the 100% upper and -50% lower limits criteria and the Retention times were within the required windows.

Yes ☒ X No ☐ NA ☐

VI. SURROGATE

Surrogate spikes were analyzed with every sample.

Yes ☒ X No ☐

And met the recovery limits defined in the current contract, which are the current laboratory limits.

Yes ☐ No ☒ X

The 1,2-dichloroethane-d4 surrogate was recovered high in two samples. These samples were reanalyzed at a dilution due to high-level detections and the recovery of the same surrogate was in control. The detections reported at the 1x dilution are qualified as JS#, where # is the recovery observed. Since this is an indication of possible high bias, no qualifiers are added to nondetected results.

Method	SDG	Lab Sample #	Targets Detected	Results	Qualifiers
8260B	L0704287	19	1,2-Dichloroethane-d4	120	JS120 detects
		23	1,2-Dichloroethane-d4	125	JS125 detects

VII. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Matrix spike (MS) and matrix spike duplicates (MSD) were analyzed for every analysis performed and for every 20 samples or for every matrix whichever is more frequent.

Yes _____ No ☒ X _____

8260B: There are 3 MS/MSDs which does not meet the 1:20 ratio.

8270C: There is 1 MS/MSD which meets the 1:20 ratio

The MS/MSDs present are shown in the table below.

SDG	Method	Client Sample ID	Lab Sample ID
L0704275	8260B\5030B	MAIN DISCHARGE-RW-2	L0704275-18
L0704287		MW-164-72.6-IS-2	L0704287-29
L0704287		MW-76-88.2-IS-2	L0704287-04
L0704275	8270C\3520C	MAIN DISCHARGE-RW-2	L0704275-18

A. The MS and MSD percent recoveries were within the limits defined in the contract, which are the current laboratory control chart limits.

Yes _____ No ☒ X _____ NA _____

The full target list has been spiked. Most MS/MSD recoveries and RPDs are in control. Instances where spike recoveries are out of limits are shown in the table below. In several instances, the sample amount is 4x the spike level or greater. In such cases, the recovery cannot realistically be calculated, because the anticipated normal analytical variability is on the order of the spike level. Thus no qualifiers are added in these instances. For low recoveries, both non-detects and detects in the parent sample are qualified as JS#, where # is the recovery. For high recoveries, only detected results in the parent sample are so qualified. Qualified results may be biased proportional to the recovery observed, and nondetects that are qualified may have a somewhat higher risk than normal of false negatives due to the observed bias.

Method	SDG	Lab Sample ID	Analyte	MS/MSD/RPD	Qualifiers
8360B	L0704287	4	All in control		None
		29	Bromodichloromethane	131/130/OK	None, ND in parent
			Chloroform	-14/-60.5/OK	None, parent > 4x spike
			Trichloroethene	24.5/-2.73/OK	None, parent > 4x spike
	L0704275	18	cis-1,2-dichloroethene	67/OK/OK	JS67 parent detection
			Trichloroethene	-41.7/-10.8/OK	None, parent > 4x spike
			Chloroform	52.5/53.1/OK	JS53 parent detection
8270C	L0704275	18	2-Chloronaphthalene	42.2/44.5/OK	JS43 parent
			2-Methylnaphthalene	45.5/47.7/OK	JS46 parent
			bis (2-chloroethoxyl) Methane	36.6/38.3/OK	JS37 parent
			2,4-Dichlorophenol	46.6/48.7/OK	JS47 parent

A. The MSD relative percent differences (RPD) were within the defined contract limits.

Yes _____ No ☒ X _____ NA _____

A few RPDs were out of limits but these are not qualified, since they are not associated with MS or MSD recoveries that are elevated.

A. The MS/MSD were client samples.

Yes ☒ No ☐ NA ☐

VIII. LABORATORY CONTROL SAMPLE

A. Laboratory Control Samples (LCS) was analyzed for every analysis performed and for every 20 samples.

Yes ☒ No ☐

B. The LCS percent recoveries were within the limits defined in the contract (the MS limits are used as a reference or laboratory-specific limits for this matrix are defined).

Yes ☐ No ☒

8260B: There are two target compound showing elevated LCS recoveries in two batches, as shown in the table below. There are no detections associated with these, so no qualifiers are added.

8270C: There are 11 targets out low in the LCS associated with the samples reported. These are qualified as JL#, where # is the low recovery. All such targets are nondetects in this case and as a consequence may have a higher probability than normal for false negatives. We were unable to find a Case Narrative in the data package for the semivolatiles analysis, so we do not know if the laboratory has an explanation for the low recoveries. None are sufficiently low to justify data rejection, most being very close to the laboratory lower control limit. Please see the EDD or the qualified report forms for details.

Method	SDG	Lab Sample #	Batch	Targets Detected	LCS/LCSD/RPD	Qualifiers
8260	L0704287	16-20, 23, 25, 29	WG238145	Bromodichloromethane	125	None, ND
		12, 21, 22, 25	WG238253	Bromodichloromethane	124/OK/OK	None, ND
				2-butanone	137/OK/OK	None, ND
8270	L0704275	18, 22	WG238752	11 compounds out low		JL#

IX. BLANKS

A. Method Blanks were analyzed at the required frequency and for each matrix and analysis.

Yes ☒ No ☐

B. No blank contamination was found in the Method Blank.

Yes ☐ No ☒

8270C: The method blank is in control.

8260B: Contamination was observed in some method blanks indicated in the table, below the reporting limit. Whenever methylene chloride or acetone is detected in associated samples at a level less than 10x the method blank (corrected for dilution), the result is qualified as UB#, where # is the corrected method blank level. Such results are usable as nondetects. Qualifiers added are summarized in the table below. For other targets, the factor used is 5x.

Method	SDG	Lab Sample #	Batch	Targets Detected	Results	Qualifiers
8260B	L0704287	16-20, 23, 25, 29	WG238145	1,2,3 trichlorobenzene	.268F	None, ND
		7, 10,11,13-15	WG238143	1,2,3 trichlorobenzene	.301F	None, ND
				1,2,4 trichlorobenzene	.230F	None, ND
				Hexachlorobutadiene	.436*	None, ND
		33-41	WG236230	1,2,3 trichlorobenzene	.304F	None, ND
				Hexachlorobutadiene	.387*	None, ND
		27,28,32	WG238321	1,2,3 trichlorobenzene	.286F	None, ND
				1,2,4 trichlorobenzene	.202F	None, ND
				Hexachlorobutadiene	.386*	None, ND
	L0704220	13,14,17,18,20,21,23-	WG238143	1,2,3 trichlorobenzene	.301F	None, ND

Method	SDG	Lab Sample #	Batch	Targets Detected	Results	Qualifiers
		30				
				1,2,4 trichlorobenzene	.230F	None, ND
				Hexachlorobutadiene	.436F	None, ND
			WG238273	1,2,3 trichlorobenzene	.287F	UB# one detect
				Hexachlorobutadiene	.416*	None, ND
	L0704275	1-6	WG238230	1,2,3 trichlorobenzene	.304F	None, ND
				Hexachlorobutadiene	.387*	None, ND
		9-23	WG238273	1,2,3 trichlorobenzene	.287F	None, ND
				Hexachlorobutadiene	.416*	None, ND

C. If Field Blanks were identified, no blank contamination was found.

Yes ___ No X

There were three (3) trip blanks. Methylene chloride was detected below the reporting limit in two of them, TCE below the reporting limit in one. Associated samples are qualified as described for method blanks, with the qualifier being UTB# for clarity as to the source of the qualification. Such data are usable as non-detects.

Method	SDG	Sample ID	Lab Sample ID	Analyte	Results	Qualifiers
8260B	L0704287	TB-041007-IS-2	41	trichloroethene	.282F	UTB.28 sample 16
	L0704220	TB-040907-IS-2	33	methylene chloride	.724F	UTB.72 detects
	L0704275	TB-041107-IS-2	23	methylene chloride	.662F	UTB.62 detects

X. FIELD QC

If Field duplicates were identified, they met guidance RPD of < 35% for water or < 50% for soils. For values reported at < 5 x the reporting limit (RL), a difference of 2 x RL is used as guidance (4 x RL for soils). Data are not qualified for field duplicates as these are evaluated for the total project by the client.

Yes X No ___ NA ___

8260B: There are 10 samples identifiable as field duplicates. Results are shown in the table below. There are some RPDs that are elevated for two of the pairs. No qualifications were made for duplicate results

8270C: There is one field duplicate, which is in control.

SDG	Method	Duplicate	Parent	Observations
L0704220	8260B\5030B	DUP1-IS-2	MW-166-87.3-IS-2	OK
L0704220	8260B\5030B	DUP2-IS-2	MW-170-61.7-IS-2	OK
L0704220	8260B\5030B	DUP5-IS-2	MW-151-94.5-IS-2	OK
L0704275	8260B\5030B	DUP-1-RW-2	RW-1-IS-2	OK
L0704275	8260B\5030B	DUP-2-RW-2	Main Discharge-RW-2	cis-1,2-DCE RPD = 48; 1,1,2,2-tetrachloroethane RPD = 40; Others OK
L0704287	8260B\5030B	DUP3-IS-2	MW-43-165.5-IS-2	OK
L0704287	8260B\5030B	DUP4-IS-2	MW-148-80.0-IS-2	cis-1,2-DCE RPD = 47; TCE RPD=50; Others OK
L0704287	8260B\5030B	DUP6-IS-2	MW-155-93.5-IS-2	OK
L0704287	8260B\5030B	DUP8-IS-2	MW-165-100.4-IS-2	OK
L0704275	8270C\3520C	DUP-2-RW-2	Main Discharge-RW-2	OK, all ND

XI. SYSTEM PERFORMANCE

A. The RICs, chromatograms, tunes and general system performance were acceptable for all instruments and analytical systems.

Yes ____ No ____ NA X ____

Not part of this review level

B. The suggested EQLs for the sample matrices in this set were met.

Yes X ____ No ____ NA ____

Dilutions were necessary in some cases to achieve the proper quantification of high-level targets, which raises the EQLs for all other targets in the run. Only the results that are in the calibration range have been reported by the laboratory, but the undiluted results have been used for nondetected targets and results that are in range at that dilution.

XII. TCL COMPOUNDS

A. The identification is accurate and all retention times, library spectra and reconstructed ion chromatograms (RIC) were evaluated for all detected compounds.

Yes ____ No ____ NA X ____

Not part of this review level

B. Quantitation was checked to determine the accuracy of calculations for representative compounds in each internal standards quantitation set.

Yes ____ No ____ NA X ____

Not part of this review level

XIII. TENTATIVELY IDENTIFIED COMPOUNDS

TICs were properly identified and met the library identification criteria.

Yes ____ No ____ NA X ____

Not part of this review level

XIV. OVERALL ASSESSMENT OF THE CASE

The laboratory has complied with the requested method. Data are fully usable after consideration of qualifiers.

The following is noted:

Chain of Custody/Deliverables:

This is a Level III Report.

There was no Case Narrative for the 8270C analysis (SDG L0704275).

The project manager is informed of the following and the chain information is to be updated for the project file.

Most of the SDGs do not have a customary chain of custody. Those have a running list of samples with date and time collected with no relinquished and received areas at the bottom of each page. They do not have page numbers.

They have been improved since we first pointed out these issues in that each page does have a printed area for the sampler name, date, time, and signature. However, there is no similar printed area for receipt signatures, dates, and times to be entered, and in this case only the first page has been so signed by the laboratory.

A few sample names are being truncated on the Chain of Custody because the field width is not sufficient to allow the full name to appear. This seems to be a relatively minor issue for this set of samples.

Our understanding is that the chain of custody is a printout of an electronic sample documentation system. We reiterate our recommendation that the printout be improved to add a printed area for the laboratory to receive the samples, and to include page numbers. Preferably, the laboratory signature should appear on each page of the Chain of Custody, but at the very least should appear each time a new COC# is applied. Alternatively, some type of electronic signature system could be used using a system compliant with EPA's proposed cross-media electronic reporting rule. The present system does not appear to meet the authentication criteria.

Sample Condition

Cooler temperature was in some cases below 2°C but narratives noted that all samples were received in good condition. When samples are below the lower EPA limit of 2° C, as long as there is no damage to the samples, no qualifier is required.

In addition, new EPA regulations (See Federal Register, March 12, 2007, 40CFR Part 122) require only that the temperature of samples delivered to the laboratory be less than 6° C. Thus the sample receipt conditions are fully compliant with applicable regulations.

For SDG L0704287, L0704220 the Sample Receiving Checklist states "NA" for whether the correct preservatives were added to the water samples, if the pH was tested on preserved water samples and if the pH ranges acceptable. SDG L0704275 has "Yes" checked.

Initial Calibrations:

There were several instruments used in the analyses of these samples. In some cases, the initial calibration response factors were above 0.05 for all targets, including acetone and 2-butanone. In some cases, acetone was below 0.05, and in the case of one instrument both acetone and 2-butanone gave average response factors below 0.05. 4-methyl-2-pentanone gave average response factors above 0.05 with the exception of one instrument. All other targets are above the 0.05 level.

Per the project manager, the 2001 EPA CLP validation guidance has been applied to the common "poor responders". The validation guidance used for this project allows for a response of 0.01 for these compounds if spectral integrity can be verified at low concentrations. These spectra are not commonly provided and are not part of the deliverable for these data sets. The laboratory has been tasked with providing to the client verification that the 0.01 RF is valid. Given the spectral verification is available, the data are not qualified for response $>0.01 < 0.05$. No data have been qualified.

The low-responding compounds are highly water-soluble and capable of hydrogen bonding with water. This decreases their purge efficiency and results in the relatively low response. The implication of this low purge efficiency is that a relatively low absolute recovery of such compounds is achieved in the purge step of the analysis. If this recovery is consistent, reasonable accuracy and precision can be achieved in a given matrix, which is indicated for the lab matrix by acceptable recoveries in LCS and calibration checks. However, this causes these targets to be more sensitive to matrix variations that impact purge efficiency (such as ionic strength or the presence of varying levels of soluble non-target organic material) than are the more hydrophobic compounds typically analyzed by this method, and as a result they are more likely to exhibit matrix bias.

The laboratory narrative states that all targets with an RSD above 15% used a regression curve. However, in the cases shown in the table within the report there is no *r* value reported in the initial calibration summary forms and no indication that a curve was used. In these cases we have assumed that the calculations were conducted using the average response rather than a regression curve.

Only in cases where there are detections or else the %RSD is so high as to suggest a possibility of false negatives are qualifiers added for %RSD outliers. In this case, no associated samples have detections of the impacted targets, and no qualifiers are added.

Continuing Calibrations:

The CCVs were analyzed at the proper frequency. The same compounds showed response factors < 0.05 as did in the initial calibrations, but since all were above the 2001 validation limit of 0.01, no qualifiers have been added for this.

Surrogates:

The 1,2-dichloroethane-d4 surrogate was recovered high in two samples. These samples were reanalyzed at a dilution due to high-level detections and the recovery of the same surrogate was in control. The detections reported at the 1x dilution are qualified as JS#, where # is the recovery observed. Since this is an indication of possible high bias, no qualifiers are added to nondetected results.

Matrix Spikes:

8260B: There are 3 MS/MSDs which does not meet the 1:20 ratio.

8270C: There is 1 MS/MSD which meets the 1:20 ratio

The full target list has been spiked. Most MS/MSD recoveries and RPDs are in control. Instances where spike recoveries are out of limits are shown in the table within the report body. In several instances, the sample amount is 4x the spike level or greater. In such cases, the recovery cannot realistically be calculated, because the anticipated normal analytical variability is on the order of the spike level. Thus no qualifiers are added in these instances. For low recoveries, both non-detects and detects in the parent sample are qualified as JS#, where # is the recovery. For high recoveries, only detected results in the parent sample are so qualified. Qualified results may be biased proportional to the recovery observed, and nondetects that are qualified may have a somewhat higher risk than normal of false negatives due to the observed bias.

Method Blanks:

8270C: The method blank is in control.

8260B: Contamination was observed in some method blanks indicated in the table, below the reporting limit. Whenever methylene chloride or acetone is detected in associated samples at a level less than 10x the method blank (corrected for dilution), the result is qualified as UB#, where # is the corrected method blank level. Such results are usable as nondetects. Qualifiers added are summarized in the table within the report body. For other targets, the factor used is 5x.

Field Blanks:

There were three (3) trip blanks. Methylene chloride was detected below the reporting limit in two of them, TCE below the reporting limit in one. Associated samples are qualified as described for method blanks, with the qualifier being UTB# for clarity as to the source of the qualification. Such data are usable as non-detects.

LCS Recoveries:

8260B: There are two target compound showing elevated LCS recoveries in two batches, as shown in the table within the report. There are no detections associated with these, so no qualifiers are added.

8270C: There are 11 targets out low in the LCS associated with the samples reported. These are qualified as JL#, where # is the low recovery. All such targets are nondetects in this case and as a consequence may have a higher probability than normal for false negatives. We were unable to find a Case Narrative in the data package for the semivolatiles analysis, so we do not know if the laboratory has an explanation for the low recoveries.

None are sufficiently low to justify data rejection, most being very close to the laboratory lower control limit. Please see the EDD or the qualified report forms for details.

EQLs:

Dilutions were necessary in some cases to achieve the proper quantification of high-level targets, which raises the EQLs for all other targets in the run. Only the results that are in the calibration range have been reported by the laboratory, but the undiluted results have been used for nondetected targets and results that are in range at that dilution.

Field QC:

8260B: There are 10 samples identifiable as field duplicates. Results are shown in the table within the report. There are some RPDs that are elevated for two of the pairs. No qualifications were made based on duplicate analysis.

8270C: There is one field duplicate, which is in control.

INORGANIC DATA QUALITY REVIEW REPORT**METALS BY ICP, ICPMS and Mercury**SDG: L00704275PROJECT: Memphis Defense Depot, Main Discharge; for e2mLABORATORY: Kemron Laboratories, Marietta, OHSAMPLE MATRIX: Water SAMPLING DATE (Month/Year): 4 / 07ANALYSES REQUESTED: SW-846 Method 6010 (ICP), 6010 (ICPMS), 7470ANO. OF SAMPLES: 2 Total WaterSAMPLE NO: Main Discharge-RW-2, DUP-2-RW-2DATA REVIEWER: Diane ShortQA REVIEWER: Diane Short and Associates Inc. INITIALS/DATE: _____Telephone Logs included Yes____ No XContractual Violations Yes____ No X

The project Sampling and Analysis Plan (SAP), the EPA Contract Laboratory Program National Functional Guidelines for Inorganic Review, 2002 and the SW-846 Methods have been referenced by the reviewer to perform this data validation review. The EPA qualifiers have been expanded to include a descriptor code and value to define QC violations and their values, per the approval of the Project Manager. Per the Scope of Work, the review includes validation of all calibrations, chains of custody (for sample holding time and preservation only), and QC forms referencing the above documents.

I. DELIVERABLES

All deliverables were present as specified in the Statement of Work or project contract.

Yes ☒ X No ☐

The following is noted for clarification:

Per the contract, all packages were reviewed for holding time, summary QC and calibration (Level III). No raw data were required for review, nor were raw data required for submission. No Internal Standard recoveries are submitted for the ICPMS and may not be required for Level III. The laboratory has submitted CLP-type summary forms for ICP and ICP/MS and mercury. There are 19 ICP analytes and 3 ICP/MS analytes.

II. CALIBRATIONS

A. All initial instrument calibrations were performed as defined in the contract or Statement of Work (SOW). All correlation coefficients of the 3 point curve were > 0.995 .

Yes ☒ X No ☐ NA ☐

No raw data were required to evaluate this requirement. No % RSD data were submitted for the ICPMS and none have been required for Level III.

B. The initial calibration verification (ICV) and continuing calibration verification (CCV) standards were analyzed at the required frequency.

Yes ☒ X No ☒ X

Sequencing was not required, but sufficient calibrations were present to verify that the frequencies were met for client samples.

C. And the ICV and CCV standard percent recovery results were within the required control limits of 90 – 110% (Mercury 80 – 120%).

Yes ☒ X No ☐

III. CRDL STANDARDS

The 2 x CRDL standards were analyzed as required in the SOW.

Yes ☐ No ☐ NA ☒ X

Not required, but was present only for thallium and is acceptable.

IV. BLANKS

Note: the highest blank associated with any particular analyte is used for the qualification process and is the value entered after the "B" blank descriptor.

A. The initial calibration blanks (ICB) and continuing calibration blanks (CCB) were analyzed at the required frequency.

Yes ☒ X No ☐ NA ☐

Sequencing was not required, but sufficient calibration blanks were present to verify that the frequencies were met for client samples.

B. And the ICB and CCB results were within the required control limits.

Yes ☐ No ☒ X NA ☐

Per the review of the data, there were as some blank analyte detects reported in the calibration blanks, but client data were either non-detect (U) or much greater (5X) than the contamination. Note that the calibration blanks are now being reported in mg/l and the sample results are reported in mg/l.

C. And all analytes in the Leach Blank were less than the CRDL, or less than 2x the instrument detection limit (IDL), whichever is lower.

Yes___ No___ NA__X__
 No TCLP analysis was performed.

V. PREPARATION BLANKS

A. Preparation blanks were prepared and analyzed at the required frequency.

Yes__X__ No___

B. And all analytes in the preparation blank were less than the CRDL, or less than the instrument detection limit (IDL), whichever is lower.

Yes__X__ No___

C. Field, trip, decon rinse or other field blanks are contained and identified in the package.

Yes___ No___ NA__X__

There is not a field blank in this data set.

D. And the reported results are less than the CRDL or less than the IDL, whichever is lower.

Yes___ No___ NA__X__

VIA. ICP INTERFERENCE CHECK SAMPLE

A. The Interference Check Sample (ICS) was analyzed as required in the SOW or contract.

Yes__X__ No___ NA___

B. And the ICS percent recovery results were reported for all required ICS analytes and were within required control limits of 80% to 120%.

Yes__X__ No___ NA___

C. ICP analysis results for analytes not required to be present in a given ICS standard were within acceptable limits.

Yes___ No___ NA__X__

Not requested by client and data not provided by laboratory.

VIB. INTERELEMENT CORRECTION FACTORS

The Interelement Correction Factors are included and complete for all possible interferent analytes.

Yes___ No___ NA__X__

Review of possible other contaminants was not requested by the client.

VII. SPIKE SAMPLE RECOVERY

A. A matrix (pre-digestion) spike sample was analyzed for each digestion group and/or matrix or as required in the SOW.

Yes__X__ No___

The client sample Main Discharge was used for the MS/MSD.

B. And the Matrix spike percent recoveries were within the required control limits of 75 – 125%.

Yes___ No__X__ NA___

The following matrix spike recoveries resulted in sample qualification.

e2MPmdMet1206

SAMPLE ID	ANALYTE (%R)	QUALIFICATION
Main Discharge	Iron 166 / 95.2%	JS166 detects
	Cooper 133 / 98.6	JS133 detects
	Calcium 121 / 119	None, 4x and meets CLP
	Selenium 83.3 / 79.6	None, meets CLP

The samples were qualified JS#, where the # is the percent recovery of that particular analyte. A high matrix spike recovery indicates a possible slight high bias to the reported result. When the (spike x 4) is less than the concentration of the analyte in the parent sample, no qualification is required as the recovery is statistically invalid. The lab limits are 80 – 120%. Per the QAPP, the CLP limits are used for validation.

B. A Post-digest spike was analyzed if required.

Yes ☒ No ☐ NA ☐

C. The MS/MSD samples included client samples

Yes ☒ No ☐ NA ☐

VIII. DUPLICATES

A. Matrix (pre-digestion) duplicate samples were analyzed at the required frequency

Yes ☒ No ☒

The laboratory runs MS/MSD samples.

B. And the Matrix duplicate relative percent differences (RPD) were within the required control limits (Water 20%, Soil 35%) or the RL limits were met if the duplicate values are $< 5 \times \text{RL}$. If the either one of the duplicate results are $< 5 \times \text{RL}$, the RPD is not used. The QC limit used is the difference between the original and the duplicate results ($\pm$ the RL) for water and ($\pm 2X$ the RL) for soils.

Yes ☐ No ☒ NA ☐

SAMPLE ID	ANALYTE (%RPD)	QUALIFICATION
Main Discharge	Iron 27.4	JD27
	Copper 47.5	JD48

Data are qualified JD#, where # is the RPD. As the RPD increases, the precision decreases.

IX. LABORATORY CONTROL SAMPLE

A. Laboratory control samples (LCS) were analyzed at the required frequency.

Yes ☒ No ☐

B. And LCS recoveries were within the required control limits of 80 to 120%.

Yes ☒ No ☐

X. MSA RESULTS AND GRAPHITE FURNACE ANALYSIS (GFAA)

Duplicate injections were performed for all analyses and the RSDs were less than 20% for all reported results. (Method of Standard Additions (MSA) requires only a single injection).

Yes ☐ No ☐ NA ☒

Graphite furnace was not done.

XI. ICP SERIAL DILUTION

A. ICP Serial Dilutions have been analyzed at the required frequency if the analyte concentrations are greater than 50 x IDL (x 100 for ICPMS).

Yes ☒ No ☐ NA ☐

Dup-2 was used for the serial dilution.

B. And the percent difference criteria of $\pm 10\%$ have been met.

Yes ☒ No ☐ NA ☐

C. The serial dilution analyses were on client samples

Yes ☒ No ☐

XII. INSTRUMENT DETECTION LIMITS

A. The Instrument Detection Limits have met the Quarterly reporting requirements.

Yes ☒ No ☐ NA ☐

This was determined to be acceptable during the contractual process.

B. And all sample results have met the required detection limits (CRDL).

Yes ☒ No ☐ NA ☐

No dilutions were performed

XIII. PREPARATION AND ANALYSIS LOGS

A. All samples were prepared or analyzed within the required holding times referencing the SOW (time of sample receipt to preparation/distillation).

Yes ☒ No ☐

B. All samples were analyzed within the 40 CFR 136 (Clean Water Act) or method recommended holding times (time of sample collection to date of analysis).

Yes ☒ No ☐

C. Chains of Custody (COC)

1. Chains of Custody (COC) were reviewed and all fields were complete, signatures were present and cross outs were clean and initialed.

Yes ☒ No ☐

2. Samples were received at the required temperature and preservation.

Yes ☒ No ☐

XIV. FIELD QC

A. Field QC samples (duplicates, SRMs) were identified.

Yes ☒ No ☐

The field duplicates are identified as Main Discharge and DUP-2

B. Field duplicates were within a guidance limit of $< 35\%$ RPD limit for water or $< 50\%$ RPD limit for soil. If values are $< 5 \times \text{RL}$, the water limit is $\pm 2 \times \text{RL}$ and the soil limit is $\pm 4 \times \text{RL}$. Final determination will be made by the project manager.

Yes ☒ No ☐ NA ☐

Main Discharge	DUP-2	Comment
Copper: 0.021	.02U	NC
Iron: 0.355	0.197 (RL = 0.1)	$\pm 2 \times \text{RL}$
Lead: 0.00759	0.005 U	NC

Most of the reported values are near the reporting limit and subject to inherent variation at low levels.

XV. GENERAL COMMENTS

The laboratory has complied with the requested methods and the quality of the data is acceptable and usable with consideration of the following qualifications. Note that the following qualifiers are used:

JS# is for matrix spike/matrix spike duplicate recoveries, where # is the analyte recovery. The bias to the data is considered to be high or low proportional to the analyte recovery. (JS125 would indicate the value could be 125% of the true value)

JD# for matrix spike duplicate RPD. As the RPD increases, the precision decreases

Summary:

* Iron and copper biased high proportional to the recovery of the matrix spike/matrix spike duplicate analyte recoveries (JS#), but also has low precision. Spike recovery may be due to inhomogeneity of the matrix.

Qualification or Comments in Detail

Deliverables

The following is noted for clarification:

Per the contract, all packages were reviewed for holding time, summary QC and calibration (Level III). No raw data were required for review, nor were raw data required for submission. No Internal Standard recoveries are submitted for the ICPMS and may not be required for Level III. The laboratory has submitted CLP-type summary forms for ICP and ICP/MS and mercury. There are 19 ICP analytes and 3 ICP/MS analytes.

Blanks

Per the review of the data, there were as some blank analyte detects reported in the calibration blanks, but client data were either non-detect (U) or much greater (5X) than the contamination. Note that the calibration blanks are now being reported in mg/l and the sample results are reported in mg/l.

Matrix Spikes/Matrix Spike Duplicates

The following matrix spike recoveries resulted in sample qualification.

SAMPLE ID	ANALYTE (%R)	QUALIFICATION
Main Discharge	Iron 166 / 95.2%	JS166 detects
	Cooper 133/ 98.6	JS133 detects
	Calcium 121/119	None, 4x and meets CLP
	Selenium 83.3/ 79.6	None, meets CLP

The samples were qualified JS#, where the # is the percent recovery of that particular analyte. A high matrix spike recovery indicates a possible slight high bias to the reported result. When the (spike x 4) is less than the concentration of the analyte in the parent sample, no qualification is required as the recovery is statistically invalid. The lab limits are 80 – 120%. Per the QAPP, the CLP limits are used for validation.

SAMPLE ID	ANALYTE (%RPD)	QUALIFICATION
Main Discharge	Iron 27.4	JD27
	Copper 47.5	JD48

Data are qualified JD#, where # is the RPD. As the RPD increases, the precision decreases.

Field Duplicates

The field duplicates are identified as Main Discharge and Dup-2. All are within the project guidance. Most of the reported values are near the reporting limit and subject to inherent variation at low levels.

QUALIFICATION SUMMARY TABLE

Analyte	Qualification
Copper	JS133D27
Iron	JS166D48

ORGANIC DATA QUALITY REVIEW REPORT
VOLATILE ORGANICS SW-846 METHOD 8260B/5030B

8260B/5030B

SDG: L0707156 (main discharge)

PROJECT: Memphis Defense Depot, Main Discharge

LABORATORY: Kemron Environmental Services, Marietta, OH

SAMPLE MATRIX: Water

SAMPLING DATE (Month/Year): July, 2007

NO. OF SAMPLES: 8260B/5030B (Waters) – 1 sample

ANALYSES REQUESTED: SW-846 8260B

SAMPLE NO.: See attached result forms and associated edd

DATA REVIEWER: Sammy Huntington and John Huntington (Gateway Enterprises)

QA REVIEWER: Diane Short and Associates Inc. INITIALS/DATE: _____

Telephone Logs included Yes ☐ No ☒

Contractual Violations Yes ☐ No ☒

The EPA Contract Laboratory Program National Functional Guidelines for Organic Review, 2001, and the SW-846 Method 8260B has been referenced by the reviewer to perform this data validation review. The EPA qualifiers have been expanded to include a descriptor code and value to define QC violations and their values, per the approval of the Project Manager. Per the Scope of Work, the review of these samples includes Level III validation of all chains of custody, calibrations and QC forms referencing the QC limits in the above documents.

I. DELIVERABLES

A. All deliverables were present as specified in the Statement of Work (SOW), SW-846, or in the project contract.

Yes ☒ No ☐

This is a Level III Report. Raw data are not reviewed, nor required.

B. Chain of Custody Documentation was complete and accurate.

Yes ☐ No ☒

The project manager is informed of the following and the chain information is to be updated for the project file.

Most of the SDGs do not have a customary chain of custody. Those have a running list of samples with date and time collected with no relinquished and received areas at the bottom of each page. They do not have page numbers.

They have been improved since we first pointed out these issues in that each page does have a printed area for the sampler name, date, time, and signature. However, there is no similar printed area for receipt signatures, dates, and times to be entered, and in this case only the first page has been so signed by the laboratory.

A few sample names are being truncated on the Chain of Custody because the field width is not sufficient to allow the full name to appear. This seems to be a relatively minor issue for this set of samples.

Our understanding is that the chain of custody is a printout of an electronic sample documentation system. We reiterate our recommendation that the printout be updated to add a printed area for the laboratory to receive the samples, and to include page numbers. Preferably, the laboratory signature should appear on each page of the Chain of Custody, but at the very least should appear each time a new COC# is applied. Alternatively, some type of electronic signature system could be used using a system compliant with EPA's proposed cross-media electronic reporting rule. The present system does not appear to fulfill the authentication criteria for sample tracking.

C. Samples were received at the required temperature, preservation and intact with no bubbles.

Yes ☒ No ☐

SDG L0707156, which consists of one sample, had "NA" checked on the sample receiving checklist for the "correct preservatives used" item.

8260B waters are normally preserved with HCl unless there are dissolved carbonates that would produce headspace in the presence of acid. There does not appear to be any other information in the data packages that would allow confirmation of proper preservation for these samples. Since most samples were analyzed in less than 7 days, there would be no negative consequences if they had not been preserved.

All of the SDGs stated NA on the Sample Receiving Checklist to whether the samples were pH tested and of acceptable range. This is normal, since the laboratory cannot check the pH of VOA samples on receipt. Any such checks are normally conducted at the bench after the samples have been analyzed.

II. ANALYTICAL REPORT FORMS

A. The Analytical Report or Data Sheets are present and complete for all requested analyses.

Yes ☒ No ☐

B. Holding Times

1. The contract holding times were met for all analyses (Time of sample receipt to time of analysis (VOA) or extraction and from extraction to analysis).

Yes ☒ No ☐

Assuming that all samples were properly preserved with HCl.

2. The Clean Water Act (40 CFR 136) or method holding times were met for all analyses (14 days from time of sample collection to analysis or extraction, assuming acid preservation).

Yes ☒ No ☐

Assuming that all samples were properly preserved with HCl.

III. INSTRUMENT CALIBRATION – GC/MS**A. Initial Calibration**

1. The Response (RF) and Relative Response Factors (RRF) and average RRF for all compounds for all analyses met the contract criteria of >0.01.

Yes ☒ No ☐ NA ☐

Per the project manager, the 2001 EPA CLP validation guidance has been applied to the common “poor responders”. Acetone, 2-butanone, and 4-methyl-2-pentanone are the compounds for which any calibration response factors below 0.05 have been observed. The validation guidance used for this project allows for a response of 0.01 for these compounds if spectral integrity can be verified at low concentrations. These spectra are not commonly provided and are not part of the deliverable for these data sets. The laboratory has been tasked with providing to the client verification that the 0.01 RF is valid. Given the spectral verification is available, the data are not qualified for response >0.01 < 0.05. No data have been qualified.

2a. The relative standard deviation (RSD) for the five point calibration was within the 30% limit for the CCCs.

Yes ☒ No ☐ NA ☐

This is a method requirement and indicates that the analytical system is in control.

2b. The relative standard deviation (RSD) for the five point calibration was within the 30% limit for all other compounds or a linear curve was used.

Yes ☐ No ☒ NA ☐

There is one target (acetone) that is shown in the ICAL forms with %RSD greater than 30%, the validation limit. These instances where this occurred and the laboratory did not use an acceptable regression curve in place of the response factor average are shown in the table below. There is one sample that would be qualified JC49 due to the fact that acetone is detected in the sample. However, this sample was as non-detect due to method blank levels (see method blank section) and is therefore not qualified.

SDG	ICAL Date	Lab Sample #	Instrument #	Analyte	%RSD	RRF OUT	Qualifiers Added
L0707156	6/30/07 18:16	1	10	acetone	49.4		None, ND

3. The 12 hour system Performance Check was performed as required in SW-846.

Yes ☒ No ☐ NA ☐

B. Continuing Calibrations

1. The midpoint standard was analyzed for each analysis at the required frequency and the QC criteria of > 0.05 (.01 for CLP 2001) were met.

Yes ☒ X ___ No ___ NA ___

The CCVs were analyzed at the proper frequency. The same compounds showed low responses in the continuing calibration as were observed in the initial calibrations. Qualifiers are not added for these outliers since none were below the lower limit of 0.01.

2. The percent difference (%D) limits of $\pm 25\%$ were met.

Yes ☒ X ___ No ___ NA ___

IV. GC/MS INSTRUMENT PERFORMANCE CHECK

The BFB (VOA) performance check was injected once at the beginning of each 12-hour period and relative abundance criteria for the ions were met.

Yes ☒ X ___ No ___ NA ___

V. INTERNAL STANDARDS

The Internal Standards met the 100% upper and -50% lower limits criteria and the Retention times were within the required windows.

Yes ☒ X ___ No ___ NA ___

VI. SURROGATE

Surrogate spikes were analyzed with every sample.

Yes ☒ X ___ No ___

And met the recovery limits defined in the current contract, which are the current laboratory limits.

Yes ☒ X ___ No ___

VII. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A. Matrix spike (MS) and matrix spike duplicates (MSD) were analyzed for every analysis performed and for every 20 samples or for every matrix whichever is more frequent.

Yes ☒ X ___ No ___

Method	SDG	Client Sample ID	Lab Sample ID
	L0707156	MAIN	1

B. The MS and MSD percent recoveries were within the limits defined in the contract, which are the current laboratory control chart limits.

Yes ___ No ☒ X ___ NA ___

The full target list has been spiked. Most MS/MSD recoveries and RPDs are in control. Instances where spike recoveries are out of limits are shown in the table below. In one case, the sample amount is 4x the spike level or greater. In such cases, the recovery cannot realistically be calculated, because the anticipated normal analytical variability is on the order of the spike level. Thus no qualifiers are added in this instance.

SDG	Client Sample ID	Lab Sample ID	Analyte	MS/MSD/RPD	Qualifiers
L0707156	MAIN	1	Chloroform	50.9/38.9/OK	JS39 parent detection
			cis-1,2-Dichloroethene	33.3/45.2/OK	JS33 parent detection
			Trichloroethene	-136/-121/OK	None, parent > 4x spike

C. The MSD relative percent differences (RPD) were within the defined contract limits.

Yes ☒ X ___ No ___ NA ___

D. The MS/MSD were client samples.

Yes ☒ X ___ No ___ NA ___

VIII. LABORATORY CONTROL SAMPLE

A. Laboratory Control Samples (LCS) was analyzed for every analysis performed and for every 20 samples.

Yes ☒ X ___ No ___

B. The LCS percent recoveries were within the limits defined in the contract (the MS limits are used as a reference or laboratory-specific limits for this matrix are defined).

Yes ☒ X ___ No ___

IX. BLANKS

A. Method Blanks were analyzed at the required frequency and for each matrix and analysis.

Yes ☒ X ___ No ___

B. No blank contamination was found in the Method Blank.

Yes ☒ X ___ No ___

C. If Field Blanks were identified, no blank contamination was found.

Yes ☒ X ___ No ___

X. FIELD QC

If Field duplicates were identified, they met guidance RPD of < 35% for water or < 50% for soils. For values reported at < 5 x the reporting limit (RL), a difference of 2 x RL is used as guidance (4 x RL for soils). Data are not qualified for field duplicates as these are evaluated for the total project by the client.

Yes ___ No ___ NA ___

XI. SYSTEM PERFORMANCE

A. The RICs, chromatograms, tunes and general system performance were acceptable for all instruments and analytical systems.

Yes ___ No ___ NA ☒ X ___

Not part of this review level

B. The suggested EQLs for the sample matrices in this set were met.

Yes ☒ X ___ No ___ NA ___

EQLs are typical. In cases where dilutions were needed due to elevated target levels, the EQLs for the other compounds are correspondingly increased.

XII. TCL COMPOUNDS

A. The identification is accurate and all retention times, library spectra and reconstructed ion chromatograms (RIC) were evaluated for all detected compounds.

Yes ☐ No ☐ NA ☒ X ☐

Not part of this review level

B. Quantitation was checked to determine the accuracy of calculations for representative compounds in each internal standards quantitation set.

Yes ☐ No ☐ NA ☒ X ☐

Not part of this review level

XIII. TENTATIVELY IDENTIFIED COMPOUNDS

TICs were properly identified and met the library identification criteria.

Yes ☐ No ☐ NA ☒ X ☐

Not part of this review level

XIV. OVERALL ASSESSMENT OF THE CASE

The laboratory has complied with the requested method. Data are fully usable after consideration of qualifiers.

The following is noted:

Chain of Custody/Deliverables:

The project manager is informed of the following and the chain information is to be updated for the project file.

Most of the SDGs do not have a customary chain of custody. Those have a running list of samples with date and time collected with no relinquished and received areas at the bottom of each page. They do not have page numbers.

They have been improved since we first pointed out these issues in that each page does have a printed area for the sampler name, date, time, and signature. However, there is no similar printed area for receipt signatures, dates, and times to be entered, and in this case only the first page has been so signed by the laboratory.

A few sample names are being truncated on the Chain of Custody because the field width is not sufficient to allow the full name to appear. This seems to be a relatively minor issue for this set of samples.

Our understanding is that the chain of custody is a printout of an electronic sample documentation system. We reiterate our recommendation that the printout be improved to add a printed area for the laboratory to receive the samples, and to include page numbers. Preferably, the laboratory signature should appear on each page of the Chain of Custody, but at the very least should appear each time a new COC# is applied. Alternatively, some type of electronic signature system could be used using a system compliant with EPA's proposed cross-media electronic reporting rule. The present system does not appear fulfill the authentication criteria for sample tracking.

There are no notations made on the chain of custody itself to reflect the fact that this sample was not received. If the laboratory checklist is separated from the chain of custody this could cause confusion. We recommend that in such cases, the laboratory make notations in both areas.

Sample Condition:

SDG L0707156, which consists of one sample, had "NA" checked on the sample receiving checklist for the "correct preservatives used" item.

8260B waters are normally preserved with HCl unless there are dissolved carbonates that would produce headspace in the presence of acid. There does not appear to be any other information in the data packages that would allow confirmation of proper preservation for these samples. Since most samples were analyzed in less than 7 days, there would be no negative consequences if they had not been preserved.

All of the SDGs stated NA on the Sample Receiving Checklist to whether the samples were pH tested and of acceptable range. This is normal, since the laboratory cannot check the pH of VOA samples on receipt. Any such checks are normally conducted at the bench after the samples have been analyzed.

Initial Calibrations:

There is one target (acetone) that is shown in the ICAL forms with %RSD greater than 30%, the validation limit. These instances where this occurred and the laboratory did not use an acceptable regression curve in place of the response factor average are shown in the table below. There is one sample that would be qualified JC49 due to the fact that acetone is detected in the sample. However, this sample was as non-detect due to method blank levels (see method blank section) and is therefore not qualified.

Continuing Calibrations:

There is one CCV in which bromomethane had a %D outside the 25% validation limit. Since the analyte is not detected in associated samples, no qualifiers are added.

Matrix Spikes:

The full target list has been spiked. Most MS/MSD recoveries and RPDs are in control. Instances where spike recoveries are out of limits are shown in the table within the report body. In one case, the sample amount is 4x the spike level or greater. In such cases, the recovery cannot realistically be calculated, because the anticipated normal analytical variability is on the order of the spike level. Thus no qualifiers are added in this instance.

LCS Recoveries:

The LCS percent recoveries were within the limits defined in the contract (the MS limits are used as a reference or laboratory-specific limits for this matrix are defined).

Method Blanks:

No blank contamination was found in the Method Blank

Field Blanks:

There are 4 trip blanks. There are detections observed below the reporting limit as shown in the table within the report. None have resulted in qualification, because associated samples are either non-detected or are qualified already due to method blank levels.

Field QC:

There was no field duplicate for this one sample.

ORGANIC DATA QUALITY REVIEW REPORT
VOLATILE ORGANICS SW-846 METHOD 8260B/5030B and Method 8270C

8260B/5030B

SDG: L0710210 (Main Discharge Sample #29), L0710237, L0710238, L0707156

8270C

SDG: L0710210 (Main Discharge Sample #29),

PROJECT: Memphis Defense Depot Interim Remedial Action IRA-3 , Main Discharge for e2m, Texas

LABORATORY: Kemron Environmental Services, Marietta, OH

SAMPLE MATRIX: Water

SAMPLING DATE (Month/Year): October 2007

NO. OF SAMPLES: 8260B/5030B (Waters) -96 samples including 1 trip blank; Method 8270C: 2 waters

ANALYSES REQUESTED: SW-846 8260B, 8270C

SAMPLE NO.: See attached result forms and associated edd

DATA REVIEWER: Sammy Huntington and John Huntington (Gateway Enterprises)

QA REVIEWER: Diane Short and Associates Inc. INITIALS/DATE: _____

Telephone Logs included Yes ☐ No ☒

Contractual Violations Yes ☐ No ☒

The EPA Contract Laboratory Program National Functional Guidelines for Organic Review, 1999, and the SW-846 Method 8260B has been referenced by the reviewer to perform this data validation review. The EPA qualifiers have been expanded to include a descriptor code and value to define QC violations and their values, per the approval of the Project Manager. Per the Scope of Work, the review of these samples includes Level III validation of all chains of custody, calibrations and QC forms referencing the QC limits in the above documents.

I. DELIVERABLES

A. All deliverables were present as specified in the Statement of Work (SOW), SW-846, or in the project contract.

Yes X No

This is a Level III Report for holding times, calibration and summary QC review.

B. Chain of Custody Documentation was complete and accurate.

Yes No X

The project manager is informed of the following and the chain information is to be updated for the project file.

Most of the SDGs do not have a customary chain of custody. Instead they have a running list of samples with date and time collected with no relinquished and received areas at the bottom of each page. They do not have page numbers. This is a printout from an electronic chain of custody system being used.

All SDGs that have a standard Chains of Custody have a gap in time between relinquished and received but are documented on the Sample Receiving Checklist with a FedEx air bill number.

The sample receiving checklists have a form item for Chain of Custody number, but this is not filled in. Thus there is no way to cross-reference the Chain of Custody with the sample receiving checklist aside from the fact of its inclusion in the SDG data packet, and the sample receipt dates and times. The impact of this missing deliverable is that sample integrity upon receipt cannot be verified except from the narrative.

SDG L0710238 shows all sample names ending in -3 but the chain of custody (A67247) shows the sample names ending in -2. There is no documentation in the data package indicating when or why this change was made. There are changes to the body of the chain of custody without initials.

SDG L0710210: Chain of Custody A67256 has only 15 samples listed and there are 37 samples in this SDG. The pdf report included additional chain of custody documents generated from the electronic system and one standard chain; these documents do account for the missing samples. However, none of the electronic chains bear a laboratory receipt signature, date, or time, and they are not present in the hardcopy data package.

SDG L0710695: Chain of Custody A72872 was missing the received by signature, date and time.

SDG L0710237: The sample receiving checklist states that sample MW-76-IS-2 has a large bubble, but there is no such sample number in this set of data.

The recommendation of the reviewers is that the chain of custody associated with this project is not adequate based on the documents received. The samples do appear to have been accounted for but there are significant gaps that do not allow for full verification of tracking of the data. A more complete and accurate chain of custody is requested in the data packages provided for validation.

C. Samples were received at the required temperature, preservation and intact with no bubbles.

Yes X No

Cooler temperature was in one case below 2°C but narratives noted that all samples were received in good condition. When samples are below the lower EPA limit of 2° C, as long as there is no damage to the samples, no qualifier is required.

In addition, new EPA regulations (See Federal Register, March 12, 2007, 40CFR Part 122) require only that the temperature of samples delivered to the laboratory be less than 6° C. Thus the sample receipt conditions are fully compliant with applicable regulations.

Sample receiving checklists noted the following:

SDG L0710237: Sample MW-76-IS-2 has a large bubble.

SDG L0710238: Sample MW-76-IS-2 has a large bubble.

SDG L0710210: Sample Dupe 6 has a major bubble.

In each case, there were other containers that could be used for the analysis. No qualifiers are needed.

For some SDGs the Sample Receiving Checklist states "NA" for whether the correct preservatives were added to the water samples, if the pH was tested on preserved water samples and if the pH ranges acceptable and some SDGs have "Yes" checked.

II. ANALYTICAL REPORT FORMS

A. The Analytical Report or Data Sheets are present and complete for all requested analyses.

Yes ☒ No ☐

B. Holding Times

1. The contract holding times were met for all analyses (Time of sample receipt to time of analysis (VOA) or extraction and from extraction to analysis).

Yes ☒ No ☐

2. The Clean Water Act (40 CFR 136) or method holding times were met for all analyses (14 days from time of sample collection to analysis or extraction).

Yes ☒ No ☐

III. INSTRUMENT CALIBRATION – GC/MS

A. Initial Calibration

1. The Response (RF) and Relative Response Factors (RRF) and average RRF for all compounds for all analyses met the contract criteria of >0.05 (>0.01 for the 2001 guidance).

Yes ☒ No ☐ NA ☐

Per the project manager, the 2001 EPA CLP validation guidance has been applied to the common "poor responders". The validation guidance used for this project allows for a response of 0.01 for these compounds if spectral integrity can be verified at low concentrations. These spectra are not commonly provided and are not part of the deliverable for these data sets. The laboratory has been tasked with providing to the client verification that the 0.01 RF is valid. Given the spectral verification is available, the data are not qualified for response $>0.01 < 0.05$. No data have been qualified.

The low-responding compounds are highly water-soluble and capable of hydrogen bonding with water. This decreases their purge efficiency and results in the relatively low response. The implication of this low purge efficiency is that a relatively low absolute recovery of such compounds is achieved in the purge step of the analysis. If this recovery is consistent, reasonable accuracy and precision can be achieved in a given matrix, which is indicated for the lab matrix by acceptable recoveries in LCS and calibration checks. However, this causes these targets to be more sensitive to matrix variations that impact purge efficiency (such as ionic strength or the presence of varying levels of soluble non-target organic material) than are the more hydrophobic compounds typically analyzed by this method, and as a result they are more likely to exhibit matrix bias. The matrix spike behavior of these compounds can be used to judge the impacts of matrix for this site.

2a. The relative standard deviation (RSD) for the five point calibration was within the 30% limit for the CCCs.

Yes ☒ No ☐ NA ☐

This is a method requirement and indicates that the analytical system is in control.

2b. The relative standard deviation (RSD) for the five point calibration was within the 30% limit (50% for the poor responders) for all other compounds or a linear curve was used.

Yes ☒ No ☐ NA ☐

3. The 12 hour system Performance Check was performed as required in SW-846.

Yes ☒ No ☐ NA ☐

B. Continuing Calibrations

1. The midpoint standard was analyzed for each analysis at the required frequency and the QC criteria of > 0.05 (> 0.01 for the 2001 validation guidance) were met.

Yes ☒ No ☐ NA ☐

The CCVs were analyzed at the proper frequency. The same compounds showed response factors < 0.05 as did in the initial calibrations, but since all were above the 2001 validation limit of 0.01, no qualifiers have been added for this.

2. The percent difference (%D) limits of $\pm 25\%$ (50% for the poor responders) were met.

Yes ☐ No ☒ NA ☐

There were a few instances where the %D is outside of the 25% validation limit. Since no detected targets are associated with these calibrations, no qualifiers have been added.

Method	SDG	CCV Date	Batch	Analyte	%D	Qualifiers Added
8260B	L0710237	10/15/07 20:01	WG252909	Chloromethane	25.1	None, ND
				Bromomethane	32.4	None, ND
			WG252806	Vinyl Acetate	72.5	None, ND
	L0710238	10/14/07 12:03	WG252787	Vinyl Acetate	54.4	None, ND
		10/15/07 20:01	WG252909	Chloromethane	25.1	None, ND
				Bromomethane	32.4	None, ND
	L0710210	10/13/07 12:48	WG252770	Vinyl Acetate	54.4	None, ND
			WG252787	Vinyl Acetate	53.7	None, ND
			WG252783	Vinyl Acetate	38.2	None, ND
8270C	L0710210	10/17/07 9:50	WG252967	Benzoic Acid	41.0	None, ND

IV. GC/MS INSTRUMENT PERFORMANCE CHECK

The BFB (VOA) or DFTPP (SVOA) performance check was injected once at the beginning of each 12-hour period and relative abundance criteria for the ions were met.

Yes ☐ No ☐ NA ☒

Not included at this review level.

V. INTERNAL STANDARDS

The Internal Standards met the 100% upper and -50% lower limits criteria and the Retention times were within the required windows.

Yes ☐ No ☐ NA ☒

Not included at this review level.

VI. SURROGATE

Surrogate spikes were analyzed with every sample.

Yes ☒ No ☐

And met the recovery limits defined in the current contract, which are the current laboratory limits.

Yes ☒ No ☐

VII. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Matrix spike (MS) and matrix spike duplicates (MSD) were analyzed for every analysis performed and for every 20 samples or for every matrix whichever is more frequent.

Yes ☒ No ☐

8260B: There are 6 MS/MSDs which meet the 1:20 ratio.

8270C: There is 1 MS/MSD which meets the 1:20 ratio

The MS/MSDs present are shown in the table below.

Method	SDG	Lab Sample ID	Client Sample ID
8260B\5030B	L0707156	L0707156-001	MAIN
	L0710210	L0710210-18	MW-147-73.7-IS-3
	L0710210	L0710210-29	MAIN DISCHARGE
	L0710237	L0710237-37	MW-165-89.9-IS-3
	L0710238	L0710238-01	MW-76-IS-3
	L0710238	L0710238-10	MW-37-137-IS3
8270C\3520C	L0710210	L0710210-29	MAIN DISCHARGE

The MS and MSD percent recoveries were within the limits defined in the contract, which are the current laboratory control chart limits.

Yes ___ No ___ X ___ NA ___

The full target list has been spiked. Instances where spike recoveries are out of limits are shown in the table below. In several instances, the sample amount is 4x the spike level or greater. In such cases, the recovery cannot realistically be calculated, because the anticipated normal analytical variability is on the order of the spike level. Thus no qualifiers are added in these instances. For low recoveries, both non-detects and detects in the parent sample are qualified as JS#, where # is the recovery. For high recoveries, only detected results in the parent sample are so qualified. Qualified results may be biased proportional to the recovery observed, and nondetects that are qualified may have a somewhat higher risk than normal of false negatives due to the observed bias.

The compounds that purge inefficiently that were discussed in the calibration section (these tend to give low response factors) were recovered within limits in the MS/MSDs. Thus their behavior in the matrix appears to be acceptable, although the recovery windows are wider for these compounds than for the other targets.

Method	SDG	Lab Sample ID	Analyte	MS/MSD/RPD	Qualifiers
8360B	L0707156	1	Chloroform	50.9/38.9/OK	JS39 parent
			cis-1,2 Dichloroethene	33.3/45.2/OK	JS33 parent
	L0710210	18	cis-1,2 Dichloroethene	48.7/41.8/OK	JS42 parent
		29	Trichloroethene	52.5/131/OK	None, parent > 4x spike
			1,1,2,2 Tetrachloroethane	139/206/OK	JS206 detect in parent
	L0710238	1	Trichloroethene	-13.7/-23.7/OK	None, parent > 4x spike
	L0710237	37	Trichloroethene	24.5/19.4/OK	None, parent > 4x spike

The MSD relative percent differences (RPD) were within the defined contract limits.

Yes ___ X ___ No ___ NA ___

The MS/MSD were client samples.

Yes ___ X ___ No ___ NA ___

VIII. LABORATORY CONTROL SAMPLE

A. Laboratory Control Samples (LCS) was analyzed for every analysis performed and for every 20 samples.

Yes ___ X ___ No ___

The LCS percent recoveries were within the limits defined in the contract (the MS limits are used as a reference or laboratory-specific limits for this matrix are defined).

Yes _____ No X _____

8260B: 2-butanone is recovered high in one batch. There are no detections associated, so no qualifiers are added.

Method	SDG	Lab Sample #	Batch	Targets Detected	LCS/LCSD/RPD	Qualifiers
8260	L0710210	18RE	WG252806	2-Butanone	139	None, ND
	L0710237	1,3-13,37	WG252806	2-Butanone	139	None, ND

IX. BLANKS

A. Method Blanks were analyzed at the required frequency and for each matrix and analysis.

Yes X _____ No _____

B. No blank contamination was found in the Method Blank.

Yes _____ No X _____

8270C: The method blank is in control.

8260B: Contamination was observed in some method blanks indicated in the table, below the reporting limit. Whenever methylene chloride or acetone is detected in associated samples at a level less than 10x the method blank (corrected for dilution), the result is qualified as UB#, where # is the corrected method blank level. Such results are usable as nondetects. Qualifiers added are summarized in the table below. For other targets, the factor used is 5x.

Method	SDG	Lab Sample #	Batch	Targets Detected	Results	Qualifiers
8260B	L0710210	29-31, 40-45	WG252787	1,2,3 Trichlorobenzene	.130F	None, ND
				Methylene Chloride	.276F	None, ND
		18-20, 32-39	WG252783	Methylene Chloride	.326F	None, ND
		17, 21, 22	WG252774	1,2,3 Trichlorobenzene	.323F	None, ND
				1,2,4 Trichlorobenzene	.226F	None, ND
				Hexachlorobutadiene	.306*	None, ND
				Naphthalene	.287F	None, ND
	L0710238	4-9	WG252787	1,2,3 Trichlorobenzene	.130F	None, ND
				Methylene Chloride	.276F	None, ND
		19	WG252928	1,2,3 Trichlorobenzene	.150F	None, ND
				Methylene Chloride	.385F	None, ND
		20-21	WG253046	1,2,3 Trichlorobenzene	.207F	None, ND
				Methylene Chloride	.272F	None, ND
		1-3	WG252909	Methylene Chloride	.516*	None, ND
	L0710237	2	WG252787	1,2,3 Trichlorobenzene	.130F	None, ND
				Methylene Chloride	.276F	None, ND
		15-17, 19-23,25-27,	WG252819	1,2,3 Trichlorobenzene	.162F	None, ND
				Methylene Chloride	.398F	UB# detects < 10x
		18, 30, 31, 40, 24, 19RE	WG252928	1,2,3 Trichlorobenzene	.150F	UB.3 detect
				Methylene Chloride	.385F	UB# detect < 10x
		14,28,29,32-36,41,42	WG252909	Methylene Chloride	.516*	
		1,3-13,37	WG252806	1,2,3 Trichlorobenzene	.264F	None, ND

C. If Field Blanks were identified, no blank contamination was found.

Yes ___ No X

8260: There was 1 trip blank. Acetone was detected in this trip blank at a level below the reporting limit.

