ANNUAL LONG-TERM MONITORING REPORT – 2013

Defense Depot Memphis, Tennessee
U.S. EPA I.D. Number TN4210020570

Department of the Army

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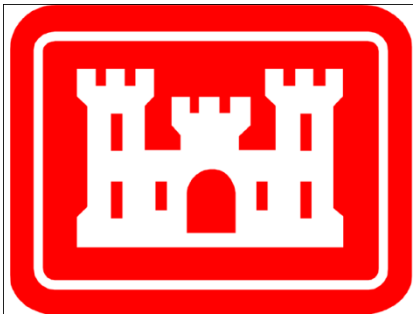

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Prepared for:

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Contract No. W90FYQ-09-D-0005
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LIST OF ACRONYMS AND ABBREVIATIONS

AS	air sparging
AS/SVE	air sparging with soil vapor extraction
bgs	below ground surface
btoc	below top of casing
cDCE	cis-1,2-dichloroethene
CF	chloroform
COV	coefficient of variation
CT	carbon tetrachloride
CVOC	chlorinated volatile organic compound
DBCP	1,2-dibromo-3-chloropropane
DCE	1,1-dichloroethene
DDMT	Defense Depot Memphis, Tennessee
DQE	data quality evaluation
DQO	data quality objective
DR	design related
EBT	enhanced bioremediation treatment
ft	foot/feet
FS	Feasibility Study
FSVE	fluvial soil vapor extraction
GW	groundwater
IAQ	Intermediate Aquifer
ID	inside diameter
IDW	investigation-derived waste
IRA	Interim Remedial Action
IRACR	Interim Remedial Action Completion Report
ISTD	in situ thermal desorption
kg	kilogram
LCS	laboratory calibration standard
LTM	long-term monitoring
LUC	land use control
MACTEC	MACTEC Engineering and Consulting, Inc.
MAQ	Memphis Aquifer
MAROS	Monitoring and Remediation Optimization System
MCL	maximum contaminant level
µg/L	micrograms per liter
MEK	methyl ethyl ketone (2-butanone)
MI	Main Installation

LIST OF ACRONYMS AND ABBREVIATIONS

(Continued)

mL	milliliter
MS	matrix spike
msl	mean sea level
MW	monitoring well
NTU	nephelometric turbidity unit
PCE	tetrachloroethene
PDB	passive diffusion bags
PMW	performance monitoring well
PRB	permeable reactive barrier
PZ	piezometer
QA/QC	quality assurance/quality control
QAPP	Quality Assurance Project Plan
RA	remedial action
RAO	remedial action objective
RA SAP	Remedial Action Sampling and Analysis Plan
RAWP	Remedial Action Work Plan
RD	remedial design
RG	remediation goal
ROD	Record of Decision
RL	reporting limit
RW	recovery well
S	Mann-Kendall Statistic
SCHD	Shelby County Health Department
SMP	Site Management Plan
SVE	soil vapor extraction
TA	treatment area
TC	target concentration
TCA	1,1,1-trichloroethane
TCE	trichloroethene
tDCE	trans-1,2-dichloroethene
TDEC	Tennessee Department of Environment and Conservation
TeCA	1,1,2,2-tetrachloroethane
TTA	target treatment area
US	United States
USACE	United States Army Corps of Engineers

LIST OF ACRONYMS AND ABBREVIATIONS

(Continued)

USEPA	United States Environmental Protection Agency
VC	vinyl chloride
VOA	volatile organic analysis
VOC	volatile organic compound
yr	year
ZVI	zero valent iron

1.0 INTRODUCTION

HDR has prepared this 2013 Annual Long-term Monitoring (LTM) Report for the Main Installation (MI) and Dunn Field at Defense Depot Memphis, Tennessee (DDMT) under Contract W90FYQ-09-D-0005, Task Order DS01 to the United States Army Corps of Engineers (USACE), Tulsa District. LTM at the MI and Dunn Field is performed to document changes in plume concentrations, to detect potential plume migration to off-site areas or into deeper aquifers and to track progress toward remediation goals. LTM activities at DDMT are performed in accordance with the MI LTM Plan in Appendix B of the *Main Installation Final Remedial Design, Rev.1* (MI RD) (CH2M HILL 2004a) and the Dunn Field LTM Plan in Appendix C of *Off Depot Groundwater Final Remedial Design, Revision 1* (Off Depot RD) (CH2M HILL 2008). DDMT's United States Environmental Protection Agency (USEPA) Identification Number is TN4210020570.

Tennessee Department of Environment and Conservation (TDEC) provided comments on the 2013 LTM Report, Rev.0 on 2 May and USEPA Region 4 provided comments on 5 May 2014. Responses to TDEC comments and to the USEPA comments related to the MI were submitted on 21-22 May 2014; the Army requested additional time to respond to USEPA comments related to Dunn Field. The comments and responses were discussed at a project review meeting in Memphis on 29 May 2014. It was agreed this report could be finalized with changes made to incorporate completed responses to comments and that the Dunn Field comments would be addressed in later LTM reports or separate documents following additional discussion. The amended responses, including comments related to Dunn Field, were submitted on 20 June. The report revisions were submitted to USEPA and TDEC for preliminary approval on 11 June; TDEC approved the report revisions on 11 July and USEPA provided their concurrence to the revisions on 18 July. The final responses to comments and the approval letters are included in Appendix A.

1.1 SITE LOCATION AND DESCRIPTION

Defense Depot Memphis, Tennessee is located in southeastern Memphis, Shelby County, Tennessee approximately 5 miles east of the Mississippi River and two miles north of Memphis International Airport (Figure 1). DDMT originated as a military facility in the early 1940s; it received, warehoused, and distributed supplies common to all United States (US) military services and some civil agencies located primarily in the southeastern US, 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 facilities to be closed under Base Realignment and Closure. Storage and distribution of material continued until the facility closed in September 1997.

The property consists of approximately 632 acres and includes the MI and Dunn Field. The MI covers approximately 567 acres and had open storage areas, warehouses, military family housing, and outdoor recreational areas. Dunn Field, which is located across Dunn Avenue from the north-northwest portion of the MI, covers approximately 65 acres and had mineral storage and waste disposal areas.

In 1992, DDMT was added to the National Priorities List (57 Federal Register 47180 No. 199). Responsibility for environmental restoration at DDMT transferred from the Defense Logistics Agency to the Department of the Army in December 2010. The regulatory oversight agencies are USEPA Region 4 and TDEC.

1.2 GEOLOGY AND HYDROGEOLOGY

The geologic units of interest at DDMT are (from youngest to oldest): loess, including surface soil; fluvial deposits; Jackson formation/Upper Claiborne group; and Memphis Sand.

The loess consists of wind-blown and deposited brown to reddish-brown, low-plasticity clayey silt to silty clay. The loess deposits are about 20 to 30 feet (ft) thick and are continuous throughout the DDMT area.

The fluvial (terrace) deposits consist of two general layers. The upper layer is a silty, sandy clay that transitions to a clayey sand and ranges from about 10 to 40 ft thick. The lower layer is composed of interlayered sand, sandy gravel, and gravelly sand, and has an average thickness of approximately 40 ft. The uppermost aquifer is the unconfined fluvial aquifer, which consists of saturated sands and gravelly sands in the lower portion of the fluvial deposits. Recharge to this unit is mainly from rainfall infiltration; discharge is to underlying units or laterally into adjacent stream channels. The saturated thickness ranges from 0 ft (dry) to approximately 60 ft, and is controlled by the uppermost clay configuration in the Jackson formation/Upper Claiborne group. The groundwater in the fluvial aquifer is not a drinking water source for area residents; however, the current Tennessee groundwater classification at DDMT is General Use (TDEC Chapter 1200-04-03).

Groundwater elevations in the fluvial aquifer at the MI range from a high of approximately 240 ft mean sea level (msl) in the northeast to a low of approximately 195 ft msl in the central area. Groundwater elevations at Dunn Field range from a high of approximately 240 ft msl in the northeast to approximately 215 ft msl west of Dunn Field.

The intermediate aquifer (IAQ) is locally developed in Jackson Formation/Upper Claiborne group deposits, which contain laterally extensive, thick clay deposits. The uppermost clay unit appears to be continuous, except for a large gap in the MI's northwestern area and Dunn Field's southwestern area. There are other possible gaps in the clay off-site, west and northwest of Dunn Field. Where present, these gaps create connections to the underlying IAQ from the fluvial deposits. Water level elevations in the IAQ, away from areas of recharge from the fluvial aquifer, are approximately 160 ft msl.

The Memphis Sand primarily consists of thick-bedded, white to brown or gray, very fine-grained to gravelly, partly argillaceous and micaceous sand. The Memphis Sand ranges from 500 to 890 ft in thickness and begins at a depth below ground surface (bgs) of approximately 120 to 300 ft. The top of the Memphis Sand was identified at approximately 280 ft bgs (elevation of 15 ft above msl) in monitoring well (MW)-254 and MW-255 near the northwest corner of the MI. The Memphis aquifer (MAQ) is confined by overlying clays and silts in the Cook Mountain formation (part of the Jackson/Upper Claiborne group) and 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, which is operated by Memphis Light, Gas and Water, is located approximately 2 miles west of Dunn Field. Water level elevations at MW-254 and MW-255 are approximately 160 ft msl.

1.3 REMEDIAL ACTION

All the selected remedies for DDMT have been implemented. The *Preliminary Close Out Report* (USEPA 2010) was approved in May 2010 and the DDMT NPL site status was revised to Construction Complete.

1.3.1 Main Installation

Remedial action objectives (RAOs) for the MI were established in the *Main Installation Record of Decision* (MI ROD) (CH2M HILL 2001). The groundwater RAOs are:

- to prevent ingestion of water contaminated with volatile organic compounds (VOCs) in excess of maximum contaminant levels (MCLs) from potential future onsite wells;
- to restore groundwater to concentrations at or less than MCLs; and
- to prevent migration horizontally and vertically offsite of groundwater contaminants in excess of MCLs.

The groundwater remedy selected in the MI ROD was enhanced bioremediation treatment (EBT) with LTM and land use controls (LUCs). EBT was conducted from September 2006 to February 2009 in the most contaminated part of the plume within the MI; untreated parts of the plume were allowed to degrade under natural attenuation processes. LUCs were implemented through deed and lease restrictions, zoning regulations, a Notice of Land Use Restrictions recorded in January 2005, and annual inspections since 2005. The *Main Installation Interim Remedial Action Completion Report, Revision 1* (MI IRACR) (HDR|e^{2}M 2010) was approved by USEPA in March 2010.

EBT components were planned to be removed following a period of monitoring after the last injection in February 2009. However, system removal and well abandonment were not performed because of rebound in chlorinated volatile organic compound (CVOC) concentrations observed in LTM samples. New baseline groundwater samples collected from the treatment areas (TAs) in December 2011 confirmed rebound in CVOC concentrations. The *Remedial Action Work Plan Addendum, Main Installation, Revision 0* (MI RAWP Addendum) (HDR 2012a) describing procedures for additional EBT was approved by USEPA and TDEC in January 2013. Additional EBT is being conducted in areas where individual CVOC concentrations of parent compounds (tetrachloroethene [PCE], trichloroethene [TCE] and carbon tetrachloride [CT]) exceed 100 micrograms per liter (µg/L): target treatment area (TTA)-1, TTA-2, the West-Central plume and the Bldg 835 plume. Quarterly injections of sodium lactate and performance monitoring were begun in November 2012 and are planned to continue for two years. The EBT injection and performance monitoring well locations are shown on Figure 2. Overall progress toward RAOs will be evaluated through LTM.

1.3.2 Dunn Field

The *Record of Decision for Interim Remedial Action* was signed in April 1996 with the objective of hydraulic containment to prevent further contaminant plume migration and reduce contaminant mass in groundwater. The interim remedial action (IRA) groundwater recovery system included 11 recovery wells (RWs) screened in the fluvial aquifer along the western boundary of Dunn Field. Based on reduction of CVOC concentrations in groundwater following implementation of the Dunn Field Source Areas remedial action (RA), five RWs were shutdown in June 2008 and the remaining RWs were shutdown in January 2009. The IRA system was removed and the RWs abandoned in July 2010.

The groundwater RAOs established in the *Memphis Depot Dunn Field Record of Decision* (Dunn Field ROD) (CH2M HILL 2004b) are:

- to prevent human exposure to contaminated groundwater (i.e., exceeding protective target concentrations [TC])
- to prevent further off-site migration of VOCs in excess of protective target levels
- to remediate fluvial aquifer groundwater to drinking water quality to be protective of the deeper MAQ.

The remedies were implemented in three phases: Disposal Sites, Source Areas and Off Depot. The selected remedies for the Source Areas and Off depot were modified through the *Dunn Field Record of Decision Amendment* (ROD Amendment) (e^2M 2009) approved in January 2009.

The Disposal Sites RA included excavation and off-site disposal of soil and waste material from five sites and was completed in 2006. The *Disposal Site Remedial Action Completion Report* (MACTEC 2006) was approved in August 2006.

The Source Areas RA included soil vapor extraction (SVE) in the vadose zone and injection of zero valent iron (ZVI) in groundwater. The Fluvial SVE (FSVE) in fluvial soils (30 to 70 ft bgs) was operated from July 2007 to July 2012 and removed approximately 4,000 pounds of VOCs. Thermal SVE, or in situ thermal desorption (ISTD), was performed in the loess (0 to 30 ft bgs) from May to December 2008 and removed approximately 12,500 pounds of VOCs. ZVI injection was not required due to success of the SVE systems in reducing groundwater impacts. Excavation and off-site disposal of soil and waste material in two additional areas were also conducted in the Source Areas RA. The *Source Areas Interim Remedial Action Completion Report, Revision 1* (Source Areas IRACR) (HDR|e^2M 2009a) was approved by USEPA and TDEC in November 2009.

The Off Depot RA included installation of an air sparging with SVE (AS/SVE) system across the downgradient portion of the plume. The AS/SVE system has removed approximately 82 pounds of VOCs from startup in December 2009 through September 2013 and is meeting the treatment goals. LUCs on Dunn Field and LTM in the Dunn Field area were also included in the Off Depot RA. LUCs were implemented through deed restrictions, zoning regulations, a Notice of Land Use Restrictions recorded in June 2009, and annual inspections since 2009. The *Dunn Field Off Depot Groundwater Interim Remedial Action Completion Report, Revision 1* (Off Depot IRACR) (HDR 2011a) was approved by USEPA in August 2011 and by TDEC in November 2011.

The FSVE system was shut down in July 2012 after meeting soil remediation goals; LTM results at nearby wells are evaluated for potential rebound in CVOC concentrations. The AS/SVE system is to

continue operation until the upgradient concentrations from the Dunn Field plume do not exceed 50 µg/L for individual CVOCs for 12 months. The FSVE and the AS/SVE systems with nearby LTM wells are shown on Figures 3 and 4, respectively.

1.4 PREVIOUS GROUNDWATER MONITORING

1.4.1 Main Installation Long-term Monitoring

The MI LTM Plan established sampling frequency (biennial, annual, semiannual, or quarterly) and classifications for 47 existing LTM wells. The well classifications are:

- Background – wells screened in the fluvial aquifer located along or outside the MI boundary; wells upgradient of or at a distance from groundwater plumes on the MI and Dunn Field; and wells with no, or low, previous detections of site constituents.
- Boundary – wells screened in the fluvial aquifer located along or outside the MI boundary to monitor constituent migration from off-site sources.
- Sentinel – wells screened within either the fluvial or IAQ adjacent to or within the window to the IAQ.
- Performance – wells screened in the fluvial aquifer and within the limits of known groundwater plumes.

Additional wells have been installed in phases since MI LTM was initiated in 2004; there were 99 MI LTM wells in 2013. The wells exceeding MCLs are grouped into six plumes in the fluvial aquifer. Sentinel wells in the IAQ and the transition zone between the fluvial aquifer and the IAQ are listed separately.

Plume	Primary CVOCs
TTA-1 North	PCE
TTA-1 South	PCE, TCE
TTA-2	PCE, CT, CF
West Central	PCE
Building 835	TCE
North Central	TCE
Sentinel	PCE

MI LTM during 2012 was described in *Annual Long Term Monitoring Report-2012* (HDR 2013); the report was approved by TDEC in April 2013. There were 112 MI LTM wells in 2012. The well classifications were background (6), boundary (7), performance (72) and sentinel (24); three wells

installed in March 2012 had not been classified. New wells are sampled semiannually for two years; the other wells had the following sample frequency: biennial (15), annual (26) and semiannual (68). A semiannual sample event was conducted in April and a biennial sample event was conducted in October 2012.

Analytical results and isopleths were generally similar to those from previous LTM sampling events, with additional information provided by the new wells. The CVOCs most often detected above MCLs and the maximum concentrations reported were: PCE, 186 µg/L; TCE, 165 µg/L; and CT 196 µg/L.

Primary CVOCs were detected above reporting limits (RLs) in 19 of 24 sentinel wells and exceeded MCLs for PCE and/or TCE in 9 sentinel wells. The PCE plume in the IAQ extended to the northwest property boundary based on concentrations in IAQ well MW-256 up to 39.5 µg/L; TCE was present at concentrations up to 13.7 µg/L. The nearby MAQ wells, MW-254 and MW-255, did not have PCE above the RL, but TCE has been detected from below the RL to 3.1 µg/L.

Increasing TCE concentrations were observed at MW-97 and at MW-258; both wells are outside the current EBT areas. The 2012 LTM results were discussed during a project review meeting with USEPA and TDEC in February 2013; two additional monitoring wells were proposed with one downgradient of MW-97 and the other upgradient of MW-258. The well locations for the two wells, MW-260 and MW-261, were approved in June 2013.

Twenty LTM wells were selected for use in the EBT injections or performance monitoring which began in November 2012. These wells were sampled during EBT and therefore omitted from MI LTM: MW-21, MW-62, MW-85, MW-113, MW-197A/B, MW-203A/B, MW-212, MW-213, PMW85-05, PMW92-03, PMW101-04A/B, DR1-5/5A, DR1-6/6A, DR2-2 and DR2-5. Five former EBT performance MWs that were not selected for abandonment were incorporated into LTM in 2013: PMW92-02, PMW101-03A/B and PMW101-6A/B.

1.4.2 Dunn Field Long-term Monitoring

Regular groundwater monitoring in the Dunn Field area at DDMT was performed as part of the IRA from 1999 through 2009. Beginning in 2010, groundwater monitoring was conducted in accordance with the Off Depot RD and consisted of performance monitoring in the AS/SVE area and LTM in the remainder of the plume.

The Dunn Field LTM plan classified the MWs in three categories:

- Background – wells screened in the fluvial aquifer located along or outside of the Dunn Field boundary; located upgradient to or at a distance from contaminant plumes on Dunn Field; no (or only low-level) previous detections of site contaminants in well samples.
- Sentinel – wells screened within either the fluvial aquifer or IAQ adjacent to or within a window to the IAQ.
- Performance – wells screened in the fluvial aquifer; located within the limits of known contaminant plumes; or repeatedly have contaminants in samples; located in areas targeted for treatment during the RA.

The LTM plan established an initial sampling frequency in 2010 for 58 existing wells: biennial, annual and semiannual. Another 20 MWs were used for water level measurements during LTM events. The 36 performance monitoring wells (PMWs) were sampled quarterly in 2010 and semiannually in 2011; the PMWs were incorporated into LTM in 2012. Historical results for all Dunn Field MWs were reviewed; 87 MWs were recommended for LTM and the remaining 27 wells for abandonment.

Dunn Field LTM during 2012 was described in *Annual Long Term Monitoring Report-2012* (HDR 2013); the report was approved by TDEC in April 2013. There were 87 Dunn Field LTM wells in 2012. The well classifications were background (13), performance (65) and sentinel (9). The wells had the following sample frequency: biennial (12), annual (33) and semiannual (42). An annual sample event was conducted in April and a semiannual sample event was conducted in October 2012. One well, MW-32, could not be sampled; the well was damaged in 2011 and could not be repaired.

Analytical results were generally similar to previous results and showed continued reduction in CVOC concentrations from the RAs at Dunn Field and the Off Depot area. Total CVOC concentrations decreased in the majority of performance wells at Dunn Field and the Off Depot area, and the overall extent of the plume originating on Dunn Field continued to decrease. Several wells in the northern area of Dunn Field showed contaminant migration on to Dunn Field from an off-site source, which is being investigated by TDEC.

Only one LTM well in the Source Areas on Dunn Field or the Off Depot area, MW-159, exceeded the treatment goal of 50 µg/L for individual CVOCs; TCE was reported at 275 µg/L in April and 247 µg/L in October 2012. In April 2012, an MCL or the TC for 1,1,2,2-tetrachloroethane (TeCA) was exceeded in 24 LTM wells; five of the wells are located within the plume originating from an off-site source northeast of Dunn Field. In October, an MCL or the TC for TeCA was exceeded in 17 LTM wells. In both sample events, TeCA and/or TCE was one of the exceedances in each well.

The only recommendations for 2013 Dunn Field LTM were changes to sample frequency in a few wells: MW-04, MW-08, MW-80, MW-126 and MW-184. Abandonment of 27 wells recommended in the 2011 LTM report and MW-32 was scheduled for March 2013. The remaining 86 wells were used for Dunn Field LTM in 2013.

2.0 LONG-TERM MONITORING ACTIVITIES

LTM activities during 2013 consisted of abandonment of 28 wells at Dunn Field and 1 piezometer on the MI; installation of two MWs on the MI; repair of 19 wells on the MI and 12 wells on Dunn Field; and monitoring designated LTM wells at the MI and Dunn Field during sampling events in April and October. Field activities and laboratory analyses were performed in accordance with the *Remedial Action Sampling and Analysis Plan, Revision 1* (RA SAP) (MACTEC 2005) and the *Remedial Action Operations and Long Term Monitoring Quality Assurance Project Plan, Revision 0* (QAPP) (HDR 2011b). The QAPP is consistent with the RA SAP but has not received final approval.

In 2013, MI LTM included 99 wells classified as Background (6), Boundary (7), Performance (57) and Sentinel (24); three wells installed in March 2012 and two wells installed in July 2013 have not been classified. The sample frequency for new wells is determined after four semiannual sample events. The remaining 94 wells have the following sample frequency: biennial (15 wells), annual (26 wells) and semiannual (53 wells). The MI LTM wells are listed on Table 1 and the locations are shown on Figure 5. The well classification, sample frequency, and 2013 sampling events are shown on Table 2.

In 2013, Dunn Field LTM included 86 wells classified as Background (8), Background-NE (5), Performance (50), Performance-FSVE (14) or Sentinel (9). The Background-NE wells are located on or bordering the northeast section of Dunn Field and have CVOC concentrations from an off-site source(s) upgradient of Dunn Field. The performance-FSVE wells are performance wells selected for rebound monitoring after shut down of the FSVE system in July 2012. The LTM wells are assigned semiannual (42), annual (29) or biennial (15) sample frequencies. The Dunn Field LTM wells are listed on Table 3 and the locations are shown on Figure 6. The well classification, sample frequency, and 2013 sampling events are shown on Table 4.

2.1 WELL ABANDONMENT

The *Off Depot Annual Groundwater Monitoring Report - 2011* (HDR 2012b) identified 27 wells at Dunn Field for abandonment; an additional well, MW-32, was added after it was found to be damaged and could not be repaired. The *Annual Long Term Monitoring Report - 2010, Main Installation* (HDR 2011c) identified one well on the MI, PZ-06, for abandonment.

The 28 monitoring wells and one piezometer were abandoned by Boart Longyear, a licensed Tennessee well driller. An HDR field geologist observed the well abandonment. Shelby County Health Department

(SCHD) issued Permit #13-037 for well abandonment to Boart Longyear on 7 March 2013; the permit is included in Appendix B. Boart Longyear notified SCHD of the schedule for well abandonment on 8 March in accordance with the permit and well abandonment was performed in accordance with SCHD requirements on 12 to 16 March 2013. A well abandonment summary is provided on Table 5. The well locations are shown on Figure 7 for the MI and Figure 8 for Dunn Field.

Total well depths were measured at each well to confirm that obstructions did not interfere with placement of the tremie pipe and grout. The measured depths were compared to depths recorded during installation. Differences were observed at five wells:

- MW-32 had an obstruction at 64 ft below top of casing (btoc), as noted during the attempted repair. The obstruction was in the screened section, left only a few feet of saturated thickness and prevented the well from being effectively re-developed.
- MW-37 measured 1.3 ft deeper than recorded.
- MW-51 measured 2.0 ft deeper than recorded.
- MW-175 had a partial obstruction at 37 ft btoc due to deformation from high temperature during ISTD on Dunn Field in 2008. The obstruction did not block the grout from passing and MW-175 was filled completely.
- MW-232 measured 1.6 ft less than recorded.

One-half gallon of bleach was poured into each well as a disinfectant. The wells were then filled with grout (Portland type II cement with 5 percent bentonite) from the bottom up using a tremie pipe. After the grout had time to settle, additional grout was added to completely fill the well casing.

Surface completions were removed at wells located in grassed or graveled areas; the areas were restored with either topsoil/grass seed or gravel. At wells located in concrete or asphalt-paved areas, the manhole covers were removed and the manholes filled with concrete. Bollards, installed at nine wells, were also removed.

All of the surface completion materials including manholes, bollards, well lids and well casings were placed in a 20 cubic foot roll-off dumpster. The materials were disposed at the Railroad Avenue Landfill in Olive Branch, MS. The weigh ticket from the landfill is provided in Appendix C. Other solid waste consisting of cement bags, gloves and topsoil bags were placed in the HDR field office dumpster for disposal as municipal waste. Approximately 30 gallons of water recovered while grouting the wells was added to condensate storage tanks at Dunn Field.

2.2 WELL INSTALLATION

Two wells, MW-260 and MW-261, were installed on the MI based on increasing TCE concentrations outside EBT areas. The well locations were discussed during a project review meeting with USEPA and TDEC in February 2013; the new well locations are shown on Figure 5.

The well locations were marked by HDR on 10 June 2013 and cleared for utilities by Tennessee One Call on 24 June. Well construction permits were issued by SCHD on 3 July; the well permits are included in Appendix B. The wells were installed by Boart Longyear from 9 to 12 July 2013; an HDR engineer was on-site to observe drilling, well installation and development.

Borings were advanced using rotasonic drilling methods with a 6-inch outer core barrel and a 4-inch inner core barrel. Continuous soil cores were collected from ground surface to the termination depth of each boring. The borings were drilled 5 to 10 ft into the uppermost clay of the Jackson Formation/Upper Claiborne Group. The borehole at MW-260 was backfilled with bentonite to approximately 1 ft below the top of the clay and 1 ft of sand was added prior to setting the well. The borehole at MW-261 was drilled approximately 25 ft deeper than planned because of the depth to top of clay; the fluvial sands were allowed to fill the borehole as the drill casing was withdrawn to the planned well depth. Soil boring logs are provided in Appendix D.

Monitoring wells were constructed with new, unused, decontaminated 2-inch inside diameter (ID) schedule 40 PVC with internal-threaded flush joints using 10-ft sections of well casing, 5-ft and 10-ft sections of 0.010-inch factory-slotted well screen, and an end cap. Centralizers were used in all wells and placed at 30-ft intervals on the casing, starting above the well screen. A filter pack of clean, 8-16 grade, inert, hard, well-rounded sand (less than 2 percent flat particles) was placed from the bottom of the well to approximately 5 ft above the top of the well screen. A 5-ft thick bentonite seal was placed above the filter pack and allowed to hydrate for a minimum of 1 hour prior to installation of the grout seal. The annular space was filled with a cement-bentonite grout mixture to approximately 6 inches bgs. Both wells had flush-mount completions with a 9-inch ID manhole set within a 3-ft by 3-ft by 0.5-ft thick concrete pad. Well installation data are provided on Table 6 and well diagrams are provided in Appendix E.

The wells were developed at least 24 hours after installation using a Waterra surge pump. The wells were surged by manually raising and lowering the pump. Water quality measurements were made to evaluate well development in accordance with the following criteria: stabilized turbidity less than 10 nephelometric turbidity units (NTUs), pH within 0.1 standard units, and temperature and specific

conductance within 10 percent for three consecutive readings. Both wells met the development criteria. A well development summary with volume purged and final stabilization parameters is provided on Table 7.

The completed wells were surveyed for location and elevation by a Tennessee-licensed surveyor from Allen and Hoshall on 22 July 2013. Horizontal and vertical coordinates are based on the North American Datum, 1927 used for all survey data at DDMT. Horizontal coordinates are provided in the Tennessee State Plane coordinate system. The survey plats are provided in Appendix F.

2.3 WELL REPAIR

Repairs were made to LTM wells based on observations during well assessments during water level measurements in 2012; 31 LTM wells were identified with broken, stripped or missing bolts on the manholes or with severely cracked well pads. Repair required replacement of the well pads and manholes. The repaired wells, which are located on the MI and Dunn Field and in the Off Depot area, are listed on Table 8. The well locations are shown on Figures 7 and 8.

Well repair was performed by TriState Testing Services from 15 July to 1 August 2013. The repairs were made by area with removal of old pads and installation of replacement pads completed at adjacent wells before moving to the next area. The concrete pads were broken up using a jackhammer and the debris was placed in a roll-off for disposal. The debris was disposed at South Shelby Landfill; the invoice for the disposal is provided in Appendix C.

The PVC risers in a few LTM wells were cut to allow the new manholes to fit properly. The replacement pads were 3 ft by 3 ft by 4 inches thick. Each pad was constructed using crack resistant concrete mix with four pieces of #3 rebar, 2.5 ft in length, laid in an overlapping square around the manhole near the mid-depth of the pad. Nine-inch diameter, powder coated, single bolt, water tight manholes were placed in the center of the pad and approximately 1-inch higher than the edge of the pad. The concrete was sloped from the manhole to the edge of the pad to allow water runoff. The well identification number was stamped on a brass tag affixed to the pad.

Bollards were installed at four LTM wells (MW-143, MW-205A/B and MW-219) where additional protection was considered necessary. The bollards were 3-inch diameter steel pipes 6-ft in length installed in holes excavated or drilled 2 ft bgs and cemented in place. The bollards were filled with concrete mounded at the top to avoid water setting in the bollard and were painted yellow.

The repaired wells were re-surveyed for location and elevation by Allen and Hoshall as repairs were completed. Horizontal and vertical coordinates are based on the North American Datum, 1927 used for all survey data at DDMT. Horizontal coordinates are provided in the Tennessee State Plane coordinate system. The survey plats are provided in Appendix F.

2.4 GROUNDWATER MONITORING

Groundwater levels were measured in all LTM wells on the MI and Dunn Field prior to sampling for the two events. Measurements were made using Solinist Model 101 water level meters with electronic sensors and tapes graduated in 0.01-ft increments.

Groundwater samples were collected using either passive diffusion bags (PDBs) or low-flow purging methods. If saturated thickness of the well screen was greater than 5 ft, a PDB was used. If the saturated thickness was less than 5 ft or a PDB was not suitable for other reasons, the well was sampled following low-flow purging or bailing.

When samples were collected using a PDB, a sample of water from the PDB removed from the well was transferred to 40-milliliter (mL) vials preserved with hydrochloric acid. Following sample collection, a new PDB was filled with de-ionized water and placed in the middle of the saturated section of well screen. Water quality parameters were not measured prior to sampling wells with PDBs.

When samples were collected using bladder pumps and low-flow purging methods, dedicated Teflon® bladders and Teflon®-lined polyethylene tubing were used. The pumping rate at each well was monitored in order that the water levels not decline more than 4 inches (0.1 meter). Following sampling, the bladder and tubing for each well were placed in separate, sealed plastic bags and stored for future sampling events. Water quality parameters were measured at approximately 5 to 10 minute intervals during purging using a flow-through cell with a YSI 6550 meter. Wells sampled with a dedicated Teflon® bailer had stabilization parameters collected using the same instrumentation; a sampling cup was filled from the bailer and a set of stabilization parameters were collected for every well volume. The YSI meter was calibrated each morning prior to sampling, and if abnormal readings were observed during the day, the instrument was recalibrated in the field. Purging continued at each well for up to two hours in order to meet the stabilization criteria: three successive readings within 0.1 for pH, 10 millivolts for oxygen reduction potential, 3 percent for specific conductance, 10 percent for dissolved oxygen and less than 20 NTU for turbidity. Temperatures were also measured and recorded, but not used as a stabilization parameter. All measurements were noted on the field sampling forms. Samples were collected in 40-mL

vials preserved with hydrochloric acid when stabilization criteria were met or the field team leader approved a variance from the criteria.

Samples were sent to Microbac Laboratories in Marietta, Ohio for VOC analysis by Method SW8260B. The activities during the two sampling event are summarized in the following sections.

2.4.1 April 2013

Groundwater levels were measured in LTM wells at both the MI and Dunn Field on 9 to 10 April. Water levels were measured at all LTM wells, except MW-211 on the MI, which was inadvertently missed. The water level measurements are shown on Table 9 for the MI and Table 10 for Dunn Field.

The field crew at DDMT for well abandonment in March 2013 made preparations for the April LTM event. The Boart Longyear crew removed a dedicated bladder pump from MW-100B on the MI; the pump could not be removed during the transition from low-flow sampling to PDBs in 2012. HDR staff found that MW-33 located west of Dunn Field was no longer blocked by surface debris; they installed PDBs in both wells.

2.4.1.1 Main Installation

Semiannual groundwater sampling was conducted on 10 to 11 April 2013 with samples collected from 56 designated wells, including the three wells installed in 2012. There were 58 groundwater samples collected; samples were collected from two screened intervals at MW-101 and MW-107.

Groundwater samples were collected from 51 wells using PDBs. The sample intervals are shown on Table 11. Groundwater samples were collected by low-flow sampling from the five wells that were added to LTM in 2013. Samples were collected when stabilization criteria were met. The final stabilization measurements are shown on Table 12. PDBs were installed in these five wells after sampling, with tethers constructed to locate the PDB near the middle of the saturated screen.

2.4.1.2 Dunn Field

Biennial groundwater sampling was conducted with samples collected from 86 designated wells on 12 to 14 April 2013.

Groundwater samples were collected from 76 wells using PDBs. The sample intervals are shown on Table 13. Groundwater samples were collected by low-flow sampling from 10 wells. The final stabilization

measurements are shown on Table 14. The following sample was collected without meeting the stabilization criteria:

- Sample was collected from MW-170 with turbidity of 38.7 NTUs after almost two hours of purging.

HDR was informed by Microbac on 17 April that one or more volatile organic analysis (VOA) vials from 23 Dunn Field LTM wells were found to be broken when the coolers were opened to log-in the samples. The samples had been collected on Saturday and Sunday, 13 and 14 April and delivered to FedEx for overnight shipping on Monday, 15 April prior to the field crew departing Memphis. HDR's project chemist and quality assurance/quality control (QA/QC) manager worked with the laboratory and field staff to gather information and determine the cause and whether corrective action was necessary. The apparent cause of the breakage was inadequate padding in the coolers. The need for proper sample packing was reinforced with staff and an item added to the shipping checklist.

HDR staff compared analytical results for the April 2013 samples with past results. The results for most samples with some usable vials were similar to past results, had standard RLs and did not require re-sampling. A total of 15 wells were selected for re-sampling: 11 wells with all sample vials broken; 2 wells with results different from past results; and 2 wells with sample hold time exceeded. The re-sampled wells were: MW-44, MW-54, MW-77, MW-134, MW-144, MW-150, MW-152, MW-159, MW-163, MW-180, MW-184, MW-190, MW-225, MW-230 and MW-249.

The samples were re-collected on 9 May, after the new PDBs installed following the initial sampling had time to equilibrate. All 15 wells had PDBs and the sample intervals were the same as for the initial samples (Table 13). Samples were sent to Microbac Laboratories in Marietta, Ohio and analyzed for VOCs by method 8260B.

2.4.2 October 2013

Groundwater levels were measured in LTM wells at Dunn Field on 8 October and at the MI on 9 October. Water levels were measured at all LTM wells, except MW-33 and MW-182 at Dunn Field and MW-208A at the MI. The water level measurements are shown on Table 9 for the MI and Table 10 for Dunn Field.

MW-33 was blocked by debris. The metal stick-up casing for MW-182 had been damaged by a fire apparently lit around the well pad; the PVC riser inside the protective casing was partially melted, but the well cap was still in place and the PDB appeared to be undamaged. MW-208A had an obstruction in the riser at approximately 15 ft bgs.

Repairs at MW-182 and MW-208A were made on 5 November. The well completion at MW-182 was replaced; the burned metal stick-up and well pad were removed and the damaged PVC riser was cut off just bgs. A new manhole and well pad were installed as described for the well repairs in Section 2.3. The obstruction in MW-208A was determined to be a damaged well cap and attached PDB tether and was removed; a new locking well cap was placed on the well. Well elevations at MW-182 were re-surveyed by Allen and Hoshall on 13 November; the new elevations are provided in Appendix F. A new tether with a PDB was installed in each well on 20 November 2013.

2.4.2.1 Main Installation

Annual groundwater sampling was conducted with samples collected from 83 of 84 designated wells on 11 and 12 October 2013. MW-208A was not sampled due to the obstruction in the well. There were 85 groundwater samples collected; samples were collected from two screened intervals at MW-101 and MW-107.

Groundwater samples were collected from 80 wells using PDBs, with a total of 82 samples. The sample intervals are shown on Table 11. Groundwater samples were collected from the two new wells, MW-260 and MW-261, using a bladder pump and low-flow purging methods. One well, PZ-03, was sampled with a Teflon® bailer due to the small well casing diameter. The final stabilization measurements are shown on Table 12. The following sample was collected without meeting the stabilization criteria:

- Sample was collected from PZ-03 with turbidity of 115 NTUs. The well was purged and sampled by bailer after three well volumes had been drawn from the well.

2.4.2.2 Dunn Field

Semiannual groundwater sampling was conducted with samples collected from 42 designated wells on 10 October 2013. Although MW-182 was not designated for sampling, a sample was collected on 11 October to determine if groundwater had been impacted by the damage to the well. No CVOCs have been detected above RLs in MW-182 since installation in October 2005.

Groundwater samples were collected from all wells using PDBs. The sample intervals are shown on Table 13.

2.5 WASTE DISPOSAL

The waste generated during LTM activities in 2013 was classified as either non-investigative waste or investigation-derived waste (IDW). Non-investigative waste, such as packaging materials, personal protective equipment, disposable sampling supplies, debris from well pads and manholes, and other inert refuse, was collected, containerized, and placed in a collection bin for disposal at a municipal landfill. The IDW consisted of soil cuttings from the MW borings, waste water from equipment decontamination, groundwater from well development, purging prior to low-flow sampling and excess water in PDBs.

The roll-off containing debris from well repair was disposed as construction debris at South Shelby Landfill. The other non-investigative waste was placed in the dumpster at the HDR field office.

The soil cuttings from the two new wells were spread in low areas on Dunn Field. Wastewater from decontamination of the drill rig and down hole equipment prior to drilling and of well construction materials prior to well installation was collected and transferred to the condensate storage tank on Dunn Field. Groundwater from well development was also transferred to the storage tank. The groundwater from purging was collected in 5-gallon buckets with lids and added to the condensate storage tank. When the storage tank nears capacity, the waste water is analyzed and, if concentration limits are met, discharged to the storm sewer per agreement with the TDEC.

3.0 SUMMARY OF MONITORING RESULTS

3.1 HYDROGEOLOGY

Water level measurements for the 2013 LTM events are shown on Table 9 for the MI and on Table 10 for Dunn Field.

3.1.1 Main Installation

Soil borings for the new MWs were drilled into the upper clay of the Jackson Formation/Upper Claiborne Group that forms the base of the fluvial aquifer. The groundwater and top of clay elevations and the resulting fluvial aquifer saturated thickness were estimated from nearby wells prior to field work. The estimates and actual measurements are shown below.

Well	Water Level Elevation (ft, msl)		Top of Clay Elevation (ft, msl)		Saturated Thickness (ft)	
	Estimated	Actual	Estimated	Actual	Estimated	Actual
MW-260	228	229.8	203	208.5	25	21.3
MW-261	202	200.0	180	152.8	22	47.2

The actual water level elevation was similar to the estimate at both locations. The top of clay was approximately 5 ft higher than estimated at MW-260 with slightly less saturated thickness while the top of clay at MW-261 was approximately 27 ft lower than estimated and the saturated thickness was twice the estimate. An updated top of clay map is provided on Figure 9 with changes to the contours at both new wells.

Groundwater elevations for MI LTM wells, with contours for the fluvial aquifer and the IAQ within the window, are shown on Figures 10 and 11. Groundwater flow is generally from the eastern and western boundaries to the central area of the MI, where the groundwater flows to the north into the window or south toward the property boundary.

Groundwater elevations in the fluvial aquifer are highest in the northeast corner of the MI (MW-16: approximately 243 ft msl) and lowest near the southern boundary (MW-259: approximately 197 ft msl). Groundwater flow near TTA-1 is to the northeast with an approximate gradient of 0.003 in April and 0.004 in October (DR1-5A to MW-197B). The groundwater flow near TTA-2 is to the west-southwest with an approximate gradient of 0.02 in April and October (DR2-1 to MW-26).

Groundwater elevations for IAQ and MAQ wells are shown on Figures 12 and 13 with more extensive contours. The water levels for the IAQ wells in the 'window' indicate flow is generally to the northwest with groundwater elevations decreasing from MW-107 (approximately 200 ft msl in April and October) to MW-140 (approximately 166 ft msl in April and 163 ft msl in October). The gradient in the 'window' is to the northwest at approximately 0.025 in April and October (MW-90 to MW-140). The groundwater elevation at MW-254, which is located in the northwest corner of the MI and screened in the Memphis Sand, was approximately 164.3 ft msl in April and 161.2 ft msl in October. The water levels in the three deepest wells show the gradient is to the west, from MW-140 to MW-254.

3.1.2 Dunn Field

Dunn Field groundwater contour maps for each event are shown on Figures 14 and 15. Groundwater flow is generally to the west on Dunn Field. The maps show a trough in groundwater elevations near MW-246 approximately 1,000 ft west of Dunn Field, with flow diverging to the north and south. The AS/SVE system is located on the eastern side of the trough.

Groundwater elevations in the fluvial aquifer are highest northeast of Dunn Field (MW-130: 238.0 ft msl in April and 239.0 ft msl in October) and decrease toward the trough west of Dunn Field (MW-165: 217.8 ft msl in April and October).

The groundwater elevations in IAQ wells away from the 'windows' providing connection with the fluvial aquifer were approximately 166-167 ft msl in April and 163-164 ft msl in October. The groundwater elevation in MW-67, which is screened in the Memphis Sand, was approximately 166.6 ft msl in April and 163.8 ft msl in October.

3.2 DATA QUALITY EVALUATION

Data collected during the 2013 LTM events were reviewed based on guidelines in the RA SAP and the QAPP. Data review was performed by an independent data validation contractor, Diane Short and Associates, Inc. The complete analytical results with data quality evaluation (DQE) flags are presented for each sample event in Appendix G.

Overall, the VOC data from the LTM events met project data quality objectives (DQOs) and were determined to be sufficient to support the evaluation of RA. The complete DQE for 2013 LTM is provided in Appendix H. The main findings from the DQE for the MI and Dunn Field are summarized separately below.

3.2.1 Main Installation

Based on the review and the project DQOs, the MI data are acceptable and usable. No data were rejected. The primary causes of the qualified data are described below.

- Bromomethane in several samples in the April 2013 event and 1,2-dibromo-3-chloropropane (DBCP), acetone and 2-butanone (MEK) in several samples in the October 2013 event were non-detect and qualified "UJ" due to high percent difference with low response in continuing calibration standards.
- Several detected PCE results in the October 2013 event were qualified as estimated "J" due to high responses in continuing calibration standards.
- Twenty-four detected results in the October 2013 event were qualified as estimated "J" due to high laboratory calibration standard (LCS) recoveries.
- Three detected results in the April 2013 event and one non-detect result in the October 2013 event were qualified as estimated "J" due to low matrix spike recoveries. Two detected results in the October 2013 event were qualified as non-detect estimated "UJ" due to low matrix spike recoveries.
- Sixteen detected results in the October 2013 event were qualified as estimated "J" due to high surrogate recoveries.
- Two detected chloromethane results in the October 2013 event were qualified "B" due to the analyte being detected in the method blank.
- Any result reported below the RL but above the method detection limit was flagged "J" and considered an estimated result (unless overridden by other QC flags).

3.2.2 Dunn Field

Based on the review and the project DQOs, the Dunn Field data are acceptable and usable. No data were rejected. The primary causes of the qualified data are described below.

- All results in MW-134-ODLB-6 and MW-144-ODLB-6 in the April 2013 samples were qualified as estimated "J" or non-detect estimated "UJ" due to analysis past the holding time. Both wells were re-sampled in May 2013.
- A number of results in the April-May 2013 event and the October 2013 event were qualified as estimated "J" or non-detect estimated "UJ" due to low responses in continuing calibration

standards. A number of detected results in the April-May 2013 event were qualified as estimated "J" due to high responses in continuing calibration standards.

- One acetone result and one TeCA result in the October 2013 event were qualified as estimated "J" due to high LCS recoveries. Six 1,2-Dibromoethane results in the October 2013 event were qualified as estimated "J" due to a low LCS recovery.
- Several detected results in the October 2013 event were qualified "B" due to the analyte being detected in the method blank.
- Carbon disulfide in MW-244-ODLB-6 in the April-May 2013 event was qualified as non-detect estimated "UJ" due to a low matrix spike (MS) recovery.
- Chloroform (CF) and TCE in sample MW-157-ODLB-6 in the April-May 2013 event were qualified as estimated "J" because these analytes were detected above the RL in the parent sample but were non-detect in the field duplicate sample.
- Any result reported below the RL but above the method detection limit was flagged "J" and considered an estimated result (unless overridden by other QC flags).