Associated samples are qualified as described for method blanks, with the qualifier being UTB# for clarity as to the source of the qualification. Such data are usable as non-detects.

8270: There were no field blanks.

Method	SDG	Sample ID	Lab Sample ID	Analyte	Results	Qualifiers
8260B\5030B	L0710237	TB-101107-IS-3	10/8/2007 12:01 AM	Acetone	2.92F	UTB2.9 detects

X. FIELD QC

If Field duplicates were identified, they met guidance RPD of < 35% for water or < 50% for soils. For values reported at < 5 x the reporting limit (RL), a difference of 2 x RL is used as guidance (4 x RL for soils). Data are not qualified for field duplicates as these are evaluated for the total project by the client.

Yes ___ No X NA ___

8260B: There are 10 samples identifiable as field duplicates. Some samples do show outliers but in each case there are many detections and the other detections meet criteria.

8270C: There is one field duplicate, which is in control.

SDG	Method	Sample ID	DUP	Comments
L0710210	8260	Main Discharge-IS-3	DUP2-Main Discharge	Tetrachloroethene RPD 107%; cis-1,2-DCE RPD 72%; Chloroform RPD 44%; 1,1-DCE RPD 128%; 1,1,2,2-tetrachloroethane RPD 86%.
		MW-166A-75.3-IS-3	DUP6	OK
		RW-2-IS-3	DUP1-RW-2	1,1,2,2-tetrachloroethane RPD 34%; Chloroform RPD 36%; cis-1,2-DCE RPD 112%.
		MW-144-74.9-IS-3	DUP2	OK
L0710238, L0710237		MW-157-74.8-IS-3	DUP4	Carbon tetrachloride RPD 36%
		MW-160-80.8-IS-3	DUP5	Tetrachloroethene RPD 34%
		MW-165A-73.9-IS-3	DUP3	Chloroform RPD 56%; TCE RPD 36%
		MW-70-88.8-IS-3	DUP1	OK
L0710238		MW-170-61.7-IS-3	DUP7	OK
		MW-171	DUP8	OK
L071021	8270	Main Discharge-IS-3	DUP2-Main Discharge	OK

XI. SYSTEM PERFORMANCE

A. The RICs, chromatograms, tunes and general system performance were acceptable for all instruments and analytical systems.

Yes ___ No ___ NA X

Not part of this review level

B. The suggested EQLs for the sample matrices in this set were met.

Yes X No ___ NA ___

Dilutions were necessary in some cases to achieve the proper quantification of high-level targets, which raises the EQLs for all other targets in the run. Only the results that are in the calibration range have been reported by the laboratory, but the undiluted results have been used for nondetected targets and results that are in range at that dilution.

XII. TCL COMPOUNDS

A. The identification is accurate and all retention times, library spectra and reconstructed ion chromatograms (RIC) were evaluated for all detected compounds.

Yes ☐ No ☐ NA ☒ X ☐

Not part of this review level

B. Quantitation was checked to determine the accuracy of calculations for representative compounds in each internal standards quantitation set.

Yes ☐ No ☐ NA ☒ X ☐

Not part of this review level

XIII. TENTATIVELY IDENTIFIED COMPOUNDS

TICs were properly identified and met the library identification criteria.

Yes ☐ No ☐ NA ☒ X ☐

Not part of this review level

XIV. OVERALL ASSESSMENT OF THE CASE

The laboratory has complied with the requested method. Data are fully usable after consideration of qualifiers.

The following is noted:

Chain of Custody/Deliverables:

The project manager is informed of the following and the chain information is to be updated for the project file.

Most of the SDGs do not have a customary chain of custody. Instead they have a running list of samples with date and time collected with no relinquished and received areas at the bottom of each page. They do not have page numbers. This is a printout from an electronic chain of custody system being used.

All SDGs that have usual Chains of Custody have a gap in time between relinquished and received but are documented on the Sample Receiving Checklist with a FedEx air bill number. The sample receiving checklists have a form item for Chain of Custody number, but this is not filled in. Thus there is no way to cross-reference the Chain of Custody with the sample receiving checklist aside from the fact of its inclusion in the SDG data packet, and the sample receipt dates and times. The impact of this missing deliverable is that sample integrity upon receipt cannot be verified except from the narrative.

SDG L0710238 shows all sample names ending in -3 but the chain of custody (A67247) shows the sample names ending in -2. There is no documentation in the data package indicating when or why this change was made. There are changes to the body of the chain of custody without initials.

SDG L0710210: Chain of Custody A67256 has only 15 samples listed and there are 37 samples in this SDG. The pdf report included additional chain of custody documents generated from the electronic system, and these documents do account for the missing samples. However, none of these bear a laboratory receipt signature, date, or time, and they are not present in the hardcopy data package.

SDG L0710695: Chain of Custody A72872 was missing the received by signature, date and time.

SDG L0710237: The sample receiving checklist states that sample MW-76-IS-2 has a large bubble, but there is no such sample number in this set of data.

The recommendation of the reviewers is that the chain of custody associated with this project is not adequate based on the documents received. The samples do appear to have been accounted for but there are significant gaps that do not allow for full verification of tracking of the data. A more complete and accurate chain of custody is requested in the data packages provided for validation.

Sample Condition:

Cooler temperature was in one case below 2°C but narratives noted that all samples were received in good condition. When samples are below the lower EPA limit of 2° C, as long as there is no damage to the samples, no qualifier is required.

In addition, new EPA regulations (See Federal Register, March 12, 2007, 40CFR Part 122) require only that the temperature of samples delivered to the laboratory be less than 6° C. Thus the sample receipt conditions are fully compliant with applicable regulations.

Sample receiving checklists noted the following:

SDG L0710237: Sample MW-76-IS-2 has a large bubble.

SDG L0710238: Sample MW-76-IS-2 has a large bubble.

SDG L0710210: Sample Dupe 6 has a major bubble.

In each case, there were other containers that could be used for the analysis. No qualifiers are needed.

For some SDGs the Sample Receiving Checklist states "NA" for whether the correct preservatives were added to the water samples, if the pH was tested on preserved water samples and if the pH ranges acceptable and some SDGs have "Yes" checked.

Continuing Calibrations:

There were a few instances where the %D is outside of the 25% validation limit. Since no detected targets are associated with these calibrations, no qualifiers have been added.

Matrix Spikes:

8260B: There are 6 MS/MSDs which meets the 1:20 ratio.

The full target list has been spiked. Instances where spike recoveries are out of limits are shown in the table within the report. In several instances, the sample amount is 4x the spike level or greater. In such cases, the recovery cannot realistically be calculated, because the anticipated normal analytical variability is on the order of the spike level. Thus no qualifiers are added in these instances. For low recoveries, both non-detects and detects in the parent sample are qualified as JS#, where # is the recovery. For high recoveries, only detected results in the parent sample are so qualified. Qualified results may be biased proportional to the recovery observed, and nondetects that are qualified may have a somewhat higher risk than normal of false negatives due to the observed bias.

The compounds that purge inefficiently that were discussed in the calibration section (these tend to give low response factors) were recovered within limits in the MS/MSDs. Thus their behavior in the matrix appears to be acceptable, although the recovery windows are wider for these compounds than for the other targets.

8270C: There is 1 MS/MSD which meets the 1:20 ratio. Recoveries are in control.

Method Blanks:

8270C: The method blank is in control.

8260B: Contamination was observed in some method blanks indicated in the table within the report, below the reporting limit. Whenever methylene chloride or acetone is detected in associated samples at a level less than 10x the method blank (corrected for dilution), the result is qualified as UB#, where # is the corrected method blank level. Such results are usable as nondetects. Qualifiers added are summarized in the table below. For other targets, the factor used is 5x.

Field Blanks:

8260: There was 1 trip blank. Acetone was detected in this trip blank at a level below the reporting limit. Associated samples are qualified as described for method blanks, with the qualifier being UTB# for clarity as to the source of the qualification. Such data are usable as non-detects.

8270: There were no field blanks.

LCS Recoveries:

8260B: 2-butanone is recovered high in one batch. There are no detections associated, so no qualifiers are added.

EQLs:

Dilutions were necessary in some cases to achieve the proper quantification of high-level targets, which raises the EQLs for all other targets in the run. Only the results that are in the calibration range have been reported by the laboratory, but the undiluted results have been used for nondetected targets and results that are in range at that dilution.

Field QC:

8260B: There are 10 samples identifiable as field duplicates. Some samples do show outliers but in each case there are many detections and the other detections meet criteria.

8270C: There is one field duplicate, which is in control.

INORGANIC DATA QUALITY REVIEW REPORT**METALS BY ICP, ICPMS, and Mercury**SDG: L0710210PROJECT: Memphis Defense Depot, Main Discharge; for e2mLABORATORY: Kemron Laboratories, Marietta, OHSAMPLE MATRIX: Water SAMPLING DATE (Month/Year): 10/2007ANALYSES REQUESTED: SW-846 Method 6010 (ICP), 6010 (ICPMS), 7470ANO. OF SAMPLES: 2 Total WaterSAMPLE NO: Main Discharge-RW-2, DUP-2-RW-2DATA REVIEWER: Joseph J Egry IVQA REVIEWER: Diane Short and Associates Inc. INITIALS/DATE: _____Telephone Logs included Yes___ No X___Contractual Violations Yes___ No X___

The project Sampling and Analysis Plan (SAP), the EPA Contract Laboratory Program National Functional Guidelines for Inorganic Review, 2002 and the SW-846 Methods have been referenced by the reviewer to perform this data validation review. The EPA qualifiers have been expanded to include a descriptor code and value to define QC violations and their values, per the approval of the Project Manager. Per the Scope of Work, the review includes validation of all calibrations, chains of custody (for sample holding time and preservation only), and QC forms referencing the above documents.

I. DELIVERABLES

All deliverables were present as specified in the Statement of Work or project contract.

Yes X No

The following is noted for clarification:

Per the contract, all packages were reviewed for holding time, summary QC and calibration (Level III). No raw data were required for review, nor were raw data required for submission. No Internal Standard recoveries are submitted for the ICPMS and may not be required for Level III. The laboratory has submitted CLP-type summary forms for ICP and ICP/MS and mercury. There are 19 ICP analytes and 3 ICP/MS analytes.

II. CALIBRATIONS

A. All initial instrument calibrations were performed as defined in the contract or Statement of Work (SOW). All correlation coefficients of the 3 point curve were > 0.995 .

Yes X No NA

No raw data were required to evaluate this requirement. No % RSD data were submitted for the ICPMS and none have been required for Level III.

B. The initial calibration verification (ICV) and continuing calibration verification (CCV) standards were analyzed at the required frequency.

Yes X No

Sequencing was not required, but sufficient calibrations were present to verify that the frequencies were met for client samples.

C. And the ICV and CCV standard percent recovery results were within the required control limits of 90 – 110% (Mercury 80 – 120%).

Yes X No

III. CRDL STANDARDS

The 2 x CRDL standards were analyzed as required in the SOW.

Yes No NA X

Not required, but was present only for thallium and is acceptable.

IV. BLANKS

Note: the highest blank associated with any particular analyte is used for the qualification process and is the value entered after the "B" blank descriptor.

A. The initial calibration blanks (ICB) and continuing calibration blanks (CCB) were analyzed at the required frequency.

Yes X No NA

Sequencing was not required, but sufficient calibration blanks were present to verify that the frequencies were met for client samples.

B. And the ICB and CCB results were within the required control limits.

Yes X No NA

C. And all analytes in the Leach Blank were less than the CRDL, or less than 2x the instrument detection limit (IDL), whichever is lower.

Yes ☐ No ☐ NA ☒
 No TCLP analysis was performed.

V. PREPARATION BLANKS

A. Preparation blanks were prepared and analyzed at the required frequency.

Yes ☒ No ☐

B. And all analytes in the preparation blank were less than the CRDL, or less than the instrument detection limit (IDL), whichever is lower.

Yes ☒ No ☐

C. Field, trip, decon rinse or other field blanks are contained and identified in the package.

Yes ☐ No ☐ NA ☒

There is not a field blank in this data set.

D. And the reported results are less than the CRDL or less than the IDL, whichever is lower.

Yes ☐ No ☐ NA ☒

VIA. ICP INTERFERENCE CHECK SAMPLE

A. The Interference Check Sample (ICS) was analyzed as required in the SOW or contract.

Yes ☒ No ☐ NA ☐

B. And the ICS percent recovery results were reported for all required ICS analytes and were within required control limits of 80% to 120%.

Yes ☒ No ☐ NA ☐

C. ICP analysis results for analytes not required to be present in a given ICS standard were within acceptable limits.

Yes ☐ No ☐ NA ☒

Not requested by client and data not provided by laboratory.

VIB. INTERELEMENT CORRECTION FACTORS

The Interelement Correction Factors are included and complete for all possible interferent analytes.

Yes ☐ No ☐ NA ☒

Review of possible other contaminants was not requested by the client.

VII. SPIKE SAMPLE RECOVERY

A. A matrix (pre-digestion) spike sample was analyzed for each digestion group and/or matrix or as required in the SOW.

Yes ☒ No ☐

The client sample Main Discharge was used for the MS/MSD.

B. And the Matrix spike percent recoveries were within the required control limits of 75 – 125%.

Yes ☐ No ☒ NA ☐

The following matrix spike recoveries resulted in sample qualification.

e2MPmdMet1206

SAMPLE ID	ANALYTE (%R)	QUALIFICATION
Main Discharge	Iron 172 / 120%	JS172

Detected results were qualified JS#, where the # is the percent recovery of that particular analyte. A high matrix spike recovery indicates a possible high bias to the reported result. When the spike is less than four times the concentration of the analyte in the parent sample, no qualification is required as the recovery is statistically invalid. The lab limits are 80 – 120%. Per the QAPP, the CLP limits are used for validation.

B. A Post-digest spike was analyzed if required.

Yes X No NA

C. The MS/MSD samples included client samples

Yes X No NA

VIII. DUPLICATES

A. Matrix (pre-digestion) duplicate samples were analyzed at the required frequency

Yes X No

The laboratory runs MS/MSD samples.

B. And the Matrix duplicate relative percent differences (RPD) were within the required control limits (Water 20%, Soil 35%) or the RL limits were met if the duplicate values are $< 5 \times \text{RL}$. If the either one of the duplicate results are $< 5 \times \text{RL}$, the RPD is not used. The QC limit used is the difference between the original and the duplicate results ($\pm$ the RL) for water and ($\pm 2 \times$ the RL) for soils.

Yes No X NA

SAMPLE ID	ANALYTE (%RPD)	QUALIFICATION
Main Discharge	Iron 25.6	JD25.6

Data are qualified JD#, where # is the RPD. As the RPD increases, the precision decreases.

IX. LABORATORY CONTROL SAMPLE

A. Laboratory control samples (LCS) were analyzed at the required frequency.

Yes X No

B. And LCS recoveries were within the required control limits of 80 to 120%.

Yes X No

X. MSA RESULTS AND GRAPHITE FURNACE ANALYSIS (GFAA)

Duplicate injections were performed for all analyses and the RSDs were less than 20% for all reported results. (Method of Standard Additions (MSA) requires only a single injection).

Yes No NA X

Graphite furnace was not done.

XI. ICP SERIAL DILUTION

A. ICP Serial Dilutions have been analyzed at the required frequency if the analyte concentrations are greater than 50 x IDL (x 100 for ICPMS).

Yes X No NA

Dup-2-Main Discharge was used for the serial dilution.

B. And the percent difference criteria of $\pm 10\%$ have been met.

Yes X No NA

C. The serial dilution analyses were on client samples

Yes X No

XII. INSTRUMENT DETECTION LIMITS

A. The Instrument Detection Limits have met the Quarterly reporting requirements.

Yes X No NA

This was determined to be acceptable during the contractual process.

B. And all sample results have met the required detection limits (CRDL).

Yes X No NA

No dilutions were performed

XIII. PREPARATION AND ANALYSIS LOGS

A. All samples were prepared or analyzed within the required holding times referencing the SOW (time of sample receipt to preparation/distillation).

Yes X No

B. All samples were analyzed within the 40 CFR 136 (Clean Water Act) or method recommended holding times (time of sample collection to date of analysis).

Yes X No

C. Chains of Custody (COC)

1. Chains of Custody (COC) were reviewed and all fields were complete, signatures were present and cross outs were clean and initialed.

Yes X No

2. Samples were received at the required temperature and preservation.

Yes X No

XIV. FIELD QC

A. Field QC samples (duplicates, SRMs) were identified.

Yes X No

The field duplicates are identified as Main Discharge and DUP-2-Main Discharge.

B. Field duplicates were within a guidance limit of $< 35\%$ RPD limit for water or $< 50\%$ RPD limit for soil. If values are $< 5 \times \text{RL}$, the water limit is $\pm 2 \times \text{RL}$ and the soil limit is $\pm 4 \times \text{RL}$. Final determination will be made by the project manager.

Yes X No NA

Main Discharge	DUP-2-Main Discharge	Comment
Zinc: 0.065	0.0391 (RL=0.02)	Ok + 2 x RL
Iron: 1.14	0.112 (RL = 0.1)	Diff 1.0
Lead: 0.0102	0.00269 (RL=0.005)	Diff. 0.0075 ok + 2 x RL

Most of the reported values are near the reporting limit and subject to inherent variation at low levels.

XV. GENERAL COMMENTS

The laboratory has complied with the requested methods and the quality of the data is acceptable and usable with consideration of the following qualifications. Note that the following qualifiers are used:

JS# is for matrix spike/matrix spike duplicate recoveries, where # is the analyte recovery. The bias to the data is considered to be high or low proportional to the analyte recovery. (JS125 would indicate the value could be 125% of the true value)

JD# for matrix spike duplicate RPD. As the RPD increases, the precision decreases.

Summary:

* Iron is biased high proportional to the recovery of the matrix spike/matrix spike duplicate analyte recoveries (JS#), but also has slightly low precision (JD#). Spike recovery may be due to inhomogeneity of the matrix.

* There were small differences in the field duplicate results for lead.

Qualification or Comments in Detail

Deliverables

The following is noted for clarification:

Per the contract, all packages were reviewed for holding time, summary QC and calibration (Level III).

No raw data were required for review, nor were raw data required for submission. No Internal Standard recoveries are submitted for the ICPMS and may not be required for Level III. The laboratory has submitted CLP-type summary forms for ICP and ICP/MS and mercury.

There are 19 ICP analytes and 3 ICP/MS analytes.

Matrix Spikes/Matrix Spike Duplicates

The following matrix spike recoveries resulted in sample qualification.

SAMPLE ID	ANALYTE (%R)	QUALIFICATION
Main Discharge	Iron 172 / 120%	JS172

The samples were qualified JS#, where the # is the percent recovery of that particular analyte. A high matrix spike recovery indicates a possible slight high bias to the reported result. When the spike is less than four times the concentration of the analyte in the parent sample, no qualification is required as the recovery is statistically invalid. The lab limits are 80 – 120%. Per the QAPP, the CLP limits are used for validation.

SAMPLE ID	ANALYTE (%RPD)	QUALIFICATION
Main Discharge	Iron 25.6	JD25.6

Data are qualified JD#, where # is the RPD. As the RPD increases, the precision decreases.

Field Duplicates

The field duplicates are identified as Main Discharge and Dup-2-Main Discharge. Most of the reported values are near the reporting limit and subject to inherent variation at low levels.

Main Discharge	DUP-2-Main Discharge	Comment
Iron: 1.14	0.112 (RL = 0.1)	Diff 1.0

Most of the reported values are near the reporting limit and subject to inherent variation at low levels.

QUALIFICATION SUMMARY TABLE

Analyte	Qualification
Iron	JS172D25.6

APPENDIX E

HISTORICAL DATA TABLES

Historical Analytical Results
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Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

MW-07

Analyte	Sample Name	MW072	MW073	MW074	MW075	MW-7-2	MW-7-1	MW-07-2	MW-07-1	MW07 (70.5-72.5)
	Sample Date	6/21/1997	9/27/1997	4/2/1998	10/14/1998	7/28/2003	7/28/2003	10/28/2003	10/28/2003	4/28/2004
	UNIT									
1,1,1-Trichloroethane	µg/L	<10	2J	2J	<10	0.96J	<1	1.69	<1	1.5
1,1,2,2-Tetrachloroethane	µg/L	<10	<10	<10	<10	<1	<1	<1	<1	<1.2
1,1,2-Trichloroethane	µg/L	<10	<10	<10	<10	<1	<1	<1	<1	<1.2
1,1-Dichloroethane	µg/L	26	50	47	25	23.9	4.06	40.9	18.7	32
Carbon tetrachloride	µg/L	<10	<10	<10	<10	<1	2.99	<1	1.23	<1.2
Chloroform	µg/L	8J	9J	2J	7J	<1	911	<1	139	<1.2
cis-1,2-Dichloroethene	µg/L	--	--	--	--	<1	2.98	<1	<1	<1.2
Tetrachloroethene	µg/L	32	82	78	47	32.3	2.26	42.6	15	50
Total 1,2-Dichloroethene	µg/L	<10	<10	<10	<10	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	--	--	--	--	<1	0.8J	<1	<1	<1.2J
Trichloroethene	µg/L	16	32	31	21	19.9	46.3	27.6	21.2	32
Vinyl chloride	µg/L	<10	<10	<10	<10	<1	<1	<1	<1	<1.2

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DOE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

Historical Analytical Results
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Defense Depot Memphis, Tennessee

MW-07

Analyte	Sample Name	Sample Date	MW07 (66.9-68.9)	MW07 69 56-71.56	MW-07(68.9)	MW-07 (68.9)1105	MW-07 (68.9)0406
			4/28/2004	10/20/2004	6/14/2005	11/18/2005	4/12/2006
	UNIT						
1,1,1-Trichloroethane	µg/L	0.94J		0.72J	<1	<1	0.868J
1,1,2,2-Tetrachloroethane	µg/L	<1		<1.4	<1	<1	<1
1,1,2-Trichloroethane	µg/L	<1		<1.4	<1	<1	<1
1,1-Dichloroethene	µg/L	22		17	15.3	18.1	27.4
Carbon tetrachloride	µg/L	0.29J		<1.4	<1	<1	<1
Chloroform	µg/L	8		0.44J	<1	1.07B	0.501B
cis-1,2-Dichloroethene	µg/L	<1		<1.4	<1	<1	<1
Tetrachloroethene	µg/L	28		18	20.6	26.3	50.7
Total 1,2-Dichloroethene	µg/L	--		--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1		<1.4	<1	<1	<1
Trichloroethene	µg/L	18		14	14.9	15.4	26.5
Vinyl chloride	µg/L	<1		<1.4	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

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imprecise

Historical Analytical Results
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MW-07

Analyte	Sample Name	MW-07 -IS-1	MW-07-68.9- IS-2	MW-07-SARA- GW01	MW-07-68.9- IS-3
	Sample Date	10/18/2006	4/9/2007	5/14/2007	10/8/2007
	UNIT				
1,1,1-Trichloroethane	µg/L	0.543J	0.737J	0.65J	0.282J
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	18.5	22.8	20	12.8
Carbon tetrachloride	µg/L	0.273J	0.641J	<1	0.48J
Chloroform	µg/L	4.49	20	0.55	13.8
cis-1,2-Dichloroethene	µg/L	<1	0.326J	0.26J	<1
Tetrachloroethene	µg/L	34.5	39.4	47	24.3
Total 1,2-Dichloroethene	µg/L	--			
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Trichloroethene	µg/L	19.6	24.7	25	16
Vinyl chloride	µg/L	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter
-- Not Analyzed

DOE FLAGS:

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Historical Analytical Results
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Defense Depot Memphis, Tennessee

MW-31

Analyte	Sample Name	MW312	MW313ADD	MW314	MW315	MW-31-Y1Q1	MW-31-Y1Q2	MW-31-Y1Q3	MW-31-Y1Q4	MW-31-Y2Q1	MW31NA
Sample Date	6/20/1997	9/24/1997	3/24/1998	10/15/1998	2/3/1999	5/25/1999	8/27/1999	11/3/1999	2/15/2000	3/23/2000	
	UNIT										
1,1,1-Trichloroethane	2J	2J	<25	<25	1.26	<1	<1	<1	<1	<1	0.2J
1,1,2,2-Tetrachloroethane	<10	10J	97	33	3.22	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	<10	<20	4J	<25	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	29	47	26	14J	7.86	33.3	7.9	5.98	9.89	8	8
Carbon tetrachloride	1J	8J	3J	<25	1.51	<1	0.59J	<1	<1	<1	<1
Chloroform	10	49	21J	16J	7.22	<1	1.66	0.92J	1.19	0.5J	0.5J
cis-1,2-Dichloroethene	-	-	-	-	58.9	4.78	4.34	5.09	6.89	0.6J	0.6J
Tetrachloroethene	67	110	66	42	4.25	7.55	1.31	0.9J	0.64J	1J	1J
Total 1,2-Dichloroethene	38	140	280	280	-	-	-	-	-	-	-
trans-1,2-Dichloroethene	-	-	-	-	22.2	2.14	4.66	2.52	3.37	0.3J	0.3J
Trichloroethene	78	220	400	380	140	23.9	33.7	18	25.6	4	4
Vinyl chloride	<10	<20	<25	<25	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
- Not Analyzed

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Historical Analytical Results
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MW-31

Analyte	Sample Name	MW-31	MW-31-Y2Q3	MW-31-Y2Q4	MW-31_010214	MW-31-Y3S2-A	MW-31-Y3S2-B	MW-31-2_020410	MW-31-1_020410
Sample Date	5/17/2000	8/23/2000	11/7/2000	2/14/2000	10/3/2001	10/3/2001	10/3/2001	4/10/2002	4/10/2002
UNIT									
1,1,1-Trichloroethane	µg/L	<1	0.42J	<1	<1	<1	0.7J	0.5J	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	14.8	<1	<1	<1	<1
1,1,2-Trichloroethane	µg/L	<1	<1	<1	1.2	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	22.3	<1	31.5	7.98	20.6	31.2	39.5	20.6
Carbon tetrachloride	µg/L	<1	0.4J	<1	2.76	1.25	<1	<1	<1
Chloroform	µg/L	1.29	<1	<1	25.1	1.61	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	15.5	12.3	4.24	148	44.2	5.53	2.66	6.78
Tetrachloroethene	µg/L	1.16	2.08	0.92J	5.02	2.1	4.19	1.24	1
Total 1,2-Dichloroethene	µg/L	—	—	—	—	—	—	—	—
trans-1,2-Dichloroethene	µg/L	7.78	<1	4.53	49.3	34.4	4.83	2.51	5.34
Trichloroethene	µg/L	49.5	68.1	18.5	241	227	38.1	21.5	33.1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

— Not Analyzed

DQE FLAGS:

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- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

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932 241

NOTES:
VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

J	Estimated results based on QC data or reported below RL
B	Estimated results possibly biased high or false positive based on blank data
<	Not detected at sample reporting limit
R	Unusable
UJ	Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
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MW-31

Analyte	Sample Name	MW-31, 72.2-4/29/2004	MW-31	MW-31, 77.5-10/20/2004	MW-31, 72.5-10/20/2004	MW-31(77.1)
	Sample Date	4/29/2004	8/12/2004	10/20/2004	10/20/2004	6/17/2005
	UNIT					
1,1,1-Trichloroethane	µg/L	0.74J	0.36J	<1J	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<1.7	<1	<1	<1
1,1,2-Trichloroethane	µg/L	<1	<1.7	<1	<1	<1
1,1-Dichloroethene	µg/L	40	26B	17	12	<1
Carbon tetrachloride	µg/L	0.24J	<1.7	<1J	<1	<1
Chloroform	µg/L	0.32J	<1.7	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	0.46J	<1.7	0.58J	0.35J	<1
Tetrachloroethene	µg/L	2.2	0.59J	0.42J	0.31J	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	0.42J	<1.7	0.31J	<1	<1
Trichloroethene	µg/L	16	5.5	4.7	2.7	<1
Vinyl chloride	µg/L	<1	<1.7J	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DOE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IIR - Year Nine
Defense Depot Memphis, Tennessee

MW-31

Analyte	Sample Name	Sample Date	6/17/2005	MW-31 (77.1)105	11/18/2005	MW-31 (71.3)1105	4/12/2006	MW-31 (71.6)0406	4/12/2006	MW-31 (77.1)0406	10/18/2006	MW-31T - 10/18/2006	MW-31B - IS-1
		UNIT											
1,1,1-Trichloroethane	µg/L	0.505J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.451J
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	µg/L	24.9	12.4	27.8	29.6	23	23.2	30.6	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	0.814J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	0.547J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	0.595J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	8.48	1.83	8.86	14.7	4.99	3.85	12	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
- Not Analyzed

DOE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

MW-31

Analyte	Sample Name	MW-31-71.6	MW-31-77.1	MW-31-71.6-IS-3	MW-31-77.1-IS-3
	Sample Date	4/9/2007	4/9/2007	10/5/2007	10/5/2007
	UNIT				
1,1,1-Trichloroethane	µg/L	0.61 J	0.292 J	0.893 J	<1
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	0.262 J	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	11.6	12.5	4.69	7.73
Carbon tetrachloride	µg/L	0.451 J	<1	0.48 J	<1
Chloroform	µg/L	0.458	0.311	0.398	0.249 J
cis-1,2-Dichloroethene	µg/L	7.32	0.579 J	8.45	0.779 J
Tetrachloroethene	µg/L	0.904 J	1.45	0.887 J	0.661 J
Total 1,2-Dichloroethene	µg/L				
trans-1,2-Dichloroethene	µg/L	5.44	0.287 J	5.23	0.847 J
Trichloroethene	µg/L	30.2	3.27	34.2	5.87
Vinyl chloride	µg/L	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

- Not Analyzed

DOE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
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Historical Analytical Results
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Defense Depot Memphis, Tennessee

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MW-32

Analyte	Sample Name	MW322	MW323	MW324	MW-32-Y1Q1	MW-32-Y1Q2	MW-32-Y1Q3	MW-32-Y1Q4	MW-32-Y2Q1	MW-32
	Sample Date	6/21/1997	9/29/1997	3/27/1998	2/3/1999	5/25/1999	8/26/1999	11/3/1999	2/15/2000	5/16/2000
	UNIT									
1,1,1-Trichloroethane	µg/L	<10	<10	<10	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	91	110	140	5.67	4.42	0.92J	<1	<1	<1
1,1,2-Trichloroethane	µg/L	5J	5J	6J	1.54	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<10	<10	<10	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	25	16	20	25.2	14.2	17.3	25.2	25.5	37
Chloroform	µg/L	8J	6J	7J	7.89	32.2	76.9	73	77.2	117
cis-1,2-Dichloroethene	µg/L	--	--	--	30.5	16.7	4.64	4.59	5.07	6.61
Tetrachloroethene	µg/L	2J	1J	1J	1.16	1.28	2.22	2.63	2.34	3.94
Total 1,2-Dichloroethene	µg/L	120	88	140	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	--	--	--	3.82	1.76	0.99J	1.01	1.12	2
Trichloroethene	µg/L	93	76	100	31.9	28.1	34.6	36.8	41.8	58.2
Vinyl chloride	µg/L	<10	<10	<10	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

DOE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
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Historical Analytical Results
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MW-32

Analyte	Sample Name	MW-32-Y2Q3	MW-32-Y2Q4	MW-32_010220	MW-32-Y3S2	MW-32-I_020410	MW-32-I_021001	MW-32-I
	Sample Date	8/24/2000	11/9/2000	2/20/2001	10/3/2001	4/10/2002	10/1/2002	4/8/2003
	UNIT							
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	2.12	21.5	68.2	216	24	14	11
1,1,2-Trichloroethane	µg/L	<1	0.61J	<1	<1	0.59J	<1	0.52
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	47.2	61.3	19.7	42.7	12.1	12.3	1.18
Chloroform	µg/L	171	372J	434	828	102	91.5	50.2
cis-1,2-Dichloroethene	µg/L	5.66	8.55	9.44	12.6J	4.21	3.49	9.16
Tetrachloroethene	µg/L	5.9	6.39J	3.74	<1	0.82J	1.41	<1
Total 1,2-Dichloroethene	µg/L	—	—	—	—	—	—	—
trans-1,2-Dichloroethene	µg/L	2.68	4.53	2.42	5.82J	1.26	0.72J	<1
Trichloroethene	µg/L	89.2	94.8	71.9	238	37.9	34.8	13.5
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
— Not Analyzed

DOE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
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Historical Analytical Results
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MW-32

Analyte	Sample Name	MW-32-1_031028	MW-32,64,5-4/29/2004	MW-32	MW-32,65,9-10/20/2004	MW32RD66	MW-32(65 I)
	Sample Date	10/28/2003	4/29/2004	8/13/2004	10/20/2004	10/28/2004	6/14/2005
	UNIT						
1,1,1-Trichloroethane	µg/L	<1	<1	<2.5	<1J	<0.25	<1
1,1,2,2-Tetrachloroethane	µg/L	7.82	8.1	21	3.6	17.10J	3.72
1,1,2-Trichloroethane	µg/L	<1	<1	<2.5	<1	0.37J	<1
1,1-Dichloroethane	µg/L	<1	<1	<2.5	<1	<0.5	<1
Carbon tetrachloride	µg/L	<1	8.2	7.6	2.3J	9.56J	2.83
Chloroform	µg/L	50.9	37	68	17	64.69J	11.5
cis-1,2-Dichloroethene	µg/L	7.97	2	2.8	1.7	3.29J	1.65
Tetrachloroethene	µg/L	<1	0.37J	0.97J	<1	0.93J	<1
Total 1,2-Dichloroethene	µg/L	-	-	-	-	-	-
trans-1,2-Dichloroethene	µg/L	<1	0.36J	<2.5	0.23J	0.49J	<1
Trichloroethene	µg/L	13.4	14	24	7.3	22J	4.1
Vinyl chloride	µg/L	<1	<1	<2.5	<1	<0.25	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
- Not Analyzed

DOE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
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Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

MW-32

Analyte	Sample Name	MW-32 (65.1) 1105	MW-32 (65.1) 0406	MW-32- IS-1	MW-32-65.6	MW-32-65.6- IS-3
	Sample Date	11/16/2005	4/12/2006	10/19/2006	4/9/2007	10/8/2007
	UNIT					
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	32.7	46	21.7	1.59	<0.5
1,1,2-Trichloroethane	µg/L	1.06	1.28	0.594J	<1	<1
1,1-Dichloroethane	µg/L	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	12.3	17.4	12.3	3.95	<1
Chloroform	µg/L	131	154	86	8.63	<0.3
cis-1,2-Dichloroethane	µg/L	4.99	7.62	3.53	1.14	<1
Tetrachloroethane	µg/L	1.55	2.58	1.63	0.82 J	<1
Total 1,2-Dichloroethane	µg/L	—	—	—	—	—
trans-1,2-Dichloroethane	µg/L	<1	1.25	0.613J	<1	<1
Trichloroethene	µg/L	55	70	38	6.47	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

— Not Analyzed

DOE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

Note:
Analytical results for 10/8/07 are
in question. Field error suspected
in labeling; results for MW-32 and
MW-37 believed to have been
switched.

Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

MW-33

MW-33-Y2Q3												
Analyte	Sample Name	MW332	MW333	MW334	MW335	MW-33-Y1Q1	MW-33-Y1Q2	MW-33-Y1Q3	MW-33-Y1Q4	MW-33-Y2Q1	MW-33-Y2Q3	
	Sample Date	6/18/1997	9/25/1997	3/25/1998	10/16/1998	2/2/1999	5/25/1999	8/26/1999	11/2/1999	2/15/2000	5/16/2000	8/22/2000
UNIT												
1,1,1-Trichloroethane	µg/L	<10	<10	<10	<10	<1	<1	<1	<1	<1	<1	<1
1,1,1,2,2-Tetrachloroethane	µg/L	<10	<10	<10	<10	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	µg/L	<10	<10	<10	<10	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	µg/L	<10	<10	<10	<10	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<10	<10	<10	<10	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<10	<10	<10	<10	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethane	µg/L	-	-	-	-	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethane	µg/L	<10	<10	<10	<10	<1	<1	<1	<1	<1	<1	<1
Total 1,2-Dichloroethane	µg/L	<10	<10	<10	<10	-	-	-	-	-	-	-
trans-1,2-Dichloroethane	µg/L	-	-	-	-	<1	<1	<1	<1	<1	<1	<1
Trichloroethane	µg/L	<10	<10	<10	<10	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<10	<10	<10	<10	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DOE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

MW-33

Sample Name MW-33-Y2Q4 MW-33-Y3S2 MW-33-I 020410 MW-33-I 021002 MW-33-I 031028 MW-33-I 031028 MW-33-I 031028 MW-33-I 031028 MW-33-I 031028 MW-33-I 031028									
Analyte	Sample Date	11/8/2000	10/3/2001	4/10/2002	10/2/2002	4/8/2003	10/28/2003	4/29/2004	4/29/2004
UNIT									
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Total 1,2-Dichloroethene	µg/L	-	-	-	-	-	-	-	-
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

- Not Analyzed

DOE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

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MW-33

Analyte	Sample Name	Sample Date	4/29/2004	10/20/2004	6/14/2005	11/16/2005	4/12/2006	10/20/2006	MW-33-58	4/9/2007	MW-33-58-IS-3
							(57.7)0406				10/8/2007
	UNIT										
1,1,1-Trichloroethane	µg/L	<1	<1J	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<1	<1	<1	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1J	<1	<1	<1	0.562J	0.278J	0.457 J	1.5	<0.3
Chloroform	µg/L	<1	<1	<1	<1	<1	<1	<0.3	<0.3	<1	<1
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total 1,2-Dichloroethene	µg/L	-	-	-	-	-	-	-	-	-	-
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
- Not Analyzed

DOE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

MW-37

Analyte	Sample Name	MW373	MW372	MW374	MW-37 3_020410_2_020410_1_020410	MW-37- MW-37-	MW-37- MW-37-	MW-37- MW-37-I
Sample Date	9/29/1996	6/18/1997	3/27/1998	2/20/2001	4/10/2002	4/10/2002	10/1/2002	10/1/2002
UNIT								
1,1,1-Trichloroethane	<10	<10	<10	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	<10	<10	<10	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	<10	<10	<10	<1	<1	<1	<1	<1
1,1-Dichloroethene	<10	<10	<10	<1	<1	<1	<1	<1
Carbon tetrachloride	<10	<10	<10	<1	<1	<1	<1	<1
Chloroform	<10	<10	<10	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	-	-	-	<1	<1	<1	<1	<1
Tetrachloroethene	<10	<10	<10	<1	<1	<1	<1	<1
Total 1,2-Dichloroethene	<10	<10	<10	-	-	-	-	-
trans-1,2-Dichloroethene	-	-	-	<1	<1	<1	<1	<1
Trichloroethene	<10	<10	<10	<1	<1	<1	<1	0.83
Vinyl chloride	<10	<10	<10	<1	<1	<1	<1	<1

VOC samples analyzed using methods SW 8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

J	Estimated results based on QC data or reported below RL
B	Estimated results possibly biased high or false positive based on blank data
<	Not detected at sample reporting limit
R	Unusable
UJ	Undetected, reporting limit is inaccurate or imprecise

MIW-37[illegible]

NOTES:

VOC samples analyzed using methods SW 8010/8020. SW8240, SW8260, SW8260A, SW8260B, or CV3990

μg/L micrograms per liter

- Not Analyzed

DOE FLAGS:

J Estimated results based on QC data or reported below RL

B Estimated results possibly biased high or false positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
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Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

MW-37

Sample Name MW-37(173.2) MW-37 (173.2) MW-37 (173.2) MW-37 - IS-1 MW-37-173.2 MW-37-173.2-IS-3		Sample Date 6/14/2005 11/16/2005 4/12/2006 10/19/2006 4/9/2007 10/8/2007			
Analyte	UNIT				
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<0.5	0.788
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1
1,1-Dichloroethane	µg/L	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	4.12
Chloroform	µg/L	<1	<1	<0.3	6.01
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	0.29 J
Tetrachloroethene	µg/L	<1	<1	<1	0.637 J
Total 1,2-Dichloroethene	µg/L	-	-	-	
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW 8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

- Not Analyzed

DOE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

Note:
Analytical results for 10/8/07 are in question. Field error suspected in labeling; results for MW-32 and MW-37 believed to have been switched.

Historical Analytical Results
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Defense Depot Memphis, Tennessee

MW-40

Analyte	Sample Name	MW402	MW403	MW404	MW405	MW-40-Y1Q1	MW-40-Y1Q2	MW-40-Y1Q3	MW-40-Y1Q4	MW-40-Y2Q1
	Sample Date	6/19/1997	9/26/1997	3/28/1998	10/19/1998	2/2/1999	5/24/1999	8/26/1999	11/2/1999	2/15/2000
	UNIT									
1,1,1-Trichloroethane	µg/L	<10	<10	<10	1J	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<10	<10	<10	<10	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	µg/L	<10	<10	<10	<10	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<10	<10	2J	<10	1.35	1.07	<1	<1	<1
Carbon tetrachloride	µg/L	<10	<10	<10	<10	<1	<1	<1	<1	<1
Chloroform	µg/L	<10	<10	<10	<10	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	--	--	--	--	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<10	<10	<10	<10	<1	<1	<1	<1	<1
Total 1,2-Dichloroethene	µg/L	<10	<10	<10	<10	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	--	--	--	--	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<10	<10	<10	<10	1.55	<1	<1	<1	<1
Vinyl chloride	µg/L	<10	<10	<10	<10	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DOE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
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Defense Depot Memphis, Tennessee

MW-40

Analyte	Sample Name	MW40NA	MW-40	MW-40-Y2Q3	MW-40-Y2Q4	MW-40_010214	MW-40-Y3S2	MW-40-1_020410	MW-40-1_021001
Sample Date	3/22/2000	5/16/2000	8/23/2000	11/8/2000	2/14/2001	10/3/2001	4/10/2002	10/1/2002	
	UNIT								
1,1,1-Trichloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	<1	<1	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	<1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	0.2J	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total 1,2-Dichloroethene	--	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	<1	<1	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	<1	<1	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DOE FLAGS:

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- < Not detected at sample reporting limit
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Historical Analytical Results
Annual Operations Report - 2007
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Defense Depot Memphis, Tennessee

MW-40

Analyte	Sample Name	MW-40-1	MW-40-1_031028	MW40,87.9	MW40,91.9	MW40,91.9	MW40,86.9	MW-40(90.0)
	Sample Date	4/8/2003	10/28/2003	4/29/2004	4/29/2004	10/21/2004	10/21/2004	6/15/2005
	UNIT							
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1J	<1J	<1
1,1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1J	<1J	<1
Chloroform	µg/L	<1	<1	0.38J	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1J
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1J	<1J	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

DOE FLAGS:

- J Estimated results based on QC data or reported below RL
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- < Not detected at sample reporting limit
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Historical Analytical Results
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MW-40

Analyte	Sample Name	MW-40 (90.0)	MW-40 (90.0)	MW-40 - JS-1	MW-40-90	MW-40-90-IS-3
	Sample Date	11/18/2005	4/13/2006	10/19/2006	4/9/2007	10/8/2007
	UNIT					
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DOE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

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R Unusable

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imprecise

Historical Analytical Results
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Defense Depot Memphis, Tennessee

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MW-43

Analyte	Sample Name	MW431_45	MW435	MW435B	MW435U	MW-43	MW-43-Y3S2-B	MW-43-Y3S2-A	MW-43-2_020410
	Sample Date	10/21/1998	10/23/1998	10/24/1998	11/8/1998	2/19/2001	10/3/2001	10/3/2001	4/10/2002
	UNIT								
1,1,1-Trichloroethane	µg/L	<10	1J	14	2J	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<10	<10	<10	<10	9.59	<1	<1	<1
1,1,2-Trichloroethane	µg/L	<10	<10	<10	<10	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<10	<10	<10	<10	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<10	<10	<10	<10	<1	<1	<1	<1
Chloroform	µg/L	2J	<10	<10	<10	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	--	--	--	--	<1	<1	<1	<1
Tetrachloroethene	µg/L	<10	<10	<10	<10	<1	<1	<1	<1
Total 1,2-Dichloroethene	µg/L	<10	<10	<10	<10	--	--	--	--
trans-1,2-Dichloroethene	µg/L	--	--	--	--	<1	<1	<1	<1
Trichloroethene	µg/L	<10	<10	<10	<10	1.02	<1	<1	<1
Vinyl chloride	µg/L	<10	<10	<10	<10	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

E FLAGS:

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below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

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Historical Analytical Results
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Defense Depot Memphis, Tennessee

MW-43

Sample Name		MW-43-1_020410	MW-43-2_021001	MW-43-1_021001	MW-43-1	MW-43-2	MW-43-1_031028	MW-43-2_031028
Analyte	Sample Date	4/10/2002	10/1/2002	10/1/2002	4/8/2003	4/8/2003	10/28/2003	10/28/2003
UNIT								
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

E FLAGS:

J Estimated results based on QC data or reported

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positive based on blank data

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R Unusable

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Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

MW-43

Analyte	Sample Name	MW43, 163	MW43, 168	MW43, 168	MW43, 168	MW43, 165	MW-43 (166.5)	MW-43 (166.5)
	Sample Date	4/29/2004	4/29/2004	10/21/2004	10/21/2004	10/21/2004	6/17/2005	11/17/2005
	UNIT							
1,1,1-Trichloroethane	µg/L	<1	<1	<1J	<1J	<1J	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1J	<1J	<1J	<1	<1
Chloroform	µg/L	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1J	<1J	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

E FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

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MW-43

Analyte	Sample Name	MW-43 (165.5)	MW-43 - IS-1	MW-43-165.5	MW-43-165.5-IS-3
	Sample Date	4/12/2006	10/19/2006	4/10/2007	10/5/2007
	UNIT				
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1
Chloroform	µg/L	<1	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

FLAGS:

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- < Not detected at sample reporting limit
- R Unusable
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Historical Analytical Results
Annual Operations Report - 2007
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Defense Depot Memphis, Tennessee

932 263

MW-44

Analyte	Sample Name	MW442	MW443	MW444	MW445	MW-44-Y1Q1	MW-44-Y1Q2	MW-44-Y1Q3	MW-44-Y1Q4	MW-44-Y2Q1
	Sample Date	6/20/1997	9/25/1997	3/27/1998	10/17/1998	2/2/1999	5/25/1999	8/26/1999	11/2/1999	2/15/2000
	UNIT									
1,1,1-Trichloroethane	µg/L	<10	<10	<10	<10	<1	<1	<10	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<10	<10	<10	<10	<1	<1	<10	<1	<1
1,1,2-Trichloroethane	µg/L	<10	<10	<10	<10	<1	<1	<10	<1	<1
1,1-Dichloroethene	µg/L	<10	<10	<10	<10	<1	<1	<10	<1	<1
Carbon tetrachloride	µg/L	6J	6J	4J	<10	<1	<1	<10	<1	<1
Chloroform	µg/L	6J	<10	4J	<10	<1	<1	<10	<1	<1
cis-1,2-Dichloroethene	µg/L	--	--	--	--	<1	<1	<10	<1	<1
Tetrachloroethene	µg/L	<10	<10	<10	<10	<1	<1	<10	<1	<1
Total 1,2-Dichloroethene	µg/L	2J	2J	1J	<10	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	--	--	--	--	<1	<1	<10	<1	<1
Trichloroethene	µg/L	4J	5J	3J	<10	<1	<1	<10	<1	<1
Vinyl chloride	µg/L	<10	<10	<10	<10	<1	<1	<10	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DOE FLAGS:

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Historical Analytical Results
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Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

MW-44

Analyte	Sample Name	MW-44	MW-44-Y2Q3	MW-44-Y2Q4	MW-44-Y3S2-C	MW-44-Y3S2-B	MW-44-Y3S2-A	MW-44-2_020410
Sample Date	5/16/2000	8/24/2000	11/8/2000	10/3/2001	10/3/2001	10/3/2001	10/3/2001	4/10/2002
	UNIT							
1,1,1-Trichloroethane	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	<1	<1	<1	<1	<1	1.29	<1	<1
1,1,2-Trichloroethane	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	<1	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	2.3	5.3	2.1	2.84	6.47	<1	4.36	<1
Chloroform	1.88	3.62	1.23	2.78	5.04	2.05	2.81	<1
cis-1,2-Dichloroethene	0.65J	1.35	0.622J	<1	<1	<1	1.1	<1
Tetrachloroethene	<1	<1	<1	<1	<1	<1	<1	<1
Total 1,2-Dichloroethene	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	1.36	4.92	0.79J	1.26	2.77	<1	2.05	<1
Vinyl chloride	<1	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter

-- Not Analyzed

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Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

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MW-44

Analyte	Sample Name	Sample Date	4/10/2002	4/10/2002	10/1/2002	10/1/2002	10/1/2002	10/1/2002	4/8/2003	10/28/2003
			UNIT							
1,1,1-Trichloroethane	MW-44-1_020410	4/10/2002	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	MW-44-3_020410	4/10/2002	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	MW-44-2_021001	10/1/2002	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	MW-44-3_021001	10/1/2002	<1	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	MW-44-2_021001	10/1/2002	<1	2.1	4.39	<1	<1	<1	3.65	1.96
Chloroform	MW-44-3_021001	10/1/2002	<1	1.29	2.8	1.03	<1	<1	2.19	1.15
cis-1,2-Dichloroethene	MW-44-1_021001	10/1/2002	<1	<1	1.01	<1	<1	<1	0.84	<1
Tetrachloroethene	MW-44-2_021001	10/1/2002	<1	<1	<1	<1	<1	<1	<1	<1
Total 1,2-Dichloroethene	MW-44-3_021001	10/1/2002	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	MW-44-1_021001	10/1/2002	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	MW-44-2_021001	10/1/2002	<1	0.85J	1.67	<1	<1	<1	1.64	0.82J
Vinyl chloride	MW-44-3_021001	10/1/2002	<1	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DOE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
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Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

MW-44

Analyte	Sample Name	MW44,69	MW44,64	MW-44	MW44,69	MW44,64	MW-44(69.0)	MW-44 (69.0)
	Sample Date	4/29/2004	4/29/2004	8/14/2004	10/21/2004	10/21/2004	6/16/2005	11/17/2005
UNIT								
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1J	<1J	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	0.85J	1.3	0.8J	0.54J	0.71J	<1	1.01
Chloroform	µg/L	0.42J	0.91J	0.4J	0.42J	0.64J	<1	<1
cis-1,2-Dichloroethene	µg/L	<1	0.35J	<1	<1	0.27J	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1J	<1	<1	<1	<1	<1
Trichloroethene	µg/L	0.35J	0.75J	0.28J	0.41J	0.55J	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DOE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

MW-44

Analyte	Sample Name	MW-44 (69.0)	MW-44 - IS-1	MW-44-69	MW-44-69-IS-3
	Sample Date	4/13/2006	10/19/2006	4/9/2007	10/5/2007
	UNIT				
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	1.2	1.24	1.2
Chloroform	µg/L	<1	0.467	0.694	0.63
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Trichloroethene	µg/L	<1	0.366J	0.688 J	0.467 J
Vinyl chloride	µg/L	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

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Historical Analytical Results
Annual Operations Report - 2007
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Defense Depot Memphis, Tennessee

MW-54

Analyte	Sample Name	MW542	MW543	MW544	MW545	MW-54-Y1Q1	MW-54-Y1Q2	MW-54-Y1Q3	MW-54-Y1Q4	MW-54-Y2Q1
	Sample Date	6/20/1997	9/25/1997	3/28/1998	10/16/1998	2/3/1999	5/25/1999	8/26/1999	11/3/1999	2/15/2000
	UNIT									
1,1,1-Trichloroethane	µg/L	<10	<10	<10	<10	<1	<1	<10	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<10	<10	<10	<10	<1	<1	<10	40.1	23.6
1,1,2-Trichloroethane	µg/L	<10	<10	<10	<10	<1	<1	<10	1.15	0.9J
1,1-Dichloroethene	µg/L	<10	<10	<10	<10	<1	<1	<10	<1	<1
Carbon tetrachloride	µg/L	<10	1J	2J	<10	<1	3.53	12.8	5.02	14.7
Chloroform	µg/L	<10	<10	1J	<10	<1	<1	5.04	2.54	12.4
cis-1,2-Dichloroethene	µg/L	--	--	--	--	3.6	3.9	10.3	24.1	22.5
Tetrachloroethene	µg/L	<10	2J	2J	<10	<1	<1	<10	0.68J	0.94J
Total 1,2-Dichloroethene	µg/L	4J	10	12	4J	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	--	--	--	--	<1	<1	<10	1.4	2.01
Trichloroethene	µg/L	58	150	180	79	60.6	61	50	30.6	43.3
Vinyl chloride	µg/L	<10	<10	<10	<10	<1	<1	<10	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

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Historical Analytical Results
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Defense Depot Memphis, Tennessee

MW-54

Analyte	Sample Date	3/23/2000	5/17/2000	8/22/2000	11/7/2000	11/7/2000	11/7/2000	10/3/2001	10/3/2001
Sample Name MW54NA MW-54_000517 MW-54-Y2Q3 MW-54-Y2Q4 MW-54-Y2Q4 MW-54-Y2Q4 MW-54-Y3S2-A MW-54-Y3S2-C									
	UNIT								
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	19	<1	4.9	20.4	22.7	3.93	11	11
1,1,2-Trichloroethane	µg/L	1	<1	0.56J	1	1.24	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	19	4.46	7.97	8.65	12.8	1.79	19.7	19.7
Chloroform	µg/L	18	5.54	13.8	14.1	19.8	6.87	12	12
cis-1,2-Dichloroethene	µg/L	30	7.08	14.9	23.8	34.6	11.3	31.4	31.4
Tetrachloroethene	µg/L	5	<1	0.74J	0.63J	0.91J	<1	1.89	1.89
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	4	<1	1.39	1.83	2.58	1.13	5.28	5.28
Trichloroethene	µg/L	50	11.6	28.1	22.6	29.2	20.2	259	259
Vinyl chloride	µg/L	0.1J	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

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Historical Analytical Results
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Defense Depot Memphis, Tennessee

MW-54

Analyte	Sample Name	Sample Date	10/3/2001	4/10/2002	4/10/2002	4/10/2002	10/1/2002	10/1/2002
		UNIT						
1,1,1-Trichloroethane	MW-54-Y3S2-B	µg/L	<1	<1	<1	<1	<10	<10
1,1,2,2-Tetrachloroethane	MW-54-2_020410	µg/L	8.67	18.1	9.06	17.5	50.7	60.1
1,1,2-Trichloroethane	MW-54-3_020410	µg/L	<1	1.19	<1	1.1	<10	<10
1,1-Dichloroethene	MW-54-3_020410	µg/L	<1	<1	<1	<1	<10	<10
Carbon tetrachloride	MW-54-3_020410	µg/L	7.7	14.2	2.96	14.4	14	14.4
Chloroform	MW-54-3_020410	µg/L	11.9	8.84	5.54	8.15	10.9	11.6
cis-1,2-Dichloroethene	MW-54-3_020410	µg/L	27.6	43.7	24.2	41.7	80.2	85.9
Tetrachloroethene	MW-54-3_020410	µg/L	<1	1.62	<1	2.06	<10	<10
Total 1,2-Dichloroethene	MW-54-3_020410	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	MW-54-3_020410	µg/L	4.15	9.95	5.11	9.17	16.2	15.2
Trichloroethene	MW-54-3_020410	µg/L	105	618	127	723	920	632
Vinyl chloride	MW-54-3_020410	µg/L	<1	<1	<1	<1	<10	<10

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

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Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

MW-54

Analyte	Sample Name	Sample Date	10/1/2002	4/8/2003	4/8/2003	4/8/2003	11/18/2003	11/18/2003	11/18/2003	11/18/2003
	MW-54-1_021001	MW-54-1	MW-54-1	MW-54-2	MW-54-3	MW-54-3	MW-54-3_031118	MW-54-1_031118	MW-54-2_031118	
	UNIT									
1,1,1-Trichloroethane	µg/L	<10	<1	<10	<10	<10	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	40	10.3	40.6	44.1	44.1	1760	301	1680	
1,1,2-Trichloroethane	µg/L	<10	<1	<10	<10	<10	10.4	2.05	7.86	
1,1-Dichloroethene	µg/L	<10	<1	<10	<10	<10	<1	<1	<1	
Carbon tetrachloride	µg/L	5.58J	0.68	7.32	7.48	7.48	2.58	<1	3.35	
Chloroform	µg/L	11.5	1.82	<10	<10	<10	3.68	<1	3.18	
cis-1,2-Dichloroethene	µg/L	66	10.7	44.1	44.3	44.3	85.3	26.3	75.5	
Tetrachloroethene	µg/L	<10	<1	3.43	4.02	4.02	10.1	<1	7.37	
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--	--	
trans-1,2-Dichloroethene	µg/L	12.1	1.51	8.76	7.71	7.71	16	4.16	15.3	
Trichloroethene	µg/L	333	72.4	632	629	629	1900	216	1530	
Vinyl chloride	µg/L	<10	<1	<10	<10	<10	<1	<1	<1	

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
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Historical Analytical Results
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Defense Depot Memphis, Tennessee

MW-54

Analyte	Sample Name	MW54-020404-90.5-92.5	MW54-85-87.5	MW54	MW54,85.6	MW54,90.6
	Sample Date	2/4/2004	2/4/2004	4/7/2004	4/29/2004	4/29/2004
	UNIT					
1,1,1-Trichloroethane	µg/L	<0.25	<0.25	<0.25	<50	<67
1,1,2,2-Tetrachloroethane	µg/L	2150	2180	1350	1300	2000
1,1,2-Trichloroethane	µg/L	9.85	9.74	6.63	<50	<67
1,1-Dichloroethene	µg/L	<0.5	<0.5	<0.5	<50	<67
Carbon tetrachloride	µg/L	5	5.79	3.94	<50	<67
Chloroform	µg/L	5.27	5.4	3.93	<50	<67
cis-1,2-Dichloroethene	µg/L	83.2	83.4	61.2	49J	64J
Tetrachloroethene	µg/L	12.8	14.2	8.36	<50	<67
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	20.3	20.4	13	38J	54J
Trichloroethene	µg/L	2110	2230	1530J	1400	2000
Vinyl chloride	µg/L	0.441J	0.301J	<0.25	<50	<67

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

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Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

MW-54

Analyte	Sample Name	MW-54	MW54,90.6-10/21/2004	MW54,85.6	MW-54	MW-54	MW-54(89.5)
	Sample Date	8/14/2004	10/21/2004	10/21/2004	1/27/2005	3/23/2005	6/17/2005
	UNIT						
1,1,1-Trichloroethane	µg/L	<100	<140	<140	<10	<8.3	<1
1,1,2,2-Tetrachloroethane	µg/L	2300	4700	4300	3000	2100	1220
1,1,2-Trichloroethane	µg/L	<100	<140	<140	6J	6.1J	3.68
1,1-Dichloroethene	µg/L	<100	<140	<140	<10	<8.3	<1
Carbon tetrachloride	µg/L	<100	<140	<140	<10	<8.3	0.902J
Chloroform	µg/L	<100	<140	<140	<10	3J	1.52B
cis-1,2-Dichloroethene	µg/L	65J	61J	70J	23	41	35.8
Tetrachloroethene	µg/L	<100	<140	<140	<10	5.8J	2.77
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<100	<140	<140	2.9J	6.5J	5.94
Trichloroethene	µg/L	2200	2700	2500	300	1300	729
Vinyl chloride	µg/L	<100	<140	<140	<10	<8.3	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

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Historical Analytical Results
Annual Operations Report - 2007
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Defense Depot Memphis, Tennessee

MW-54

Analyte	Sample Name	MW-54 (89.5)	MW-54 (89.5)	MW-54 - IS-1	MW-54-89.5	MW-54-89.5-IS-3
	Sample Date	11/18/2005	4/13/2006	10/19/2006	4/9/2007	10/8/2007
	UNIT					
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<2.5	<5
1,1,2,2-Tetrachloroethane	µg/L	853	605	572	160	80
1,1,2-Trichloroethane	µg/L	3.44	3.91	2.54	0.968 J	<5
1,1-Dichloroethene	µg/L	<1	<1	<1	<2.5	<5
Carbon tetrachloride	µg/L	1.3	0.944J	1.9	2.34 J	5.74
Chloroform	µg/L	1.46B	1.14B	1.45	2	3.17
cis-1,2-Dichloroethene	µg/L	25.4	19.1	19.6	18.9	19.2
Tetrachloroethene	µg/L	4.42	2.98	2.78	3.58	5.06
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	4.18	4.38	3.88	4.2	4.48 J
Trichloroethene	µg/L	478J	671	604	405	474
Vinyl chloride	µg/L	<1	<1	<1	<2.5	<5

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

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Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

MW-57

Analyte	Sample Name	DJA224	MW-57-Y2Q1	MW-57	MW-57-Y2Q3	MW-57-Y2Q4	MW-57-Y3S2-B	MW-57-Y3S2-A	MW-57-2_020410
Sample Date	3/15/1999	2/16/2000	5/17/2000	8/22/2000	11/7/2000	10/3/2001	10/3/2001	10/3/2001	4/10/2002
	UNIT								
1,1,1-Trichloroethane	µg/L	<10	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<10	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	µg/L	<10	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<10	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	14	39.9	50.6	45.7	48.3	37.5	37.1	42.8
Chloroform	µg/L	6J	13.2	10.3	11.3	8.93	28	25.9	15.1
cis-1,2-Dichloroethene	µg/L	--	<1	<1	0.53J	0.411J	0.97J	0.86J	0.55J
Tetrachloroethene	µg/L	2J	5.38	5.1	5.86	5.07	4.58	5.24	5.02
Total 1,2-Dichloroethene	µg/L	<10	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	--	1.55	1.51	1.83	1.5	1.68	1.73	1.88
Trichloroethene	µg/L	22	50.8	46.5	49.2	30.9	77.4	73.4	66.4
Vinyl chloride	µg/L	<10	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

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Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

MW-57

Sample Name MW-57-1_020410 MW-57-2_021001 MW-57-1_021001 MW-57-2 MW-57-1_031028 MW-57-2_031028									
Analyte	Sample Date	4/10/2002	10/1/2002	10/1/2002	4/8/2003	4/8/2003	10/28/2003	10/28/2003	10/28/2003
UNIT									
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	38.5	43	19.6	41.5	42.4	24.3	33.3	18.2
Chloroform	µg/L	13.4	29.7	12.6	11.8	15.6	12.2	18.2	<1
cis-1,2-Dichloroethene	µg/L	0.51J	1.13	0.54J	0.53	0.68	<1	<1	5.28
Tetrachloroethene	µg/L	6.08	8.14	3.64	6.43	7.86	5.32	5.28	-
Total 1,2-Dichloroethene	µg/L	-	-	-	-	-	-	-	1.45
trans-1,2-Dichloroethene	µg/L	1.63	2.27	1.1	0.99	1.37	0.97J	1.45	71.6
Trichloroethene	µg/L	58.8	111	54.1	60.9	73.3	57.3	71.6	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
- Not Analyzed

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Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

MW-57

Analyte	Sample Name	MW57.67	MW57.64.5	MW57.66.8	MW57RD67	MW-57(66.6)	MW-57(66.6)	MW-57(66.6)	MW-57 - IS-1
	Sample Date	4/29/2004	4/29/2004	10/21/2004	10/28/2004	6/14/2005	11/18/2005	4/12/2006	10/20/2006
	UNIT								
1,1,1-Trichloroethane	µg/L	<1.7	<3.3	<1	<0.25	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1.7	<3.3	<1	<0.125	<1	<1	<1	<0.5
1,1,2-Trichloroethane	µg/L	<1.7	<3.3	<1	<0.25	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1.7	<3.3	<1	<0.5	<1	<1	<1	<1
Carbon tetrachloride	µg/L	25	33	19	23.7	20.6	17.1	23	31
Chloroform	µg/L	5.7	11	6.1	9.29	4.94B	4.75B	3.25B	5.67
cis-1,2-Dichloroethene	µg/L	<1.7	<3.3	0.27J	0.34J	<1	<1	<1	0.294J
Tetrachloroethene	µg/L	3.5	5	2.7	2.96	2.6	2.3	2.81	4.02
Total 1,2-Dichloroethene	µg/L	-	-	-	-	-	-	-	-
trans-1,2-Dichloroethene	µg/L	0.46J	<3.3	0.58J	0.79J	<1	<1	0.419J	0.659J
Trichloroethene	µg/L	31	48	29	35.9	19	17.6	18	28.7
Vinyl chloride	µg/L	<1.7	<3.3	<1	<0.25	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW 8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990
µg/L micrograms per liter

- Not Analyzed

DOE FLAGS:

J Estimated results based on QC data or reported below RL

B Estimated results possibly biased high or false positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IFA - Year Nine
Defense Depot Memphis, Tennessee

MW-57

Analyte	MW-57-SARA-		
	Sample Name	MW-57-66-6-IS-2	MW-57-66-6-IS-3
	Sample Date	4/10/2007	5/15/2007
	UNIT		
1,1,1-Trichloroethane	µg/L	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1
1,1-Dichloroethene	µg/L	<1	<1
Carbon tetrachloride	µg/L	29.6	22.9
Chloroform	µg/L	6.6	5.8
cis-1,2-Dichloroethene	µg/L	0.325J	0.33J
Tetrachloroethene	µg/L	5.06	4.3
Total 1,2-Dichloroethene	µg/L		
trans-1,2-Dichloroethene	µg/L	0.684J	0.58J
Trichloroethene	µg/L	34.6	29
Vinyl chloride	µg/L	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

- Not Analyzed

DOE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

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MW-67

Analyte	Sample Name	Sample Date	MW-67- Y2Q1	MW-67- Y3S2-A	MW-67- Y3S2-B	MW-67- 3_020410	MW-67- 1_020410	MW-67- 2_020410	MW-67- 1_021001	MW-67- 2_021001	MW-67- 3_021001	MW-67- 10/1/2002	MW-67- 10/1/2002	MW-67- 4/8/2003
			2/16/2000	10/3/2001	10/3/2001	4/10/2002	4/10/2002	4/10/2002	10/1/2002	10/1/2002	10/1/2002	10/1/2002	10/1/2002	4/8/2003
			UNIT											
1,1,1-Trichloroethane			µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane			µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane			µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene			µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride			µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform			µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene			µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene			µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total 1,2-Dichloroethene			µg/L	-	-	-	-	-	-	-	-	-	-	-
trans-1,2-Dichloroethene			µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene			µg/L	1.26	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride			µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW 8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

DOE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
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Defense Depot Memphis, Tennessee

MW-67

Analyte	Sample Name	MW-67-3	3_031028	MW-67-2_031028	MW-67-1_031028	MW67,261	MW67,266	MW67,271	MW67,266	MW67,271	MW67,266	MW67,261
Sample Date	4/8/2003	#####	#####	#####	#####	4/29/2004	4/29/2004	4/29/2004	4/29/2004	10/21/2004	10/21/2004	10/21/2004
UNIT												
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1J	<1J	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DOE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

19-MW

Analyte	Sample Date	MW-67(267.5)	MW-67(267.5)	MW-67 (267.5)	MW-67 - IS-1	IS-2	MW-67-267.5- MW-67-267.5
		6/17/2005	12/8/2005	4/12/2006	10/19/2006	4/10/2007	10/5/2007
	UNIT						
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<0.5J	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1J	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	<1	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1
Total 1,2-Dichloroethene	µg/L	-	-	-	-	-	-
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

VOC samples analyzed using methods SW 8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990	micrograms per liter
--	Not Analyzed

DQE FLAGS:

J	Estimated results based on QC data or reported below RL
B	Estimated results possibly biased high or false positive based on blank data
<	Not detected at sample reporting limit
R	Unusable
UJ	Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

MW-68

Sample Name MW-68_000518 MW-68-Y2Q3 MW-68-Y2Q4 MW-68_010214 MW-68-Y4S2-A MW-68-Y3S2-A MW-68-Y3S2-B										
Analyte	Sample Date	5/18/2000	8/23/2000	11/8/2000	2/14/2001	10/3/2001	10/3/2001	10/3/2001	10/3/2001	10/3/2001
	UNIT									
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	6.55	<1	<1	<1	<1	<1	<1	4.15
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	9.01	<1	<1	<1	<1
Carbon tetrachloride	µg/L	0.89J	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	6.44	<1	<1	<1	1.43	<1	<1	<1	3.5
cis-1,2-Dichloroethene	µg/L	13.7	31	1.9	4.38	<1	<1	<1	<1	3.12
Tetrachloroethene	µg/L	2.07	8.35	0.4J	0.92J	4.3	<1	<1	<1	1.6
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	13.1	9.36	1.4	4.14	<1	<1	<1	<1	0.78J
Trichloroethene	µg/L	44.5	48.9	3.21	9.67	3.85	0.5J	<1	<1	6.56
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DOE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

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Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

MW-68

Sample Name		MW-68-1_020410		MW-68-2_020410		MW-68-2_021001		MW-68-1_021001		MW-68-2_031028	
Analyte	Sample Date	4/10/2002	4/10/2002	4/10/2002	10/1/2002	10/1/2002	10/1/2002	4/8/2003	4/8/2003	10/28/2003	10/28/2003
UNIT											
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1,2,2-Tetrachloroethane	µg/L	1.01	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	9.01	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	<1	1.43	7.88	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	4.3	<1	<1	<1	<1	<1	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	3.85	0.94J	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

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positive based on blank data

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imprecise

Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

MW-68

Analyte	Sample Name	Sample Date	MW68,69	MW68,73	MW68,78	MW68,78.6	MW68,74.6	MW68,70.6
		10/28/2003	4/29/2004	4/29/2004	4/29/2004	10/21/2004	10/21/2004	10/21/2004
	UNIT							
1,1,1-Trichloroethane		<1	<2.5	<1	<1	<1J	<1	<33J
1,1,2,2-Tetrachloroethane		<1	0.85J	<1	<1	<1	<1	81
1,1,2-Trichloroethane		<1	<2.5	<1	<1	<1	<1	<33
1,1-Dichloroethene		<1	<2.5	<1	1.5	<1	<1	<33
Carbon tetrachloride		<1	<2.5	0.21J	<1	<1J	<1	<33J
Chloroform		<1	0.78J	0.59J	<1	<1	<1	<33
cis-1,2-Dichloroethene		<1	<2.5	<1	<1	<1	<1	<33
Tetrachloroethene		<1	<2.5	0.32J	2.1	<1	<1	<33
Total 1,2-Dichloroethene		--	--	--	--	--	--	--
trans-1,2-Dichloroethene		<1	<2.5	<1	<1	<1	<1	<33
Trichloroethene		<1	1J	<1	1.4	<1	<1	20J
Vinyl chloride		<1	<2.5	<1	<1	<1	<1	<33

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

DOE FLAGS:

- J Estimated results based on QC data or reported below RL
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Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

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MW-68

Analyte	Sample Name	MW-68(80.5)	MW-68(74.5)	MW-68 (80.5)	MW-68 (74.5)	MW-68 (74.5)	MW-68 (80.5)	MW-68 (74.5)	MW-68 (80.5)	MW-68 (80.5)	MW-68 (80.5)	MW-68T - IS-1
	Sample Date	6/15/2005	6/15/2005	11/17/2005	11/17/2005	11/17/2005	4/12/2006	4/12/2006	4/12/2006	4/12/2006	10/19/2006	
	UNIT											
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	1.52B	<1	<1	<1	<1	<1	<1	<1	5.67	<1
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.951J	<1
Chloroform	µg/L	<1	<1	<1	<1	<1	0.564B	<1	<1	<1	1.57	<1
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	1.06	<1
Tetrachloroethene	µg/L	<1J	<1J	<1	<1	<1	0.696J	<1	<1	<1	1.63	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.544J	<1
Trichloroethene	µg/L	<1	0.512J	<1	<1	<1	0.608J	<1	<1	<1	5.76	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DOE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

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MW-68

MW-68B - MW-68-77.5- MW68-SARA- MW-68-77.5-IS-					
Analyte	Sample Name	IS-1	IS-2	GW01	3
	Sample Date	10/19/2006	4/11/2007	5/17/2007	10/8/2007
UNIT					
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	0.457J	1.45	5.5	1.51
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1
Chloroform	µg/L	0.165J	0.263 J	0.43	0.775
cis-1,2-Dichloroethene	µg/L	<1	0.473 J	4.2	2.36
Tetrachloroethene	µg/L	<1	0.506 J	0.69 J	0.738 J
Total 1,2-Dichloroethene	µg/L	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	0.261 J	1.3	0.585 J
Trichloroethene	µg/L	0.485J	2.58	14	4.73
Vinyl chloride	µg/L	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter
-- Not Analyzed

DOE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
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Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

MW-69

Analyte	Sample Name	Sample Date	MW-69-Y2Q1	MW-69	MW-69-Y2Q3	MW-69-Y2Q4	MW69-94.2FT	MW69-88.2FT	MW-69-Y3S2-A	MW-69-Y3S2-B	MW-69-2_020410
			2/16/2000	5/18/2000	8/24/2000	11/9/2000	1/8/2001	1/8/2001	10/3/2001	10/3/2001	4/10/2002
		UNIT									
1,1,1-Trichloroethane		µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane		µg/L	<1	<1	4.36	<1	<1	0.6J	<1	<1	<1
1,1,2-Trichloroethane		µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane		µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride		µg/L	<1	0.73J	<1	<1	<1	0.3J	<1	<1	<1
Chloroform		µg/L	<1	3.56	<1	2.12	0.1J	1	<1	<1	<1
cis-1,2-Dichloroethene		µg/L	4.11	31.2	2.26	23.1	<1	11	<1	<1	<1
Tetrachloroethene		µg/L	1.76	4.87	0.68J	6.39J	<1	4	<1	<1	<1
Total 1,2-Dichloroethene		µg/L	--	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene		µg/L	2.26	19.1	0.86J	12.3	<1	5	<1	<1	<1
Trichloroethene		µg/L	99.2	642	50.4	464	<1	350	1.01	<1	<1
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020. SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

DOE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
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Historical Analytical Results
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Defense Depot Memphis, Tennessee

MW-69

Analyte	Sample Name	4/10/2002	10/2/2002	10/2/2002	10/2/2002	4/8/2003	4/8/2003	10/28/2003	10/28/2003	MW-69-1_031028	MW69,86
	Sample Date										4/29/2004
	UNIT										
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	1.52	<1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	7.92	<1	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	1.84	0.98J	<1	<1	1.94	<1	<1	<1	<1	0.55J
Total 1,2-Dichloroethene	µg/L	-	-	-	-	-	-	-	-	-	-
trans-1,2-Dichloroethene	µg/L	4.14	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	128	8.12	<1	<1	2.18	<1	<1	<1	<1	0.47J
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
- Not Analyzed

DOE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
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MW-69

Analyte	Sample Name	Sample Date	MW69,91	MW69,86.4	MW69,91.4	MW-69(87.4)	MW-69(90.1)	MW-69 (87.4)
			4/29/2004	10/21/2004	10/21/2004	6/15/2005	11/16/2005	11/16/2005
	UNIT							
1,1,1-Trichloroethane	µg/L	<1	<1J	<1J	<1J	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1J	<1J	<1J	<1	<1	<1
Chloroform	µg/L	<1	<1	0.17J	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	1.5	<1	0.951J	<1	<1
Total 1,2-Dichloroethene	µg/L	-	-	-	-	-	-	-
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1R	<1	<1	<1
Trichloroethene	µg/L	<1	<1	3.7	<1	2.47	0.334J	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
- Not Analyzed

DOE FLAGS:

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below RL
B Estimated results possibly biased high or false
positive based on blank data
< Not detected at sample reporting limit
R Unusable
UJ Undetected, reporting limit is inaccurate or
imprecise

Historical Analytical Results
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MW-69

Analyte	Sample Name	MW-69 (87.4)	MW-69 (90.1)	MW-69T - IS-1	MW-69B - IS-1	MW-69-88.2-IS-2	MW-69-88.2-IS-3
	Sample Date	4/12/2006	4/12/2006	10/20/2006	10/20/2006	4/11/2007	10/8/2007
	UNIT						
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	5.51	1.15	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	µg/L	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	0.261J	0.169J	0.144J	0.136J
cis-1,2-Dichloroethene	µg/L	<1	<1	0.348J	<1	<1	<1
Tetrachloroethene	µg/L	4.72	0.341J	2.03	0.688J	0.898J	1.03
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	3.85	<1	9.84	2.09	0.879J	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

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Historical Analytical Results
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MW-70

Analyte	Sample Name	MW-70-Y2Q1	MW70NA	MW-70 Bottom	MW-70-Top	MW-70-Y2Q3	MW-70-Y2Q4	MW70-93FT	MW70-89.5FT
Sample Date	2/15/2000	3/24/2000	5/18/2000	5/18/2000	8/24/2000	11/10/2000	1/8/2001	1/8/2001	1/8/2001
	UNIT								
1,1,1-Trichloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	4830	310	342	284	930	3370	14	130J	
1,1,2-Trichloroethane	39.4	4	3.93	2.64	15.2	16	0.6J	1	
1,1-Dichloroethene	0.61J	<1	<1	<1	<1	<1	<1	<1	
Carbon tetrachloride	3.48	0.4J	0.64J	<1	2.46	1.81	<1	0.3J	
Chloroform	18.2	2	5.18	4.36	8.46	9.37	0.1J	0.5J	
cis-1,2-Dichloroethene	522	46	54.8	38.8	211	292	12	9	
Tetrachloroethene	89.7	13	5.35	2.92	35.8	32.5J	<1	0.8J	
Total 1,2-Dichloroethene	--	--	--	--	--	--	--	--	
trans-1,2-Dichloroethene	149	14	12	10.1	50.4	57.3	0.6J	2	
Trichloroethene	11700	1100	720	538	4240	4040	18	140J	
Vinyl chloride	1.88	0.2J	<1	<1	0.62J	1.69	8	<1	

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DOE FLAGS:

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Historical Analytical Results
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MW-70

Sample Name		MW70-86.3FT	MW-70-Y3S2-A	MW-70-Y3S2-B	MW-70-1_020410	MW-70-2_020410	MW-70-2_021002
Analyte	Sample Date	1/8/2001	10/3/2001	10/3/2001	4/10/2002	4/10/2002	10/2/2002
	UNIT						
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<50
1,1,2,2-Tetrachloroethane	µg/L	390	1320	766	2540	1580	7980
1,1,2-Trichloroethane	µg/L	2	<1	<1	7.35	5.2	<50
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	0.98J	<50
Carbon tetrachloride	µg/L	0.4J	<1	<1	<1	<1	<50
Chloroform	µg/L	1J	<1	<1	3.99	2.65	<50
cis-1,2-Dichloroethene	µg/L	21	92.8J	55.9J	114	69.2	42.5J
Tetrachloroethene	µg/L	2	<1	<1	13.5	3.27	<50
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	5	<1	<1	27.3	10.8	<50
Trichloroethene	µg/L	590	2340	1170	2940	1490	1340
Vinyl chloride	µg/L	<1	<1	<1	<1	17	<50

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DOE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

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Defense Depot Memphis, Tennessee

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MW-70

Analyte	Sample Name	MW-70-1_021002	MW-70-1	MW-70-2	MW-70-2_031028	MW-70-1_031028	MW70,85.8	MW70,90.8
	Sample Date	10/2/2002	4/8/2003	4/8/2003	10/28/2003	10/28/2003	4/29/2004	4/29/2004
	UNIT							
1,1,1,1-Tetrachloroethane	µg/L	<50	<200	<50	<1	<1	<250	<200
1,1,2,2-Tetrachloroethane	µg/L	12400	3060	2120	4170	8270	8500	6900
1,1,2-Trichloroethane	µg/L	<50	<200	<50	4.39	6.92	<250	<200
1,1-Dichloroethene	µg/L	<50	<200	<50	<1	<1	<250	<200
Carbon tetrachloride	µg/L	<50	<200	<50	<1	0.64J	<250	<200
Chloroform	µg/L	<50	<200	<50	<1	2.5	<250	<200
cis-1,2-Dichloroethene	µg/L	72.4	<200	31.6	50	112	120J	110J
Tetrachloroethene	µg/L	<50	<200	<50	3.85	17.3	<250	<200
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<50	<200	<50	3.91	18.8	<250	<200
Trichloroethene	µg/L	1980	1220	824	1410	2530	3700	2200
Vinyl chloride	µg/L	<50	<200	<50	10.3	<1	<250	<200

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

DOE FLAGS:

J Estimated results based on QC data or reported
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positive based on blank data
< Not detected at sample reporting limit
R Unusable
UJ Undetected, reporting limit is inaccurate or
imprecise

MW-70

Analyte	Sample Name	MW-70	8/14/2004	MW70,90.8	10/21/2004	MW70,85.8	MW-70(83.0)	6/14/2005	MW-70(88.8)	6/14/2005	MW-70(88.8)	11/19/2005	MW-70(82.8)
	Sample Date												
	UNIT												
1,1,1-Trichloroethane		µg/L	<120	<170J	<140	<10	<5	<1				<10	
1,1,2,2-Tetrachloroethane		µg/L	3500	4200	5800	6410	1890	2200				2990	
1,1,2-Trichloroethane		µg/L	<120	<170	<140	13.2	8.88	13.1				6.65J	
1,1-Dichloroethene		µg/L	<120	<170	<140	<10	<5	1.07				<10	
Carbon tetrachloride		µg/L	<120	<170J	<140	<10	<5	<1				<10	
Chloroform		µg/L	<120	<170	<140	<10	<5	2.12B				11.6	
cis-1,2-Dichloroethene		µg/L	<120	<170	41J	67.8	37.2	70.5				63.4	
Tetrachloroethene		µg/L	<120	<170	<140	6.3J	<5	4.84				16.9	
Total 1,2-Dichloroethene		µg/L	--	--	--	--	--	--				--	
trans-1,2-Dichloroethene		µg/L	<120	<170	<140	13.9	6.31	13.8				15.8	
Trichloroethene		µg/L	970	1100	2100	1940	361	1620				2420	
Vinyl chloride		µg/L	<120	<170	<140	<10	18.1	29.5				<10	

VOC samples analyzed using methods SW 8010/8020. SW8240, SW8260, SW8260A, SW8260B, or CV3990

DQE FLAGS:

J	Estimated results based on QC data or reported below RL
B	Estimated results possibly biased high or false positive based on blank data
<	Not detected at sample reporting limit
R	Unusable
UJ	Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
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MW-70

Analyte	Sample Name	MW-70 (82.8)	MW-70 (88.8)	MW-70B - IS-1	MW-70T - IS-1	MW-70-83.3-IS-2	MW-70-88.8-IS-2
	Sample Date	4/12/2006	4/12/2006	10/20/2006	10/20/2006	4/11/2007	4/11/2007
	UNIT						
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	7670	6750	5850	9200	1460	627
1,1,2-Trichloroethane	µg/L	6.15	29	25.7	10.1	2.17	19.5
1,1-Dichloroethene	µg/L	<1	3.36	1.89	<1	<1	1.75
Carbon tetrachloride	µg/L	<1	<1	<1	0.575J	<1	<1
Chloroform	µg/L	1.52B	1.37B	2.42	3.79	1.08	0.338
cis-1,2-Dichloroethene	µg/L	48.1	111	122	101	26.7	58.5
Tetrachloroethene	µg/L	16.5	11.4	12.7	29.5	8.16	2.89
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	12	16.6	17.4	19.7	4.83	5.48
Trichloroethene	µg/L	2130	1980	2180	3390	750	329
Vinyl chloride	µg/L	1.82	94.2	64.2	<1	<1	94.3

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DOE FLAGS:

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positive based on blank data
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Historical Analytical Results
Annual Operations Report - 2007
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Defense Depot Memphis, Tennessee

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MW-70

Analyte	Sample Name	Sample Date	UNIT	10/8/2007	10/8/2007
	MW-70-83.3-IS-3				MW-70-88.8-IS-3
1,1,1-Trichloroethane			µg/L	<2	<2
1,1,2,2-Tetrachloroethane			µg/L	237	455
1,1,2-Trichloroethane			µg/L	147	1.31 J
1,1-Dichloroethene			µg/L	2.48	<2
Carbon tetrachloride			µg/L	<2	<2
Chloroform			µg/L	0.256 J	0.461 J
cis-1,2-Dichloroethene			µg/L	61.1	8.01
Tetrachloroethene			µg/L	1.31 J	4.44
Total 1,2-Dichloroethene			µg/L		
trans-1,2-Dichloroethene			µg/L	11.5	1.38 J
Trichloroethene			µg/L	119	308
Vinyl chloride			µg/L	42.3	<2

NOTES:

VOC samples analyzed using methods SW
8010/8020. SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

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Historical Analytical Results
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Defense Depot Memphis, Tennessee

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MW-71

Analyte	Sample Name	Sample Date	MW-71-Y2Q1	MW71NA	MW-71	MW-71-Y2Q3	MW-71-Y2Q4	MW-71B-Y2Q4	MW-71-Y3S2-B	MW-71-Y3S2-A
			2/15/2000	3/24/2000	5/18/2000	8/23/2000	11/9/2000	11/9/2000	10/3/2001	10/3/2001
	UNIT									
1,1,1-Trichloroethane	µg/L	<1	<10	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	97.7	180	181	168	106	78.4	262	268	268
1,1,2-Trichloroethane	µg/L	3.21	5J	4.54	4.04	2.99	2.03	<1	5.17J	5.17J
1,1-Dichloroethene	µg/L	<1	<10	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	53.9	47	34	32.9	26.5	19.7	22.6	21.8	21.8
Chloroform	µg/L	996	1600	1080	989	605J	554	857	839	839
cis-1,2-Dichloroethene	µg/L	11.5	14	9.98	8.94	6.49	4.71	9.09J	7.94J	7.94J
Tetrachloroethene	µg/L	10	15	7.35	7.02	4.09J	3.15J	<1	<1	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	4.7	5J	3.72	2.94	2.29	1.58	<1	2.91J	2.91J
Trichloroethene	µg/L	330	390	239	247	95.6	75.3	186	159	159
Vinyl chloride	µg/L	<1	<10	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

DOE FLAGS:

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Historical Analytical Results
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Defense Depot Memphis, Tennessee

MW-71

Analyte	Sample Name	MW-71-2_020410	MW-71-1_020410	MW-71-2_021002	MW-71-1_021002	MW-71-2_4/8/2003	MW-71-1_4/8/2003	MW-71-2_10/28/2003
Sample Date	4/10/2002	4/10/2002	10/2/2002	10/2/2002	4/8/2003	4/8/2003	10/28/2003	
	UNIT							
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1,2,2- Tetrachloroethane	µg/L	68.1	332	26.7	9.49	7.62	30.8	<1
1,1,2-Trichloroethane	µg/L	1.36	6	<1	<1	<1	0.66	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	17	20.3	11.2	<1	15.3	17.6	15.3
Chloroform	µg/L	234	828	73.1	8.89	35.4	117	31.1
cis-1,2-Dichloroethene	µg/L	3.3	9.64	1.12	<1	0.54	1.59	<1
Tetrachloroethene	µg/L	1.32	1.96	<1	<1	<1	1.31	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	1.76	3.36	<1	<1	<1	0.52	<1
Trichloroethene	µg/L	70.9	184	27	1.6	16.8	44.5	10.4
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW 8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported below RL
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Historical Analytical Results
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Defense Depot Memphis, Tennessee

MW-71

Analyte	Sample Name	MW-71-1_031028	MW71,74.4	MW71,71	MW71,73.8	MW71RD73	MW-71(72.3)
	Sample Date	10/28/2003	4/29/2004	4/29/2004	10/21/2004	10/28/2004	6/14/2005
	UNIT						
1,1,1-Trichloroethane	µg/L	<1	<1	<2	<1J	<0.25	<1
1,1,2,2-Tetrachloroethane	µg/L	27	3.8	16	6	4.27	25.8
1,1,2-Trichloroethane	µg/L	<1	<1	<2	<1	<0.25	0.634J
1,1-Dichloroethene	µg/L	<1	<1	<2	<1	<0.5	<1
Carbon tetrachloride	µg/L	6.87	8.2	7.8	5.6J	9.89	12.8
Chloroform	µg/L	88.8	17	56	28	17.5	103
cis-1,2-Dichloroethene	µg/L	1.59	0.48J	0.98J	0.7J	0.59J	1.86
Tetrachloroethene	µg/L	<1	0.31J	0.54J	0.4J	0.61J	1.58
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<2	<1	<0.25	0.532J
Trichloroethene	µg/L	17.4	6.9	15	12	6.95	34.9
Vinyl chloride	µg/L	<1	<1	<2	<1	<0.25	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

MW-71

Analyte	Sample Name	MW-71 (72.3)	MW-71 (72.3)	MW-71 - IS-1	MW-71-72.3	MW-71-72.3-IS-3
	Sample Date	11/16/2005	4/12/2006	10/20/2006	4/11/2007	10/8/2007
	UNIT					
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	27.6	26.3	22.9	4.66	2.21
1,1,2-Trichloroethane	µg/L	0.924J	0.766J	1.16	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	14	16.3	37.8	16.5	12.6
Chloroform	µg/L	94.2	73.5	303	59.2	32.6
cis-1,2-Dichloroethene	µg/L	10.6	10.6	11.7	1.89	1.65
Tetrachloroethene	µg/L	2.1	2.65	7.34	3.03	1.52
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	0.977J	3.07	0.59 J	0.36 J
Trichloroethene	µg/L	47.9	54	158J	36.2	21
Vinyl chloride	µg/L	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

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B Estimated results possibly biased high or false
positive based on blank data

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Historical Analytical Results
Annual Operations Report - 2007
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Defense Depot Memphis, Tennessee

MW-76

Analyte	Sample Name	MW76-88.7FT	MW76-91.7FT	MW-76	MW-76-Y3S2-B	MW-76-Y3S2-A	MW-76-2_020410	MW-76-1_020410
Sample Date	1/8/2001	1/8/2001	2/14/2001	10/3/2001	10/3/2001	10/3/2001	4/10/2002	4/10/2002
UNIT								
1,1,1-Trichloroethane	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	2000	2300	694	332	106	15.5	117	117
1,1,2-Trichloroethane	2	2	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	<1	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	0.9J	1	<1	<1	<1	1.22	<1	<1
cis-1,2-Dichloroethene	34	58	17.8	19.6	4.67J	13.5	10.6	10.6
Tetrachloroethene	5	1	3.98	<1	<1	1.81	<1	<1
Total 1,2-Dichloroethene	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	11	19	6.84	7.57J	1.91J	7.71	5.29	5.29
Trichloroethene	840	690	276	117	72.2	142	90.7	90.7
Vinyl chloride	<1	0.3J	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020. SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported

below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

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imprecise

[illegible]

VOC samples analyzed using methods SW 8010/8020. SW8240, SW8260, SW8260A, SW8260B, or CV3990

-- Not Analyzed

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
Annual Operations Report - 2007
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Defense Depot Memphis, Tennessee

MW-76

Analyte	Sample Name	4/29/2004	8/16/2004	10/21/2004	10/21/2004	10/21/2004	6/15/2005
	UNIT						
1,1,1-Trichloroethane	µg/L	<1	<2	<1J	<1J	<1J	<1
1,1,2,2-Tetrachloroethane	µg/L	10	2.9	12	4.3	4.98B	4.98B
1,1,2-Trichloroethane	µg/L	<1	<2	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<2	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<2	<1J	<1J	<1J	<1
Chloroform	µg/L	0.23J	0.47J	0.18J	0.16J	0.16J	<1
cis-1,2-Dichloroethene	µg/L	0.95J	6.9	0.69J	0.24J	0.24J	<1
Tetrachloroethene	µg/L	0.86J	1.8J	<1	0.27J	0.854J	0.854J
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	0.44J	3.5	0.24J	<1	<1	<1
Trichloroethene	µg/L	10	34	8.9	3.9	3.88	3.88
Vinyl chloride	µg/L	<1	<2	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

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Historical Analytical Results
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Defense Depot Memphis, Tennessee

MW-76

Analyte	Sample Name	MW-76 (88.2)1105	MW-76 (88.2)0406	MW-76 - IS-1	MW-76-88.2-IS-2	MW-76-88.2-IS-3
	Sample Date	11/17/2005	4/12/2006	10/20/2006	4/10/2007	10/8/2007
	UNIT					
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	18.3	2.58	3.82	18.4
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	0.208J	0.359	0.978
cis-1,2-Dichloroethene	µg/L	<1	<1	0.263J	3.08	11.8
Tetrachloroethene	µg/L	1.14	2.36	1.84	2.74	4.82
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	1.41	5.79
Trichloroethene	µg/L	5.16B	7.71	4.9	26.4	132
Vinyl chloride	µg/L	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

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Historical Analytical Results
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Defense Depot Memphis, Tennessee

MW-77

Analyte	Sample Name	MW77-85FT	MW77-87.5FT	MW-77-Y3S2	MW-77-1_020410	MW-77-1_021001	MW-77-1_031118
Sample Date	1/8/2001	1/8/2001	10/3/2001	4/10/2002	10/1/2002	4/8/2003	11/18/2003
UNIT							
1,1,1-Trichloroethane	<10	<1	<1	<1	<50	<50	<1
1,1,2,2-Tetrachloroethane	2400	2900	1820	4330	18200	30000	12800
1,1,2-Trichloroethane	7J	8	<1	9.46	<50	<50	8.53
1,1-Dichloroethene	<10	<1	<1	<1	<50	<50	<1
Carbon tetrachloride	<10	0.6J	<1	<1	<50	<50	0.86J
Chloroform	4J	4	<1	5.39	<50	<50	4.96
cis-1,2-Dichloroethene	130	130	76.4J	176	237	230	189
Tetrachloroethene	11	6	<1	7.18	<50	<50	14.8
Total 1,2-Dichloroethene	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	33	30	20.1J	42.2	42.9J	42.2	37.8
Trichloroethene	2400	2500	1620	3170	5040	5320	4550
Vinyl chloride	<10	0.4J	<1	<1	<50	<50	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

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Historical Analytical Results
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Defense Depot Memphis, Tennessee

MW-77

Analyte	Sample Name	MW76,85.6	MW76,82	MW-77	MW76,85.2	MW-77(84.9)	MW-77 (84.9)
	Sample Date	4/29/2004	4/29/2004	8/15/2004	10/21/2004	6/15/2005	11/16/2005
UNIT							
1,1,1-Trichloroethane	µg/L	<500	<620	<330	<250J	<20	<1
1,1,2,2-Tetrachloroethane	µg/L	15000	15000	11000	4700	2290J	14000
1,1,2-Trichloroethane	µg/L	<500	<620	<330	<250	<20	18.7
1,1-Dichloroethene	µg/L	<500	<620	<330	<250	<20	<1
Carbon tetrachloride	µg/L	<500	<620	<330	<250J	<20	0.961J
Chloroform	µg/L	<500	<620	<330	<250	<20	2.58B
cis-1,2-Dichloroethene	µg/L	160J	170J	94J	64J	100	107
Tetrachloroethene	µg/L	<500	<620	<330	<250	16.8J	21.1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<500J	<620	<330	<250	24.1	15.5
Trichloroethene	µg/L	5000	5400	3200	1700	2100	5300
Vinyl chloride	µg/L	<500	<620	<330	<250	<20	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DOE FLAGS:

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Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

MW-77

Analyte	Sample Name	MW-77 (84.9)	MW-77 - IS-1	MW-77-84.9-IS-2	MW-77-84.9-IS-3
	Sample Date	4/12/2006	10/20/2006	4/10/2007	10/8/2007
	UNIT				
1,1,1-Trichloroethane	µg/L	<1	<1	<50	<1
1,1,2,2-Tetrachloroethane	µg/L	21700	14300	8800	1980
1,1,2-Trichloroethane	µg/L	15.7	17.4	<50	2.59
1,1-Dichloroethene	µg/L	<1	<1	<50	<1
Carbon tetrachloride	µg/L	1.12	0.922J	<50	<1
Chloroform	µg/L	4.32B	4.77	<15	0.822
cis-1,2-Dichloroethene	µg/L	154	151	67.5	22.1
Tetrachloroethene	µg/L	48	46.9	21 F	17
Total 1,2-Dichloroethene	µg/L	--	--	--	--
trans-1,2-Dichloroethene	µg/L	38.5	19.1	<50	2.16
Trichloroethene	µg/L	5520	6500	3330	1290
Vinyl chloride	µg/L	<1	<1	<50	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

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Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

MW-79

Analyte	Sample Name	MW79-96FEET	MW79-100.5FT	MW79-91.3FT	MW79-86.1FT	MW-79	MW-79-Y3S2-D	MW-79-Y3S2-A
	Sample Date	2/15/2001	2/15/2001	2/15/2001	2/15/2001	2/19/2001	10/3/2001	10/3/2001
	UNIT							
1,1,1-Trichloroethane	µg/L	1.2	<1	1.2	0.8J	<1	0.6J	0.35J
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<3.8	3.34	<1	<1
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	48	46	48	22	30.1	37.6	21
Carbon tetrachloride	µg/L	<1	0.099J	0.1J	<1	<1	<1	<1
Chloroform	µg/L	0.76J	0.8J	0.76J	1.7	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	0.53J	0.89J	0.51J	6.1	2.52	<1	0.62J
Tetrachloroethene	µg/L	33	34	31	3.2	14	16.6	6.28
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	0.5J	0.55J	0.49J	2.2	<1	<1	0.75J
Trichloroethene	µg/L	20	26	20	18	9.6	11.9	8.8
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

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Historical Analytical Results
Annual Operations Report - 2007
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Defense Depot Memphis, Tennessee

MW-79

Analyte	Sample Name	Sample Date	10/3/2001	10/3/2001	4/10/2002	4/10/2002	4/10/2002	4/10/2002
			UNIT					
1,1,1-Trichloroethane	MW-79-Y3S2-B	10/3/2001	0.39J	0.35J	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	MW-79-Y3S2-C	10/3/2001	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	MW-79-2_020410	4/10/2002	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	MW-79-3_020410	4/10/2002	22.8	21.4	18.8	16.4	17.4	18.5
Carbon tetrachloride	MW-79-4_020410	4/10/2002	<1	<1	<1	<1	<1	<1
Chloroform			<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene			0.88J	0.57J	<1	<1	0.68J	<1
Tetrachloroethene			6.85	6.53	6.96	3.56	3.39	6.64
Total 1,2-Dichloroethene			--	--	--	--	--	--
trans-1,2-Dichloroethene			0.96J	0.59J	<1	<1	1.09	<1
Trichloroethene			10.8	8.27	6.87	6.05	9	5.79
Vinyl chloride			<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

- J Estimated results based on QC data or reported below RL
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Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

932 310

MW-79

Analyte	Sample Name	MW-79-1_021001	MW-79-2_021001	MW-79-3_021001	MW-79-4_021001	MW-79-1	MW-79-2	MW-79-1_031028
	Sample Date	10/1/2002	10/1/2002	10/1/2002	10/1/2002	4/8/2003	4/8/2003	10/28/2003
	UNIT							
1,1,1-Trichloroethane	µg/L	<10	<10	<10	<10	<1	0.44	<1
1,1,2,2-Tetrachloroethane	µg/L	<10	<10	<10	<10	<1	<1	<1
1,1,2-Trichloroethane	µg/L	<10	<10	<10	<10	<1	<1	<1
1,1-Dichloroethene	µg/L	19.8	22.6	23.5	23.8	29.3	35.8	21.6
Carbon tetrachloride	µg/L	<10	<10	<10	<10	<1	<1	<1
Chloroform	µg/L	<10	<10	<10	<10	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	5.34J	8.67J	8.07J	7.02J	0.86	0.48	1.41
Tetrachloroethene	µg/L	<10	2.89J	3.26J	3.18J	1.83	5.64	2.1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	6.82J	11.2	10.7	9	1.31	0.73	1.34
Trichloroethene	µg/L	37.8	67.6	68.4	56.6	15.2	12.3	11.2
Vinyl chloride	µg/L	<10	<10	<10	<10	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

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Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

932 311

MW-79

Analyte	Sample Name	MW-79-2_031028	MW79,89	MW79,94	MW79,84	MW79,99	MW-79	MW79,99	MW79,94
	Sample Date	10/28/2003	4/29/2004	4/29/2004	4/29/2004	4/29/2004	8/13/2004	10/22/2004	10/22/2004
	UNIT								
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	0.27J	<1	0.28J
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	23.9	8.9	10	9.4	12	7.6B	7.8	6.8
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	0.77J	0.2J	0.29J
Chloroform	µg/L	<1	<1	0.21J	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	2.07	1.6	1	1.7	0.56J	1.9	0.92J	1.7
Tetrachloroethene	µg/L	1.95	1.5	1.8	1.7	2.1	1.7	1.8	1.5
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	1.61	1.8J	0.91J	2J	0.51J	1.6	1.4	1.9
Trichloroethene	µg/L	12.4	11	8.3	12	5.8	14	9.5	14
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

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Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

MW-79

Analyte	Sample Name	MW79.89	MW79.84	MW-79	MW-79	MW-79(92.0)	MW-79 (92.0)	MW-79 (92.0)
	Sample Date	10/22/2004	10/22/2004	1/26/2005	3/22/2005	6/16/2005	11/18/2005	4/13/2006
	UNIT							
1,1,1-Trichloroethane	µg/L	0.48J	0.41J	<1	0.35J	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	6.3	6.3	9.1	10	13.1	16.6	11.4
Carbon tetrachloride	µg/L	0.42J	0.37J	0.22J	0.3J	<1	<1	<1
Chloroform	µg/L	0.29J	0.26J	<1	0.28B	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	3	2.6	1	2.4	1.59	<1	<1
Tetrachloroethene	µg/L	1.2	1.4	1.2	1.2	1.17	1.01	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	3	2.8	1.1	2.3	1.28	<1	<1
Trichloroethene	µg/L	21	19	7.5	16	9.99	3.69	1.94
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

Historical Analytical Results
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Defense Depot Memphis, Tennessee

MW-79

Analyte	Sample Name	MW-79 - IS-1	MW-79-92-IS-2	MW-79-92-IS-3
	Sample Date	10/18/2006	4/10/2007	10/8/2007
	UNIT			
1,1,1-Trichloroethane	µg/L	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1
1,1-Dichloroethene	µg/L	10.6	11.2	13.7
Carbon tetrachloride	µg/L	<1	<1	<1
Chloroform	µg/L	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1
Tetrachloroethene	µg/L	0.47J	1.06	1.14
Total 1,2-Dichloroethene	µg/L	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1
Trichloroethene	µg/L	1.63	1.9	3.27
Vinyl chloride	µg/L	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL
B Estimated results possibly biased high or false
positive based on blank data
< Not detected at sample reporting limit
R Unusable
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imprecise

Historical Analytical Results
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Defense Depot Memphis, Tennessee

MW-130

Analyte	Sample Name	MW-130-4_030728	MW-130-3_030728	MW-130-2_030728	MW-130-1_030728	MW-130-2_031028	MW-130-2_031028
Sample Date	Sample Date	7/28/2003	7/28/2003	7/28/2003	7/28/2003	10/28/2003	10/28/2003
UNIT							
1,1,1-Trichloroethane	µg/L	4.29	3.68	4.03	3.55	4.62	4.81
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	41.1	38.9	40.7	36.5	42.2	40.5
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	0.54J	0.5J	0.49J	0.46J	0.59J	0.67J
Tetrachloroethene	µg/L	71.6	63.8	69.7	62.9	74.3	79.8
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	54	48.1	51.2	48.5	61.1	64
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

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below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

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imprecise

Historical Analytical Results
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MW-130

Analyte	Sample Name	Sample Date	10/28/2003	MW-130-3_031028	10/28/2003	MW-130-4_031028	4/29/2004	MW130,65.5	4/29/2004	MW130,70.5	4/29/2004	MW130,75.5	4/29/2004
		UNIT											
1,1,1-Trichloroethane		µg/L	4.39		4.61		3.7J		4.4		3.9J		
1,1,1,2,2-Tetrachloroethane		µg/L	<1		<1		<5		<4		<4		
1,1,2-Trichloroethane		µg/L	<1		<1		<5		<4		<4		
1,1-Dichloroethene		µg/L	38.4		38		52		55		57		
Carbon tetrachloride		µg/L	<1		<1		<5		<4		<4		
Chloroform		µg/L	<1		<1		<5		<4		<4		
cis-1,2-Dichloroethene		µg/L	<1		0.59J		<5		<4		<4		
Tetrachloroethene		µg/L	80.3		76.6		120		120		120		
Total 1,2-Dichloroethene		µg/L	--		--		--		--		--		
trans-1,2-Dichloroethene		µg/L	<1		<1		<5J		<4J		<4J		
Trichloroethene		µg/L	60.4		62.3		75		76		74		
Vinyl chloride		µg/L	<1		<1		<5		<4		<4		

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL
B Estimated results possibly biased high or false
positive based on blank data
< Not detected at sample reporting limit
R Unusable
UJ Undetected, reporting limit is inaccurate or
imprecise

Historical Analytical Results
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Defense Depot Memphis, Tennessee

MW-130

Analyte	Sample Name	MW130,60.5 4/29/2004	MW130,70.5 10/22/2004	MW130,60.5 10/22/2004	MW130,65.5 10/22/2004	MW130,75.5 10/22/2004
	UNIT					
1,1,1-Trichloroethane	µg/L	3.5	4	3.8	3.9	4.1
1,1,2,2-Tetrachloroethane	µg/L	<3.3	<2.5	<2	<3.3	<2
1,1,2-Trichloroethane	µg/L	<3.3	<2.5	<2	<3.3	<2
1,1-Dichloroethene	µg/L	41	33	33	31	35
Carbon tetrachloride	µg/L	<3.3	<2.5	<2	<3.3	<2
Chloroform	µg/L	<3.3	<2.5	<2	<3.3	<2
cis-1,2-Dichloroethene	µg/L	<3.3	<2.5	<2	<3.3	0.63J
Tetrachloroethene	µg/L	88	62	50	59	63
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<3.3	<2.5	<2	<3.3	<2
Trichloroethene	µg/L	58	48	47	46	50
Vinyl chloride	µg/L	<3.3	<2.5	<2	<3.3	<2

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
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positive based on blank data
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imprecise

Historical Analytical Results
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Defense Depot Memphis, Tennessee

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MW-130

Analyte	Sample Name	Sample Date	MW-130(69.5)	MW-130 (69.5)	MW-130 (69.5)	MW-130 - IS-1	MW-130-69.5-IS-2	MW-130-69.5-IS-3
			6/15/2005	11/17/2005	4/12/2006	10/20/2006	4/10/2007	10/5/2007
	UNIT							
1,1,1-Trichloroethane	µg/L		4.08	3.76	3.78	3.64	3.39	2.28
1,1,2,2-Tetrachloroethane	µg/L		<1	<1	<1	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	µg/L		<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L		22.6	28.3	52.8	61.6	70	74
Carbon tetrachloride	µg/L		<1	<1	<1	<1	<1	<1
Chloroform	µg/L		<1	<1	<1	0.256J	0.315	0.291 J
cis-1,2-Dichloroethene	µg/L		<1	<1	<1	0.766J	0.818 J	0.82 J
Tetrachloroethene	µg/L		48.8	57.4	114	112	154	147
Total 1,2-Dichloroethene	µg/L		--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L		<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L		37.9	43.5	57.7	60.5	71.2	67.4
Vinyl chloride	µg/L		<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

DQE FLAGS:

- J Estimated results based on QC data or reported below RL
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- < Not detected at sample reporting limit
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Historical Analytical Results
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Defense Depot Memphis, Tennessee

MW-144

Analyte	Sample Name	MW-144	MW144RD75	MW-144	MW-144	MW-144(74.4)	MW-144(74.4)
	Sample Date	8/12/2004	10/27/2004	1/27/2005	3/23/2005	6/15/2005	11/14/2005
	UNIT						
1,1,1-Trichloroethane	µg/L	<250	<0.25	<12	<25	<10	<20
1,1,2,2-Tetrachloroethane	µg/L	7700	6230J	4600	7700	5810J	4970
1,1,2-Trichloroethane	µg/L	<250	7.05J	10J	14J	9.64J	14.1J
1,1-Dichloroethene	µg/L	<250	<0.5	<12	<25	<10	<20
Carbon tetrachloride	µg/L	<250	1.47J	<12	<25	<10	<20
Chloroform	µg/L	<250	2.75J	3.2J	4.3J	<10	<20
cis-1,2-Dichloroethene	µg/L	68J	74.09J	69	72	70.2	54.3
Tetrachloroethene	µg/L	<250	7.69J	10J	13J	8.78J	10.2
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<250	17.5J	15	14J	14.1	<20
Trichloroethene	µg/L	2800	2060	2100	4500	2610	2280
Vinyl chloride	µg/L	<250J	<0.25	<12	<25	<10	<20

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
.. Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL
B Estimated results possibly biased high or false
positive based on blank data
< Not detected at sample reporting limit
R Unusable
UJ Undetected, reporting limit is inaccurate or
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Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

MW-144

Analyte	Sample Name	MW-144(74.4)	MW-144 - IS-1	MW-144-74.9-IS-2	MW-144-74.9-IS-3
	Sample Date	4/12/2006	10/19/2006	4/10/2007	10/8/2007
	UNIT				
1,1,1-Trichloroethane	µg/L	<1	<10	<10	<1
1,1,2,2-Tetrachloroethane	µg/L	5040	2520	1350	841
1,1,2-Trichloroethane	µg/L	9.04	60.4	20.4	8.75
1,1-Dichloroethene	µg/L	<1	<10	<10	<1
Carbon tetrachloride	µg/L	1.03	<10	<10	1.59
Chloroform	µg/L	2.72B	1.45J	<3	1.7
cis-1,2-Dichloroethene	µg/L	83.9	98.2	33.5	26.3
Tetrachloroethene	µg/L	19.9J	11.4	4.11 J	3.49
Total 1,2-Dichloroethene	µg/L	--	--	--	--
trans-1,2-Dichloroethene	µg/L	7.28J	19.2	3.39 J	2.24
Trichloroethene	µg/L	2650	1890	694	464
Vinyl chloride	µg/L	<1	<10	<10	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

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Historical Analytical Results
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Defense Depot Memphis, Tennessee

MW-145

Analyte	Sample Name	MW-145	MW-145	MW-145	MW-145	MW-145(94.6)	MW-145(78.6)	MW-145 (94.6)	MW-145 (78.6)
	Sample Date	8/16/2004	1/27/2005	3/23/2005	6/17/2005	6/17/2005	6/17/2005	11/17/2005	11/17/2005
	UNIT								
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL

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positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

Historical Analytical Results
Annual Operations Report - 2007
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Defense Depot Memphis, Tennessee

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MW-145

Analyte	Sample Name	MW-145 (94.6)	MW-145 (78.6)	MW-145T - IS-1	MW-145B - IS-1	MW-145-86.6-IS-2	MW-145-86.6-IS-3
	Sample Date	4/13/2006	4/13/2006	10/19/2006	10/19/2006	4/9/2007	10/8/2007
	UNIT						
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

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Historical Analytical Results
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MW-147

Analyte	Sample Name	MW-147 8/17/2004	MW147RD74 10/26/2004	MW-147 1/27/2005	MW-147 3/22/2005	MW-147(73.7) 6/17/2005	MW-147 (73.7) 11/18/2005
	UNIT						
1,1,1-Trichloroethane	µg/L	<5.6	<0.25	0.66J	1.9	1.69	1.92
1,1,2,2-Tetrachloroethane	µg/L	56	61.79J	140	180	251J	185
1,1,2-Trichloroethane	µg/L	<5.6	0.74J	1.8	2.2	2.62	3.9
1,1-Dichloroethene	µg/L	2.2B	1.23	1.2	2.7	2.07	3.32
Carbon tetrachloride	µg/L	4.3J	1.50	0.36J	0.45J	0.729J	1.27
Chloroform	µg/L	12	13.40	3.4	3	5.94B	5.1b
cis-1,2-Dichloroethene	µg/L	57	60.60	48	39	65.1	95
Tetrachloroethene	µg/L	5.3J	5.94	3.4	3.4	4.44	4.83
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	20	23.29	12	15	15.9	20.5
Trichloroethene	µg/L	120	130	77	73	124	121
Vinyl chloride	µg/L	<5.6	<0.25	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

DQE FLAGS:

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Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

MW-147

Analyte	Sample Name	MW-147(73.7)	MW-147 - IS-1	MW-147-73.7-IS-2	MW-147-73.7-IS-3
	Sample Date	4/12/2006	10/18/2006	4/10/2007	10/5/2007
	UNIT				
1,1,1-Trichloroethane	µg/L	1.32	0.313J	0.666 J	5.13
1,1,2,2-Tetrachloroethane	µg/L	311	87.9	634	198
1,1,2-Trichloroethane	µg/L	4.36	1.39	9.28	4.47
1,1-Dichloroethene	µg/L	1.76	0.657J	1.49	5.65
Carbon tetrachloride	µg/L	0.565J	0.364J	0.83 J	2.3
Chloroform	µg/L	5.53B	2.66	7.24	4.6
cis-1,2-Dichloroethene	µg/L	74.8	41.2	155	120 J
Tetrachloroethene	µg/L	3.61	3.92	12.2	8.97
Total 1,2-Dichloroethene	µg/L	--	--	--	--
trans-1,2-Dichloroethene	µg/L	14.4	10.3	39.6	28.9
Trichloroethene	µg/L	106	81.3	278	169
Vinyl chloride	µg/L	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DOE FLAGS:

J Estimated results based on QC data or reported
below RL

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positive based on blank data

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R Unusable

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Historical Analytical Results
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Defense Depot Memphis, Tennessee

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MW-147

Analyte	Sample Name	MW-147-73.7	MW-147-73.7-3
	Sample Date	4/10/2007	10/5/2007
	UNIT		
1,1,1-Trichloroethane	µg/L	0.666 J	5.13
1,1,2,2-Tetrachloroethane	µg/L	634	198
1,1,2-Trichloroethane	µg/L	9.28	4.47
1,1-Dichloroethene	µg/L	1.49	5.65
Carbon tetrachloride	µg/L	0.83 J	2.3
Chloroform	µg/L	7.24	4.6
cis-1,2-Dichloroethene	µg/L	155	120 J
Tetrachloroethene	µg/L	12.2	8.97
Total 1,2-Dichloroethene	µg/L	--	--
trans-1,2-Dichloroethene	µg/L	39.6	28.9
Trichloroethene	µg/L	278	169
Vinyl chloride	µg/L	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

DQE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
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MW-148