3.3 ANALYTICAL RESULTS

The complete analytical results are shown in Appendix G. Summary tables for each sampling event list the analytical results for the primary CVOCs and other VOCs detected above the RL in one or more samples.

3.3.1 Main Installation

The primary CVOCs for the MI are PCE, TCE, cis-1,2-dichloroethene (cDCE), CT, CF and vinyl chloride (VC). The MCLs are shown on the summary tables.

3.3.1.1 April 2013

Groundwater samples were collected from 56 LTM wells for the semiannual event in April 2013. A total of 58 groundwater samples were collected; samples were collected from two screened intervals in MW-101 and MW-107. Table 15 lists the analytical results for the primary CVOCs and other VOCs detected above the RL in one or more samples. A summary of analytical results for the primary CVOCs is provided on Table 16.

3.3.1.2 October 2013

Groundwater samples were collected from 83 of 84 LTM wells for the annual event in October 2013; a sample was not collected from MW-208A due to an obstruction in the well. A total of 85 groundwater samples were collected; samples were collected from two screened intervals in MW-101 and MW-107. Table 17 lists the analytical results for the primary CVOCs and other VOCs detected above the RL in one or more samples. A summary of analytical results for the primary CVOCs is provided on Table 18.

3.3.2 Dunn Field

The primary CVOCs for Dunn Field are CT, CF, 1,1-dichloroethene (DCE), trans-1,2-dichloroethene (tDCE), cDCE, TeCA, PCE, 1,1,1-trichloroethane (TCA), and TCE; VC, a significant CVOC degradation product, is also included. The MCLs and TCs from the Dunn Field ROD are shown on the summary tables.

3.3.2.1 April 2013

Groundwater samples were collected from 86 LTM wells for the biennial event in April 2013; 15 wells were re-sampled in May 2013 due to breakage in the initial sample shipment. Table 19 lists the analytical results for the primary CVOCs and other VOCs detected above the RL in one or more samples. A summary of the primary CVOC results is provided on Table 20.

3.3.2.2 October 2013

Groundwater samples were collected from 43 LTM wells for the semiannual event in October 2013. Table 21 lists the analytical results for the primary CVOCs and other VOCs detected above the RL in one or more samples. A summary of the primary CVOC results is provided on Table 22.

3.4 PLUME MAPS AND CROSS-SECTIONS

3.4.1 Main Installation

PCE, TCE and CT isoconcentration maps are shown on Figures 16, 17 and 18 for the April 2013 LTM semiannual samples and on Figures 19, 20 and 21 for the October 2013 LTM annual samples. The CVOC concentrations and extent are similar to recent sample events. Two new fluvial aquifer wells, MW-260 and MW-261, were sampled for the first time in October 2013; the wells were installed based on increasing TCE concentrations outside current EBT areas.

- MW-260 was installed upgradient of MW-258 in the area of the North-central Plume. Two CVOCs were detected above the RL in October 2013; CF and TCE were reported at 1.37 µg/L

and 3.97 µg/L, respectively. The MW-260 results are similar to MW-103 and MW-104 to the northeast (upgradient) but with lower concentrations. The results at MW-260 limit extent of high concentrations of PCE and TCE at MW-258, 32.2 µg/L and 85.8 µg/L in October 2013.

- MW-261 was installed downgradient of MW-97 in the southwestern MI, east of TTA-1S. One CVOC was detected above the RL; TCE was reported at 2.71 µg/L in October 2013. The results at MW-261 limit extent of the high concentration of TCE at MW-97, 67.8 µg/L in October 2013.

As noted in the 2012 annual report, the PCE plume in the IAQ, shown on Figures 16 and 19, extends to the northwest property boundary based on reported concentrations in IAQ well MW-256 (41.9 µg/L in April and 37.7 µg/L in October 2013); TCE is present at lower concentrations (16.0 µg/L in April and 14.0 µg/L in October 2013). The PCE and TCE concentrations are similar to the 2012 results but have increased since the initial sample in August 2010 (8.73 µg/L and 2.43 µg/L, respectively). PCE has not been detected above the RL in the nearby MAQ wells, MW-254 and MW-255; TCE has been detected from below the RL to 3 µg/L.

Locations of cross-sections illustrating site hydrogeology and contaminant extent on the MI are shown on Figure 22. Cross-section A runs south from MAQ well MW-254 in the northwest corner of the MI to fluvial aquifer well MW-24 on the central southern boundary; the section includes several sentinel wells within the 'window' and the West-Central area. The cross-section was prepared in 2012 following installation of IAQ and MAQ wells MW-252 to MW-256. The 2013 analytical results for PCE and TCE in IAQ and MAQ wells are shown in cross-section A on Figures 23 and 24. PCE concentrations are higher in the wells screened in the upper portion of the IAQ.

New or revised cross-sections were prepared for other areas of the MI where EBT has been restarted or where new wells have been installed; the sections include LTM and EBT wells. Cross-section B runs east from MW-66A west of the MI to MW-39A on cross-section A; the section includes wells in TTA-1N and the West Central area. Cross-section C runs east from MW-24 on the central southern boundary to MW-50 on the eastern boundary; the section includes new well MW-259 and wells along the approximate flow path from TTA-2. Cross-section D runs southeast from MW-19 near the northwest boundary to MW-199A on cross-section A and MW-108 and MW-207A on cross-section E; the section includes wells in the Building 835 area along the approximate flow path toward the 'window'. Cross-section E runs east from MW-209A on cross-section A to MW-16 in the northeast corner of the MI; the section includes new wells MW-258 and MW-260 and other wells in the North Central area along the approximate flow path toward the 'window'. Cross-section F runs northeast from MW-102B in the southwest corner of the MI to MW-203A on cross-section B; the section includes wells in TTA-1S. Cross-section G runs northeast from

MW-23 along the southern boundary to MW-94A on cross-section A; the section includes new well MW-261 and MW-97 in the South Central area. The October 2013 analytical results for PCE and/or TCE on cross-sections B through G are shown on Figures 25 through 30.

3.4.2 Dunn Field

Total CVOC concentrations for the April and October sample events are shown on Figures 31 and 32. The total CVOC concentrations in the Off Depot plume remain low due to the Source Areas and Off Depot RAs. The 50 µg/L contour for total CVOCs indicates the progress toward the active treatment goal of reducing individual CVOC concentrations below 50 µg/L.

The highest total CVOC concentration in both sample events was at MW-159, which is immediately upgradient of the AS/SVE system; the concentrations were 258 µg/L in April and 223 µg/L in October 2013. The results show a large decrease from 335 µg/L in October 2012.

Total CVOC concentrations continued to decrease in wells on the southwest side of the AS/SVE system where plume diversion, due to reduced permeability caused by AS, was suspected. AS operations were modified in June 2012 to limit potential for plume diversion. Total CVOC concentration decreased at three wells (MW-149, MW-166 and MW-249) located southwest of MW-159. However the total CVOC concentration increased at MW-44, located west of MW-249, to 23.8 µg/L in April 2013 from 4.9 µg/L in April 2012. The increased concentration is considered to represent contaminant migration from the upgradient wells and should decrease since upgradient concentrations have decreased.

The primary CVOCs detected most frequently above the MCL or the TC for TeCA are shown on Tables 20 and 22. Concentrations and isopleths are shown for April 2013 TeCA, PCE and TCE results on Figures 33 to 35 and for October 2013 TeCA and TCE results on Figures 36 and 37. Each figure includes a 50 µg/L isopleth to show where the active treatment objective has not been met and an isopleth at both the TC and MCL, where applicable, to show where the RAO has not been met. No wells exceed MCLs in the Source Areas on Dunn Field and only TeCA (Figures 33 and 36) and TCE (Figures 35 and 37) have significant areas above the MCL or TC in the Off Depot area. Background-NE wells in the northern area of Dunn Field and off site were sampled in April 2013, and the PCE and TCE results (Figures 34 and 35) clearly show contaminant migration on to Dunn Field.

As has been the case since April 2012, MW-159 was the only LTM well in the Source Areas on Dunn Field or the Off Depot area to exceed the active treatment objective. TCE concentrations were 181 µg/L in April and 129 µg/L in October 2013, a decrease from 247 µg/L in October 2012.

3.5 WELL CLASSIFICATION REVIEW

3.5.1 Main Installation

There are 99 wells included in MI LTM for 2013. The current well classifications are shown on Table 2: 6 background wells, 7 boundary wells, 57 performance wells and 24 sentinel wells. This does not include the five wells installed in 2012 and 2013.

Analytical results for the individual well classifications in 2013 LTM events are summarized in the following sections. Historical analytical results for the primary CVOCs in all MI LTM wells are provided in Appendix I. Time trend plots for primary CVOCs where one or more were detected above MCLs in MI LTM wells are provided in Appendix J.

The three wells installed in March 2012 (MW-257 to MW-259) have been sampled four times as of October 2013. The analytical results and the recommended classification and sample frequency are discussed below.

- MW-257 was installed north of MW-143 and northwest of MW-213 to evaluate the upgradient extent of the Building 835 TCE plume. No CVOCs have been detected in the four samples collected. MW-257 is recommended to be classified as a performance well based on its location adjacent to the Building 835 plume and to be sampled annually.
- MW-258 was installed to evaluate potential for a plume upgradient of MW-107 and MW-214A/B, which had increasing concentrations in 2011. PCE has been detected at 19.4 to 32.2 µg/L and TCE at 57.7 to 93 µg/L; CF and cDCE have been detected at low concentrations below 5 µg/L. The results at MW-258 indicate an additional contaminant source impacting that area, but the initial results from MW-260 indicate the area of high concentrations is relatively small. MW-258 is recommended to be classified as a performance well based on its CVOC concentrations and location near the North-central plume and to be sampled semiannually.
- MW-259 was installed to clarify the direction and extent of contaminant migration from TTA-2. PCE has been detected at 15.1 to 17 µg/L, TCE at 15.7 to 23.9 µg/L and CT at 4.69 to 5.12 µg/L. MW-259 appears to be in the downgradient area of the TTA-2 plume and is recommended to be classified as a performance well based on its location within the plume and to be sampled semiannually.

The two new wells installed in 2013 (MW-260 and MW-261) were first sampled in October 2013. The wells are recommended to be classified as performance wells based on their locations in the fluvial aquifer within or adjacent to known groundwater plumes.

3.5.1.1 Background Wells

There are six background wells screened in the fluvial aquifer located along or outside the MI boundary; wells upgradient of or at a distance from groundwater plumes on the MI and Dunn Field; and wells with no, or low, previous detections of site constituents. The background wells are MW-16, MW-19, MW-53, MW-55, MW-66A and MW-99. No background wells were sampled in 2013.

3.5.1.2 Boundary Wells

There are seven boundary wells screened in the fluvial aquifer located along or outside the MI boundary to monitor constituent migration from off-site sources. The boundary wells are MW-22, MW-23, MW-24, MW-50, MW-93, MW-102B, and MW-219. MW-219 was sampled in April and October; no other boundary wells were sampled in 2013.

MW-219, located immediately upgradient of TTA-1 North, contained PCE at 39.6 µg/L in April and at 53.6 µg/L in October 2013; TCE and cDCE were also detected at low levels (below 4 µg/L). PCE concentrations have increased from the recent low of 4.55 µg/L in April 2011, and the October result exceeds the previous high concentration of 48 µg/L in January 2008. As noted in previous reports, the results at MW-219 indicate potential plume migration on to the MI.

3.5.1.3 Sentinel Wells

There are 24 sentinel wells screened within either the fluvial, intermediate or Memphis aquifers adjacent to or within the window. The sentinel wells are MW-34, MW-38, MW-63A/B, MW-89, MW-90, MW-107, MW-108, MW-140, MW-141, MW-199A, MW202A/B, MW-207A/B, MW-209A, MW-210A, MW-211, MW-229 and MW-252 to MW-256. Thirteen sentinel wells were sampled in April and twenty-one sentinel wells were sampled in October 2012.

Primary CVOCs were not detected above RLs in five sentinel wells (MW-199A, MW-211, MW-229, MW-253 and MW-255). At MW-253, TCE exceeded the MCL in 2011 but was not detected in 2012 or 2013. The remaining sentinel wells had CVOCs detected above the RLs and nine wells (MW-90, MW-107, MW-108, MW-141, MW-202B, MW-207A/B, MW-210A and MW-256) had PCE and/or TCE at concentrations above the MCL. The highest concentrations for 2013 were: PCE at 54 µg/L in MW-107T

in April and 37.7 µg/L in MW-256 in October; and TCE in MW-108 at 28.7 µg/L in April and 30.3 µg/L in October.

CVOC concentrations have been variable at MW-207B; PCE concentrations decreased 10-fold in 2012 from 124 µg/L in April to 11.8 µg/L in October. The results were 11.5 µg/L in April and 12.5 µg/L in October 2013. PCE concentrations in the two screened sections at MW-107 increased significantly in 2011 and remain at elevated levels above the MCL, 54 and 20.3 µg/L in April and 18.3 and 25.1 µg/L in October 2013. Wells MW-141 and MW-202B have long-term increasing trends for PCE, from approximately 5 µg/L to 25 µg/L.

Three sentinel wells installed in 2010 are located downgradient of the window: MW-256 in the IAQ, and MW-254 and MW-255 in the MAQ. MW-255 is located adjacent to MW-256 with the screened interval approximately 160 ft deeper; MW-254 is located approximately 350 ft to the west of MW-255 and is downgradient. Analytical results for primary CVOCs are summarized below:

- MW-254 (MAQ) - TCE was detected at 3.13 µg/L in April and 2.7 µg/L in October; other CVOCs (CT, CF, cDCE and PCE) were detected below the RL.
- MW-255 (MAQ) - No detections above the RL but TCE was detected below the RL in April and October.
- MW-256 (IAQ) – PCE and TCE were detected above the MCL and CF was detected above the RL. PCE and TCE concentrations were 41.9 µg/L and 16 µg/L in April and 37.7 µg/L and 14 µg/L in October; the concentrations are similar to the October 2012 results but increased from the initial sample results of 8.71 µg/L and 2.43 µg/L in August 2010.

3.5.1.4 Performance Wells

There are 57 LTM performance wells screened in the fluvial aquifer and within the limits of designated groundwater plumes: TTA-1 North (MW-21 Area), TTA-1 South (MW-101 Area), TTA-2, West Central, Building 835 and North Central. The number of performance wells changed in 2013; 20 LTM wells are being used for EBT injections and performance monitoring and 5 former performance monitoring wells were added to LTM. The designated plumes, primary CVOCs and associated LTM wells are listed below. Wells MW-214A/B, MW-215A/B and PZ-03 have been listed with the West-Central plume in previous reports; based on further review of groundwater contours and analytical results, MW-214A/B are now listed with the North-Central plume and MW-215A/B and PZ-03 are considered outside the designated plumes. A new plume designation is shown for the South-Central MI.

Plume	CVOC	LTM Wells
TTA-1 North	PCE	DR1-2, DR1-7, DR1-8, MW-100B, PMW21-03, PMW21-05
TTA-1 South	PCE, TCE	DR1-1/1A, DR1-3, DR1-4, MW-101, PMW101-03A/B, PMW101-06A/B
TTA-2	PCE, CT, CF	DR2-1, DR2-3, DR2-4, DR2-6, MW-26, MW-64, MW-88, MW-92, MW-96, MW-217, MW-218, MW-259, PMW92-02
West-Central	PCE	MW-39/39A, MW-94A, MW-98, MW-200, MW-204A/B, MW-205A/B, MW-206A/B, MW-208A/B, MW-210B
Building 835	TCE	MW-142, MW-143, MW-198, MW199B, MW-209B, MW-257
North-Central	TCE	MW-103, MW-104, MW-214A/B, MW-258, MW-260
South-Central	TCE	MW-97, MW-216, MW-261

The designated plumes are shown on Figure 38 with PCE and TCE isopleths for the October 2013 LTM event.

There are five LTM performance wells outside the designated plumes (MW-25A, MW-52, MW-215A/B and PZ-03). No wells were sampled in April, and all wells were sampled in October 2013. All five wells had CVOC concentrations above MCLs in 2013. Concentrations were below 10 µg/L for TCE in MW-25A and MW-52, and for PCE and TCE in MW-215A/B and PZ-03.

3.5.1.4.1 TTA-1 North

The TTA-1 North plume is a generally oval-shaped area with elevated PCE concentrations near the central section of Building 1089 and north of former Buildings 1084 and 1085. The depth of water is approximately 90 ft bgs and the average saturated thickness is 26 ft. The groundwater flow direction is to the east- northeast toward the West-Central plume.

Six LTM performance wells are associated with the TTA-1 North plume. Three wells were sampled in April, and all wells were sampled in October 2013. Primary CVOCs were not detected in DR1-2, and only PCE was detected above the RL but below the MCL in DR1-7 and DR1-8. PCE was detected above the MCL in MW-100B, PMW21-03 and PMW21-05. The highest PCE concentration was 115 µg/L at PMW21-03 in October. VC concentrations increased in MW-100B after the initial EBT was performed from 2006 to 2009; VC concentrations remain high (188 µg/L in October) and PCE concentrations at MW-100B have rebounded (68.4 µg/L in October).

3.5.1.4.2 TTA-1 South

The TTA-1 South plume is located a few hundred feet southeast of TTA-1 North, on the west side of Building 1088 and the southern section of Building 972. Based on the distribution of PCE and TCE in the plume, there appear to be two source areas. Wells in the southern area have had higher TCE concentrations and moderate PCE concentrations while those in the northern area have had higher PCE concentrations and low TCE concentrations. The depth of water is approximately 90 ft bgs and the average saturated thickness is 36 ft. The groundwater flow direction is to the northeast toward the West-Central plume.

Nine LTM performance wells are associated with the TTA-1 South plume. Seven wells were sampled in April, and all wells were sampled in October 2012. Primary CVOCs were detected above the RL in all wells except DR1-1A and DR1-4. PCE was detected above the MCL in PMW101-03A/B and PMW101-06B in both events; PCE concentrations decreased below the MCL at MW-101 in October. The highest concentrations were PCE at 42.4 µg/L at PMW101-03B in October and TCE at 3.97 µg/L at PMW101-06B in April. Well with higher concentrations of PCE and TCE reported in 2012 are currently being used as EBT injection wells.

3.5.1.4.3 TTA-2

The TTA-2 plume is an irregularly shaped area with elevated concentrations of PCE, TCE, and CT. The distribution of PCE and CT in TTA-2 suggest two or more source areas. While PCE concentrations are elevated throughout most of the plume area, CT concentrations are primarily in the northwestern plume area (near Buildings 260, 261 and 263). The depth of water is approximately 93 ft bgs and the average saturated thickness is 9 ft. The groundwater flow direction is to the west-southwest toward the southern property boundary.

Thirteen LTM performance wells are associated with the TTA-2 plume. Eleven wells were sampled in April, and all wells were sampled in October 2013. Primary CVOCs were not detected above the RL in MW-96 but exceeded the MCL for PCE, TCE, CT, cDCE and/or VC in the other wells in both events. The highest concentrations were PCE at 235 µg/L at DR2-1 in October, TCE at 44 µg/L at MW-217 in April, and CT at 40.4 µg/L at MW-217 in October.

3.5.1.4.4 West Central

The West-Central plume is a broad area of elevated PCE concentrations approximately 1,500 ft northeast of TTA-1. The eastern end of the plume is at the former location of Buildings 873 and 875 and the central area is near Building 770. The depth of water is approximately 100 ft bgs and the saturated thickness ranges from 7 to 94 ft with an average of 48 ft. The groundwater flow direction is to the east and diverges toward the 'window' or the southern property boundary.

Fourteen LTM performance wells are associated with the West Central plume. Twelve wells were sampled in April, and thirteen wells were sampled in October 2013; MW-208A was designated for sampling in October but the sample could not be collected due to an obstruction in the well. Primary CVOCs were detected above the RL in all wells and exceeded the MCL for PCE and/or TCE in all wells sampled in each event. The highest concentrations were PCE at 41.2 µg/L at MW-98 in April and TCE at 22.9 µg/L at MW-208B in April.

3.5.1.4.5 Building 835

The Building 835 plume located in the western portion of the MI contains elevated concentrations of TCE. The plume is orientated along the southern edge of the clay adjacent to the window in the northwest corner of the MI. The depth of water is approximately 94 ft bgs and the average saturated thickness is 6 ft. The groundwater flow direction is to the southeast toward the West-Central plume and the 'window'.

Six LTM performance wells are associated with the Building 835 plume. Four wells were sampled in April, and all wells were sampled in October 2013. Primary CVOCs were not detected above the RL in MW-257; TCE was detected above the RL in the other wells and exceeded the MCL in all except MW-98. The highest TCE concentration was 84.1 µg/L at MW-199B in April.

3.5.1.4.6 North-Central

The North-Central plume is located in the northeastern portion of the MI and contains slightly elevated concentrations of TCE in most wells with higher concentrations of TCE and PCE in MW-258. The depth of water is approximately 66 ft bgs and the average saturated thickness is 23 ft. The groundwater flow direction is to the southwest toward the 'window' or the southern property boundary.

Six LTM performance wells are associated with the North Central plume, including the provisional assignment of MW-260. Three wells were sampled in April, and all wells were sampled in October 2013.

CF and TCE were detected above the RL in all the wells; PCE and CT were also detected in MW-214A/B, while PCE and cDCE were also detected MW-258. The highest concentrations were TCE at 88.7 µg/L at MW-258 in April and CF at 9.07 µg/L at MW-103 in October.

3.5.1.4.7 South-Central

The South-Central plume is located in the southwestern portion of the MI and contains elevated concentrations of TCE. The depth of water is approximately 94 ft bgs and the average saturated thickness is 29 ft. The groundwater flow direction is to the northeast but likely diverges toward the southern property boundary.

Three LTM performance wells are associated with the South-Central plume, including the provisional assignment of MW-261. One well, MW-97, was sampled in April, and all wells were sampled in October 2013. MW-216 did not have any primary CVOCs above the RL; TCE was detected above the RL in MW-261 and exceeded the MCL in MW-97 at 70.7 µg/L in April and 67.8 µg/L in October. Sample results at MW-216 located upgradient of MW-97 and at MW-261 located downgradient indicate the area of high concentration is relatively small.

3.5.2 Dunn Field

There are 86 wells included in Dunn Field LTM. The current well classifications are shown on Table 4: 13 background wells, 9 sentinel wells and 64 performance wells. Analytical results for the individual well classifications in the 2013 LTM events are summarized in the following sections. Historical analytical results for the primary CVOCs in all Dunn Field LTM wells are provided in Appendix K. Time trend plots for primary CVOCs detected above MCLs or the TC for TeCA in Dunn Field LTM wells are provided in Appendix L; where multiple sample results were available for a sampling event, the highest result was plotted.

3.5.2.1 Background Wells

There are 13 background wells screened in the fluvial aquifer located along or outside of the Dunn Field boundary; upgradient to or at a distance from contaminant plumes on Dunn Field; and with no or low previous detections of primary CVOCs. These include five background-NE wells located on or bordering the northeast section of Dunn Field with CVOC concentrations from an off-site source(s) upgradient of Dunn Field.

All background wells were sampled in April; only MW-28 was sampled in October 2013. Primary CVOCs were not detected above the RL in five background wells, and three background wells (MW-04, MW-28 and MW-80) contained CF at 0.329 to 0.476 µg/L. PCE, TCE and DCE were detected above the RL in all five background-NE wells; PCE and TCE exceeded the MCL in all five wells and DCE exceeded the MCL in four wells. The highest concentrations were in MW-130 northeast of Dunn Field with PCE at 98.5 µg/L, TCE at 79.5 µg/L and DCE at 38.6 µg/L.

3.5.2.2 Sentinel Wells

There are 9 sentinel wells screened within either the fluvial aquifer or the IAQ adjacent to or within a window. All sentinel wells were sampled in April; only MW-182 was sampled in October 2013. Primary CVOCs were detected above the RL in two wells: DCE in MW-237, and DCE and CF in MW-251. No concentrations were above the TC or MCL.

3.5.2.3 Performance Wells

There are 64 performance wells screened in the fluvial aquifer and within the limits of groundwater plumes. The 14 performance wells selected for rebound monitoring after shut down of the FSVE system in July 2012 are designated performance-FSVE. All performance wells were sampled in April and 41 performance wells were sampled in October 2013; all performance-FSVE wells were sampled in each event. Primary CVOCs were detected above RLs in 35 performance wells in April and 32 wells in October; the CVOCs detected most commonly were TeCA, TCE and CF. CVOC concentrations exceeded the MCL for TCE and/or the TC for TeCA in 16 wells in April and 11 wells in October. Other CVOCs were detected above MCLs in a few wells, but all of those wells also exceeded the MCL for TCE and/or the TC for TeCA.

Considering only the 14 performance-FSVE wells, primary CVOCs were detected above RLs in 2 wells in April and 6 wells in October. Concentrations exceeded an MCL in one well; MW-03 contained PCE at 5.32 µg/L in October. MW-03 is within the area impacted by the NE off-site plume and the October sample also contained TCE and DCE.

3.6 TREND ANALYSIS

Concentration trends were assessed for the available groundwater analytical results for the LTM wells from January 2004 through October 2013 using the Mann-Kendall test. The Mann-Kendall test does not require any assumptions as to the statistical distribution of the data and can be used with data sets which

include irregular sampling intervals and missing data. The analysis was performed using the Mann-Kendall module within Monitoring and Remediation Optimization System (MAROS) software version 2.2 developed by Air Force Center for Engineering and the Environment. The Mann-Kendall trend evaluation using MAROS relies on three statistical metrics: the Mann-Kendall statistic (S), the coefficient of variation (COV) and the confidence factor.

S measures the trend in the data. Positive values indicate an increase in constituent concentrations over time, whereas negative values indicate a decrease in constituent concentrations over time. The strength of the trend is proportional to the magnitude of S (i.e., large magnitudes indicate a strong trend). COV is a statistical measure of how the individual data points vary about the mean value; it is defined as the standard deviation divided by the average. Values less than or near 1.00 indicate that the data form a relatively close group about the mean value. Values larger than 1.00 indicate that the data show a greater degree of scatter about the mean. Confidence factor is the statistical probability that the constituent concentration is increasing (S>0) or decreasing (S<0).

The Concentration Trend for each well is determined according to the following rules:

Mann-Kendall Statistic	**Confidence Factor**	**Concentration Trend**
S > 0	> 95%	Increasing
S > 0	90 - 95%	Probably Increasing
S > 0	< 90%	No Trend
S ≤ 0	< 90% and COV ≥ 1	No Trend
S ≤ 0	< 90% and COV < 1	Stable
S < 0	90 - 95%	Probably Decreasing
S < 0	95%	Decreasing

If there are less than four sample results, the trend evaluation cannot be performed and the trend is listed as Insufficient Data (N/A). If the analyte is below the detection limit for all samples, the trend is listed as Not Detected.

3.6.1 Main Installation

3.6.1.1 Analysis

The Mann-Kendall analysis for the MI was run for PCE, TCE and cDCE on analytical results for 101 LTM sample locations, including both screened intervals in MW-101 and MW-107. In addition, Mann-Kendall analysis was run for CT and CF on analytical results for the 13 LTM wells in TTA-2. The analysis was limited to samples collected since January 2004 to provide a more consistent comparison

between wells; many of the LTM performance wells were installed from 2004 to 2007 and regular groundwater monitoring was not performed before 2004.

Results of the Mann-Kendall analysis for the MI are shown on Tables 23 through 27. The tables present the statistical metrics for each well, the concentration trend, the number of sample rounds and the number of samples with detects. In addition, the maximum and minimum analytical results for the review period are shown.

Most of the background (6) and boundary (7) wells had non-detects or very low concentrations of CVOCs and the majority of those wells are listed as Not Detected or No Trend. One boundary well, MW-219, located upgradient of TTA-1 North has PCE concentrations up to 53.6 µg/L and may represent a groundwater plume migrating on to the MI; the PCE concentration at MW-219 was 53.6 µg/L in October 2013 and the well has a stable trend.

The results are summarized below for sentinel (25) and performance (63) sample locations. The Insufficient Data column includes wells with less than four sample analyses or with all analyses below detection limits.

	Total Locations	**Insufficient Data**	**Increasing/ Probably Increasing**	**Stable/ No Trend**	**Decreasing/ Probably Decreasing**
PCE	88	12	19	26	31
TCE	88	4	31	33	20
cDCE	88	26	19	34	9

The analysis indicates about one-third of the locations show no trend or are stable for these CVOCs. More of the remaining locations have decreasing trends for PCE, with increasing trends for TCE and cDCE. This indicates LTM wells are being affected by EBT but the decreasing trends for PCE and TCE need to increase in order to meet remediation goals.

If the sample locations are limited to those with a maximum concentration above the MCL, the proportion of decreasing trends is slightly higher.

	Total Locations	**Insufficient Data**	**Increasing/ Probably Increasing**	**Stable/ No Trend**	**Decreasing/ Probably Decreasing**
PCE	61	0	13	20	28
TCE	47	0	18	16	13
cDCE	6	0	1	3	2

Trends for the parent/primary CVOCs in each plume are summarized below.

Plume	Analyte	Total Locations	Insufficient Data	Increasing/ Probably Increasing	Stable/ No Trend	Decreasing/ Probably Decreasing
TTA-1 North	PCE	6	1	1	2	2
TTA-1 South	PCE	10	0	0	2	8
TTA-1 South	TCE	10	0	2	6	2
TTA-2	PCE	13	0	1	5	7
TTA-2	CT	13	0	1	6	6
West-Central	PCE	14	0	3	0	11
Building 835	TCE	6	1	3	0	2
North-Central	TCE	6	1	2	1	2
South-Central	TCE	3	1	1	1	0
Sentinel	PCE	25	3	10	11	1

The wells in plumes where EBT was re-started in November 2012 generally show stable and decreasing trends (TTA-1 North, TTA-1 South, TTA-2 and West-Central). The impact of EBT at Building 835 appears to have been less to date; however, that area was not affected by the initial EBT from 2006 to 2009. The Sentinel wells show an even split between increasing and stable wells; since these wells are downgradient from the EBT areas, they should show a similar trend over time.

3.6.1.2 MCL Exceedance

Trends for LTM wells with parent CVOC (PCE, TCE and CT) concentrations above the MCL in October 2013, the most recent annual or biennial MI sample event, are shown on Table 28. The 55 LTM wells with concentrations above the MCL for one or more of these CVOCs are shown in order of decreasing concentration; one additional well (PMW92-02) exceeded only the MCL for cDCE. Only concentrations above the MCL are shown. The maximum concentration is PCE at 235 µg/L in DR2-1 in TTA-2. Eight wells have one or more of these CVOCs at concentrations above 50 µg/L, and there were more increasing than decreasing trends for these wells. Of the 55 wells listed, 25 wells have increasing trends for one or more of these CVOCs.

3.6.1.3 Reductive Dechlorination

EBT is being conducted in five areas on the MI: TTA-1N, TTA-1S, TTA-2, West-Central and Building 835. The historical analytical results and trend plots were reviewed for decreasing concentrations of PCE and TCE with increasing cDCE as indications of reductive dechlorination. Only a few LTM wells showed

these patterns since restarting EBT in November 2012: DR1-3, DR2-1 and MW-101. Several LTM wells had these patterns in the initial EBT from 2006 to 2009: DR1-4, MW-39/39A, MW-92, MW-100B, MW-205A/B, MW-206A/B, MW-208A, PMW92-02, PMW101-3A/B and PMW101-6A/B and are expected to demonstrate reductive dechlorination as the additional EBT continues.

There are 48 LTM performance wells in the five areas where EBT is currently being performed, and 34 of these wells exceeded MCLs. In addition to the 14 performance wells associated with the North-Central and South-Central areas or in isolated locations, many of the wells associated with the current EBT areas may be outside the TAs. Based on upgradient or side-gradient locations on groundwater contour maps and absence of past signs of reductive dechlorination, the wells listed below are not affected by the current EBT.

Plume	LTM Wells Exceeding MCLs and Outside EBT Impact Areas
TTA-1 North	None
TTA-1 South	None
TTA-2	DR2-1, DR2-3, DR2-4, MW-26, MW-64, MW-88, MW-217, MW-218, MW-259
West-Central	MW-94A, MW-98, MW-204A/B, MW-210B
Building 835	MW-142, MW-143, MW199B, MW-209B
North-Central	MW-103, MW-104, MW-214A/B, MW-258
South-Central	MW-97
Isolated	MW-25A, MW-52, MW-215A/B, PZ-03

3.6.2 Dunn Field

3.6.2.1 Analysis

The Mann-Kendall analysis for Dunn Field was run for TeCA, PCE, TCE, DCE, CT and CF on analytical results for the 86 LTM wells. The analysis was limited to samples collected since January 2004. Results of the Mann-Kendall analysis are shown on Tables 29 through 34. The tables present the statistical metrics for each well, the concentration trend, the number of sample rounds and the number of samples with detects. In addition, the maximum and minimum analytical results for the review period are shown.

The results are summarized below for background wells, sentinel wells, and performance wells. The Insufficient Data column includes wells with less than four sample analyses or with all analyses below detection limits; non-detect results were the only reason for Dunn Field, as shown on Tables 29 through 34.

Background Wells

	Total Locations	**Insufficient Data**	**Increasing/ Probably Increasing**	**Stable/ No Trend**	**Decreasing/ Probably Decreasing**
TeCA	8	4	0	4	0
PCE	8	4	0	2	2
TCE	8	4	0	3	1
DCE	8	8	0	0	0
CT	8	7	0	1	0
CF	8	1	1	5	1

Background NE Wells

	Total Locations	**Insufficient Data**	**Increasing/ Probably Increasing**	**Stable/ No Trend**	**Decreasing/ Probably Decreasing**
TeCA	5	3	0	2	0
PCE	5	0	1	4	0
TCE	5	0	3	2	0
DCE	5	0	0	5	0
CT	5	4	0	0	1
CF	5	1	1	2	1

Sentinel Wells

	Total Locations	**Insufficient Data**	**Increasing/ Probably Increasing**	**Stable/ No Trend**	**Decreasing/ Probably Decreasing**
TeCA	9	8	0	1	0
PCE	9	6	0	2	1
TCE	9	6	0	2	1
DCE	9	5	1	2	1
CT	9	9	0	0	0
CF	9	5	1	1	2

Performance Wells

	Total Locations	Insufficient Data	Increasing/ Probably Increasing	Stable/ No Trend	Decreasing/ Probably Decreasing
TeCA	50	4	5	12	29
PCE	50	4	3	12	31
TCE	50	2	4	8	36
DCE	50	31	2	10	7
CT	50	13	1	8	28
CF	50	3	2	18	27

Performance-FSVE Wells

	Total Locations	Insufficient Data	Increasing/ Probably Increasing	Stable/ No Trend	Decreasing/ Probably Decreasing
TeCA	14	0	1	5	8
PCE	14	0	0	3	11
TCE	14	0	0	0	14
DCE	14	12	0	0	2
CT	14	8	0	0	6
CF	14	0	2	5	7

Few LTM wells had increasing/probably increasing trends. The majority of sentinel wells had insufficient data due to few CVOC concentrations above the RL and the majority of background wells had either stable/no trend or insufficient data.

Performance wells showed the most decreasing/probably decreasing trends, due to the Source Areas and Off Depot RAs. Increasing trends were reported at three wells for TeCA (MW-79, MW-151 and MW-249) and for TCE (MW-44, MW-151 and MW-249). The increasing trend for TeCA at MW-79 appears to be an anomaly as the last reported detection was 30.8 µg/L in April 2008. The three other wells are located near the western end or south of the AS/SVE system and the trends likely reflect plume diversion around the system. The 2013 concentrations at the wells are relatively low: 1.2 to 2.74 µg/L for TeCA and 6.98 to 8.14 µg/L for TCE.

3.6.2.2 MCL or TC Exceedance

Trends for LTM wells with the most commonly detected CVOCs (TeCA, TCE, PCE, DCE and CF) at concentrations above the MCL or TC in April 2013, the most recent annual or biennial Dunn Field

sample event, are shown on Table 35. The 18 performance wells and 5 background-NE wells with concentrations above the TC for one or more CVOCs are shown in order of decreasing concentration. Only concentrations above the TC are shown, and the performance and background-NE wells are shown separately. The maximum concentration for performance wells is TCE at 181 µg/L in MW-159 and no other performance wells have any CVOCs at concentrations above 50 µg/L. The performance wells exceeding TCs include 11 wells with decreasing trends; the other seven wells have been impacted by the off-site plume (MW-31, MW-79 and MW-220) or by past plume diversion around the AS/SVE system (MW-44, MW-151, MW-166/166A and MW-249).

4.0 CONCLUSIONS AND RECOMMENDATIONS

4.1 MAIN INSTALLATION

Groundwater concentrations on the MI are generally stable, and EBT was re-started in November 2012 to address contaminant rebound and improve progress toward RAOs. However, 34 of 58 EBT wells exceeded MCLs in August 2013 and 57 of the 83 LTM wells sampled exceeded MCLs in October 2013. The selected remedy included EBT in the most contaminated areas and assumed that "untreated parts of the groundwater plume would degrade under natural attenuation" based on previous studies. The MI RD used concentrations of 100 µg/L for PCE and TCE to delineate the initial treatment areas and this criterion was also used for the additional EBT treatment areas. The ROD estimated that 10 years would be required for the selected remedy to meet RAOs and the current schedule has RA completion for the MI in 2017. Based on the number of MI EBT and LTM wells exceeding MCLs in 2013, it is unlikely that this schedule will be met.

The Third Five-Year Review included an action item for re-evaluation of the schedule for meeting MCLs on the MI in the annual EBT report, which is to be submitted in March 2014. USEPA highlighted the issue in review comments for the *2014 Site Management Plan, Revision 1* (SMP) (HDR 2014). The SMP stated the following issues should be considered: 1) determination of CVOC concentrations or locations in the fluvial aquifer that require active treatment versus natural attenuation, 2) the need for RA in the IAQ, 3) the continued use of EBT versus other RAs and 4) potential impacts from off-site locations. The re-evaluation will be performed in 2014 and will be based on the findings from this LTM report and the annual EBT report.

4.1.1 Estimated Schedule, Conceptual Site Model and Groundwater Modeling

The estimated time required to meet MCLs in the ROD was based on biodegradation rates calculated for the fluvial aquifer beneath the MI in a March 2000 natural attenuation study included in the *Main Installation Groundwater Feasibility Study Report* (MI GW FS) (CH2M HILL 2000); the rates were 0.086/year (yr) for PCE and 0.062/yr for TCE. The estimated time also assumed that EBT would triple the calculated rates.

Groundwater modeling was also performed for the MI GW FS; BIOSCREEN, a simple two-dimensional analytical solute transport model, was used to estimate potential VOC transport within the MAQ beneath the MI to the nearest pumping well at the Allen Well Field. The modeling was reported to show that the maximum PCE and TCE concentrations at the closest public supply well would be below the MCL.

Additional groundwater modeling was performed for the *Main Installation Source Areas Investigation* (HDR|e²M 2009b). The updated conceptual site model (CSM) incorporated hydrogeological information from numerous monitoring wells installed since the MI GW FS and is summarized as follows.

Several PCE and TCE plumes are present at the site in the shallow fluvial unconfined aquifer. The groundwater levels in the fluvial aquifer suggest a general groundwater flow direction from northeast to southwest and from southwest to northeast converging on a relatively stagnant low point which lies approximately in the center of the site, close to MW-108 (Figure 11). The groundwater that accumulates in this area generally appears to flow toward the south. However, some groundwater in the northern part of the area appears to flow north toward MW-90. The Jackson/Claiborne unit in this area is comprised of relatively coarse grained material, and the IAQ provides a conduit for groundwater flow. Further, the low permeability aquitard between the IAQ and the underlying MAQ is locally absent (Figure 24). These features, which are relatively common in the Memphis Area, are referred to as "windows" in the fluvial/intermediate aquitard, and are characterized by relatively strong downward gradients. As such, these structures represent potential conduits where contamination present in the fluvial and intermediate aquifers can migrate vertically downward and enter the underlying MAQ. At the window on the MI, a clay layer which extends above the water table surrounds the window to the north, west and east, preventing direct fluvial aquifer discharge to enter the window from these directions. While some of the groundwater entering the window flows around the clay and enters the window from the southeast within the fluvial aquifer, additional groundwater flow appears to travel downward into the IAQ, and then north beneath the overlying clay aquitard and to enter the window from the southwest. The IAQ then provides a permeable conduit for groundwater to migrate vertically downward into the MAQ.

The additional groundwater modeling was conducted in a two step procedure. First, each plume was modeled from its source to the window using BIOSCREEN. Second, the transient VOC concentrations at the window computed by BIOSCREEN were combined with independently estimated groundwater flux quantities to the window, to yield transient contaminant mass and groundwater flux values for input to models for three-dimensional groundwater flow (MODFLOW) and solute transport (MT3D) in the MAQ. The West-Central PCE plume and the Building 835 TCE plume, which are closest to the window, were modeled over fifty years to determine their behavior and potential threat to drinking water wells in the Allen well field approximately two miles west of Dunn Field. The model simulations assumed both an infinite (10,000 kilograms [kg]) and a finite (2,000 kg) source of CVOCs in the fluvial aquifer and both active attenuation and no attenuation in the fluvial and Memphis Sand aquifers. The model simulations incorporating a finite source and attenuation rates developed for the MI resulted in little plume migration

in the Memphis Sand with concentrations above standard detection limits (1 µg/L) limited to the MI. Model simulations without attenuation resulted in plume migration beyond the MI but not reaching the Allen Well Field in the 50-year model period.

The attenuation study and groundwater model should be reviewed to determine whether additional RA may be warranted and to develop a new estimated date for achieving RAOs. Additional studies and modeling may be required.

4.1.2 2013 LTM Results

Isoconcentration maps for PCE, TCE and CT were prepared for the April and October 2013 sample events. The CVOC concentrations and extent were similar to recent sample events.

Two new wells were installed in July 2013. MW-260 was installed upgradient of MW-258 in the area of the North-Central Plume and MW-261 was installed downgradient of MW-97 in the South-Central plume, east of TTA-1S. The initial samples from the wells collected in October indicated the extent of high concentrations at MW-258 and MW-97, respectively, was limited.

Changes to the wells associated with designated plumes were recommended based on review of groundwater contours and analytical results; and designation of a new plume was recommended. A South-Central plume was recommended to include MW-97, MW-216 and MW-261. Wells MW-214A/B were recommended to move from the West-Central to the North-Central plume, and wells MW-215A/B and PZ-03 were recommended to move from the West-Central plume to undesignated.

Nine sentinel wells had PCE and/or TCE at concentrations above the MCL, including IAQ well MW-256 near the NW property boundary which had PCE near 40 µg/L. Nearby MAQ wells, MW-254 and MW-255, did not contain PCE above the RL, but TCE was detected near 3 µg/L in MW-254.

Analytical results for the annual LTM event in October had 55 of the 83 wells sampled with concentrations of PCE, TCE and/or CT above the MCL, and 25 of these wells had increasing trends based on M-K analysis. The maximum concentration was PCE at 235 µg/L in DR2-1 in TTA-2; only eight wells had concentrations above 50 µg/L for these CVOCs.

Signs of reductive dechlorination were noted at three LTM wells since the additional EBT injections began in November 2012. Another 15 LTM wells were considered to have demonstrated reductive dechlorination during the initial EBT in 2006 to 2009 and are expected to show the same results as EBT continues. MW-100B in TTA-1N, the VC concentration increased after the initial EBT and was 188 µg/L

in October 2013. At PMW92-02 in TTA-2, cDCE concentrations increased during the initial EBT and remained at high levels; the concentration was 149 µg/L in October 2013. Additional action may be needed if concentrations do not decrease.

There are 18 LTM performance wells in the current EBT areas that exceeded MCLs and are located outside of EBT impact areas based on upgradient or side-gradient locations and absence of reductive dechlorination. Another 11 LTM performance wells that exceeded MCLs are located in other plumes or isolated locations. These 29 locations should be considered for RA during the planned schedule re-evaluation.

The CVOC concentration maps and groundwater contours for October (Figures 19, 20 and 21) were reviewed to determine whether CVOC concentrations above MCLs were bounded by an upgradient well with concentrations below the MCL.

- Boundary well MW-219, located upgradient from TTA-1N, had PCE at 53.6 µg/L in October; off-site background well MW-66A approximately 600 ft west of the MI has had PCE at 1.7 to 3.3 µg/L since 2004.
- Boundary wells MW-22 and MW-102B are located generally upgradient of DR1-5/5A, the upgradient performance well at TTA-1S. Neither boundary well has had CVOCs above RLs since 2006.
- The northern limit of the TTA-2 plume is aligned east-west although the groundwater gradient is to the southwest, which indicates there may be multiple sources. Performance wells MW-88, MW-218 and MW-64 along the upgradient (northern) limit exceed MCLs for PCE, TCE and/or CT.
- TTA-1N and TTA-1S are upgradient to the West-Central Plume.
- The Building 835 plume is located along the edge of the fluvial aquifer where the upper clay of the Jackson/Claiborne unit is above the water level and the source may be to the west in the dewatered zone or to the north. MW-257, located upgradient of MW-213 and MW-62, has not had CVOCs detected since installation in 2012. MW-143, west of MW-213, did not have CVOCs detected when first sampled in 2004 but has contained TCE at 8.8 to 13.5 µg/L since 2010 and is upgradient of other wells in the plume.
- Performance well MW-104 is the upgradient well for the North-Central plume and has had TCE above the MCL at concentrations up to 24 µg/L since 2001.

- Performance well MW-216 is the upgradient well for the South-Central plume and has not had CVOCs above RL since installation in 2007, except for one possibly mislabeled sample in 2008.

During evaluation of the remedial action and schedule to meet RAOs at the MI, upgradient fluvial aquifer wells should be considered at TTA-1N, TTA-2, Building 835 and North-Central plumes. An additional IAQ well downgradient of MW-256 should also be considered.

The CSM describes groundwater flow converging on a low point in the central MI and then diverging to the south or to the north toward the window. While several monitoring provide hydrogeological and analytical data around and within the window, there is limited data in the south central MI. Additional fluvial aquifer wells are recommended in the area bounded by MW-94A, MW-215A/B, MW-259 and the southern property boundary.

4.1.3 Changes to LTM for 2014

The wells installed in 2012 (MW-257, MW-258 and MW-259) are recommended to be classified as performance wells with MW-257 sampled annually, and MW-258 and MW-259 sampled semiannually. The wells installed in 2013 are recommended to be classified as performance wells; the sample frequency will be recommended after four sample events.

The 2013 LTM results and historical results were reviewed with regard to changes in sample frequency. The last four samples from sentinel wells MW-252, MW-253 and MW-254 have had CVOC concentrations ranging from non-detect to near the RL and the sample frequency is recommended to be decreased from semiannual to annual. No other changes are recommended

The recommended 2014 MI LTM sample schedule is shown on Table 36.

4.2 DUNN FIELD

The treatment goal for the AS/SVE system is to reduce individual CVOC concentrations to 50 µg/L or less, and the system is to operate until concentrations in upgradient wells do not exceed 50 µg/L for individual CVOCs. In addition, individual CVOC concentrations in wells on Dunn Field are not to exceed 50 µg/L after the Source Areas RA unless the groundwater will pass through the AS/SVE system.

As has been the case since April 2012, MW-159 was the only LTM well in the Source Areas on Dunn Field or the Off Depot area to exceed the active treatment objective. The only CVOC to exceed the goal was TCE at 181 µg/L in April and 129 µg/L in October 2013, a decrease from 247 µg/L in October 2012.

The groundwater RAO requires CVOC concentrations to be reduced below remediation goals (RGs) in the Dunn Field ROD. The RGs for groundwater are TC based on a target cumulative risk level of 1 in 10,000 ($1X10^{-4}$) and a Hazard Index of 1.0. The final TC may vary based on the individual concentration of each CVOC in a well; however, they are not to exceed MCL or nonzero MCL goal levels. TCs were reviewed using revised toxicity factors in the *Third Five-Year Review, Revision 1* (HDR 2012c). The review demonstrated that MCLs will be the primary determinant in meeting the RAO. TeCA is the only COC without an MCL and could meet the RG at concentrations above the TC.

In April 2013, samples were collected from all LTM wells; 18 performance wells and 5 background-NE wells had concentrations above the TC for one or more CVOCs. Individual CVOC concentrations were above 50 µg/L in only one performance well and above 10 µg/L in only seven performance wells.

The Dunn Field ROD estimated 15 years would be required to meet RAOs after RA implementation. This estimate was based on the selected groundwater remedy including ZVI injection in the source areas, a downgradient iron permeable reactive barrier (PRB) and natural attenuation, and assumed the subsurface soil remedy abated contaminant transfer from soil to groundwater on Dunn Field. ZVI injection was not required at Dunn Field and the remedy was amended to replace the PRB with AS/SVE. The 2014 SMP schedule estimates RAOs will be met in 2019; progress toward meeting the RAOs continued in 2013 and the schedule is considered achievable.

4.2.1 2013 LTM Results

Isoconcentration maps for total CVOCs, TeCA and TCE were prepared for the April and October 2013 sample events; a map for PCE was also made for the April event. CVOC concentrations decreased at most locations in the Off Depot plume. Each map for the individual CVOCs includes a 50 µg/L isopleth to show where the active treatment objective has not been met and an isopleth at both the MCL and TC, where applicable, to show where the RAO has not been met.

Decreasing concentrations at wells southwest of the AS/SVE system indicate diversion of contaminants around the treatment system has stopped or been greatly reduced. Increased concentrations at MW-44 located further to the SW are an effect of previous migration and are expected to decrease as at wells closer to the system.

Rebound in CVOC concentrations was not observed in the 14 performance-FSVE wells. The wells were all sampled in April and October. MW-03, in the northwest corner of Dunn Field, contained PCE at 5.32

µg/L in October. However, the sample also contained TCE and DCE and the increase is attributed to the NE off-site plume.

Samples collected from the five background-NE wells in the northern area of Dunn Field and off site in April 2013 clearly show continued contaminant migration on to Dunn Field.

CVOCs were detected above the RL in two of the nine sentinel wells sampled in April 2013. DCE was detected in MW-237 and MW-251, and CF in MW-251; concentrations were below the MCL and TC.

Analytical results for the biennial LTM event in April included results from all 86 LTM wells; 18 performance wells and 5 background-NE wells had concentrations of TeCA, TCE, PCE, DCE and CE above the MCL or TC. The performance wells exceeding TC include 11 wells with decreasing trends; the other seven wells have been impacted by the off-site plume or by past plume diversion around the AS/SVE system.

4.2.2 Changes to LTM for 2014

The 2013 LTM results and historical results were reviewed with regard to changes in sample frequency.

Background well MW-28 was sampled in 1993 and 1996 with no CVOCs detected. Only CF has been detected above the RL in semiannual samples collected in 2012 and 2013. Since the last four samples have not exceeded MCLs, MW-28 is recommended for biennial sampling.

The last four samples from performance wells MW-15, MW-57, MW-157 and MW-242 have not exceeded MCLs and the sample frequency is recommended to be decreased from semiannual to annual.

The last sample from performance well MW-44 exceeded the MCL for TCE and the sample frequency is recommended to be increased from annual to semiannual.

The recommended 2014 Dunn Field LTM sample schedule is shown on Table 37.

4.2.3 Changes to AS/SVE Operations

The AS/SVE system was estimated to require five years of operations to achieve the active treatment objective; five years will be reached in December 2014. The TCE concentration at MW-159, located immediately upgradient of the system, decreased to 129 µg/L in October 2013 from 247 µg/L in October 2012. A further 60% decrease is required to meet the objective.

The AS/SVE system is recommended to be operated in alternating months to restore the northerly groundwater flow observed prior to system operation. That will allow groundwater to flow from MW-159 into the treatment zone and if necessary extend the operating period without additional cost.

CVOCs upgradient of the AS/SVE system should not escape treatment based on the estimated groundwater flow rate. In discussing changes to system operations the Off Depot IRACR stated *the Off Depot RD assumed a groundwater flow rate of 0.1 feet/day, while the estimated rate from the reported average hydraulic conductivity (37 feet/day), groundwater gradient (0.003) and porosity (0.3) is 0.4 feet/day. If the distance between the two rows of primary AS points (15 feet) is conservatively assumed to be the treatment path; the groundwater travel time through the area is 37.5 to 150 days.* The actual path would be longer assuming a 15-ft sparge zone around each AS point.

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TABLES

TABLE 1
MAIN INSTALLATION LTM WELLS
ANNUAL LONG TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

Well	Aquifer	Well Classification	Sample Frequency	Northing (ft)	Easting (ft)	Top of Casing Elevation (ft, msl)	Ground Elevation (ft, msl)	Riser Length (ft)	Screen Length (ft)	Total Well Depth (ft, btoc)
MW-16	Fluvial	Background	Biennial	278837.83	807099.66	299.86	300.19	57.6	15	72.6
MW-19	Fluvial	Background	Biennial	278945.87	800782.26	290.57	290.86	83.1	10	93.1
MW-22	Fluvial	Boundary	Biennial	275912.38	800702.16	298.04	298.49	95.4	10	105.4
MW-23	Fluvial	Boundary	Biennial	275791.02	801817.13	298.99	299.24	101.2	10	111.2
MW-24	Fluvial	Boundary	Biennial	275616.05	803538.81	299.51	299.81	97.3	15	112.3
MW-25A	Fluvial	Performance	Annual	275975.11	805521.27	269.88	270.13	73.0	10	83.0
MW-26	Fluvial	Performance	Semiannual	276508.16	805962.09	303.69	303.89	97.6	10	107.6
MW-34	Intermediate	Sentinel	Biennial	279411.21	801917.96	299.97	300.80	136.6	20	156.6
MW-38	Intermediate	Sentinel	Biennial	279141.38	802450.43	307.45	308.45	139.9	15	154.9
MW-39	Fluvial	Performance	Semiannual	277280.67	802598.11	296.28	296.58	95.5	20	115.5
MW-39A[1]	Fluvial	Performance	Semiannual	277278.11	802607.66	298.61	298.70	148.1	20	168.1
MW-50	Fluvial	Boundary	Biennial	276455.81	807065.28	298.82	299.32	115.0	10	125.0
MW-52	Fluvial	Performance	Annual	275371.97	805897.36	279.26	279.71	94.0	10	104.0
MW-53	Fluvial	Background	Biennial	279176.66	805136.05	306.38	305.58	72.5	10	82.5
MW-55	Fluvial	Background	Biennial	279301.05	801204.62	292.08	292.48	64.0	10	74.0
MW-63A	Fluvial/Intermediate	Sentinel	Annual	278200.31	803572.83	305.96	306.33	140.0	10	150.0
MW-63B	Fluvial/Intermediate	Sentinel	Annual	278201.32	803557.77	305.78	306.22	115.0	10	125.0
MW-64	Fluvial	Performance	Semiannual	276951.52	805005.97	304.21	304.46	102.0	10	112.0
MW-66A	Fluvial	Background	Biennial	276626.02	799792.63	284.22	284.34	74.6	20	94.6
MW-88	Fluvial	Performance	Semiannual	276879.05	806512.88	305.15	305.47	82.0	15	97.0
MW-89	Intermediate	Sentinel	Annual	278286.97	802555.25	303.98	304.38	147.0	30	177.0
MW-90	Intermediate	Sentinel	Semiannual	278283.60	802539.51	304.19	304.64	115.0	30	145.0
MW-92	Fluvial	Performance	Semiannual	276614.20	806489.66	304.41	304.78	93.0	15	108.0
MW-93	Fluvial	Boundary	Biennial	275542.22	804440.10	294.08	294.31	92.0	15	107.0
MW-94A	Fluvial	Performance	Semiannual	276805.80	803085.80	303.00	303.23	109.6	10	119.6
MW-96	Fluvial	Performance	Annual	276310.14	806320.24	289.02	289.67	75.5	20	95.5
MW-97	Fluvial	Performance	Semiannual	276074.23	802139.23	297.44	297.70	97.5	20	117.5
MW-98	Fluvial	Performance	Semiannual	276891.37	802572.77	294.43	294.93	137.0	10	147.0
MW-99	Fluvial	Background	Biennial	277443.37	801114.53	285.33	285.69	91.5	20	111.5
MW-100B[1]	Fluvial	Performance	Semiannual	276600.61	800854.26	290.92	291.47	107.4	20	127.4
MW-101[1]	Fluvial	Performance	Semiannual	276204.09	801110.27	291.74	291.98	89.0	15	104.0
MW-102B	Fluvial	Boundary	Biennial	275760.59	800707.72	311.40	312.07	120.5	20	140.5
MW-103	Fluvial	Performance	Annual	278690.88	805159.83	301.37	301.89	70.0	20	90.0
MW-104	Fluvial	Performance	Annual	278676.47	805417.03	291.98	292.18	70.5	20	90.5
MW-107	Fluvial/Intermediate	Sentinel	Semiannual	278419.07	803009.93	304.92	305.18	128.0	15	143.0
MW-108	Fluvial/Intermediate	Sentinel	Semiannual	277658.02	802985.53	303.07	303.25	160.0	10	170.0
MW-140	Intermediate	Sentinel	Annual	279061.29	801715.68	298.12	298.16	224.6	20	244.6
MW-141	Intermediate	Sentinel	Semiannual	278019.19	802571.25	303.71	303.70	148.7	20	168.7
MW-142	Fluvial	Performance	Annual	278056.03	801629.12	291.18	291.49	85.0	20	105.0
MW-143[1]	Fluvial	Performance	Semiannual	278301.35	801201.48	290.66	290.90	78.6	20	98.6
MW-198[1]	Fluvial	Performance	Annual	277775.91	802142.37	291.78	292.20	90.3	15	105.3
MW-199A	Intermediate	Sentinel	Annual	277756.40	802573.52	301.53	301.84	146.1	15	161.1
MW-199B	Fluvial	Performance	Semiannual	277751.74	802575.66	301.73	302.07	104.6	15	119.6
MW-200	Fluvial	Performance	Semiannual	277006.10	802859.39	300.18	300.51	102.9	15	117.9
MW-202A	Intermediate	Sentinel	Annual	278685.74	802111.27	299.23	299.69	176.2	15	191.2
MW-202B	Intermediate	Sentinel	Semiannual	278692.79	802112.04	299.51	299.74	118.8	15	133.8
MW-204A	Fluvial	Performance	Semiannual	276724.66	802168.25	292.21	292.49	133.3	15	148.3
MW-204B[1]	Fluvial	Performance	Semiannual	276707.81	802167.07	292.71	293.00	94.9	15	109.9
MW-205A[1]	Fluvial	Performance	Semiannual	277157.18	802277.24	292.30	292.40	141.3	15	156.3
MW-205B[1]	Fluvial	Performance	Semiannual	277173.05	802277.84	292.16	292.30	97.3	15	112.3
MW-206A	Fluvial	Performance	Semiannual	277219.28	802792.28	299.92	300.35	127.3	15	142.4
MW-206B	Fluvial	Performance	Semiannual	277200.85	802794.78	299.90	300.12	96.7	15	111.7
MW-207A[1]	Fluvial	Sentinel	Semiannual	277652.76	803192.01	304.05	304.45	149.9	15	164.9
MW-207B[1]	Fluvial	Sentinel	Semiannual	277665.02	803193.27	304.06	304.42	108.5	15	123.5
MW-208A[1]	Fluvial	Performance	Semiannual	277382.22	802799.08	302.21	302.40	184.2	15	199.2
MW-208B	Fluvial	Performance	Semiannual	277396.90	802814.96	301.79	302.08	106.7	15	121.7
MW-209A	Intermediate	Sentinel	Annual	277574.28	802507.10	298.05	298.36	189.0	15	204.0
MW-209B	Fluvial	Performance	Semiannual	277581.50	802520.13	298.49	298.72	102.3	15	117.3
MW-210A[1]	Intermediate	Sentinel	Semiannual	277238.57	801958.11	289.61	289.70	177.0	15	192.0
MW-210B	Fluvial	Performance	Semiannual	277228.18	801951.94	289.29	289.53	97.0	15	112.0
MW-211	Intermediate	Sentinel	Annual	278000.59	802973.69	303.74	304.09	166.3	15	181.3
MW-214A	Fluvial	Performance	Semiannual	277877.62	803906.94	303.61	303.96	119.1	15	134.1
MW-214B	Fluvial	Performance	Semiannual	277875.84	803922.20	303.70	303.96	101.6	15	116.6

TABLE 1
MAIN INSTALLATION LTM WELLS
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Defense Depot Memphis, Tennessee

Well	Aquifer	Well Classification	Sample Frequency	Northing (ft)	Easting (ft)	Top of Casing Elevation (ft, msl)	Ground Elevation (ft, msl)	Riser Length (ft)	Screen Length (ft)	Total Well Depth (ft, btoc)
MW-215A	Fluvial	Performance	Annual	277298.37	804164.31	304.50	304.86	128.8	15	143.8
MW-215B	Fluvial	Performance	Annual	277298.27	804177.33	304.56	304.98	105.4	15	120.4
MW-216	Fluvial	Performance	Annual	276024.68	801995.93	297.34	297.63	99.9	15	115.0
MW-217	Fluvial	Performance	Semiannual	276670.60	805213.69	304.18	304.51	101.8	15	116.8
MW-218	Fluvial	Performance	Semiannual	276936.70	805628.44	305.60	306.00	98.9	15	114.0
MW-219[1]	Fluvial	Boundary	Semiannual	276429.49	800460.96	295.13	295.00	98.0	15	113.0
MW-229[1]	Intermediate	Sentinel	Biennial	279294.17	802836.96	311.78	312.09	188.4	20	208.4
MW-252	Intermediate	Sentinel	Semiannual	278789.21	801364.70	294.16	294.40	126.1	20	146.1
MW-253	Intermediate	Sentinel	Semiannual	278287.43	801191.42	290.47	290.80	118.3	20	138.3
MW-254	Memphis	Sentinel	Semiannual	279334.36	800857.53	292.84	293.28	285.8	20	305.8
MW-255	Memphis	Sentinel	Semiannual	279304.76	801226.84	291.84	292.38	284.7	20	304.7
MW-256	Intermediate	Sentinel	Semiannual	279301.82	801243.80	292.68	293.40	127.1	20	147.1
MW-257	Fluvial	TBD	TBD	278549.06	801340.58	292.22	292.67	85.5	15	100.5
MW-258	Fluvial	TBD	TBD	278125.81	804426.82	304.37	304.83	79.3	20	99.3
MW-259	Fluvial	TBD	TBD	276279.04	804450.97	290.77	291.44	98.6	20	118.6
MW-260	Fluvial	TBD	TBD	278398.46	804376.22	304.16	304.45	68.0	20	88.3
MW-261	Fluvial	TBD	TBD	276390.64	802591.62	293.52	293.79	90.0	20	110.3
DR1-1[1]	Fluvial	Performance	Annual	276300.34	800855.57	293.14	293.42	121.7	20	141.7
DR1-1A[1]	Fluvial	Performance	Annual	276307.34	800863.06	293.00	293.37	89.2	20	109.2
DR1-2[1]	Fluvial	Performance	Annual	276536.64	801152.66	290.00	291.39	97.7	20	117.7
DR1-3	Fluvial	Performance	Semiannual	276527.27	801415.91	290.93	291.11	109.7	20	129.7
DR1-4	Fluvial	Performance	Annual	276231.20	801399.53	292.78	293.00	106.3	20	126.3
DR1-7	Fluvial	Performance	Annual	276791.26	801441.36	289.15	289.46	108.3	20	128.3
DR1-8[1]	Fluvial	Performance	Annual	276752.48	800875.32	290.09	290.47	92.7	20	112.7
DR2-1	Fluvial	Performance	Semiannual	276772.10	806497.62	304.90	305.08	73.9	20	93.9
DR2-3	Fluvial	Performance	Semiannual	276539.12	806203.16	303.44	303.66	93.0	20	113.0
DR2-4[1]	Fluvial	Performance	Annual	276455.62	806633.07	303.55	303.96	88.1	20	108.1
DR2-6	Fluvial	Performance	Semiannual	276643.99	805860.91	304.70	304.92	94.6	20	114.6
PMW21-03	Fluvial	Performance	Semiannual	276573.43	800742.52	292.11	292.72	90.3	20	110.3
PMW21-05	Fluvial	Performance	Semiannual	276628.32	801129.72	288.53	288.92	94.3	20	114.3
PMW92-02	Fluvial	Performance	Semiannual	276667.02	806476.47	304.17	304.35	94.8	10	104.8
PMW101-03A	Fluvial	Performance	Semiannual	276348.46	801198.37	291.61	291.99	119.2	20	139.2
PMW101-03B	Fluvial	Performance	Semiannual	276353.09	801194.14	291.55	291.82	99.3	20	119.3
PMW101-06A	Fluvial	Performance	Semiannual	276191.88	801187.45	292.13	292.72	120.0	20	140.0
PMW101-06B	Fluvial	Performance	Semiannual	276194.93	801183.96	292.17	292.40	99.3	20	119.3
PZ-03	Fluvial	Performance	Annual	276379.33	802941.05	298.51	298.98	108.9	10	118.9

Notes:
1) Wells re-surveyed after wellhead modifications in July 2013
ft: feet
btoc: below top of casing
msl: mean sea level

TABLE 2
MAIN INSTALLATION SAMPLE SCHEDULE
ANNUAL LONG TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

Well ID	Well Classification	Sample Frequency	Semiannual Apr-2013	Annual Oct-2013
MW-16	Background	Biennial	-	-
MW-19	Background	Biennial	-	-
MW-22	Boundary	Biennial	-	-
MW-23	Boundary	Biennial	-	-
MW-24	Boundary	Biennial	-	-
MW-25A	Performance	Annual	-	S
MW-26	Performance	Semiannual	S	S
MW-34	Sentinel	Biennial	-	-
MW-38	Sentinel	Biennial	-	-
MW-39	Performance	Semiannual	S	S
MW-39A	Performance	Semiannual	S	S
MW-50	Boundary	Biennial	-	-
MW-52	Performance	Annual	-	S
MW-53	Background	Biennial	-	-
MW-55	Background	Biennial	-	-
MW-63A	Sentinel	Annual	-	S
MW-63B	Sentinel	Annual	-	S
MW-64	Performance	Semiannual	S	S
MW-66A	Background	Biennial	-	-
MW-88	Performance	Semiannual	S	S
MW-89	Sentinel	Annual	-	S
MW-90	Sentinel	Semiannual	S	S
MW-92	Performance	Semiannual	S	S
MW-93	Boundary	Biennial	-	-
MW-94A	Performance	Semiannual	S	S
MW-96	Performance	Annual	-	S
MW-97	Performance	Semiannual	S	S
MW-98	Performance	Semiannual	S	S
MW-99	Background	Biennial	-	-
MW-100B	Performance	Semiannual	S	S
MW-101(T)	Performance	Semiannual	S	S
MW-101(B)	Performance	Semiannual	S	S
MW-102B	Boundary	Biennial	-	-
MW-103	Performance	Annual	-	S
MW-104	Performance	Annual	-	S
MW-107(T)	Sentinel	Semiannual	S	S
MW-107(B)	Sentinel	Semiannual	S	S
MW-108	Sentinel	Semiannual	S	S
MW-140	Sentinel	Annual	-	S
MW-141	Sentinel	Semiannual	S	S
MW-142	Performance	Annual	-	S
MW-143	Performance	Semiannual	S	S
MW-198	Performance	Annual	-	S
MW-199A	Sentinel	Annual	-	S
MW-199B	Performance	Semiannual	S	S
MW-200	Performance	Semiannual	S	S
MW-202A	Sentinel	Annual	-	S
MW-202B	Sentinel	Semiannual	S	S
MW-204A	Performance	Semiannual	S	S
MW-204B	Performance	Semiannual	S	S
MW-205A	Performance	Semiannual	S	S
MW-205B	Performance	Semiannual	S	S
MW-206A	Performance	Semiannual	S	S
MW-206B	Performance	Semiannual	S	S
MW-207A	Sentinel	Semiannual	S	S
MW-207B	Sentinel	Semiannual	S	S
MW-208A	Performance	Semiannual	S	NS
MW-208B	Performance	Semiannual	S	S
MW-209A	Sentinel	Annual	-	S

TABLE 2
MAIN INSTALLATION SAMPLE SCHEDULE
ANNUAL LONG TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

Well ID	Well Classification	Sample Frequency	Semiannual Apr-2013	Annual Oct-2013
MW-209B	Performance	Semiannual	S	S
MW-210A	Sentinel	Semiannual	S	S
MW-210B	Performance	Semiannual	S	S
MW-211	Sentinel	Annual	-	S
MW-214A	Performance	Semiannual	S	S
MW-214B	Performance	Semiannual	S	S
MW-215A	Performance	Annual	-	S
MW-215B	Performance	Annual	-	S
MW-216	Performance	Annual	-	S
MW-217	Performance	Semiannual	S	S
MW-218	Performance	Semiannual	S	S
MW-219	Boundary	Semiannual	S	S
MW-229	Sentinel	Biennial	-	-
MW-252	Sentinel	Semiannual	S	S
MW-253	Sentinel	Semiannual	S	S
MW-254	Sentinel	Semiannual	S	S
MW-255	Sentinel	Semiannual	S	S
MW-256	Sentinel	Semiannual	S	S
MW-257	TBD	TBD	S	S
MW-258	TBD	TBD	S	S
MW-259	TBD	TBD	S	S
MW-260	TBD	TBD	NA	LF
MW-261	TBD	TBD	NA	LF
DR1-1	Performance	Annual	-	S
DR1-1A	Performance	Annual	-	S
DR1-2	Performance	Annual	-	S
DR1-3	Performance	Semiannual	S	S
DR1-4	Performance	Annual	-	S
DR1-7	Performance	Annual	-	S
DR1-8	Performance	Annual	-	S
DR2-1	Performance	Semiannual	S	S
DR2-3	Performance	Semiannual	S	S
DR2-4	Performance	Annual	-	S
DR2-6	Performance	Semiannual	S	S
PMW21-03	Performance	Semiannual	S	S
PMW21-05	Performance	Semiannual	S	S
PMW92-02	Performance	Semiannual	LF	S
PMW101-03A	Performance	Semiannual	LF	S
PMW101-03B	Performance	Semiannual	LF	S
PMW101-06A	Performance	Semiannual	LF	S
PMW101-06B	Performance	Semiannual	LF	S
PZ-03	Performance	Annual	-	B

Notes:

1) Samples collected from two screened intervals in MW-101 and MW-107
2) MW-260 and MW-261 installed in July 2013

PDB: Passive diffusion bag
B: Sample collected with bailer
LF: Sample collected with bladder pump by low-flow method
S: Sample collected with PDB
NS: Sample not collected
P: Sample planned
-: Sample not planned or collected

TABLE 3
DUNN FIELD LTM WELLS
ANNUAL LONG TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

Well	Aquifer	Well Classification	Sample Frequency	Northing (ft)	Easting (ft)	Top of Casing Elevation (ft, msl)	Ground Elevation (ft, msl)	Riser Length (ft)	Screen Length (ft)	Total Well Depth (ft, btoc)
MW-03	Fluvial	Performance-FSVE	Semiannual	281596.25	802100.69	292.35	290.40	65.5	10	75.5
MW-04	Fluvial	Background	Biennial	281278.87	802369.19	301.61	300.00	60.0	20	80.0
MW-06	Fluvial	Performance-FSVE	Semiannual	280604.17	802069.13	289.11	288.10	51.0	20	71.0
MW-07	Fluvial	Background-NE	Annual	281839.88	802481.70	295.10	293.10	67.0	10	77.0
MW-08	Fluvial	Background-NE	Annual	282001.04	802727.91	292.59	292.74	56.5	10	66.5
MW-13	Fluvial	Background	Biennial	281033.56	802369.21	300.01	300.10	66.0	15	81.0
MW-15	Fluvial	Performance	Semiannual	280348.88	801985.36	295.12	295.23	63.4	15	78.4
MW-28	Fluvial	Background	Semiannual	281568.58	803154.48	294.79	294.89	54.3	15	69.3
MW-31	Fluvial	Performance	Semiannual	281651.53	801783.90	290.37	287.50	64.1	15	79.1
MW-33	Fluvial	Performance	Biennial	280398.10	801561.30	280.71	277.70	44.6	15	59.6
MW-44	Fluvial	Performance	Annual	281073.71	800601.09	269.07	269.40	64.0	10	74.0
MW-54[1]	Fluvial	Performance	Semiannual	281159.21	801183.83	295.39	295.57	84.5	10	94.5
MW-57	Fluvial	Performance	Semiannual	280184.05	802006.19	290.77	291.10	60.0	10	70.0
MW-58	Fluvial	Performance	Biennial	279845.07	802066.44	290.51	290.70	57.0	10	67.0
MW-67	Memphis	Sentinel	Biennial	280473.05	800933.94	278.21	275.53	260.0	15	275.0
MW-68	Fluvial	Performance	Annual	281500.76	802040.04	291.69	291.60	72.5	10	82.5
MW-69	Fluvial	Performance	Annual	281202.55	802011.49	307.02	304.90	82.1	10	92.1
MW-70	Fluvial	Performance	Annual	281029.60	801988.49	304.99	302.80	80.8	10	90.8
MW-71	Fluvial	Performance	Annual	280584.68	801804.71	294.40	291.90	65.5	10	75.5
MW-76	Fluvial	Performance	Annual	281311.98	801642.76	302.71	303.30	73.0	20	93.0
MW-77	Fluvial	Performance	Semiannual	281142.96	801815.29	304.42	304.70	68.0	20	88.0
MW-78	Fluvial	Performance	Biennial	282051.71	802065.28	275.00	275.40	44.5	20	64.5
MW-79	Fluvial	Performance	Semiannual	281794.22	800899.03	285.03	285.40	82.5	20	102.5
MW-80	Fluvial	Background	Biennial	281417.56	800199.07	273.81	274.00	53.0	20	73.0
MW-87	Fluvial	Performance-FSVE	Semiannual	280696.36	802038.55	294.93	292.80	63.0	15	78.0
MW-91	Fluvial	Performance	Annual	280474.97	802014.43	291.99	289.30	55.0	15	70.0
MW-126	Fluvial	Background	Biennial	282390.01	800491.67	252.22	252.49	16.0	10	26.0
MW-129	Fluvial	Background-NE	Annual	282271.08	803128.53	293.01	293.33	65.0	15	80.0
MW-130[1]	Fluvial	Background-NE	Annual	282116.80	803241.45	293.17	293.77	59.5	20	79.5
MW-134	Fluvial	Performance-FSVE	Semiannual	281012.74	802102.58	300.81	301.05	75.0	15	90.0
MW-144	Fluvial	Performance	Semiannual	281138.63	801528.84	291.60	291.89	56.8	20	76.8
MW-145	Fluvial	Performance	Annual	280967.63	800823.18	284.72	284.86	80.1	20	100.1
MW-147[1]	Fluvial	Performance	Annual	281501.94	801674.17	289.76	289.93	60.3	20	80.3
MW-148	Fluvial	Performance	Annual	281377.94	801461.63	294.71	294.87	70.0	20	90.0
MW-149	Fluvial	Performance	Semiannual	281130.04	800982.76	287.18	287.44	81.4	20	101.4
MW-150[1]	Fluvial	Performance	Semiannual	281239.57	801283.62	296.86	297.00	71.2	20	91.2
MW-151	Fluvial	Performance	Semiannual	281290.42	800874.85	284.27	284.42	77.0	20	97.0
MW-152	Fluvial	Performance	Annual	281515.56	800892.84	289.59	289.82	91.0	20	111.0
MW-153	Fluvial	Performance	Biennial	282119.38	800952.34	279.17	279.26	76.1	20	96.1
MW-154	Fluvial	Background	Biennial	280501.53	800919.48	273.81	274.07	53.3	10	63.3
MW-155[1]	Fluvial	Performance	Annual	281325.32	801168.98	291.54	291.83	76.9	20	96.9
MW-157[1]	Fluvial	Performance	Semiannual	281050.86	801348.37	286.47	286.55	56.7	20	76.7
MW-158	Fluvial	Performance	Annual	281434.42	801005.34	294.07	294.38	91.0	15	106.0
MW-158A	Fluvial	Performance	Annual	281443.51	801005.67	293.95	294.22	77.9	15	92.9
MW-159[1]	Fluvial	Performance	Semiannual	281304.17	801006.69	286.36	286.68	80.5	20	100.5
MW-160[1]	Fluvial	Performance	Annual	281366.70	801304.05	293.84	294.13	65.7	20	85.7
MW-163	Fluvial	Performance	Semiannual	281152.59	801487.27	290.63	290.81	56.2	20	76.2
MW-164	Fluvial	Performance	Semiannual	280997.55	801497.47	287.48	287.71	55.6	20	75.6
MW-165	Fluvial	Performance	Semiannual	281384.63	800855.49	287.06	287.35	88.6	15	103.6
MW-165A	Fluvial	Performance	Semiannual	281383.55	800865.69	287.26	287.53	71.3	15	86.3
MW-166	Fluvial	Performance	Semiannual	281225.00	800927.99	282.72	283.29	84.6	15	100.0
MW-166A	Fluvial	Performance	Semiannual	281213.39	800927.27	282.90	283.36	68.1	15	83.4
MW-167	Fluvial	Background	Biennial	281394.03	800618.54	284.82	285.21	70.5	15	85.5
MW-169	Transition	Sentinel	Biennial	282491.23	800956.58	261.90	262.17	68.1	20	88.1
MW-170	Fluvial	Sentinel	Biennial	282443.17	801260.46	273.75	273.98	59.8	20	79.8
MW-171	Fluvial	Sentinel	Biennial	282315.35	801057.83	270.69	271.02	53.3	15	68.3
MW-174	Fluvial	Performance-FSVE	Semiannual	280352.00	802092.07	296.56	296.83	67.0	10	77.0
MW-176	Fluvial	Performance	Annual	280823.77	802032.08	299.68	299.92	76.0	10	86.0
MW-180	Fluvial	Performance	Annual	281476.43	802131.85	296.14	296.39	72.0	10	82.0
MW-182	Fluvial	Sentinel	Annual	280524.22	800623.13	275.40	272.98	62.0	10	72.0
MW-184	Fluvial	Performance	Semiannual	280903.16	801442.29	283.12	283.34	58.0	10	68.0
MW-187	Fluvial	Background	Biennial	280563.18	802348.09	302.74	303.21	76.0	10	86.0
MW-190	Fluvial	Performance	Semiannual	281138.88	801595.73	297.32	297.58	78.0	10	88.0
MW-220	Fluvial	Performance-FSVE	Semiannual	281617.49	802166.87	293.29	290.31	64.9	15	79.9

TABLE 3
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Well	Aquifer	Well Classification	Sample Frequency	Northing (ft)	Easting (ft)	Top of Casing Elevation (ft, msl)	Ground Elevation (ft, msl)	Riser Length (ft)	Screen Length (ft)	Total Well Depth (ft, btoc)
MW-221	Fluvial	Performance-FSVE	Semiannual	281399.71	802100.05	301.52	298.37	73.1	15	88.1
MW-222	Fluvial	Performance-FSVE	Semiannual	280986.04	802145.54	303.82	301.06	74.2	15	89.2
MW-223	Fluvial	Performance-FSVE	Semiannual	280913.53	802104.29	303.00	300.41	73.9	15	88.9
MW-224	Fluvial	Performance-FSVE	Semiannual	281017.74	802181.62	304.13	301.18	73.7	15	88.7
MW-225	Fluvial	Performance-FSVE	Semiannual	280947.12	802070.50	304.52	301.30	75.0	15	90.0
MW-226	Fluvial	Performance-FSVE	Semiannual	280931.94	802147.21	303.19	300.56	74.2	15	89.2
MW-227	Fluvial	Performance-FSVE	Semiannual	280257.91	802081.00	299.70	296.64	63.6	15	78.6
MW-228	Fluvial	Performance-FSVE	Semiannual	280251.88	802157.40	301.65	298.59	64.1	15	79.1
MW-230[1]	Fluvial	Background-NE	Annual	281842.79	802800.06	286.57	286.66	59.2	15	74.2
MW-235	Fluvial	Sentinel	Annual	280727.57	800447.83	264.00	264.21	50.6	10	60.8
MW-237	Intermediate	Sentinel	Annual	281356.02	800963.99	289.18	289.53	166.5	10	176.7
MW-241[1]	Fluvial	Performance	Annual	281389.82	801396.64	292.97	293.16	73.4	15	88.4
MW-242	Fluvial	Performance	Semiannual	281297.31	801228.65	295.40	295.94	73.2	16	88.7
MW-243	Fluvial	Performance	Semiannual	281370.62	801116.45	292.26	292.53	80.7	20	100.7
MW-244	Fluvial	Performance	Semiannual	281333.49	801101.07	288.72	289.45	76.3	20	96.3
MW-245[1]	Fluvial	Performance	Semiannual	281379.46	801035.00	290.48	290.62	85.1	20	105.1
MW-246	Fluvial	Performance	Semiannual	281387.26	800951.62	288.17	288.49	85.2	20	105.2
MW-247[1]	Fluvial	Performance	Semiannual	281319.40	800900.12	286.17	286.63	80.5	20	100.5
MW-248	Fluvial	Performance	Annual	281253.66	800720.22	275.45	275.93	67.5	20	87.5
MW-249	Fluvial	Performance	Semiannual	281029.63	800789.83	285.53	285.89	78.0	20	98.0
MW-250	Intermediate	Sentinel	Annual	281045.53	800900.38	289.66	290.19	168.7	15	183.7
MW-251	Intermediate	Sentinel	Annual	281211.70	801021.75	285.83	286.16	160.2	15	175.2

Notes:
1) Wells re-surveyed after wellhead modifications in July 2013
ft: feet
btoc: below top of casing
msl: mean sea level

TABLE 4
DUNN FIELD LTM SCHEDULE
ANNUAL LONG TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

Well ID	Well Classification	Sample Frequency	Biennial Apr-2013	Semiannual Oct-2013
MW-03	Performance-FSVE	Semiannual	S	S
MW-04	Background	Biennial	S	-
MW-06	Performance-FSVE	Semiannual	S	S
MW-07	Background-NE	Annual	S	-
MW-08	Background-NE	Annual	LF	-
MW-13	Background	Biennial	LF	-
MW-15	Performance	Semiannual	S	S
MW-28	Background	Semiannual	S	S
MW-31	Performance	Semiannual	S	S
MW-33	Performance	Biennial	S	-
MW-44	Performance	Annual	S	-
MW-54	Performance	Semiannual	S	S
MW-57	Performance	Semiannual	S	S
MW-58	Performance	Biennial	LF	-
MW-67	Sentinel	Biennial	S	-
MW-68	Performance	Annual	S	-
MW-69	Performance	Annual	S	-
MW-70	Performance	Annual	S	-
MW-71	Performance	Annual	S	-
MW-76	Performance	Annual	S	-
MW-77	Performance	Semiannual	S	S
MW-78	Performance	Biennial	LF	-
MW-79	Performance	Semiannual	S	S
MW-80	Background	Biennial	S	-
MW-87	Performance-FSVE	Semiannual	S	S
MW-91	Performance	Annual	S	-
MW-126	Background	Biennial	LF	-
MW-129	Background-NE	Annual	S	-
MW-130	Background-NE	Annual	S	-
MW-134	Performance-FSVE	Semiannual	S	S
MW-144	Performance	Semiannual	S	S
MW-145	Performance	Annual	S	-
MW-147	Performance	Annual	S	-
MW-148	Performance	Annual	S	-
MW-149	Performance	Semiannual	S	S
MW-150	Performance	Semiannual	S	S
MW-151	Performance	Semiannual	S	S
MW-152	Performance	Annual	S	-
MW-153	Performance	Biennial	LF	-
MW-154	Background	Biennial	S	-
MW-155	Performance	Annual	S	-
MW-157	Performance	Semiannual	S	S
MW-158	Performance	Annual	S	-
MW-158A	Performance	Annual	S	-
MW-159	Performance	Semiannual	S	S
MW-160	Performance	Annual	S	-
MW-163	Performance	Semiannual	S	S
MW-164	Performance	Semiannual	S	S
MW-165	Performance	Semiannual	S	S
MW-165A	Performance	Semiannual	S	S
MW-166	Performance	Semiannual	S	S
MW-166A	Performance	Semiannual	S	S
MW-167	Background	Biennial	S	-
MW-169	Sentinel	Biennial	LF	-
MW-170	Sentinel	Biennial	LF	-
MW-171	Sentinel	Biennial	LF	-
MW-174	Performance-FSVE	Semiannual	S	S
MW-176	Performance	Annual	S	-

TABLE 4
DUNN FIELD LTM SCHEDULE
ANNUAL LONG TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

Well ID	Well Classification	Sample Frequency	Biennial Apr-2013	Semiannual Oct-2013
MW-180	Performance	Annual	S	-
MW-182	Sentinel	Annual	S	S[1]
MW-184	Performance	Semiannual	S	S
MW-187	Background	Biennial	LF	-
MW-190	Performance	Semiannual	S	S
MW-220	Performance-FSVE	Semiannual	S	S
MW-221	Performance-FSVE	Semiannual	S	S
MW-222	Performance-FSVE	Semiannual	S	S
MW-223	Performance-FSVE	Semiannual	S	S
MW-224	Performance-FSVE	Semiannual	S	S
MW-225	Performance-FSVE	Semiannual	S	S
MW-226	Performance-FSVE	Semiannual	S	S
MW-227	Performance-FSVE	Semiannual	S	S
MW-228	Performance-FSVE	Semiannual	S	S
MW-230	Background-NE	Annual	S	-
MW-235	Sentinel	Annual	S	-
MW-237	Sentinel	Annual	S	-
MW-241	Performance	Annual	S	-
MW-242	Performance	Semiannual	S	S
MW-243	Performance	Semiannual	S	S
MW-244	Performance	Semiannual	S	S
MW-245	Performance	Semiannual	S	S
MW-246	Performance	Semiannual	S	S
MW-247	Performance	Semiannual	S	S
MW-248	Performance	Annual	S	-
MW-249	Performance	Semiannual	S	S
MW-250	Sentinel	Annual	S	-
MW-251	Sentinel	Annual	S	-

Notes:
1) MW-182 sampled in October to evaluate potential groundwater impact from well damage.
PDB: Passive diffusion bag
LF: Sample collected with bladder pump by low-flow method
S: Sample collected with PDB
NS: Sample not collected
P: Sample planned
-: Sample not planned or collected

TABLE 5
WELL ABANDONMENT SUMMARY
ANNUAL LONG TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

Well	Aquifer	Well Classification	Northing (ft)	Easting (ft)	Ground Elevation (ft, msl)	Well Diameter (inches)	Stick Up (ft)	Recorded Well Depth (ft, bgs)	Measured Well Depth (ft, btoc)	Grout Pumped (gallons)	Date Abandoned	Surface
MW-05	Fluvial	Performance	281254.49	802084.68	301.30	2	3.3	76.7	79.4	19	3/12/2013	Grass
MW-10	Fluvial	Performance	281662.55	802201.26	289.20	2	3.0	69.0	71.6	20	3/12/2013	Grass
MW-14	Fluvial	Background	280003.37	802288.95	302.44	2	-0.2	80.2	79.0	25	3/12/2013	Grass
MW-32	Fluvial	Performance	280834.37	801615.51	285.60	2	-0.2	67.7	64.0	20	3/13/2013	Gravel
MW-37	Intermediate	Sentinel	280831.22	801616.58	285.50	2	-0.6	181.3	182.0	35	3/13/2013	Gravel
MW-42	Fluvial	Background	281883.92	800182.40	275.10	2	-0.3	59.3	58.5	18	3/16/2013	Asphalt
MW-43	Intermediate	Sentinel	280284.33	800111.73	284.99	2	0.0	171.5	171.9	29	3/16/2013	Grass
MW-45	Fluvial	Background	280728.08	804125.99	293.30	2	-0.1	68.1	68.5	20	3/16/2013	Grass
MW-51	Fluvial	Background	282345.86	802828.62	275.50	2	-0.3	65.3	67.0	22	3/15/2013	Gravel
MW-65	Fluvial	Background	283529.72	803887.68	264.00	2	-0.8	51.6	51.0	10	3/16/2013	Grass
MW-74	Fluvial	Performance	280991.20	802044.29	304.00	2	-0.3	90.3	90.0	23	3/12/2013	Grass
MW-75	Fluvial	Performance	281080.10	802051.10	304.30	2	-0.7	91.7	91.0	23	3/12/2013	Grass
MW-127	Fluvial	Background	280738.40	799810.30	268.86	2	-0.2	70.2	69.8	19	3/16/2013	Grass
MW-128	Fluvial	Background	282712.19	803376.38	284.77	2	-0.6	75.4	74.8	22	3/15/2013	Asphalt
MW-132	Fluvial	Performance	281006.28	802129.10	301.05	2	-0.3	88.8	88.8	24	3/12/2013	Grass
MW-161	Fluvial	Performance	281120.29	801596.82	296.67	2	-0.3	82.1	81.6	23	3/14/2013	Grass
MW-162	Fluvial	Performance	281244.22	801596.06	299.89	2	-0.2	86.5	87.0	23	3/14/2013	Grass
MW-172	Fluvial	Background	280213.31	802221.98	300.94	2	-0.7	78.7	78.3	20	3/12/2013	Asphalt
MW-175	Fluvial	Performance	280618.49	802175.36	291.93	2	-0.3	77.8	37.0	27	3/12/2013	Grass
MW-178	Fluvial	Background	280982.81	802227.34	300.57	2	-0.3	86.3	86.5	23	3/12/2013	Grass
MW-179	Fluvial	Performance	281075.70	802158.65	301.32	2	-0.2	87.2	87.6	22	3/12/2013	Grass
MW-185	Fluvial	Sentinel	282673.47	800985.92	256.98	2	-0.3	95.3	96.0	20	3/15/2013	Grass
MW-186	Fluvial	Sentinel	282691.30	800988.07	256.69	2	-0.4	158.4	158.0	28	3/15/2013	Grass
MW-234	Intermediate	Sentinel	281005.44	801630.89	291.71	2	-0.2	177.0	175.8	35	3/13/2013	Grass
MW-239	Intermediate	Sentinel	281334.02	801009.58	288.77	2	-0.3	176.0	175.0	33	3/14/2013	Grass
MW-240	Intermediate	Sentinel	282897.03	800869.30	259.51	2	-0.2	97.0	97.0	23	3/15/2013	Gravel
MW-231	Intermediate	Sentinel	280944.20	801628.65	289.43	6	-0.3	193.5	192.6	280	3/13/2013	Grass
MW-232	Intermediate	Sentinel	281294.53	801006.27	285.63	6	-0.5	171.0	169.0	275	3/14/2013	Grass
PZ-06	Fluvial	Performance	278855.84	805099.54	304.56	1	-0.2	99.4	99.0	8	3/16/2013	Grass