Analyte	Sample Name	MW-148 8/17/2004	MW148RD82 10/26/2004	MW-148 1/27/2005	MW-148 3/22/2005	MW-148(85.8) 6/17/2005	MW-148(79.1) 6/17/2005
	UNIT						
1,1,1-Trichloroethane	µg/L	<1	<0.25	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	0.72J	5.55	0.63J	0.37J	0.997J	15.4
1,1,2-Trichloroethane	µg/L	<1	0.42J	<1	<1	<1	1.03
1,1-Dichloroethene	µg/L	<1	<0.5	<1	<1	<1	0.426J
Carbon tetrachloride	µg/L	0.73J	0.577J	0.19J	<1	<1	0.583J
Chloroform	µg/L	0.6J	2.25	0.88J	0.58B	<1	3.07B
cis-1,2-Dichloroethene	µg/L	13	52.29	12	4.8	<1	95.2
Tetrachloroethene	µg/L	3.7	7.82	4.5	3.3	<1	6.44
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	4.9	21.29	3.8	1.9	<1	26.8
Trichloroethene	µg/L	31	136	27	13	1.17B	160
Vinyl chloride	µg/L	<1	<0.25	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

Historical Analytical Results
Annual Operations Report - 2007
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Defense Depot Memphis, Tennessee

MW-148

Analyte	Sample Name	MW-148 (85.8)	MW-148 (79.5)	MW-148(85.8)	MW-148(79.5)	MW-148T
	Sample Date	11/18/2005	11/18/2005	4/12/2006	4/12/2006	10/18/2006
	UNIT					
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	2.87	0.416J	2.47	3.72
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	0.316J
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	0.267J
Chloroform	µg/L	<1	1.3B	<1	0.861B	1.74
cis-1,2-Dichloroethene	µg/L	<1	23.2	<1	10.4	34.3
Tetrachloroethene	µg/L	<1	3.93	0.351J	2.88	7.53
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	6.4	<1	3.18	10.7
Trichloroethene	µg/L	1.01	42	1.12	21.1	74.1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
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MW-148

Analyte	Sample Name	MW-148B - IS-1	MW-148-80_0-IS-2	MW-148-85_5-IS-2	MW-148-80.0-IS-3	MW-148-85.5-IS-3
	Sample Date	10/18/2006	4/10/2007	4/10/2007	10/5/2007	10/5/2007
	UNIT					
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	0.789	0.179 J	1.75	3.43	2.67
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1
Chloroform	µg/L	0.146J	0.473	0.247 J	1.09	0.398
cis-1,2-Dichloroethene	µg/L	<1	5.04	1.97	18.8	4.58
Tetrachloroethene	µg/L	0.481J	4.18	0.89 J	3.78	1.24
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	1.82	0.686 J	6.68	1.83
Trichloroethene	µg/L	2.28	17.6	7.7	123	22.7
Vinyl chloride	µg/L	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

Historical Analytical Results
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Defense Depot Memphis, Tennessee

MW-149

Analyte	Sample Name	Sample Date	8/18/2004	1/27/2005	4/12/2005	6/17/2005	6/17/2005	11/19/2005
			UNIT					
1,1,1-Trichloroethane		µg/L	<5	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane		µg/L	27J	37	27	50.4	18.1	38.3
1,1,2-Trichloroethane		µg/L	<5	0.87J	0.64J	1.66	0.454J	1.62
1,1-Dichloroethene		µg/L	<5	<1	<1	<1	<1	<1
Carbon tetrachloride		µg/L	12	14	16	15.7	10.7	22
Chloroform		µg/L	110	140	79	167	64	159
cis-1,2-Dichloroethene		µg/L	3.8J	4	3.1	20.4	2.57	16.6
Tetrachloroethene		µg/L	1.6J	1.8	1.6	0.881J	1.01	2.13
Total 1,2-Dichloroethene		µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene		µg/L	<5	0.81J	0.63J	2.37	0.513J	2.21
Trichloroethene		µg/L	38	45	35	68.1	23.1	75.4
Vinyl chloride		µg/L	<5	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

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- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
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Historical Analytical Results
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Defense Depot Memphis, Tennessee

MW-149

Analyte	Sample Name	Sample Date	MW-149 (83.6)1105	MW-149 (99.6)0406	MW-149 (83.6)0406	MW-149T - 10/19/2006	MW-149B - IS-1
			11/19/2005	4/13/2006	4/13/2006	10/19/2006	10/19/2006
	UNIT						
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	29.2	30.3	11.4	21.3	23.1	23.1
1,1,2-Trichloroethane	µg/L	0.83J	1.23	<1	0.425J	0.686J	0.686J
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	15.1	12.6	10.3	12.9	12.2	12.2
Chloroform	µg/L	102	122	50	81	95.5	95.5
cis-1,2-Dichloroethene	µg/L	4.36	11.3	3.42	3.15	7.81	7.81
Tetrachloroethene	µg/L	1.84	1.02	1.3	1.44	1.27	1.27
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	0.894J	1.48	<1	0.794J	1.13	1.13
Trichloroethene	µg/L	44.5	57.1	32.1	40	45.4	45.4
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

DQE FLAGS:

- J Estimated results based on QC data or reported
below RL
B Estimated results possibly biased high or false
positive based on blank data
< Not detected at sample reporting limit
R Unusable
UJ Undetected, reporting limit is inaccurate or
imprecise

Historical Analytical Results
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Defense Depot Memphis, Tennessee

MW-149

Analyte	Sample Name	MW-149-83.6	MW-149-98.5	MW-149-83.6-IS-3	MW-149-98.5-IS-3
	Sample Date	4/9/2007	4/9/2007	10/5/2007	10/5/2007
	UNIT				
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	37.2	33.3	6.03	9.78
1,1,2-Trichloroethane	µg/L	1.29	1.23	<1	0.346 J
1,1-Dichloroethene	µg/L	<1	<1	<1	<1
Carbon tetrachloride	µg/L	19.8	19.6	6.59	8.05
Chloroform	µg/L	155	141	38.6	54
cis-1,2-Dichloroethene	µg/L	8.02	9.02	1.61	3.1
Tetrachloroethene	µg/L	3.81	2.99	1.23	1.84
Total 1,2-Dichloroethene	µg/L	--	--	--	--
trans-1,2-Dichloroethene	µg/L	1.52	1.59	0.356 J	0.536 J
Trichloroethene	µg/L	80.9	77.2	19.2	30.1
Vinyl chloride	µg/L	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
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Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

MW-150

Analyte	Sample Name	MW-150 8/18/2004	MW150RD86 10/25/2004	MW-150 1/27/2005	MW-150 3/23/2005	MW-150(92.7) 6/17/2005	MW-150(82.2) 6/17/2005
	UNIT						
1,1,1-Trichloroethane	µg/L	<250	<0.25	<20	<20	<10	<10
1,1,2,2-Tetrachloroethane	µg/L	8000J	10900J	6700	6600	4790	3050
1,1,2-Trichloroethane	µg/L	<250	5.73J	6.9J	5.1J	7.44J	9.2J
1,1-Dichloroethene	µg/L	<250	<0.5	<20	<20	<10	<10
Carbon tetrachloride	µg/L	<250	1.53J	<20	<20	<10	<10
Chloroform	µg/L	<250	3.34J	<20	3.3J	<10	<10
cis-1,2-Dichloroethene	µg/L	74J	81.90J	84	48	57	44.7
Tetrachloroethene	µg/L	<250	13.60J	<20	6.4J	6.77J	<10
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<250	21.10J	22	9.1J	13.8	8.83J
Trichloroethene	µg/L	3000	2330J	690	2000	2060	983
Vinyl chloride	µg/L	<250	<0.25	<20	<20	<10	<10

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

MW-150

Analyte	Sample Name	MW-150 (92.7)	MW-150 (82.2)	MW-150(92.7)	MW-150(82.2)	MW-150T - IS-1
	Sample Date	11/19/2005	11/19/2005	4/12/2006	4/12/2006	10/19/2006
	UNIT					
1,1,1-Trichloroethane	µg/L	<10	<1	<1	<1	<10
1,1,2,2-Tetrachloroethane	µg/L	3080	284	2940	1090	2040
1,1,2-Trichloroethane	µg/L	16.3	11.3	5.7	10.5	5.31J
1,1-Dichloroethene	µg/L	<10	<1	<1	<1	<10
Carbon tetrachloride	µg/L	<10	<1	0.413J	<1	<10
Chloroform	µg/L	<10	1.36B	2.09B	0.871B	<3
cis-1,2-Dichloroethene	µg/L	64.3	32.7	54.1	74.2	38.1
Tetrachloroethene	µg/L	10.6	2.47	10.1	4.09	7.13J
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	16.7	5.78	11.1	8.66	9.79J
Trichloroethene	µg/L	1700	639	1150	747	1430
Vinyl chloride	µg/L	<10	<1	<1	<1	<10

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

MW-150

Analyte	Sample Name	MW-150B - IS-1	MW-150-83_2-IS-2	MW-150-90_5-IS-2	MW-150-83.2-IS-3	MW-150-90.5-IS-3
	Sample Date	10/19/2006	4/9/2007	4/9/2007	10/8/2007	10/8/2007
	UNIT					
1,1,1-Trichloroethane	µg/L	<1	<25	<1	<25	<25
1,1,2,2-Tetrachloroethane	µg/L	8480	3030	4620	2640	3960
1,1,2-Trichloroethane	µg/L	14.6	10.2 J	27	54.4	87.2
1,1-Dichloroethane	µg/L	0.619J	<25	0.687 J	<25	<25
Carbon tetrachloride	µg/L	<1	<25	<1	<25	<25
Chloroform	µg/L	2.22	<7.5	1.92	<7.5	<7.5
cis-1,2-Dichloroethene	µg/L	77.1	56.2	109	81.3	104
Tetrachloroethene	µg/L	13	6.54 J	16.8	15.4 J	18.9 J
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	13.9	11.1 J	24.3	10 J	11.6 J
Trichloroethene	µg/L	2910	1350	3060	1720	2470
Vinyl chloride	µg/L	<1	<25	0.83 J	<25	<25

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
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Defense Depot Memphis, Tennessee

MW-151

Analyte	Sample Name	MW-151 8/16/2004	MW151RD87 10/26/2004	MW-151 1/25/2005	MW-151 3/22/2005	MW-151(94.5) 6/17/2005	MW-151(78.5) 6/17/2005
	UNIT						
1,1,1-Trichloroethane	µg/L	<1	<0.25	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<0.125	0.23J	0.28J	<1	<1
1,1,2-Trichloroethane	µg/L	<1	<0.25	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<0.5	<1	<1	<1	<1
Carbon tetrachloride	µg/L	2.7	3.44	4.7	5.3	0.939J	<1
Chloroform	µg/L	3.3	6.71	10	11	2.69B	<1
cis-1,2-Dichloroethene	µg/L	0.22J	0.44J	0.92J	0.96J	<1	<1
Tetrachloroethene	µg/L	<1	<0.25	0.4J	0.48J	<1	<1
Total 1,2-Dichloroethene	µg/L	-	-	-	-	-	-
trans-1,2-Dichloroethene	µg/L	<1	<0.25	<1	0.25J	<1	<1
Trichloroethene	µg/L	2.2	3.67	6.3	7.2	1.31	<1
Vinyl chloride	µg/L	<1	<0.25	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL
B Estimated results possibly biased high or false
positive based on blank data
< Not detected at sample reporting limit
R Unusable
UJ Undetected, reporting limit is inaccurate or
imprecise

Historical Analytical Results
Annual Operations Report - 2007
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Defense Depot Memphis, Tennessee

MW-151

Analyte	Sample Name	MW-151 (94.5)	MW-151 (78.5)	MW-151 (94.5)	MW-151 (78.5)	MW-151 (94.5)	MW-151 (78.5)	MW-151T - IS-1	MW-151B - IS-1
	Sample Date	11/19/2005	11/19/2005	4/13/2006	4/13/2006	4/13/2006	4/13/2006	10/18/2006	10/18/2006
	UNIT								
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<1	<1	<1	<0.5	1.42
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	4.78	<1	4.47	<1	<1	0.558J	6.19	16.9
Chloroform	µg/L	8.04	<1	11.4	<1	<1	0.287J	1.45	0.621J
cis-1,2-Dichloroethene	µg/L	1	<1	1.22	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	0.415J	<1	<1	<1	<1	<1	<1	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	0.282J
Trichloroethene	µg/L	4.67B	<1	8.75	<1	<1	0.502J	10.5	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL
B Estimated results possibly biased high or false
positive based on blank data
< Not detected at sample reporting limit
R Unusable
UJ Undetected, reporting limit is inaccurate or
imprecise

Historical Analytical Results
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Defense Depot Memphis, Tennessee

MW-151

Analyte	Sample Name	MW-151-78_5-IS-2	MW-151-94_5-IS-2	MW-151-78.5-IS-3	MW-151-94.5-IS-3
	Sample Date	4/9/2007	4/9/2007	10/5/2007	10/5/2007
	UNIT				
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<0.5	0.68	<0.5	0.408 J
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1
Carbon tetrachloride	µg/L	0.493 J	5.53	0.615 J	3.9
Chloroform	µg/L	0.327	12.5	0.292 J	12.4
cis-1,2-Dichloroethene	µg/L	<1	1.24	<1	1.29
Tetrachloroethene	µg/L	<1	0.588 J	<1	0.859 J
Total 1,2-Dichloroethene	µg/L	-	-	-	-
trans-1,2-Dichloroethene	µg/L	<1	0.274 J	<1	0.304 J
Trichloroethene	µg/L	0.562 J	11.1	0.422 J	16.8
Vinyl chloride	µg/L	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
- Not Analyzed

DQE FLAGS:

- J Estimated results based on QC data or reported
below RL
B Estimated results possibly biased high or false
positive based on blank data
< Not detected at sample reporting limit
R Unusable
UJ Undetected, reporting limit is inaccurate or
imprecise

Historical Analytical Results
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Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

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MW-152

Analyte	Sample Name	MW-152	MW-152	MW-152	MW-152	MW-152-2.5
	Sample Date	8/15/2004	10/10/2004	10/11/2004	10/13/2004	10/14/2004
	UNIT					
1,1,1-Trichloroethane	µg/L	<3.3	<5	<5	<100	<5
1,1,2,2-Tetrachloroethane	µg/L	11	<5	15	1500	12
1,1,2-Trichloroethane	µg/L	<3.3	<5	<5	<100	<5
1,1-Dichloroethene	µg/L	<3.3	<5	<5	<100	<5
Carbon tetrachloride	µg/L	2.11	<5	<5	<100	<5
Chloroform	µg/L	0.97J	<5	<5	<100	<5
cis-1,2-Dichloroethene	µg/L	9.2	6.9	7.7	35J	9
Tetrachloroethene	µg/L	5.4	4J	3.1J	<100	5.9
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	4.1	3.4J	4.6J	<100	4.1J
Trichloroethene	µg/L	76	70	78	950	92
Vinyl chloride	µg/L	<3.3	<5	<5	<100	<5

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

Historical Analytical Results
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MW-152

Analyte	Sample Name	MW-152 1/26/2005	MW-152 3/22/2005	MW-152(92.9) 6/16/2005	MW-152(108.9) 6/16/2005	MW-152 (92.9) 11/18/2005	MW-152 (108.9) 11/18/2005
	UNIT						
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	9.3J	6.5	5.32	3.4	12	4.95
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	0.39J	0.24J	<1	<1	1	<1
Chloroform	µg/L	1.5	0.98B	<1	<1	2.19B	1.08B
cis-1,2-Dichloroethene	µg/L	14	10	2.97	4.22	29	12.2
Tetrachloroethene	µg/L	78	5.8	1.06	1.74	11.7	5.27
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	6.6	5.1	1.12	1.87	13.5	4.43
Trichloroethene	µg/L	110	59	17.6	19.3	159	71
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

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imprecise

Historical Analytical Results
Annual Operations Report - 2007
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Defense Depot Memphis, Tennessee

MW-152

Analyte	Sample Name	MW-152 (92.9)	MW-152 (108.9)	MW-152T - IS-1	MW-152B - IS-1	MW-152-92_9-IS-2
	Sample Date	4/13/2006	4/13/2006	10/18/2006	10/18/2006	4/10/2007
	UNIT					
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	12.4	8.16	4.87	3.86	15.7
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1
Chloroform	µg/L	1.36B	1.76B	1.2	1.14	1.84
cis-1,2-Dichloroethene	µg/L	15.6	18.7	10.9	12.7	21.8
Tetrachloroethene	µg/L	10.4	11.3	13.4	10.8	12.7
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	7.1	9.62	5.48	5.96	9.23
Trichloroethene	µg/L	147	161	125	116	185
Vinyl chloride	µg/L	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DOE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

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R Unusable

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imprecise

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Defense Depot Memphis, Tennessee

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MW-152

Analyte	Sample Name	Sample Date	MW-152-107_9-IS-2	MW-152-92_9-IS-3	MW-152-107_9-IS-3
			4/10/2007	10/8/2007	10/8/2007
	UNIT				
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	8.67	4.85	2.39	2.39
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1
Chloroform	µg/L	1.31	1.03	0.709	0.709
cis-1,2-Dichloroethene	µg/L	14.7	14	7.71	7.71
Tetrachloroethene	µg/L	9.65	6.87	7.69	7.69
Total 1,2-Dichloroethene	µg/L	--	--	--	--
trans-1,2-Dichloroethene	µg/L	6.32	5.18	2.89	2.89
Trichloroethene	µg/L	130	145	95	95
Vinyl chloride	µg/L	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020. SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DOE FLAGS:

J Estimated results based on QC data or reported
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positive based on blank data

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Historical Analytical Results
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MW-153

Analyte	Sample Name	MW-153 8/19/2004	MW-153(95.1) 6/16/2005	MW-153(95.1) 6/16/2005	MW-153(79.1) 6/16/2005	MW-153 (95.1) 11/18/2005	MW-153 (79.1) 11/18/2005	MW-153 (95.1) 4/13/2006
	UNIT							
1,1,1-Trichloroethane	µg/L	4	1.46	1.15	1.31	1.04	1.27	
1,1,2,2-Tetrachloroethane	µg/L	<1J	<1	<1	<1	<1	<1	
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	
1,1-Dichloroethene	µg/L	9.1	3.73	3.07	4.56	3.48	4.13	
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	
Chloroform	µg/L	<1	<1	<1	<1	<1	<1	
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	
Tetrachloroethene	µg/L	0.24J	<1	<1	<1	<1	<1	
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	
Trichloroethene	µg/L	<1	<1	<1	<1	<1	<1	
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL

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positive based on blank data

< Not detected at sample reporting limit

R Unusable

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imprecise

Historical Analytical Results
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Defense Depot Memphis, Tennessee

MW-153

Analyte	Sample Name	MW-153 (79.1)	MW-153T - IS-1	MW-153B - IS-1	MW-153-87_1-IS-2	MW-153-87.1-IS-3
	Sample Date	4/13/2006	10/18/2006	10/18/2006	4/10/2007	10/8/2007
	UNIT					
1,1,1-Trichloroethane	µg/L	1.71	1.04	1.18	1.77	1.39
1,1,2,2-Tetrachloroethane	µg/L	<1	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	5.4	4.19	4.87	5.91	5.61
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	0.368J	0.334 J	0.302 J
Tetrachloroethene	µg/L	<1	<1	<1	0.332 J	0.714 J
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	0.251 J	0.272 J
Vinyl chloride	µg/L	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

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imprecise

Historical Analytical Results
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Defense Depot Memphis, Tennessee

932 343

MW-154

Analyte	Sample Name	MW-154 (59)	MW-154	MW-154(65.5)	MW-154(57.6)	MW-154 (65.5)	MW-154 (57.6)
	Sample Date	8/14/2004	8/17/2004	6/17/2005	6/17/2005	11/17/2005	11/17/2005
	UNIT						
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW 8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported below RL

B Estimated results possibly biased high or false positive based on blank data

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R Unusable

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Historical Analytical Results
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Defense Depot Memphis, Tennessee

MW-154

Analyte	Sample Name	MW-154(65.5)	MW-154(57.6)	MW-154T-IS-1	MW-154B-IS-1	MW-154-61_6-IS-2	MW-154-61.6-IS-3
	Sample Date	4/12/2006	4/12/2006	10/19/2006	10/19/2006	4/10/2007	10/5/2007
	UNIT						
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	0.437 J
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

Historical Analytical Results
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Defense Depot Memphis, Tennessee

MW-155

Analyte	Sample Name	MW-155 8/16/2004	MW-155 10/13/2004	MW-155-Int3 11/8/2004	MW-155-Int2 11/8/2004	MW-155-Int4 11/8/2004
	UNIT					
1,1,1-Trichloroethane	µg/L	<77	<100	<25	<50	<25
1,1,2,2-Tetrachloroethane	µg/L	2100	2000	700	1300	800
1,1,2-Trichloroethane	µg/L	<77	<100	<25	<50	<25
1,1-Dichloroethene	µg/L	<77	<100	<25	<50	<25
Carbon tetrachloride	µg/L	<77	<100	<25	<50	<25
Chloroform	µg/L	<77	<100	<25	<50	<25
cis-1,2-Dichloroethene	µg/L	48J	55J	24J	46J	23J
Tetrachloroethene	µg/L	<77	<100	7.4J	10J	5.9J
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<77	<100	6.4J	<50	<25
Trichloroethene	µg/L	1000	1000	570	1000J	620
Vinyl chloride	µg/L	<77	<100	<25	<50	<25

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

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imprecise

Historical Analytical Results
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Defense Depot Memphis, Tennessee

932 346

MW-155

Analyte	Sample Name	MW-155-Intl	MW-155	MW-155	MW-155(78.6)	MW-155(94.6)	MW-155 (94.6)
	Sample Date	11/8/2004	1/26/2005	3/23/2005	6/17/2005	6/17/2005	11/19/2005
	UNIT						
1,1,1-Trichloroethane	µg/L	<42	<1	<2.2	<1	<1	<1
1,1,1,2,2-Tetrachloroethane	µg/L	1100	470J	660	2220	1650	1680
1,1,2-Trichloroethane	µg/L	<42	0.59J	1.7J	4.54	3.24	7.91
1,1-Dichloroethene	µg/L	<42	<1	<2.2	<1	<1	<1
Carbon tetrachloride	µg/L	<42	<1	<2.2	<1	<1	<1
Chloroform	µg/L	<42	<1	0.68B	1.5B	1.08B	1.64B
cis-1,2-Dichloroethene	µg/L	38J	1.8	27	67.5	50.5	38.5
Tetrachloroethene	µg/L	<42	<1	0.6J	3.04	1.01	8.11
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	10J	0.29J	4.5	15.1	10.9	9.91
Trichloroethene	µg/L	820	32	530	1750	1410	1130
Vinyl chloride	µg/L	<42	<1	<2.2	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
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Defense Depot Memphis, Tennessee

932 347

MW-155

Analyte	Sample Name	MW-155 (78.6)	MW-155 (78.6)	MW-155 (94.6)	MW-155T - IS-1	MW-155B - IS-1
	Sample Date	11/19/2005	4/13/2006	4/13/2006	10/18/2006	10/18/2006
	UNIT					
1,1,1-Trichloroethane	µg/L	<10	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	3530	1880	581	3190	4090
1,1,2-Trichloroethane	µg/L	9.95J	7.5	7.1	77.4	58.5
1,1-Dichloroethene	µg/L	<10	<1	<1	<1	0.559J
Carbon tetrachloride	µg/L	<10	<1	<1	<1	<1
Chloroform	µg/L	<10	1.51B	1.21B	1.57	2.1
cis-1,2-Dichloroethene	µg/L	53.9	35.1	29	67	72.2
Tetrachloroethene	µg/L	11.2	5.93	5.06	10.4	13.8
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	14.5	8.66	7.06	19.3	20.4
Trichloroethene	µg/L	1560	865	572	1310	1810
Vinyl chloride	µg/L	<10	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

Historical Analytical Results
Annual Operations Report - 2007
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Defense Depot Memphis, Tennessee

MW-155

Analyte	Sample Name	MW-155-77_0-IS-2	MW-155-93_5-IS-2	MW-155-77.0-IS-3	MW-155-93.5-IS-3
	Sample Date	4/10/2007	4/10/2007	10/8/2007	10/8/2007
	UNIT				
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	2880	3180	1430	3400
1,1,2-Trichloroethane	µg/L	147	120 J	45.1	80.3
1,1-Dichloroethene	µg/L	0.966 J	0.928 J	1.68	2.84
Carbon tetrachloride	µg/L	<1	<1	<1	<1
Chloroform	µg/L	1.45	1.69 J	0.705	1.65
cis-1,2-Dichloroethene	µg/L	105	86 J	64.1	116
Tetrachloroethene	µg/L	11.6	12.4 J	4.3	16.3
Total 1,2-Dichloroethene	µg/L	--	--	--	--
trans-1,2-Dichloroethene	µg/L	35.3	27.2 J	12.8	23.6
Trichloroethene	µg/L	1560	1650	794	2220
Vinyl chloride	µg/L	1.15	0.619 J	0.525 J	0.971 J

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

Historical Analytical Results
Annual Operations Report - 2007
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Defense Depot Memphis, Tennessee

932 349

MW-156

Analyte	Sample Name	Sample Date	MW-156- 156,55/8/17/2004	MW-156- 8/20/2004	MW-156(66.8) 6/16/2005	MW-156(57.2) 6/16/2005	MW-156 (66.8) 1105 11/17/2005	MW-156 (57.2) 1105 11/17/2005
			UNIT					
1,1,1-Trichloroethane	µg/L		<0U	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L		<0U	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	µg/L		<0U	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L		<0U	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L		<0U	<1	<1	<1	<1	<1
Chloroform	µg/L		<0U	0.42J	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L		<0U	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L		<0U	<1	<1	<1	<1	<1
Total 1,2-Dichloroethene	µg/L		--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L		<0U	<1	<1	<1	<1	<1
Trichloroethene	µg/L		<0U	<1	<1	<1	<1	<1
Vinyl chloride	µg/L		<0J	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

E FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
Annual Operations Report - 2007
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Defense Depot Memphis, Tennessee

MW-156

Analyte	Sample Name	MW-156 (66.8)0406	MW-156 (57.2)0406	MW-156T-IS-1	MW-156B-IS-1	MW-156-62_0-IS-2	MW-156-62.0-IS-3
	Sample Date	4/13/2006	4/13/2006	10/19/2006	10/19/2006	4/11/2007	10/5/2007
	UNIT						
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

E FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

Historical Analytical Results
Annual Operations Report - 2007
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Defense Depot Memphis, Tennessee

MW-157

Analyte	Sample Name	MW-157	MW157RD73	MW-157	MW-157	MW-157	MW-157(73.3)	MW-157 (73.3)
	Sample Date	8/18/2004	10/27/2004	1/27/2005	3/23/2005	6/15/2005	11/17/2005	
	UNIT							
1,1,1-Trichloroethane	µg/L	<6.7	<0.25	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	5.7J	6.73J	3.8	3.6	3.18B	2.22	
1,1,2-Trichloroethane	µg/L	<6.7	0.35J	0.33J	0.26J	<1	<1	<1
1,1-Dichloroethane	µg/L	<6.7	<0.5	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	9.4	10.5J	9.9	5.2	4.75	4.56	
Chloroform	µg/L	14	14J	12	7.5	10.2	8.18	
cis-1,2-Dichloroethene	µg/L	11	13.19J	13	11	10.9	9.35	
Tetrachloroethene	µg/L	1.9J	1.50J	2	1.6	1.32	1.49	
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	1.9J	2.70J	2.4	1.9	2.58	1.3	
Trichloroethene	µg/L	120	143J	160	200	157	117	
Vinyl chloride	µg/L	<6.7	<0.25	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL
B Estimated results possibly biased high or false
positive based on blank data
< Not detected at sample reporting limit
R Unusable
UJ Undetected, reporting limit is inaccurate or
imprecise

Historical Analytical Results
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Defense Depot Memphis, Tennessee

MW-157

Analyte	Sample Name	MW-157(73.3)	MW-157 - IS-1	MW-157-74_8-IS-2	MW-157-74_8-IS-3
	Sample Date	4/12/2006	10/19/2006	4/10/2007	10/8/2007
	UNIT				
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	2.28	2.64	25.2	27
1,1,2-Trichloroethane	µg/L	<1	<1	1.04	1.22
1,1-Dichloroethene	µg/L	<1	<1	<1	<1
Carbon tetrachloride	µg/L	5.61	9.25	17.2	26
Chloroform	µg/L	10.8	30.1	153	235
cis-1,2-Dichloroethene	µg/L	9.75	13.3	16.8	12.5
Tetrachloroethene	µg/L	1.59	2.19	4.1	7.43
Total 1,2-Dichloroethene	µg/L	--	--	--	--
trans-1,2-Dichloroethene	µg/L	2.2	2.7	3	3.06
Trichloroethene	µg/L	132	148J	162	151
Vinyl chloride	µg/L	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L, micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

Historical Analytical Results
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MW-158

Analyte	Sample Name	MW-158 10/9/2004	MW-158 10/13/2004	MW-158Int2 11/8/2004	MW-158Int1 11/8/2004	MW-158Int3 11/8/2004
	UNIT					
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1.4
1,1,2,2-Tetrachloroethane	µg/L	15	21	13	16	25
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1.4
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1.4
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1.4
Chloroform	µg/L	0.47B	0.29J	0.45J	0.3J	0.47J
cis-1,2-Dichloroethene	µg/L	2.2	3	4.5	2.1	6.1
Tetrachloroethene	µg/L	1.2	1.8	2.9	1.7	3.5
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	1.1	1.3	1.8	0.86J	2.5
Trichloroethene	µg/L	20	30	32	24	46
Vinyl chloride	µg/L	<1	<1	<1	<1	<1.4

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter
-- Not Analyzed

DQE FLAGS:

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Historical Analytical Results
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Defense Depot Memphis, Tennessee

MW-158

Analyte	Sample Name	Sample Date	MW-158Int4	MW-158	MW-158	MW-158(93.1)	MW-158(104.1)
			11/8/2004	1/25/2005	3/21/2005	6/16/2005	6/16/2005
		UNIT					
1,1,1-Trichloroethane	µg/L	<2.5	<1.4	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	53	24	11	4.39	3.74	
1,1,2-Trichloroethane	µg/L	<2.5	<1.4	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<2.5	<1.4	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<2.5	<1.4	<1	<1	<1	<1
Chloroform	µg/L	0.63J	0.38J	0.41B	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	7.2	3.1	3.3	5.13	5.16	
Tetrachloroethene	µg/L	3.1	2.3	3.3	3.67	1.93	
Total 1,2-Dichloroethene	µg/L	—	—	—	—	—	—
trans-1,2-Dichloroethene	µg/L	3	1.3J	1.6	2.32	2.52	
Trichloroethene	µg/L	74	33	30	30.7	32	
Vinyl chloride	µg/L	<2.5	<1.4	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

— Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL

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positive based on blank data

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R Unusable

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Defense Depot Memphis, Tennessee

MW-158

Analyte	Sample Name	MW-158 (104.1)	MW-158 (93.1)	MW-158 (104.1)	MW-158 (93.1)	MW-158T - IS-1	MW-158B - IS-1
	Sample Date	11/18/2005	11/18/2005	4/13/2006	4/13/2006	10/19/2006	10/19/2006
	UNIT						
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	5.44	5.54	3.78	6.36	4.41	3.73
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	1.07B	1B	0.738B	0.673	0.691
cis-1,2-Dichloroethene	µg/L	7.17	9.31	7.74	4.87	5.6	5.96
Tetrachloroethene	µg/L	5.05	6.05	9.28	7.19	7.22	8.49
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	2.99	3.38	3.62	2.4	2.62	3.13
Trichloroethene	µg/L	74.6	77.8	76.3	52.6	69.3	77.4
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

- J Estimated results based on QC data or reported
below RL
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positive based on blank data
- < Not detected at sample reporting limit
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imprecise

Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

MW-158

Analyte	Sample Name	MW-158-104_I-IS-2	MW-158-93_I-IS-2	MW-158-93_I-IS-3	MW-158-104_I-IS-3
	Sample Date	4/10/2007	4/10/2007	10/8/2007	10/8/2007
	UNIT				
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	1.86	0.933	1.26	1.25
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1
Chloroform	µg/L	0.404	0.31	0.175 J	0.194 J
cis-1,2-Dichloroethene	µg/L	2.9	2.82	1.09	1.4
Tetrachloroethene	µg/L	7.83	8.13	3.87	3.5
Total 1,2-Dichloroethene	µg/L	--	--	--	--
trans-1,2-Dichloroethene	µg/L	1.56	1.39	0.505 J	0.697 J
Trichloroethene	µg/L	54	53.2	18.5	20.6
Vinyl chloride	µg/L	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL
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positive based on blank data
< Not detected at sample reporting limit
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imprecise

Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

MW-158A

Analyte	Sample Name	MW-158A	MW-158A-RA	MW-158A-Int2	MW-158A-Int1	MW-158A-Int3
	Sample Date	10/10/2004	10/12/2004	11/8/2004	11/8/2004	11/8/2004
	UNIT					
1,1,1-Trichloroethane	µg/L	<20	<15	<7.7	<22	<7.1
1,1,2,2-Tetrachloroethane	µg/L	560	270	170	560	25
1,1,2-Trichloroethane	µg/L	<20	<15	<7.7	<22	<7.1
1,1-Dichloroethene	µg/L	<20	<15	<7.7	<22	<7.1
Carbon tetrachloride	µg/L	<20	<15	<7.7	<22	<7.1
Chloroform	µg/L	<20	<15	<7.7	<22	2.1J
cis-1,2-Dichloroethene	µg/L	27	43	18	32	40
Tetrachloroethene	µg/L	<20	5.7J	6.5J	11J	8
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	9J	17	7.1J	11J	17
Trichloroethene	µg/L	340	360	210	530	180
Vinyl chloride	µg/L	<20	<15	<7.7	<22	<7.1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL
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positive based on blank data
< Not detected at sample reporting limit
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Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

MW-158A

Analyte	Sample Name	MW-158A-Int4	MW-158A	MW-158A	MW-158A	MW-158A(91.4)	MW-158A(80.8)	MW-158A (80.8)
	Sample Date	11/8/2004	1/24/2005	3/21/2005	6/16/2005	6/16/2005	6/16/2005	11/18/2005
	UNIT							
1,1,1-Trichloroethane	µg/L	<7.1	<2	<1	<1	<1	<1	<10
1,1,2,2-Tetrachloroethane	µg/L	83	77	96	193	736	844	844
1,1,2-Trichloroethane	µg/L	<7.1	<2	0.24J	0.983J	2.5	4.5J	4.5J
1,1-Dichloroethene	µg/L	<7.1	<2	<1	<1	0.392J	<10	<10
Carbon tetrachloride	µg/L	<7.1	<2	0.55J	<1	<1	<10	<10
Chloroform	µg/L	1.9J	0.88J	2.4	1.28B	1.12B	<10	<10
cis-1,2-Dichloroethene	µg/L	31	11	33	28	37.1	38	38
Tetrachloroethene	µg/L	8.1	3.2	12	5.63	2.32	<10	<10
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	13	4.3	15	7.26	9.54	<10	<10
Trichloroethene	µg/L	190	58	200	185	470	492	492
Vinyl chloride	µg/L	<7.1	<2	<1	<1	<1	<1	<10

NOTES:

VOC samples analyzed using methods SW 8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported below RL

B Estimated results possibly biased high or false positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
Annual Operations Report - 2007
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Defense Depot Memphis, Tennessee

MW-158A

Analyte	Sample Name	MW-158A (91.4)	MW-158A (80.8)	MW-158A (91.4)	MW-158AT - IS-1	MW-158AB - IS-1
	Sample Date	11/18/2005	4/13/2006	4/13/2006	10/19/2006	10/19/2006
	UNIT					
1,1,1-Trichloroethane	µg/L	<10	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	64.4	681	43.1	410	36.2
1,1,2-Trichloroethane	µg/L	<10	6.08	<1	14.9	0.618J
1,1-Dichloroethene	µg/L	<10	<1	<1	0.622J	0.818J
Carbon tetrachloride	µg/L	<10	<1	<1	<1	0.754J
Chloroform	µg/L	3.47B	1.47B	2.62B	1.22	3.64
cis-1,2-Dichloroethene	µg/L	45.5	49.7	32.6	60.7	58.3
Tetrachloroethene	µg/L	17.8	4.69	15	6.64	16.1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	13.6	14	13.8	19.1	22.8
Trichloroethene	µg/L	374	689	273	678	301
Vinyl chloride	µg/L	<10	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

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imprecise

Historical Analytical Results
Annual Operations Report - 2007
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Defense Depot Memphis, Tennessee

MW-158A

Analyte	Sample Name	Sample Date	4/10/2007	4/10/2007	10/8/2007	10/8/2007
		UNIT				
1,1,1-Trichloroethane	MW-158A-81_5-IS-2	4/10/2007	<1	<2	<1	<1
1,1,2,2-Tetrachloroethane	MW-158A-91_4-IS-2	4/10/2007	268	50.3	102	3.7
1,1,2-Trichloroethane	MW-158A-81_5-IS-3	4/10/2007	28.8 J	3.49	2.65	<1
1,1-Dichloroethene	MW-158A-91_4-IS-2	4/10/2007	0.592 J	<2	<1	<1
Carbon tetrachloride	MW-158A-81_5-IS-3	4/10/2007	<1	<2	<1	1.54
Chloroform	MW-158A-91_4-IS-2	4/10/2007	0.858 J	1.44	<0.3	1.36
cis-1,2-Dichloroethene	MW-158A-81_5-IS-3	4/10/2007	95.3 J	21.4	1.98	14.6
Tetrachloroethene	MW-158A-91_4-IS-2	4/10/2007	3.77 J	10.4	0.252 J	13.7
Total 1,2-Dichloroethene	MW-158A-81_5-IS-3	4/10/2007	--	--	--	--
trans-1,2-Dichloroethene	MW-158A-91_4-IS-2	4/10/2007	15.2 J	7.78	<1	6.22
Trichloroethene	MW-158A-81_5-IS-3	4/10/2007	514	240	42	156
Vinyl chloride	MW-158A-91_4-IS-2	4/10/2007	0.663 J	<2	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL

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positive based on blank data

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R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

Historical Analytical Results
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Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

932 361

MW-159

Analyte	Sample Name	MW-159 10/11/2004	MW-159-Int4 11/8/2004	MW-159-Int3 11/8/2004	MW-159-Int2 11/8/2004	MW-159-Int1 11/8/2004	MW-159 1/26/2005
	UNIT						
1,1,1-Trichloroethane	µg/L	<150	<10	<20	<33	<29	<6.2
1,1,2,2-Tetrachloroethane	µg/L	3500	210	300	510	580	2000J
1,1,2-Trichloroethane	µg/L	<150	<10	<20	<33	<29	6.3
1,1-Dichloroethene	µg/L	<150	<10	<20	<33	<29	<6.2
Carbon tetrachloride	µg/L	<150	<10	<20	<33	<29	<6.2
Chloroform	µg/L	<150	<10	<20	<33	<29	2.9J
cis-1,2-Dichloroethene	µg/L	100J	98	200	390	350	62
Tetrachloroethene	µg/L	<150	<10	<20	<33	<29	4J
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<150	28	58	100	100	12
Trichloroethene	µg/L	1700	290	440	790	660	830
Vinyl chloride	µg/L	<150	<10	<20	<33	<29	<6.2

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

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positive based on blank data

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Historical Analytical Results
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Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

MW-159

Analyte	Sample Name	MW-159	MW-159(97.1)	MW-159(81.1)	MW-159(81.1)	MW-159(97.1)	MW-159(97.1)	MW-159(97.1)
	Sample Date	3/24/2005	6/17/2005	6/17/2005	11/19/2005	12/8/2005	4/13/2006	
	UNIT							
1,1,1-Trichloroethane	µg/L	<7.1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	2200	659	1830	421	1.25	549	
1,1,2-Trichloroethane	µg/L	7.8	1.76	3.27	2.25	<1	2.5	
1,1-Dichloroethene	µg/L	<7.1	<1	<1	<1	<1	<1	
Carbon tetrachloride	µg/L	<7.1	0.961J	0.567J	0.927J	4.13	<1	
Chloroform	µg/L	4.2J	1.27B	1.04B	1.6B	12.1	1.14B	
cis-1,2-Dichloroethene	µg/L	80	26.7	39.4	46.7	10.5	20.4	
Tetrachloroethene	µg/L	7.1	1.56	1.82	2.33	0.935J	1.33	
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	
trans-1,2-Dichloroethene	µg/L	15	6.57	9.78	5.76	1.73	4.14	
Trichloroethene	µg/L	1700	531	691	552	120	594	
Vinyl chloride	µg/L	<7.1	<1	<1	<1	<1	<1	

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

DQE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
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Defense Depot Memphis, Tennessee

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MW-159

Analyte	Sample Name	MW-159 (81.1)	MW-159T - IS-1	MW-159B - IS-1	MW-159-81_1-IS-2	MW-159-97_1-IS-2
	Sample Date	4/13/2006	10/18/2006	10/18/2006	4/9/2007	4/9/2007
	UNIT					
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	847	276	357	248	272
1,1,2-Trichloroethane	µg/L	10.4	10.7	19.6	37.4	32.9
1,1-Dichloroethene	µg/L	<1	<1	<1	1.16	1.12
Carbon tetrachloride	µg/L	<1	0.252J	0.493J	<1	<1
Chloroform	µg/L	1.22B	0.807	1.02	0.967	1.03
cis-1,2-Dichloroethene	µg/L	36.4	37	55.4	156	152
Tetrachloroethene	µg/L	1.71	0.93J	2.63	3.75	3.81
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	7.64	6.37	11.2	17.9	16.8
Trichloroethene	µg/L	1520	935	1400	1660	1580
Vinyl chloride	µg/L	<1	<1	<1	0.504 J	0.514 J

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported

below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or

imprecise

Historical Analytical Results
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MW-159

Analyte	Sample Name	MW-159-81.1-1S-3	MW-159-97.1-1S-3
	Sample Date	10/8/2007	10/8/2007
	UNIT		
1,1,1-Trichloroethane	µg/L	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	501	436
1,1,2-Trichloroethane	µg/L	66.4	57.3
1,1-Dichloroethene	µg/L	1.98	1.72
Carbon tetrachloride	µg/L	<1	<1
Chloroform	µg/L	1.69	1.72
cis-1,2-Dichloroethene	µg/L	392	312
Tetrachloroethene	µg/L	9.33	8.29
Total 1,2-Dichloroethene	µg/L		
trans-1,2-Dichloroethene	µg/L	28	23.9
Trichloroethene	µg/L	2700	2420
Vinyl chloride	µg/L	1.14	1.04

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
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Defense Depot Memphis, Tennessee

MW-160

Analyte	Sample Name	MW-160	MW-160	MW-160	MW-160	MW-160 (80.8)	MW-160 (80.8)	MW-160 (80.8)
Sample Date	Sample Date	10/13/2004	1/28/2005	3/22/2005	6/17/2005	11/18/2005	4/12/2006	
UNIT								
1,1,1-Trichloroethane	µg/L	<10	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	30	53	29	35.4	13.4	23.1	23.1
1,1,2-Trichloroethane	µg/L	<10	0.23J	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<10	<1	<1	<1	<1	0.538J	0.538J
Carbon tetrachloride	µg/L	<10	0.79J	0.48J	0.581J	1.01	0.729J	0.729J
Chloroform	µg/L	<10	2.7	1.7	2.33B	2.26B	3.29B	3.29B
cis-1,2-Dichloroethene	µg/L	31	38	21	35.7	30.8	45	45
Tetrachloroethene	µg/L	12	21	15	14.7	14.7	13	13
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	17	18	10	16.3	12.2	18.1	18.1
Trichloroethene	µg/L	240	290	190	448	161	278	278
Vinyl chloride	µg/L	<10	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

DQE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
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Defense Depot Memphis, Tennessee

MW-160

Analyte	Sample Name	MW-160 - IS-1	MW-160-80_8-IS-2	MW-160-80.8-IS-3
	Sample Date	10/18/2006	4/10/2007	10/8/2007
	UNIT			
1,1,1-Trichloroethane	µg/L	<1	<1	1.14
1,1,2,2-Tetrachloroethane	µg/L	9.08	24.9	175
1,1,2-Trichloroethane	µg/L	<1	<1	0.555 J
1,1-Dichloroethene	µg/L	<1	0.708 J	1.05
Carbon tetrachloride	µg/L	0.575J	0.781 J	1.91
Chloroform	µg/L	3.35	1.68	3.53
cis-1,2-Dichloroethene	µg/L	42.5	22.6	56.1
Tetrachloroethene	µg/L	19.8	14.5	18.8
Total 1,2-Dichloroethene	µg/L	--	--	--
trans-1,2-Dichloroethene	µg/L	17.8	8.63	15.6
Trichloroethene	µg/L	307	191	695
Vinyl chloride	µg/L	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DOE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

Historical Analytical Results
Annual Operations Report - 2007
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MW-161

Analyte	Sample Name	MW-161 10/12/2004	MW-161(79.9) 6/15/2005	MW-161(79.9) 11/14/2005	MW-161(79.9) 4/12/2006	MW-161 - IS-1 10/19/2006
	UNIT					
1,1,1-Trichloroethane	µg/L	<50	<10	<20	<1	<10
1,1,2,2-Tetrachloroethane	µg/L	3100J	4560	2680	2120	1950
1,1,2-Trichloroethane	µg/L	<50	9.26J	7.58J	5.71	3.55J
1,1-Dichloroethene	µg/L	<50	<10	<20	<1	<10
Carbon tetrachloride	µg/L	<50	<10	<20	0.339J	<10
Chloroform	µg/L	<50	<10	<20	1.12B	<3
cis-1,2-Dichloroethene	µg/L	31J	48.5	43	38.4	38.5
Tetrachloroethene	µg/L	<50	7.22J	7.68	13	10.1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<50	9.52J	<20	5.12	<10
Trichloroethene	µg/L	1400J	2170	1590	1470	1640
Vinyl chloride	µg/L	<50	<10	<20	<1	<10

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

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MW-161

Analyte	Sample Name	MW-161-80_4-IS-2	MW-161-80.4-IS-3
	Sample Date	4/10/2007	10/8/2007
	UNIT		
1,1,1-Trichloroethane	µg/L	<10	<1
1,1,2,2-Tetrachloroethane	µg/L	1170	1850
1,1,2-Trichloroethane	µg/L	<10	6.46
1,1-Dichloroethene	µg/L	<10	<1
Carbon tetrachloride	µg/L	5.68 J	2.13
Chloroform	µg/L	2.1 J	2.79
cis-1,2-Dichloroethene	µg/L	42.5	55
Tetrachloroethene	µg/L	6.49 J	10.2
Total 1,2-Dichloroethene	µg/L	--	--
trans-1,2-Dichloroethene	µg/L	5.77 J	7.87
Trichloroethene	µg/L	1400	818
Vinyl chloride	µg/L	<10	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
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Defense Depot Memphis, Tennessee

MW-162

Analyte	Sample Name	MW-162	MW-162(83.7)	MW-162(83.7)	MW-162(83.7)	MW-162 - IS-1
	Sample Date	10/12/2004	6/15/2005	11/14/2005	4/12/2006	10/19/2006
	UNIT					
1,1,1-Trichloroethane	µg/L	<100	<5	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	1700	123	10.2	522	162J
1,1,2-Trichloroethane	µg/L	<100	<5	<1	0.99J	0.36J
1,1-Dichloroethene	µg/L	<100	<5	<1	<1	<1
Carbon tetrachloride	µg/L	<100	<5	<1	<1	<1
Chloroform	µg/L	<100	<5	0.463B	1.49B	0.988
cis-1,2-Dichloroethene	µg/L	62J	26.1	2.91	31.2	18.3
Tetrachloroethene	µg/L	<100	16.2J	3.43	10.5	7.81
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<100	7.46	<1	8.25	5.05
Trichloroethene	µg/L	1400	641	72.9	342	445
Vinyl chloride	µg/L	<100	<5	<1	<1	<1J

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported

below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

MW-162

Analyte	Sample Name	MW-162-83_7-IS-2	MW-162-83_7-IS-3
	Sample Date	4/10/2007	10/8/2007
	UNIT		
1,1,1-Trichloroethane	µg/L	<20	<1
1,1,2,2-Tetrachloroethane	µg/L	3030	7210
1,1,2-Trichloroethane	µg/L	<20	6.73
1,1-Dichloroethene	µg/L	<20	<1
Carbon tetrachloride	µg/L	<20	<1
Chloroform	µg/L	<6	1.65
cis-1,2-Dichloroethene	µg/L	45.5	41
Tetrachloroethene	µg/L	13.2 J	6.24
Total 1,2-Dichloroethene	µg/L	--	--
trans-1,2-Dichloroethene	µg/L	9.93 J	5.28
Trichloroethene	µg/L	1470	1120
Vinyl chloride	µg/L	<20	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

MW-163

Analyte	Sample Name	MW-163	MW-163(74.9)	MW-163 (74.9)	MW-163 (74.9)	MW-163 - IS-1
	Sample Date	10/14/2004	6/15/2005	11/17/2005	4/13/2006	10/19/2006
	UNIT					
1,1,1-Trichloroethane	µg/L	--	<10	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	4800	3420J	2080	1980	538
1,1,2-Trichloroethane	µg/L	<100	7.43J	4.95	4.77	17.3
1,1-Dichloroethene	µg/L	<100	<10	<1	<1	<1
Carbon tetrachloride	µg/L	<100	<10	0.882J	<1	<1
Chloroform	µg/L	<100	<10	0.88B	1.28B	0.446
cis-1,2-Dichloroethene	µg/L	41J	39.6	24	39.7	98.6
Tetrachloroethene	µg/L	<100	5.09J	4.3	8.68	4.35
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<100	9.22J	2.68	3.55	17.2
Trichloroethene	µg/L	1700	1740	1300	1860	527
Vinyl chloride	µg/L	<100	<10	<1	<1	3.63

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

MW-163

Analyte	Sample Name	MW-163-74_9-IS-2	MW-163-74.9-IS-3
	Sample Date	4/10/2007	10/8/2007
	UNIT		
1,1,1-Trichloroethane	µg/L	<5	<1
1,1,2,2-Tetrachloroethane	µg/L	642	860
1,1,2-Trichloroethane	µg/L	61.2	23.8
1,1-Dichloroethene	µg/L	<5	<1
Carbon tetrachloride	µg/L	<5	0.683 J
Chloroform	µg/L	0.883 J	1.59
cis-1,2-Dichloroethene	µg/L	113	59
Tetrachloroethene	µg/L	3.5 J	4.93
Total 1,2-Dichloroethene	µg/L	--	--
trans-1,2-Dichloroethene	µg/L	14.8	10.9
Trichloroethene	µg/L	485	699
Vinyl chloride	µg/L	3.91 J	2.15

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
Annual Operations Report - 2007
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Defense Depot Memphis, Tennessee

MW-164

Analyte	Sample Name	MW-164	MW-164(72.6)	MW-164(72.6)	MW-164(72.6)	MW-164 - IS-1
Sample Date	10/15/2004	6/15/2005	11/14/2005	4/12/2006	10/19/2006	
	UNIT					
1,1,1-Trichloroethane	µg/L	<2.5	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<2.5	4.65B	2.14	2.6	3.05
1,1,2-Trichloroethane	µg/L	<2.5	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<2.5	<1	<1	<1	<1
Carbon tetrachloride	µg/L	4	3.66	5.44	2.99	16.8
Chloroform	µg/L	9.1	8.82	8.44B	9.56	52.6
cis-1,2-Dichloroethene	µg/L	6.3	7.86	8.05	6.87	8.79
Tetrachloroethene	µg/L	<2.5	<1	0.576	0.637J	2.03
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	0.97J	1.22	0.599J	0.974J	1.49
Trichloroethene	µg/L	60	53.3	75.5	62.9J	92.6
Vinyl chloride	µg/L	<2.5	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

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MW-164

Analyte	Sample Name	Sample Date	UNIT
	MW-164-72_6-IS-2	4/10/2007	10/8/2007
1,1,1-Trichloroethane		<1	<1
1,1,2,2-Tetrachloroethane		45	17.7
1,1,2-Trichloroethane		1.75	0.719 J
1,1-Dichloroethene		<1	<1
Carbon tetrachloride		24.8	9.87
Chloroform		247	126
cis-1,2-Dichloroethene		18.1	4.38
Tetrachloroethene		3.62	2.13
Total 1,2-Dichloroethene		--	--
trans-1,2-Dichloroethene		2.66	1.39
Trichloroethene		136 J	61.1
Vinyl chloride		<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

MW-165

Analyte	Sample Name	MW-165	MW-165	MW-165	MW-165(89.9)	MW-165(100.4)	MW-165 (89.9)	MW-165 (100.4)
	Sample Date	11/21/2004	1/25/2005	3/21/2005	6/16/2005	6/16/2005	11/18/2005	11/18/2005
	UNIT							
1,1,1-Trichloroethane	µg/L	<9.1	<2	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	24	8.9	12	21.8	12.3	21.8	21.2
1,1,2-Trichloroethane	µg/L	<9.1	0.74J	0.55J	1.16	0.54J	1.48	1.58
1,1-Dichloroethene	µg/L	<9.1	<2	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	11	8	7.8	1.67	<1	2.68	<1
Chloroform	µg/L	140	64	58	77	26.5	65.4	1.01B
cis-1,2-Dichloroethene	µg/L	7.1J	10	11	6.22	7.64	8.06	7.75
Tetrachloroethene	µg/L	2.3J	1.8J	2.1	<1	<1	0.916J	1.04
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<9.1	1.3J	2.2	1.13	2.49	0.991J	1.64J
Trichloroethene	µg/L	64	48	53	37.2	28.1	46.5	42.3
Vinyl chloride	µg/L	<9.1	<2	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

MW-165

Analyte	Sample Name	MW-165 (89.9)	MW-165 (100.4)	MW-165T - IS-1	MW-165B - IS-1	MW-165-89_9-IS-2
Sample Date	4/13/2006	4/13/2006	4/13/2006	10/18/2006	10/18/2006	4/10/2007
	UNIT					
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	5.81	8	2.63	3.5	1.9
1,1,2-Trichloroethane	µg/L	1.51	1.24	0.343J	0.655J	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	3.85	<1	3.9
Chloroform	µg/L	<1	<1	7.48	0.332	7.6
cis-1,2-Dichloroethene	µg/L	8.65	10.9	12.9	14.6	9.31
Tetrachloroethene	µg/L	0.892J	1.27	1.1	1.23	1.35
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	1.64	2.07	2.84	2.67	2
Trichloroethene	µg/L	60.4	54.2	187	146	134
Vinyl chloride	µg/L	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

MW-165

Analyte	Sample Name	Sample Date	UNIT	10/8/2007	10/8/2007
	MW-165-100_4-IS-2	4/10/2007		MW-165-89.9-IS-3	MW-165-100_4-IS-3
1,1,1-Trichloroethane			µg/L	<1	<1
1,1,2,2-Tetrachloroethane			µg/L	1.82	2
1,1,2-Trichloroethane			µg/L	0.3 J	0.3 J
1,1-Dichloroethene			µg/L	<1	<1
Carbon tetrachloride			µg/L	<1	1.49
Chloroform			µg/L	1.89	8.57
cis-1,2-Dichloroethene			µg/L	11.6	10.3
Tetrachloroethene			µg/L	1.36	1.42
Total 1,2-Dichloroethene			µg/L	--	--
trans-1,2-Dichloroethene			µg/L	2.44	2.03
Trichloroethene			µg/L	153	128
Vinyl chloride			µg/L	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

DQE FLAGS:

- J Estimated results based on QC data or reported
below RL
B Estimated results possibly biased high or false
positive based on blank data
< Not detected at sample reporting limit
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UJ Undetected, reporting limit is inaccurate or
imprecise

Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

MW-165A

Analyte	Sample Name	MW-165A 11/18/2004	MW-165A 1/24/2005	MW-165A 3/21/2005	MW-165A(84.5) 6/16/2005	MW-165A(73.9) 6/16/2005
	UNIT					
1,1,1-Trichloroethane	µg/L	<2	<2	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	7.8	5.4	5.5	12	0.77J
1,1,2-Trichloroethane	µg/L	<2	<2	0.37J	<1	<1
1,1-Dichloroethene	µg/L	<2	<2	<1	<1	<1
Carbon tetrachloride	µg/L	6.4	6.9	9.8	4.63	0.933J
Chloroform	µg/L	24	15	24	48.5	3.7B
cis-1,2-Dichloroethene	µg/L	13	9.3	10	6.05	1.83
Tetrachloroethene	µg/L	1.3J	1.1J	1.4	<1	<1
Total 1,2-Dichloroethene	µg/L	-	-	-	-	-
trans-1,2-Dichloroethene	µg/L	1.7J	1.3J	1.8	0.986J	<1
Trichloroethene	µg/L	69	53	64	46.7	17.9
Vinyl chloride	µg/L	<2	<2	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
- Not Analyzed

DQE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
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Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