Notes:
bgs: below ground surface
btoc: below top of casing
ft: feet
msl: mean sea level

TABLE 6
WELL INSTALLATION SUMMARY
ANNUAL LONG TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

Well	Date Completed	Northing	Easting	Location	Aquifer Screened	Top of Casing Elevation (ft, msl)	Ground Elevation (ft, msl)	Riser Length (ft)	Top of Screen Elevation (ft, msl)	Total Boring Depth (ft, bgs)	Groundwater Elevation (ft, msl)	Top of Clay Elevation (ft, msl)	Fluvial Aquifer Thickness (ft)	Screen Length (ft)	Total Well Depth (ft, btoc)
MW-260	7/10/2013	278399.46	804735.50	MI	Fluvial	304.16	304.45	68	236.16	107	229.76	208.5	21.3	20	88.3
MW-261	7/11/2013	276391.08	802591.50	MI	Fluvial	293.52	293.79	90	203.52	147	200.02	152.8	47.2	20	110.3

Notes:
bgs: below ground surface
btoc: below top of casing
ft: feet
MI: Main Installation
NA: Not applicable

TABLE 7
WELL DEVELOPMENT SUMMARY
ANNUAL LONG TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

			Final Stabilization Parameters			
Well ID	Date Developed	Volume Purged (gallons)	pH	Specific Conductivity (mS/cm)	Turbidity (NTU)	Temperature (˚C)
MW-260	7/12/2013	342	7.2	0.359	10	24.9
MW-261	7/12/2013	235	6.5	0.268	9	21.2

Notes:
ºC: degrees Celsius
mS/cm: milliSiemens per centimeter
NTU: nephelometric turbidity units

TABLE 8
LIST OF REPAIRED WELLS
ANNUAL LONG TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

Well ID	Location	Aquifer	Surrounding Surface	Old Top of Casing Elevations (ft, msl)	New Top of Casing Elevations (ft, msl)
DR1-1	MI	Fluvial	Asphalt	293.09	293.14
DR1-1A	MI	Fluvial	Asphalt	293.13	293.00
DR1-2	MI	Fluvial	Asphalt	290.08	290.00
DR1-8	MI	Fluvial	Asphalt	290.02	290.09
DR2-4	MI	Fluvial	Asphalt	303.47	303.55
MW-39A	MI	Fluvial	Grass	298.45	298.61
MW-100B	MI	Fluvial	Asphalt	291.06	290.92
MW-101	MI	Fluvial	Asphalt	291.70	291.74
MW-143[1]	MI	Fluvial	Gravel	290.56	290.66
MW-198	MI	Fluvial	Asphalt	291.50	291.78
MW-204B	MI	Fluvial	Asphalt	292.32	292.71
MW-205A[1]	MI	Fluvial	Gravel	291.93	292.30
MW-205B[1]	MI	Fluvial	Gravel	291.82	292.16
MW-207A	MI	Fluvial	Asphalt	303.78	304.05
MW-207B	MI	Fluvial	Asphalt	303.83	304.06
MW-208A	MI	Fluvial	Grass	301.50	302.21
MW-210A	MI	Intermediate	Grass	289.66	289.61
MW-219[1]	MI	Fluvial	Grass	294.90	295.13
MW-229	MI	Intermediate	Grass	311.77	311.78
MW-54	DF	Fluvial	Grass	295.35	295.39
MW-130	DF	Fluvial	Grass	293.20	293.17
MW-147	DF	Fluvial	Grass	289.72	289.76
MW-150	DF	Fluvial	Grass	296.81	296.86
MW-155	DF	Fluvial	Grass	291.65	291.54
MW-157	DF	Fluvial	Grass	286.78	286.47
MW-159	DF	Fluvial	Grass	286.33	286.36
MW-160	DF	Fluvial	Asphalt	293.69	293.84
MW-230	DF	Fluvial	Asphalt	286.57	286.57
MW-241	DF	Fluvial	Asphalt	292.82	292.97
MW-245	DF	Fluvial	Asphalt	290.13	290.48
MW-247	DF	Fluvial	Grass	285.70	286.17

Notes:

1) Bollards added at MW-143, MW-205A/B and MW-219
2) Wells re-surveyed in August 2013 after well repairs

DF: Dunn Field
ft: feet
MI: Main Installation
msl: mean sea level

TABLE 9
MAIN INSTALLATION WATER LEVEL MEASUREMENTS
ANNUAL LONG TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

Well ID	Aquifer	Top of Casing Elevation (ft, msl)	New Top of Casing Elevation (ft, msl)	Top of Screen Elevation (ft, msl)	Depth to Water 9-Apr-13 (ft, btoc)	Groundwater Elevation 9-Apr-13 (ft, msl)	Depth to Water 9-Oct-13 (ft, btoc)	Groundwater Elevation 9-Oct-13 (ft, msl)
MW-16	Fluvial	299.86	299.86	242.26	57.27	242.59	56.93	242.93
MW-19	Fluvial	290.57	290.57	207.47	84.13	206.44	83.89	206.68
MW-22	Fluvial	298.04	298.04	202.64	92.33	205.71	92.01	206.03
MW-23	Fluvial	298.99	298.99	197.79	94.54	204.45	94.30	204.69
MW-24	Fluvial	299.51	299.51	202.21	100.23	199.28	100.36	199.15
MW-25A	Fluvial	269.88	269.88	196.88	67.66	202.22	67.64	202.24
MW-26	Fluvial	303.69	303.69	206.09	96.92	206.77	96.60	207.09
MW-34	Intermediate	299.97	299.97	163.37	127.11	172.86	130.50	169.47
MW-38	Intermediate	307.45	307.45	167.55	124.72	182.73	125.29	182.16
MW-39	Fluvial	296.28	296.28	200.78	98.18	198.10	98.35	197.93
MW-39A[1]	Fluvial	298.45	298.61	150.53	98.56	199.89	98.77	199.84
MW-50	Fluvial	298.82	298.82	183.82	83.95	214.87	83.63	215.19
MW-52	Fluvial	279.26	279.26	185.26	75.76	203.50	75.59	203.67
MW-53	Fluvial	306.38	306.38	233.88	73.64	232.74	73.11	233.27
MW-55	Fluvial	292.08	292.08	228.08	69.91	222.17	69.93	222.15
MW-63A	Fluvial/Intermed.	305.96	305.96	165.96	101.40	204.56	102.25	203.71
MW-63B	Fluvial/Intermed.	305.78	305.78	190.78	101.24	204.54	101.07	204.71
MW-64	Fluvial	304.21	304.21	202.21	103.30	200.91	103.38	200.83
MW-66A	Fluvial	284.22	284.22	209.60	75.97	208.25	75.78	208.44
MW-88	Fluvial	305.15	305.15	223.15	78.31	226.84	77.79	227.36
MW-89	Intermediate	303.98	303.98	156.98	110.14	193.84	110.91	193.07
MW-90	Intermediate	304.19	304.19	189.19	110.75	193.44	111.50	192.69
MW-92	Fluvial	304.41	304.41	211.41	93.85	210.56	93.38	211.03
MW-93	Fluvial	294.08	294.08	202.08	95.70	198.38	95.85	198.23
MW-94A	Fluvial	303.00	303.00	193.38	103.45	199.55	103.70	199.30
MW-96	Fluvial	289.02	289.02	213.52	79.87	209.15	79.54	209.48
MW-97	Fluvial	297.44	297.44	199.94	94.45	202.99	94.35	203.09
MW-98	Fluvial	294.43	294.43	157.43	94.15	200.28	94.36	200.07
MW-99	Fluvial	285.33	285.33	193.83	82.74	202.59	82.83	202.50
MW-100B[1]	Fluvial	291.06	290.92	183.56	86.54	204.52	86.28	204.64
MW-101[1]	Fluvial	291.70	291.74	202.70	87.09	204.61	86.90	204.84
MW-102B	Fluvial	311.40	311.40	190.90	105.12	206.28	104.80	206.60
MW-103	Fluvial	301.37	301.37	231.35	69.28	232.09	68.95	232.42
MW-104	Fluvial	291.98	291.98	225.26	59.11	232.87	58.67	233.31
MW-107	Fluvial/Intermed.	304.92	304.92	176.92	105.02	199.90	105.17	199.75
MW-108	Fluvial/Intermed.	303.07	303.07	143.07	104.18	198.89	104.50	198.57
MW-140	Intermediate	298.12	298.12	73.52	132.14	165.98	135.27	162.85
MW-141	Intermediate	303.71	303.71	155.01	108.33	195.38	108.88	194.83
MW-142	Fluvial	291.18	291.18	206.18	89.20	201.98	89.24	201.94
MW-143[1]	Fluvial	290.56	290.66	212.06	86.71	203.85	86.58	204.08
MW-198[1]	Fluvial	291.50	291.78	201.47	91.08	200.42	91.07	200.71
MW-199A	Intermediate	301.53	301.53	155.45	105.21	196.32	105.50	196.03
MW-199B	Fluvial	301.73	301.73	197.12	101.93	199.80	102.05	199.68
MW-200	Fluvial	300.18	300.18	196.98	100.68	199.50	100.85	199.33
MW-202A	Intermediate	299.23	299.23	122.73	117.20	182.03	118.90	180.33
MW-202B	Intermediate	299.51	299.51	180.42	117.03	182.48	118.26	181.25
MW-204A	Fluvial	292.21	292.21	158.95	91.58	200.63	91.72	200.49
MW-204B[1]	Fluvial	292.32	292.71	197.83	91.63	200.69	91.75	200.96
MW-205A[1]	Fluvial	291.93	292.30	150.96	91.83	200.10	91.94	200.36
MW-205B[1]	Fluvial	291.82	292.16	194.82	91.61	200.21	91.70	200.46
MW-206A	Fluvial	299.92	299.92	172.58	100.52	199.40	100.72	199.20
MW-206B	Fluvial	299.90	299.90	203.18	100.49	199.41	100.68	199.22
MW-207A[1]	Fluvial	303.78	304.05	154.13	104.86	198.92	104.98	199.07
MW-207B[1]	Fluvial	303.83	304.06	195.58	104.61	199.22	104.66	199.40
MW-208A[1]	Fluvial	301.50	302.21	118.05	102.33	199.17	NM	-
MW-208B	Fluvial	301.79	301.79	195.13	102.44	199.35	102.66	199.13

TABLE 9
MAIN INSTALLATION WATER LEVEL MEASUREMENTS
ANNUAL LONG TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

Well ID	Aquifer	Top of Casing Elevation (ft, msl)	New Top of Casing Elevation (ft, msl)	Top of Screen Elevation (ft, msl)	Depth to Water 9-Apr-13 (ft, btoc)	Groundwater Elevation 9-Apr-13 (ft, msl)	Depth to Water 9-Oct-13 (ft, btoc)	Groundwater Elevation 9-Oct-13 (ft, msl)
MW-209A	Intermediate	298.05	298.05	109.07	100.56	197.49	100.93	197.12
MW-209B	Fluvial	298.49	298.49	196.17	98.68	199.81	98.90	199.59
MW-210A[1]	Intermediate	289.66	289.61	112.60	95.17	194.49	95.36	194.25
MW-210B	Fluvial	289.29	289.29	192.33	88.80	200.49	89.00	200.29
MW-211	Intermediate	303.74	303.74	137.48	NM	-	106.13	197.61
MW-214A	Fluvial	303.61	303.61	184.53	100.36	203.25	100.40	203.21
MW-214B	Fluvial	303.70	303.70	202.13	99.87	203.83	99.76	203.94
MW-215A	Fluvial	304.50	304.50	175.75	105.22	199.28	105.44	199.06
MW-215B	Fluvial	304.56	304.56	199.15	105.31	199.25	105.54	199.02
MW-216	Fluvial	297.34	297.34	197.41	94.16	203.18	94.02	203.32
MW-217	Fluvial	304.18	304.18	202.39	103.71	200.47	103.68	200.50
MW-218	Fluvial	305.60	305.60	206.69	100.65	204.95	100.41	205.19
MW-219[1]	Fluvial	294.90	295.13	197.16	89.09	205.81	88.60	206.53
MW-229[1]	Intermediate	311.77	311.78	123.34	144.37	167.40	148.90	162.88
MW-252	Intermediate	294.16	294.16	168.36	125.91	168.25	129.30	164.86
MW-253	Intermediate	290.47	290.47	172.47	103.30	187.17	104.95	185.52
MW-254	Memphis	292.84	292.84	7.24	128.50	164.34	131.60	161.24
MW-255	Memphis	291.84	291.84	7.34	126.79	165.05	129.85	161.99
MW-256	Intermediate	292.68	292.68	166.68	124.37	168.31	128.38	164.30
MW-257	Fluvial	292.22	292.22	207.12	88.40	203.82	88.23	203.99
MW-258	Fluvial	304.37	304.37	225.47	77.43	226.94	77.04	227.33
MW-259	Fluvial	290.77	290.77	192.27	93.93	196.84	93.31	197.46
MW-260[2]	Fluvial	-	304.16	236.18	-	-	74.08	230.08
MW-261[2]	Fluvial	-	293.52	203.52	-	-	93.66	199.86
DR1-1[1]	Fluvial	293.09	293.14	171.42	88.51	204.58	88.29	204.85
DR1-1A[1]	Fluvial	293.13	293.00	203.79	88.43	204.70	88.03	204.97
DR1-2[1]	Fluvial	290.08	290.00	192.28	86.47	203.61	86.10	203.90
DR1-3	Fluvial	290.93	290.93	181.26	88.21	202.72	88.18	202.75
DR1-4	Fluvial	292.78	292.78	186.50	88.65	204.13	88.49	204.29
DR1-7	Fluvial	289.15	289.15	180.86	86.71	202.44	86.69	202.46
DR1-8[1]	Fluvial	290.02	290.09	197.37	85.72	204.30	85.59	204.50
DR2-1	Fluvial	304.90	304.90	231.00	86.83	218.07	86.80	218.10
DR2-3	Fluvial	303.44	303.44	210.44	95.11	208.33	94.73	208.71
DR2-4[1]	Fluvial	303.47	303.55	215.47	92.60	210.87	92.16	211.39
DR2-6	Fluvial	304.70	304.70	210.10	98.62	206.08	98.32	206.38
PMW21-03	Fluvial	292.11	292.11	201.80	87.49	204.62	87.28	204.83
PMW21-05	Fluvial	288.53	288.53	194.28	85.33	203.20	85.23	203.30
PMW-92-02	Fluvial	304.17	304.17	209.40	91.72	212.45	91.45	212.72
PMW101-03A	Fluvial	291.61	291.61	172.42	88.80	202.81	87.61	204.00
PMW101-03B	Fluvial	291.55	291.55	192.24	87.79	203.76	87.62	203.93
PMW101-06A	Fluvial	292.13	292.13	172.12	88.04	204.09	87.82	204.31
PMW101-06B	Fluvial	292.17	292.17	192.92	88.11	204.06	87.90	204.27
PZ-03	Fluvial	298.51	298.51	189.61	98.41	200.10	98.92	199.59

Notes:
1) Top of Casing re-surveyed after well repairs in July 2013
2) MW-260 and MW-261 installed in July 2013
btoc: below top of casing
ft: feet
msl: mean sea level
NM: Not measured

TABLE 10
DUNN FIELD WATER LEVEL MEASUREMENTS
ANNUAL LONG TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

Well ID	Aquifer	Top of Casing Elevation (ft, msl)	New Top of Casing Elevation (ft, msl)	Top of Screen Elevation (ft, msl)	Total Depth (ft, btoc)	Depth to Water 10-Apr-13 (ft, btoc)	Groundwater Elevation 10-Apr-13 (ft, msl)	Depth to Water 8-Oct-13 (ft, btoc)	Groundwater Elevation 8-Oct-13 (ft, msl)
MW-03	Fluvial	292.35	292.35	226.85	75.5	64.84	227.51	64.09	228.26
MW-04	Fluvial	301.61	301.61	241.61	80.0	72.39	229.22	71.6	230.01
MW-06	Fluvial	289.11	289.11	238.11	71.0	60.22	228.89	59.61	229.50
MW-07	Fluvial	295.10	295.10	228.10	77.0	64.77	230.33	63.98	231.12
MW-08	Fluvial	292.59	292.59	236.09	66.5	60.87	231.72	60.17	232.42
MW-13	Fluvial	300.01	300.01	234.01	81.0	70.69	229.32	70.02	229.99
MW-15	Fluvial	295.12	295.12	231.72	78.4	66.01	229.11	65.52	229.60
MW-28	Fluvial	294.79	294.79	240.49	69.3	55.69	239.10	54.48	240.31
MW-31	Fluvial	290.37	290.37	226.27	79.1	66.92	223.45	66.12	224.25
MW-33	Fluvial	280.71	280.71	236.11	59.6	53.03	227.68	NM	-
MW-44	Fluvial	269.07	269.07	205.07	74.0	51.73	217.34	51.12	217.95
MW-54[1]	Fluvial	295.35	295.39	210.85	94.5	77.32	218.03	76.04	219.35
MW-57	Fluvial	290.77	290.77	230.77	70.0	61.77	229.00	61.23	229.54
MW-58	Fluvial	290.51	290.51	233.51	67.0	62.28	228.23	61.8	228.71
MW-67	Memphis	278.21	278.21	18.21	275.0	111.60	166.61	114.4	163.81
MW-68	Fluvial	291.69	291.69	219.19	82.5	64.74	226.95	63.94	227.75
MW-69	Fluvial	307.02	307.02	224.94	92.1	79.68	227.34	79.04	227.98
MW-70	Fluvial	304.99	304.99	224.18	90.8	77.46	227.53	76.75	228.24
MW-71	Fluvial	294.40	294.40	228.90	75.5	66.65	227.75	66.11	228.29
MW-76	Fluvial	302.71	302.71	229.71	93.0	80.52	222.19	79.74	222.97
MW-77	Fluvial	304.42	304.42	236.42	88.0	78.93	225.49	78.36	226.06
MW-78	Fluvial	275.00	275.00	230.50	64.5	46.60	228.40	45.95	229.05
MW-79	Fluvial	285.03	285.03	202.53	102.5	68.19	216.84	67.71	217.32
MW-80	Fluvial	273.81	273.81	220.81	73.0	57.27	216.54	56.4	217.41
MW-87	Fluvial	294.93	294.93	231.93	78.0	66.34	228.59	65.75	229.18
MW-91	Fluvial	291.99	291.99	236.99	70.0	63.16	228.83	62.64	229.35
MW-126	Fluvial	252.22	252.22	236.22	26.0	15.90	236.32	19.4	232.82
MW-129	Fluvial	293.01	293.01	228.01	80.0	55.82	237.19	54.92	238.09
MW-130[1]	Fluvial	293.20	293.17	233.70	79.5	55.22	237.98	54.05	239.12
MW-134	Fluvial	300.81	300.81	225.81	90.0	72.50	228.31	71.85	228.96
MW-144	Fluvial	291.60	291.60	235.10	76.8	70.11	221.49	69.52	222.08
MW-145	Fluvial	284.72	284.72	204.72	100.1	66.94	217.78	66.3	218.42
MW-147[1]	Fluvial	289.72	289.76	229.72	80.2	67.34	222.38	66.54	223.22
MW-148	Fluvial	294.71	294.71	224.71	90.0	74.44	220.27	73.92	220.79
MW-149	Fluvial	287.18	287.18	205.78	101.4	69.17	218.01	68.4	218.78
MW-150[1]	Fluvial	296.81	296.86	225.61	91.2	78.36	218.45	77.18	219.68
MW-151	Fluvial	284.27	284.27	207.27	97.0	66.64	217.63	65.95	218.32
MW-152	Fluvial	289.59	289.59	198.59	111.0	72.19	217.40	71.73	217.86
MW-153	Fluvial	279.17	279.17	203.17	96.1	62.57	216.60	62.16	217.01
MW-154	Fluvial	273.81	273.81	220.81	63.3	55.36	218.45	55.24	218.57
MW-155[1]	Fluvial	291.65	291.54	214.65	97.0	72.55	219.10	72.21	219.33
MW-157[1]	Fluvial	286.78	286.47	229.78	77.0	66.62	220.16	65.83	220.64
MW-158	Fluvial	294.07	294.07	203.06	106.0	76.31	217.76	75.71	218.36
MW-158A	Fluvial	293.95	293.95	216.03	92.9	76.22	217.73	75.62	218.33
MW-159[1]	Fluvial	286.33	286.36	205.89	100.4	68.56	217.77	67.7	218.66
MW-160[1]	Fluvial	293.69	293.84	228.04	85.9	74.32	219.37	74	219.84
MW-163	Fluvial	290.63	290.63	234.42	76.2	69.52	221.11	68.8	221.83
MW-164	Fluvial	287.48	287.48	231.86	75.6	65.93	221.55	65.3	222.18
MW-165	Fluvial	287.06	287.06	198.43	103.6	69.29	217.77	69.22	217.84
MW-165A	Fluvial	287.26	287.26	215.96	86.3	69.68	217.58	69.12	218.14
MW-166	Fluvial	282.72	282.72	199.59	98.9	65.11	217.61	64.3	218.42

TABLE 10
DUNN FIELD WATER LEVEL MEASUREMENTS
ANNUAL LONG TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

Well ID	Aquifer	Top of Casing Elevation (ft, msl)	New Top of Casing Elevation (ft, msl)	Top of Screen Elevation (ft, msl)	Total Depth (ft, btoc)	Depth to Water 10-Apr-13 (ft, btoc)	Groundwater Elevation 10-Apr-13 (ft, msl)	Depth to Water 8-Oct-13 (ft, btoc)	Groundwater Elevation 8-Oct-13 (ft, msl)
MW-166A	Fluvial	282.90	282.90	215.15	83.3	65.22	217.68	64.45	218.45
MW-167	Fluvial	284.82	284.82	214.68	85.5	68.10	216.72	67.14	217.68
MW-169	Transition	261.90	261.90	194.12	88.1	70.21	191.69	70.6	191.30
MW-170	Fluvial	273.75	273.75	214.14	79.8	53.05	220.70	54.54	219.21
MW-171	Fluvial	270.69	270.69	217.72	68.3	55.35	215.34	52.43	218.26
MW-174	Fluvial	296.56	296.56	229.56	77.0	67.27	229.29	66.87	229.69
MW-176	Fluvial	299.68	299.68	223.68	86.0	70.17	229.51	70.63	229.05
MW-180	Fluvial	296.14	296.14	224.14	82.0	68.32	227.82	67.6	228.54
MW-182	Fluvial	275.40	275.40	213.40	72.0	61.34	214.06	NM	-
MW-184	Fluvial	283.12	283.12	225.12	68.0	61.82	221.30	61.18	221.94
MW-187	Fluvial	302.74	302.74	226.74	86.0	72.92	229.82	72.4	230.34
MW-190	Fluvial	297.32	297.32	219.32	88.0	75.37	221.95	74.66	222.66
MW-220	Fluvial	293.29	293.29	228.35	79.9	65.07	228.22	64.35	228.94
MW-221	Fluvial	301.52	301.52	228.40	88.1	73.88	227.64	73.16	228.36
MW-222	Fluvial	303.82	303.82	229.64	89.2	75.22	228.60	74.61	229.21
MW-223	Fluvial	303.00	303.00	229.13	88.9	74.40	228.60	73.83	229.17
MW-224	Fluvial	304.13	304.13	230.42	88.7	75.43	228.70	74.86	229.27
MW-225	Fluvial	304.52	304.52	229.54	90.0	76.18	228.34	75.55	228.97
MW-226	Fluvial	303.19	303.19	228.97	89.2	74.11	229.08	73.94	229.25
MW-227	Fluvial	299.70	299.70	236.06	78.6	70.33	229.37	69.84	229.86
MW-228	Fluvial	301.65	301.65	237.56	79.1	72.17	229.48	71.71	229.94
MW-230[1]	Fluvial	286.57	286.57	227.32	74.3	53.94	232.63	53.09	233.48
MW-235	Fluvial	264.00	264.00	213.41	60.8	54.36	209.64	53.01	210.99
MW-237	Intermediate	289.18	289.18	122.73	176.7	122.24	166.94	124.72	164.46
MW-241[1]	Fluvial	292.82	292.97	219.57	88.3	73.33	219.49	72.69	220.28
MW-242	Fluvial	295.40	295.40	222.20	88.7	75.67	219.73	75.42	219.98
MW-243	Fluvial	292.26	292.26	211.56	100.7	74.29	217.97	73.42	218.84
MW-244	Fluvial	288.72	288.72	212.39	96.3	69.70	219.02	69.91	218.81
MW-245[1]	Fluvial	290.13	290.48	205.40	104.7	72.18	217.95	71.81	218.67
MW-246	Fluvial	288.17	288.17	202.97	105.2	70.87	217.30	69.95	218.22
MW-247[1]	Fluvial	285.70	286.17	205.70	100.0	68.26	217.44	67.85	218.32
MW-248	Fluvial	275.45	275.45	207.94	87.5	57.95	217.50	57.25	218.20
MW-249	Fluvial	285.53	285.53	207.49	98.0	67.85	217.68	67.22	218.31
MW-250	Intermediate	289.66	289.66	120.96	183.7	123.11	166.55	126.12	163.54
MW-251	Intermediate	285.83	285.83	125.63	175.2	119.10	166.73	122.08	163.75

Notes:
1) Top of Casing re-surveyed after well repairs in July 2013
btoc: below top of casing
ft: feet
msl: mean sea level
NM: Not measured

TABLE 11
MAIN INSTALLATION PDB SAMPLE INTERVALS
ANNUAL LONG TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

Well	Top of Screen Depth (ft, btoc)	Screen Length (ft)	Apr-13 Date Collected	Apr-13 Depth to Water (ft,btoc)	Apr-13 Sample Depth[1] (ft, btoc)	Oct-13 Date Collected	Oct-13 Depth to water (ft,btoc)	Oct-13 Sample Depth[1] (ft, btoc)
MW-25A	73.0	10	-	-	-	10/11/2013	67.64	78.0
MW-26	97.6	10	4/10/2013	96.92	102.6	10/12/2013	96.60	102.6
MW-39	95.5	20	4/10/2013	98.18	107.3	10/11/2013	98.35	107.3
MW-39A	148.1	20	4/10/2013	98.56	157.9	10/11/2013	98.77	157.9
MW-52	94.0	10	-	-	-	10/11/2013	75.59	99.0
MW-63A	130.0	10	-	-	-	10/12/2013	102.25	135.0
MW-63B	115.0	10	-	-	-	10/12/2013	101.07	120.0
MW-64	102.0	10	4/10/2013	103.30	108.0	10/12/2013	103.38	108.0
MW-88	82.0	15	4/10/2013	78.31	89.5	10/12/2013	77.79	89.5
MW-89	147.0	30	-	-	-	10/11/2013	110.91	162.0
MW-90	115.0	30	4/10/2013	110.75	130.0	10/11/2013	111.50	130.0
MW-92	93.0	15	4/10/2013	93.85	101.0	10/12/2013	93.38	101.0
MW-94A	109.6	10	4/10/2013	103.45	114.6	10/12/2013	103.70	114.6
MW-96	75.5	20	-	-	-	10/11/2013	79.54	87.7
MW-97	97.5	20	4/10/2013	94.45	107.5	10/11/2013	94.35	107.5
MW-98	137.0	10	4/10/2013	94.15	142.0	10/11/2013	94.36	142.0
MW-100B	107.4	20	4/11/2013	86.54	117.5	10/12/2013	86.28	117.5
MW-101T	89.0	15	4/11/2013	87.09	96.5	10/12/2013	86.90	96.5
MW-101B	120.5	10	4/11/2013	87.09	124.0	10/12/2013	86.90	124.0
MW-103	70.0	20	-	-	-	10/12/2013	68.95	80.0
MW-104	70.5	20	-	-	-	10/12/2013	58.67	78.5
MW-107T	128.0	15	4/11/2013	105.02	135.5	10/12/2013	105.17	135.5
MW-107B	148.0	10	4/11/2013	105.02	153.0	10/12/2013	105.17	153.0
MW-108	160.0	10	4/11/2013	104.18	165.0	10/12/2013	104.50	165.0
MW-140	224.6	20	-	-	-	10/11/2013	135.27	234.6
MW-141	148.7	20	4/10/2013	108.33	158.7	10/11/2013	108.88	158.7
MW-142	85.0	20	-	-	-	10/11/2013	89.24	97.4
MW-143	78.6	20	4/11/2013	86.71	92.8	10/12/2013	86.58	92.8
MW-198	90.3	15	-	-	-	10/11/2013	91.07	98.4
MW-199A	146.1	15	-	-	-	10/11/2013	105.50	153.6
MW-199B	104.6	15	4/10/2013	101.93	112.1	10/11/2013	102.05	112.1
MW-200	102.9	15	4/10/2013	100.68	110.4	10/12/2013	100.85	110.4
MW-202A	176.2	15	-	-	-	10/11/2013	118.90	183.7
MW-202B	118.8	15	4/11/2013	117.03	126.3	10/11/2013	118.26	126.3
MW-204A	133.3	15	4/10/2013	91.58	140.8	10/11/2013	91.72	140.8
MW-204B	94.9	15	4/10/2013	91.63	102.0	10/11/2013	91.75	102.0
MW-205A	141.3	15	4/10/2013	91.83	148.5	10/11/2013	91.94	148.5
MW-205B	97.3	15	4/10/2013	91.61	104.5	10/11/2013	91.70	104.5
MW-206A	127.3	15	4/10/2013	100.52	134.8	10/11/2013	100.72	134.8
MW-206B	96.7	15	4/10/2013	100.49	106.5	10/11/2013	100.68	106.5
MW-207A	149.9	15	4/11/2013	104.86	157.2	10/12/2013	104.98	157.2
MW-207B	108.5	15	4/11/2013	104.61	115.8	10/12/2013	104.66	115.8
MW-208A	183.5	15	4/10/2013	102.33	191.0	-	-	-
MW-208B	106.7	15	4/10/2013	102.44	114.2	10/11/2013	102.66	114.2
MW-209A	189.0	15	-	-	-	10/11/2013	100.93	196.5
MW-209B	102.3	15	4/10/2013	98.68	109.8	10/11/2013	98.90	109.8
MW-210A	177.0	15	4/10/2013	95.17	184.5	10/11/2013	95.36	184.5
MW-210B	97.0	15	4/10/2013	88.80	104.5	10/11/2013	89.00	104.5
MW-211	166.3	15	-	-	-	10/12/2013	106.13	173.8
MW-214A	119.1	15	4/11/2013	100.36	126.6	10/12/2013	100.40	126.6
MW-214B	101.6	15	4/11/2013	99.87	109.1	10/12/2013	99.76	109.1
MW-215A	128.8	15	-	-	-	10/12/2013	105.44	136.3
MW-215B	105.4	15	-	-	-	10/12/2013	105.54	113.2
MW-216	99.9	15	-	-	-	10/11/2013	94.02	107.4

TABLE 11
MAIN INSTALLATION PDB SAMPLE INTERVALS
ANNUAL LONG TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

Well	Top of Screen Depth (ft, btoc)	Screen Length (ft)	Apr-13 Date Collected	Apr-13 Depth to Water (ft,btoc)	Apr-13 Sample Depth[1] (ft, btoc)	Oct-13 Date Collected	Oct-13 Depth to water (ft,btoc)	Oct-13 Sample Depth[1] (ft, btoc)
MW-217	101.8	15	4/10/2013	103.71	110.5	10/12/2013	103.68	110.5
MW-218	98.9	15	4/10/2013	100.65	107.4	10/12/2013	100.41	107.4
MW-219	98.0	15	4/11/2013	89.09	105.3	10/12/2013	88.60	105.3
MW-252	126.1	20	4/11/2013	125.91	139.2	10/12/2013	129.30	139.2
MW-253	118.3	20	4/11/2013	103.30	128.8	10/12/2013	104.95	128.8
MW-254	285.8	20	4/11/2013	128.50	295.8	10/12/2013	131.60	295.8
MW-255	284.7	20	4/11/2013	126.79	294.7	10/12/2013	129.85	294.7
MW-256	127.1	20	4/11/2013	124.37	139.1	10/12/2013	128.38	139.1
MW-257	85.1	15	4/11/2013	88.40	94.3	10/12/2013	88.23	94.3
MW-258	78.9	20	4/11/2013	77.43	88.9	10/12/2013	77.04	88.9
MW-259	98.5	20	4/10/2013	93.93	108.5	10/12/2013	93.31	108.5
DR1-1	121.7	20	-	-	-	10/12/2013	88.29	131.7
DR1-1A	89.2	20	-	-	-	10/12/2013	88.03	99.3
DR1-2	97.7	20	-	-	-	10/12/2013	86.10	107.8
DR1-3	109.7	20	4/11/2013	88.21	119.7	10/12/2013	88.18	119.7
DR1-4	106.3	20	-	-	-	10/12/2013	88.49	116.3
DR1-7	108.3	20	-	-	-	10/12/2013	86.69	118.3
DR1-8	92.7	20	-	-	-	10/12/2013	85.59	102.7
DR2-1	73.9	20	4/10/2013	86.83	90.5	10/12/2013	86.80	90.5
DR2-3	93.0	20	4/10/2013	95.11	104.1	10/12/2013	94.73	104.1
DR2-4	88.1	20	-	-	-	10/12/2013	92.16	100.3
DR2-6	94.6	20	4/10/2013	98.62	106.7	10/12/2013	98.32	106.7
PMW21-03	90.3	20	4/11/2013	87.49	100.3	10/12/2013	87.28	100.3
PMW21-05	94.3	20	4/11/2013	85.33	104.3	10/12/2013	85.23	104.3
PMW92-02	94.8	10	-	-	-	10/12/2013	91.45	100.3
PMW101-03A	119.2	20	-	-	-	10/12/2013	87.61	129.7
PMW101-03B	99.3	20	-	-	-	10/12/2013	87.62	109.8
PMW101-06A	120.0	20	-	-	-	10/12/2013	87.82	130.5
PMW101-06B	99.3	20	-	-	-	10/12/2013	87.90	109.8

Notes:
1) Sample Depth is to PDB mid-point
btoc: below top of casing
ft: feet
PDB: passive diffusion bag

TABLE 12
MAIN INSTALLATION FINAL WELL STABILIZATION MEASUREMENTS
ANNUAL LONG TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

Well ID	Date	Method	Time Sampled	Sample Depth (ft, btoc)	Water Depth (ft, btoc)	Purge Rate (mL/min)	Volume Purged (Liters)	pH	Temp (˚C)	Specific Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTUs)
PMW92-02	4/11/2013	low flow	9:43	100.7	93.2	67	6.0	6.3	16.7	0.469	8.9	-38.9	11.5
PMW101-03A	4/10/2013	low flow	12:10	130.1	87.8	79	3.5	6.2	23.6	0.388	22.2	-44.9	2.3
PMW101-03B	4/10/2013	low flow	10:51	110.1	87.8	100	3.5	5.9	21.5	0.324	26.0	-16.5	7.4
PMW101-06A	4/10/2013	low flow	16:38	130.8	87.9	77	4.1	6.0	21.8	0.314	9.8	56.3	11.4
PMW101-06B	4/10/2013	low flow	15:19	110.2	88.0	68	7.9	5.9	21.4	0.269	10.4	118.1	10.2
MW-260	10/11/2013	low flow	9:45	82.0	74.2	167	10.0	5.8	19.8	0.682	3.6	82.9	2.6
MW-261	10/11/2013	low flow	11:59	103.0	93.5	140	9.8	5.6	20.0	0.298	7.7	156.8	13.6
PZ-03	10/11/2013	bailer	16:45	NA	98.7	NA	5.0	5.9	21.0	0.315	8.7	76.9	115.0

Notes:
˚C : degrees Celsius
ft, btoc: feet below top of casing
mg/L : milligrams per liter
mL/min: milliliters per minute
mS/cm : milliSiemens per centimeter
mV :millivolts
NA: not applicable
NTUs: nephelometric turbidity units

TABLE 13
DUNN FIELD PDB SAMPLE INTERVALS
ANNUAL LONG TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

Well	Top of Screen Depth (ft, btoc)	Screen Length (ft)	Apr-13 Date Collected	Apr-13 Depth to Water (ft, btoc)	Apr-13 Sample Depth[1] (ft, btoc)	Oct-13 Date Collected	Oct-13 Depth to Water (ft, btoc)	Oct-13 Sample Depth[1] (ft, btoc)
MW-03	65.5	10	4/13/2013	64.8	70.5	10/10/2013	64.1	70.5
MW-04	60.0	20	4/13/2013	72.4	76.2	-	-	-
MW-06	51.0	20	4/12/2013	60.2	65.9	10/10/2013	59.6	65.9
MW-07	67.0	10	4/13/2013	64.8	68.4	-	-	-
MW-15	63.4	15	4/12/2013	66.0	72.5	10/10/2013	65.5	72.5
MW-28	54.3	15	4/13/2013	55.7	62.3	10/10/2013	54.5	62.3
MW-31	64.1	15	4/13/2013	66.9	73.2	10/10/2013	66.1	73.2
MW-33	44.6	15	4/13/2013	53.0	56.8	-	-	-
MW-44	64.0	10	5/9/2013	51.7	69.0	-	-	-
MW-54	84.5	10	5/9/2013	77.3	89.5	10/10/2013	76.0	89.5
MW-57	60.0	10	4/12/2013	61.8	66.1	10/10/2013	61.2	66.1
MW-67	260.0	15	4/14/2013	111.6	268.0	-	-	-
MW-68	72.5	10	4/13/2013	64.7	78.0	-	-	-
MW-69	82.1	10	4/13/2013	79.7	87.1	-	-	-
MW-70	80.8	10	4/13/2013	77.5	84.1	-	-	-
MW-71	65.5	10	4/13/2013	66.7	71.4	-	-	-
MW-76	73.0	20	4/13/2013	80.5	87.3	-	-	-
MW-77	68.0	20	5/9/2013	78.9	83.6	10/10/2013	78.4	83.6
MW-79	82.5	20	4/13/2013	68.2	92.5	10/10/2013	67.7	92.5
MW-80	53.0	20	4/11/2013	57.3	64.7	-	-	-
MW-87	63.0	15	4/12/2013	66.3	72.4	10/10/2013	65.8	72.4
MW-91	55.0	15	4/12/2013	63.2	66.6	-	-	-
MW-129	65.0	15	4/13/2013	55.8	73.0	-	-	-
MW-130	59.5	20	4/13/2013	55.2	70.0	-	-	-
MW-134	75.0	15	5/9/2013	72.5	83.0	10/10/2013	71.9	83.0
MW-144	56.8	20	5/9/2013	70.1	74.3	10/10/2013	69.5	74.3
MW-145	80.1	20	4/13/2013	66.9	90.1	-	-	-
MW-147	60.3	20	4/13/2013	67.3	74.3	-	-	-
MW-148	70.0	20	4/13/2013	74.4	81.7	-	-	-
MW-149	81.4	20	4/13/2013	69.2	91.7	10/10/2013	68.4	91.7
MW-150	71.2	20	5/9/2013	78.4	85.3	10/10/2013	77.2	85.3
MW-151	77.0	20	4/13/2013	66.6	87.2	10/10/2013	66.0	87.2
MW-152	91.0	20	5/9/2013	72.2	101.2	-	-	-
MW-154	53.3	10	4/14/2013	55.4	60.1	-	-	-
MW-155	76.9	20	4/13/2013	72.6	87.2	-	-	-
MW-157	56.7	20	4/13/2013	66.6	72.9	10/10/2013	65.8	72.9
MW-158	91.0	15	4/13/2013	76.3	98.8	-	-	-
MW-158A	77.9	15	4/13/2013	76.2	85.8	-	-	-
MW-159	80.5	20	5/9/2013	68.6	90.7	10/10/2013	67.7	90.7
MW-160	65.7	20	4/13/2013	74.3	81.4	-	-	-
MW-163	56.2	20	5/9/2013	69.5	73.0	10/10/2013	68.8	73.0
MW-164	55.6	20	4/13/2013	65.9	70.4	10/10/2013	65.3	70.4
MW-165	88.6	15	4/13/2013	69.3	96.4	10/10/2013	69.2	96.4
MW-165A	71.3	15	4/13/2013	69.7	79.2	10/10/2013	69.1	79.2
MW-166	84.6	15	4/14/2013	65.1	90.7	10/10/2013	64.3	90.7
MW-166A	68.1	15	4/14/2013	65.2	75.2	10/10/2013	64.5	75.2
MW-167	70.5	15	4/13/2013	68.1	78.5	-	-	-
MW-174	67.0	10	4/12/2013	67.3	73.0	10/10/2013	66.9	73.0
MW-176	76.0	10	4/13/2013	70.2	81.0	-	-	-
MW-180	72.0	10	5/9/2013	68.3	77.0	-	-	-
MW-182	62.0	10	4/14/2013	61.3	67.7	10/11/2013	-	67.7
MW-184	58.0	10	5/9/2013	61.8	64.8	10/10/2013	61.2	64.8
MW-190	78.0	10	5/9/2013	75.4	83.0	10/10/2013	74.7	83.0
MW-220	64.9	15	4/13/2013	65.1	72.4	10/10/2013	64.4	72.4

TABLE 13
DUNN FIELD PDB SAMPLE INTERVALS
ANNUAL LONG TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

Well	Top of Screen Depth (ft, btoc)	Screen Length (ft)	Apr-13 Date Collected	Apr-13 Depth to Water (ft, btoc)	Apr-13 Sample Depth[1] (ft, btoc)	Oct-13 Date Collected	Oct-13 Depth to Water (ft, btoc)	Oct-13 Sample Depth[1] (ft, btoc)
MW-221	73.1	15	4/13/2013	73.9	81.0	10/10/2013	73.2	81.0
MW-222	74.2	15	4/13/2013	75.2	82.4	10/10/2013	74.6	82.4
MW-223	73.9	15	4/13/2013	74.4	81.4	10/10/2013	73.8	81.4
MW-224	73.7	15	4/13/2013	75.4	82.2	10/10/2013	74.9	82.2
MW-225	75.0	15	5/9/2013	76.2	83.2	10/10/2013	75.6	83.2
MW-226	74.2	15	4/13/2013	74.1	82.0	10/10/2013	73.9	82.0
MW-227	63.6	15	4/12/2013	70.3	74.7	10/10/2013	69.8	74.7
MW-228	64.1	15	4/12/2013	72.2	76.5	10/10/2013	71.7	76.5
MW-230	59.2	15	5/9/2013	53.9	67.3	-	-	-
MW-235	50.6	10	4/14/2013	54.4	57.2	-	-	-
MW-237	166.5	10	4/14/2013	122.2	171.6	-	-	-
MW-241	73.4	15	4/14/2013	73.3	81.6	-	-	-
MW-242	73.2	16	4/14/2013	75.7	83.8	10/10/2013	75.4	83.8
MW-243	80.7	20	4/14/2013	74.3	90.7	10/10/2013	73.4	90.7
MW-244	76.3	20	4/14/2013	69.7	86.3	10/10/2013	69.9	86.3
MW-245	85.1	20	4/14/2013	72.2	95.0	10/10/2013	71.8	95.0
MW-246	85.2	20	4/14/2013	70.9	95.2	10/10/2013	70.0	95.2
MW-247	80.5	20	4/14/2013	68.3	90.0	10/10/2013	67.9	90.0
MW-248	67.5	20	4/13/2013	58.0	77.5	-	-	-
MW-249	78.0	20	5/9/2013	67.9	88.3	10/10/2013	67.2	88.3
MW-250	168.7	15	4/13/2013	123.1	176.2	-	-	-
MW-251	160.2	15	4/14/2013	119.1	167.7	-	-	-

Notes:
1) Sample depth is to PDB mid-point
btoc: Below top of casing
ft: feet
PDB: passive diffision bag

TABLE 14
DUNN FIELD FINAL WELL STABILIZATION MEASUREMENTS
ANNUAL LONG TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

Well ID	Sample Date	Method	Time Sampled	Sample Depth (ft, btoc)	Water Depth (ft, btoc)	Purge Rate (mL/min)	Volume Purged (Liters)	pH	Temp (˚C)	Specific Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTUs)
MW-08	4/12/2013	low flow	9:21	64.5	61.0	196	12.8	5.9	16.0	0.256	7.6	174.8	16.6
MW-13	4/12/2013	low flow	11:13	78.0	70.9	110	5.3	5.6	18.0	0.176	13.9	143.9	11.6
MW-58	4/12/2013	low flow	13:15	65.0	62.4	137	9.6	5.5	17.9	0.186	11.7	210.0	17.1
MW-78	4/12/2013	low flow	14:20	62.5	46.7	190	10.4	6.0	18.4	0.581	0.5	153.0	4.7
MW-126	4/12/2013	low flow	8:37	21.0	14.5	140	4.9	5.8	17.2	0.156	13.2	151.0	5.8
MW-153	4/12/2013	low flow	15:19	91.0	63.0	159	10.8	5.9	18.8	0.282	10.4	193.1	19.4
MW-169	4/11/2013	low flow	14:15	82.8	69.7	110	3.3	6.2	17.4	0.899	11.6	173.2	8.6
MW-170	4/11/2013	low flow	16:46	75.0	55.4	48	4.9	6.5	14.5	0.723	15.3	96.6	38.7
MW-171	4/12/2013	low flow	9:35	63.0	53.4	110	3.3	5.7	17.4	0.384	14.2	167.6	12.0
MW-187	4/12/2013	low flow	11:35	81.0	73.1	220	19.7	5.7	19.1	0.152	3.8	193.4	14.9

Notes:
˚C : degrees Celsius
ft, btoc: feet below top of casing
mg/L : milligrams per liter
mL/min: milliliters per minute
mS/cm : milliSiemens per centimeter
mV :millivolts
NA: not applicable
NTUs: nephelometric turbidity units

TABLE 15
MAIN INSTALLATION ANALYTICAL RESULTS SUMMARY, APRIL 2013
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

	Well ID		DR1-3	DR2-1	DR2-3	DR2-6	PMW21-03	PMW21-05	PMW92-02	PMW101-03A
	Date		4/11/2013	4/10/2013	4/10/2013	4/10/2013	4/11/2013	4/11/2013	4/11/2013	4/10/2013
	LabID		L13040650-23	L13040604-34	L13040604-35	L13040604-36	L13040650-21	L13040650-22	L13040649-01	L13040603-01
Analyte	Units	MCL								
Carbon tetrachloride	µg/L	5	<1	**21.5**	2.88	**34.3**	<1	<1	<1	<1
Chloroform	µg/L	80	<0.3	9.08	0.585	9.44	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	70	3.64	1.85	0.36 J	12.4	2.31	<1	**122**	0.637 J
Tetrachloroethene	µg/L	5	3.18	**176**	**17.4**	**43.8**	**112**	**14.4**	0.327 J	**33.9**
trans-1,2-Dichloroethene	µg/L	100	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5	1.42	2.99	1.66	**7.78**	**31**	0.892 J	<1	0.886 J
Vinyl chloride	µg/L	2	<1	<1	<1	1	<1	<1	0.54 J	<1
1,1,2,2-Tetrachloroethane	µg/L	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethene	µg/L	7	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	-	<1	<1	<1	12.4	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acetone	µg/L	-	<10	4.31 J	<10	4.43 J	4.86 J	3.56 J	107	<10
Carbon disulfide	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1
MEK (2-Butanone)	µg/L	-	<10	<10	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	-	2.73 J	<5	<5	<5	12.4	<5	<5	4.34 J
Trichlorofluoromethane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
µg/L: micrograms per liter
-- : Not Listed
MCL: Maximum Contaminant Level
RL: Reporting Limit
<: Analyte not detected above RL
Results above MCL shown in bold

DQE Flags:
J: Estimated

Methods:
8260B: Volatile Organic Compounds

TABLE 15
MAIN INSTALLATION ANALYTICAL RESULTS SUMMARY, APRIL 2013
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

	Well ID		PMW101-03B	PMW101-06A	PMW101-06B	MW-26	MW-39	MW-39A	MW-64	MW-88
	Date		4/10/2013	4/10/2013	4/10/2013	4/10/2013	4/10/2013	4/10/2013	4/10/2013	4/10/2013
	LabID		L13040603-02	L13040603-03	L13040603-04	L13040604-01	L13040604-02	L13040604-03	L13040604-04	L13040604-05
Analyte	Units	MCL								
Carbon tetrachloride	µg/L	5	<1	<1	<1	**5.27**	<1	<1	2.3	**9.83**
Chloroform	µg/L	80	<0.3	<0.3	<0.3	0.588	<0.3	<0.3	1.02	1.32
cis-1,2-Dichloroethene	µg/L	70	0.637 J	0.36 J	0.998 J	0.504 J	3.38	10.6	0.436 J	1.91
Tetrachloroethene	µg/L	5	**41.4**	1.29	**18**	**29.7**	**10.7**	**28.9**	**17.6**	**44.5 J**
trans-1,2-Dichloroethene	µg/L	100	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5	2.16	<1	3.97	1.53	**10.4**	**6.88**	**35.4**	3.29
Vinyl chloride	µg/L	2	<1	<1	<1	<1	<1	1.37	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.704	<0.5
1,1-Dichloroethene	µg/L	7	<1	<1	<1	<1	<1	<1	0.745 J	<1
1,2,3-Trichloropropane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.583	<0.5
Acetone	µg/L	-	<10	<10	<10	<10	3.9 J	5.26 J	3.45 J	<10
Carbon disulfide	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1
MEK (2-Butanone)	µg/L	-	<10	<10	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	-	10.7	2.13 J	9.19	<5	<5	<5	<5	<5
Trichlorofluoromethane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
µg/L: micrograms per liter
-- : Not Listed
MCL: Maximum Contaminant Level
RL: Reporting Limit
<: Analyte not detected above RL
Results above MCL shown in bold

DQE Flags:
J: Estimated

Methods:
8260B: Volatile Organic Compounds

TABLE 15
MAIN INSTALLATION ANALYTICAL RESULTS SUMMARY, APRIL 2013
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

	Well ID		MW-90	MW-92	MW-94A	MW-97	MW-98	MW-100B	MW-101T	MW-101B
	Date		4/10/2013	4/10/2013	4/10/2013	4/10/2013	4/10/2013	4/11/2013	4/11/2013	4/11/2013
	LabID		L13040604-08	L13040604-09	L13040604-10	L13040604-11	L13040604-12	L13040650-01	L13040650-02	L13040650-03
Analyte	Units	MCL								
Carbon tetrachloride	µg/L	5	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	80	1.76	<0.3	0.149 J	0.261 J	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	70	0.384 J	45.7	1.35	<1	0.43 J	18.5	25.5	23.6
Tetrachloroethene	µg/L	5	**22.4**	**59.1**	**30.4**	<1	**41.2**	**33**	**7.45**	**9.71**
trans-1,2-Dichloroethene	µg/L	100	<1	<1	<1	<1	<1	0.977 J	<1	<1
Trichloroethene	µg/L	5	4.65	**14.6**	**10.2**	**70.7**	3.18	4.51	2.25	3.05
Vinyl chloride	µg/L	2	<1	**12.7**	<1	<1	<1	**172**	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	-	<0.5	<0.5	0.925	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethene	µg/L	7	<1	<1	<1	<1	<1	1.02	<1	<1
1,2,3-Trichloropropane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acetone	µg/L	-	<10	<10	<10	5.14 J	3.79 J	5.93 J	8.86 J	9.11 J
Carbon disulfide	µg/L	-	<1	<1	<1	<1	<1	<1	6.08	4.81
MEK (2-Butanone)	µg/L	-	<10	<10	<10	<10	<10	<10	10.6	12.7
Methyl t-butyl ether (MTBE)	µg/L	-	<5	<5	<5	<5	<5	9.67	4.36 J	4.16 J
Trichlorofluoromethane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
µg/L: micrograms per liter
-- : Not Listed
MCL: Maximum Contaminant Level
RL: Reporting Limit
<: Analyte not detected above RL
Results above MCL shown in bold

DQE Flags:
J: Estimated

Methods:
8260B: Volatile Organic Compounds

TABLE 15
MAIN INSTALLATION ANALYTICAL RESULTS SUMMARY, APRIL 2013
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

	Well ID		MW-107T	MW-107B	MW-108	MW-141	MW-143	MW-199B	MW-200	MW-202B
	Date		4/11/2013	4/11/2013	4/11/2013	4/10/2013	4/11/2013	4/10/2013	4/10/2013	4/11/2013
	LabID		L13040650-04	L13040650-05	L13040650-06	L13040604-13	L13040650-07	L13040604-16	L13040604-17	L13040650-08
Analyte	Units	MCL								
Carbon tetrachloride	µg/L	5	0.66 J	0.431 J	<1	<1	<1	0.328 J	<1	0.364 J
Chloroform	µg/L	80	0.389	0.272 J	8.95	3.24	<0.3	0.138 J	<0.3	0.534
cis-1,2-Dichloroethene	µg/L	70	<1	<1	0.733 J	<1	<1	<1	2.69	0.379 J
Tetrachloroethene	µg/L	5	**54**	**20.3**	2.75	**31.9 J**	0.384 J	0.258 J	**8.74**	**23.8**
trans-1,2-Dichloroethene	µg/L	100	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5	3.72	2.44	**28.7**	4.32	**12.7**	**84.1**	**8.06**	**5.16**
Vinyl chloride	µg/L	2	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethene	µg/L	7	<1	<1	1.21	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acetone	µg/L	-	4.17 J	<10	5.29 J	<10	5.26 J	5.54 J	7.11 J	4.49 J
Carbon disulfide	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1
MEK (2-Butanone)	µg/L	-	<10	<10	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	-	<5	<5	<5	<5	1.28 J	<5	<5	<5
Trichlorofluoromethane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
µg/L: micrograms per liter
-- : Not Listed
MCL: Maximum Contaminant Level
RL: Reporting Limit
<: Analyte not detected above RL
Results above MCL shown in bold

DQE Flags:
J: Estimated

Methods:
8260B: Volatile Organic Compounds

TABLE 15
MAIN INSTALLATION ANALYTICAL RESULTS SUMMARY, APRIL 2013
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

	Well ID		MW-204A	MW-204B	MW-205A	MW-205B	MW-206A	MW-206B	MW-207A	MW-207B
	Date		4/10/2013	4/10/2013	4/10/2013	4/10/2013	4/10/2013	4/10/2013	4/11/2013	4/11/2013
	LabID		L13040604-18	L13040604-21	L13040604-22	L13040604-23	L13040604-24	L13040604-25	L13040650-09	L13040650-10
Analyte	Units	MCL								
Carbon tetrachloride	µg/L	5	<1	<1	<1	<1	<1	<1	<1	2.75
Chloroform	µg/L	80	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	10.2	0.535
cis-1,2-Dichloroethene	µg/L	70	1.02	0.805 J	5.65	4.3	3.45	2.01	0.429 J	0.269 J
Tetrachloroethene	µg/L	5	**40.2 J**	**11.8**	**27**	**23.8**	**18.9**	**21.1**	**14.9**	**11.5**
trans-1,2-Dichloroethene	µg/L	100	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5	0.7 J	**5.03**	**7.77**	**10.1**	**9.65**	**7.75**	**21.3**	3.21
Vinyl chloride	µg/L	2	<1	<1	<1	0.609 J	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	-	<0.5	0.656	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethene	µg/L	7	<1	<1	<1	<1	<1	<1	0.906 J	<1
1,2,3-Trichloropropane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	2.86
Acetone	µg/L	-	<10	3.74 J	5.29 J	3.77 J	4.01 J	3.48 J	3.52 J	2.73 J
Carbon disulfide	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1
MEK (2-Butanone)	µg/L	-	<10	<10	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	-	<5	<5	<5	1.1 J	<5	<5	<5	<5
Trichlorofluoromethane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
µg/L: micrograms per liter
-- : Not Listed
MCL: Maximum Contaminant Level
RL: Reporting Limit
<: Analyte not detected above RL
Results above MCL shown in bold

DQE Flags:
J: Estimated

Methods:
8260B: Volatile Organic Compounds

TABLE 15
MAIN INSTALLATION ANALYTICAL RESULTS SUMMARY, APRIL 2013
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

	Well ID		MW-208A	MW-208B	MW-209B	MW-210A	MW-210B	MW-214A	MW-214B	MW-219
	Date		4/10/2013	4/10/2013	4/10/2013	4/10/2013	4/10/2013	4/11/2013	4/11/2013	4/11/2013
	LabID		L13040604-26	L13040604-27	L13040604-28	L13040604-29	L13040604-30	L13040650-11	L13040650-12	L13040650-13
Analyte	Units	MCL								
Carbon tetrachloride	µg/L	5	<1	<1	0.66 J	<1	<1	0.976 J	0.977 J	**27.3**
Chloroform	µg/L	80	<0.3	0.614	0.262 J	<0.3	<0.3	2.27	1.61	3.74
cis-1,2-Dichloroethene	µg/L	70	10.9	1.36	<1	2.15	0.717 J	<1	<1	0.707 J
Tetrachloroethene	µg/L	5	**21.5**	**26**	0.342 J	**8.42**	4.7	**6.06**	**5.42**	**23.8**
trans-1,2-Dichloroethene	µg/L	100	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5	**18.4**	**22.9**	**33.9**	**5.36**	**8.56**	2.01	1.41	**44**
Vinyl chloride	µg/L	2	1.55	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.443 J
1,1-Dichloroethene	µg/L	7	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.403 J
Acetone	µg/L	-	3.34 J	3.98 J	3.48 J	3.19 J	4.25 J	<10	<10	3.44 J
Carbon disulfide	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1
MEK (2-Butanone)	µg/L	-	<10	<10	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	-	<5	<5	<5	0.652 J	<5	0.65 J	<5	<5
Trichlorofluoromethane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	1.49

Notes:
µg/L: micrograms per liter
-- : Not Listed
MCL: Maximum Contaminant Level
RL: Reporting Limit
<: Analyte not detected above RL
Results above MCL shown in bold

DQE Flags:
J: Estimated

Methods:
8260B: Volatile Organic Compounds

TABLE 15
MAIN INSTALLATION ANALYTICAL RESULTS SUMMARY, APRIL 2013
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

	Well ID		MW-217	MW-218	MW-252	MW-253	MW-254	MW-255	MW-256	MW-257
	Date		4/10/2013	4/10/2013	4/11/2013	4/11/2013	4/11/2013	4/11/2013	4/11/2013	4/11/2013
	LabID		L13040604-31	L13040604-32	L13040650-14	L13040650-15	L13040650-16	L13040650-17	L13040650-18	L13040650-19
Analyte	Units	MCL								
Carbon tetrachloride	µg/L	5	**7.6**	<1	<1	<1	0.889 J	<1	0.334 J	<1
Chloroform	µg/L	80	2.55	<0.3	<0.3	<0.3	0.185 J	<0.3	2.32	<0.3
cis-1,2-Dichloroethene	µg/L	70	0.252 J	2.04	<1	<1	0.34 J	<1	0.28 J	<1
Tetrachloroethene	µg/L	5	**18.1**	**39.6**	0.651 J	<1	0.905 J	<1	**41.9**	<1
trans-1,2-Dichloroethene	µg/L	100	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5	**42.2**	3.54	<1	<1	3.13	0.433 J	**16**	<1
Vinyl chloride	µg/L	2	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	-	1.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethene	µg/L	7	1.15	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	5	0.462 J	1.64	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acetone	µg/L	-	2.71 J	<10	6.21 J	4.86 J	4.14 J	4.58 J	3.58 J	<10
Carbon disulfide	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1
MEK (2-Butanone)	µg/L	-	<10	<10	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	-	<5	<5	<5	<5	<5	<5	<5	<5
Trichlorofluoromethane	µg/L	-	1.51	<1	<1	<1	<1	<1	<1	<1

Notes:
µg/L: micrograms per liter
-- : Not Listed
MCL: Maximum Contaminant Level
RL: Reporting Limit
<: Analyte not detected above RL
Results above MCL shown in bold

DQE Flags:
J: Estimated

Methods:
8260B: Volatile Organic Compounds

TABLE 15
MAIN INSTALLATION ANALYTICAL RESULTS SUMMARY, APRIL 2013
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

	Well ID		MW-258	MW-259
	Date		4/11/2013	4/10/2013
	LabID		L13040650-20	L13040604-33
Analyte	Units	MCL		
Carbon tetrachloride	µg/L	5	<1	4.98
Chloroform	µg/L	80	2.95	3.08
cis-1,2-Dichloroethene	µg/L	70	2.22	0.278 J
Tetrachloroethene	µg/L	5	**25.9**	**16.1**
trans-1,2-Dichloroethene	µg/L	100	<1	<1
Trichloroethene	µg/L	5	**88.7**	**22**
Vinyl chloride	µg/L	2	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	-	<0.5	0.213 J
1,1-Dichloroethene	µg/L	7	1.55	<1
1,2,3-Trichloropropane	µg/L	-	<1	<1
1,2-Dichloroethane	µg/L	5	<0.5	1.29
Acetone	µg/L	-	3.33 J	2.76 J
Carbon disulfide	µg/L	-	<1	<1
MEK (2-Butanone)	µg/L	-	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	-	3.66 J	<5
Trichlorofluoromethane	µg/L	-	<1	<1

Notes:
µg/L: micrograms per liter
-- : Not Listed
MCL: Maximum Contaminant Level
RL: Reporting Limit
<: Analyte not detected above RL
Results above MCL shown in bold

DQE Flags:
J: Estimated

Methods:
8260B: Volatile Organic Compounds

TABLE 16
MAIN INSTALLATION PRIMARY CVOC RESULTS, APRIL 2013
ANNUAL LONG TERM MONITORING REPORT - 2013
Defense Depot Memphis Tennessee

VOC Analyte	MCL (µg/L)	Number of Locations with Analyte Above RL	Maximum Concentrations (µg/L)	Location of Maximum Concentration	Number of Locations with Analyte Above MCL
Carbon tetrachloride	5	10	34.3	DR2-6	6
Chloroform	80	21	10.2	MW-207A	0
cis-1,2-Dichloroethene	70	24	122	PMW92-02	1
Tetrachloroethene	5	48	176	DR2-1	44
trans-1,2-Dichloroethene	100	0	0.977	MW-100B	0
Trichloroethene	5	49	88.7	MW-258	29
Vinyl chloride	2	5	172	MW-100B	2

Notes:
µg/L micrograms per liter
--: Not Listed
RL: reporting limit
MCL: Maximum Contaminant Level

TABLE 17
MAIN INSTALLATION ANALYTICAL RESULTS SUMMARY, OCTOBER 2013
ANNUAL LONG-TERM MONITORING REPORT -2013
Defense Depot Memphis, Tennessee

	Well ID		DR1-1A	DR1-1	DR1-2	DR1-3	DR1-4	DR1-7	DR1-8	DR2-1
	Date		10/12/2013	10/12/2013	10/12/2013	10/12/2013	10/12/2013	10/12/2013	10/12/2013	10/12/2013
	Lab ID		L13101112-30	L13101112-29	L13101112-31	L13101112-32	L13101112-33	L13101112-01	L13101112-02	L13101117-01
Analyte	Units	MCL								
Carbon tetrachloride	µg/L	5	<1	<1	<1	<1	<1	<1	<1	**37.2**
Chloroform	µg/L	80	0.51	<0.3	0.142 J	<0.3	<0.3	0.156 J	<0.3	8.82
cis-1,2-Dichloroethene	µg/L	70	<1	0.734 J	0.369 J	7.5	0.523 J	0.286 J	<1	10.2
Tetrachloroethene	µg/L	5	0.389 J	1.77	1.3	1.52	<1	1.19	<1	**235**
trans-1,2-Dichloroethene	µg/L	100	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5	0.973 J	<1	<1	2.17	0.41 J	<1	<1	**5.45**
Vinyl chloride	µg/L	2	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	7	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acetone	µg/L	-	7.82 J	7.03 J	<10	7.73 J	8.91 J	2.63	<10	24 J
Carbon disulfide	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane	µg/L	-	0.67 J	0.64 J	0.785 J	<1	0.81 J	0.681 J	<1	0.587 J
MEK (2-Butanone)	µg/L	-	<10	<10	<10	<10	<10	<10	<10	21.2
Methyl t-butyl ether (MTBE)	µg/L	-	<5	<5	<5	4.97 J	1.19 J	<5	<5	<5
Trichlorofluoromethane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
µg/L: micrograms per liter
-- : Not Listed
MCL: Maximum Contaminant Level
RL: Reporting Limit
<: Analyte not detected above RL
Results above MCL shown in bold

DQE Flags:
J: Estimated

Methods:
8260B: Volatile Organic Compounds

TABLE 17
MAIN INSTALLATION ANALYTICAL RESULTS SUMMARY, OCTOBER 2013
ANNUAL LONG-TERM MONITORING REPORT -2013
Defense Depot Memphis, Tennessee

	Well ID		DR2-3	DR2-4	DR2-6	PMW21-03	PMW21-05	PMW92-02	PMW101-03A	PMW101-03B
	Date		10/12/2013	10/12/2013	10/12/2013	10/12/2013	10/12/2013	10/12/2013	10/12/2013	10/12/2013
	Lab ID		L13101117-02	L13101117-03	L13101117-04	L13101112-03	L13101112-04	L13101117-07	L13101112-05	L13101112-06
Analyte	Units	MCL								
Carbon tetrachloride	µg/L	5	2.87	3.01	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	80	0.567	0.645	7.85	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	70	<1	<1	24	3.76	<1	**149**	5.83	6.35
Tetrachloroethene	µg/L	5	**14**	**9.58**	**10.3**	**115**	**12.5**	0.385 J	**35**	**42.4**
trans-1,2-Dichloroethene	µg/L	100	<1	<1	<1	<1	<1	0.273 J	<1	<1
Trichloroethene	µg/L	5	1.29	0.898 J	3.22	**33.4**	0.763 J	0.559 J	0.838 J	1.34
Vinyl chloride	µg/L	2	<1	<1	**7.52**	<1	<1	0.902 J	<1	1.27
1,1,2,2-Tetrachloroethane	µg/L	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	7	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	-	<1	<1	9.06 J	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acetone	µg/L	-	7.71 J	5.02 J	17.1 J	9.33	3.21	10.9 J	6.79	5.02
Carbon disulfide	µg/L	-	<1	<1	5.34	<1	<1	<1	<1	<1
Chloromethane	µg/L	-	<1	<1	<1	<1	0.876 J	0.512 J	0.808 J	<1
MEK (2-Butanone)	µg/L	-	<10	<10	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	-	<5	<5	<5	13.5	<5	<5	4.08 J	11.1
Trichlorofluoromethane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
µg/L: micrograms per liter
-- : Not Listed
MCL: Maximum Contaminant Level
RL: Reporting Limit
<: Analyte not detected above RL
Results above MCL shown in bold

DQE Flags:
J: Estimated

Methods:
8260B: Volatile Organic Compounds

TABLE 17
MAIN INSTALLATION ANALYTICAL RESULTS SUMMARY, OCTOBER 2013
ANNUAL LONG-TERM MONITORING REPORT -2013
Defense Depot Memphis, Tennessee

	Well ID		PMW101-06A	PMW101-06B	PZ-03	MW-25A	MW-26	MW-39A	MW-39	MW-52
	Date		10/12/2013	10/12/2013	10/11/2013	10/11/2013	10/12/2013	10/11/2013	10/11/2013	10/11/2013
	Lab ID		L13101112-07	L13101112-10	L13101116-01	L13101116-05	L13101117-11	L13101114-04	L13101114-03	L13101116-06
Analyte	Units	MCL								
Carbon tetrachloride	µg/L	5	<1	<1	<1	1.7	4.6	<1	<1	<1
Chloroform	µg/L	80	<0.3	<0.3	0.263 J	0.261 J	0.642	<0.3	<0.3	0.841
cis-1,2-Dichloroethene	µg/L	70	1.76	2.37	<1	<1	0.462 J	7.28	12.3	0.562 J
Tetrachloroethene	µg/L	5	1.28	**16**	2.43 J	**5.83**	**25**	**29.5**	1.34	**7.16**
trans-1,2-Dichloroethene	µg/L	100	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5	0.312 J	2.98	**5.81 J**	<1	1.24	**7.05**	**11.6**	0.995 J
Vinyl chloride	µg/L	2	<1	<1	<1	<1	<1	1.67	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	7	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acetone	µg/L	-	6.55	6.07	<10 UJ	<10 UJ	3.72 J	6.67 J	8.71 J	<10 UJ
Carbon disulfide	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane	µg/L	-	<1	<1	0.679 J	<1	<1	<1	<1	<1
MEK (2-Butanone)	µg/L	-	3.47	<10	<10 UJ	<10 UJ	<10	<10	<10	<10 UJ
Methyl t-butyl ether (MTBE)	µg/L	-	2.88 J	8.47	<5	<5	<5	0.591 J	0.535 J	<5
Trichlorofluoromethane	µg/L	-	<1	<1	0.29 J	<1	<1	<1	<1	<1

Notes:
µg/L: micrograms per liter
-- : Not Listed
MCL: Maximum Contaminant Level
RL: Reporting Limit
<: Analyte not detected above RL
Results above MCL shown in bold

DQE Flags:
J: Estimated

Methods:
8260B: Volatile Organic Compounds

TABLE 17
MAIN INSTALLATION ANALYTICAL RESULTS SUMMARY, OCTOBER 2013
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Defense Depot Memphis, Tennessee

	Well ID		MW-63A	MW-63B	MW-64	MW-88	MW-89	MW-90	MW-92	MW-94A
	Date		10/12/2013	10/12/2013	10/12/2013	10/12/2013	10/11/2013	10/11/2013	10/12/2013	10/12/2013
	Lab ID		L13101117-12	L13101117-13	L13101117-14	L13101117-15	L13101114-05	L13101114-06	L13101117-16	L13101117-17
Analyte	Units	MCL								
Carbon tetrachloride	µg/L	5	<1	<1	2.56	**11**	<1	0.283 J	<1	<1
Chloroform	µg/L	80	<0.3	0.399	0.821	1.49	0.205 J	1.72	<0.3	0.19 J
cis-1,2-Dichloroethene	µg/L	70	<1	0.34 J	0.431 J	2.17	<1	0.428 J	39.7	1.38
Tetrachloroethene	µg/L	5	2.52	1.23	**18**	**45.2**	2.44	**21.5**	**79.7**	**32.8**
trans-1,2-Dichloroethene	µg/L	100	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5	1.83	2.07	**28**	2.77	1.35	**5.19**	**10.8**	**10.4**
Vinyl chloride	µg/L	2	<1	<1	<1	<1	<1	<1	**5.28**	<1
1,1,2,2-Tetrachloroethane	µg/L	-	<0.5	<0.5	1.57 J	<0.5	<0.5	<0.5	<0.5	0.41 J
1,1-Dichloroethane	µg/L	-	<1	0.466 J	<1	<1	<1	0.849 J	<1	<1
1,1-Dichloroethene	µg/L	7	<1	<1	0.879 J	<1	<1	0.69 J	<1	<1
1,2,3-Trichloropropane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	5	<0.5	<0.5	0.391 J	<0.5	<0.5	<0.5	<0.5	<0.5
Acetone	µg/L	-	2.91 J	3.26 J	18 J	8.81 J	<10	5.53 J	12 J	6.15 J
Carbon disulfide	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane	µg/L	-	<1	<1	<1	<1	<1	0.938 J	<1	0.643 JB
MEK (2-Butanone)	µg/L	-	<10	<10	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	-	<5	<5	<5	<5	<5	<5	<5	<5
Trichlorofluoromethane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
µg/L: micrograms per liter
-- : Not Listed
MCL: Maximum Contaminant Level
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Results above MCL shown in bold

DQE Flags:
J: Estimated

Methods:
8260B: Volatile Organic Compounds

TABLE 17
MAIN INSTALLATION ANALYTICAL RESULTS SUMMARY, OCTOBER 2013
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Defense Depot Memphis, Tennessee

	Well ID		MW-96	MW-97	MW-98	MW-100B	MW-101B	MW-101T	MW-103	MW-104
	Date		10/11/2013	10/11/2013	10/11/2013	10/12/2013	10/12/2013	10/12/2013	10/12/2013	10/12/2013
	Lab ID		L13101116-07	L13101114-07	L13101114-08	L13101112-16	L13101112-18	L13101112-17	L13101117-18	L13101117-19
Analyte	Units	MCL								
Carbon tetrachloride	µg/L	5	0.832 J	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	80	0.21 J	0.308	<0.3	<0.3	<0.3	<0.3	9.07	7.71
cis-1,2-Dichloroethene	µg/L	70	<1	<1	0.541 J	21.8	31	36.5	0.373 J	0.833 J
Tetrachloroethene	µg/L	5	0.318 J	<1	**40.5**	**68.4**	2.72	1.22	<1	<1
trans-1,2-Dichloroethene	µg/L	100	<1	<1	<1	1.7	<1	<1	<1	<1
Trichloroethene	µg/L	5	<1	**67.8**	3.16	**7.49**	1.01	0.9 J	**10.6**	**22**
Vinyl chloride	µg/L	2	<1	<1	<1	**188**	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	µg/L	-	<1	<1	<1	<1	<1	<1	2.19	1.17
1,1-Dichloroethene	µg/L	7	<1	<1	<1	1.21	<1	<1	2.25	3.23
1,2,3-Trichloropropane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acetone	µg/L	-	<10 UJ	8.79 J	4.15 J	8.83 J	13.9	13.2	5 J	<10
Carbon disulfide	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane	µg/L	-	<1	<1	<1	<1	<1	0.58 J	<1	0.525 JB
MEK (2-Butanone)	µg/L	-	<10 UJ	<10	<10	<10	25.9	29.5	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	-	<5	<5	<5	24.4	6.02	6.96	<5	<5
Trichlorofluoromethane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
µg/L: micrograms per liter
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Results above MCL shown in bold

DQE Flags:
J: Estimated

Methods:
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TABLE 17
MAIN INSTALLATION ANALYTICAL RESULTS SUMMARY, OCTOBER 2013
ANNUAL LONG-TERM MONITORING REPORT -2013
Defense Depot Memphis, Tennessee

	Well ID		MW-107B	MW-107T	MW-108	MW-140	MW-141	MW-142	MW-143	MW-198
	Date		10/12/2013	10/12/2013	10/12/2013	10/11/2013	10/11/2013	10/11/2013	10/12/2013	10/11/2013
	Lab ID		L13101117-21	L13101117-20	L13101117-24	L13101114-09	L13101114-10	L13101114-11	L13101112-19	L13101114-12
Analyte	Units	MCL								
Carbon tetrachloride	µg/L	5	0.459 J	0.402 J	<1	0.391 J	<1	<1	<1	<1
Chloroform	µg/L	80	0.328	0.31	9.41	0.219 J	3.36	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	70	<1	<1	0.842 J	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	5	**25.1 J**	**18.3**	3.76	2.8	**31.9**	<1	0.353 J	<1
trans-1,2-Dichloroethene	µg/L	100	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5	2.72	2.08	**30.3**	1.73	4.22	**5.77**	**10**	1.06
Vinyl chloride	µg/L	2	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	µg/L	-	<1	<1	0.8 J	<1	0.399 J	<1	<1	<1
1,1-Dichloroethene	µg/L	7	<1	<1	1.38	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acetone	µg/L	-	<10	<10	7.18 J	2.98 J	3.2 J	6.52 J	6.3 J	3.31 J
Carbon disulfide	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane	µg/L	-	<1	<1	<1	1.11	<1	<1	<1	<1
MEK (2-Butanone)	µg/L	-	<10	<10	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	-	<5	<5	<5	<5	<5	2.93 J	0.834 J	<5
Trichlorofluoromethane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
µg/L: micrograms per liter
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DQE Flags:
J: Estimated

Methods:
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TABLE 17
MAIN INSTALLATION ANALYTICAL RESULTS SUMMARY, OCTOBER 2013
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Defense Depot Memphis, Tennessee

	Well ID		MW-199A	MW-199B	MW-200	MW-202A	MW-202B	MW-204A	MW-204B	MW-205A
	Date		10/11/2013	10/11/2013	10/12/2013	10/11/2013	10/11/2013	10/11/2013	10/11/2013	10/11/2013
	Lab ID		L13101114-13	L13101114-14	L13101117-25	L13101114-15	L13101114-16	L13101114-17	L13101114-18	L13101114-19
Analyte	Units	MCL								
Carbon tetrachloride	µg/L	5	<1	0.307 J	<1	<1	0.416 J	<1	<1	<1
Chloroform	µg/L	80	<0.3	0.149 J	<0.3	0.216 J	0.539	<0.3	0.161 J	<0.3
cis-1,2-Dichloroethene	µg/L	70	<1	<1	1.8	<1	0.332 J	0.528 J	0.998 J	4.69
Tetrachloroethene	µg/L	5	<1	0.545 J	**7.75**	2.26	**25.5**	**38.6**	**13.9**	**26.4**
trans-1,2-Dichloroethene	µg/L	100	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5	0.986 J	**74.6**	**6.17**	1.83	4.78	0.695 J	4.64	**6.81**
Vinyl chloride	µg/L	2	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.46 J	<0.5
1,1-Dichloroethane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	7	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acetone	µg/L	-	<10	8.4 J	8.18 J	<10	6.84 J	6.22 J	8.59 J	7.77 J
Carbon disulfide	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1
MEK (2-Butanone)	µg/L	-	<10	<10	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	-	3.72 J	<5	<5	<5	<5	<5	<5	0.689 J
Trichlorofluoromethane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
µg/L: micrograms per liter
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TABLE 17
MAIN INSTALLATION ANALYTICAL RESULTS SUMMARY, OCTOBER 2013
ANNUAL LONG-TERM MONITORING REPORT -2013
Defense Depot Memphis, Tennessee

	Well ID		MW-205B	MW-206A	MW-206B	MW-207A	MW-207B	MW-208B	MW-209A	MW-209B
	Date		10/11/2013	10/11/2013	10/11/2013	10/12/2013	10/12/2013	10/11/2013	10/11/2013	10/11/2013
	Lab ID		L13101114-20	L13101114-23	L13101114-24	L13101117-26	L13101117-27	L13101114-25	L13101114-26	L13101114-27
Analyte	Units	MCL								
Carbon tetrachloride	µg/L	5	<1	<1	<1	<1	2.61	<1	<1	0.445 J
Chloroform	µg/L	80	<0.3	<0.3	0.127 J	10.2	0.565	0.929	<0.3	0.257 J
cis-1,2-Dichloroethene	µg/L	70	4.61	2.85	1.68	0.555 J	0.325 J	0.937 J	<1	<1
Tetrachloroethene	µg/L	5	**23.5**	**19.9**	**20.8**	**18.1**	**12.5**	**22.2**	0.354 J	0.545 J
trans-1,2-Dichloroethene	µg/L	100	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5	**8.86**	**7.26**	**5.53**	**18.7**	3.29	**12.7**	4.97	**28.8**
Vinyl chloride	µg/L	2	0.559 J	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	µg/L	-	<1	<1	<1	1.04	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	7	<1	<1	<1	1.09	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	5	<0.5	<0.5	<0.5	<0.5	3.03	<0.5	<0.5	<0.5
Acetone	µg/L	-	11.3	13.5	11.5	7.23 J	2.55 J	9.81 J	6.87 J	7.92 J
Carbon disulfide	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1
MEK (2-Butanone)	µg/L	-	<10	<10	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	-	1.78 J	0.543 J	<5	<5	<5	<5	4.25 J	<5
Trichlorofluoromethane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1

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Methods:
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TABLE 17
MAIN INSTALLATION ANALYTICAL RESULTS SUMMARY, OCTOBER 2013
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Defense Depot Memphis, Tennessee

	Well ID		MW-210A	MW-210B	MW-211	MW-214A	MW-214B	MW-215A	MW-215B	MW-216
	Date		10/11/2013	10/11/2013	10/12/2013	10/12/2013	10/12/2013	10/12/2013	10/12/2013	10/11/2013
	Lab ID		L13101114-28	L13101114-29	L13101117-28	L13101117-29	L13101117-30	L13101117-31	L13101117-32	L13101114-30
Analyte	Units	MCL								
Carbon tetrachloride	µg/L	5	<1	<1	<1	1.09	1.01	0.978 J	1.33	<1
Chloroform	µg/L	80	<0.3	<0.3	<0.3	2.18	1.7	2.39	0.685	<0.3
cis-1,2-Dichloroethene	µg/L	70	2	0.635 J	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	5	**5.79**	3.59	0.686 J	**6.6**	**6**	**6.93**	**6.24**	<1
trans-1,2-Dichloroethene	µg/L	100	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5	4.52	**6.93**	0.461 J	2.14	1.98	3.46	1.55	0.379 J
Vinyl chloride	µg/L	2	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	-	<0.5	<0.5	<0.5	0.219 J	0.256 J	0.244 J	<0.5	<0.5
1,1-Dichloroethane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	7	<1	<1	<1	<1	<1	<1	0.548 J	<1
1,2,3-Trichloropropane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acetone	µg/L	-	6.04 J	5.83 J	<10	<10	<10	<10	<10	<10 UJ
Carbon disulfide	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1
MEK (2-Butanone)	µg/L	-	<10	<10	<10	<10	<10	<10	<10	<10 UJ
Methyl t-butyl ether (MTBE)	µg/L	-	0.514 J	<5	<5	0.651 J	0.581 J	1.12 J	0.991 J	<5
Trichlorofluoromethane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
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TABLE 17
MAIN INSTALLATION ANALYTICAL RESULTS SUMMARY, OCTOBER 2013
ANNUAL LONG-TERM MONITORING REPORT -2013
Defense Depot Memphis, Tennessee

	Well ID		MW-217	MW-218	MW-219	MW-252	MW-253	MW-254	MW-255	MW-256
	Date		10/12/2013	10/12/2013	10/12/2013	10/12/2013	10/12/2013	10/12/2013	10/12/2013	10/12/2013
	Lab ID		L13101117-33	L13101117-34	L13101112-20	L13101112-21	L13101112-22	L13101112-23	L13101112-24	L13101112-25
Analyte	Units	MCL								
Carbon tetrachloride	µg/L	5	**40.4**	**8.75**	<1	<1	<1	0.748 J	<1	0.366 J
Chloroform	µg/L	80	3.88	2.8	<0.3	<0.3	<0.3	0.162 J	<0.3	2.29 J
cis-1,2-Dichloroethene	µg/L	70	0.791 J	0.33 J	2.48	<1	<1	0.347 J	<1	<1
Tetrachloroethene	µg/L	5	**29.6**	**18.9**	**53.6**	0.273 J	<1	0.77 J	<1	**37.7 J**
trans-1,2-Dichloroethene	µg/L	100	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5	**42.1**	**40.3**	3.62	<1	<1	2.7	0.353 J	**14 J**
Vinyl chloride	µg/L	2	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	-	0.312 J	1.14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	7	<1	1.02	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	5	0.333 J	0.494 J	1.66	<0.5	<0.5	<0.5	<0.5	<0.5
Acetone	µg/L	-	10.9	11.4	<10	8.67 J	10.2	15.2	11.2 J	8.94 J
Carbon disulfide	µg/L	-	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane	µg/L	-	<1	<1	<1	<1	0.929 J	0.527 J	<1	0.552 J
MEK (2-Butanone)	µg/L	-	<10	<10	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	-	<5	<5	<5	<5	<5	<5	<5	<5
Trichlorofluoromethane	µg/L	-	1.33	1.65	<1	<1	<1	<1	<1	<1

Notes:
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ANNUAL LONG-TERM MONITORING REPORT -2013
Defense Depot Memphis, Tennessee

	Well ID		MW-257	MW-258	MW-259	MW-260	MW-261
	Date		10/12/2013	10/12/2013	10/12/2013	10/11/2013	10/11/2013
	Lab ID		L13101112-28	L13101117-35	L13101117-36	L13101116-08	L13101116-09
Analyte	Units	MCL					
Carbon tetrachloride	µg/L	5	<1	<1	**5.02**	<1	<1
Chloroform	µg/L	80	<0.3	2.54	3	1.37	<0.3
cis-1,2-Dichloroethene	µg/L	70	<1	2.25	0.277 J	<1	<1
Tetrachloroethene	µg/L	5	<1	**32.2**	**17**	<1	<1
trans-1,2-Dichloroethene	µg/L	100	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5	<1	**85.8**	**23.9**	3.97	2.71 J
Vinyl chloride	µg/L	2	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	-	<0.5	<0.5	0.294 J	<0.5	<0.5
1,1-Dichloroethane	µg/L	-	<1	0.199 J	<1	1.12	<1
1,1-Dichloroethene	µg/L	7	<1	1.22	<1	1.39	<1
1,2,3-Trichloropropane	µg/L	-	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	5	<0.5	<0.5	2.6	<0.5	<0.5
Acetone	µg/L	-	<10	9.26 J	10.3	<10 UJ	<10 UJ
Carbon disulfide	µg/L	-	<1	<1	<1	<1	<1
Chloromethane	µg/L	-	0.521 J	<1	0.953 J	<1	<1
MEK (2-Butanone)	µg/L	-	<10	<10	<10	<10 UJ	<10 UJ
Methyl t-butyl ether (MTBE)	µg/L	-	<5	3.94 J	<5	<5	<5
Trichlorofluoromethane	µg/L	-	<1	<1	<1	<1	<1

Notes:
µg/L: micrograms per liter
-- : Not Listed
MCL: Maximum Contaminant Level
RL: Reporting Limit
<: Analyte not detected above RL
Results above MCL shown in bold

DQE Flags:
J: Estimated

Methods:
8260B: Volatile Organic Compounds

TABLE 18
MAIN INSTALLATION PRIMARY CVOC RESULTS, OCTOBER 2013
ANNUAL LONG TERM MONITORING REPORT - 2013
Defense Depot Memphis Tennessee

VOC Analyte	MCL (µg/L)	Number of Locations with Analyte Above RL	Maximum Concentrations (µg/L)	Location of Maximum Concentration	Number of Locations with Analyte Above MCL
Carbon tetrachloride	5	14	40.4	MW-217	5
Chloroform	80	32	10.2	MW-207A	0
cis-1,2-Dichloroethene	70	25	149	PMW92-02	1
Tetrachloroethene	5	61	235	DR2-1	45
trans-1,2-Dichloroethene	100	1	1.7	MW-100B	0
Trichloroethene	5	62	85.8	MW-258	31
Vinyl chloride	2	5	188	MW-100B	3

Notes:
µg/L micrograms per liter
--: Not Listed
RL: reporting limit
MCL: Maximum Contaminant Level

TABLE 19
DUNN FIELD ANALYTICAL RESULTS SUMMARY, APRIL 2013
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

	Well ID			MW-03	MW-04	MW-06	MW-07	MW-08	MW-13	MW-15	MW-28
	LabID			L13040809-01	L13040809-02	L13040687-01	L13040809-03	L13040687-02	L13040680-01	L13040687-03	L13040809-04
	Date			4/13/2013	4/13/2013	4/12/2013	4/13/2013	4/12/2013	4/12/2013	4/12/2013	4/13/2013
Analyte	Units	MCL	TC								
1,1,2,2-Tetrachloroethane	µg/L	-	2.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	5	1.9	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	7	7	<1	<1	<1	**20**	5.64	<1	<1	<1
1,2-Dichloroethane	µg/L	5	-	<0.5	<0.5	<0.5	0.338 J	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	µg/L	5	3	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	80	12	<0.3	0.371	2.21	0.276 J	0.197 J	0.199 J	1.25	0.332
cis-1,2-Dichloroethene	µg/L	70	35	<1	<1	<1	0.535 J	0.345 J	<1	<1	<1
Tetrachloroethene	µg/L	5	2.5	0.311 J	<1	<1	**55.9**	**9.91**	0.287 J	0.598 J	<1
trans-1,2-Dichloroethene	µg/L	100	50	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5	5	0.364 J	<1	0.707 J	**52.3**	**14.5**	<1	0.549 J	<1
Vinyl chloride	µg/L	2	-	<1	<1	<1	<1	<1	<1	<1	<1
Total Primary CVOCs				0.675	0.371	2.92	129	30.6	0.486	2.40	0.332
1,1,1-Trichloroethane	µg/L	200	-	<1	<1	<1	0.435 J	0.288 J	<1	<1	<1
1,1-Dichloroethane	µg/L	-	-	<1	<1	<1	1.15	0.355 J	<1	<1	<1
Chlorobenzene	µg/L	100	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Notes:
µg/L: micrograms per liter
- : Not Listed
MCL: Maximum Contaminant Level
RE: Re-sampled
RL: Reporting Limit
TC: Target Concentration
<: Analyte not detected above RL
Results above MCL or TC shown in bold

DQE Flags:
J: Estimated
UJ: Estimated Non-Detect

Methods:
8260B: Volatile Organic Compounds

TABLE 19
DUNN FIELD ANALYTICAL RESULTS SUMMARY, APRIL 2013
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

	Well ID			MW-31	MW-33	MW-44	MW-44-RE	MW-54	MW-57	MW-58	MW-67
	LabID			L13040810-01	L13040809-05	L13040808-02	L13050701-01	L13050701-02	L13040687-05	L13040680-03	L13040808-04
	Date			4/13/2013	4/13/2013	4/14/2013	5/9/2013	5/9/2013	4/12/2013	4/12/2013	4/14/2013
Analyte	Units	MCL	TC								
1,1,2,2-Tetrachloroethane	µg/L	-	2.2	<0.5 UJ	<0.5	1.21	1.33	1.85	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	5	1.9	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	7	7	2.36	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	µg/L	5	3	<1	<1	0.827 J	0.678 J	<1	<1	0.277 J	<1
Chloroform	µg/L	80	12	0.145 J	0.318	**13.6**	**12.3**	0.23 J	6.97	0.343	<0.3
cis-1,2-Dichloroethene	µg/L	70	35	<1	<1	0.547 J	0.633 J	<1	<1	<1	<1
Tetrachloroethene	µg/L	5	2.5	**3.46**	<1	0.398 J	0.329 J	0.295 J	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	100	50	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5	5	4.76	<1	**6.98**	**6.55**	**6.51**	0.916 J	1.7	<1
Vinyl chloride	µg/L	2	-	<1	<1	<1	<1	<1	<1	<1	<1
Total Primary CVOCs				10.7	0.318	23.6	21.8	8.89	7.89	2.32	0
1,1,1-Trichloroethane	µg/L	200	-	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	µg/L	-	-	0.125 J	0.192 J	<1	<1	<1	<1	<1	<1
Chlorobenzene	µg/L	100	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Notes:
µg/L: micrograms per liter
- : Not Listed
MCL: Maximum Contaminant Level
RE: Re-sampled
RL: Reporting Limit
TC: Target Concentration
<: Analyte not detected above RL
Results above MCL or TC shown in bold