MW-165A

Analyte	Sample Name	MW-165A (84.5)	MW-165A (73.9)	MW-165A (84.5)	MW-165A (73.9)	MW-165AT - IS-1	MW-165AB - IS-1	MW-165A-73_9-IS-2
	Sample Date	11/18/2005	11/18/2005	4/13/2006	4/13/2006	10/18/2006	10/18/2006	4/10/2007
	UNIT							
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	4.42	<1	1.14	<1	0.188J	1.65	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	6.69	1.35	1.93	1.16	0.505J	4.91	0.449 J
Chloroform	µg/L	12.7	3.52B	5.72B	1.96B	1.95	7.98	0.835
cis-1,2-Dichloroethene	µg/L	13.5	2.41	6.05	3.09	5.06	10.3	2.16
Tetrachloroethene	µg/L	0.955J	<1	0.608J	<1	0.436J	1.35	0.36 J
Total 1,2-Dichloroethene	µg/L	-	-	-	-	-	-	-
trans-1,2-Dichloroethene	µg/L	1.31	<1	1.15	0.73J	0.89J	2.22	0.627 J
Trichloroethene	µg/L	88.7	28.5	69.8	48	86.7	165	49.6
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,

SW8260B, or CV3990

µg/L micrograms per liter

- Not Analyzed

DQE FLAGS:

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below RL

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positive based on blank data

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Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

MW-165A

Analyte	Sample Name	MW-165A-84_5-IS-2	MW-165A-73.9-IS-3	MW-165A-84.5-IS-3
	Sample Date	4/10/2007	10/8/2007	10/8/2007
	UNIT			
1,1,1-Trichloroethane	µg/L	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	2	<0.5	2.98
1,1,2-Trichloroethane	µg/L	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1
Carbon tetrachloride	µg/L	6.23	2.62	16.4
Chloroform	µg/L	18	5.79	66.9
cis-1,2-Dichloroethene	µg/L	9.46	1.92	7.63
Tetrachloroethene	µg/L	1.57	0.439 J	2.49
Total 1,2-Dichloroethene	µg/L	--	--	--
trans-1,2-Dichloroethene	µg/L	1.96	0.511 J	1.57
Trichloroethene	µg/L	131	53.1	133
Vinyl chloride	µg/L	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV 3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

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Historical Analytical Results
Annual Operations Report - 2007
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Defense Depot Memphis, Tennessee

MW-166

Analyte	Sample Name	Sample Date	MW-166 11/19/2004	MW-166 1/27/2005	MW-166 3/23/2005	MW-166(97.8) 6/17/2005	MW-166(87.3) 6/17/2005	MW-166 (97.8) 11/19/2005	MW-166 (87.3) 11/19/2005
			UNIT						
1,1,1-Trichloroethane			<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane			4.2	3.7	3.5	1.2	0.822J	1.48	
1,1,2-Trichloroethane			0.32J	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene			<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride			0.83J	2.9	1.9	<1	1.68	<1	1.17
Chloroform			30	24	11	1.03B	9.01	5.27	7.54
cis-1,2-Dichloroethene			4.3	3.4	2.6	1.51	1.27	2.49	3.43
Tetrachloroethene			0.79J	0.68J	0.87J	<1	<1	0.561J	0.498J
Total 1,2-Dichloroethene			--	--	--	--	--	--	--
trans-1,2-Dichloroethene			0.49J	0.41J	0.63J	<1	<1	0.438J	<1
Trichloroethene			12	10	11	5.78	6.27	6.92	6.67
Vinyl chloride			<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL

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positive based on blank data

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R Unusable

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Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

932 382

MW-166

Analyte	Sample Name	MW-166 (97.8)	MW-166 (87.3)	MW-166T - JS-1	MW-166B - JS-1	MW-166-87_3-IS-2
	Sample Date	4/13/2006	4/13/2006	10/20/2006	10/20/2006	4/9/2007
	UNIT					
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	12.5	13.4	10.2	9.59	5.46
1,1,2-Trichloroethane	µg/L	<1	<1	0.422J	0.385J	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	8.54	10.6	16.5	14	8
Chloroform	µg/L	65.8	79.3	68.5	56.9	25.3
cis-1,2-Dichloroethene	µg/L	5.21	4.41	5.41	4.44	2.69
Tetrachloroethene	µg/L	<1	1.24	1.68	1.44	1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	1.17	0.826J	0.937J	0.935J	0.685 J
Trichloroethene	µg/L	35.8	38	43.7	35.6	25.6
Vinyl chloride	µg/L	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

DQE FLAGS:

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Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

MW-166

Analyte	Sample Name	MW-166-97_8-IS-2	MW-166-87.3-IS-3	MW-166-97.8-IS-3
	Sample Date	4/9/2007	10/5/2007	10/5/2007
	UNIT			
1,1,1-Trichloroethane	µg/L	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	5.47	22.3	28.5
1,1,2-Trichloroethane	µg/L	<1	0.893 J	0.946 J
1,1-Dichloroethene	µg/L	<1	<1	<1
Carbon tetrachloride	µg/L	12.5	8.81	13.3
Chloroform	µg/L	33.1	115	140
cis-1,2-Dichloroethene	µg/L	2.49	4.58	5.44
Tetrachloroethene	µg/L	1.28	1.91	2.47
Total 1,2-Dichloroethene	µg/L	--	--	--
trans-1,2-Dichloroethene	µg/L	0.547 J	1.13	1.15
Trichloroethene	µg/L	23.2	54.1	63.9
Vinyl chloride	µg/L	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported

below RL

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positive based on blank data

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Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

MW-166A

Analyte	Sample Name	MW-166A	MW-166A	MW-166A	MW-166A	MW-166A (75.3)	MW-166A (75.3)	MW-166A (75.3)
	Sample Date	11/19/2004	1/27/2005	3/23/2005	6/17/2005	11/19/2005	11/19/2005	4/13/2006
	UNIT							
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	1.4	3.9	3.9	3.08	1.89	1.89	13.6
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	6.1	8.3	6.91	3.5	3.5	9.75
Chloroform	µg/L	13B	37	38	31.3	17.2	17.2	57
cis-1,2-Dichloroethene	µg/L	0.77J	2.6	2.8	3.08	1.89	1.89	2.33
Tetrachloroethene	µg/L	0.24J	0.8J	0.9J	0.732J	0.516J	0.516J	1.06
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	0.52J	0.65J	0.69J	0.482J	0.482J	<1
Trichloroethene	µg/L	5.2	19	24	19.8	17.6	17.6	25.8
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DOE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

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imprecise

Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

932 385

MW-166A

Analyte	Sample Name	Sample Date	MW-166A - IS-1	MW-166A-75_3-IS-2	MW-166A-75.3-IS-3
			10/20/2006	4/9/2007	10/5/2007
	UNIT				
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	5.15	5.38	12.6	0.417 J
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1
Carbon tetrachloride	µg/L	7.06	7.29	5.62	65.5
Chloroform	µg/L	27.7	30.1	3.54	1.57
cis-1,2-Dichloroethene	µg/L	2.14	2.42	0.854 J	--
Tetrachloroethene	µg/L	0.792J	0.527 J	1.04	81.5
Total 1,2-Dichloroethene	µg/L	--	24.3J	<1	<1
trans-1,2-Dichloroethene	µg/L	0.433J			
Trichloroethene	µg/L	24.3J			
Vinyl chloride	µg/L	<1			

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL

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positive based on blank data

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R Unusable

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Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

MW-167

Analyte	Sample Name	MW-167	MW-167	MW-167	MW-167(80.7)	MW-167(72.3)	MW-167 (80.7)	MW-167 (72.3)
	Sample Date	11/21/2004	1/25/2005	3/22/2005	6/16/2005	6/16/2005	11/18/2005	11/18/2005
	UNIT							
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<1	<1	<1	2.67
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	2.1B	0.47J	0.82B	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1	<1	<1	0.961J
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020. SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

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imprecise

Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

MW-167

Analyte	Sample Name	MW-167 (80.7)	MW-167 (72.3)	MW-167T - IS-1	MW-167B - IS-1	MW-167-76_5-IS-2	MW-167-76.5-IS-3
	Sample Date	4/13/2006	4/13/2006	10/18/2006	10/18/2006	4/9/2007	10/5/2007
	UNIT						
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

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imprecise

Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

MW-168

Analyte	Sample Name	MW-168 11/19/2004	MW-168 1/26/2005	MW-168 3/21/2005	MW-168(119.1) 6/16/2005	MW-168 (119.1) 11/18/2005	MW-168 (108.6) 11/18/2005
	UNIT						
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	1.9	1.7	1.6	<1	0.889J	0.858J
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	0.71J	0.53J	0.5J	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL
B Estimated results possibly biased high or false
positive based on blank data
< Not detected at sample reporting limit
R Unusable
UJ Undetected, reporting limit is inaccurate or
imprecise

Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

MW-168

Analyte	Sample Name	MW-168 (119.1)	MW-168 (108.6)	MW-168T - IS-1	MW-168B - IS-1	MW-168-113_9-IS-2	MW168-113.9-IS-3
Sample Date	Sample Date	4/13/2006	4/13/2006	10/19/2006	10/19/2006	4/9/2007	10/8/2007
	UNIT						
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	0.842J	0.905J	1.07	0.941J	1.04	0.836 J
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	0.384 J
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	0.467J	0.509J	0.66 J	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DOE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

MW-168A

Analyte	Sample Name	MW-168A	MW-168A	MW-168A	MW-168A(86.9)	MW-168A(76.4)
	Sample Date	11/17/2004	1/25/2005	3/21/2005	6/16/2005	6/16/2005
	UNIT					
1,1,1-Trichloroethane	µg/L	6.7	7.3	7.2	3.88	21.2
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	11	10	11	6.12	19.3
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1
Chloroform	µg/L	0.6B	0.52J	0.55B	<1	0.571B
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	1.1	0.8J	0.98J	0.817J	0.508J
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Trichloroethene	µg/L	0.36J	0.49J	0.52J	0.383J	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

Historical Analytical Results
Annual Operations Report - 2007
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Defense Depot Memphis, Tennessee

MW-168A

Analyte	Sample Name	Sample Date	MW-168A (86.9)	MW-168A (76.4)	MW-168A (86.9)	MW-168A (76.4)	MW-168A (76.4)	MW168AT - IS-1
			11/18/2005	11/18/2005	4/13/2006	4/13/2006	4/13/2006	10/20/2006
	UNIT							
1,1,1-Trichloroethane	µg/L		3.18	23.1	1.66	13.8	12.5	
1,1,2,2-Tetrachloroethane	µg/L		<1	<1	<1	<1	<0.5	
1,1,2-Trichloroethane	µg/L		<1	<1	<1	<1	<1	
1,1-Dichloroethane	µg/L		7.56	27.6	3.72	19.4	22.1	
Carbon tetrachloride	µg/L		<1	0.825J	<1	<1	0.257J	
Chloroform	µg/L		<1	0.883B	<1	0.957B	0.85	
cis-1,2-Dichloroethene	µg/L		<1	<1	<1	<1	<1	
Tetrachloroethene	µg/L		<1	0.888J	<1	<1	0.836J	
Total 1,2-Dichloroethene	µg/L		--	--	--	--	--	
trans-1,2-Dichloroethene	µg/L		<1	<1	<1	<1	<1	
Trichloroethene	µg/L		<1	<1	<1	1	1.32	
Vinyl chloride	µg/L		<1	<1	<1	<1	<1	

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL
B Estimated results possibly biased high or false
positive based on blank data
< Not detected at sample reporting limit
R Unusable
UJ Undetected, reporting limit is inaccurate or
imprecise

MW-168A

Analyte	Sample Name	MW168AB - IS-1	MW-168A-76_4-IS-2	MW-168A-86_9-IS-2	MW168A-76.4-IS-3	MW168A-86.9-IS-3
Sample Date	10/20/2006	4/9/2007	4/9/2007	10/8/2007	10/8/2007	10/8/2007
	UNIT					
1,1,1-Trichloroethane	µg/L	0.471J	13.5	1.68	9.08	0.681 J
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	1.99	22.9	4.85	15.9	2.2
Carbon tetrachloride	µg/L	<1	0.276 J	<1	0.446 J	<1
Chloroform	µg/L	<0.3	0.71	0.171 J	0.615	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	0.887 J	0.464 J	1.09	0.699 J
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Trichloroethene	µg/L	0.289J	1.08	0.565 J	0.627 J	0.294 J
Vinyl chloride	µg/L	<1	<1	<1	<1	<1

VOC samples analyzed using methods SW 8010/8020. SW8240, SW8260, SW8260A, SW8260B, or CV3990

ug/L micrograms per liter

-- Not Analyzed

DOE FLAGS:

J Estimated results based on QC data or reported below RL

B Estimated results possibly biased high or false positive based on blank data

Not detected at sample reporting limit

R Unusable

Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
Annual Operations Report - 2007
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Defense Depot Memphis, Tennessee

MW-169

Analyte	Sample Name	Sample Date	MW-169 12/12/2004	MW-169(86.2) 6/15/2005	MW-169(77.4) 6/15/2005	MW-169 (86.2) 11/18/2005	MW-169 (77.4) 11/18/2005	MW-169 (86.2) 4/13/2006
		UNIT						
1,1,1-Trichloroethane		µg/L	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane		µg/L	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane		µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	0.8B	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene		µg/L	0.26J	<1	<1	<1	<1	<1
Tetrachloroethene		µg/L	<1	<1J	<1J	<1	<1	<1
Total 1,2-Dichloroethene		µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Vinyl chloride		µg/L	<1J	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

Historical Analytical Results
Annual Operations Report - 2007
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Defense Depot Memphis, Tennessee

MW-169

Analyte	Sample Name	MW-169 (77.4)	MW-169T -IS-1	MW-169B -IS-1	MW-169-81_8-IS-2	MW169-81-8-IS-3
	Sample Date	4/13/2006	10/19/2006	10/19/2006	4/9/2007	10/8/2007
	UNIT					
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	0.282J	0.281J	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

DQE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
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Defense Depot Memphis, Tennessee

MW-170

Analyte	Sample Name	Sample Date	MW-170 12/12/2004	MW-170(77.7) 6/16/2005	MW-170(61.7) 6/16/2005	MW-170 (77.7) 11/18/2005	MW-170 (61.7) 11/18/2005	MW-170 (77.7) 4/13/2006
	UNIT							
1,1,1-Trichloroethane	µg/L	0.54J	<1	<1	2.01	<1	1.46	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	1.3	<1	<1	4.06	<1	4.37	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.42B	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1J	<1	<1	<1J	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

MW-170

Analyte	Sample Name	Sample Date	MW-170 (61.7)	MW-170T-IS-1	MW-170B-IS-1	MW-170-61_7-IS-2	MW-170-77_7-IS-2
			4/13/2006	10/19/2006	10/19/2006	4/9/2007	4/9/2007
	UNIT						
1,1,1-Trichloroethane	µg/L		<1	1	<1	0.833 J	<1
1,1,2,2-Tetrachloroethane	µg/L		<1	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	µg/L		<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L		2.84	3.52	<1	3.67	<1
Carbon tetrachloride	µg/L		<1	<1	<1	<1	<1
Chloroform	µg/L		<1	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L		<1	<1	<1	<1	<1
Tetrachloroethene	µg/L		<1	<1	<1	<1	<1
Total 1,2-Dichloroethene	µg/L		--	--	--	--	--
trans-1,2-Dichloroethene	µg/L		<1	<1	<1	<1	<1
Trichloroethene	µg/L		<1	<1	<1	<1	<1
Vinyl chloride	µg/L		<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

932 397

MW-170

Analyte	Sample Name	Sample Date	UNIT
	MW170-61.7-IS-3	10/8/2007	MW170-77.7-IS-3
1,1,1-Trichloroethane	0.864 J	<1	<1
1,1,2,2-Tetrachloroethane	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	<1	<1	<1
1,1-Dichloroethene	3.06	<1	<1
Carbon tetrachloride	<1	<1	<1
Chloroform	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	<1	<1	<1
Tetrachloroethene	0.485 J	<1	<1
Total 1,2-Dichloroethene	--	--	--
trans-1,2-Dichloroethene	<1	<1	<1
Trichloroethene	<1	<1	<1
Vinyl chloride	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

Historical Analytical Results
Annual Operations Report - 2007
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Defense Depot Memphis, Tennessee

MW-171

Analyte	Sample Name	MW-171 12/13/2004	MW-171(67.5) 6/16/2005	MW-171(57.2) 6/16/2005	MW-171 (67.5) 11/18/2005	MW-171 (57.2) 11/18/2005	MW-171 (67.5) 4/13/2006
	UNIT						
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1J	<1J	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

932 399

MW-171

Analyte	Sample Name	MW171 (57.2)	MW-171T - IS-1	MW-171B - IS-1	MW-171-62_4-IS-2	MW171-IS-3
	Sample Date	4/13/2006	10/19/2006	10/19/2006	4/9/2007	10/8/2007
	UNIT					
1,1,1-Trichloroethane	µg/L	<1	0.33J	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	0.544J	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

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imprecise

Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

RW-01

Analyte	Sample Name	Sample Date	RW-1 2/16/2000	RW-1 5/17/2000	RW-1 8/23/2000	RW-1 11/9/2000	RW-1 4/10/2002	RW-1 10/29/2003	RW-1 5/4/2004	RW1 10/22/2004	RW-01 6/13/2005	RW-01 11/14/2005
		UNIT										
1,1,1-Trichloroethane	µg/L		0.95J	<1	<1	<1	<1	<1	<3.3	<8J	<1	<1
1,1,2,2-Tetrachloroethane	µg/L		<1	<1	<1	<1	<1	<1	<3.3	<8	14J	8.89
1,1,2-Trichloroethane	µg/L		<1	<1	<1	<1	<1	<1	<3.3	<8	0.404J	<1
1,1-Dichloroethene	µg/L		<1	<1	<1	<1	<1	<1	<3.3	<8	<1	<1
Carbon tetrachloride	µg/L		42.4	45.4	41.5	46.1J	24.1	49.1	15	29J	29.4	28.4
Chloroform	µg/L		15.7	22.8	15.5	13.1J	68.2	286	45	170	123	185
cis-1,2-Dichloroethene	µg/L		<1	<1	<1	<1	1.16	4.3	<3.3	3.9J	2.75	5
Tetrachloroethene	µg/L		4.66	4.28	3.99	3.77J	4.36	9.36	7.3	8.6	5.32	5.57
Total 1,2-Dichloroethene	µg/L		--	--	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L		0.93J	1.18	0.8J	1.18J	1.55	2.86	2.9J	2.1J	1.53	2.32
Trichloroethene	µg/L		35.2	45.5	40.2	28J	58.2	154	87	130	81.4	109
Vinyl chloride	µg/L		<1	<1	<1	<1	<1	<1	<3.3	<8	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
- UJ Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

RW-01

Analyte	Sample Name	RW-01	RW-01 - IS-1	RW-1-RW-2	RW-1-RW-2
	Sample Date	4/11/2006	11/8/2006	4/11/2007	10/5/2007
UNIT					
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	1.78	1.79	1.3	1.3
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1
Carbon tetrachloride	µg/L	14.3	24.5	33.9	32.5
Chloroform	µg/L	69.3	120	146	180
cis-1,2-Dichloroethene	µg/L	1.88	2.93	4.75	4.81
Tetrachloroethene	µg/L	3.26	6.35	8.23	8.35
Total 1,2-Dichloroethene	µg/L	--	--	--	--
trans-1,2-Dichloroethene	µg/L	1.01	1.67	2.54	2.34
Trichloroethene	µg/L	52.8	88	109	143
Vinyl chloride	µg/L	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020 SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

DQE FLAGS:

- J Estimated results based on QC data or reported
below RL
B Estimated results possibly biased high or false
positive based on blank data
< Not detected at sample reporting limit
R Unusable
UJ Undetected, reporting limit is inaccurate or
imprecise

Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

RW-01A

Analyte	Sample Name	Sample Date	RW-1A	RW-1A	RW-1A	RW-1A	RW-1A	RW-1A	RW-1A	RW-1A	RW-1A	RW-1A	RW-1A	RW-1A
			5/24/1999	8/27/1999	11/1/1999	2/15/2000	5/17/2000	8/23/2000	11/9/2000	4/10/2002	10/1/2002	4/23/2003	10/29/2003	
		UNIT												
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	72.6	<1	46.5	49.8	25.8	35.3	43.9	156	187	167	167	169	169
1,1,2-Trichloroethane	µg/L	1.6	<1	2.12	1.54	0.82J	1.08	1.39	3.41	3.32J	2.7	4.22	4.22	4.22
1,1-Dichloroethene	µg/L	12.9	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1	<1
Carbon tetrachloride	µg/L	1.29	<1	16	15.2	10.6	9.47	15.6	44.5	65.3	14.6	33.6	33.6	33.6
Chloroform	µg/L	10	3.17	6.27	397	339	292	420J	700	1120	449	776	776	776
cis-1,2-Dichloroethene	µg/L	104	5	52.1	3.63	2.49	2.75	3.29	12.1	17.6	6.44	11.1	11.1	11.1
Tetrachloroethene	µg/L	5.52	10	1.18	3.14	2.31	2.2	2.62J	13.3	12.3	4.54	11.3	11.3	11.3
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	35.4	1.88	4.03	1.4	0.96J	0.96J	1.59	5.41	6.35J	1.34	3.64	3.64	3.64
Trichloroethene	µg/L	198	33.1	64.3	119	73	73.9	66.4	289	294	112	285	285	285
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

RW-01A

Analyte	Sample Name	Sample Date	RW-1A	RW1A	RW-01A	RW-01A	RW-01A	RW-01A	RW-01A -IS-I	RW-1A-RW-2	RW-1A-RW-2
			5/4/2004	10/22/2004	6/13/2005	12/8/2005	4/11/2006	11/8/2006	4/11/2007	10/5/2007	
		UNIT									
1,1,1-Trichloroethane		µg/L	<25	<33J	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane		µg/L	110	160	253J	146	131	202	113	179	179
1,1,2-Trichloroethane		µg/L	<25	<33	5.51	5.15	3.68	5.55	3.56	4.18	4.18
1,1-Dichloroethene		µg/L	<25	<33	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride		µg/L	24J	18J	46.8	20	16.4	18.1	18.9	10.5	10.5
Chloroform		µg/L	580J	680	1330	643	512	650	479	413	413
cis-1,2-Dichloroethene		µg/L	9J	9.8J	19.6	10.3	5.38	8.64	8.63	6.97	6.97
Tetrachloroethene		µg/L	10J	11J	17.2	8.05	6.06	9.83	7.91	4.8	4.8
Total 1,2-Dichloroethene		µg/L	--	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene		µg/L	18J	<33	5.67	2.1	1.82	2.47	2.34	1.37	1.37
Trichloroethene		µg/L	230	230	424	175J	152	209	159	141	141
Vinyl chloride		µg/L	<25	<33	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

RW-01B

[illegible]

VOC samples analyzed using methods SW 8010/8020. SW8240, SW8260, SW8260A, SW8260B, or CV3990

μg/L micrograms per liter

-- Not Analyzed

DOE FLAGS:

J Estimated results based on QC data or reported below RL

Estimated results possibly biased high or false positive based on blank data

< Not detected at sample reporting limit

R Unusable

Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
Annual Operations Report - 2007
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Defense Depot Memphis, Tennessee

RW-01B

Analyte	Sample Name	RW-01B	RW-01B	RW-01B	RW-01B - IS-1	RW-1B-RW-2	RW-1B-RW-2
Sample Date	6/13/2005	11/14/2005	4/11/2006	11/8/2006	4/11/2007	10/5/2007	
UNIT							
1,1,1-Trichloroethane	<1	<1	<1	<1	<1	<1	
1,1,2,2-Tetrachloroethane	7.53J	<1	<1	0.303J	1.76	43.7	
1,1,2-Trichloroethane	<1	<1	<1	<1	<1	1.21	
1,1-Dichloroethene	<1	<1	<1	<1	<1	<1	
Carbon tetrachloride	33.5	11.6	21.4	15.4	13.7	10.8	
Chloroform	85.4	35.6	47.5	79.1	56.6	187	
cis-1,2-Dichloroethene	9.04	5.41	3.62	3.86	2.74	4.52	
Tetrachloroethene	4.9	1.73	3.6	3.68	2.88	3.88	
Total 1,2-Dichloroethene	--	--	--	--	--	--	
trans-1,2-Dichloroethene	1.63	0.908J	0.875J	0.807J	0.677 J	1	
Trichloroethene	74	29.4	46.1	53.4	39.2	74.8	
Vinyl chloride	<1	<1	<1	<1	<1	<1	

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

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Historical Analytical Results
Annual Operations Report - 2007
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Defense Depot Memphis, Tennessee

RW-02

Analyte	Sample Name	Sample Date	RW-2	RW-2	RW-2	RW-2	RW-2	RW-2	RW-2	RW-2	RW-2	RW-2	RW2
			2/16/2000	5/17/2000	8/23/2000	11/10/2000	4/10/2002	10/11/2002	4/17/2003	10/29/2003	5/4/2004	10/22/2004	
		UNIT											
		µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<2.9	<4J	
	1,1,1-Trichloroethane	µg/L	4.04	<1	<1	2.18	77.1	94.7	80.6	95.9	67	83	
	1,1,2,2-Tetrachloroethane	µg/L	0.61J	<1	0.51J	<1	2.74	3.34	2.91	3.02	1.9J	2.8J	
	1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<2.9	<4	
	1,1-Dichloroethene	µg/L	15.7	16.4	16.8	23.8	13	21.6	15.5	14	6.5	7.2J	
	Carbon tetrachloride	µg/L	14.2	11.5	15.4	20.2	34.4	23.1	12.4	11.4	13	9.4	
	Chloroform	µg/L	17.4	10.7	13.6	12.1	65.9	88.1	68.7	78.6	55	72	
	cis-1,2-Dichloroethene	µg/L	1.25	1.06	1.29	1.36J	1.48	1.48	1.88	1.56	1.2J	1.6J	
	Tetrachloroethene	µg/L	--	--	--	--	--	--	--	--	--	--	
	Total 1,2-Dichloroethene	µg/L	1.69	1.3	1.77	1.93	5.22	6.49	3.89	4.57	4.4J	3.7J	
	trans-1,2-Dichloroethene	µg/L	21.4	16.9	20.6	17.2	63.9	64.6	73.4	83.4	57	65	
	Trichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<2.9	<4	
	Vinyl chloride	µg/L											

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

- J Estimated results based on QC data or reported below RL
- B Estimated results possibly biased high or false positive based on blank data
- < Not detected at sample reporting limit
- R Unusable
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Historical Analytical Results
Annual Operations Report - 2007
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Defense Depot Memphis, Tennessee

RW-02

Analyte	Sample Name	RW-02 6/13/2005	RW-02 11/19/2005	RW-02 4/11/2006	RW-02 - IS-1 11/8/2006	RW-2-RW-2 4/11/2007	RW-2-RW-2 10/5/2007
	UNIT						
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	88.7	18.6	64.7	99.5	56.6	77.5
1,1,2-Trichloroethane	µg/L	2.39	0.882J	2.72	3.4	2.17	2.31
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	13.5	21.1	7.62	9.05	12.5	11.3
Chloroform	µg/L	15.9	99.9	25.9	34	118	212
cis-1,2-Dichloroethene	µg/L	89.9	12.3	56.5	75.1	39	20
Tetrachloroethene	µg/L	1.74	3.57	1.4	1.82	3.12	4.03
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	4.52	1.75	3.1	3.69	2.84	1.91
Trichloroethene	µg/L	58.8	69.2	47.9	65	72.3	95.6
Vinyl chloride	µg/L	0.654J	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

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Historical Analytical Results
Annual Operations Report - 2007
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Defense Depot Memphis, Tennessee

RW-03

Analyte	Sample Name	5/24/1999	8/27/1999	11/1/1999	2/14/2000	5/18/2000	8/24/2000	11/20/2000	4/10/2002	10/1/2002	4/17/2003	4/17/2003
	UNIT											
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	--
1,1,2,2-Tetrachloroethane	µg/L	42.5	40.8	42.3	61.9	85.5	59.6	97.5	4.35	3.61	31.7	37.7
1,1,2-Trichloroethane	µg/L	2.73	1.98	1.85	2.8	3.23	2.39	<1	<1	<1	1.31	1.46
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	--
Carbon tetrachloride	µg/L	13.3	10.5	13.2	10.9	16.3	13.8	16	9.75	15.2	19.1	22.5
Chloroform	µg/L	1.36	5.66	5.24	4.57	5.51	4.77	5.36	2.43	3.97	17.5	20.7
cis-1,2-Dichloroethene	µg/L	56	47	44	101	138	70.8	160	15.4	16.9	36	38.6
Tetrachloroethene	µg/L	<1	0.73J	1.01	0.65J	0.73J	0.84J	<1	1.3	0.92J	2.81	2.82
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	3.94	2.97	3.31	4.52	7.42	4.78	7.53	2.47	2.56	2.78	2.83
Trichloroethene	µg/L	54.3	42.1	55	57.8	78.8	57.4	62.1	87.2	70.4	65.7	70.4
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	--

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

RW-03

Analyte	Sample Name	Sample Date	RW-3 10/29/2003	RW-3 5/4/2004	RW-3 10/22/2004	RW-3 6/13/2005	RW-3 11/14/2005	RW-3 4/11/2006	RW-3-IS-1 11/8/2006	RW-3-RW-2 4/11/2007	RW-3-RW-2 10/5/2007
			UNIT								
	1,1,1-Trichloroethane		<1	<2.9	<2J	<1	<1	<1	<1	<1	<1
	1,1,2,2-Tetrachloroethane		<1	<2.9	<2	27.6J	27.6	16	26.7	29.5	16.1
	1,1,2-Trichloroethane		<1	<2.9	<2	1.03	1.46	0.775J	1.09	1.29	0.718 J
	1,1-Dichloroethene		<1	<2.9	<2	<1	<1	<1	<1	<1	<1
	Carbon tetrachloride		10.9	4.3	5.2J	5.88	6.51	3.6	5.03	4.49	4.07
	Chloroform		2.08	1.2J	1.8J	2.26	2.98	1.68	2.22	2.15	9.65
	cis-1,2-Dichloroethene		9.04	6.9	8.9	24.8	27.5	13.7	19.4	25.3	9.8
	Tetrachloroethene		1.1	1.1J	1.2J	1.08	1.13	0.928J	1.24	1.21	0.807 J
	Total 1,2-Dichloroethene		--	--	--	--	--	--	--	--	--
	trans-1,2-Dichloroethene		1.73	2.9J	1.2J	2.14	1.44	1.22	1.73	1.81	0.729 J
	Trichloroethene		66.4	68	54	56.6	59.7	49.9	62.7	59.8	31
	Vinyl chloride		<1	<2.9	<2	0.512J	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

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imprecise

Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

RW-04

Analyte	Sample Name	5/24/1999	8/27/1999	11/1/1999	2/14/2000	5/15/2000	8/24/2000	11/20/2000	4/10/2002	10/1/2002	4/17/2003	5/4/2004
	UNIT											
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<25
1,1,2,2-Tetrachloroethane	µg/L	21.9	19.2	<1	12.3	12.9	20.2	14.9	37.5	669	55.4	250
1,1,2-Trichloroethane	µg/L	1.5	1.4	<1	0.76J	0.7J	1.41	<1	3.33	5.25	2.87	<25
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<25
Carbon tetrachloride	µg/L	3.51	3.23	<1	6.97	4.26	5.83	<1	1.7	1.77	1.61	<25
Chloroform	µg/L	<1	2.3	<1	2.8	2.27	2.82	<1	2.23	3.33	2.41	<25
cis-1,2-Dichloroethene	µg/L	15.4	17.6	26.6J	15	16	29.6	17.8	26.8	38.8	22.8	26
Tetrachloroethene	µg/L	2.4	2.92	<1	2.03	1.97	5.14	<1	6.21	5.73	5.97	7.3J
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	2.74	3.03	<1	2.15	2.65	4.72	3.08	7.01	8.11	4.24	19J
Trichloroethene	µg/L	294	368	649	252	316	438	204J	665	1050	562	820
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<25

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

Analyte	Sample Name	RW-4	RW-04	RW-04	RW-04	RW-04 -IS-1	RW-4-RW-2	RW-4-RW-2
	Sample Date	10/22/2004	6/13/2005	11/14/2005	4/11/2006	11/8/2006	4/11/2007	10/5/2007
	UNIT							
1,1,1-Trichloroethane	µg/L	<42J	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	840	1170J	799	264	230	127	288
1,1,2-Trichloroethane	µg/L	<42	20.4	11.3	11.8	5.91	3.43	3.99
1,1-Dichloroethene	µg/L	<42	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<42J	1.84	1.37	0.698J	1.56	1.23	2.48
Chloroform	µg/L	<42	4.35	2.88	2.75	1.96	1.74	1.68
cis-1,2-Dichloroethene	µg/L	25J	60.7	33.1	30	18.9	19.6	14.2
Tetrachloroethene	µg/L	<42	16	7.05	8.25	7.13	8.99	8.02
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<42	11.4	6.18	5.65	3.97	4.6	2.98
Trichloroethene	µg/L	860	1620	1490	1080	593	743	784
Vinyl chloride	µg/L	<42	<1	<1	<1	<1	<1	<1

VOC samples analyzed using methods SW 8010/8020. SW8240, SW8260, SW8260A, SW8260B, or CV3990
 µg/L micrograms per liter
 -- Not Analyzed

J	Estimated results based on QC data or reported below RL
B	Estimated results possibly biased high or false positive based on blank data
<	Not detected at sample reporting limit
R	Unusable
UJ	Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

RW-05

Analyte	Sample Name	2/1/1999	5/24/1999	8/27/1999	11/1/1999	2/14/2000	8/24/2000	11/20/2000	4/10/2002	10/1/2002	4/17/2003	10/29/2003
	UNIT											
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	3.13	582	1380	2260	3120	167	<1	196	47.8	5.6	14.9
1,1,2-Trichloroethane	µg/L	<1	<1	1.15	<1	1.93	0.6J	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	2.65	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	1.62	<1	1.36	1.29	<1	1.24	<1	1.04	1.04
cis-1,2-Dichloroethene	µg/L	7.34	50.1	49.6	48.4J	50.2	17.9	<1	15.8	12.8	3.95	7.08
Tetrachloroethene	µg/L	2.16	12.9	12.2	45.1J	10.8	1.45	<1	5.89	4.36	10.2	7.47
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	2.4	15.7	14.3	<1	12.3	2.28	<1	5.08	2.3	1.05	2.23
Trichloroethene	µg/L	171	1180	1270	1290	1170	132	1.89	400	142	95	193
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

[illegible]

VOC samples analyzed using methods SW/8010/8020. SW8240, SW8260, SW8260A, SW8260B, or CV3990
ug/L micrograms per liter

DOE FLAGS:

J	Estimated results based on QC data or reported below RL
B	Estimated results possibly biased high or false positive based on blank data
<	Not detected at sample reporting limit
R	Unusable
UJ	Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
Annual Operations Report - 2007
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Defense Depot Memphis, Tennessee

RW-06

Analyte	Sample Name	RW-6	RW-6	RW-6	RW-6	RW-6	RW-6	RW-6	RW-6	RW-6	RW-6	RW-6
	Sample Date	2/4/1999	5/24/1999	8/27/1999	11/1/1999	2/14/2000	5/15/2000	8/24/2000	11/20/2000	4/11/2002	10/1/2002	
	UNIT											
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	1.56	<1	3.09	2.48	3.2	2.26	1.98	2.38	1.37	3.15	3.15
cis-1,2-Dichloroethene	µg/L	3.26	4.53	5.1	2.34	1.18	5.12	5.96	3.14	1.39	10	10
Tetrachloroethene	µg/L	19.1	4.93	10.1	5.8	6.48	5.52	5.9	2.18J	28.7	32.6	32.6
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	1.03	1.49	1.89	1.59	0.69J	2.03	2.28	1.25	0.76J	3.98	3.98
Trichloroethene	µg/L	19.6	22	32.7	24.2	17	37.9	34	11.3	5.42	27.2	27.2
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

E FLAGS:

- J Estimated results based on QC data or reported below RL
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- < Not detected at sample reporting limit
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Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

RW-06

Analyte	Sample Name	RW-6	RW-6	RW-6	RW-6	RW-06	RW-06	RW-06	RW-06 - IS-1
	Sample Date	4/17/2003	10/29/2003	5/4/2004	10/22/2004	6/13/2005	11/14/2005	4/11/2006	11/8/2006
	UNIT								
1,1,1-Trichloroethane	µg/L	<1	<1	<1.2	<1.7J	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1.2	<1.7	2.34J	<1	<1	0.772
1,1,2-Trichloroethane	µg/L	<1	<1	<1.2	<1.7	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1.2	<1.7	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1.2	<1.7J	<1	<1	<1	<1
Chloroform	µg/L	3.11	2.15	1.8	1.8	2.14	2.2	2.06	1.87
cis-1,2-Dichloroethene	µg/L	15.7	11.2	11	11	22.3	18.6	16.1	18
Tetrachloroethene	µg/L	37.6	37.1	20	24	27.9	18.8	19.7	20.7
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	5.13	4.01	3.8J	3.5	8	6.68	5.89	6.58
Trichloroethene	µg/L	59.4	40.7	39	35	68.2	63.8	59.3	68.8
Vinyl chloride	µg/L	<1	<1	<1.2	<1.7	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

E FLAGS:

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below RL
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positive based on blank data
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imprecise

Historical Analytical Results
Annual Operations Report - 2007
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Defense Depot Memphis, Tennessee

RW-06

Analyte	Sample Name	RW-6-RW-2	RW-6-RW-2
	Sample Date	4/11/2007	10/5/2007
	UNIT		
1,1,1-Trichloroethane	µg/L	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	0.448 J	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1
1,1-Dichloroethene	µg/L	<1	<1
Carbon tetrachloride	µg/L	<1	0.385 J
Chloroform	µg/L	2.85	1.69
cis-1,2-Dichloroethene	µg/L	21.4	4.54
Tetrachloroethene	µg/L	21.9	14.1
Total 1,2-Dichloroethene	µg/L	--	--
trans-1,2-Dichloroethene	µg/L	8.77	1.3
Trichloroethene	µg/L	88.5	35.5
Vinyl chloride	µg/L	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

E FLAGS:

- J Estimated results based on QC data or reported below RL
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- < Not detected at sample reporting limit
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Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater (RA - Year Nine
Defense Depot Memphis, Tennessee

RW-07

Analyte	Sample Name	RW-7	RW-7	RW-7	RW-7	RW-7	RW-7	RW-7	RW-7	RW-7	RW-7	RW-7	RW-7	RW-7	RW-7
Sample Date	Sample Date	2/4/1999	5/24/1999	8/27/1999	11/1/1999	2/14/2000	5/15/2000	8/24/2000	#####	4/10/2002	10/1/2002	4/17/2003			
UNIT															
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	14	28.8	43.2	60.7	49.9	52.2	65.8	49.8	115	156	144			
1,1,2-Trichloroethane	µg/L	<1	<1	0.85J	1.08	1.03	0.95J	1.44	1.88	1.87	1.43	2.2			
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	0.54J	<1	<1	<1	<1	0.43J	<1	0.98J	<1	<1	<1	<1
Chloroform	µg/L	1.79	<1	3.39	2.28	1.84	1.27	1.59	3.08	2.64	6.66	3.48			
cis-1,2-Dichloroethene	µg/L	35	54.6	59.1	74.7	70.3	59.6	70.6	86.6	51.2	50.4	63.8			
Tetrachloroethene	µg/L	8.84	7.94	9.81	12.2	9.33	7.76	10.7	9.3J	4.96	4.22	5.94			
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	11.8	17.1	17.3	23.6	19.2	17.4	19.7	22.9	12.7	10.8	13.7			
Trichloroethene	µg/L	64.2	89.5	94	145	102	97.2	98.9	101	74.1	55.3	108			
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

E FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

RW-07

Analyte	Sample Name	RW-7 10/29/2003	RW-7 5/4/2004	RW7 10/22/2004	RW-07 6/13/2005	RW-07 11/14/2005	RW-07 4/14/2006	RW-07 - IS-1 11/8/2006	RW-7-RW-2 4/1/2007	RW-7-RW-2 10/5/2007
	UNIT									
	µg/L	<1	<5	<4J	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	µg/L	214	160	100	155J	56.5	9.28	90.3J	45.1	44.5
1,1,2,2-Tetrachloroethane	µg/L	2.21	<5	1.6J	1.89	1.28	<1	1.94	0.921 J	0.325 J
1,1,2-Trichloroethane	µg/L	<1	<5	<4	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<5	<4J	<1	<1	<1	0.762J	<1	0.34 J
Carbon tetrachloride	µg/L	3.87	3J	3.2J	4.86	3.43	5.02	7.16	1.66	2.44
Chloroform	µg/L	56.8	42	51	61.6	60.4	15.5	62.6	36.7	3.55
cis-1,2-Dichloroethene	µg/L	5.35	3.3J	4.4	7.04	3.98	3.33	6.06	3.19	4.35
Tetrachloroethene	µg/L	--	--	--	--	--	--	--	--	--
Total 1,2-Dichloroethene	µg/L	12	12J	9.2	13.1	17	4.4	14.7	9.68	0.529 J
trans-1,2-Dichloroethene	µg/L	102	79	95	109	117	40.7	153J	106	7.42
Trichloroethene	µg/L	<1	<5	<4	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<5	<4	<1	<1	<1	<1	<1	<1

VOC samples analyzed using methods SW 8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

FLAGS:

J	Estimated results based on QC data or reported below RL
B	Estimated results possibly biased high or false positive based on blank data
<	Not detected at sample reporting limit
R	Unusable
UU	Undetected, reporting limit is inaccurate or imprecise

Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

RW-08

Analyte	Sample Name	RW-8	RW-8	RW-8	RW-8	RW-8	RW-8	RW-8	RW-8	RW-8	RW-8	RW-8	RW-8	RW-8	RW-8	RW-8	RW-8
Sample Date		2/4/1999	5/24/1999	8/27/1999	11/1/1999	2/14/2000	5/15/2000	8/24/2000	11/20/2000	4/10/2002	10/1/2002	4/17/2003					
UNIT																	
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	11.4	74.8	108	119	121	121	109	<1	171	312	350					
1,1,2-Trichloroethane	µg/L	<1	1.66	1.32	1.28	1.58	1.74	1.97	<1	2.98	3.9	4.85					
1,1-Dichloroethene	µg/L	8.54	12.2	9.79	<1	6.82	4.98	5.1	<1	14.2	21.8	14.1					
Carbon tetrachloride	µg/L	<1	1.38	1.3	1.11	1.03	0.89J	0.94J	<1	1.49	2.76	1.96					
Chloroform	µg/L	2.49	10.3	14.1	10.3	10.5	8.41	8.72	6.53	15.3	36.2	20					
cis-1,2-Dichloroethene	µg/L	11.9	104	93	89.1	115	120	128	40.1	130	166	168					
Tetrachloroethene	µg/L	3.5	5.96	5.5	6.14	6.67	5.19	5.66	2.02J	10.4	8.35	14.3					
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--	--	--	--	--					
trans-1,2-Dichloroethene	µg/L	2.96	35.4	27	<1	30.8	37.6	39.7	11.9	38	38.6	36.3					
Trichloroethene	µg/L	26.4	273	173	261	190	268	190	56.9	288	189	413					
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

< Not detected at sample reporting limit

R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

RW-08

Analyte	Sample Name	RW-8	RW-8	RW-08	RW-08	RW-08	RW-08 - IS-1	RW-8-RW-2	RW-8-RW-2
	Sample Date	10/29/2003	10/22/2004	6/13/2005	11/14/2005	4/11/2006	11/8/2006	4/11/2007	10/5/2007
	UNIT								
1,1,1-Trichloroethane	µg/L	<1	<11J	<1	<10	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	223	270	588J	353	195	174	158	19.1
1,1,2-Trichloroethane	µg/L	3.12	4J	6.69	<10	4.47	3.3	3.8	0.982 J
1,1-Dichloroethene	µg/L	14.2	12	8.67	11.2	2.12	3.45	4.46	3.18
Carbon tetrachloride	µg/L	1.79	<11J	1.3	<10	0.755J	1.22	0.813 J	0.532 J
Chloroform	µg/L	18.7	16	15.3	27.1	10.6	12.1	8.93	5.4
cis-1,2-Dichloroethene	µg/L	116	130	229	236	151	162	95	7.3
Tetrachloroethene	µg/L	11	8.8J	7.36	<10	3.74	4.56	5.27	2.77
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	26.1	28	52.3	44.1	32.6	43.7	67.6	1.59
Trichloroethene	µg/L	232	240	386	361	266	294	187	16.3
Vinyl chloride	µg/L	<1	<11	0.677J	<10	<1	<1	<1	<1

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990
µg/L micrograms per liter
-- Not Analyzed

DQE FLAGS:

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Historical Analytical Results
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee

RW-09

Analyte	Sample Name	RW-9	RW-9	RW-9	RW-9	RW-9	RW-9	RW-9	RW-9	RW-9	RW-9	RW-9
Sample Date	5/24/1999	8/27/1999	11/1/1999	2/14/2000	5/15/2000	8/24/2000	11/20/2000	4/10/2002	10/1/2002	4/17/2003		
UNIT												
1,1,1-Trichloroethane	µg/L	2.01	1.67	1.73	1.56	1.4	1.25	1.92	1.28	1.49	1.23	
1,1,2,2-Tetrachloroethane	µg/L	1.21	1.52	<1	2.98	<1	2.55	<1	5.07	10.2	5.35	
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
1,1-Dichloroethene	µg/L	49.2	45.1	44.4	52.9	35.9	45.4	52.5	32.4	42	33.2	
Carbon tetrachloride	µg/L	1.43	1.21	1.12	0.79J	0.9J	1.17	<1	1.23	1.28	1.5	
Chloroform	µg/L	10.2	15.4	11.8	12.5	10.8	12.5	13.3	12.1	23.4	16.5	
cis-1,2-Dichloroethene	µg/L	8.47	5.65	4.95	5.45	6.03	7.68	2.02	7.23	7.55	9.11	
Tetrachloroethene	µg/L	41.5	37.7	38.8	61.2	32.1	32.9	54.3J	42.9	30.4	64.6	
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--	--	--	--	
trans-1,2-Dichloroethene	µg/L	3.18	1.94	1.86	2.23	2.24	2.53	<1	2.41	2.03	2.71	
Trichloroethene	µg/L	52	41.1	43.3	51.4	37.7	35.5	36.3	42.2	35	61.3	
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	

NOTES:

VOC samples analyzed using methods SW
8010/8020, SW8240, SW8260, SW8260A,
SW8260B, or CV3990

µg/L micrograms per liter

-- Not Analyzed

DQE FLAGS:

J Estimated results based on QC data or reported
below RL

B Estimated results possibly biased high or false
positive based on blank data

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R Unusable

UJ Undetected, reporting limit is inaccurate or
imprecise

RW-09

Analyte	Sample Name	RW-9 10/29/2003	RW-9 5/4/2004	RW9 10/22/2004	RW-09 6/13/2005	RW-09 11/14/2005	RW-09 4/11/2006	RW-09 -IS-1 11/8/2006	RW-9-RW-2 4/11/2007	RW-9-RW-2 10/5/2007
		UNIT								
	I,1,1-Trichloroethane	<1	0.85J	0.61J	<1	<10	<1	0.658J	0.498 J	1.25
	I,1,2,2-Tetrachloroethane	90.3	6.2	6.3	11.2J	11.5	4.42	3.25	2.85	2.34
	1,1,2-Trichloroethane	1.7	<2	<2	<1	<10	<1	<1	<1	<1
	1,1-Dichloroethene	7.46	31	24	28	44.4	19.5	18	25.4	19
	Carbon tetrachloride	6.55	0.8J	0.43J	<1	<10	<1	0.846J	<1	1.6
	Chloroform	69.7	10	12	12.3	16.5	5.82	5.51	2.74	5.55
	cis-1,2-Dichloroethene	47	9	5.4	11.4	18.1	8.95	8.61	5.93	0.3 J
	Tetrachloroethene	26.5	35	32	33.7	39.2	20.1	20.4	22.6	19.8
	Total 1,2-Dichloroethene	--	--	--	--	--	--	--	--	--
	trans-1,2-Dichloroethene	9.51	4.1J	1.6J	4.68	<10	3.6	3.54	2.15	<1
	Trichloroethene	120	49	40	56.9	88.2	40.4	40.8	32	18.5
	Vinyl chloride	<1	<2	<2	<1	<10	<1	<1	<1	<1

VOC samples analyzed using methods SW 8010/8020. SW8240, SW8260, SW8260A, SW8260B, or CV3990

μg/L micrograms per liter

-- Not Analyzed

J Estimated results based on QC data or reported below RL

B Estimated results possibly biased high or false positive based on blank data

< Not detected at sample reporting limit

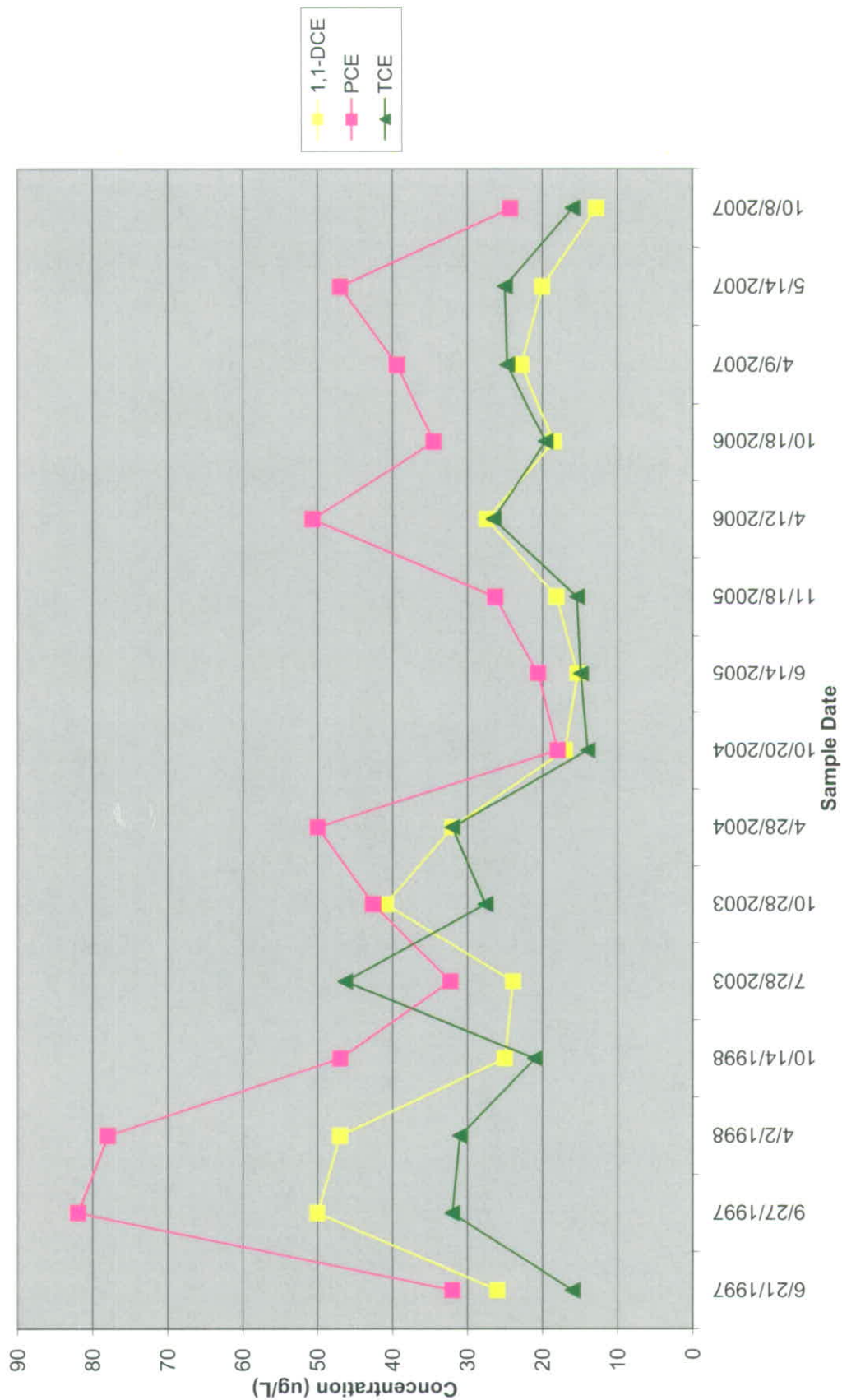
R Unusable

UI Undetected, reporting limit is inaccurate or imprecise

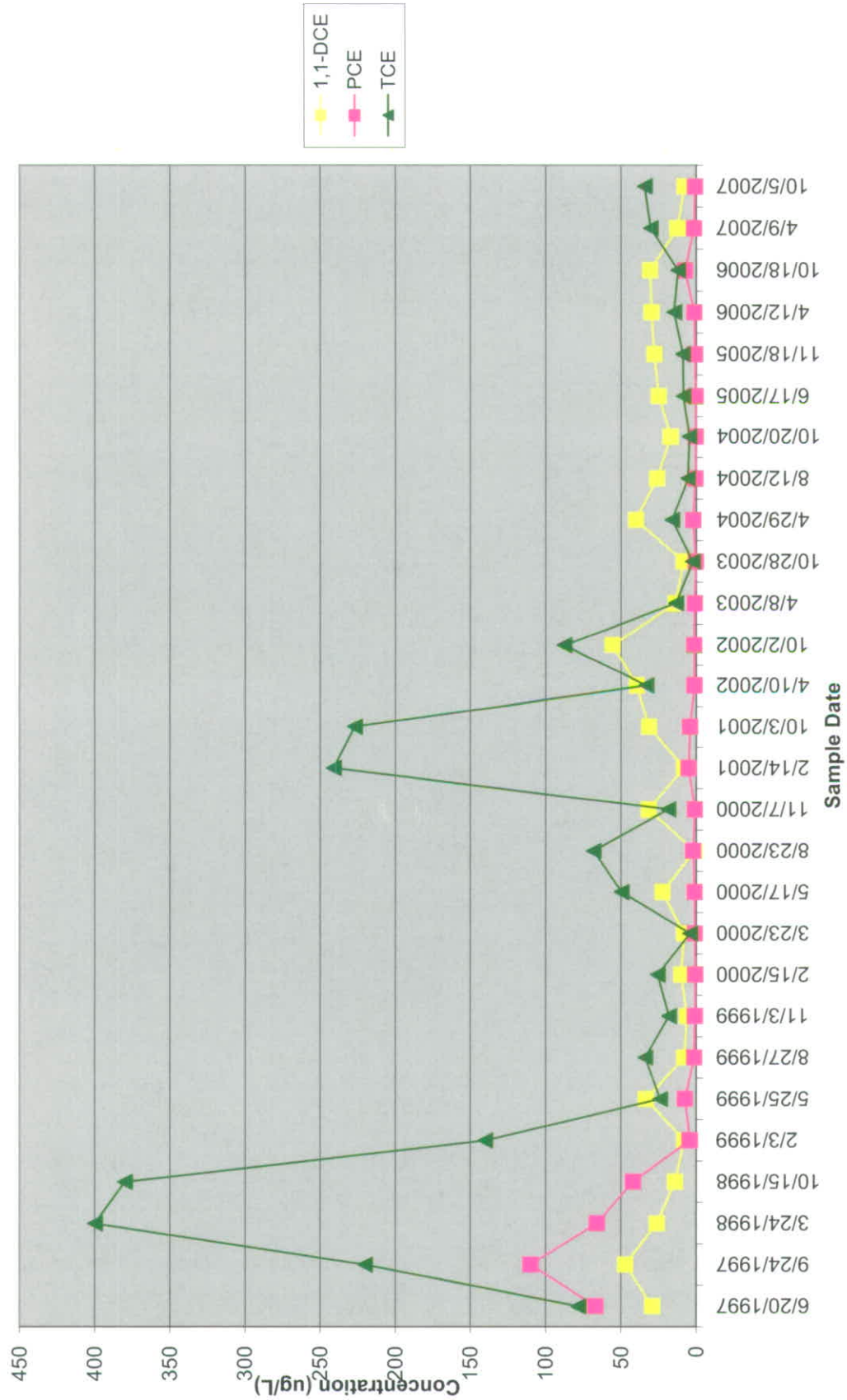
APPENDIX F

TIME TREND PLOTS FOR RECOVERY WELLS

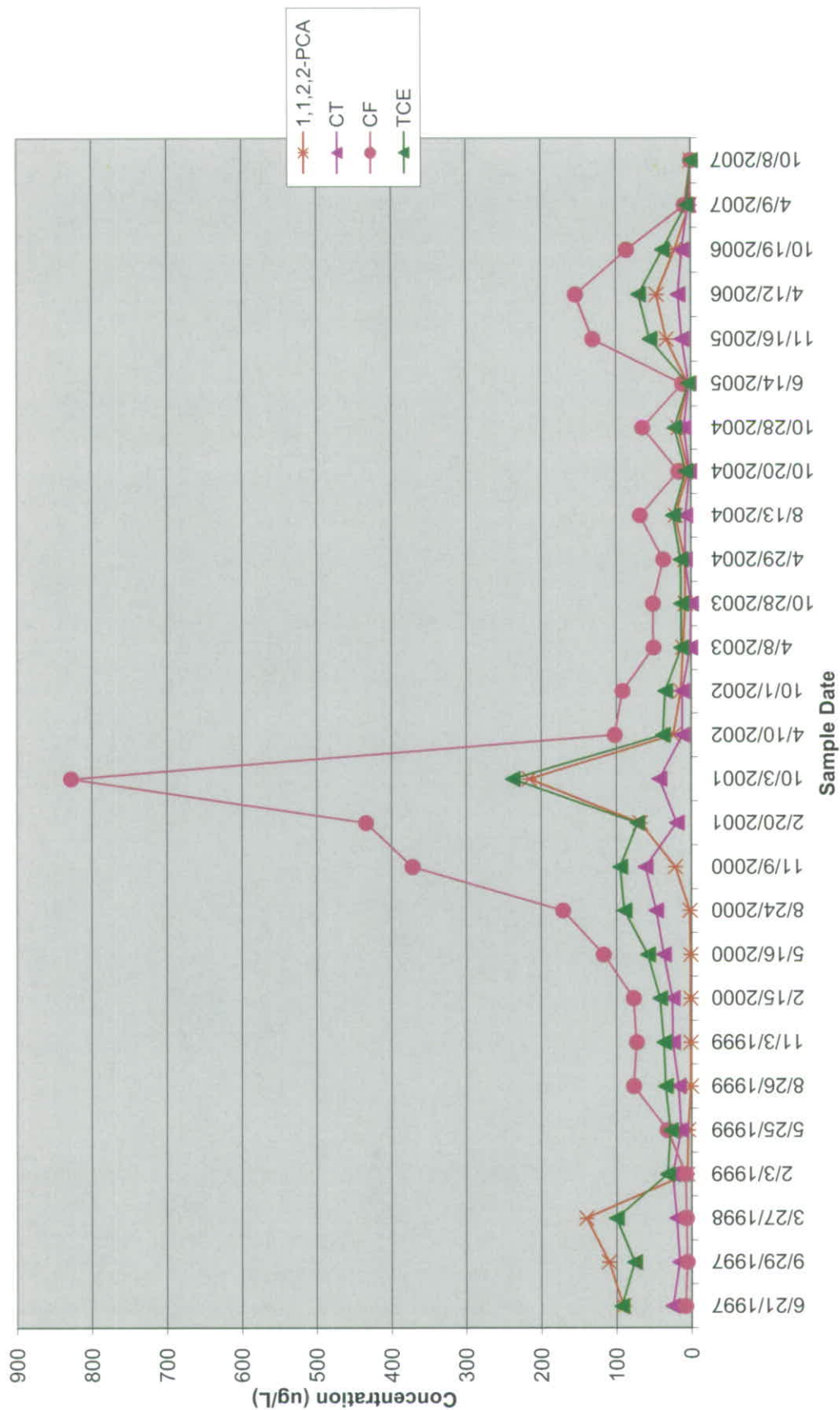
Time Trend Plots
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee
MW-07