DQE Flags:
J: Estimated
UJ: Estimated Non-Detect

Methods:
8260B: Volatile Organic Compounds

TABLE 19
DUNN FIELD ANALYTICAL RESULTS SUMMARY, APRIL 2013
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

	Well ID			MW-68	MW-69	MW-70	MW-71	MW-76	MW-77	MW-78	MW-79
	LabID			L13040809-10	L13040809-11	L13040809-12	L13040809-13	L13040810-04	L13050701-03	L13040687-06	L13040810-05
	Date			4/13/2013	4/13/2013	4/13/2013	4/13/2013	4/13/2013	5/9/2013	4/12/2013	4/13/2013
Analyte	Units	MCL	TC								
1,1,2,2-Tetrachloroethane	µg/L	-	2.2	<0.5	<0.5	<0.5	0.58	0.284 J	**7.45**	<0.5	<0.5 UJ
1,1,2-Trichloroethane	µg/L	5	1.9	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	7	7	<1	<1	<1	<1	<1	<1	<1	4.71
1,2-Dichloroethane	µg/L	5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	µg/L	5	3	<1	<1	<1	0.452 J	<1	<1	<1	<1
Chloroform	µg/L	80	12	<0.3	<0.3	0.166 J	8.06	<0.3	0.426	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	70	35	<1	<1	<1	<1	<1	0.381 J	<1	<1
Tetrachloroethene	µg/L	5	2.5	<1	<1	0.642 J	<1	<1	0.447 J	<1	**6.35**
trans-1,2-Dichloroethene	µg/L	100	50	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5	5	<1	<1	0.988 J	2.39	0.624 J	**15.5**	<1	**6.07**
Vinyl chloride	µg/L	2	-	<1	<1	<1	<1	<1	<1	<1	<1
Total Primary CVOCs				0	0	1.80	11.5	0.908	24.2	0	17.1
1,1,1-Trichloroethane	µg/L	200	-	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	µg/L	-	-	<1	<1	<1	<1	<1	<1	<1	0.179 J
Chlorobenzene	µg/L	100	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Notes:
µg/L: micrograms per liter
- : Not Listed
MCL: Maximum Contaminant Level
RE: Re-sampled
RL: Reporting Limit
TC: Target Concentration
<: Analyte not detected above RL
Results above MCL or TC shown in bold

DQE Flags:
J: Estimated
UJ: Estimated Non-Detect

Methods:
8260B: Volatile Organic Compounds

TABLE 19
DUNN FIELD ANALYTICAL RESULTS SUMMARY, APRIL 2013
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

	Well ID			MW-80	MW-87	MW-91	MW-126	MW-129	MW-130	MW-134	MW-134-RE
	LabID			L13040648-02	L13040687-09	L13040687-10	L13040680-04	L13040810-06	L13040809-14	L13040809-15	L13050701-04
	Date			4/11/2013	4/12/2013	4/12/2013	4/12/2013	4/13/2013	4/13/2013	4/13/2013	5/9/2013
Analyte	Units	MCL	TC								
1,1,2,2-Tetrachloroethane	µg/L	-	2.2	<0.5	<0.5	<0.5	<0.5	<0.5 UJ	<0.5	<0.5 UJ	<0.5
1,1,2-Trichloroethane	µg/L	5	1.9	<1	<1	<1	<1	<1	<1	<1 UJ	<1
1,1-Dichloroethene	µg/L	7	7	<1	<1	<1	<1	**16.8**	**38.6**	<1 UJ	<1
1,2-Dichloroethane	µg/L	5	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.485 J	<0.5 UJ	<0.5
Carbon tetrachloride	µg/L	5	3	<1	<1	<1	<1	<1	<1	<1 UJ	<1
Chloroform	µg/L	80	12	0.329	0.254 J	0.926	<0.3	<0.3	0.274 J	0.213 J	0.14 J
cis-1,2-Dichloroethene	µg/L	70	35	<1	0.32 J	<1	<1	<1	1.04	<1 UJ	<1
Tetrachloroethene	µg/L	5	2.5	<1	<1	0.251 J	<1	**18**	**98.5**	0.73 J	0.685 J
trans-1,2-Dichloroethene	µg/L	100	50	<1	<1	<1	<1	<1	<1	<1 UJ	<1
Trichloroethene	µg/L	5	5	<1	<1	0.332 J	<1	**14.5**	**79.5**	<1 UJ	<1
Vinyl chloride	µg/L	2	-	<1	<1	<1	<1	<1	<1	<1 UJ	<1
Total Primary CVOCs				0.329	0.574	1.51	0	49.3	218	0.943	0.825
1,1,1-Trichloroethane	µg/L	200	-	<1	<1	<1	<1	0.661 J	1.44	<1 UJ	<1
1,1-Dichloroethane	µg/L	-	-	<1	<1	<1	<1	1.48	2.13	<1 UJ	<1
Chlorobenzene	µg/L	100	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5 UJ	<0.5

Notes:
µg/L: micrograms per liter
- : Not Listed
MCL: Maximum Contaminant Level
RE: Re-sampled
RL: Reporting Limit
TC: Target Concentration
<: Analyte not detected above RL
Results above MCL or TC shown in bold

DQE Flags:
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UJ: Estimated Non-Detect

Methods:
8260B: Volatile Organic Compounds

TABLE 19
DUNN FIELD ANALYTICAL RESULTS SUMMARY, APRIL 2013
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

	Well ID			MW-144	MW-144-RE	MW-145	MW-147	MW-148	MW-149	MW-150	MW-150-RE
	LabID			L13040809-16	L13050701-05	L13040809-17	L13040810-07	L13040810-08	L13040809-18	L13040810-09	L13050701-06
	Date			4/13/2013	5/9/2013	4/13/2013	4/13/2013	4/13/2013	4/13/2013	4/13/2013	5/9/2013
Analyte	Units	MCL	TC								
1,1,2,2-Tetrachloroethane	µg/L	-	2.2	**11 J**	**5.41**	<0.5	<0.5 UJ	<0.5 UJ	**2.33**	**16.9 J**	**16.4**
1,1,2-Trichloroethane	µg/L	5	1.9	<1 UJ	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	7	7	<1 UJ	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	5	-	<0.5 UJ	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	µg/L	5	3	<1 UJ	<1	0.493 J	<1	<1	0.397 J	<1	<1
Chloroform	µg/L	80	12	0.305 J	0.222 J	0.844	<0.3	0.125 J	7.47	0.698	0.695
cis-1,2-Dichloroethene	µg/L	70	35	0.822 J	0.327 J	<1	<1	<1	1.6	0.803 J	1.01
Tetrachloroethene	µg/L	5	2.5	0.867 J	0.476 J	<1	<1	<1	0.312 J	<1	<1
trans-1,2-Dichloroethene	µg/L	100	50	<1 UJ	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5	5	**32.4 J**	**14**	0.713 J	<1	<1	3.58	**48.2**	**47.7**
Vinyl chloride	µg/L	2	-	<1 UJ	<1	<1	<1	<1	<1	<1	<1
Total Primary CVOCs				45.4	20.4	2.05	0	0.125	15.7	66.6	65.8
1,1,1-Trichloroethane	µg/L	200	-	<1 UJ	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	µg/L	-	-	<1 UJ	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	µg/L	100	-	<0.5 UJ	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Notes:
µg/L: micrograms per liter
- : Not Listed
MCL: Maximum Contaminant Level
RE: Re-sampled
RL: Reporting Limit
TC: Target Concentration
<: Analyte not detected above RL
Results above MCL or TC shown in bold

DQE Flags:
J: Estimated
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Methods:
8260B: Volatile Organic Compounds

TABLE 19
DUNN FIELD ANALYTICAL RESULTS SUMMARY, APRIL 2013
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

	Well ID			MW-151	MW-152	MW-153	MW-154	MW-155	MW-157	MW-158A	MW-158
	LabID			L13040810-10	L13050701-07	L13040680-05	L13040808-05	L13040810-11	L13040809-19	L13040810-13	L13040810-12
	Date			4/13/2013	5/9/2013	4/12/2013	4/14/2013	4/13/2013	4/13/2013	4/13/2013	4/13/2013
Analyte	Units	MCL	TC								
1,1,2,2-Tetrachloroethane	µg/L	-	2.2	**2.74 J**	<0.5	<0.5	<0.5	0.552 J	0.494 J	<0.5 UJ	1.58 J
1,1,2-Trichloroethane	µg/L	5	1.9	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	7	7	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	µg/L	5	3	0.892 J	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	80	12	**14.5**	<0.3	<0.3	<0.3	0.16 J	2.88 J	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	70	35	0.87 J	<1	<1	<1	<1	0.351 J	<1	<1
Tetrachloroethene	µg/L	5	2.5	0.398 J	<1	<1	<1	0.373 J	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	100	50	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5	5	**8.14**	0.53 J	<1	<1	1.16	2.49 J	<1	4.59
Vinyl chloride	µg/L	2	-	<1	<1	<1	<1	<1	<1	<1	<1
Total Primary CVOCs				27.5	0.53	0	0	2.25	6.22	0	6.17
1,1,1-Trichloroethane	µg/L	200	-	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	µg/L	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	µg/L	100	-	<0.5	<0.5	0.375 J	<0.5	<0.5	<0.5	<0.5	<0.5

Notes:
µg/L: micrograms per liter
- : Not Listed
MCL: Maximum Contaminant Level
RE: Re-sampled
RL: Reporting Limit
TC: Target Concentration
<: Analyte not detected above RL
Results above MCL or TC shown in bold

DQE Flags:
J: Estimated
UJ: Estimated Non-Detect

Methods:
8260B: Volatile Organic Compounds

TABLE 19
DUNN FIELD ANALYTICAL RESULTS SUMMARY, APRIL 2013
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

	Well ID			MW-159	MW-160	MW-163	MW-164	MW-165A	MW-165	MW-166A	MW-166
	LabID			L13050701-08	L13040810-14	L13050701-09	L13040809-20	L13040810-16	L13040810-15	L13040808-07	L13040808-06
	Date			5/9/2013	4/13/2013	5/9/2013	4/13/2013	4/13/2013	4/13/2013	4/14/2013	4/14/2013
Analyte	Units	MCL	TC								
1,1,2,2-Tetrachloroethane	µg/L	-	2.2	**19.4**	<0.5 UJ	1.87	0.578	0.929	0.388 J	**3.15**	**2.65**
1,1,2-Trichloroethane	µg/L	5	1.9	**4.15**	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	7	7	3.39	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	µg/L	5	3	<1	<1	<1	0.9 J	<1	<1	0.276 J	0.838 J
Chloroform	µg/L	80	12	0.296 J	<0.3	0.277 J	4.65	<0.3	<0.3	5.47	7.67
cis-1,2-Dichloroethene	µg/L	70	35	28.4	<1	<1	0.905 J	<1	<1	1.1	1.58
Tetrachloroethene	µg/L	5	2.5	0.688 J	<1	0.527 J	0.306 J	<1	<1	<1	0.539 J
trans-1,2-Dichloroethene	µg/L	100	50	3.41	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5	5	**181**	<1	**7.86**	**5.36**	0.473 J	2.38	2.87	**5.34**
Vinyl chloride	µg/L	2	-	**17.3**	<1	<1	<1	<1	<1	<1	<1
Total Primary CVOCs				258	0	10.5	12.7	1.40	2.77	12.9	18.6
1,1,1-Trichloroethane	µg/L	200	-	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	µg/L	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	µg/L	100	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Notes:
µg/L: micrograms per liter
- : Not Listed
MCL: Maximum Contaminant Level
RE: Re-sampled
RL: Reporting Limit
TC: Target Concentration
<: Analyte not detected above RL
Results above MCL or TC shown in bold

DQE Flags:
J: Estimated
UJ: Estimated Non-Detect

Methods:
8260B: Volatile Organic Compounds

TABLE 19
DUNN FIELD ANALYTICAL RESULTS SUMMARY, APRIL 2013
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

	Well ID			MW-167	MW-169	MW-170	MW-171	MW-174	MW-176	MW-180	MW-182
	LabID			L13040810-17	L13040648-05	L13040648-06	L13040680-06	L13040687-11	L13040809-21	L13050701-10	L13040808-08
	Date			4/13/2013	4/11/2013	4/11/2013	4/12/2013	4/12/2013	4/13/2013	5/9/2013	4/14/2013
Analyte	Units	MCL	TC								
1,1,2,2-Tetrachloroethane	µg/L	-	2.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	5	1.9	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	7	7	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	µg/L	5	3	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	80	12	<0.3	<0.3	<0.3	<0.3	0.158 J	0.275 J	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	70	35	<1	<1	0.633 J	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	5	2.5	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	100	50	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5	5	<1	<1	<1	<1	<1	0.3 J	<1	<1
Vinyl chloride	µg/L	2	-	<1	<1	<1	<1	<1	<1	<1	<1
Total Primary CVOCs				0	0	0.633	0	0.158	0.575	0	0
1,1,1-Trichloroethane	µg/L	200	-	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	µg/L	-	-	<1	<1	<1	0.19 J	<1	<1	<1	<1
Chlorobenzene	µg/L	100	-	<0.5	0.591	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Notes:
µg/L: micrograms per liter
- : Not Listed
MCL: Maximum Contaminant Level
RE: Re-sampled
RL: Reporting Limit
TC: Target Concentration
<: Analyte not detected above RL
Results above MCL or TC shown in bold

DQE Flags:
J: Estimated
UJ: Estimated Non-Detect

Methods:
8260B: Volatile Organic Compounds

TABLE 19
DUNN FIELD ANALYTICAL RESULTS SUMMARY, APRIL 2013
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

	Well ID			MW-184	MW-187	MW-190	MW-220	MW-221	MW-222	MW-223	MW-224
	LabID			L13050701-13	L13040687-12	L13050701-14	L13040809-22	L13040809-23	L13040809-24	L13040809-25	L13040809-26
	Date			5/9/2013	4/12/2013	5/9/2013	4/13/2013	4/13/2013	4/13/2013	4/13/2013	4/13/2013
Analyte	Units	MCL	TC								
1,1,2,2-Tetrachloroethane	µg/L	-	2.2	0.353 J	<0.5	**8.93**	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	5	1.9	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	7	7	<1	<1	<1	1.76	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	µg/L	5	3	0.923 J	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	80	12	5.03	0.166 J	0.274 J	0.138 J	0.156 J	<0.3	0.206 J	0.245 J
cis-1,2-Dichloroethene	µg/L	70	35	0.587 J	<1	0.429 J	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	5	2.5	0.261 J	0.267 J	0.58 J	**3.37**	<1	0.312 J	0.415 J	<1
trans-1,2-Dichloroethene	µg/L	100	50	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5	5	2.7	<1	**20.4**	4.97	<1	<1	0.328 J	<1
Vinyl chloride	µg/L	2	-	<1	<1	<1	<1	<1	<1	<1	<1
Total Primary CVOCs				9.85	0.433	30.6	10.2	0.156	0.312	0.949	0.245
1,1,1-Trichloroethane	µg/L	200	-	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	µg/L	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	µg/L	100	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Notes:
µg/L: micrograms per liter
- : Not Listed
MCL: Maximum Contaminant Level
RE: Re-sampled
RL: Reporting Limit
TC: Target Concentration
<: Analyte not detected above RL
Results above MCL or TC shown in bold

DQE Flags:
J: Estimated
UJ: Estimated Non-Detect

Methods:
8260B: Volatile Organic Compounds

TABLE 19
DUNN FIELD ANALYTICAL RESULTS SUMMARY, APRIL 2013
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

	Well ID			MW-225	MW-226	MW-227	MW-228	MW-230	MW-235	MW-237	MW-241
	LabID			L13050701-15	L13040809-27	L13040687-13	L13040687-16	L13050701-16	L13040808-09	L13040808-10	L13040808-11
	Date			5/9/2013	4/13/2013	4/12/2013	4/12/2013	5/9/2013	4/14/2013	4/14/2013	4/14/2013
Analyte	Units	MCL	TC								
1,1,2,2-Tetrachloroethane	µg/L	-	2.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	5	1.9	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	7	7	<1	<1	<1	<1	**12.6**	<1	1.93	<1
1,2-Dichloroethane	µg/L	5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	µg/L	5	3	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	80	12	0.17 J	<0.3	0.223 J	<0.3	0.288 J	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	70	35	<1	<1	<1	<1	0.562 J	<1	0.353 J	<1
Tetrachloroethene	µg/L	5	2.5	0.308 J	<1	0.405 J	<1	**33.7**	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	100	50	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5	5	<1	<1	0.339 J	<1	**60.1**	<1	<1	0.505 J
Vinyl chloride	µg/L	2	-	<1	<1	<1	<1	<1	<1	<1	<1
Total Primary CVOCs				0.478	0	0.967	0	107	0	2.28	0.505
1,1,1-Trichloroethane	µg/L	200	-	<1	<1	<1	<1	0.432 J	<1	<1	<1
1,1-Dichloroethane	µg/L	-	-	<1	<1	<1	<1	1.06	<1	0.22 J	<1
Chlorobenzene	µg/L	100	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Notes:
µg/L: micrograms per liter
- : Not Listed
MCL: Maximum Contaminant Level
RE: Re-sampled
RL: Reporting Limit
TC: Target Concentration
<: Analyte not detected above RL
Results above MCL or TC shown in bold

DQE Flags:
J: Estimated
UJ: Estimated Non-Detect

Methods:
8260B: Volatile Organic Compounds

TABLE 19
DUNN FIELD ANALYTICAL RESULTS SUMMARY, APRIL 2013
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

	Well ID			MW-242	MW-243	MW-244	MW-245	MW-246	MW-247	MW-248	MW-249
	LabID			L13040808-12	L13040808-13	L13040808-14	L13040808-17	L13040808-18	L13040808-19	L13040810-18	L13050701-17
	Date			4/14/2013	4/14/2013	4/14/2013	4/14/2013	4/14/2013	4/14/2013	4/13/2013	5/9/2013
Analyte	Units	MCL	TC								
1,1,2,2-Tetrachloroethane	µg/L	-	2.2	<0.5	1.76	1.24	0.988	**3.05**	0.646	<0.5	1.2
1,1,2-Trichloroethane	µg/L	5	1.9	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	7	7	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	µg/L	5	3	<1	<1	<1	<1	<1	<1	<1	1.67
Chloroform	µg/L	80	12	0.183 J	<0.3	0.205 J	0.292 J	<0.3	0.278 J	<0.3	10.5
cis-1,2-Dichloroethene	µg/L	70	35	<1	<1	<1	<1	<1	<1	<1	0.517 J
Tetrachloroethene	µg/L	5	2.5	<1	<1	0.408 J	<1	<1	<1	<1	0.478 J
trans-1,2-Dichloroethene	µg/L	100	50	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5	5	0.402 J	1.13	1.92	0.656 J	0.46 J	<1	<1	**7.3**
Vinyl chloride	µg/L	2	-	<1	<1	<1	<1	<1	<1	<1	<1
Total Primary CVOCs				0.585	2.89	3.77	1.94	3.51	0.924	0	21.7
1,1,1-Trichloroethane	µg/L	200	-	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	µg/L	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	µg/L	100	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Notes:
µg/L: micrograms per liter
- : Not Listed
MCL: Maximum Contaminant Level
RE: Re-sampled
RL: Reporting Limit
TC: Target Concentration
<: Analyte not detected above RL
Results above MCL or TC shown in bold

DQE Flags:
J: Estimated
UJ: Estimated Non-Detect

Methods:
8260B: Volatile Organic Compounds

TABLE 19
DUNN FIELD ANALYTICAL RESULTS SUMMARY, APRIL 2013
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

	Well ID			MW-250	MW-251
	LabID			L13040809-28	L13040808-20
	Date			4/13/2013	4/14/2013
Analyte	Units	MCL	TC		
1,1,2,2-Tetrachloroethane	µg/L	-	2.2	<0.5 UJ	<0.5
1,1,2-Trichloroethane	µg/L	5	1.9	<1	<1
1,1-Dichloroethene	µg/L	7	7	<1	4
1,2-Dichloroethane	µg/L	5	-	<0.5	<0.5
Carbon tetrachloride	µg/L	5	3	<1	<1
Chloroform	µg/L	80	12	<0.3	0.387
cis-1,2-Dichloroethene	µg/L	70	35	<1	<1
Tetrachloroethene	µg/L	5	2.5	<1	0.595 J
trans-1,2-Dichloroethene	µg/L	100	50	<1	<1
Trichloroethene	µg/L	5	5	<1	<1
Vinyl chloride	µg/L	2	-	<1	<1
Total Primary CVOCs				0	4.98
1,1,1-Trichloroethane	µg/L	200	-	<1	<1
1,1-Dichloroethane	µg/L	-	-	<1	0.603 J
Chlorobenzene	µg/L	100	-	<0.5	<0.5

Notes:
µg/L: micrograms per liter
- : Not Listed
MCL: Maximum Contaminant Level
RE: Re-sampled
RL: Reporting Limit
TC: Target Concentration
<: Analyte not detected above RL
Results above MCL or TC shown in bold

DQE Flags:
J: Estimated
UJ: Estimated Non-Detect

Methods:
8260B: Volatile Organic Compounds

TABLE 20
DUNN FIELD PRIMARY CVOC RESULTS, APRIL 2013
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

VOC Analyte	MCL (µg/L)	TC (µg/L)	Number of Locations with Analyte Above RL	Maximum Concentrations (µg/L)	Location of Maximum Concentration	Number of Locations with Analyte Above MCL	Number of Locations with Analyte Above TC
1,1,2,2-Tetrachloroethane	--	2.2	26	19.4	MW-159	--	12
1,1,2-Trichloroethane	5	1.9	1	4.15	MW-159	0	1
1,1-Dichloroethene	7	7	11	38.6	MW-130	4	4
1,2-Dichloroethane	5	--	0	0.485	MW-130	0	--
Carbon tetrachloride	5	3	1	1.67	MW-249	0	0
Chloroform	80	12	26	14.5	MW-151	0	3
cis-1,2-Dichloroethene	70	35	6	28.4	MW-159	0	0
Tetrachloroethene	5	2.5	8	98.5	MW-130	6	8
trans-1,2-Dichloroethene	100	50	1	3.41	MW-159	0	0
Trichloroethene	5	5	34	181	MW-159	21	21
Vinyl chloride	2	--	1	17.3	MW-159	1	--

Notes:
µg/L micrograms per liter
--: Not Listed
RL: reporting limit
MCL: Maximum Contaminant Level
TC: Target Concentration

TABLE 21
DUNN FIELD ANALYTICAL RESULTS SUMMARY, OCTOBER 2013
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

	Well ID			MW-03	MW-06	MW-15	MW-28	MW-31	MW-54	MW-57	MW-77
	Lab ID			L13100923-01	L13100923-02	L13100923-03	L13100923-04	L13100923-25	L13100923-26	L13100923-05	L13100923-06
	Date			10/10/2013	10/10/2013	10/10/2013	10/10/2013	10/10/2013	10/10/2013	10/10/2013	10/10/2013
Analyte	Units	MCL	TC								
1,1,2,2-Tetrachloroethane	µg/L	-	2.2	<0.5	<0.5	<0.5	<0.5	1.61	1.47	<0.5	**5.76**
1,1,2-Trichloroethane	µg/L	5	1.9	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	7	7	2.52	<1	<1	<1	1.91	<1	<1	<1
1,2-Dichloroethane	µg/L	5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	µg/L	5	3	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	80	12	<0.3	2.38	1.25	0.476	0.175 J	0.246 J	2.52	0.41
cis-1,2-Dichloroethene	µg/L	70	35	<1	0.572 J	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	5	2.5	**5.32**	<1	0.478 J	<1	**5.32**	0.436 J	<1	0.371 J
trans-1,2-Dichloroethene	µg/L	100	50	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5	5	3.95	0.848 J	0.537 J	<1	**7.15**	**5.02**	0.77 J	**15.6**
Vinyl chloride	µg/L	2	-	<1	<1	<1	<1	<1	<1	<1	<1
Total Primary CVOCs				11.8	3.8	2.27	0.476	16.2	7.17	3.29	22.1

Notes:
µg/L: micrograms per liter
- : Not Listed
MCL: Maximum Contaminant Level
RL: Reporting Limit
TC: Target Concentration
<: Analyte not detected above RL
Results above MCL or TC shown in bold

DQE Flags:
J: Estimated

Methods:
8260B: Volatile Organic Compounds

TABLE 21
DUNN FIELD ANALYTICAL RESULTS SUMMARY, OCTOBER 2013
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

	Well ID			MW-79	MW-87	MW-134	MW-144	MW-149	MW-150	MW-151	MW-157
	Lab ID			L13100923-27	L13100923-07	L13100923-08	L13100923-28	L13100923-29	L13100923-30	L13100923-31	L13100923-32
	Date			10/10/2013	10/10/2013	10/10/2013	10/10/2013	10/10/2013	10/10/2013	10/10/2013	10/10/2013
Analyte	Units	MCL	TC								
1,1,2,2-Tetrachloroethane	µg/L	-	2.2	<0.5	<0.5	<0.5	**17.5**	1.39	**13.8**	**2.48**	0.756 J
1,1,2-Trichloroethane	µg/L	5	1.9	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	7	7	1.93	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	µg/L	5	3	<1	<1	<1	<1	0.502 J	<1	0.709 J	<1
Chloroform	µg/L	80	12	<0.3	3.46	0.129 J	0.549	5.56	0.574	10.6	0.486
cis-1,2-Dichloroethene	µg/L	70	35	<1	<1	<1	1.08	1.1	0.743 J	0.801 J	<1
Tetrachloroethene	µg/L	5	2.5	**3.6**	<1	0.883 J	0.788 J	0.437 J	0.275 J	0.347 J	<1
trans-1,2-Dichloroethene	µg/L	100	50	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5	5	2.67	0.677 J	<1	**41.7**	2.88	**33.6**	**5.67**	0.837 J
Vinyl chloride	µg/L	2	-	<1	<1	<1	<1	<1	<1	<1	<1
Total Primary CVOCs				8.2	4.14	1.01	61.6	11.9	49.0	20.6	2.08

Notes:
µg/L: micrograms per liter
- : Not Listed
MCL: Maximum Contaminant Level
RL: Reporting Limit
TC: Target Concentration
<: Analyte not detected above RL
Results above MCL or TC shown in bold

DQE Flags:
J: Estimated

Methods:
8260B: Volatile Organic Compounds

TABLE 21
DUNN FIELD ANALYTICAL RESULTS SUMMARY, OCTOBER 2013
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

	Well ID			MW-159	MW-163	MW-164	MW-165A	MW-165	MW-166A	MW-166	MW-174
	Lab ID			L13100923-33	L13100923-34	L13100923-35	L13100923-37	L13100923-36	L13100923-39	L13100923-38	L13100923-11
	Date			10/10/2013	10/10/2013	10/10/2013	10/10/2013	10/10/2013	10/10/2013	10/10/2013	10/10/2013
Analyte	Units	MCL	TC								
1,1,2,2-Tetrachloroethane	µg/L	-	2.2	**18.2**	0.739	0.35 J	0.43 J	<0.5	0.936	**2.32**	<0.5
1,1,2-Trichloroethane	µg/L	5	1.9	**3.87**	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	7	7	4.66	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	µg/L	5	3	<1	<1	0.454 J	<1	<1	0.506 J	0.396 J	<1
Chloroform	µg/L	80	12	0.197 J	0.178 J	2.03	0.612	0.225 J	5.92	6.4	0.135 J
cis-1,2-Dichloroethene	µg/L	70	35	**47.3**	<1	0.474 J	<1	<1	0.42 J	1.52	<1
Tetrachloroethene	µg/L	5	2.5	0.789 J	0.856 J	<1	<1	<1	0.435 J	0.377 J	<1
trans-1,2-Dichloroethene	µg/L	100	50	3.41	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5	5	**129**	2.82	2.75	0.519 J	1.47	2.41	4.12	<1
Vinyl chloride	µg/L	2	-	**15.4**	<1	<1	<1	<1	<1	<1	<1
Total Primary CVOCs				223	4.59	6.06	1.56	1.70	10.6	15.1	0.135

Notes:
µg/L: micrograms per liter
- : Not Listed
MCL: Maximum Contaminant Level
RL: Reporting Limit
TC: Target Concentration
<: Analyte not detected above RL
Results above MCL or TC shown in bold

DQE Flags:
J: Estimated

Methods:
8260B: Volatile Organic Compounds

TABLE 21
DUNN FIELD ANALYTICAL RESULTS SUMMARY, OCTOBER 2013
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

	Well ID			MW-182	MW-184	MW-190	MW-220	MW-221	MW-222	MW-223	MW-224
	Lab ID			L13100994-01	L13100923-40	L13100923-41	L13100923-12	L13100923-15	L13100923-16	L13100923-17	L13100923-18
	Date			10/11/2013	10/10/2013	10/10/2013	10/10/2013	10/10/2013	10/10/2013	10/10/2013	10/10/2013
Analyte	Units	MCL	TC								
1,1,2,2-Tetrachloroethane	µg/L	-	2.2	<0.5	0.344 J	**9.08**	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	5	1.9	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	7	7	<1	<1	<1	1.16	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	µg/L	5	3	<1	0.879 J	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	80	12	<0.3	4.61	0.498	0.126 J	<0.3	<0.3	0.217 J	0.142 J
cis-1,2-Dichloroethene	µg/L	70	35	<1	0.442 J	0.401 J	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	5	2.5	<1	0.366 J	0.85 J	**2.92**	<1	<1	0.421 J	<1
trans-1,2-Dichloroethene	µg/L	100	50	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5	5	<1	2.29	**23.9**	4.24	<1	1.44	<1	<1
Vinyl chloride	µg/L	2	-	<1	<1	<1	<1	<1	<1	<1	<1
Total Primary CVOCs				0	8.93	34.7	8.45	0	1.44	0.638	0.142

Notes:
µg/L: micrograms per liter
- : Not Listed
MCL: Maximum Contaminant Level
RL: Reporting Limit
TC: Target Concentration
<: Analyte not detected above RL
Results above MCL or TC shown in bold

DQE Flags:
J: Estimated

Methods:
8260B: Volatile Organic Compounds

TABLE 21
DUNN FIELD ANALYTICAL RESULTS SUMMARY, OCTOBER 2013
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

	Well ID			MW-225	MW-226	MW-227	MW-228	MW-242	MW-243	MW-244	MW-245
	Lab ID			L13100923-19	L13100923-20	L13100923-21	L13100923-22	L13100923-42	L13100923-43	L13100923-44	L13100923-47
	Date			10/10/2013	10/10/2013	10/10/2013	10/10/2013	10/10/2013	10/10/2013	10/10/2013	10/10/2013
Analyte	Units	MCL	TC								
1,1,2,2-Tetrachloroethane	µg/L	-	2.2	<0.5	<0.5	<0.5	<0.5	<0.5	1.89	1.1	0.519
1,1,2-Trichloroethane	µg/L	5	1.9	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	7	7	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	µg/L	5	3	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	80	12	0.207 J	<0.3	0.356	<0.3	0.164 J	<0.3	0.216 J	<0.3
cis-1,2-Dichloroethene	µg/L	70	35	<1	<1	0.268 J	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	5	2.5	0.6 J	<1	0.318 J	<1	<1	<1	0.462 J	<1
trans-1,2-Dichloroethene	µg/L	100	50	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5	5	<1	<1	0.523 J	<1	0.5 J	0.949 J	1.78	0.606 J
Vinyl chloride	µg/L	2	-	<1	<1	<1	<1	<1	<1	<1	<1
Total Primary CVOCs				0.807	0	1.47	0	0.664	2.84	3.56	1.13

Notes:
µg/L: micrograms per liter
- : Not Listed
MCL: Maximum Contaminant Level
RL: Reporting Limit
TC: Target Concentration
<: Analyte not detected above RL
Results above MCL or TC shown in bold

DQE Flags:
J: Estimated

Methods:
8260B: Volatile Organic Compounds

TABLE 21
DUNN FIELD ANALYTICAL RESULTS SUMMARY, OCTOBER 2013
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

	Well ID			MW-246	MW-247	MW-249
	Lab ID			L13100923-48	L13100923-49	L13100923-50
	Date			10/10/2013	10/10/2013	10/10/2013
Analyte	Units	MCL	TC			
1,1,2,2-Tetrachloroethane	µg/L	-	2.2	**2.85**	0.664	1.51
1,1,2-Trichloroethane	µg/L	5	1.9	<1	<1	<1
1,1-Dichloroethene	µg/L	7	7	<1	<1	<1
1,2-Dichloroethane	µg/L	5	-	<0.5	<0.5	<0.5
Carbon tetrachloride	µg/L	5	3	<1	<1	2.03
Chloroform	µg/L	80	12	<0.3	0.133 J	11
cis-1,2-Dichloroethene	µg/L	70	35	<1	<1	0.41 J
Tetrachloroethene	µg/L	5	2.5	<1	<1	0.591 J
trans-1,2-Dichloroethene	µg/L	100	50	<1	<1	<1
Trichloroethene	µg/L	5	5	1.05	0.304 J	**7.3**
Vinyl chloride	µg/L	2	-	<1	<1	<1
Total Primary CVOCs				3.9	1.10	22.8

Notes:
µg/L: micrograms per liter
- : Not Listed
MCL: Maximum Contaminant Level
RL: Reporting Limit
TC: Target Concentration
<: Analyte not detected above RL
Results above MCL or TC shown in bold

DQE Flags:
J: Estimated

Methods:
8260B: Volatile Organic Compounds

TABLE 22
DUNN FIELD PRIMARY CVOC RESULTS, OCTOBER 2013
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

VOC Analyte	MCL (µg/L)	TC (µg/L)	Number of Locations with Analyte Above RL	Maximum Concentrations (µg/L)	Location of Maximum Concentration	Number of Locations with Analyte Above MCL	Number of Locations with Analyte Above TC
1,1,2,2-Tetrachloroethane	--	2.2	19	18.2	MW-159	--	8
1,1,2-Trichloroethane	5	1.9	1	3.87	MW-159	0	1
1,1-Dichloroethene	7	7	5	4.66	MW-159	0	0
1,2-Dichloroethane	5	--	0	-	-	0	--
Carbon tetrachloride	5	3	1	2.03	MW-249	0	0
Chloroform	80	12	19	11	MW-249	0	0
cis-1,2-Dichloroethene	70	35	4	47.3	MW-159	0	1
Tetrachloroethene	5	2.5	4	5.32	MW-31	2	4
trans-1,2-Dichloroethene	100	50	1	3.41	MW-159	0	0
Trichloroethene	5	5	22	129	MW-159	9	9
Vinyl chloride	2	--	1	15.4	MW-159	1	--

Notes:
µg/L: micrograms per liter
--: Not Listed
RL: reporting limit
MCL: Maximum Contaminant Level
TC: Target Concentration

TABLE 23
MAIN INSTALLATION MANN-KENDALL TREND ANALYSIS - PCE
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

Well	Plume	Coefficient of Variation	MK (S)	Confidence Factor	Concentration Trend	Sample Rounds	Detects	Max	Min
DR1-1	TTA-1 South	0.17	-22	92.40%	PD	12	12	3.3	1.77
DR1-1A	TTA-1 South	0.41	-64	99.95%	D	15	15	1.8	0.389
DR1-2	TTA-1 North	0.20	-21	91.30%	PD	12	12	2.5	1.3
DR1-3	TTA-1 South	1.08	-38	83.35%	NT	23	23	54.7	0.45
DR1-4	TTA-1 South	1.19	-44	98.40%	D	15	12	12.4	0.435
DR1-7	TTA-1 North	1.02	-59	100.00%	D	12	12	30	1.19
DR1-8	TTA-1 North	0.00	0	47.30%	ND	12	0		
DR2-1	TTA-2	0.38	-53	91.40%	PD	23	23	280	33.7
DR2-3	TTA-2	0.33	-50	95.65%	D	19	19	50.3	14
DR2-4	TTA-2	0.29	1	50.00%	NT	12	12	19.8	7.15
DR2-6	TTA-2	0.54	-63	98.60%	D	19	19	115	10.3
MW-16	Background	0.00	0	40.80%	ND	5	0		
MW-19	Background	0.00	0	40.80%	ND	5	0		
MW-22	Boundary	1.15	-2	59.20%	NT	5	1	0.79	0.79
MW-23	Boundary	0.00	0	40.80%	ND	5	0		
MW-24	Boundary	0.00	0	40.80%	ND	5	0		
MW-25A	-	0.29	-24	94.20%	PD	12	12	13.6	4.91
MW-26	TTA-2	0.33	17	71.00%	NT	19	19	52.5	13.7
MW-34	Sentinel	0.42	0	47.80%	S	19	12	0.753	0.269
MW-38	Sentinel	0.83	5	68.30%	NT	8	2	0.591	0.446
MW-39	West Central	0.71	-132	100.00%	D	20	20	158	1.34
MW-39A	West Central	0.69	-96	100.00%	D	19	19	234	25.6
MW-50	Boundary	0.45	10	99.20%	I	5	4	0.492	0.263
MW-52	-	0.27	-10	70.50%	S	13	13	10.8	4.7
MW-53	Background	0.42	0	40.80%	S	5	5	2.26	0.59
MW-55	Background	0.00	0	40.80%	ND	5	0		
MW-63A	Sentinel	0.74	21	96.40%	I	10	9	2.52	0.32
MW-63B	Sentinel	0.56	-1	50.00%	S	10	10	7.47	1.23
MW-64	TTA-2	0.13	7	59.60%	NT	17	17	23.8	16
MW-66A	Background	0.25	8	80.10%	NT	8	8	3.31	1.7
MW-88	TTA-2	0.38	94	100.00%	I	19	19	56.1	14
MW-89	Sentinel	1.12	23	97.70%	I	10	9	4.25	0.251
MW-90	Sentinel	0.55	-19	76.75%	S	17	17	80.8	19
MW-92	TTA-2	0.81	-41	91.80%	PD	19	18	193	0.499
MW-93	Boundary	0.10	-6	76.40%	S	7	1	0.16	0.16
MW-94A	West Central	0.28	-67	99.00%	D	19	19	52.2	15.3
MW-96	TTA-2	1.46	-53	99.60%	D	16	16	63	0.306
MW-97	South Central	0.00	0	48.40%	ND	17	0		
MW-98	West Central	0.21	88	99.90%	I	19	19	41.7	17
MW-99	Background	0.00	0	43.73%	ND	7	0		
MW-100B	TTA-1 North	1.22	36	88.80%	NT	19	13	101	0.706
MW-101B	TTA-1 South	0.64	-123	100.00%	D	19	19	239	2.72
MW-101T	TTA-1 South	0.69	-127	100.00%	D	19	19	251	1.22
MW-102B	Boundary	0.46	-2	55.70%	S	7	1	0.308	0.308
MW-103	North Central	0.00	0	46.43%	ND	10	0		
MW-104	North Central	0.00	0	47.30%	ND	12	0		
MW-107B	Sentinel	1.21	37	99.80%	I	11	11	62.5	0.291
MW-107T	Sentinel	1.04	31	99.80%	I	10	10	54	0.411
MW-108	Sentinel	0.29	-11	65.70%	S	17	17	7.25	2.67
MW-140	Sentinel	0.87	63	100.00%	I	12	11	2.8	0.38
MW-141	Sentinel	0.31	50	95.65%	I	19	19	31.9	5.9
MW-142	Building 835	0.00	0	47.30%	ND	12	0		
MW-143	Background	0.61	32	97.10%	I	13	4	0.431	0.353
MW-198	Building 835	0.00	0	47.60%	ND	13	0		
MW-199A	Sentinel	0.49	-4	58.95%	S	11	1	0.361	0.361
MW-199B	Building 835	2.90	-12	67.20%	NT	17	17	23.4	0.258

TABLE 23
MAIN INSTALLATION MANN-KENDALL TREND ANALYSIS - PCE
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

Well	Plume	Coefficient of Variation	MK (S)	Confidence Factor	Concentration Trend	Sample Rounds	Detects	Max	Min
MW-200	West Central	0.78	-81	100.00%	D	17	17	132	3
MW-202A	Sentinel	0.93	46	99.80%	I	13	13	2.28	0.257
MW-202B	Sentinel	0.46	85	100.00%	I	17	17	27.1	3.82
MW-204A	West Central	0.11	31	91.00%	PI	16	16	50.2	36.2
MW-204B	West Central	0.30	-61	99.75%	D	16	16	29.4	11.8
MW-205A	West Central	0.72	-96	100.00%	D	16	16	180	26.4
MW-205B	West Central	0.86	-64	99.80%	D	16	16	149	19.7
MW-206A	West Central	0.77	-68	99.90%	D	16	16	114	14
MW-206B	West Central	0.72	-51	98.85%	D	16	16	77.5	12.3
MW-207A	Sentinel	0.28	70	99.90%	I	16	16	18.6	7.92
MW-207B	Sentinel	0.92	-8	62.20%	S	16	16	124	11.5
MW-208A	West Central	0.81	-66	100.00%	D	15	15	198	3.94
MW-208B	West Central	0.83	92	100.00%	I	16	16	26.5	1.68
MW-209A	Sentinel	0.54	2	52.70%	NT	12	3	0.354	0.323
MW-209B	Building 835	0.50	68	99.90%	I	16	11	0.557	0.278
MW-210A	Sentinel	0.57	-106	100.00%	D	16	16	38.2	5.79
MW-210B	West Central	0.63	-114	100.00%	D	16	16	32.4	3.59
MW-211	Sentinel	0.66	17	89.10%	NT	11	7	0.811	0.275
MW-214A	North Central	0.28	-9	66.60%	S	14	14	11.1	4.51
MW-214B	North Central	0.30	2	52.15%	NT	14	14	10	4
MW-215A	-	0.20	-15	82.75%	S	12	12	7.01	3.51
MW-215B	-	0.22	48	100.00%	I	12	12	6.24	2.1
MW-216	South Central	3.17	1	50.00%	NT	11	2	34.2	0.285
MW-217	TTA-2	0.17	-34	93.00%	PD	16	16	34.7	17.9
MW-218	TTA-2	0.15	28	88.60%	NT	16	16	20.3	11.2
MW-219	Boundary	0.61	-10	65.50%	S	16	16	53.6	4.55
MW-229	Sentinel	0.00	0	45.20%	ND	8	0		
MW-252	Sentinel	1.47	2	54.00%	NT	9	5	5.64	0.273
MW-253	Sentinel	0.00	0	46.00%	ND	9	0		
MW-254	Sentinel	0.36	4	61.90%	NT	9	8	0.905	0.573
MW-255	Sentinel	0.00	0	46.00%	ND	9	0		
MW-256	Sentinel	0.62	28	99.90%	I	9	9	41.9	8.64
MW-257	Building 835	0.00	0	37.50%	ND	4	0		
MW-258	North Central	0.22	6	95.80%	I	4	4	32.2	19.4
MW-259	TTA-2	0.06	5	89.55%	NT	4	4	17	15.1
MW-260	North Central	0.00	0	0.00%	N/A	1	0		
MW-261	South Central	0.00	0	0.00%	N/A	1	0		
PMW101-03A	TTA-1 South	0.89	-42	99.50%	D	13	13	112	0.766
PMW101-03B	TTA-1 South	1.09	-26	93.60%	PD	13	13	194	3.3
PMW101-06A	TTA-1 South	0.62	-28	95.00%	D	13	13	7.26	0.341
PMW101-06B	TTA-1 South	1.31	0	47.60%	NT	13	9	37.6	0.294
PMW21-03	TTA-1 North	0.72	49	96.60%	I	18	18	185	18.7
PMW21-05	TTA-1 North	0.56	3	53.00%	NT	18	18	61.2	6.37
PMW92-02	TTA-2	3.21	-37	98.70%	D	13	7	157	0.327
PZ-03	-	0.41	-21	96.40%	D	11	11	5	0.523

Notes:
I: Increasing
S: Stable
D: Decreasing
N/A: Insufficent Data
PI: Probably Increasing
NT: No Trend
PD: Probably Decreasing
ND: Not Detected