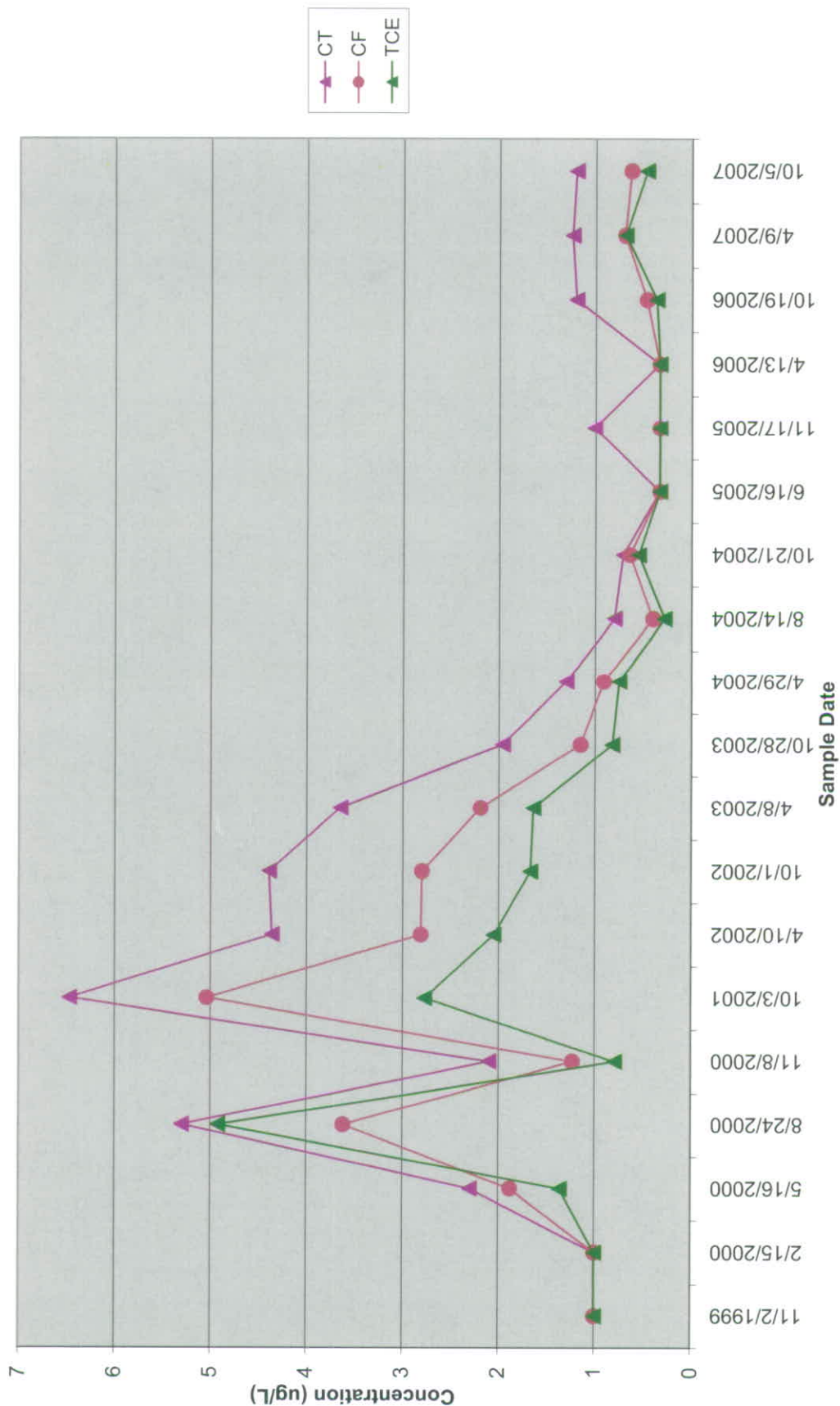
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Defense Depot Memphis, Tennessee
MW-31



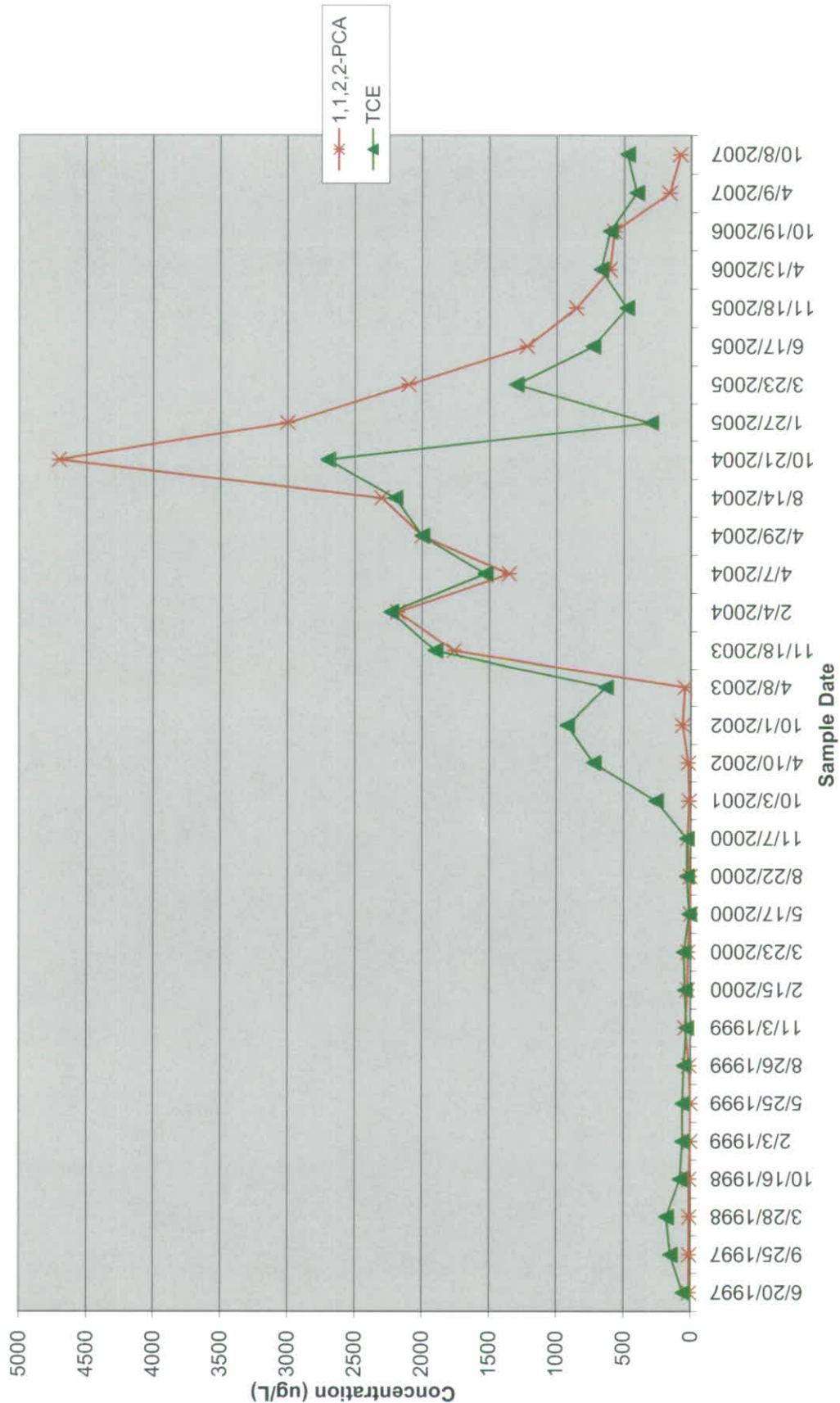
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 Dunn Field Groundwater IRA - Year Nine
 Defense Depot Memphis, Tennessee
MW-32



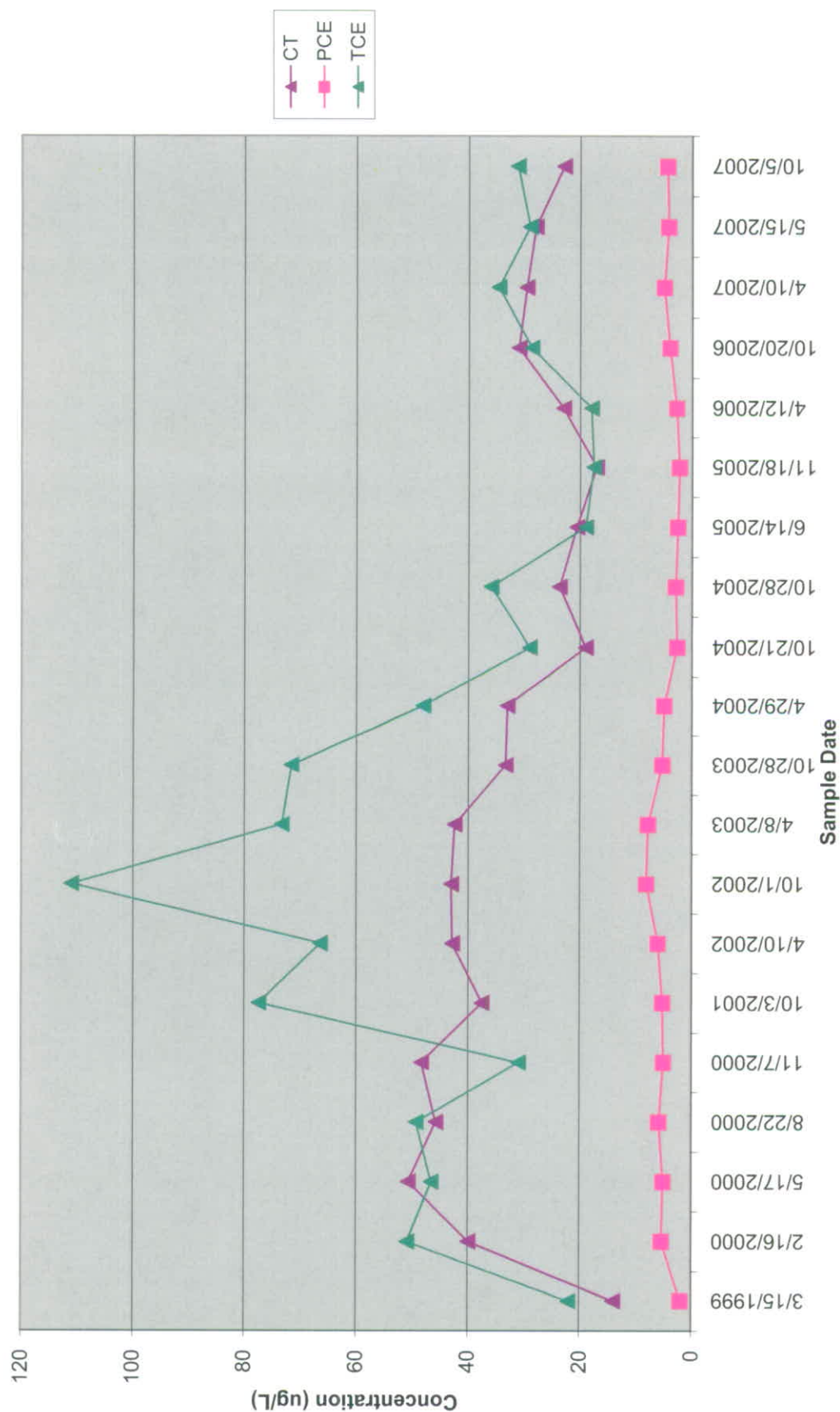
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Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee
MW-44



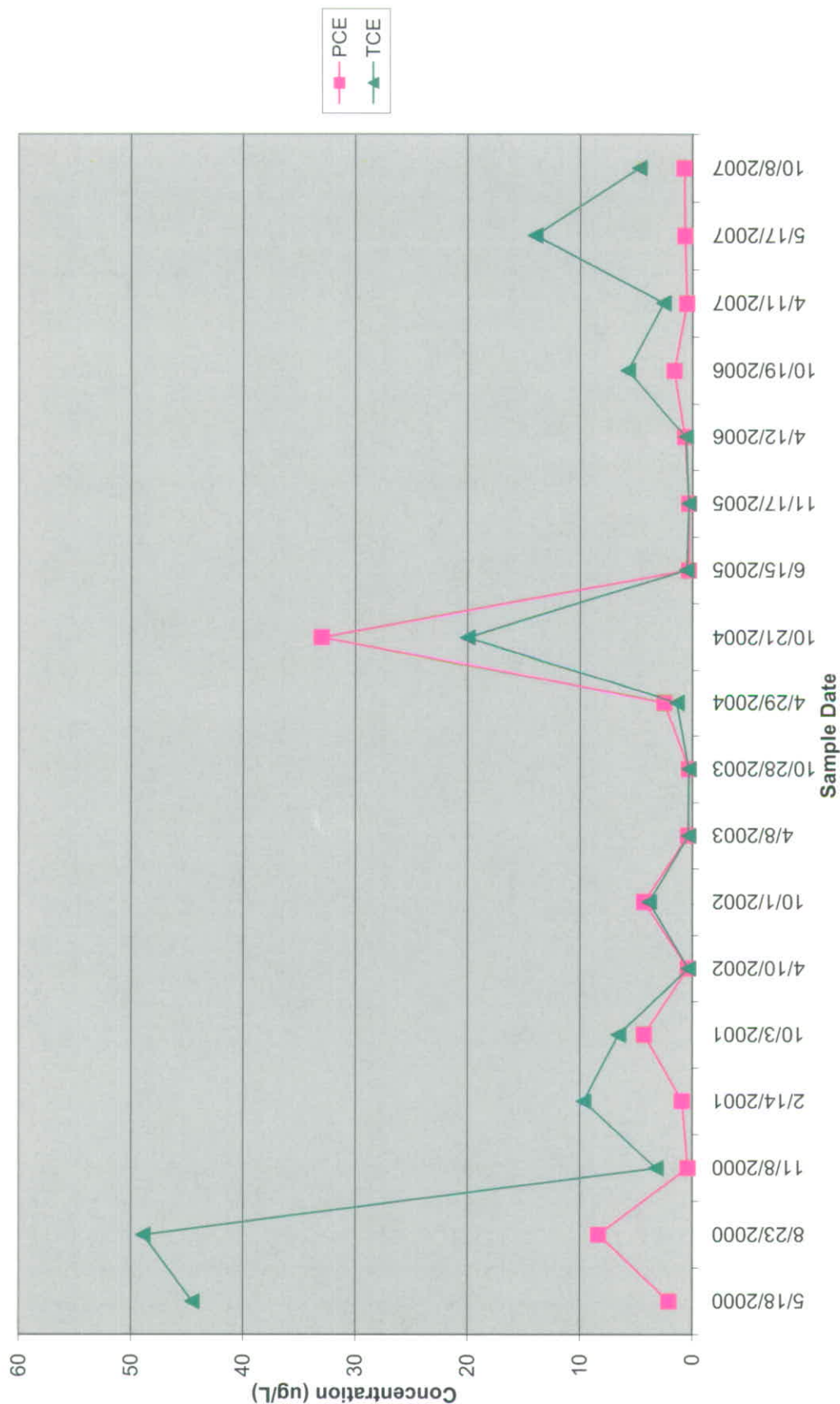
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 Dunn Field Groundwater IRA - Year Nine
 Defense Depot Memphis, Tennessee
MW-54



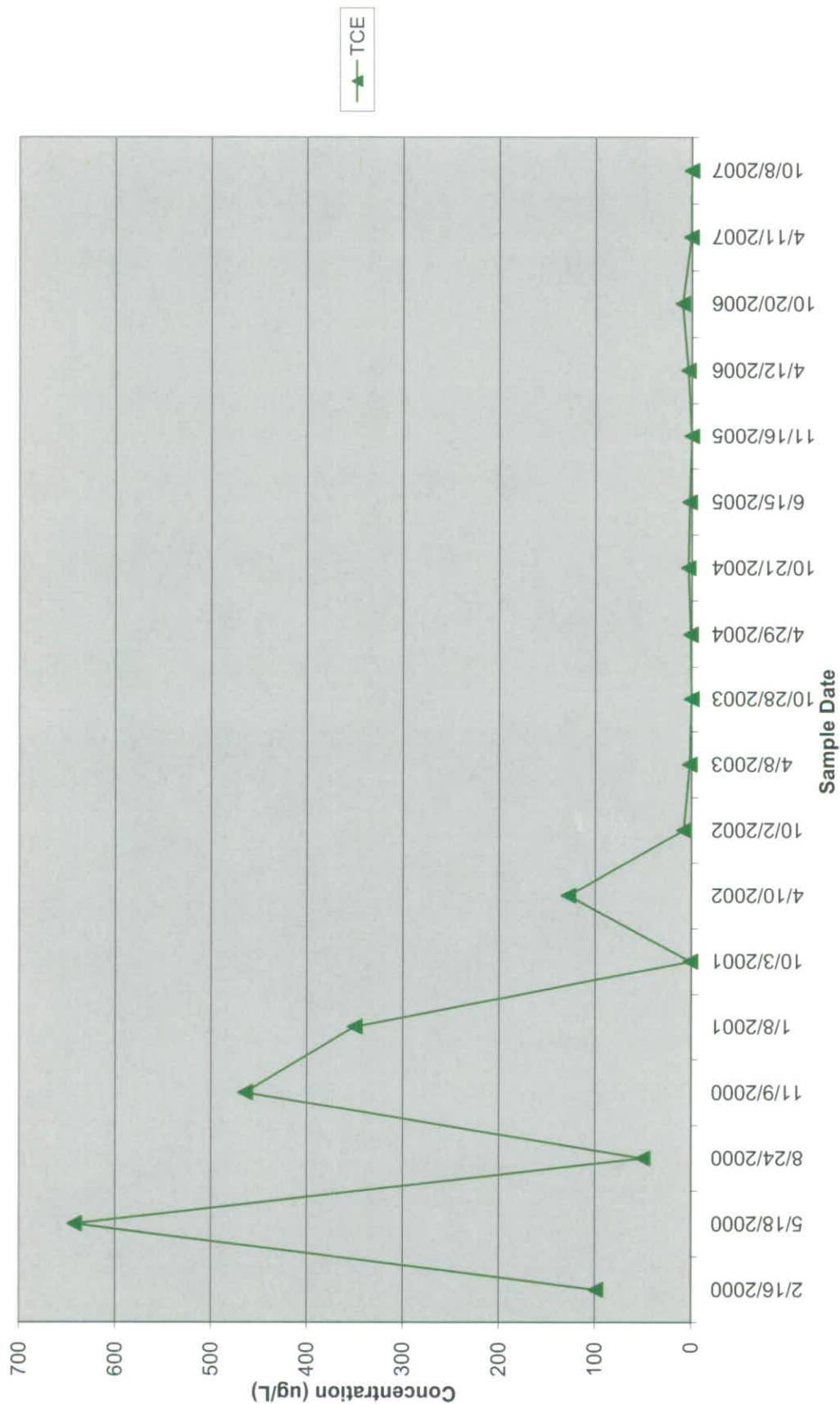
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 Dunn Field Groundwater IRA - Year Nine
 Defense Depot Memphis, Tennessee
MW-57



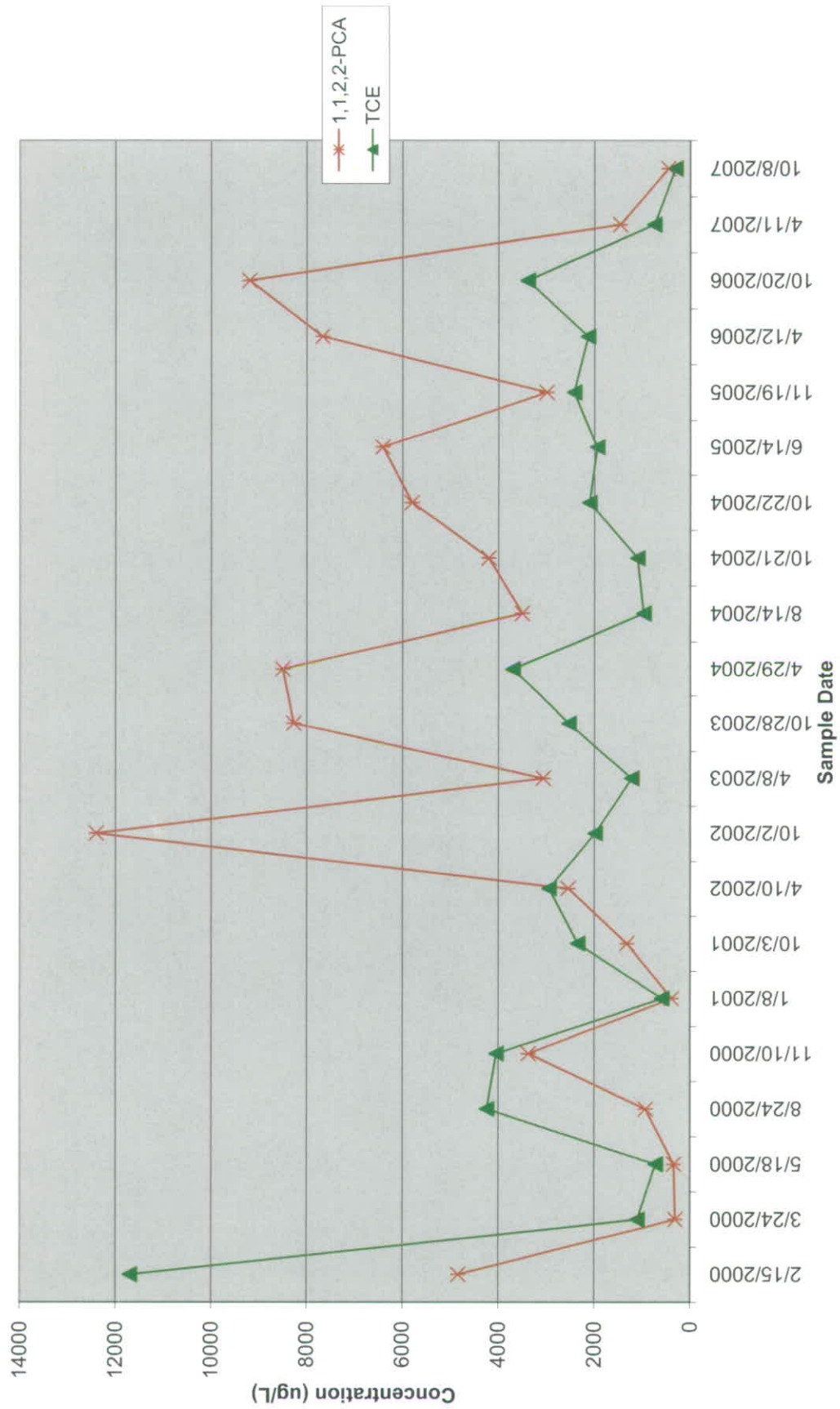
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 Dunn Field Groundwater IRA - Year Nine
 Defense Depot Memphis, Tennessee
MW-68



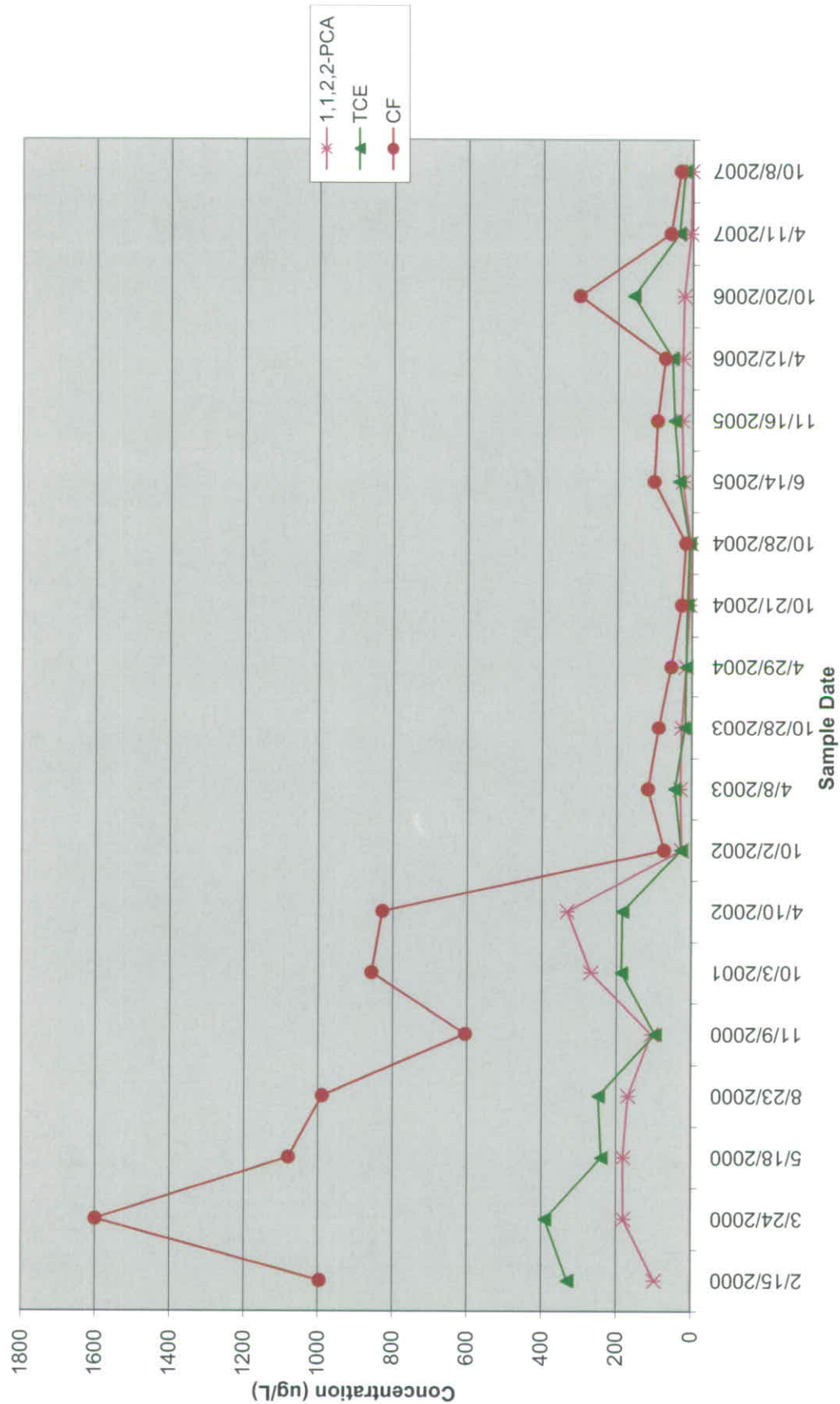
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Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee
MW-69



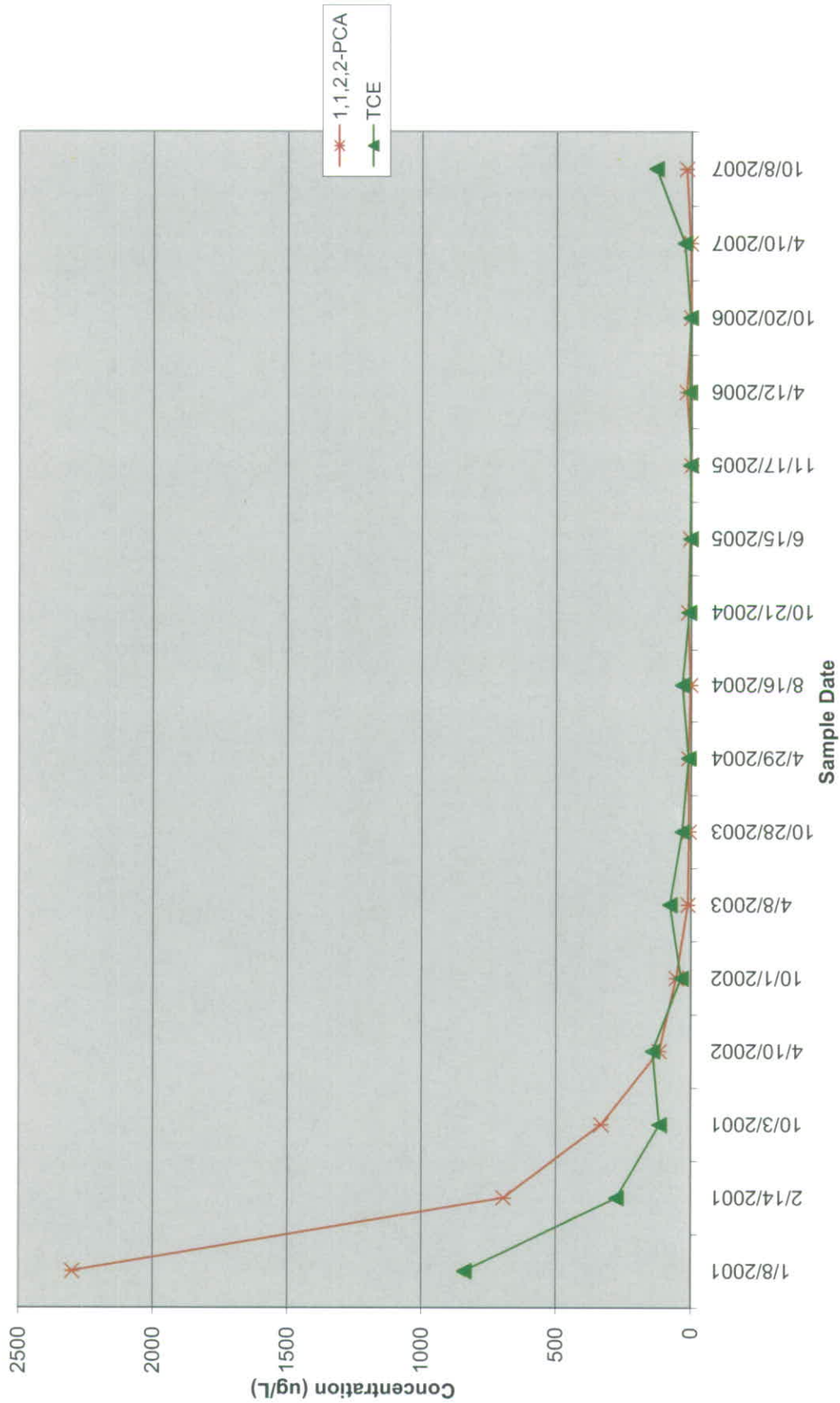
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 Dunn Field Groundwater IRA - Year Nine
 Defense Depot Memphis, Tennessee
MW-70



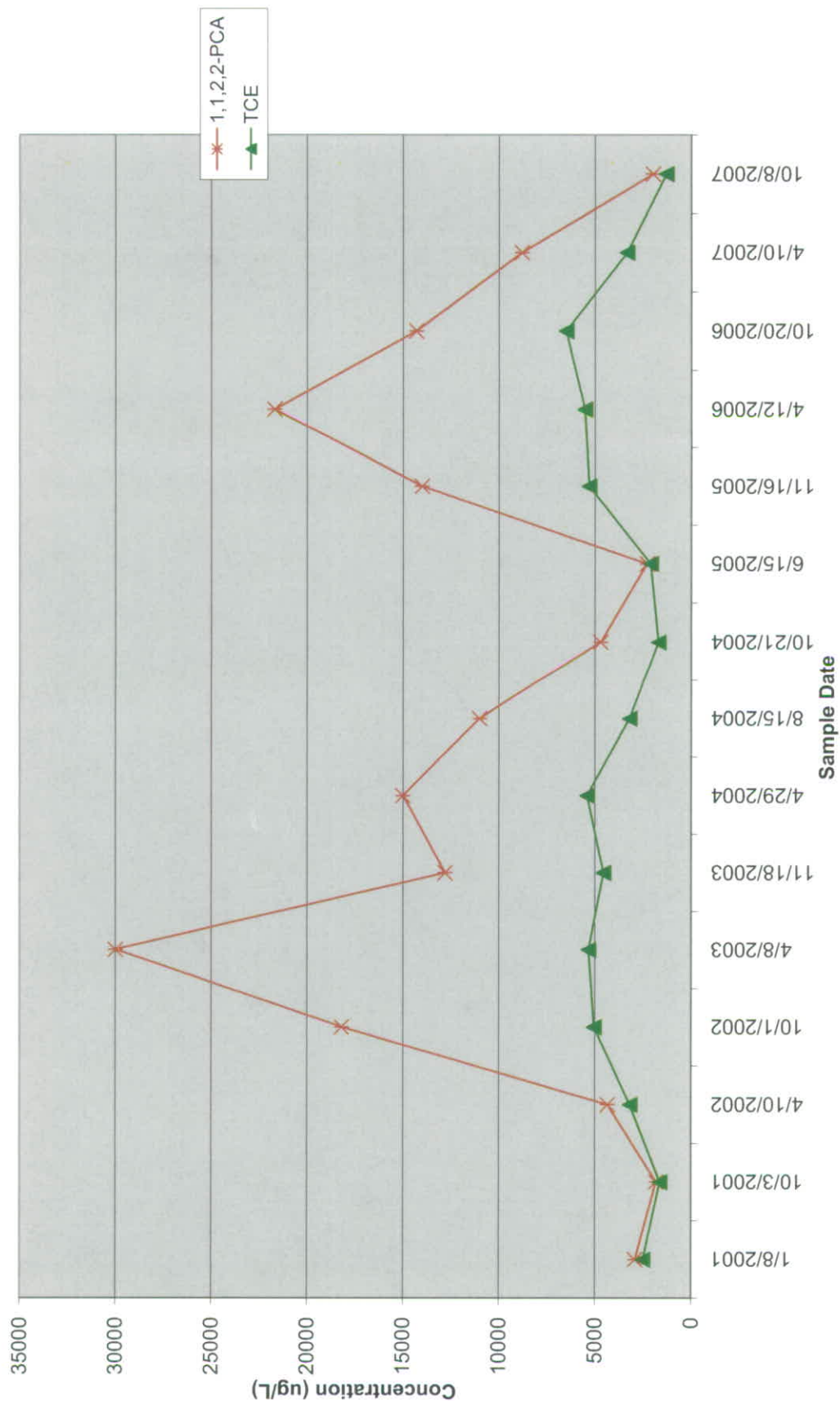
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 Dunn Field Groundwater IRA - Year Nine
 Defense Depot Memphis, Tennessee
MW-71



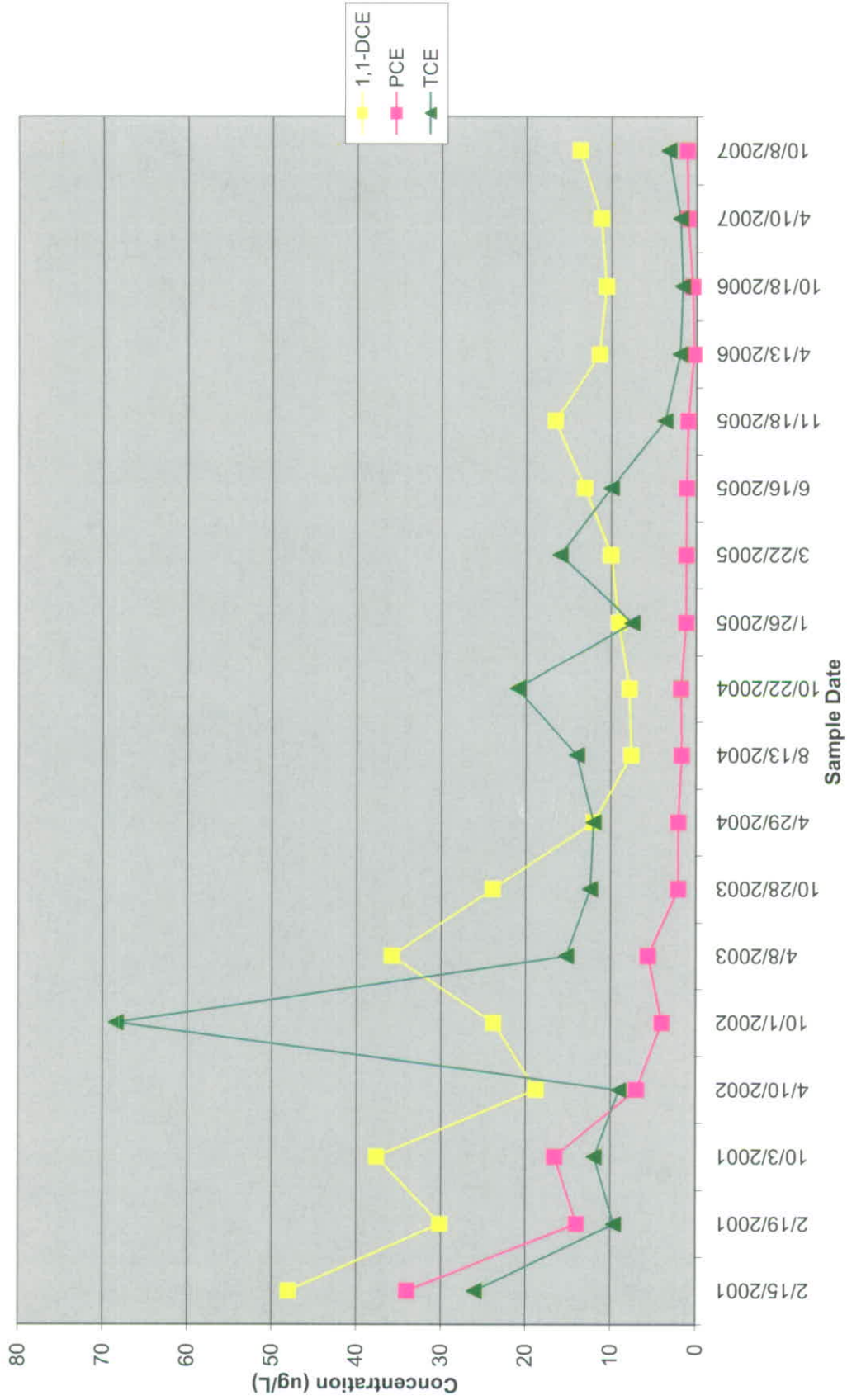
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 Dunn Field Groundwater IRA - Year Nine
 Defense Depot Memphis, Tennessee
MW-76



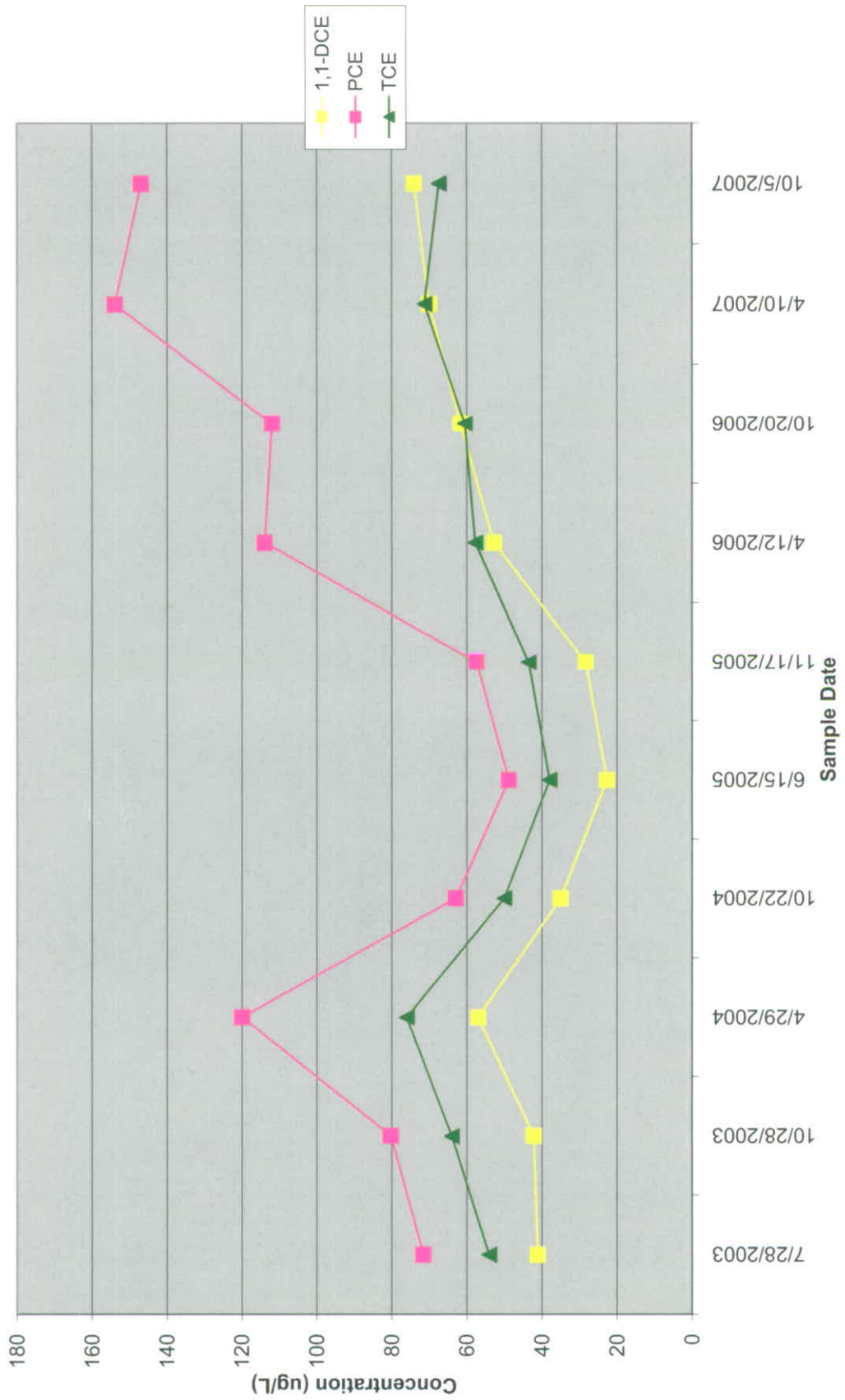
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Defense Depot Memphis, Tennessee
MW-77



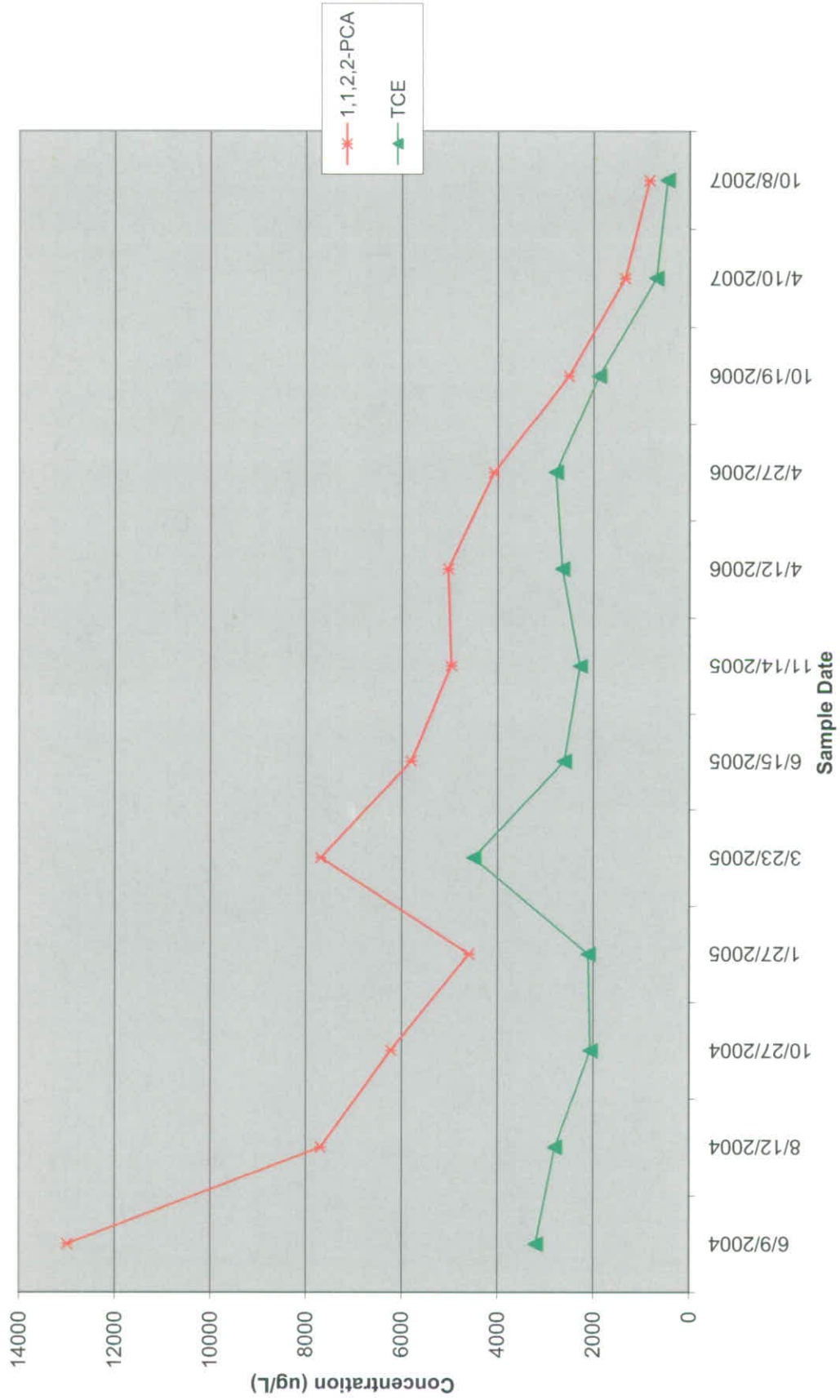
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Defense Depot Memphis, Tennessee
MW-79



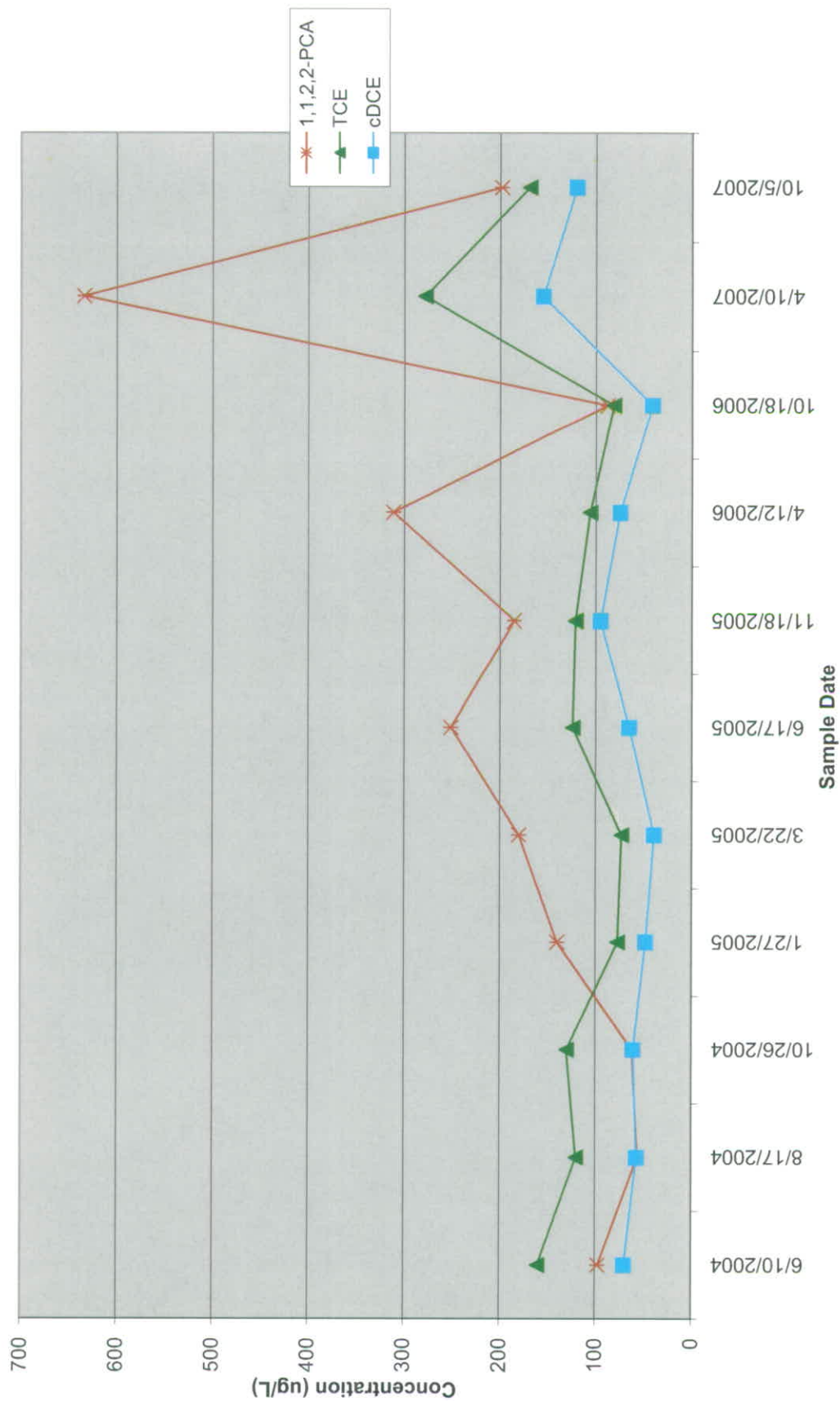
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Defense Depot Memphis, Tennessee
MW-130



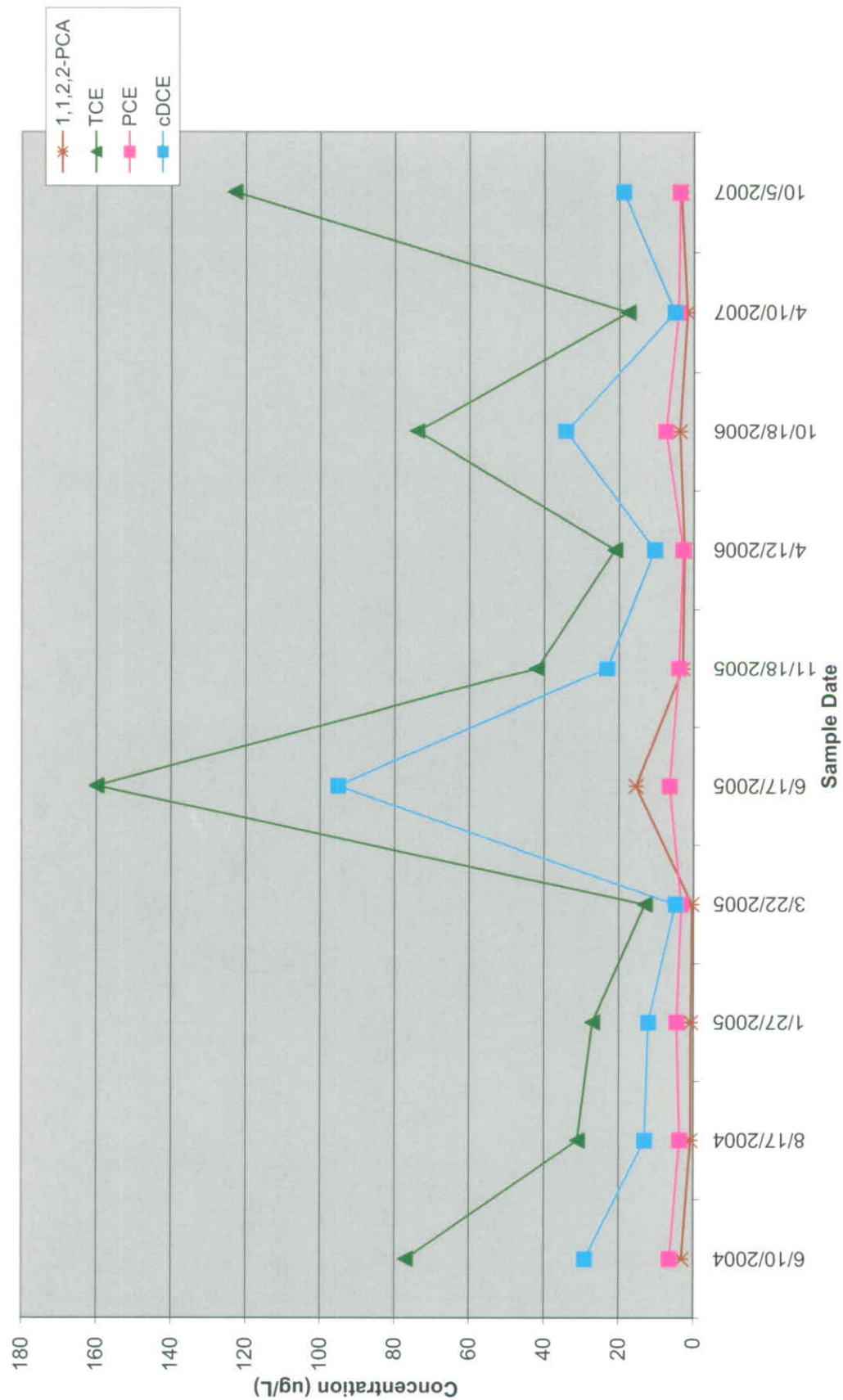
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 Defense Depot Memphis, Tennessee
MW-144



Time Trend Plots
Annual Operations Report - 2007
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Defense Depot Memphis, Tennessee
MW-147



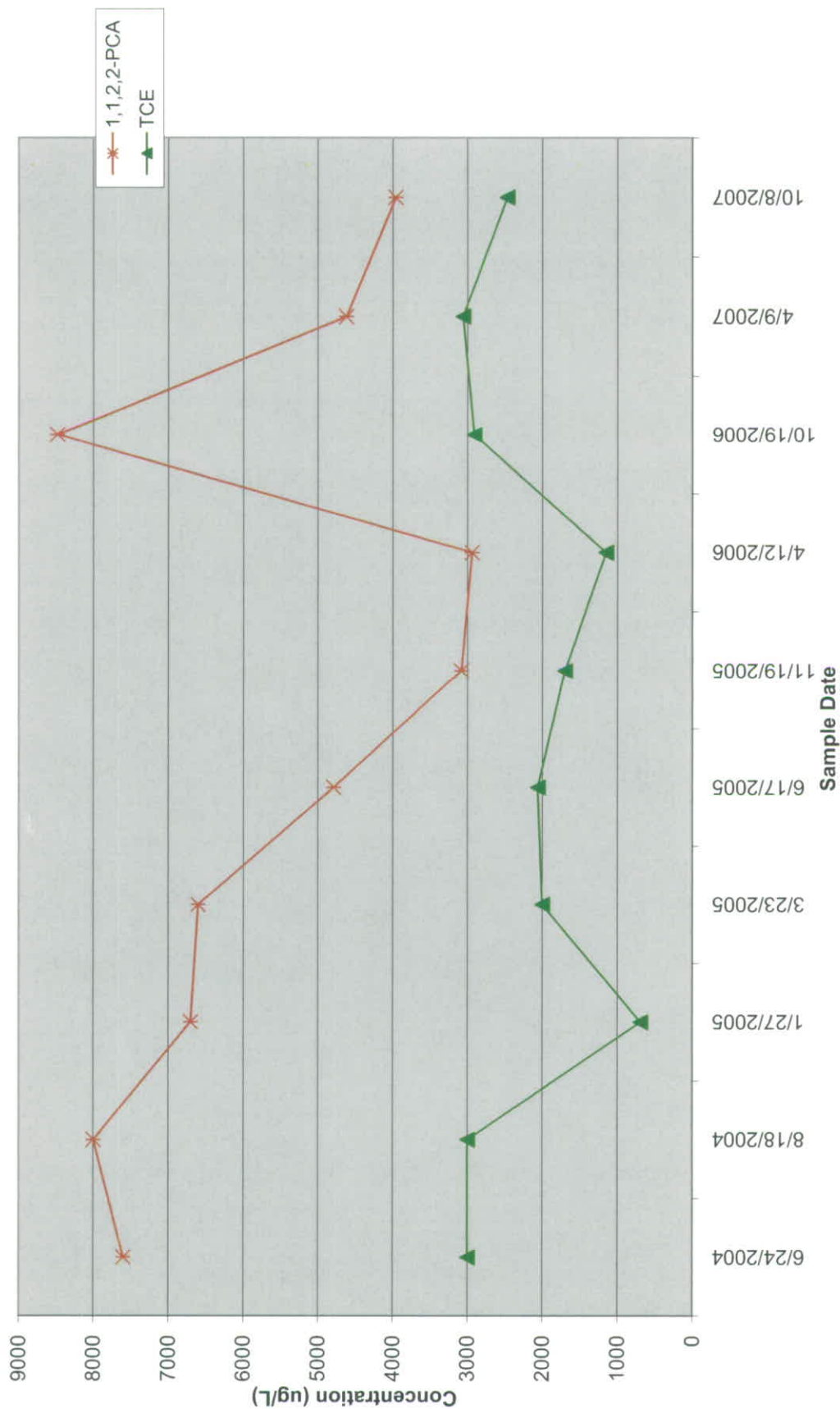
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 Defense Depot Memphis, Tennessee
MW-148