TABLE 24
MAIN INSTALLATION MANN-KENDALL TREND ANALYSIS - TCE
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

Well	Plume	Coefficient of Variation	MK (S)	Confidence Factor	Concentration Trend	Sample Rounds	Detects	Max	Min
DR1-1	TTA-1 South	0.34	12	77.00%	NT	12	9	0.399	0.255
DR1-1A	TTA-1 South	0.42	-65	100.00%	D	15	15	6.9	0.973
DR1-2	TTA-1 North	1.84	1	50.00%	NT	12	1	1.83	1.83
DR1-3	TTA-1 South	0.58	-49	89.60%	S	23	22	5.13	0.303
DR1-4	TTA-1 South	0.71	-35	95.40%	D	15	12	1.69	0.252
DR1-7	TTA-1 North	0.70	-48	100.00%	D	12	10	2.2	0.441
DR1-8	TTA-1 North	1.20	1	50.00%	NT	12	2	1.03	0.341
DR2-1	TTA-2	0.34	-107	99.80%	D	23	23	12.7	2.61
DR2-3	TTA-2	0.17	-97	100.00%	D	19	19	2.7	1.29
DR2-4	TTA-2	0.21	-44	99.90%	D	12	12	2.2	0.898
DR2-6	TTA-2	0.50	-47	94.60%	PD	19	19	19.7	2.2
MW-16	Background	0.00	0	40.80%	ND	5	0		
MW-19	Background	1.02	4	75.80%	NT	5	1	0.651	0.651
MW-22	Boundary	0.74	-3	67.50%	S	5	2	0.531	0.329
MW-23	Boundary	0.00	0	40.80%	ND	5	0		
MW-24	Boundary	0.00	0	40.80%	ND	5	0		
MW-25A	-	0.35	-37	99.45%	D	12	11	0.644	0.301
MW-26	TTA-2	0.21	-59	97.90%	D	19	19	2.5	1.24
MW-34	Sentinel	0.46	41	98.70%	I	19	17	1.48	0.29
MW-38	Sentinel	1.19	5	68.30%	NT	8	5	4.86	0.291
MW-39	West Central	0.23	48	93.60%	PI	20	20	13.9	5.96
MW-39A	West Central	0.31	18	72.15%	NT	19	19	11.8	4.04
MW-50	Boundary	0.43	6	88.30%	NT	5	5	2.65	1.1
MW-52	-	0.27	-1	50.00%	S	13	13	1.4	0.34
MW-53	Background	0.00	0	40.80%	ND	5	0		
MW-55	Background	0.00	0	40.80%	ND	5	0		
MW-63A	Sentinel	0.44	21	96.40%	I	10	10	1.83	0.432
MW-63B	Sentinel	0.49	15	89.20%	NT	10	10	4.56	0.92
MW-64	TTA-2	0.13	-6	58.00%	S	17	17	41.5	26.1
MW-66A	Background	0.00	0	45.20%	ND	8	0		
MW-88	TTA-2	0.15	-10	62.20%	S	19	19	4.8	2.7
MW-89	Sentinel	0.22	-11	81.00%	S	10	10	2.13	1.1
MW-90	Sentinel	0.38	6	58.00%	NT	17	17	8.55	2.4
MW-92	TTA-2	0.88	50	95.65%	I	19	17	26.7	1.72
MW-93	Boundary	0.00	0	43.73%	ND	7	0		
MW-94A	West Central	0.23	101	100.00%	I	19	19	10.4	4.2
MW-96	TTA-2	0.52	-17	78.20%	S	15	2	0.419	0.22
MW-97	South Central	0.57	128	100.00%	I	17	17	70.7	2.2
MW-98	West Central	0.22	121	100.00%	I	19	19	3.44	1.2
MW-99	Background	0.40	-6	76.40%	S	7	1	0.28	0.28
MW-100B	TTA-1 North	1.70	10	62.20%	NT	19	13	43.1	0.309
MW-101B	TTA-1 South	1.25	-2	51.35%	NT	19	13	4.15	0.293
MW-101T	TTA-1 South	1.05	8	59.55%	NT	19	12	2.25	0.298
MW-102B	Boundary	0.00	0	43.73%	ND	7	0		
MW-103	North Central	0.39	28	99.35%	I	10	10	10.6	3.98
MW-104	North Central	0.21	32	98.40%	I	12	12	22	11
MW-107B	Sentinel	0.46	41	100.00%	I	11	11	4.15	0.585
MW-107T	Sentinel	0.34	27	99.20%	I	10	10	3.72	0.999
MW-108	Sentinel	0.18	0	48.40%	S	17	17	38.4	15
MW-140	Sentinel	0.24	25	94.95%	PI	12	12	1.73	0.54
MW-141	Sentinel	0.26	112	100.00%	I	19	19	4.32	1.2
MW-142	Building 835	1.12	44	99.90%	I	12	12	11	0.3
MW-143	Background	0.92	61	100.00%	I	13	10	13.5	0.31
MW-198	Building 835	0.92	-46	99.80%	D	13	13	25.8	0.44
MW-199A	Sentinel	0.91	36	99.75%	I	11	5	1	0.419
MW-199B	Building 835	0.27	-51	98.10%	D	17	17	136	53.8

TABLE 24
MAIN INSTALLATION MANN-KENDALL TREND ANALYSIS - TCE
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

Well	Plume	Coefficient of Variation	MK (S)	Confidence Factor	Concentration Trend	Sample Rounds	Detects	Max	Min
MW-200	West Central	0.24	7	59.60%	NT	17	17	8.06	3.42
MW-202A	Sentinel	0.16	-16	81.60%	S	13	13	2.22	1.21
MW-202B	Sentinel	0.47	110	100.00%	I	17	17	5.16	0.811
MW-204A	West Central	0.32	-48	98.40%	D	16	16	1.83	0.695
MW-204B	West Central	0.25	32	91.70%	PI	16	16	5.92	2.37
MW-205A	West Central	0.19	59	99.65%	I	16	16	9.18	3.69
MW-205B	West Central	0.17	20	80.10%	NT	16	16	11.8	5.15
MW-206A	West Central	0.15	-26	86.70%	S	16	16	13.9	7.26
MW-206B	West Central	0.20	-74	100.00%	D	16	16	11.7	5.53
MW-207A	Sentinel	0.41	-11	67.10%	S	16	16	52.7	15.7
MW-207B	Sentinel	0.78	-50	98.70%	D	16	16	109	3.21
MW-208A	West Central	0.40	72	100.00%	I	15	15	20.2	6.48
MW-208B	West Central	0.44	18	77.50%	NT	16	16	45.1	12.7
MW-209A	Sentinel	1.22	44	99.90%	I	12	12	4.97	0.404
MW-209B	Building 835	0.42	84	100.00%	I	16	16	33.9	6.4
MW-210A	Sentinel	0.12	-48	98.40%	D	16	16	6.37	4.43
MW-210B	West Central	0.14	-10	65.50%	S	16	16	10.7	6.76
MW-211	Sentinel	0.50	-1	50.00%	S	11	11	1.38	0.39
MW-214A	North Central	0.51	-37	97.60%	D	14	14	7.88	1.95
MW-214B	North Central	0.42	-40	98.45%	D	14	14	5.65	1.41
MW-215A	-	0.45	-38	99.60%	D	12	12	10.2	2.08
MW-215B	-	0.10	10	72.70%	NT	12	12	1.76	1.25
MW-216	South Central	1.40	15	85.90%	NT	11	3	1.5	0.363
MW-217	TTA-2	0.17	48	98.40%	I	16	16	46.1	25.6
MW-218	TTA-2	0.10	-11	67.10%	S	16	16	49.2	32.8
MW-219	Boundary	0.52	-6	58.80%	S	16	16	3.74	0.439
MW-229	Sentinel	0.00	0	45.20%	ND	8	0		
MW-252	Sentinel	1.58	-5	65.65%	NT	9	3	3.73	0.891
MW-253	Sentinel	1.28	-10	82.10%	NT	9	5	9.81	0.344
MW-254	Sentinel	0.16	19	97.00%	I	9	9	3.13	1.8
MW-255	Sentinel	0.39	20	97.80%	I	9	8	0.586	0.269
MW-256	Sentinel	0.74	34	100.00%	I	9	9	16	2.43
MW-257	Building 835	0.00	0	37.50%	ND	4	0		
MW-258	North Central	0.20	0	37.50%	S	4	4	93	57.7
MW-259	TTA-2	0.22	6	95.80%	I	4	4	23.9	15.7
MW-260	North Central	0.00	0	0.00%	N/A	1	1	3.97	3.97
MW-261	South Central	0.00	0	0.00%	N/A	1	1	2.71	2.71
PMW101-03A	TTA-1 South	1.01	39	99.10%	I	13	7	1.59	0.278
PMW101-03B	TTA-1 South	0.41	-16	81.60%	S	13	13	3.31	0.958
PMW101-06A	TTA-1 South	0.71	26	93.60%	PI	13	4	0.607	0.252
PMW101-06B	TTA-1 South	1.59	4	57.10%	NT	13	8	18.6	1.04
PMW21-03	TTA-1 North	0.73	55	98.00%	I	18	18	58	6.73
PMW21-05	TTA-1 North	0.94	-121	100.00%	D	18	18	34.6	0.763
PMW92-02	TTA-2	1.93	-30	96.20%	D	13	5	5.81	0.283
PZ-03	-	0.94	38	100.00%	I	11	11	5.83	0.321

Notes:
I: Increasing
S: Stable
D: Decreasing
N/A: Insufficent Data
PI: Probably Increasing
NT: No Trend
PD: Probably Decreasing
ND: Not Detected

TABLE 25
MAIN INSTALLATION MANN-KENDALL TREND ANALYSIS - cDCE
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

Well	Plume	Coefficient of Variation	MK (S)	Confidence Factor (CF)	Concentration Trend	Sample Rounds	Detects	Max	Min
DR1-1	TTA-1 South	0.35	14	81.00%	NT	12	11	1.52	0.734
DR1-1A	TTA-1 South	0.63	-68	100.00%	D	15	12	1	0.262
DR1-2	TTA-1 North	0.21	0	47.30%	S	12	12	0.856	0.369
DR1-3	TTA-1 South	1.34	-22	70.80%	NT	23	13	32.9	0.22
DR1-4	TTA-1 South	2.01	3	53.90%	NT	15	6	8.09	0.523
DR1-7	TTA-1 North	0.27	-14	81.00%	S	12	12	0.787	0.286
DR1-8	TTA-1 North	0.00	0	47.30%	ND	12	0		
DR2-1	TTA-2	0.89	-87	98.90%	D	23	23	86.4	1.85
DR2-3	TTA-2	0.54	-64	98.70%	D	19	18	1.8	0.36
DR2-4	TTA-2	0.46	19	88.85%	NT	12	8	0.414	0.22
DR2-6	TTA-2	0.55	55	97.10%	I	19	19	50.5	0.69
MW-16	Background	0.00	0	40.80%	ND	5	0		
MW-19	Background	0.00	0	40.80%	ND	5	0		
MW-22	Boundary	0.88	-2	59.20%	S	5	1	0.527	0.527
MW-23	Boundary	0.00	0	40.80%	ND	5	0		
MW-24	Boundary	0.00	0	40.80%	ND	5	0		
MW-25A	-	0.00	0	47.30%	ND	12	0		
MW-26	TTA-2	0.47	1	50.00%	NT	19	18	1.23	0.295
MW-34	Sentinel	0.00	0	47.80%	ND	19	0		
MW-38	Sentinel	0.00	0	45.20%	ND	8	0		
MW-39	West Central	1.16	95	99.90%	I	20	17	21.3	0.435
MW-39A	West Central	1.12	80	99.75%	I	19	17	40.8	0.362
MW-50	Boundary	0.30	-2	59.20%	S	5	5	0.617	0.297
MW-52	-	0.20	-6	61.70%	S	13	13	0.993	0.562
MW-53	Background	0.00	0	40.80%	ND	5	0		
MW-55	Background	0.00	0	40.80%	ND	5	0		
MW-63A	Sentinel	0.00	0	46.43%	ND	10	0		
MW-63B	Sentinel	0.56	10	78.40%	NT	10	4	0.401	0.253
MW-64	TTA-2	0.15	60	99.30%	I	17	17	0.544	0.31
MW-66A	Background	0.00	0	45.20%	ND	8	0		
MW-88	TTA-2	0.44	69	99.20%	I	19	19	2.54	0.325
MW-89	Sentinel	0.54	-22	97.05%	D	10	4	0.404	0.27
MW-90	Sentinel	0.27	33	90.50%	PI	17	16	0.484	0.267
MW-92	TTA-2	0.72	26	80.65%	NT	19	19	123	7.32
MW-93	Boundary	0.00	0	43.73%	ND	7	0		
MW-94A	West Central	0.67	65	98.80%	I	19	19	3.41	0.42
MW-96	TTA-2	2.35	-41	97.70%	D	16	10	19	0.34
MW-97	South Central	0.00	0	48.40%	ND	17	0		
MW-98	West Central	2.59	96	100.00%	I	19	13	8.6	0.22
MW-99	Background	0.00	0	43.73%	ND	7	0		
MW-100B	TTA-1 North	0.87	-99	100.00%	D	19	19	160	5.94
MW-101B	TTA-1 South	1.26	-17	71.00%	NT	19	15	35.6	0.253
MW-101T	TTA-1 South	1.79	9	60.90%	NT	19	15	51.2	0.266
MW-102B	Boundary	0.00	0	43.73%	ND	7	0		
MW-103	North Central	0.26	-3	56.90%	S	10	9	0.44	0.314
MW-104	North Central	0.28	36	99.30%	I	12	12	0.833	0.305
MW-107B	Sentinel	0.58	-11	77.70%	S	11	3	0.449	0.252
MW-107T	Sentinel	0.52	-16	90.70%	PD	10	3	0.385	0.257
MW-108	Sentinel	0.20	48	97.40%	I	17	17	0.927	0.33
MW-140	Sentinel	0.40	-11	74.85%	S	12	4	0.294	0.22
MW-141	Sentinel	0.00	0	48.60%	ND	19	0		
MW-142	Building 835	0.00	0	47.30%	ND	12	0		
MW-143	Background	0.00	0	47.60%	ND	13	0		
MW-198	Building 835	0.00	0	47.60%	ND	13	0		
MW-199A	Sentinel	0.00	0	46.87%	ND	11	0		
MW-199B	Building 835	0.00	0	48.40%	ND	17	0		

TABLE 25
MAIN INSTALLATION MANN-KENDALL TREND ANALYSIS - cDCE
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

Well	Plume	Coefficient of Variation	MK (S)	Confidence Factor (CF)	Concentration Trend	Sample Rounds	Detects	Max	Min
MW-200	West Central	1.16	52	98.30%	I	17	17	16.7	0.303
MW-202A	Sentinel	0.26	-6	61.70%	S	13	1	0.251	0.251
MW-202B	Sentinel	0.61	65	99.65%	I	17	7	0.485	0.299
MW-204A	West Central	1.03	20	80.10%	NT	16	16	6.88	0.528
MW-204B	West Central	0.85	-18	77.50%	S	16	16	6.13	0.793
MW-205A	West Central	0.92	34	93.00%	PI	16	16	31.8	0.337
MW-205B	West Central	0.93	-22	82.50%	S	16	16	43	0.546
MW-206A	West Central	0.92	28	88.60%	NT	16	16	18.6	0.607
MW-206B	West Central	0.89	6	58.80%	NT	16	16	11	0.582
MW-207A	Sentinel	0.31	22	82.50%	NT	16	16	0.974	0.382
MW-207B	Sentinel	0.88	42	96.80%	I	16	7	0.9	0.269
MW-208A	West Central	1.04	47	99.00%	I	15	15	41	0.517
MW-208B	West Central	0.26	0	48.20%	S	16	16	2.14	0.932
MW-209A	Sentinel	0.00	0	47.30%	ND	12	0		
MW-209B	Building 835	0.00	0	48.20%	ND	16	0		
MW-210A	Sentinel	0.39	74	100.00%	I	16	16	2.25	0.727
MW-210B	West Central	0.32	27	87.65%	NT	16	16	1.3	0.433
MW-211	Sentinel	0.00	0	46.87%	ND	11	0		
MW-214A	North Central	0.00	0	47.80%	ND	14	0		
MW-214B	North Central	0.00	0	47.80%	ND	14	0		
MW-215A	-	0.00	0	47.30%	ND	12	0		
MW-215B	-	0.00	0	47.30%	ND	12	0		
MW-216	South Central	0.35	-2	53.00%	S	11	1	0.288	0.288
MW-217	TTA-2	0.75	-60	99.70%	D	16	16	4.8	0.519
MW-218	TTA-2	0.25	-47	98.15%	D	16	15	0.508	0.252
MW-219	Boundary	0.69	15	73.25%	NT	16	13	2.48	0.393
MW-229	Sentinel	0.00	0	45.20%	ND	8	0		
MW-252	Sentinel	0.00	0	46.00%	ND	9	0		
MW-253	Sentinel	0.00	0	46.00%	ND	9	0		
MW-254	Sentinel	0.45	22	98.80%	I	9	5	0.347	0.299
MW-255	Sentinel	0.00	0	46.00%	ND	9	0		
MW-256	Sentinel	0.36	6	69.40%	NT	9	1	0.28	0.28
MW-257	Building 835	0.00	0	37.50%	ND	4	0		
MW-258	North Central	0.15	2	62.50%	NT	4	4	2.54	1.75
MW-259	TTA-2	0.44	3	72.90%	NT	4	2	0.278	0.277
MW-260	North Central	0.00	0	0.00%	N/A	1	0		
MW-261	South Central	0.00	0	0.00%	N/A	1	0		
PMW101-03A	TTA-1 South	1.24	32	97.10%	I	13	9	73	0.637
PMW101-03B	TTA-1 South	0.96	-4	57.10%	S	13	11	91.5	0.637
PMW101-06A	TTA-1 South	1.05	17	83.15%	NT	13	10	3.63	0.36
PMW101-06B	TTA-1 South	0.82	-18	84.70%	S	13	12	45.8	0.687
PMW21-03	TTA-1 North	2.55	66	99.40%	I	18	18	57.4	0.355
PMW21-05	TTA-1 North	0.72	-19	75.00%	S	18	14	1.47	0.278
PMW92-02	TTA-2	0.35	-5	59.40%	S	13	13	184	10.9
PZ-03	-	0.41	-3	56.90%	S	11	2	0.287	0.26

Notes:
I: Increasing
S: Stable
D: Decreasing
N/A: Insufficent Data
PI: Probably Increasing
NT: No Trend
PD: Probably Decreasing
ND: Not Detected

TABLE 26
MAIN INSTALLATION MANN-KENDALL TREND ANALYSIS - CT
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

Well	Plume	Coefficient of Variation	MK (S)	Confidence Factor (CF)	Concentration Trend	Sample Rounds	Detects	Max	Min
DR2-1	TTA-2	0.46	-30	77.60%	S	23	23	37.2	1.26
DR2-3	TTA-2	0.25	-5	55.50%	S	19	19	7.38	2.87
DR2-4	TTA-2	0.17	-2	52.70%	S	12	12	4.56	2.2
DR2-6	TTA-2	0.70	-35	88.10%	S	19	18	92	7.2
MW-26	TTA-2	0.26	-18	72.15%	S	19	19	9.99	4.38
MW-64	TTA-2	0.14	-49	97.65%	D	17	17	3.68	2.3
MW-88	TTA-2	0.41	75	99.60%	I	19	19	12.2	2.66
MW-92	TTA-2	1.41	-104	100.00%	D	19	8	27.2	6.3
MW-96	TTA-2	2.63	-35	95.40%	D	16	16	150	0.69
MW-217	TTA-2	0.42	-42	96.80%	D	16	16	96.3	23.9
MW-218	TTA-2	0.33	-66	99.90%	D	16	16	17.7	6.73
MW-259	TTA-2	0.04	2	62.50%	NT	4	4	5.12	4.69
PMW92-02	TTA-2	3.27	-23	90.80%	PD	13	2	19.8	0.462

Notes:
I: Increasing
S: Stable
D: Decreasing
N/A: Insufficent Data
PI: Probably Increasing
NT: No Trend
PD: Probably Decreasing
ND: Not Detected

TABLE 27
MAIN INSTALLATION MANN-KENDALL TREND ANALYSIS - CF
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

Well	Plume	Coefficient of Variation	MK (S)	Confidence Factor (CF)	Concentration Trend	Sample Rounds	Detects	Max	Min
DR2-1	TTA-2	0.38	-120	99.95%	D	23	23	16	3.76
DR2-3	TTA-2	0.38	-98	100.00%	D	19	19	1.9	0.567
DR2-4	TTA-2	0.19	-36	99.30%	D	12	12	1.06	0.575
DR2-6	TTA-2	0.70	-53	96.60%	D	19	19	43.1	1.5
MW-26	TTA-2	0.33	-69	99.20%	D	19	19	1.8	0.588
MW-64	TTA-2	0.19	33	90.50%	PI	17	17	1.45	0.818
MW-88	TTA-2	0.37	2	51.35%	NT	19	19	2.5	0.406
MW-92	TTA-2	1.22	-86	99.90%	D	19	8	13.2	7.6
MW-96	TTA-2	2.46	-37	96.30%	D	16	16	33	0.21
MW-217	TTA-2	0.48	-56	99.40%	D	16	16	13.4	3.54
MW-218	TTA-2	0.08	-7	60.50%	S	16	16	3.15	2.28
MW-259	TTA-2	0.06	2	62.50%	NT	4	4	3.08	2.69
PMW92-02	TTA-2	1.60	-46	99.80%	D	13	5	12.2	0.751

Notes:
I: Increasing
S: Stable
D: Decreasing
N/A: Insufficent Data
PI: Probably Increasing
NT: No Trend
PD: Probably Decreasing
ND: Not Detected

TABLE 28
MAIN INSTALLATION TRENDS AT WELLS EXCEEDING MCLS
ANNUAL LONG-TERM MONITORING REPORT -2013
Defense Depot Memphis, Tennessee

		Analyte	PCE		TCE		CT	
		Units	µg/L		µg/L		µg/L	
		MCL	5		5		5	
Well ID	Area	Date	Concentration	Trend	Concentration	Trend	Concentration	Trend
DR2-1	TTA-2	10/12/2013	235.0	PD	5.5	D	37.2	S
PMW21-03	TTA-1N	10/12/2013	115.0	I	33.4	I	-	-
MW-258	N-C	10/12/2013	32.2	I	85.8	S	-	-
MW-92	TTA-2	10/12/2013	79.7	PD	10.8	I	-	-
MW-199B	B-835	10/11/2013	-	-	74.6	D	-	-
MW-100B	TTA-1N	10/12/2013	68.4	NT	7.5	NT	-	-
MW-97	S-C	10/11/2013	-	-	67.8	I	-	-
MW-219	Bndy	10/12/2013	53.6	S	-	-	-	-
MW-88	TTA-2	10/12/2013	45.2	I	-	-	11.0	I
PMW101-03B	TTA-1S	10/12/2013	42.4	PD	-	-	-	-
MW-217	TTA-2	10/12/2013	29.6	PD	42.1	I	40.4	D
MW-98	W-C	10/11/2013	40.5	I	-	-	-	-
MW-218	TTA-2	10/12/2013	18.9	NT	40.3	S	8.8	D
MW-204A	W-C	10/11/2013	38.6	PI	-	-	-	-
MW-256	Sent	10/12/2013	37.7	I	14.0	I	-	-
PMW101-03A	TTA-1S	10/12/2013	35.0	D	-	-	-	-
MW-94A	W-C	10/12/2013	32.8	D	10.4	I	-	-
MW-141	Sent	10/11/2013	31.9	I	-	-	-	-
MW-108	Sent	10/12/2013	-	-	30.3	S	-	-
MW-39A	W-C	10/11/2013	29.5	D	7.1	NT	-	-
MW-209B	B-835	10/11/2013	-	-	28.8	I	-	-
MW-64	TTA-2	10/12/2013	18.0	NT	28.0	S	-	-
MW-205A	W-C	10/11/2013	26.4	D	6.8	I	-	-
MW-202B	Sent	10/11/2013	25.5	I	-	-	-	-
MW-107B	Sent	10/12/2013	25.1	I	-	-	-	-
MW-26	TTA-2	10/12/2013	25.0	NT	-	-	-	-
MW-259	TTA-2	10/12/2013	17.0	NT	23.9	I	5.0	NT
MW-205B	W-C	10/11/2013	23.5	D	8.9	NT	-	-
MW-208B	W-C	10/11/2013	22.2	I	12.7	NT	-	-
MW-104	N-C	10/12/2013	-	-	22.0	I	-	-
MW-90	Sent	10/11/2013	21.5	S	5.2	NT	-	-
MW-206B	W-C	10/11/2013	20.8	D	5.5	D	-	-
MW-206A	W-C	10/11/2013	19.9	D	7.3	S	-	-
MW-207A	Sent	10/12/2013	18.1	I	18.7	S	-	-
MW-107T	Sent	10/12/2013	18.3	I	-	-	-	-
PMW101-06B	TTA-1S	10/12/2013	16.0	NT	-	-	-	-
DR2-3	TTA-2	10/12/2013	14.0	D	-	-	-	-
MW-204B	W-C	10/11/2013	13.9	D	-	-	-	-
MW-207B	Sent	10/12/2013	12.5	S	-	-	-	-
PMW21-05	TTA-1N	10/12/2013	12.5	NT	-	-	-	-
MW-39	W-C	10/11/2013	-	-	11.6	PI	-	-
MW-103	N-C	10/12/2013	-	-	10.6	I	-	-
DR2-6	TTA-2	10/12/2013	10.3	D	-	-	-	-
MW-143	B-835	10/12/2013	-	-	10.0	I	-	-
DR2-4	TTA-2	10/12/2013	9.6	NT	-	-	-	-
MW-200	W-C	10/12/2013	7.8	D	6.2	NT	-	-
MW-52	-	10/11/2013	7.2	S	-	-	-	-
MW-215A	-	10/12/2013	6.9	S	-	-	-	-
MW-210B	W-C	10/11/2013	-	-	6.9	S	-	-

TABLE 28
MAIN INSTALLATION TRENDS AT WELLS EXCEEDING MCLS
ANNUAL LONG-TERM MONITORING REPORT -2013
Defense Depot Memphis, Tennessee

		Analyte	PCE		TCE		CT	
		Units	µg/L		µg/L		µg/L	
		MCL	5		5		5	
Well ID	Area	Date	Concentration	Trend	Concentration	Trend	Concentration	Trend
MW-214A	N-C	10/12/2013	6.6	S	-	-	-	-
PZ-03	-	10/11/2013	-	-	5.8	I	-	-
MW-215B	-	10/12/2013	6.2	I	-	-	-	-
MW-214B	N-C	10/12/2013	6.0	NT	-	-	-	-
MW-25A	-	10/11/2013	5.8	PD	-	-	-	-
MW-210A	Sent	10/11/2013	5.8	D		D	-	-
MW-142	B-835	10/11/2013	-	-	5.8	I	-	-

Notes:
I: Increasing
S: Stable
D: Decreasing
N/A: Insufficent Data
MCL: Maximum Contaminant Level
µg/L: micrograms per liter
PI: Probably Increasing
NT: No Trend
PD: Probably Decreasing
ND: Not Detected

TABLE 29
DUNN FIELD MANN-KENDALL TREND ANALYSIS - TeCA
ANNUAL LONG-TERM MONITORING REPORT – 2013
Defense Depot Memphis, Tennessee

Well	Well Classification	Coefficient of Variation	MK (S)	Confidence Factor (CF)	Concentration Trend	Sample Rounds	Detects	Max	Min
MW-03	Performance-FSVE	1.98	-23	88.30%	NT	14	5	96.2	0.425
MW-04	Background	0.58	3	61.40%	NT	7	1	0.23	0.23
MW-06	Performance-FSVE	2.69	-116	100.00%	D	17	15	613	0.486
MW-07	Background-NE	0.47	-7	60.50%	ND	17	0		
MW-08	Background-NE	0.78	1	50.00%	NT	6	1	0.26	0.26
MW-13	Background	2.02	3	57.95%	NT	10	3	2.64	0.66
MW-15	Performance	2.12	-73	100.00%	D	16	12	273	0.239
MW-28	Background	0.00	0	37.50%	ND	4	0		
MW-31	Performance	1.81	42	92.30%	PI	28	3	1.61	0.262
MW-33	Performance	0.48	-3	54.30%	ND	15	0		
MW-44	Performance	1.75	42	93.90%	PI	20	2	1.33	1.21
MW-54	Performance	1.36	-303	100.00%	D	31	31	4700	1.47
MW-57	Performance	0.42	19	70.45%	ND	23	0		
MW-58	Performance	0.64	7	86.40%	NT	6	1	0.213	0.213
MW-67	Sentinel	0.60	-1	50.00%	S	17	1	0.251	0.251
MW-68	Performance	2.63	-50	98.70%	D	24	9	81	0.24
MW-69	Performance	2.70	11	67.10%	NT	22	3	5.51	0.229
MW-70	Performance	1.45	-176	100.00%	D	31	29	9200	0.415
MW-71	Performance	1.03	-60	99.30%	D	19	19	27.6	0.58
MW-76	Performance	2.27	-113	99.90%	D	24	23	77	0.276
MW-77	Performance	1.49	-220	100.00%	D	27	27	21700	5.13
MW-78	Performance	2.15	-9	83.15%	NT	13	5	5.2	0.35
MW-79	Performance	4.65	75	95.80%	I	31	1	30.4	30.4
MW-80	Background	0.21	4	66.65%	ND	11	0		
MW-87	Performance-FSVE	2.18	-43	99.85%	D	13	10	180	0.207
MW-91	Performance	1.19	-2	54.80%	NT	9	3	0.92	0.26
MW-126	Background	0.26	8	89.80%	ND	7	0		
MW-129	Background-NE	0.51	5	76.50%	NT	10	1	0.19	0.19
MW-130	Background-NE	0.48	-3	54.30%	ND	20	0		
MW-134	Performance-FSVE	2.09	-51	98.10%	D	19	8	240	0.717
MW-144	Performance	1.21	-204	100.00%	D	27	23	13000	5.41
MW-145	Performance	0.60	26	82.55%	NT	24	1	0.274	0.274
MW-147	Performance	1.41	-73	99.10%	D	23	14	634	0.373
MW-148	Performance	1.59	-120	99.95%	D	33	22	21.2	0.179
MW-149	Performance	0.74	-146	100.00%	D	32	31	50.4	1.39
MW-150	Performance	1.27	-255	100.00%	D	38	35	10900	0.917
MW-151	Performance	1.43	143	100.00%	I	34	14	4.26	0.23
MW-152	Performance	4.20	-107	99.35%	D	32	28	1500	1.1
MW-153	Performance	0.48	-8	66.20%	ND	18	0		
MW-154	Background	0.51	-13	79.00%	ND	17	0		
MW-155	Performance	1.01	-137	100.00%	D	34	33	4090	0.552
MW-157	Performance	1.18	-124	99.80%	D	28	26	27	0.494
MW-158	Performance	1.16	-141	100.00%	D	34	33	53	0.49
MW-158A	Performance	1.10	-182	100.00%	D	34	30	844	0.663
MW-159	Performance	1.58	-206	100.00%	D	35	34	3500	1.25
MW-160	Performance	2.42	-108	99.90%	D	23	20	3560	0
MW-163	Performance	1.53	-219	100.00%	D	24	23	4800	0.739
MW-164	Performance	1.10	-43	88.00%	NT	23	21	45	0.35
MW-165	Performance	0.97	-56	92.60%	PD	33	30	38.8	0.388
MW-165A	Performance	1.56	15	64.30%	NT	33	26	104	0.188
MW-166	Performance	0.77	11	59.65%	NT	33	30	28.5	0.519
MW-166A	Performance	0.70	33	79.90%	NT	24	24	13.6	0.149
MW-167	Sentinel	1.86	-20	84.75%	NT	20	1	2.67	2.67
MW-169	Sentinel	0.65	-33	97.50%	ND	19	0		
MW-170	Sentinel	0.65	-33	97.50%	ND	22	0		
MW-171	Sentinel	0.62	-25	92.70%	ND	19	0		

TABLE 29
DUNN FIELD MANN-KENDALL TREND ANALYSIS - TeCA
ANNUAL LONG-TERM MONITORING REPORT – 2013
Defense Depot Memphis, Tennessee

Well	Well Classification	Coefficient of Variation	MK (S)	Confidence Factor (CF)	Concentration Trend	Sample Rounds	Detects	Max	Min
MW-174	Performance-FSVE	1.45	-11	67.10%	NT	17	6	2.08	0.315
MW-176	Performance	0.25	16	96.90%	ND	8	0		
MW-180	Performance	2.39	-16	84.50%	NT	12	4	44.2	0.763
MW-182	Sentinel	0.25	16	96.90%	ND	8	0		
MW-184	Performance	1.30	-3	59.40%	NT	9	7	5.06	0.231
MW-187	Background	0.33	1	50.00%	NT	11	1	0.141	0.141
MW-190	Performance	2.37	-39	100.00%	D	10	10	4410	8.93
MW-220	Performance-FSVE	3.46	10	72.70%	NT	12	2	780	0.267
MW-221	Performance-FSVE	3.67	-19	83.50%	NT	14	4	110	0.147
MW-222	Performance-FSVE	2.81	-50	99.75%	D	14	6	1130	1.19
MW-223	Performance-FSVE	2.52	-58	99.95%	D	14	7	30.3	0.227
MW-224	Performance-FSVE	3.71	29	93.70%	PI	14	1	140	140
MW-225	Performance-FSVE	1.40	-66	100.00%	D	15	8	75.9	0.926
MW-226	Performance-FSVE	3.56	10	68.55%	NT	14	2	220	9.56
MW-227	Performance-FSVE	1.98	-55	99.90%	D	14	6	120	5.14
MW-228	Performance-FSVE	3.25	-32	95.50%	D	15	4	46	0.22
MW-230	Background-NE	0.25	10	90.65%	ND	7	0		
MW-235	Sentinel	0.26	12	94.85%	ND	7	0		
MW-237	Sentinel	0.26	12	94.85%	ND	7	0		
MW-241	Performance	2.87	-17	92.20%	PD	10	2	16.8	0.744
MW-242	Performance	2.58	-61	100.00%	D	12	9	1040	0.325
MW-243	Performance	1.54	-62	100.00%	D	12	12	90	1.76
MW-244	Performance	2.34	-54	100.00%	D	12	12	1620	1.1
MW-245	Performance	1.96	-60	100.00%	D	12	12	383	0.519
MW-246	Performance	2.35	-46	100.00%	D	12	12	2290	2.85
MW-247	Performance	1.10	-28	96.90%	D	12	11	44.8	0.646
MW-248	Performance	1.08	1	50.00%	NT	10	1	0.589	0.589
MW-249	Performance	1.38	31	98.10%	I	13	7	5.03	0.6
MW-250	Sentinel	0.18	14	91.00%	ND	9	0		
MW-251	Sentinel	0.18	14	91.00%	ND	9	0		

Notes:
I: Increasing
S: Stable
D: Decreasing
N/A: Insufficent Data
PI: Probably Increasing
NT: No Trend
PD: Probably Decreasing
ND: Not Detected

TABLE 30
DUNN FIELD MANN-KENDALL TREND ANALYSIS - PCE
ANNUAL LONG-TERM MONITORING REPORT – 2013
Defense Depot Memphis, Tennessee

Well	Well Classification	Coefficient of Variation	MK (S)	Confidence Factor (CF)	Concentration Trend	Sample Rounds	Detects	Max	Min
MW-03	Performance-FSVE	0.81	-29	93.70%	PD	14	14	12.3	0.311
MW-04	Background	1.72	-11	93.20%	PD	7	2	33.4	23.4
MW-06	Performance-FSVE	1.13	-82	100.00%	D	17	9	1.9	0.254
MW-07	Background-NE	0.38	62	99.80%	I	17	17	70.6	18
MW-08	Background-NE	1.02	7	86.40%	NT	6	5	9.91	0.37
MW-13	Background	1.10	-27	99.80%	D	10	7	4.69	0.287
MW-15	Performance	1.32	-79	100.00%	D	16	16	14.4	0.442
MW-28	Background	0.00	0	37.50%	ND	4	0		
MW-31	Performance	1.79	79	99.70%	I	28	26	43.5	0.31
MW-33	Performance	0.25	-7	62.60%	S	15	1	0.254	0.254
MW-44	Performance	0.49	10	63.15%	NT	20	2	0.398	0.329
MW-54	Performance	1.14	-124	99.30%	D	31	25	14.2	0.295
MW-57	Performance	0.77	-128	100.00%	D	23	18	5.06	0.27
MW-58	Performance	0.48	1	50.00%	NT	6	1	0.309	0.309
MW-67	Sentinel	0.14	-18	84.70%	ND	17	0		
MW-68	Performance	0.92	1	50.00%	NT	24	10	2.1	0.32
MW-69	Performance	1.00	-58	99.60%	D	22	13	4.72	0.271
MW-70	Performance	1.72	-7	56.20%	NT	31	25	29.5	0.58
MW-71	Performance	1.38	-52	98.30%	D	19	15	7.34	0.264
MW-76	Performance	1.16	-110	99.90%	D	24	19	4.82	0.27
MW-77	Performance	1.70	-89	98.05%	D	27	22	48	0.353
MW-78	Performance	0.00	0	45.20%	ND	13	0		
MW-79	Performance	1.57	57	90.30%	PI	31	30	50.8	0.47
MW-80	Background	0.00	0	43.73%	ND	11	0		
MW-87	Performance-FSVE	1.26	-30	97.80%	D	13	4	1.45	0.676
MW-91	Performance	0.61	-24	99.90%	D	9	8	1.18	0.251
MW-126	Background	0.00	0	42.27%	ND	7	0		
MW-129	Background-NE	0.42	5	76.50%	NT	10	10	30.2	3.9
MW-130	Background-NE	0.40	15	77.50%	NT	20	20	196	48.8
MW-134	Performance-FSVE	0.80	12	67.20%	NT	19	18	3.1	0.328
MW-144	Performance	1.16	-84	99.10%	D	27	23	19.9	0
MW-145	Performance	0.12	-21	77.30%	ND	24	1	0	0
MW-147	Performance	0.93	-92	99.90%	D	23	14	12.2	2.95
MW-148	Performance	1.03	-175	100.00%	D	33	21	7.83	0.254
MW-149	Performance	0.60	-133	100.00%	D	32	31	3.81	0.296
MW-150	Performance	1.27	-133	99.70%	D	38	26	18.9	0.275
MW-151	Performance	0.96	13	60.90%	NT	34	14	1.69	0.286
MW-152	Performance	0.97	-90	98.20%	D	32	24	15.7	0.681
MW-153	Performance	0.72	-21	88.60%	S	18	5	0.714	0.24
MW-154	Background	0.55	-17	86.00%	S	17	1	0.437	0.437
MW-155	Performance	1.21	-44	87.05%	NT	34	22	16.3	0.373
MW-157	Performance	1.03	-135	99.90%	D	28	18	7.43	1.03
MW-158	Performance	0.95	-87	98.90%	D	34	26	9.28	0.697
MW-158A	Performance	1.03	-111	99.90%	D	34	23	17.8	0.252
MW-159	Performance	0.89	-75	95.80%	D	35	29	9.33	0.688
MW-160	Performance	0.97	-164	100.00%	D	23	14	21	0.251
MW-163	Performance	1.30	-78	97.95%	D	24	20	12.6	0.487
MW-164	Performance	0.89	-69	97.30%	D	23	18	3.62	0.284
MW-165	Performance	0.75	-133	100.00%	D	33	23	2.3	0.327
MW-165A	Performance	1.00	-124	100.00%	D	33	17	2.49	0.252
MW-166	Performance	0.53	12	60.60%	NT	33	28	2.47	0.377
MW-166A	Performance	0.49	-60	94.00%	PD	24	22	1.57	0.24
MW-167	Sentinel	0.34	-31	95.00%	ND	20	0		
MW-169	Sentinel	0.35	-39	99.10%	ND	19	0		
MW-170	Sentinel	0.41	-37	98.70%	D	22	1	0.485	0.485
MW-171	Sentinel	0.35	-39	99.10%	ND	19	0		

TABLE 30
DUNN FIELD MANN-KENDALL TREND ANALYSIS - PCE
ANNUAL LONG-TERM MONITORING REPORT – 2013
Defense Depot Memphis, Tennessee

Well	Well Classification	Coefficient of Variation	MK (S)	Confidence Factor (CF)	Concentration Trend	Sample Rounds	Detects	Max	Min
MW-174	Performance-FSVE	0.92	-46	97.90%	D	17	12	1.9	0.263
MW-176	Performance	0.64	-13	92.85%	PD	8	2	0.44	0.287
MW-180	Performance	1.49	-29	97.35%	D	12	5	5.02	0.766
MW-182	Sentinel	0.00	0	45.20%	ND	8	0		
MW-184	Performance	1.64	-4	64.00%	NT	9	8	4.98	0.261
MW-187	Background	0.49	12	79.90%	NT	11	4	0.36	0.253
MW-190	Performance	1.54	-19	94.60%	PD	10	10	12.5	0.58
MW-220	Performance-FSVE	0.69	-26	95.70%	D	12	12	19.8	1.95
MW-221	Performance-FSVE	2.46	-36	97.25%	D	14	3	6.9	0.893
MW-222	Performance-FSVE	2.05	-48	99.60%	D	14	9	5.7	0.291
MW-223	Performance-FSVE	1.32	-19	83.50%	NT	14	13	3.7	0.262
MW-224	Performance-FSVE	1.10	-64	100.00%	D	14	8	2.23	0.305
MW-225	Performance-FSVE	0.72	-45	99.30%	D	15	14	2.3	0.252
MW-226	Performance-FSVE	2.06	-35	96.90%	D	14	9	7.1	0.376
MW-227	Performance-FSVE	1.94	-53	99.80%	D	14	14	22	0.267
MW-228	Performance-FSVE	1.17	8	64.60%	NT	15	7	1.8	0.264
MW-230	Background-NE	0.37	-9	88.10%	S	7	7	100	33.7
MW-235	Sentinel	0.00	0	43.73%	ND	7	0		
MW-237	Sentinel	0.37	-6	76.40%	S	7	4	0.286	0.256
MW-241	Performance	0.00	0	46.43%	ND	10	0		
MW-242	Performance	2.42	-28	96.90%	D	12	2	4.54	0.373
MW-243	Performance	1.80	-21	91.30%	PD	12	2	2.77	2.48
MW-244	Performance	1.74	3	55.35%	NT	12	4	3.17	0.389
MW-245	Performance	2.08	-21	91.30%	PD	12	2	6.38	4.55
MW-246	Performance	2.04	-19	88.85%	NT	12	2	5.47	5.3
MW-247	Performance	1.92	-21	91.30%	PD	12	2	3.81	3.38
MW-248	Performance	0.00	0	46.43%	ND	10	0		
MW-249	Performance	0.88	33	98.70%	I	13	6	1.02	0.478
MW-250	Sentinel	0.00	0	46.00%	ND	9	0		
MW-251	Sentinel	0.08	-4	61.90%	S	9	9	0.716	0.572

Notes:

I: Increasing
PI: Probably Increasing
S: Stable
NT: No Trend
D: Decreasing
PD: Probably Decreasing
N/A: Insufficent Data
ND: Not Detected

TABLE 31
DUNN FIELD MANN-KENDALL TREND ANALYSIS - TCE
ANNUAL LONG-TERM MONITORING REPORT – 2013
Defense Depot Memphis, Tennessee

Well	Well Classification	Coefficient of Variation	MK (S)	Confidence Factor (CF)	Concentration Trend	Sample Rounds	Detects	Max	Min
MW-03	Performance-FSVE	1.72	-47	99.50%	D	14	14	138	0.364
MW-04	Background	1.45	-11	93.20%	PD	7	2	2.23	1.11
MW-06	Performance-FSVE	1.71	-112	100.00%	D	17	17	236	0.707
MW-07	Background-NE	0.40	84	100.00%	I	17	17	52.3	14
MW-08	Background-NE	1.11	9	93.20%	PI	6	5	14.5	0.85
MW-13	Background	1.02	-13	89.00%	NT	10	3	0.91	0.262
MW-15	Performance	1.54	-83	100.00%	D	16	16	403	0.289
MW-28	Background	0.00	0	37.50%	ND	4	0		
MW-31	Performance	0.85	-1	50.00%	S	28	27	34.2	1.83
MW-33	Performance	0.13	-21	86.00%	ND	15	0		
MW-44	Performance	1.73	54	97.80%	I	20	16	6.98	0.252
MW-54	Performance	1.17	-294	100.00%	D	31	31	2700	4.4
MW-57	Performance	0.65	-114	100.00%	D	23	23	48	0.77
MW-58	Performance	0.99	-1	50.00%	S	6	5	1.7	0.26
MW-67	Sentinel	0.32	-9	68.35%	S	17	1	0.292	0.292
MW-68	Performance	1.59	-27	87.65%	NT	24	14	20	0.36
MW-69	Performance	1.49	-49	98.55%	D	22	10	9.84	0.334
MW-70	Performance	1.43	-177	100.00%	D	31	31	3700	0.581
MW-71	Performance	1.54	-60	99.30%	D	19	19	158	0.612
MW-76	Performance	2.74	-141	100.00%	D	24	24	336	0.624
MW-77	Performance	1.37	-193	100.00%	D	27	27	6500	5.68
MW-78	Performance	0.52	-11	88.65%	S	13	5	0.59	0.26
MW-79	Performance	0.91	-5	53.70%	S	31	31	39	0.501
MW-80	Background	0.00	0	43.73%	ND	11	0		
MW-87	Performance-FSVE	1.80	-36	99.30%	D	13	9	105	0.677
MW-91	Performance	1.33	-13	92.85%	PD	9	7	13.8	0.332
MW-126	Background	0.00	0	42.27%	ND	7	0		
MW-129	Background-NE	0.22	5	76.50%	NT	10	10	19.3	11
MW-130	Background-NE	0.20	47	99.50%	I	20	20	79.5	37.9
MW-134	Performance-FSVE	2.09	-80	100.00%	D	19	10	169	0.262
MW-144	Performance	1.06	-173	100.00%	D	27	24	4500	0
MW-145	Performance	0.88	36	90.60%	PI	24	3	0.713	0.425
MW-147	Performance	1.03	-115	100.00%	D	23	15	278	0.313
MW-148	Performance	1.39	-148	100.00%	D	33	24	266	0.613
MW-149	Performance	0.63	-107	99.65%	D	32	31	87.9	2.88
MW-150	Performance	1.14	-222	100.00%	D	38	35	3060	0.515
MW-151	Performance	0.53	146	100.00%	I	34	30	20.1	0.422
MW-152	Performance	1.61	-106	99.30%	D	32	32	950	0.277
MW-153	Performance	0.55	-12	74.50%	S	18	3	0.469	0.251
MW-154	Background	0.14	-21	91.30%	ND	17	0		
MW-155	Performance	0.99	-120	99.95%	D	34	33	2220	0.408
MW-157	Performance	0.78	-132	99.90%	D	28	27	286	0.837
MW-158	Performance	1.12	-100	99.60%	D	34	34	162	0
MW-158A	Performance	0.97	-152	100.00%	D	34	31	689	0.302
MW-159	Performance	0.81	-143	100.00%	D	35	34	2700	120
MW-160	Performance	1.36	-116	100.00%	D	23	16	1130	0.323
MW-163	Performance	1.43	-189	100.00%	D	24	23	2030	2.82
MW-164	Performance	0.73	-128	100.00%	D	23	22	136	2.75
MW-165	Performance	0.89	-99	99.60%	D	33	31	194	1.47
MW-165A	Performance	0.94	-133	100.00%	D	33	31	165	0.473
MW-166	Performance	1.21	45	86.05%	NT	33	31	223	4.12
MW-166A	Performance	0.79	-19	68.10%	S	24	24	85.9	2.41
MW-167	Sentinel	0.68	-22	87.15%	S	20	2	0.961	0.34
MW-169	Sentinel	0.35	-39	99.10%	ND	19	0		
MW-170	Sentinel	0.35	-39	99.10%	ND	22	0		
MW-171	Sentinel	0.35	-39	99.10%	ND	19	0		