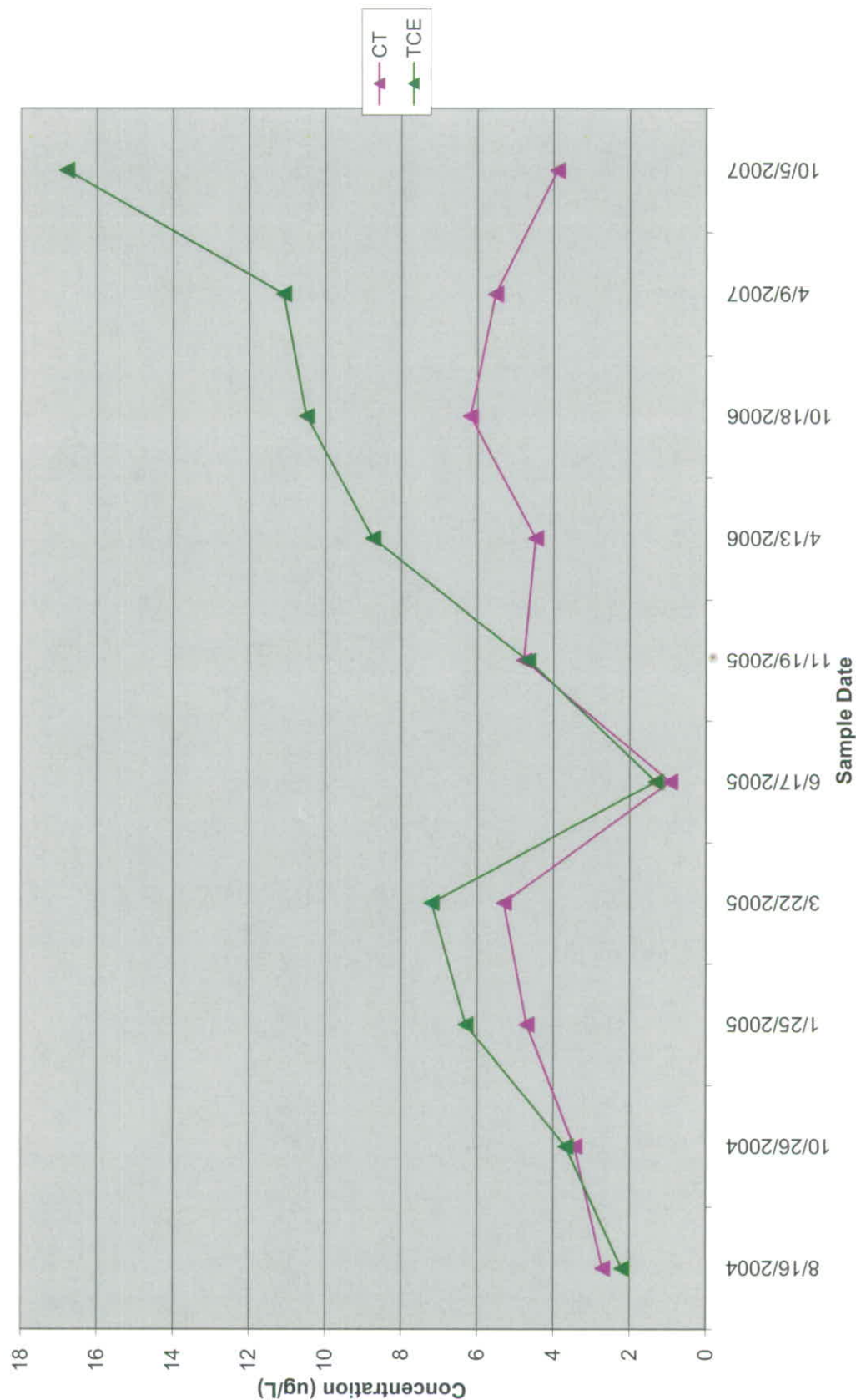
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Defense Depot Memphis, Tennessee
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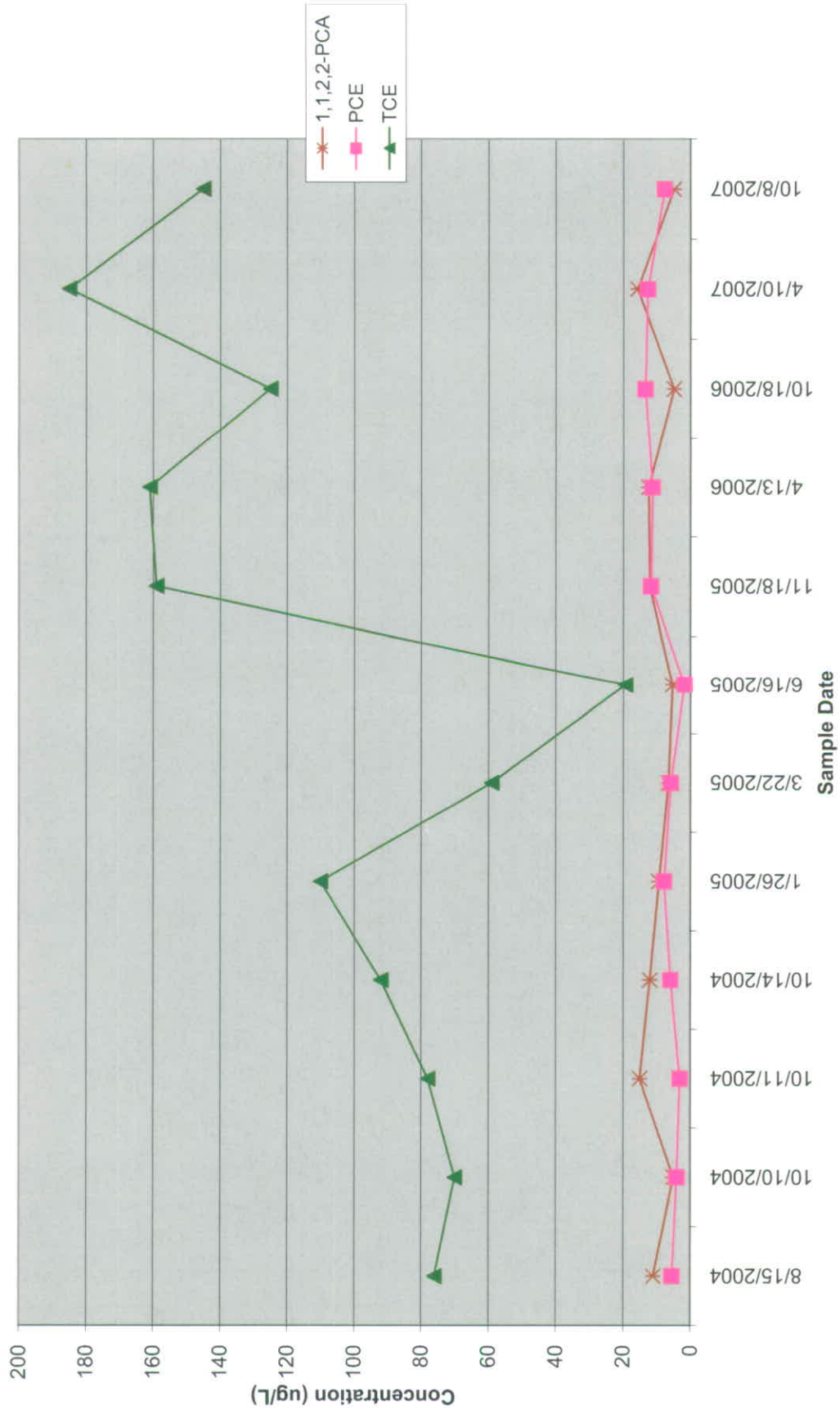
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Defense Depot Memphis, Tennessee
MW-150



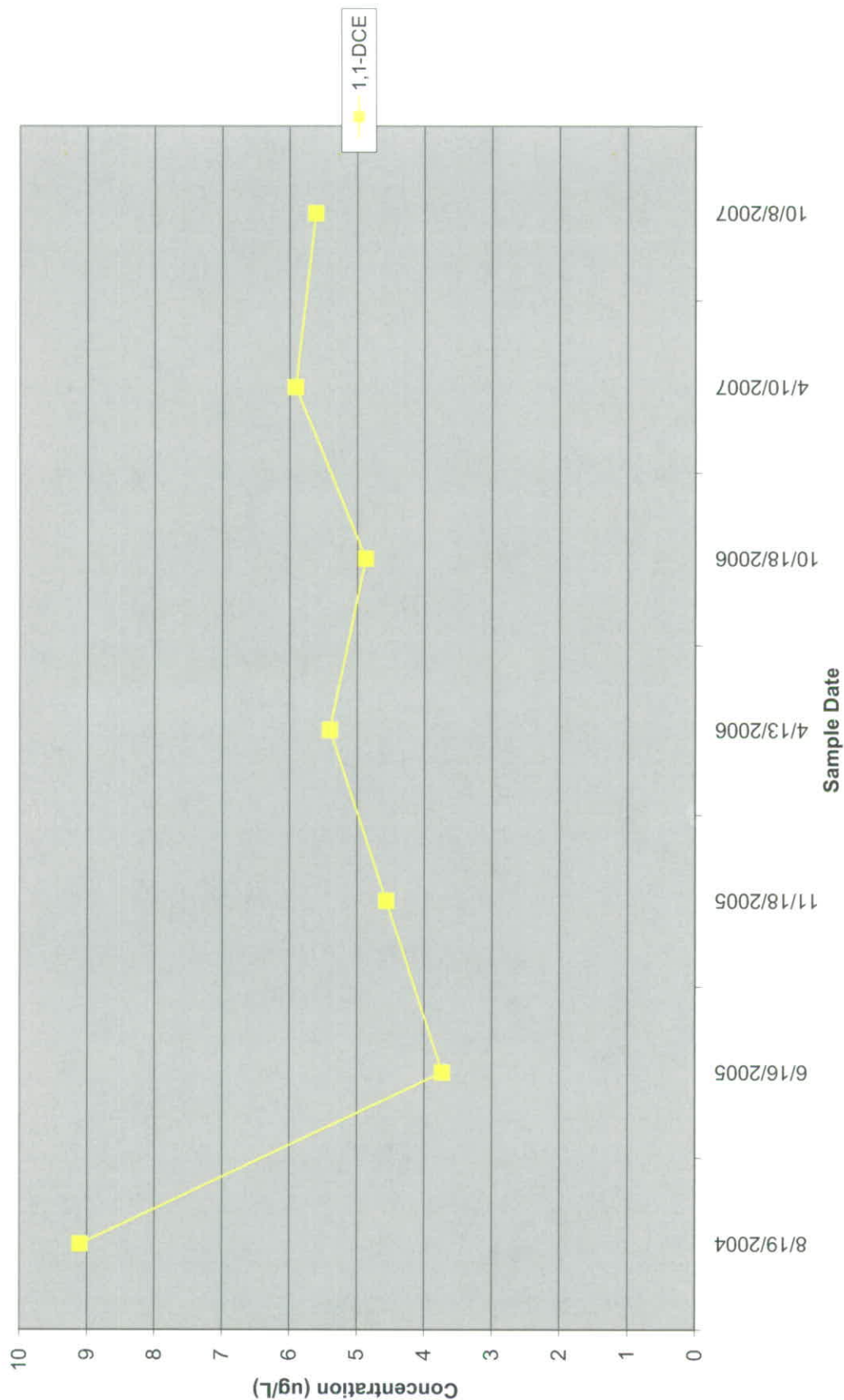
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Defense Depot Memphis, Tennessee
MW-151



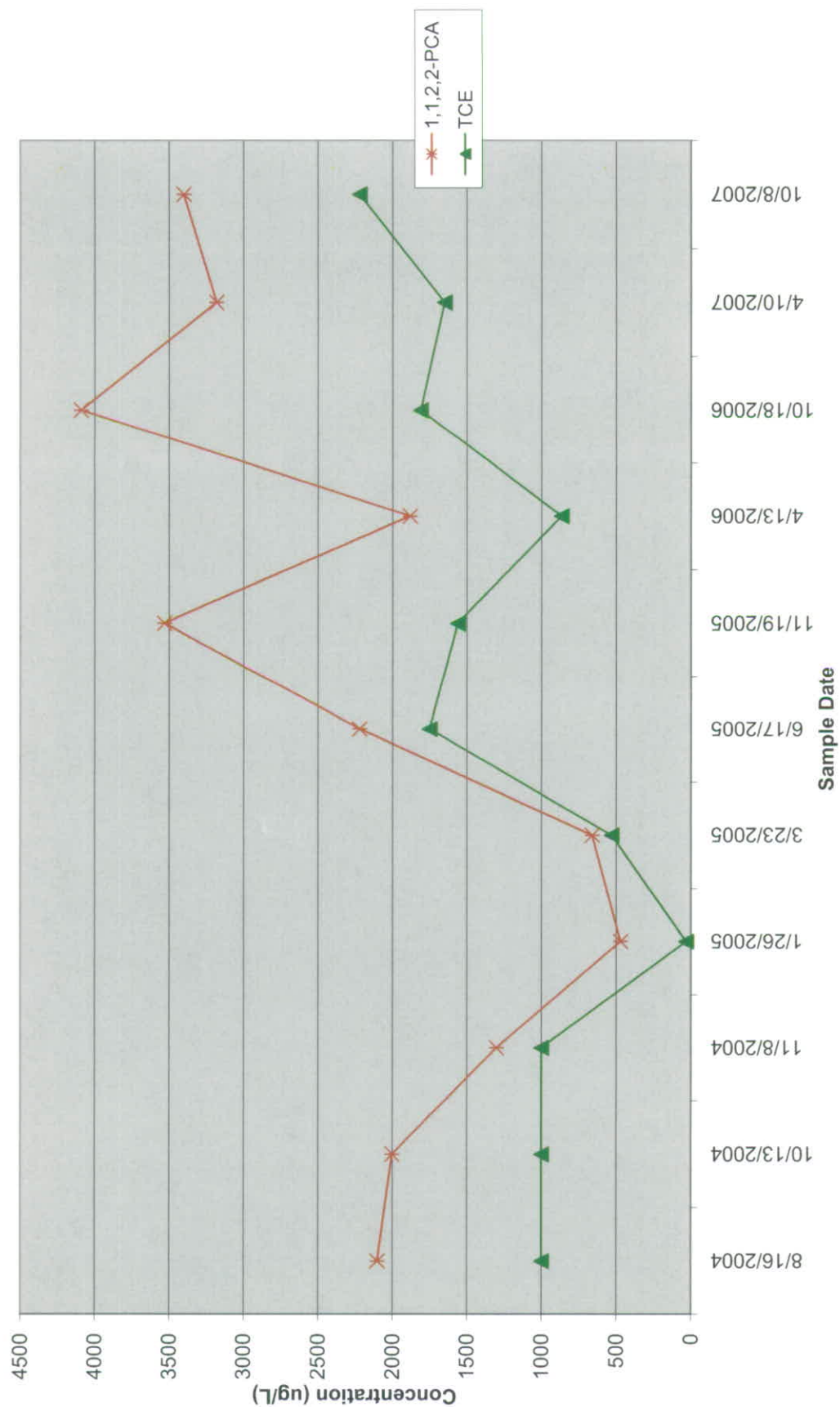
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 Dunn Field Groundwater IRA - Year Nine
 Defense Depot Memphis, Tennessee
MW-152



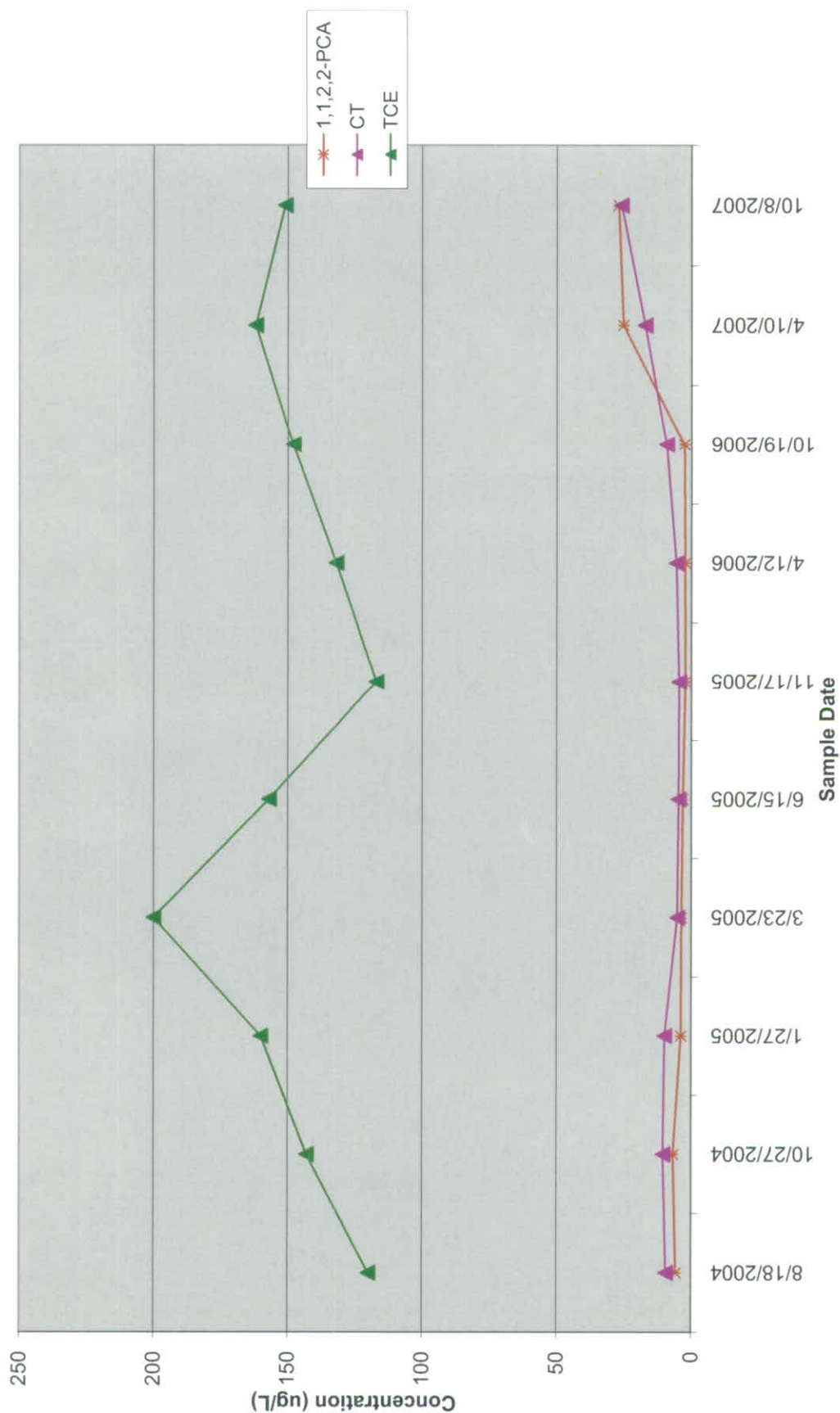
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 Dunn Field Groundwater IRA - Year Nine
 Defense Depot Memphis, Tennessee
MW-153



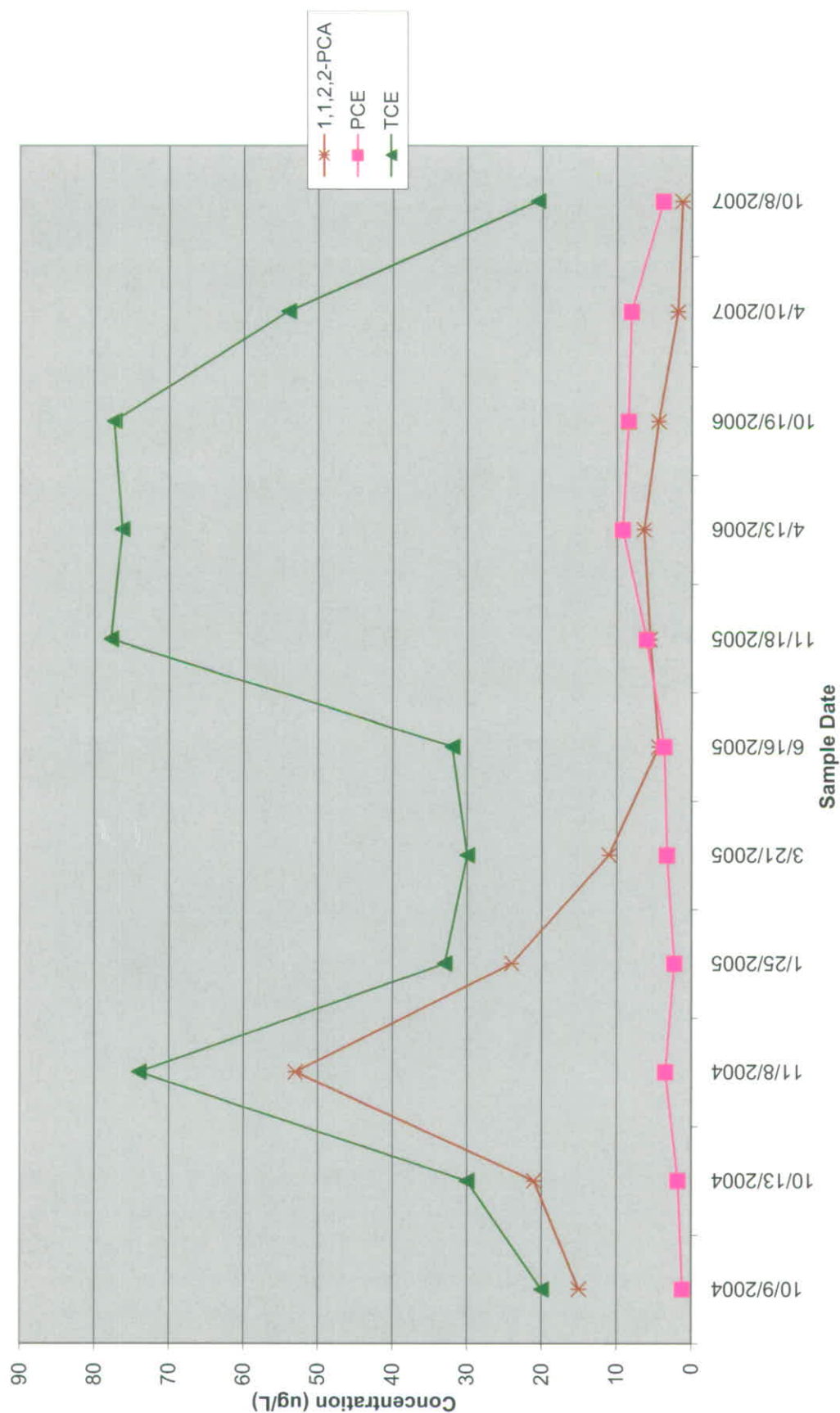
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Defense Depot Memphis, Tennessee
MW-155



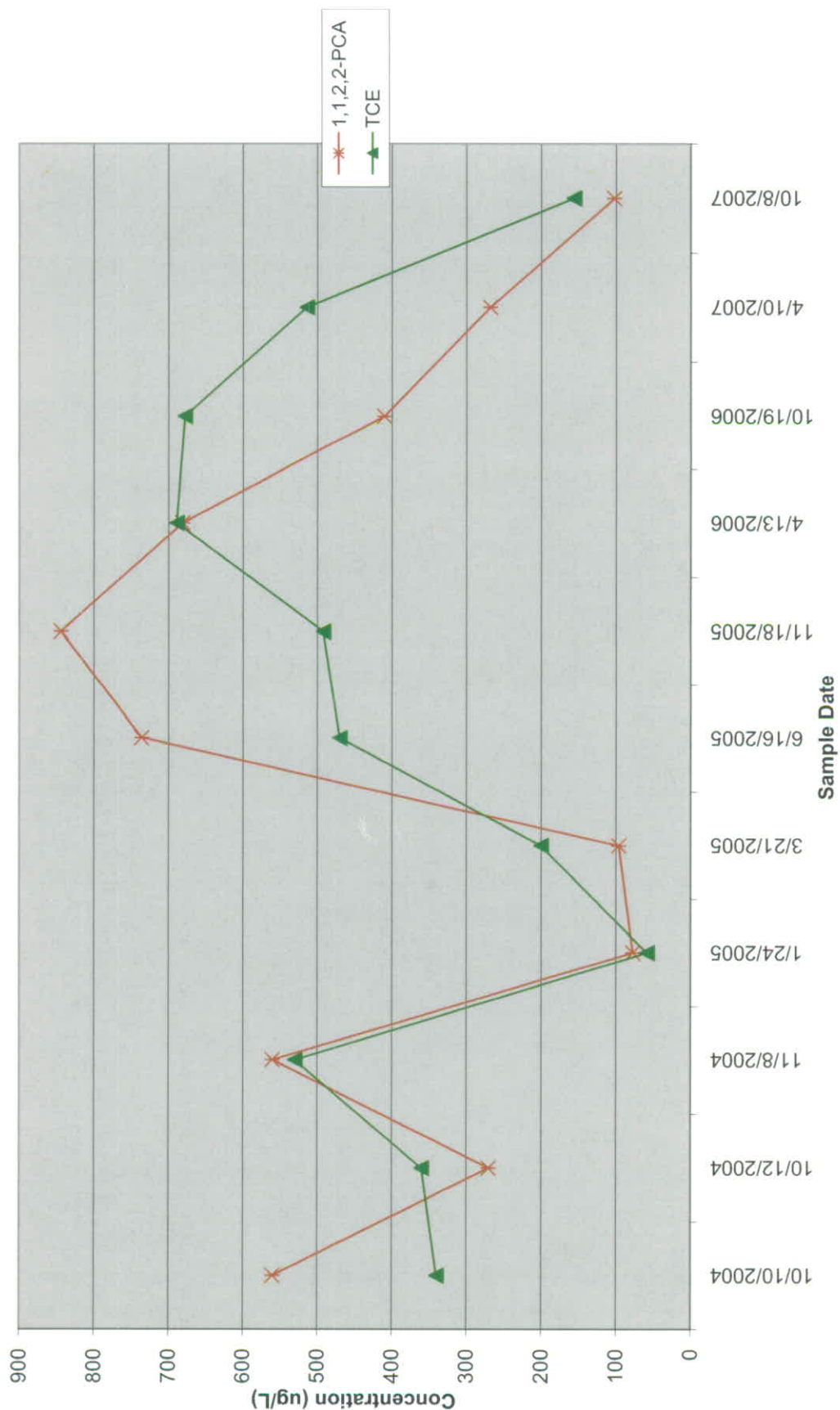
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Defense Depot Memphis, Tennessee
MW-157



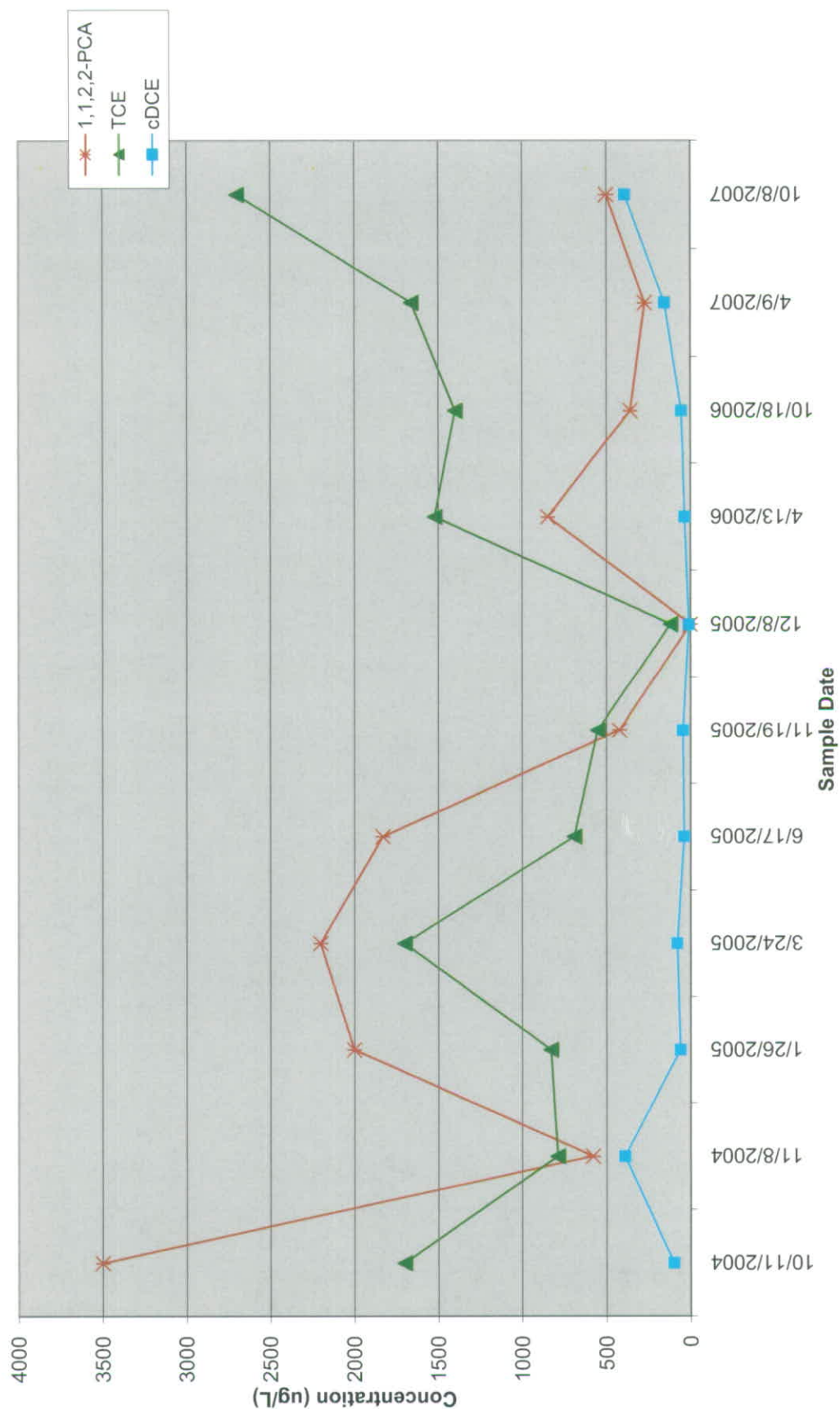
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Defense Depot Memphis, Tennessee
MW-158



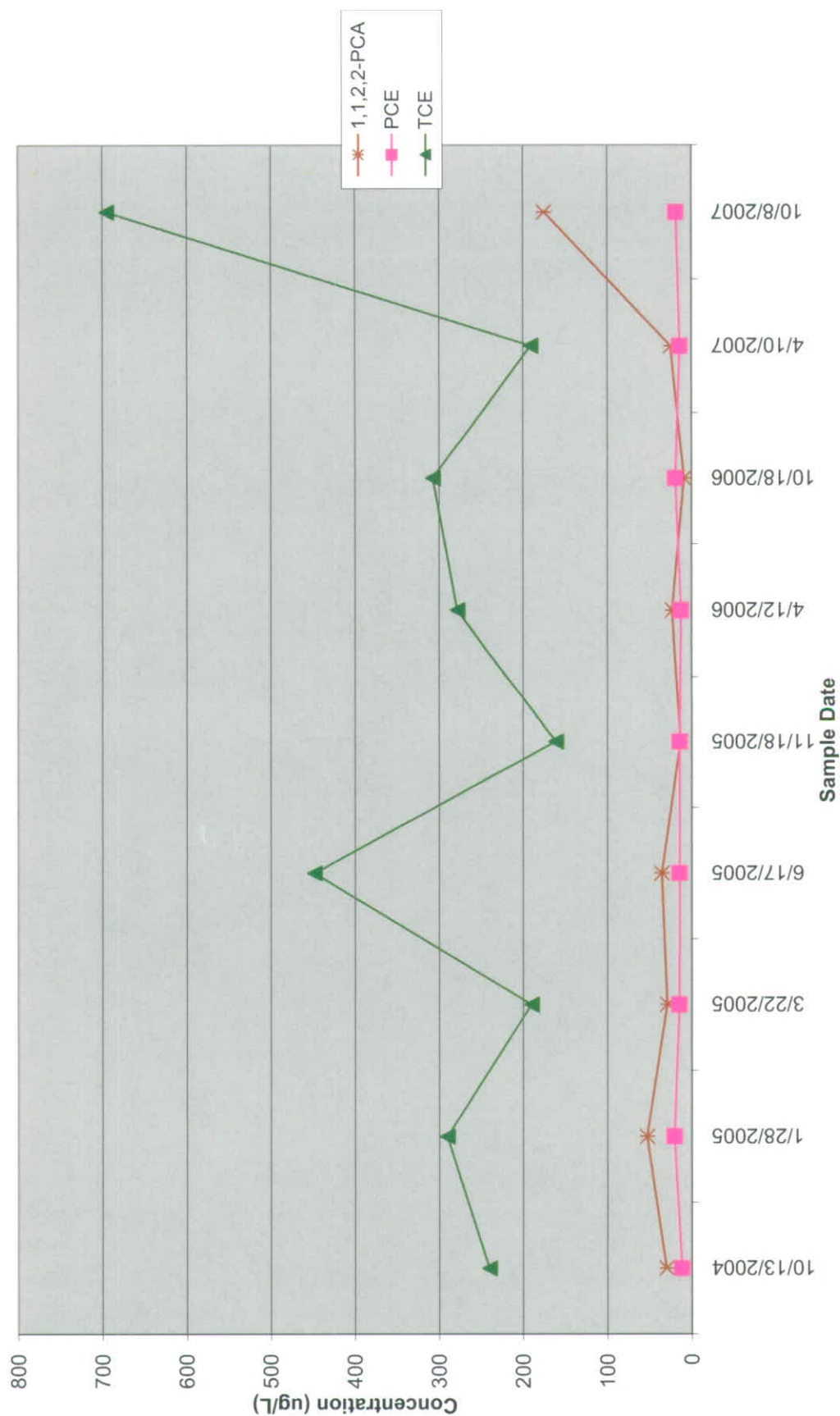
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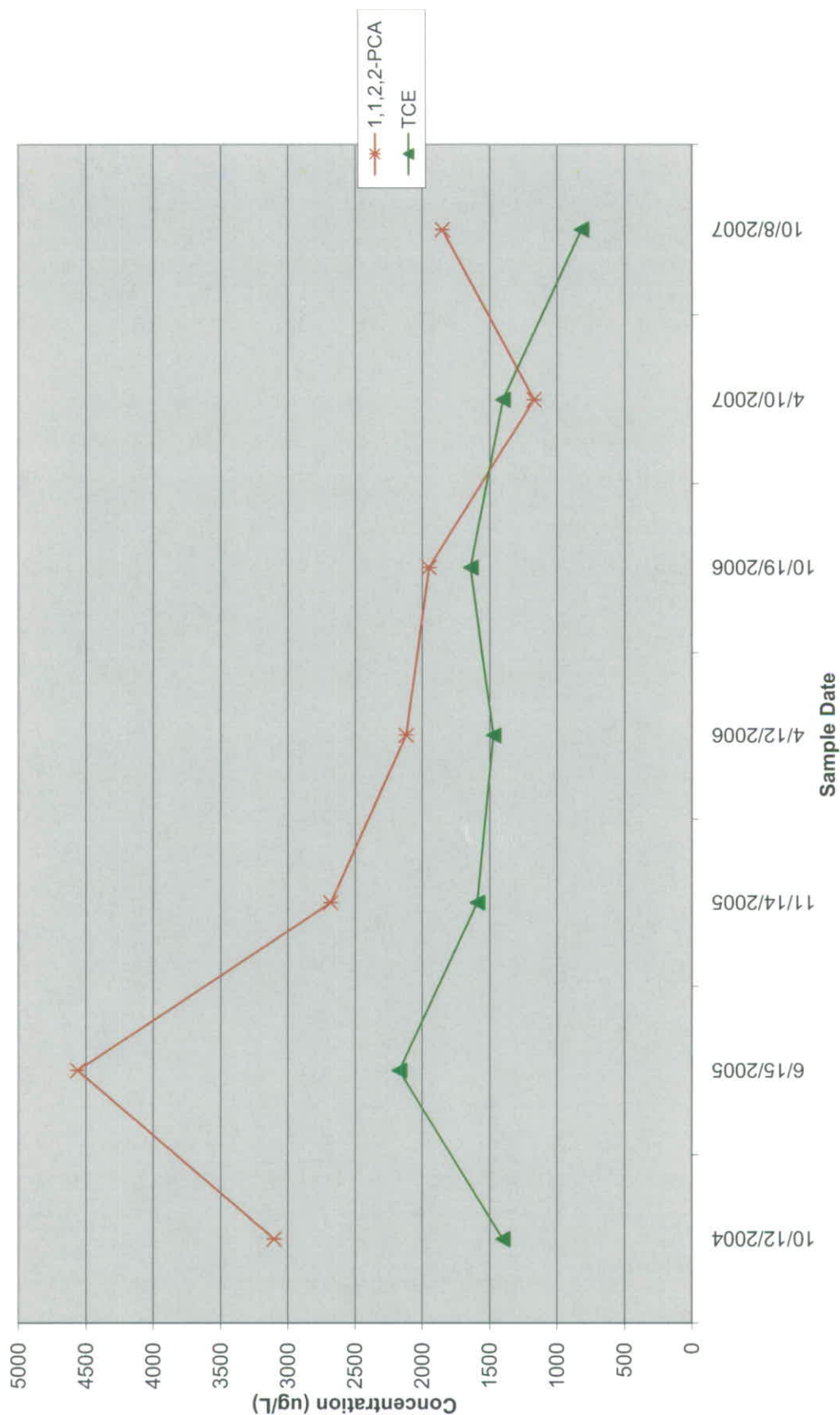
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Dunn Field Groundwater (RA - Year Nine)
Defense Depot Memphis, Tennessee
MW-159



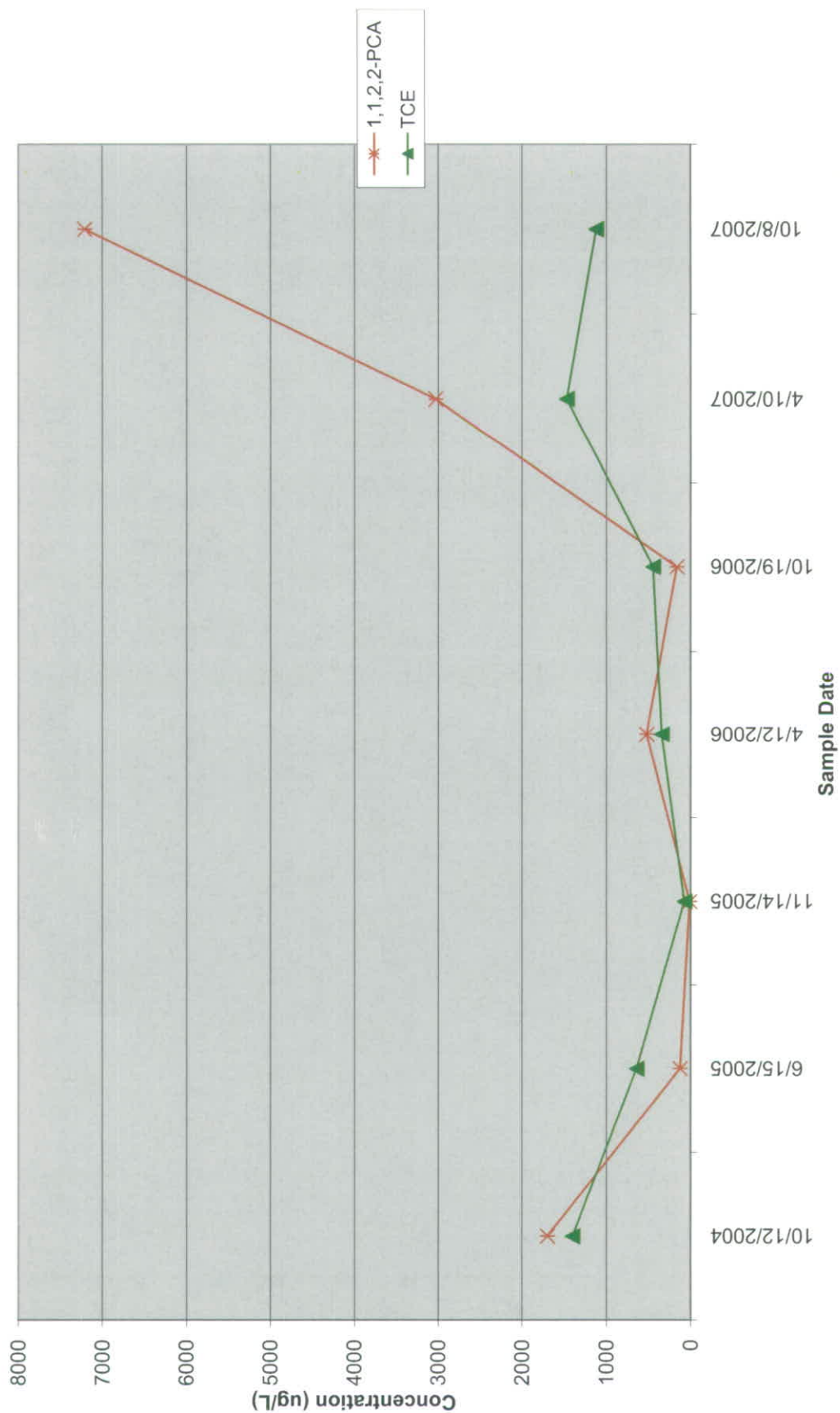
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Defense Depot Memphis, Tennessee
MW-160



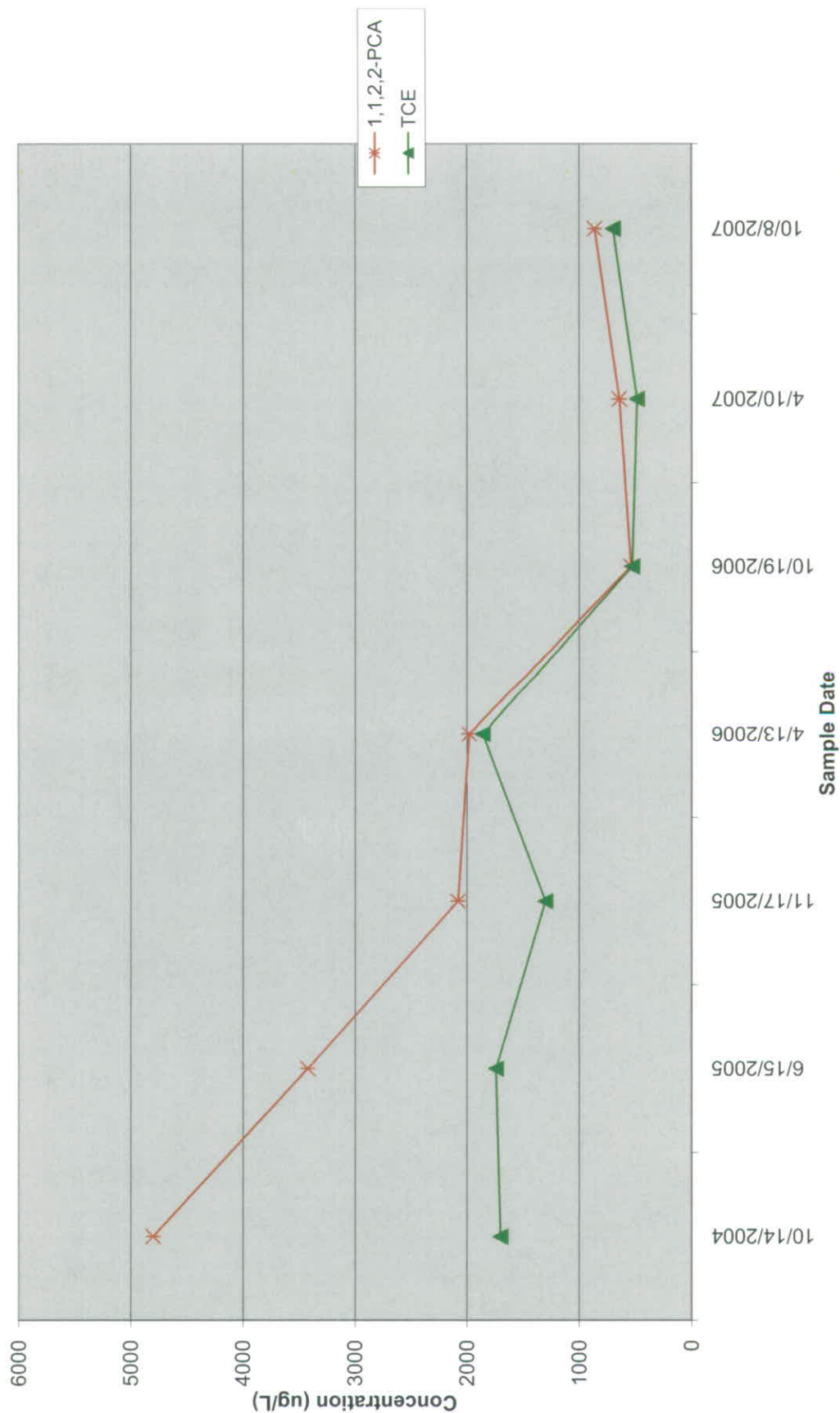
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Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee
MW-161



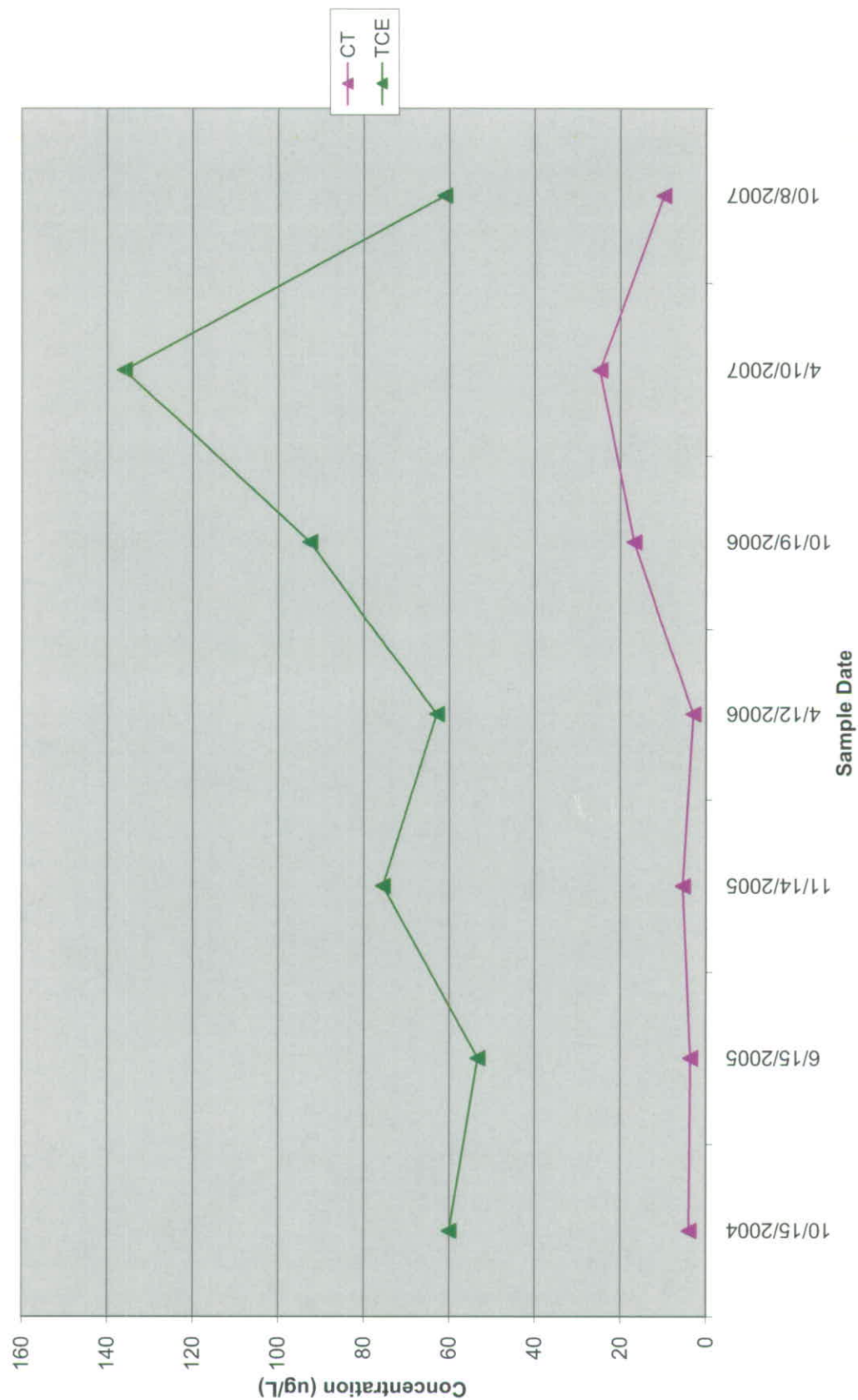
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Defense Depot Memphis, Tennessee
MW-162



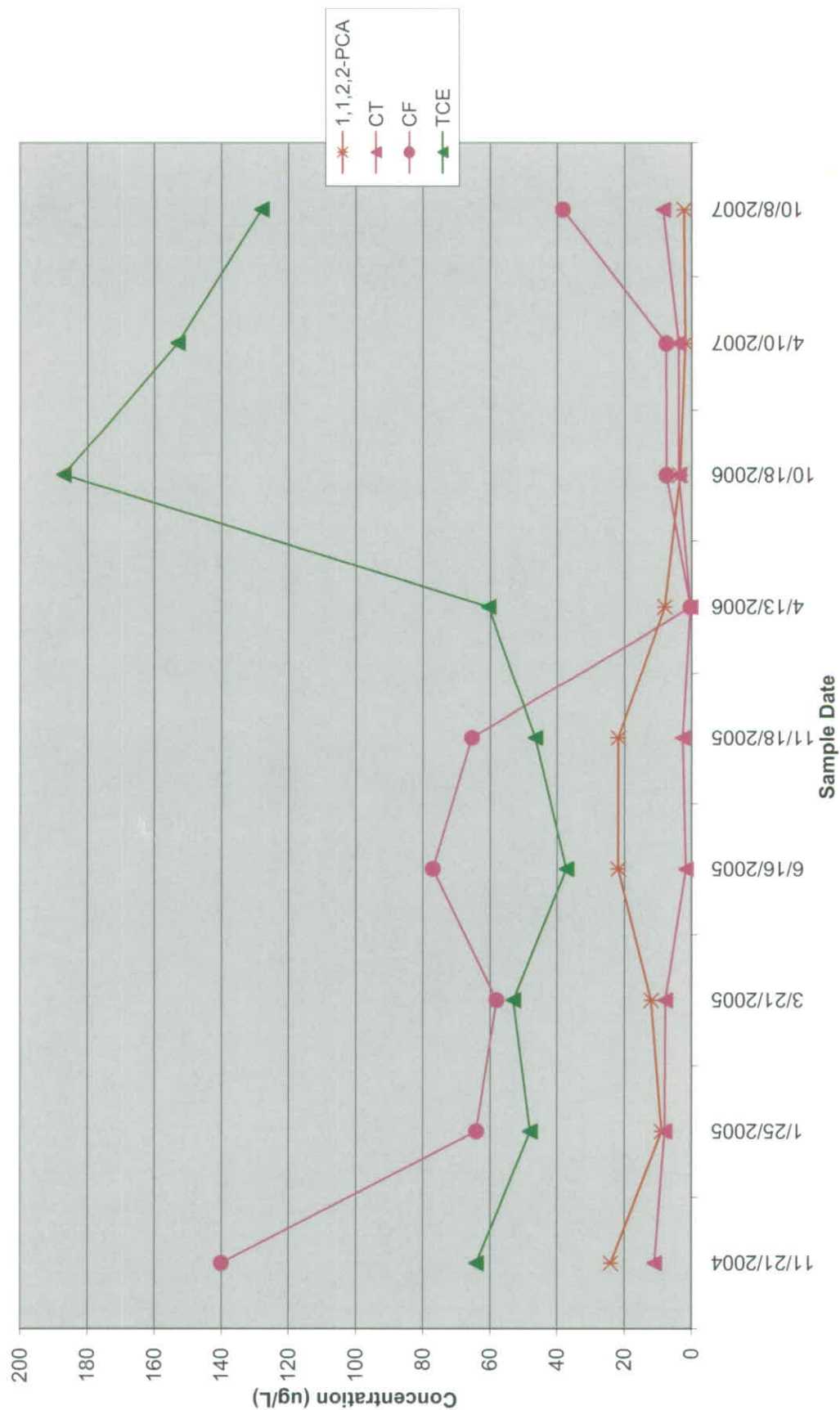
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Defense Depot Memphis, Tennessee
MW-163



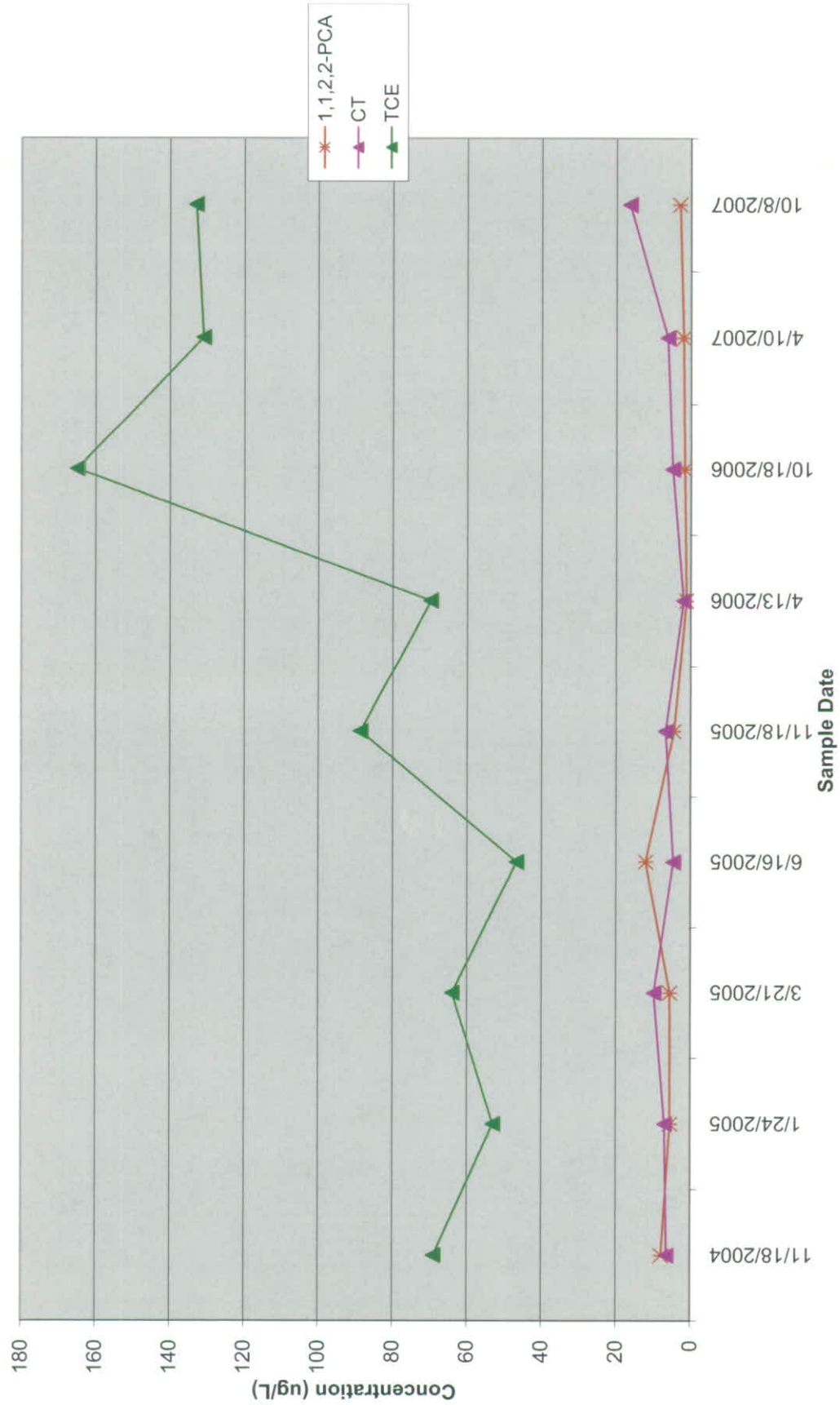
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Defense Depot Memphis, Tennessee
MW-164



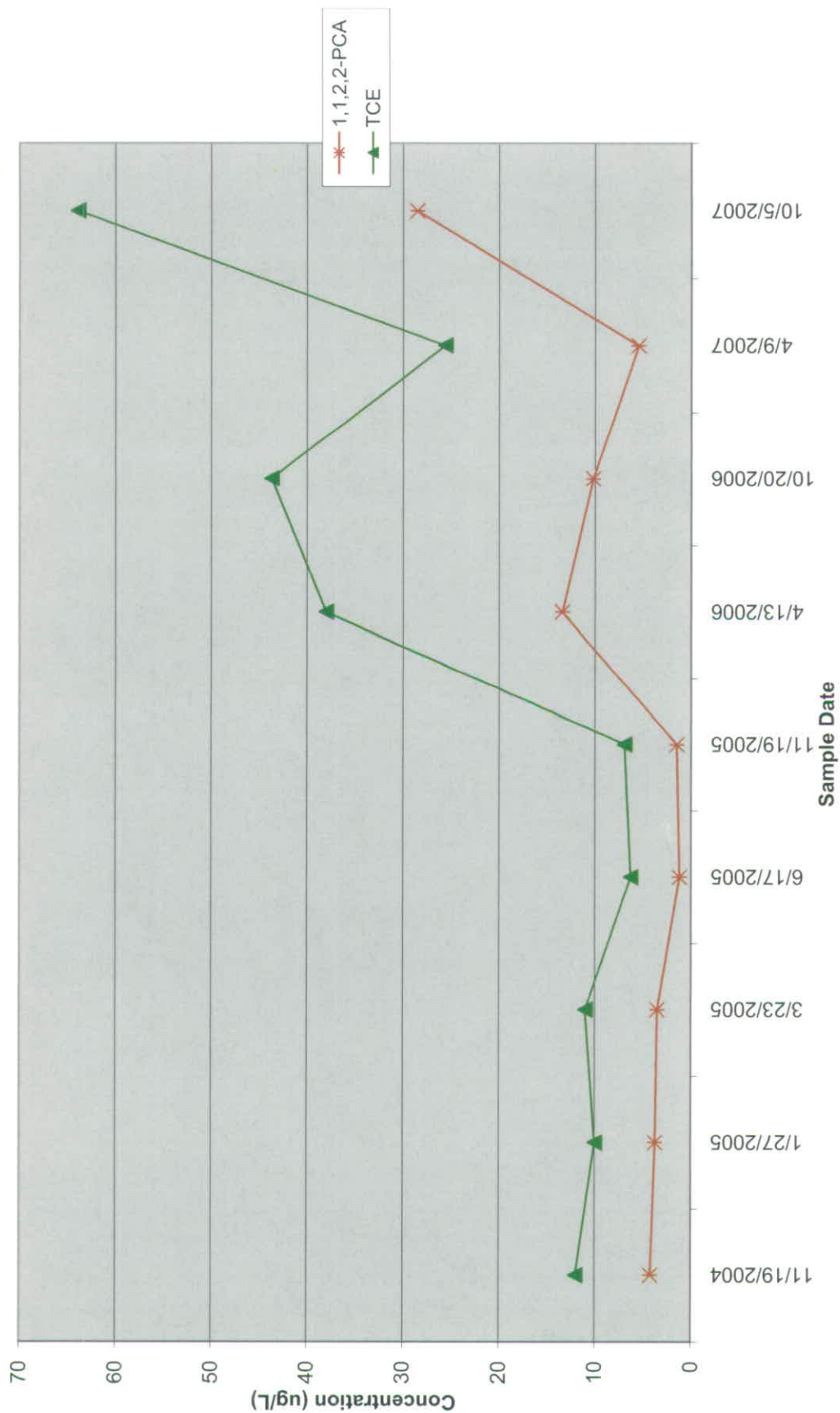
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Defense Depot Memphis, Tennessee
MW-165



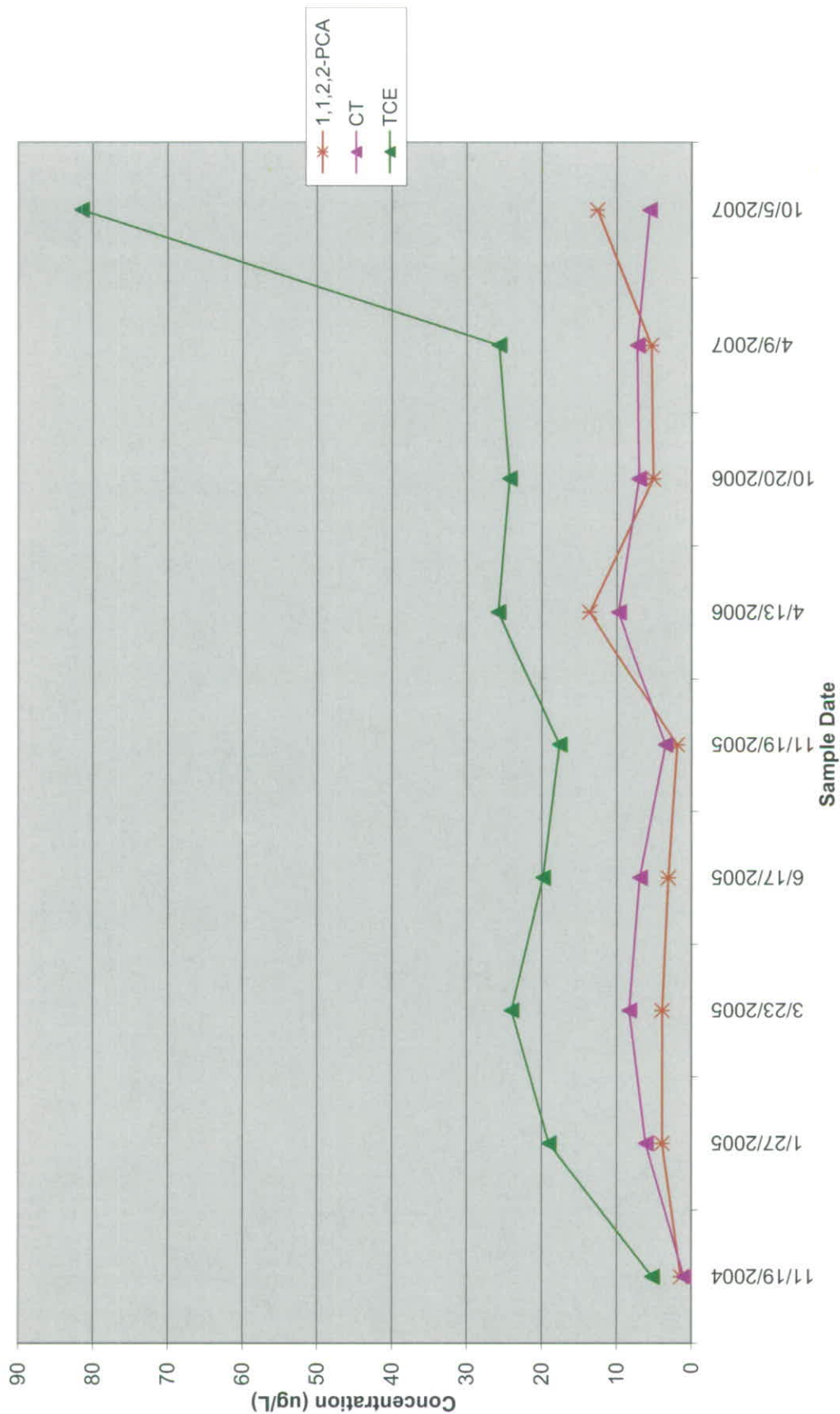
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 Defense Depot Memphis, Tennessee
MW-165A



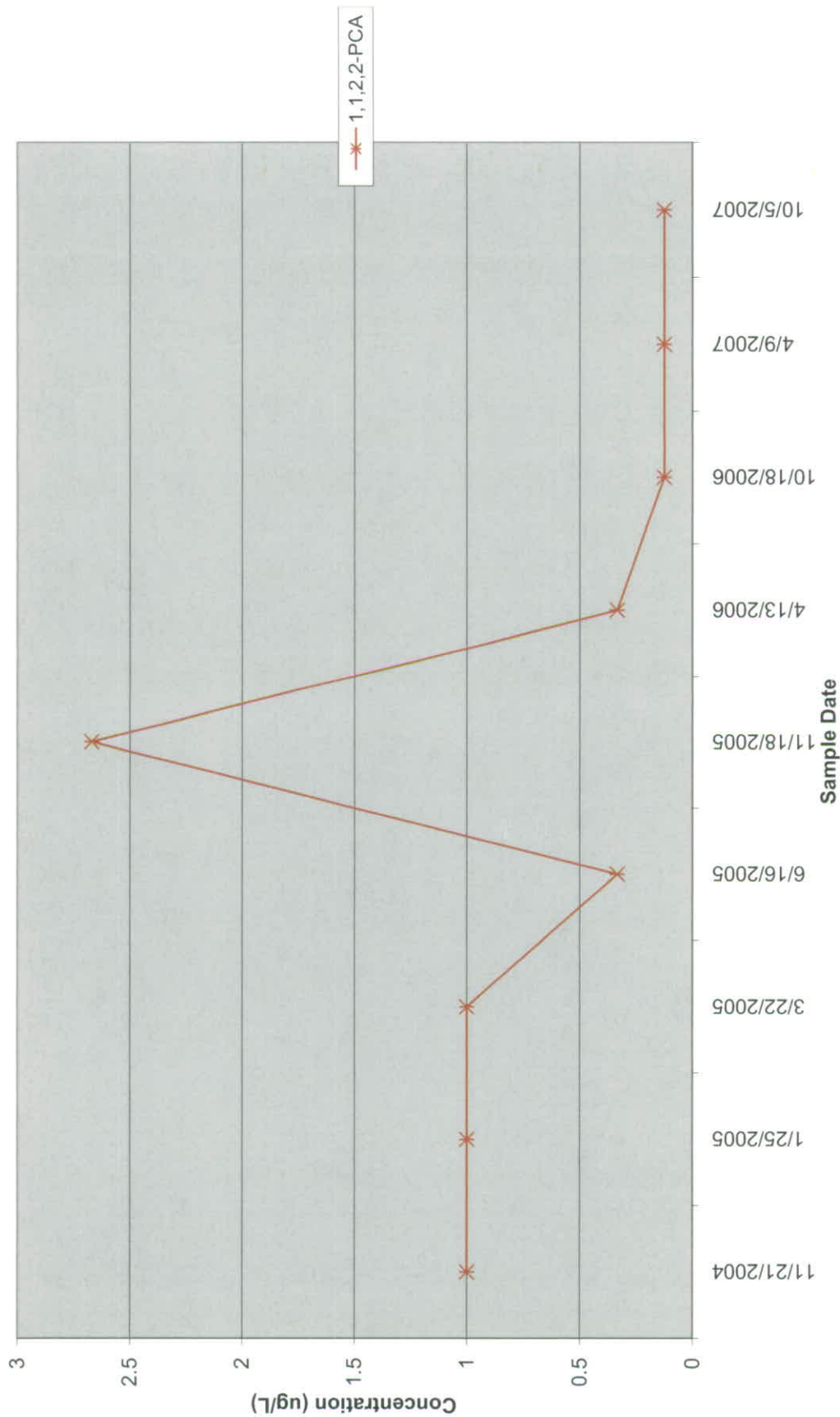
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Defense Depot Memphis, Tennessee
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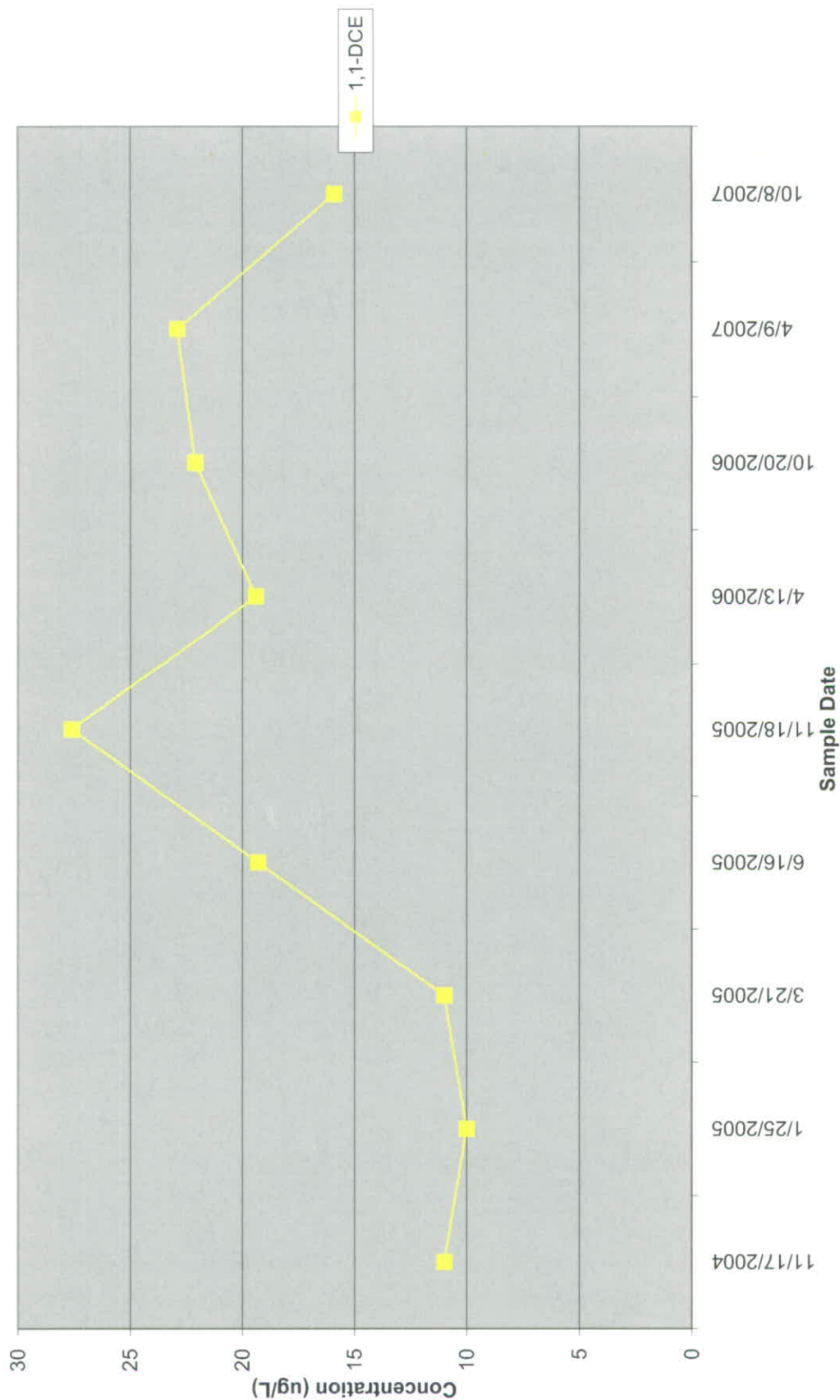
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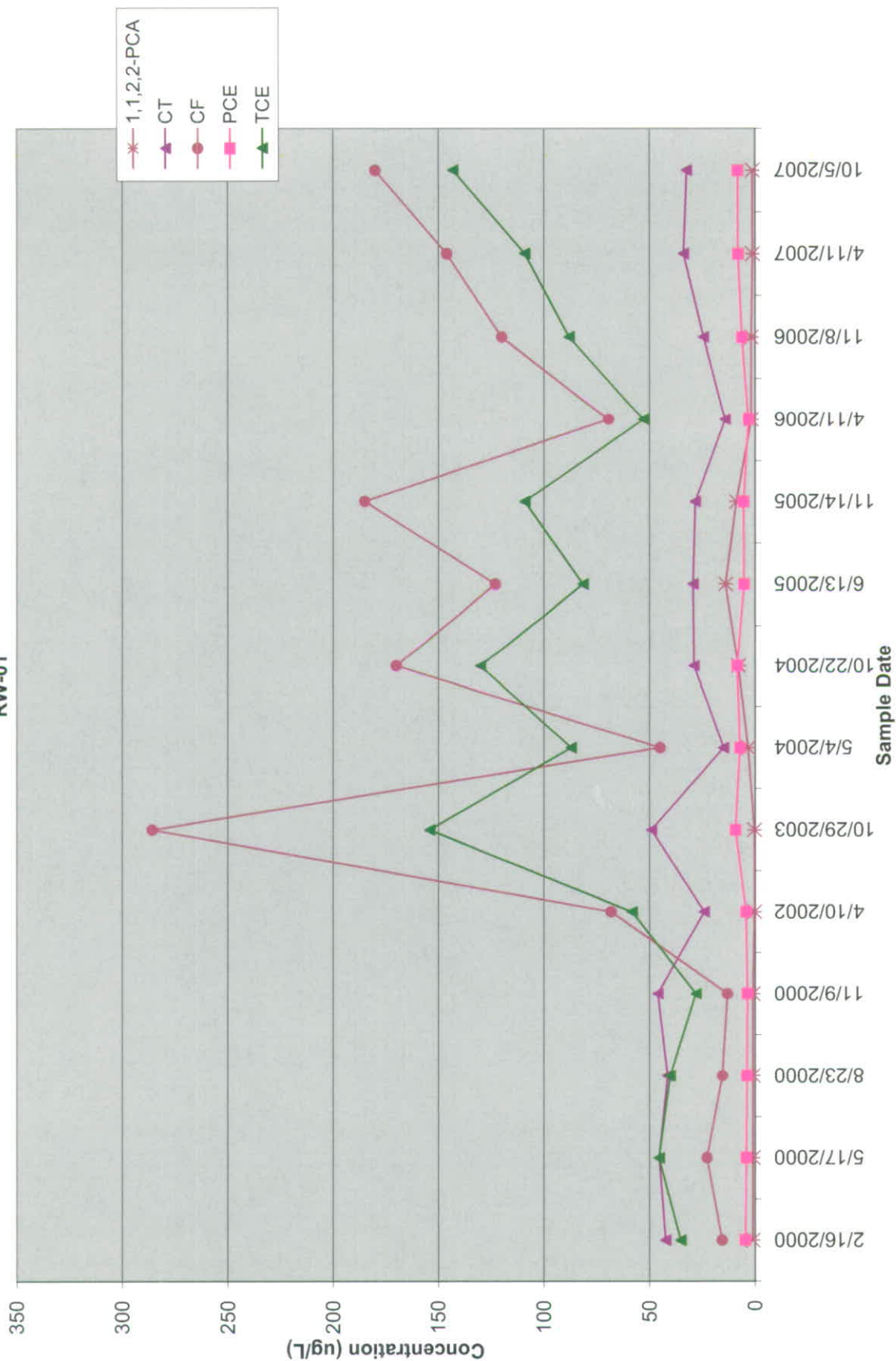
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Defense Depot Memphis, Tennessee
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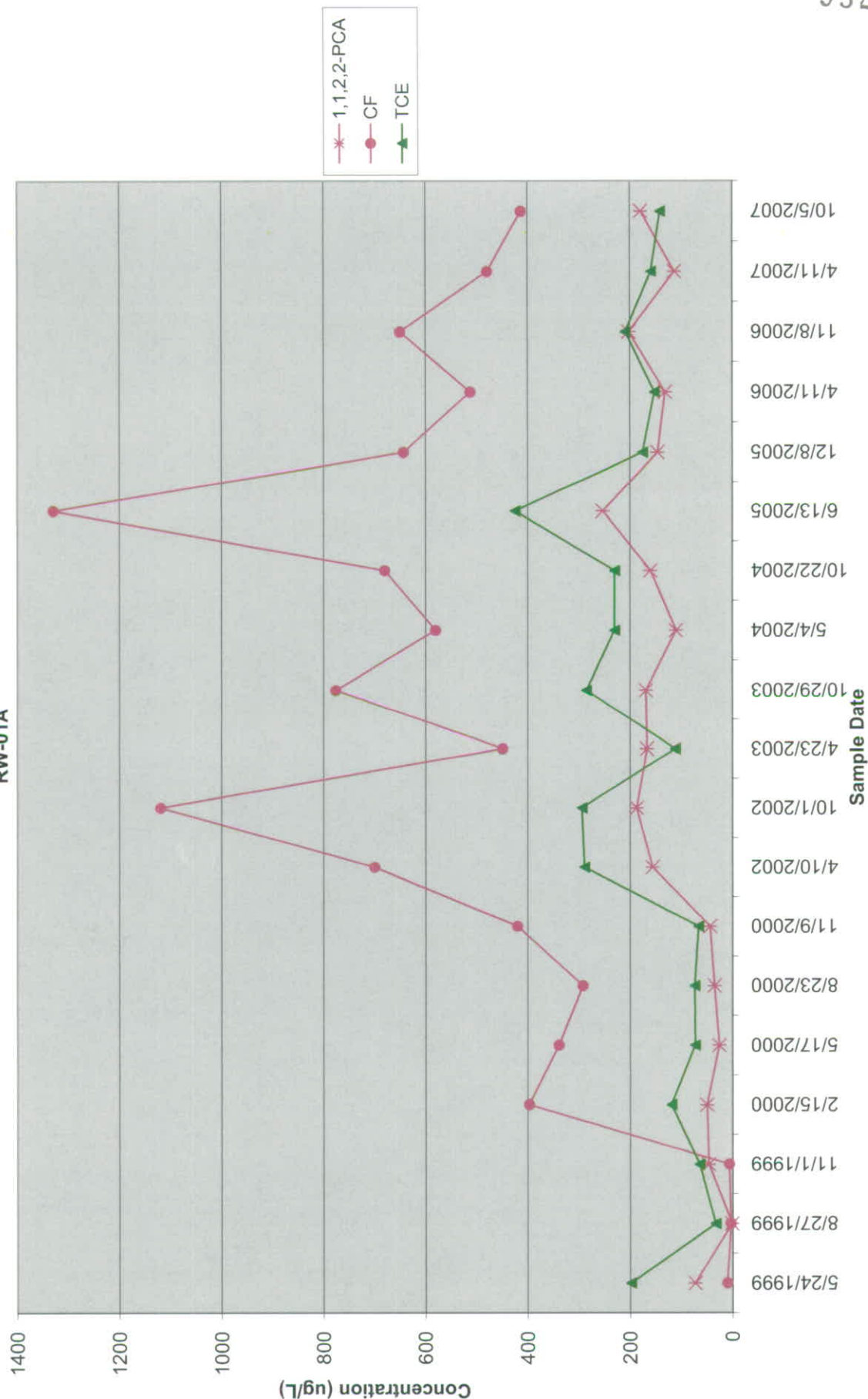
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Defense Depot Memphis, Tennessee
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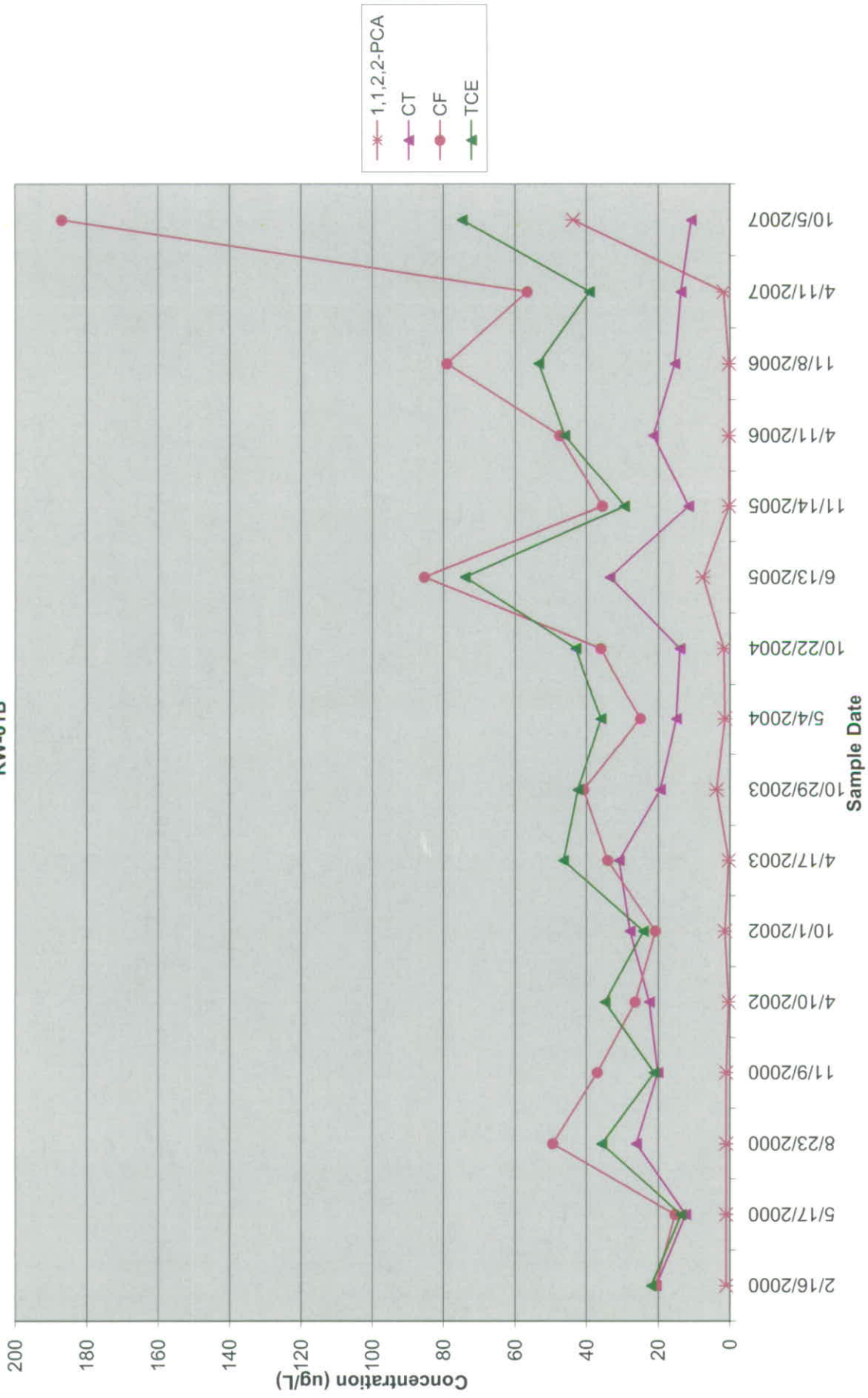
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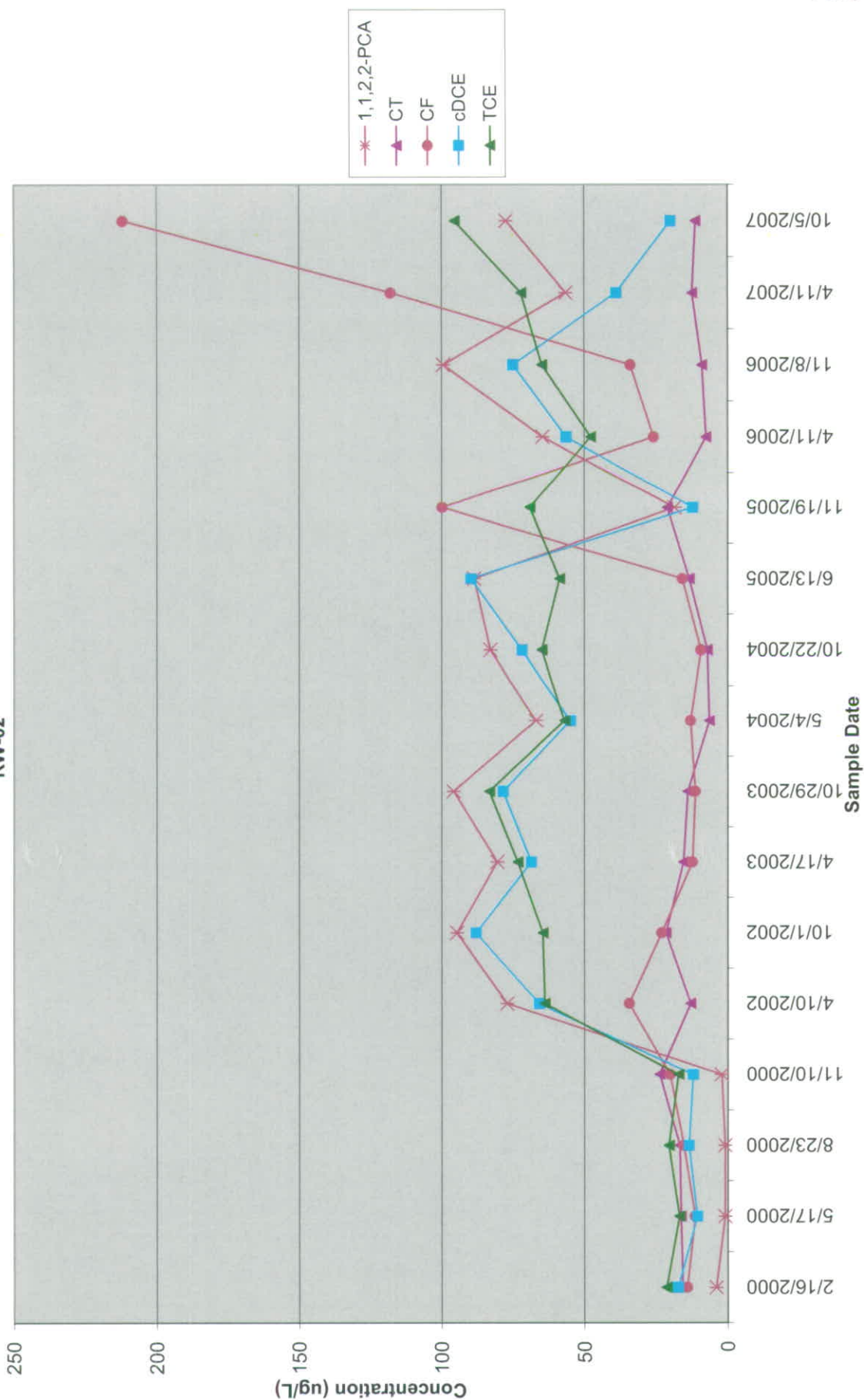
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Defense Depot Memphis, Tennessee
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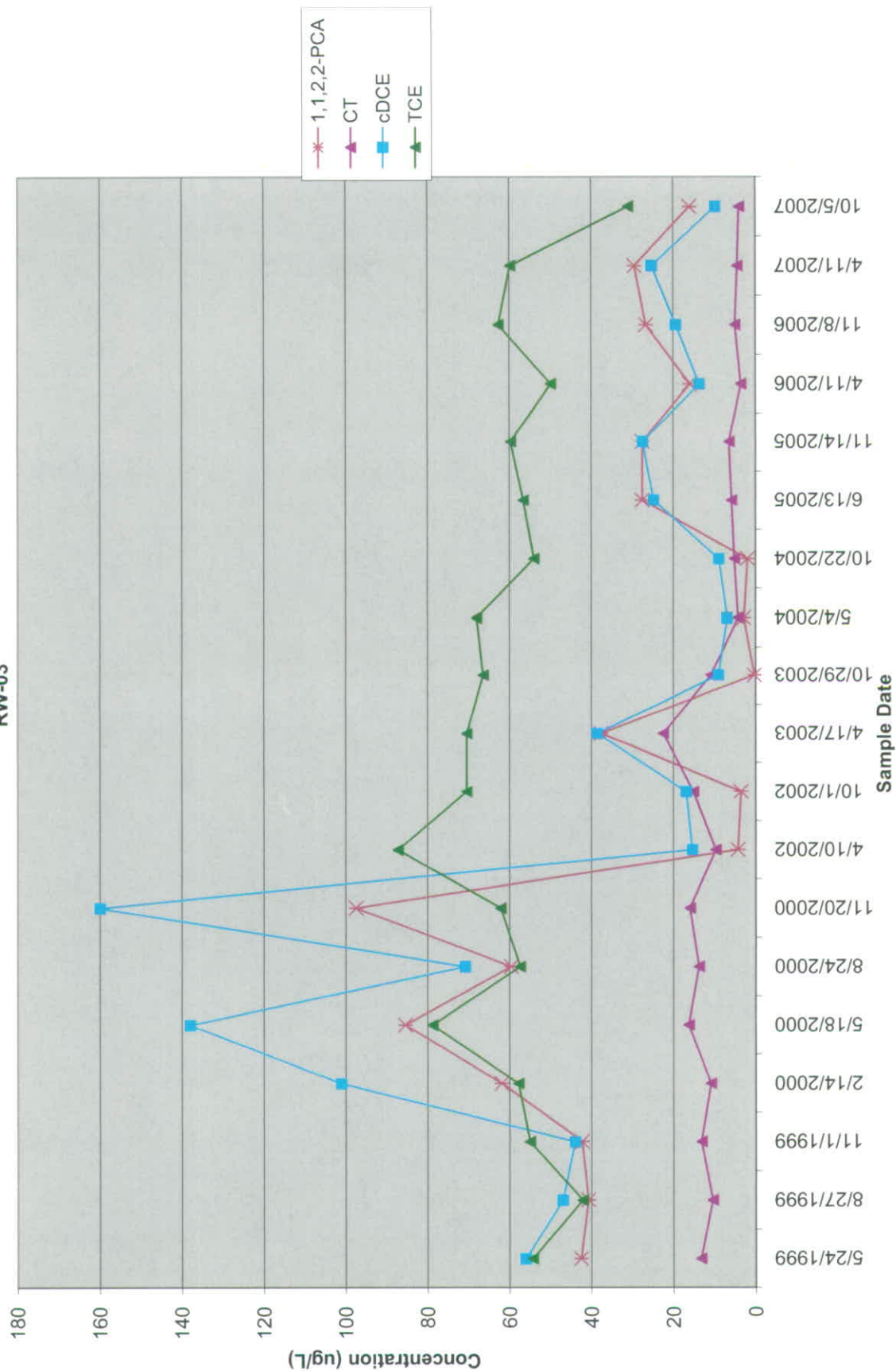
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 Dunn Field Groundwater IRA - Year Nine
 Defense Depot Memphis, Tennessee
RW-01B



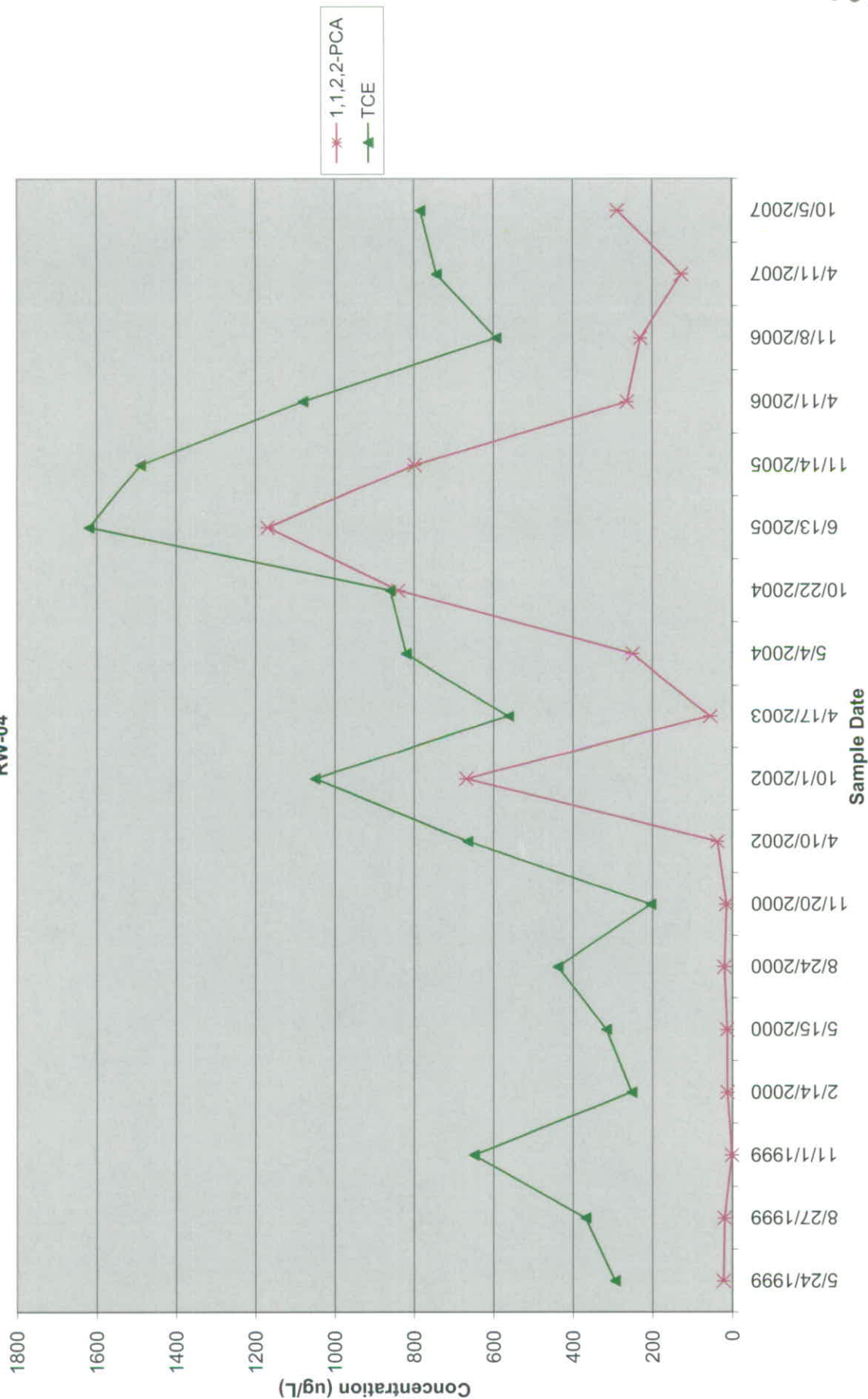
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Defense Depot Memphis, Tennessee
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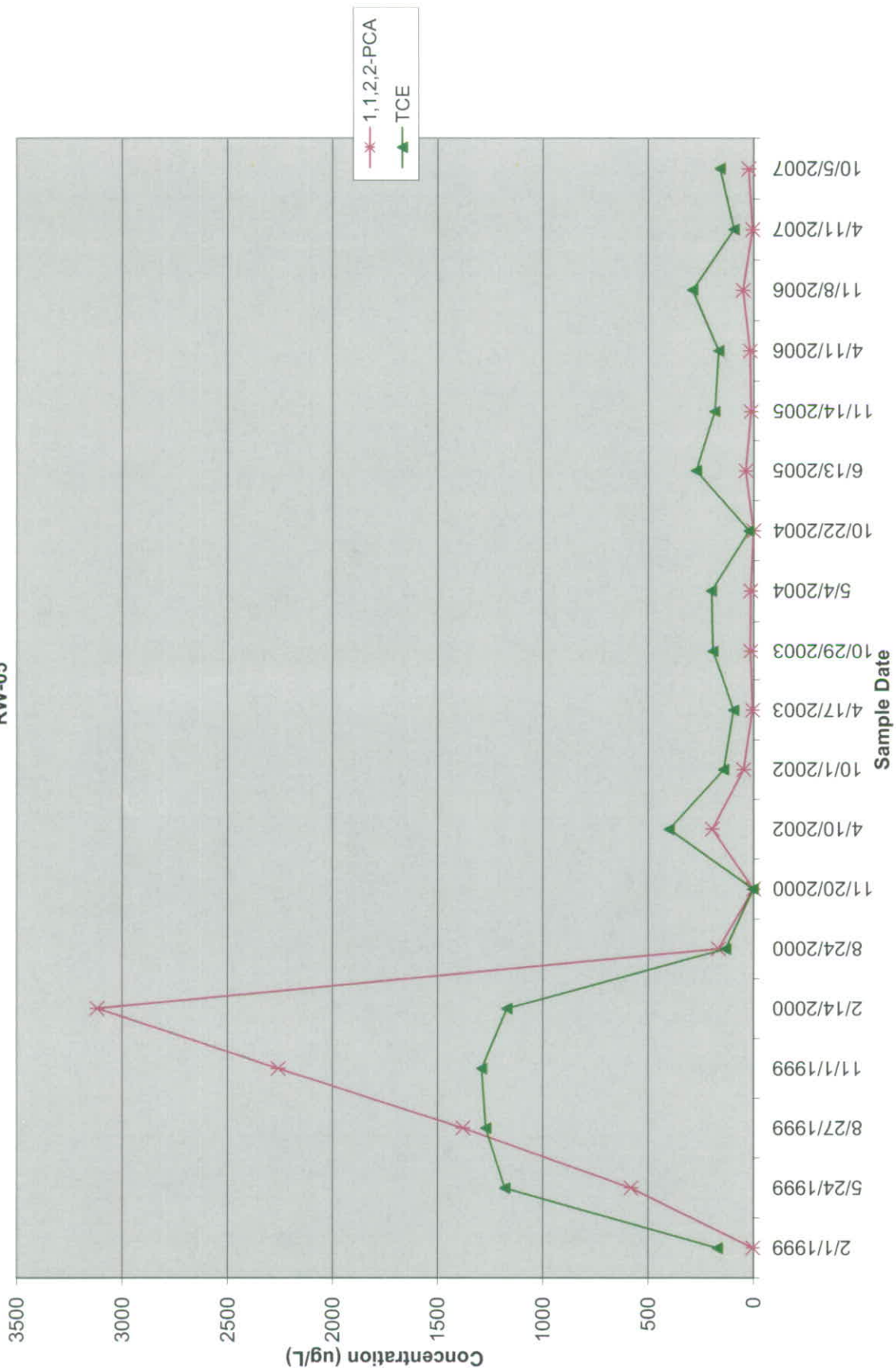
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Defense Depot Memphis, Tennessee
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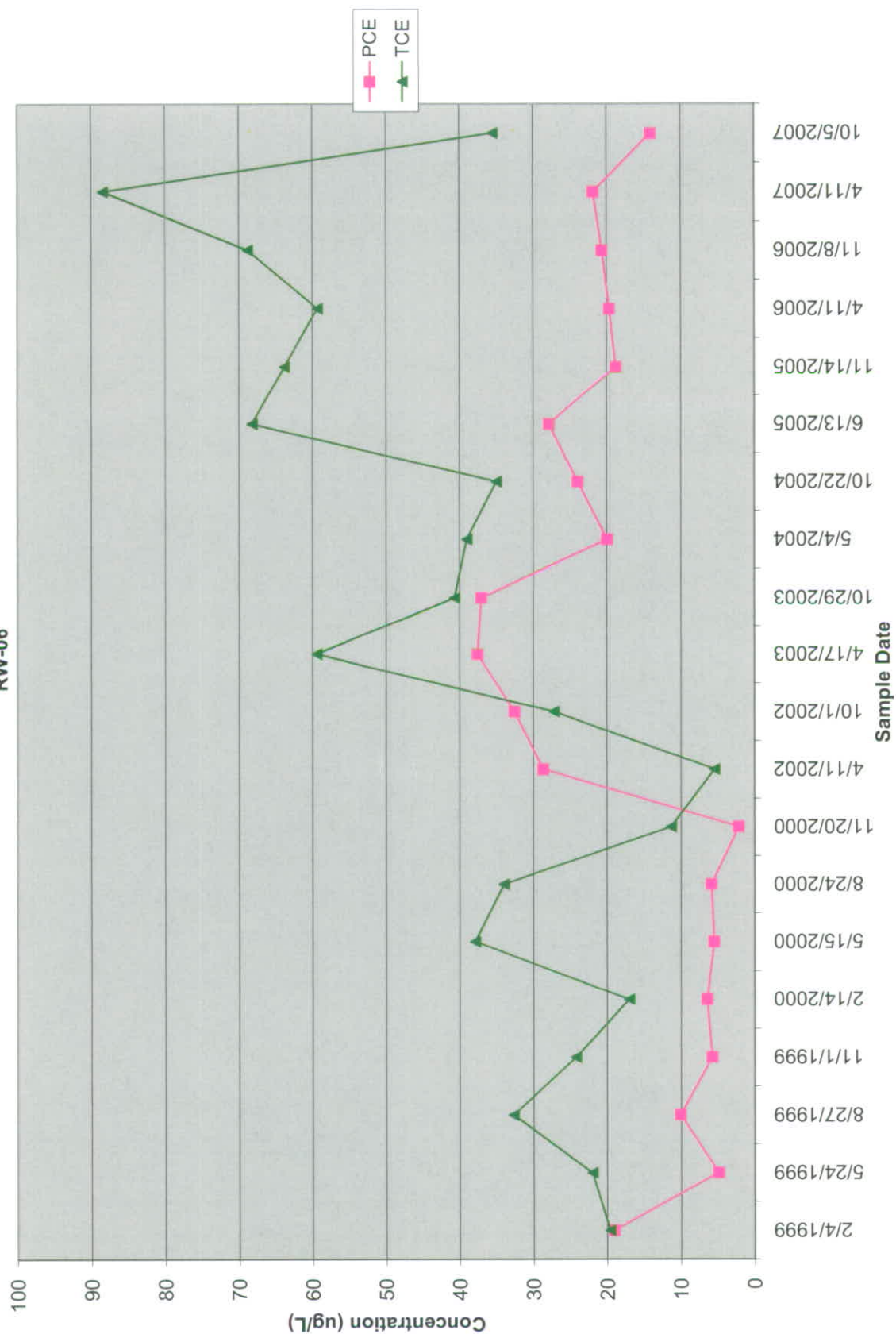
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Defense Depot Memphis, Tennessee
RW-04



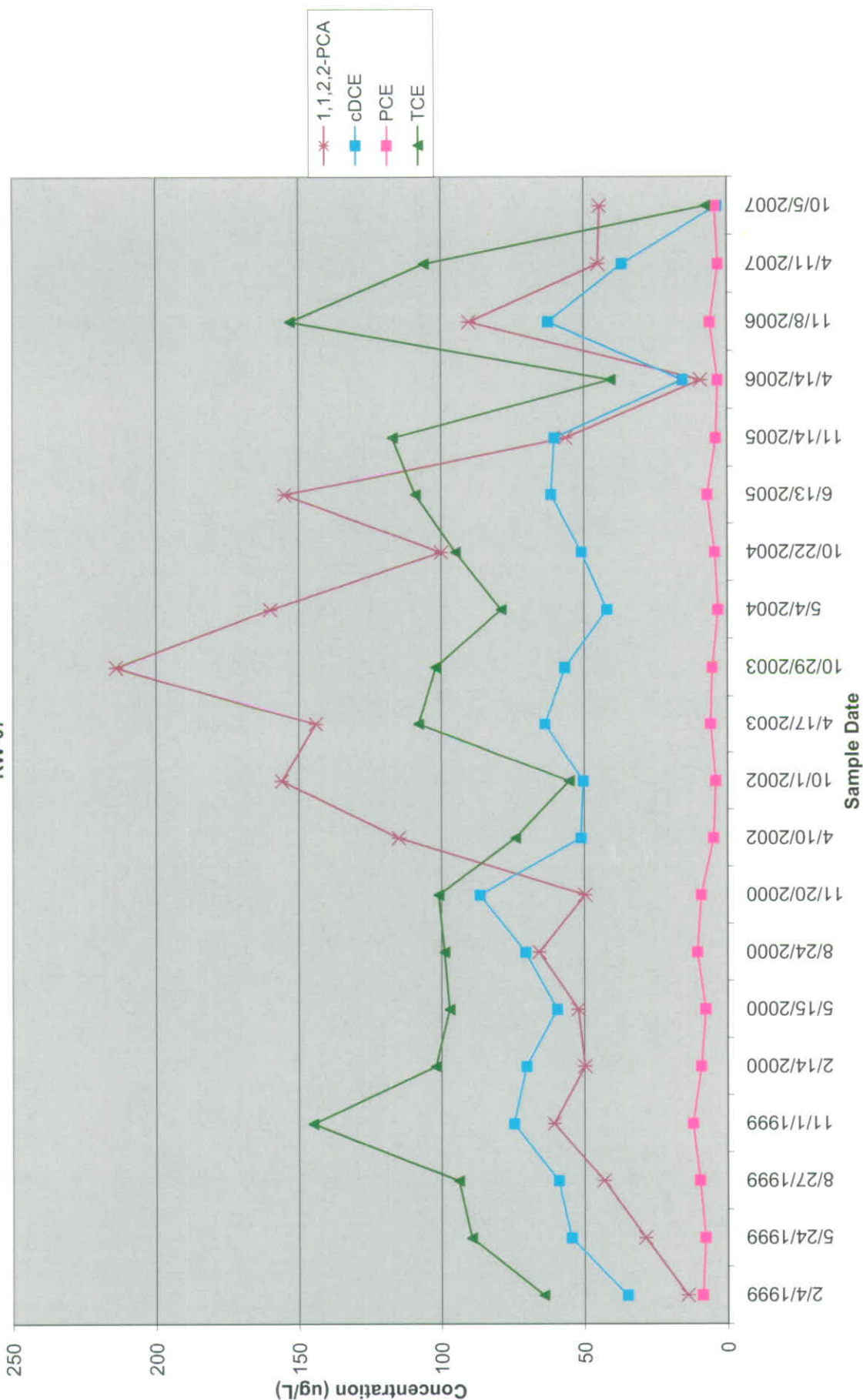
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Defense Depot Memphis, Tennessee
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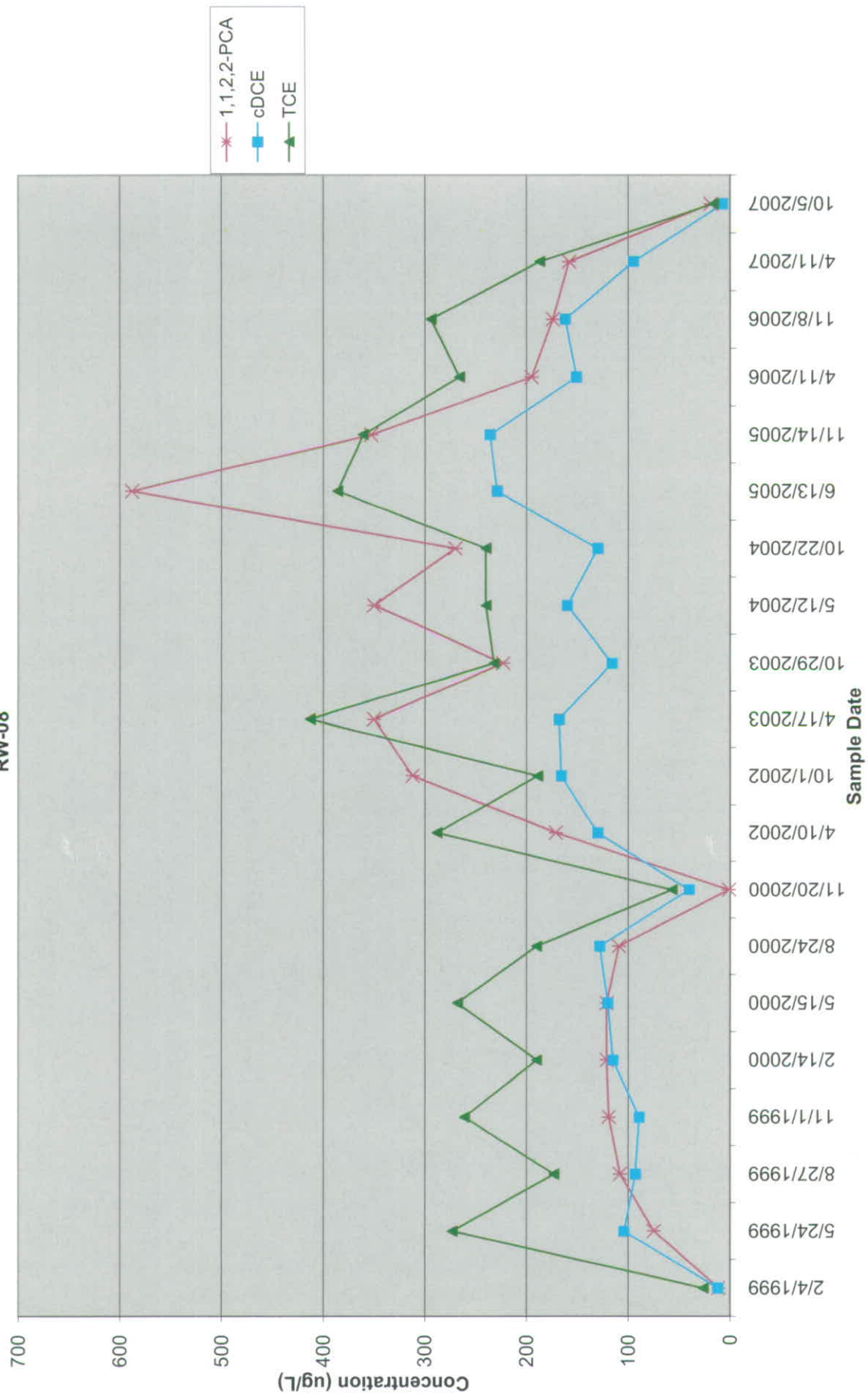
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Defense Depot Memphis, Tennessee
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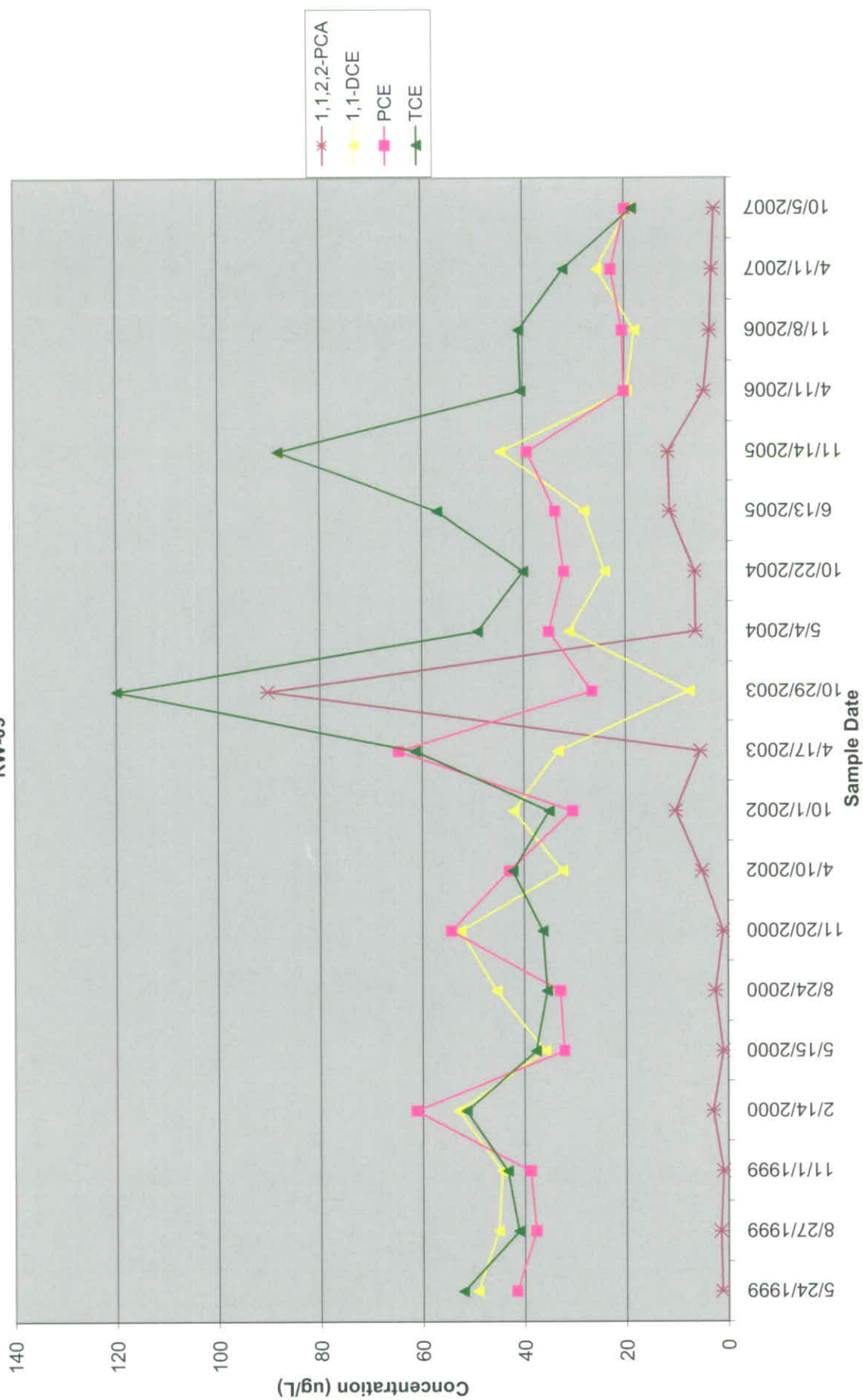
Time Trend Plots
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee
RW-07



Time Trend Plots
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee
RW-08



Time Trend Plots
Annual Operations Report - 2007
Dunn Field Groundwater IRA - Year Nine
Defense Depot Memphis, Tennessee
RW-09



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ADMINISTRATIVE RECORD

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