TABLE 31
DUNN FIELD MANN-KENDALL TREND ANALYSIS - TCE
ANNUAL LONG-TERM MONITORING REPORT – 2013
Defense Depot Memphis, Tennessee

Well	Well Classification	Coefficient of Variation	MK (S)	Confidence Factor (CF)	Concentration Trend	Sample Rounds	Detects	Max	Min
MW-174	Performance-FSVE	2.02	-57	99.50%	D	17	9	33	0.324
MW-176	Performance	1.55	-12	91.10%	PD	8	4	3.07	0.3
MW-180	Performance	2.56	-29	97.35%	D	12	5	78	0.893
MW-182	Sentinel	1.11	-7	76.35%	NT	8	1	0.77	0.77
MW-184	Performance	1.81	-16	96.90%	D	9	9	84	2.14
MW-187	Background	2.32	-17	89.10%	NT	11	2	3.7	0.26
MW-190	Performance	2.30	-26	98.90%	D	10	10	2720	19.4
MW-220	Performance-FSVE	2.83	-24	94.20%	PD	12	12	530	4.24
MW-221	Performance-FSVE	3.60	-42	98.85%	D	14	4	140	0.501
MW-222	Performance-FSVE	2.87	-55	99.90%	D	14	9	1100	1.04
MW-223	Performance-FSVE	2.84	-67	100.00%	D	14	13	500	0.25
MW-224	Performance-FSVE	3.21	-25	90.40%	PD	14	2	92	13.4
MW-225	Performance-FSVE	2.40	-82	100.00%	D	15	11	320	0.653
MW-226	Performance-FSVE	3.60	-36	97.25%	D	14	3	740	0.855
MW-227	Performance-FSVE	2.13	-46	99.40%	D	14	11	420	0.339
MW-228	Performance-FSVE	3.45	-34	96.45%	D	15	3	42	0.911
MW-230	Background-NE	0.22	-7	80.90%	S	7	7	98.4	54.3
MW-235	Sentinel	0.00	0	43.73%	ND	7	0		
MW-237	Sentinel	0.00	0	43.73%	ND	7	0		
MW-241	Performance	0.90	-27	99.20%	D	10	10	3.23	0.362
MW-242	Performance	2.71	-62	100.00%	D	12	12	308	0.402
MW-243	Performance	2.04	-54	100.00%	D	12	12	146	0.949
MW-244	Performance	2.49	-22	92.40%	PD	12	12	346	0.389
MW-245	Performance	2.25	-58	100.00%	D	12	12	473	0.554
MW-246	Performance	2.42	-43	99.85%	D	12	12	1800	0.46
MW-247	Performance	2.04	-38	99.60%	D	12	11	134	0.304
MW-248	Performance	0.00	0	46.43%	ND	10	0		
MW-249	Performance	1.11	39	99.65%	I	13	11	14.9	0.519
MW-250	Sentinel	0.00	0	46.00%	ND	9	0		
MW-251	Sentinel	0.54	-27	99.80%	D	9	7	0.707	0.253

Notes:
I: Increasing
S: Stable
D: Decreasing
N/A: Insufficent Data
PI: Probably Increasing
NT: No Trend
PD: Probably Decreasing
ND: Not Detected

TABLE 32
DUNN FIELD MANN-KENDALL TREND ANALYSIS - DCE
ANNUAL LONG-TERM MONITORING REPORT – 2013
Defense Depot Memphis, Tennessee

Well	Well Classification	Coefficient of Variation	MK (S)	Confidence Factor (CF)	Concentration Trend	Sample Rounds	Detects	Max	Min
MW-03	Performance-FSVE	1.28	-28	92.90%	PD	14	11	34.5	0.524
MW-04	Background	0.00	0	43.73%	ND	7	0		
MW-06	Performance-FSVE	0.22	11	67.10%	ND	17	0		
MW-07	Background-NE	0.28	21	81.30%	NT	17	17	35.6	12.8
MW-08	Background-NE	0.80	5	76.50%	NT	6	5	5.64	1.1
MW-13	Background	0.00	0	46.00%	ND	10	0		
MW-15	Performance	0.23	10	66.90%	ND	16	0		
MW-28	Background	0.00	0	37.50%	ND	4	0		
MW-31	Performance	0.78	-73	99.50%	D	28	27	40	0.902
MW-33	Performance	0.15	21	86.00%	ND	15	0		
MW-44	Performance	0.14	27	83.50%	ND	20	0		
MW-54	Performance	0.69	28	70.20%	ND	31	0		
MW-57	Performance	0.36	39	87.25%	NT	23	1	0.538	0.538
MW-58	Performance	0.00	0	42.27%	ND	6	0		
MW-67	Sentinel	0.16	18	84.70%	ND	17	0		
MW-68	Performance	1.07	33	92.35%	PI	24	4	1.82	0.727
MW-69	Performance	0.14	27	87.65%	ND	22	0		
MW-70	Performance	0.90	-59	93.70%	PD	31	6	3.36	1.07
MW-71	Performance	0.14	24	82.60%	ND	19	0		
MW-76	Performance	0.12	39	85.60%	ND	24	0		
MW-77	Performance	2.52	-1	50.00%	ND	27	0		
MW-78	Performance	0.00	0	45.20%	ND	13	0		
MW-79	Performance	0.72	16	63.60%	NT	31	31	35.7	1.17
MW-80	Background	0.00	0	43.73%	ND	11	0		
MW-87	Performance-FSVE	0.00	0	47.30%	ND	13	0		
MW-91	Performance	0.00	0	45.20%	ND	9	0		
MW-126	Background	0.00	0	42.27%	ND	7	0		
MW-129	Background-NE	0.35	-3	64.00%	S	10	10	36	13.7
MW-130	Background-NE	0.41	13	74.10%	NT	20	20	80.2	22.6
MW-134	Performance-FSVE	0.22	8	61.20%	ND	19	0		
MW-144	Performance	1.41	-16	66.20%	ND	27	1	0	0
MW-145	Performance	0.14	21	77.30%	ND	24	0		
MW-147	Performance	1.14	-77	99.35%	D	23	11	5.65	0.657
MW-148	Performance	0.11	8	57.25%	NT	33	1	0.426	0.426
MW-149	Performance	0.12	39	82.50%	ND	32	0		
MW-150	Performance	1.53	-45	81.90%	NT	38	3	0.992	0.619
MW-151	Performance	4.04	25	71.05%	NT	34	1	25.5	25.5
MW-152	Performance	0.43	27	72.60%	NT	32	1	0.758	0.758
MW-153	Performance	0.54	-23	90.80%	PD	18	15	9.1	2.99
MW-154	Background	0.16	21	91.30%	ND	17	0		
MW-155	Performance	1.59	4	53.15%	NT	34	6	2.84	0.559
MW-157	Performance	0.24	35	78.45%	ND	28	0		
MW-158	Performance	0.12	30	77.60%	ND	34	0		
MW-158A	Performance	0.99	-21	69.90%	S	34	5	1.65	0.392
MW-159	Performance	0.91	171	100.00%	I	35	16	8.51	1.12
MW-160	Performance	0.79	0	48.87%	S	23	3	1.05	0.538
MW-163	Performance	0.98	-21	69.90%	ND	24	0		
MW-164	Performance	0.12	51	92.00%	ND	23	0		
MW-165	Performance	1.36	23	71.70%	ND	33	0		
MW-165A	Performance	0.33	23	71.70%	ND	33	0		
MW-166	Performance	0.24	19	67.10%	ND	33	0		
MW-166A	Performance	0.17	23	71.70%	ND	24	0		
MW-167	Sentinel	0.22	5	58.50%	ND	20	0		
MW-169	Sentinel	0.23	15	79.90%	ND	19	0		
MW-170	Sentinel	0.71	-46	99.80%	D	22	9	4.37	1.3
MW-171	Sentinel	0.28	9	68.35%	NT	19	1	0.544	0.544

TABLE 32
DUNN FIELD MANN-KENDALL TREND ANALYSIS - DCE
ANNUAL LONG-TERM MONITORING REPORT – 2013
Defense Depot Memphis, Tennessee

Well	Well Classification	Coefficient of Variation	MK (S)	Confidence Factor (CF)	Concentration Trend	Sample Rounds	Detects	Max	Min
MW-174	Performance-FSVE	0.22	11	67.10%	ND	17	0		
MW-176	Performance	0.00	0	45.20%	ND	8	0		
MW-180	Performance	1.19	4	58.00%	NT	12	3	2.04	0.558
MW-182	Sentinel	0.00	0	45.20%	ND	8	0		
MW-184	Performance	0.00	0	45.20%	ND	9	0		
MW-187	Background	0.28	8	70.25%	ND	11	0		
MW-190	Performance	0.00	0	46.43%	ND	10	0		
MW-220	Performance-FSVE	1.07	-34	99.00%	D	12	12	45.9	1.16
MW-221	Performance-FSVE	0.24	13	74.10%	ND	14	0		
MW-222	Performance-FSVE	0.07	13	74.10%	ND	14	0		
MW-223	Performance-FSVE	0.20	13	74.10%	ND	14	0		
MW-224	Performance-FSVE	0.24	13	74.10%	ND	14	0		
MW-225	Performance-FSVE	0.24	13	74.10%	ND	15	0		
MW-226	Performance-FSVE	0.20	13	74.10%	ND	14	0		
MW-227	Performance-FSVE	0.24	13	74.10%	ND	14	0		
MW-228	Performance-FSVE	0.24	13	74.10%	ND	15	0		
MW-230	Background-NE	0.36	-9	88.10%	S	7	7	32.7	12.6
MW-235	Sentinel	0.00	0	43.73%	ND	7	0		
MW-237	Sentinel	0.22	-5	71.90%	S	7	7	3.03	1.62
MW-241	Performance	0.00	0	46.43%	ND	10	0		
MW-242	Performance	0.27	-9	70.40%	ND	12	0		
MW-243	Performance	0.00	0	47.30%	ND	12	0		
MW-244	Performance	2.14	-21	91.30%	PD	12	1	6.73	6.73
MW-245	Performance	1.24	-21	91.30%	PD	12	2	2.03	1.85
MW-246	Performance	2.36	-21	91.30%	PD	12	2	36.2	18.2
MW-247	Performance	0.00	0	47.30%	ND	12	0		
MW-248	Performance	0.00	0	46.43%	ND	10	0		
MW-249	Performance	0.00	0	47.30%	ND	13	0		
MW-250	Sentinel	0.00	0	46.00%	ND	9	0		
MW-251	Sentinel	0.12	14	91.00%	PI	9	9	4.12	2.9

Notes:
I: Increasing
S: Stable
D: Decreasing
N/A: Insufficent Data
PI: Probably Increasing
NT: No Trend
PD: Probably Decreasing
ND: Not Detected

TABLE 33
DUNN FIELD MANN-KENDALL TREND ANALYSIS - CT
ANNUAL LONG-TERM MONITORING REPORT – 2013
Defense Depot Memphis, Tennessee

Well	Well Classification	Coefficient of Variation	MK (S)	Confidence Factor (CF)	Concentration Trend	Sample Rounds	Detects	Max	Min
MW-03	Performance-FSVE	1.36	-32	95.50%	D	14	3	1.56	0.53
MW-04	Background	0.00	0	43.73%	ND	7	0		
MW-06	Performance-FSVE	1.73	-92	100.00%	D	17	9	31.2	0.463
MW-07	Background-NE	0.77	-33	92.35%	PD	17	4	0.641	0.273
MW-08	Background-NE	0.00	0	42.27%	ND	6	0		
MW-13	Background	0.00	0	46.00%	ND	10	0		
MW-15	Performance	1.56	-87	100.00%	D	16	12	58.2	0.288
MW-28	Background	0.00	0	37.50%	ND	4	0		
MW-31	Performance	0.36	-46	94.20%	PD	28	5	0.48	0.18
MW-33	Performance	1.17	-5	58.50%	NT	15	5	1.5	0.278
MW-44	Performance	0.59	-38	91.80%	PD	20	15	1.3	0.5
MW-54	Performance	1.48	-89	95.90%	D	31	13	6.76	0.745
MW-57	Performance	0.94	-145	100.00%	D	23	17	33	0.9
MW-58	Performance	0.94	8	89.80%	NT	6	3	0.946	0.277
MW-67	Sentinel	0.14	-18	84.70%	ND	17	0		
MW-68	Performance	0.67	-34	93.00%	PD	24	2	0.951	0.21
MW-69	Performance	0.13	-27	87.65%	ND	22	0		
MW-70	Performance	1.20	-57	93.00%	PD	31	1	0.575	0.575
MW-71	Performance	1.09	-61	99.40%	D	19	17	37.8	0.301
MW-76	Performance	0.11	-39	85.60%	ND	24	0		
MW-77	Performance	1.91	-81	96.95%	D	27	4	1.12	0.922
MW-78	Performance	0.00	0	45.20%	ND	13	0		
MW-79	Performance	0.77	-128	99.90%	D	31	7	0.77	0.2
MW-80	Background	0.00	0	43.73%	ND	11	0		
MW-87	Performance-FSVE	1.97	-30	97.80%	D	13	4	18.7	7.16
MW-91	Performance	1.39	-25	99.95%	D	9	7	9.35	0.391
MW-126	Background	0.00	0	42.27%	ND	7	0		
MW-129	Background-NE	0.00	0	42.27%	ND	10	0		
MW-130	Background-NE	0.13	-21	86.00%	ND	20	0		
MW-134	Performance-FSVE	0.14	8	61.20%	ND	19	0		
MW-144	Performance	1.29	-55	93.60%	PD	27	5	1.59	0.9
MW-145	Performance	0.99	32	87.75%	NT	24	3	0.886	0.493
MW-147	Performance	1.34	-106	100.00%	D	23	12	4.3	0.36
MW-148	Performance	0.80	-127	100.00%	D	33	7	0.73	0.19
MW-149	Performance	0.76	-194	100.00%	D	32	31	22	0.397
MW-150	Performance	1.37	-95	97.50%	D	38	4	1.54	0.31
MW-151	Performance	0.72	-98	98.90%	D	34	29	6.19	0.493
MW-152	Performance	1.55	-71	94.85%	PD	32	5	2.1	0.24
MW-153	Performance	0.14	-24	91.80%	ND	18	0		
MW-154	Background	0.14	-21	91.30%	ND	17	0		
MW-155	Performance	1.82	-16	65.25%	ND	34	0		
MW-157	Performance	1.10	-189	100.00%	D	28	22	26	0.314
MW-158	Performance	0.11	-30	77.60%	ND	34	0		
MW-158A	Performance	1.24	-47	88.60%	NT	34	4	1.54	0.55
MW-159	Performance	1.69	-46	85.20%	NT	35	6	4.13	0.252
MW-160	Performance	0.97	-96	99.70%	D	23	10	1.91	0.388
MW-163	Performance	1.10	-117	99.90%	D	24	3	0.882	0.683
MW-164	Performance	0.98	-119	100.00%	D	23	22	24.8	0.454
MW-165	Performance	1.39	-140	100.00%	D	33	14	11	0.769
MW-165A	Performance	1.27	-127	100.00%	D	33	19	16.4	0.449
MW-166	Performance	0.82	-23	70.55%	S	33	29	16.5	0.396
MW-166A	Performance	0.74	-138	100.00%	D	24	22	9.75	0.276
MW-167	Sentinel	0.34	-31	95.00%	ND	20	0		
MW-169	Sentinel	0.35	-39	99.10%	ND	19	0		
MW-170	Sentinel	0.35	-39	99.10%	ND	22	0		
MW-171	Sentinel	0.35	-39	99.10%	ND	19	0		

TABLE 33
DUNN FIELD MANN-KENDALL TREND ANALYSIS - CT
ANNUAL LONG-TERM MONITORING REPORT – 2013
Defense Depot Memphis, Tennessee

Well	Well Classification	Coefficient of Variation	MK (S)	Confidence Factor (CF)	Concentration Trend	Sample Rounds	Detects	Max	Min
MW-174	Performance-FSVE	1.31	-53	99.10%	D	17	10	5.9	0.442
MW-176	Performance	0.64	-5	68.30%	S	8	1	0.415	0.415
MW-180	Performance	0.93	-21	91.30%	PD	12	2	0.72	0.26
MW-182	Sentinel	0.00	0	45.20%	ND	8	0		
MW-184	Performance	0.98	-20	99.30%	D	9	9	13.4	0.879
MW-187	Background	1.09	-8	70.25%	NT	11	1	0.8	0.8
MW-190	Performance	1.25	-15	89.20%	NT	10	2	1.17	0.63
MW-220	Performance-FSVE	0.17	11	74.85%	ND	12	0		
MW-221	Performance-FSVE	0.16	13	74.10%	ND	14	0		
MW-222	Performance-FSVE	0.29	-13	74.10%	ND	14	0		
MW-223	Performance-FSVE	0.51	-25	90.40%	PD	14	2	0.39	0.283
MW-224	Performance-FSVE	0.16	13	74.10%	ND	14	0		
MW-225	Performance-FSVE	0.16	13	74.10%	ND	15	0		
MW-226	Performance-FSVE	0.04	13	74.10%	ND	14	0		
MW-227	Performance-FSVE	2.02	-67	100.00%	D	14	10	43	0.348
MW-228	Performance-FSVE	1.79	-13	74.10%	NT	15	5	3.4	0.327
MW-230	Background-NE	0.00	0	43.73%	ND	7	0		
MW-235	Sentinel	0.00	0	43.73%	ND	7	0		
MW-237	Sentinel	0.00	0	43.73%	ND	7	0		
MW-241	Performance	0.00	0	46.43%	ND	10	0		
MW-242	Performance	0.27	-9	70.40%	ND	12	0		
MW-243	Performance	0.00	0	47.30%	ND	12	0		
MW-244	Performance	0.87	-9	70.40%	ND	12	0		
MW-245	Performance	0.27	-9	70.40%	ND	12	0		
MW-246	Performance	1.48	-9	70.40%	ND	12	0		
MW-247	Performance	2.05	-30	97.80%	D	12	3	5.85	0.378
MW-248	Performance	0.00	0	46.43%	ND	10	0		
MW-249	Performance	0.87	45	99.95%	I	13	10	3.55	0.437
MW-250	Sentinel	0.00	0	46.00%	ND	9	0		
MW-251	Sentinel	0.00	0	46.00%	ND	9	0		

Notes:
I: Increasing
S: Stable
D: Decreasing
N/A: Insufficent Data
PI: Probably Increasing
NT: No Trend
PD: Probably Decreasing
ND: Not Detected

TABLE 34
DUNN FIELD MANN-KENDALL TREND ANALYSIS - CF
ANNUAL LONG-TERM MONITORING REPORT – 2013
Defense Depot Memphis, Tennessee

Well	Well Classification	Coefficient of Variation	MK (S)	Confidence Factor (CF)	Concentration Trend	Sample Rounds	Detects	Max	Min
MW-03	Performance-FSVE	1.90	-68	100.00%	D	14	8	12.4	0.14
MW-04	Background	0.35	-3	61.40%	S	7	7	0.43	0.16
MW-06	Performance-FSVE	1.51	-82	100.00%	D	17	17	84.7	2.21
MW-07	Background-NE	1.95	-38	95.20%	D	17	15	20	0.192
MW-08	Background-NE	0.60	7	86.40%	NT	6	2	0.197	0.158
MW-13	Background	0.47	-10	82.10%	S	10	10	0.522	0.127
MW-15	Performance	1.99	-84	100.00%	D	16	16	1530	0.524
MW-28	Background	0.72	6	95.80%	I	4	3	0.476	0.154
MW-31	Performance	0.65	-24	78.70%	S	28	15	0.802	0.131
MW-33	Performance	0.91	20	84.75%	NT	15	3	0.517	0.184
MW-44	Performance	2.14	18	73.75%	NT	20	16	13.6	0.17
MW-54	Performance	1.27	-80	94.00%	PD	31	25	9.78	0.23
MW-57	Performance	1.32	42	89.10%	NT	23	23	73	2.52
MW-58	Performance	1.63	-5	76.50%	NT	6	5	8.89	0.149
MW-67	Sentinel	0.53	-18	84.70%	ND	17	0		
MW-68	Performance	0.98	-36	94.20%	PD	24	10	1.57	0.147
MW-69	Performance	0.42	-11	67.10%	S	22	9	0.261	0.136
MW-70	Performance	2.33	-42	85.90%	NT	31	12	11.6	0.166
MW-71	Performance	1.43	-68	99.80%	D	19	19	303	1.47
MW-76	Performance	1.06	-130	100.00%	D	24	16	0.978	0.134
MW-77	Performance	1.35	-1	50.00%	NT	27	20	5.05	0.13
MW-78	Performance	0.00	0	45.20%	ND	13	0		
MW-79	Performance	1.42	14	61.80%	NT	31	12	1.31	0.127
MW-80	Background	1.00	6	76.40%	NT	11	1	0.329	0.329
MW-87	Performance-FSVE	0.94	-18	87.50%	S	13	13	6.25	0.148
MW-91	Performance	1.41	-12	91.10%	PD	9	9	25.6	0.538
MW-126	Background	0.33	-1	50.00%	S	7	1	0.12	0.12
MW-129	Background-NE	0.00	0	42.27%	ND	10	0		
MW-130	Background-NE	0.38	39	98.20%	I	20	9	0.315	0.206
MW-134	Performance-FSVE	1.09	45	96.50%	I	19	7	0.668	0.128
MW-144	Performance	0.91	-88	99.35%	D	27	18	4.3	0.222
MW-145	Performance	1.39	34	89.25%	NT	24	3	0.927	0.585
MW-147	Performance	1.14	-127	100.00%	D	23	15	13.4	0.147
MW-148	Performance	0.99	-145	100.00%	D	33	23	3.07	0.125
MW-149	Performance	0.75	-154	100.00%	D	32	31	200	5.56
MW-150	Performance	1.00	-77	94.30%	PD	38	23	5	0.16
MW-151	Performance	1.00	74	95.60%	I	34	30	37.4	0.15
MW-152	Performance	1.01	-49	86.70%	NT	32	20	2.59	0.446
MW-153	Performance	0.53	-24	91.80%	ND	18	0		
MW-154	Background	0.53	-21	91.30%	ND	17	0		
MW-155	Performance	1.09	-52	91.00%	PD	34	15	2.1	0.16
MW-157	Performance	2.02	-185	100.00%	D	28	27	235	0.434
MW-158	Performance	0.79	-119	99.90%	D	34	23	1.07	0.156
MW-158A	Performance	1.15	-101	99.60%	D	34	20	3.94	0.155
MW-159	Performance	1.81	-126	99.90%	D	35	24	12.1	0.197
MW-160	Performance	0.97	-123	100.00%	D	23	13	3.53	0.56
MW-163	Performance	1.98	-84	98.60%	D	24	19	11.9	0.142
MW-164	Performance	1.29	-79	98.70%	D	23	22	247	2.03
MW-165	Performance	1.63	-183	100.00%	D	33	28	140	0.225
MW-165A	Performance	1.62	-147	100.00%	D	33	29	82.7	0.15
MW-166	Performance	0.84	-35	79.80%	S	33	31	140	1.03
MW-166A	Performance	0.61	-85	98.70%	D	24	24	65.5	5.47
MW-167	Sentinel	1.78	-58	99.95%	D	20	4	2.1	0.47
MW-169	Sentinel	1.41	-39	99.10%	D	19	2	0.8	0.8
MW-170	Sentinel	0.90	-39	99.10%	D	22	2	0.42	0.42
MW-171	Sentinel	0.68	-39	99.10%	ND	19	0		

TABLE 34
DUNN FIELD MANN-KENDALL TREND ANALYSIS - CF
ANNUAL LONG-TERM MONITORING REPORT – 2013
Defense Depot Memphis, Tennessee

Well	Well Classification	Coefficient of Variation	MK (S)	Confidence Factor (CF)	Concentration Trend	Sample Rounds	Detects	Max	Min
MW-174	Performance-FSVE	1.97	-88	100.00%	D	17	16	68	0.135
MW-176	Performance	0.35	2	54.80%	NT	8	7	0.275	0.147
MW-180	Performance	1.86	-20	90.20%	PD	12	4	2.04	0.136
MW-182	Sentinel	0.00	0	45.20%	ND	8	0		
MW-184	Performance	1.66	-10	86.20%	NT	9	9	117	2.94
MW-187	Background	0.50	14	84.00%	NT	11	8	0.29	0.13
MW-190	Performance	1.26	-10	78.40%	NT	10	10	2.73	0.135
MW-220	Performance-FSVE	2.11	-14	81.00%	NT	12	7	2.5	0.126
MW-221	Performance-FSVE	1.79	-25	90.40%	PD	14	5	1.4	0.134
MW-222	Performance-FSVE	0.85	-14	75.80%	S	14	6	0.523	0.156
MW-223	Performance-FSVE	0.86	-25	90.40%	PD	14	14	2	0.177
MW-224	Performance-FSVE	1.14	25	90.40%	PI	14	9	1.03	0.142
MW-225	Performance-FSVE	0.78	-9	66.60%	S	15	13	0.803	0.149
MW-226	Performance-FSVE	1.29	-13	74.10%	NT	14	11	1.52	0.133
MW-227	Performance-FSVE	2.21	-55	99.90%	D	14	13	1100	0.223
MW-228	Performance-FSVE	3.46	-45	99.30%	D	15	9	120	0.155
MW-230	Background-NE	0.18	5	71.90%	NT	7	7	0.288	0.188
MW-235	Sentinel	0.00	0	43.73%	ND	7	0		
MW-237	Sentinel	0.38	-6	76.40%	S	7	5	0.181	0.129
MW-241	Performance	0.57	2	53.45%	NT	10	4	0.227	0.132
MW-242	Performance	0.89	-31	98.10%	D	12	10	0.897	0.164
MW-243	Performance	0.86	-21	91.30%	PD	12	2	0.315	0.233
MW-244	Performance	1.52	5	60.55%	NT	12	6	1.55	0.161
MW-245	Performance	1.00	-14	81.00%	NT	12	3	0.438	0.292
MW-246	Performance	1.51	-21	91.30%	PD	12	1	0.829	0.829
MW-247	Performance	2.31	-30	97.80%	D	12	12	193	0.133
MW-248	Performance	0.00	0	46.43%	ND	10	0		
MW-249	Performance	1.16	45	99.95%	I	13	11	20.3	0.399
MW-250	Sentinel	0.00	0	46.00%	ND	9	0		
MW-251	Sentinel	0.18	16	94.00%	PI	9	9	0.387	0.197

Notes:
I: Increasing
S: Stable
D: Decreasing
N/A: Insufficent Data
PI: Probably Increasing
NT: No Trend
PD: Probably Decreasing
ND: Not Detected

TABLE 35
DUNN FIELD TRENDS AT WELLS EXCEEDING MCLS
ANNUAL LONG-TERM MONITORING REPORT -2013
Defense Depot Memphis, Tennessee

		Analyte	TeCA		TCE		PCE		DCE		CF	
		Units	µg/L		µg/L		µg/L		µg/L		µg/L	
		MCL	-		5		5		7		80	
		TC	2.2		5		2.5		7		12	
Well ID	Classification	Date	Concentration	Trend	Concentration	Trend	Concentration	Trend	Concentration	Trend	Concentration	Trend
MW-159	Performance	5/9/2013	19.4	D	181.0	D	-	-	-	-	-	-
MW-150-RE	Performance	5/9/2013	16.4	D	47.7	D	-	-	-	-	-	-
MW-190	Performance	5/9/2013	8.9	D	20.4	D	-	-	-	-	-	-
MW-77	Performance	5/9/2013	7.5	D	15.5	D	-	-	-	-	-	-
MW-151	Performance	4/13/2013	2.7	I	8.1	I	-	-	-	-	14.5	I
MW-144-RE	Performance	5/9/2013	5.4	D	14.0	D	-	-	-	-	-	-
MW-44-RE	Performance	5/9/2013	-	-	6.6	I	-	-	-	-	12.3	NT
MW-163	Performance	5/9/2013	-	-	7.9	D	-	-	-	-	-	-
MW-249	Performance	5/9/2013	-	-	7.3	I	-	-	-	-	-	-
MW-54	Performance	5/9/2013	-	-	6.5	D	-	-	-	-	-	-
MW-79	Performance	4/13/2013	-	-	6.1	S	6.4	PI	-	-	-	-
MW-164	Performance	4/13/2013	-	-	5.4	D	-	-	-	-	-	-
MW-166	Performance	4/14/2013	2.7	NT	5.3	NT	-	-	-	-	-	-
MW-31	Performance	4/13/2013	-	-	-	-	3.5	I	-	-	-	-
MW-220	Performance-FSVE	4/13/2013	-	-	-	-	3.4	D	-	-	-	-
MW-166A	Performance	4/14/2013	3.2	NT	-	-	-	-	-	-	-	-
MW-246	Performance	4/14/2013	3.1	D	-	-	-	-	-	-	-	-
MW-149	Performance	4/13/2013	2.3	D	-	-	-	-	-	-	-	-
MW-130	Background-NE	4/13/2013	-	-	79.5	I	98.5	NT	38.6	NT	-	-
MW-230	Background-NE	5/9/2013	-	-	60.1	S	33.7	S	12.6	S	-	-
MW-07	Background-NE	4/13/2013	-	-	52.3	I	55.9	I	20.0	NT	-	-
MW-129	Background-NE	4/13/2013	-	-	14.5	NT	18.0	NT	16.8	S	-	-
MW-08	Background-NE	4/12/2013	-	-	14.5	PI	9.9	NT	-	-	-	-

Notes:
I: Increasing
S: Stable
D: Decreasing
N/A: Insufficent Data
MCL: Maximum Contaminant Level
TC: Target Concentration
µg/L: micrograms per liter
PI: Probably Increasing
NT: No Trend
PD: Probably Decreasing
ND: Not Detected

TABLE 36
2014 MAIN INSTALLATION LTM SCHEDULE
ANNUAL LONG TERM MONITORING REPORT-2013
Defense Depot Memphis, Tennessee

Well ID	Well Classification	Sample Frequency	Semiannual Apr-2014	Biennial Oct-2014
MW-16	Background	Biennial	-	P
MW-19	Background	Biennial	-	P
MW-22	Boundary	Biennial	-	P
MW-23	Boundary	Biennial	-	P
MW-24	Boundary	Biennial	-	P
MW-25A	Performance	Annual	-	P
MW-26	Performance	Semiannual	P	P
MW-34	Sentinel	Biennial	-	P
MW-38	Sentinel	Biennial	-	P
MW-39	Performance	Semiannual	P	P
MW-39A	Performance	Semiannual	P	P
MW-50	Boundary	Biennial	-	P
MW-52	Performance	Annual	-	P
MW-53	Background	Biennial	-	P
MW-55	Background	Biennial	-	P
MW-63A	Sentinel	Annual	-	P
MW-63B	Sentinel	Annual	-	P
MW-64	Performance	Semiannual	P	P
MW-66A	Background	Biennial	-	P
MW-88	Performance	Semiannual	P	P
MW-89	Sentinel	Annual	-	P
MW-90	Sentinel	Semiannual	P	P
MW-92	Performance	Semiannual	P	P
MW-93	Boundary	Biennial	-	P
MW-94A	Performance	Semiannual	P	P
MW-96	Performance	Annual	-	P
MW-97	Performance	Semiannual	P	P
MW-98	Performance	Semiannual	P	P
MW-99	Background	Biennial	-	P
MW-100B	Performance	Semiannual	P	P
MW-101[1]	Performance	Semiannual	P	P
MW-102B	Boundary	Biennial	-	P
MW-103	Performance	Annual	-	P
MW-104	Performance	Annual	-	P
MW-107[1]	Sentinel	Semiannual	P	P
MW-108	Sentinel	Semiannual	P	P
MW-140	Sentinel	Annual	-	P
MW-141	Sentinel	Semiannual	P	P
MW-142	Performance	Annual	-	P
MW-143	Performance	Semiannual	P	P
MW-198	Performance	Annual	-	P
MW-199A	Sentinel	Annual	-	P
MW-199B	Performance	Semiannual	P	P
MW-200	Performance	Semiannual	P	P
MW-202A	Sentinel	Annual	-	P
MW-202B	Sentinel	Semiannual	P	P
MW-204A	Performance	Semiannual	P	P
MW-204B	Performance	Semiannual	P	P
MW-205A	Performance	Semiannual	P	P
MW-205B	Performance	Semiannual	P	P
MW-206A	Performance	Semiannual	P	P
MW-206B	Performance	Semiannual	P	P
MW-207A	Sentinel	Semiannual	P	P
MW-207B	Sentinel	Semiannual	P	P
MW-208A	Performance	Semiannual	P	P
MW-208B	Performance	Semiannual	P	P
MW-209A	Sentinel	Annual	-	P

TABLE 36
2014 MAIN INSTALLATION LTM SCHEDULE
ANNUAL LONG TERM MONITORING REPORT-2013
Defense Depot Memphis, Tennessee

Well ID	Well Classification	Sample Frequency	Semiannual Apr-2014	Biennial Oct-2014
MW-209B	Performance	Semiannual	P	P
MW-210A	Sentinel	Semiannual	P	P
MW-210B	Performance	Semiannual	P	P
MW-211	Sentinel	Annual	-	P
MW-214A	Performance	Semiannual	P	P
MW-214B	Performance	Semiannual	P	P
MW-215A	Performance	Annual	-	P
MW-215B	Performance	Annual	-	P
MW-216	Performance	Annual	-	P
MW-217	Performance	Semiannual	P	P
MW-218	Performance	Semiannual	P	P
MW-219	Boundary	Semiannual	P	P
MW-229	Sentinel	Biennial	-	P
MW-252	Sentinel	Annual	-	P
MW-253	Sentinel	Annual	-	P
MW-254	Sentinel	Semiannual	P	P
MW-255	Sentinel	Annual	-	P
MW-256	Sentinel	Semiannual	P	P
MW-257	Performance	Annual	-	P
MW-258	Performance	Semiannual	P	P
MW-259	Performance	Semiannual	P	P
MW-260	Performance	TBD	P	P
MW-261	Performance	TBD	P	P
DR1-1	Performance	Annual	-	P
DR1-1A	Performance	Annual	-	P
DR1-2	Performance	Annual	-	P
DR1-3	Performance	Semiannual	P	P
DR1-4	Performance	Annual	-	P
DR1-7	Performance	Annual	-	P
DR1-8	Performance	Annual	-	P
DR2-1	Performance	Semiannual	P	P
DR2-3	Performance	Semiannual	P	P
DR2-4	Performance	Annual	-	P
DR2-6	Performance	Semiannual	P	P
PMW21-03	Performance	Semiannual	P	P
PMW21-05	Performance	Semiannual	P	P
PMW92-02	Performance	Semiannual	P	P
PMW101-03A	Performance	Semiannual	P	P
PMW101-03B	Performance	Semiannual	P	P
PMW101-06A	Performance	Semiannual	P	P
PMW101-06B	Performance	Semiannual	P	P
PZ-03	Performance	Annual	-	P

Notes:
1) Samples to be collected from two screened intervals in MW-101 and MW-107
PDB: Passive diffusion bag
P: Sample planned
-: Sample not planned

TABLE 37
2014 DUNN FIELD LTM SCHEDULE
ANNUAL LONG TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

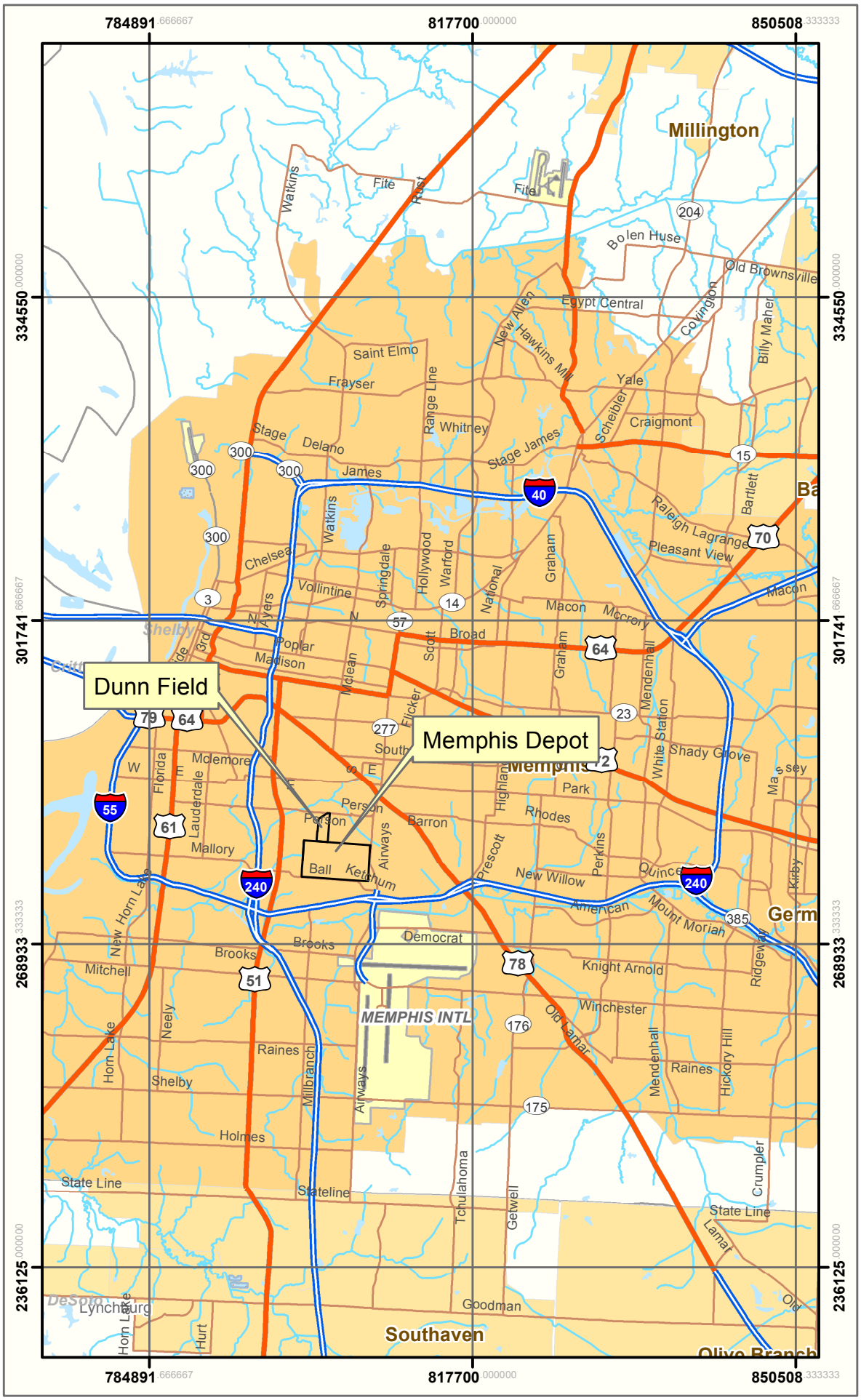
Well ID	Well Classification	Sample Frequency	Annual Apr 2014	Semiannual Sep 2014
MW-03	Performance-FSVE	Semiannual	P	P
MW-04	Background	Biennial	-	-
MW-06	Performance-FSVE	Semiannual	P	P
MW-07	Background-NE	Annual	P	-
MW-08	Background-NE	Annual	P	-
MW-13	Background	Biennial	-	-
MW-15	Performance	Annual	P	-
MW-28	Background	Biennial	-	-
MW-31	Performance	Semiannual	P	P
MW-33	Performance	Biennial	-	-
MW-44	Performance	Semiannual	P	P
MW-54	Performance	Semiannual	P	P
MW-57	Performance	Annual	P	-
MW-58	Performance	Biennial	-	-
MW-67	Sentinel	Biennial	-	-
MW-68	Performance	Annual	P	-
MW-69	Performance	Annual	P	-
MW-70	Performance	Annual	P	-
MW-71	Performance	Annual	P	-
MW-76	Performance	Annual	P	-
MW-77	Performance	Semiannual	P	P
MW-78	Performance	Biennial	-	-
MW-79	Performance	Semiannual	P	P
MW-80	Background	Biennial	-	-
MW-87	Performance-FSVE	Semiannual	P	P
MW-91	Performance	Annual	P	-
MW-126	Background	Biennial	-	-
MW-129	Background-NE	Annual	P	-
MW-130	Background-NE	Annual	P	-
MW-134	Performance-FSVE	Semiannual	P	P
MW-144	Performance	Semiannual	P	P
MW-145	Performance	Annual	P	-
MW-147	Performance	Annual	P	-
MW-148	Performance	Annual	P	-
MW-149	Performance	Semiannual	P	P
MW-150	Performance	Semiannual	P	P
MW-151	Performance	Semiannual	P	P
MW-152	Performance	Annual	P	-
MW-153	Performance	Biennial	-	-
MW-154	Background	Biennial	-	-
MW-155	Performance	Annual	P	-
MW-157	Performance	Annual	P	-
MW-158	Performance	Annual	P	-
MW-158A	Performance	Annual	P	-
MW-159	Performance	Semiannual	P	P
MW-160	Performance	Annual	P	-
MW-163	Performance	Semiannual	P	P
MW-164	Performance	Semiannual	P	P
MW-165	Performance	Semiannual	P	P
MW-165A	Performance	Semiannual	P	P
MW-166	Performance	Semiannual	P	P
MW-166A	Performance	Semiannual	P	P
MW-167	Background	Biennial	-	-
MW-169	Sentinel	Biennial	-	-
MW-170	Sentinel	Biennial	-	-
MW-171	Sentinel	Biennial	-	-
MW-174	Performance-FSVE	Semiannual	P	P

TABLE 37
2014 DUNN FIELD LTM SCHEDULE
ANNUAL LONG TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

Well ID	Well Classification	Sample Frequency	Annual Apr 2014	Semiannual Sep 2014
MW-176	Performance	Annual	P	-
MW-180	Performance	Annual	P	-
MW-182	Sentinel	Annual	P	-
MW-184	Performance	Semiannual	P	P
MW-187	Background	Biennial	-	-
MW-190	Performance	Semiannual	P	P
MW-220	Performance-FSVE	Semiannual	P	P
MW-221	Performance-FSVE	Semiannual	P	P
MW-222	Performance-FSVE	Semiannual	P	P
MW-223	Performance-FSVE	Semiannual	P	P
MW-224	Performance-FSVE	Semiannual	P	P
MW-225	Performance-FSVE	Semiannual	P	P
MW-226	Performance-FSVE	Semiannual	P	P
MW-227	Performance-FSVE	Semiannual	P	P
MW-228	Performance-FSVE	Semiannual	P	P
MW-230	Background-NE	Annual	P	-
MW-235	Sentinel	Annual	P	-
MW-237	Sentinel	Annual	P	-
MW-241	Performance	Annual	P	-
MW-242	Performance	Annual	P	-
MW-243	Performance	Semiannual	P	P
MW-244	Performance	Semiannual	P	P
MW-245	Performance	Semiannual	P	P
MW-246	Performance	Semiannual	P	P
MW-247	Performance	Semiannual	P	P
MW-248	Performance	Annual	P	-
MW-249	Performance	Semiannual	P	P
MW-250	Sentinel	Annual	P	-
MW-251	Sentinel	Annual	P	-

Notes:
PDB: Passive diffusion bag
P: Sample planned
-: Sample not planned

FIGURES



N
W E
S

Figure 1

SITE LOCATION MAP

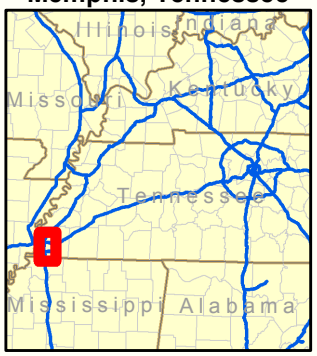
ANNUAL LONG TERM MONITORING REPORT - 2013

DEFENSE DEPOT MEMPHIS, TENNESSEE

Projection: NAD 1927 StatePlane Tennessee
Units: Feet

0 0.6 1.2 1.8 2.4 3 Miles

Installation Location
Memphis, Tennessee



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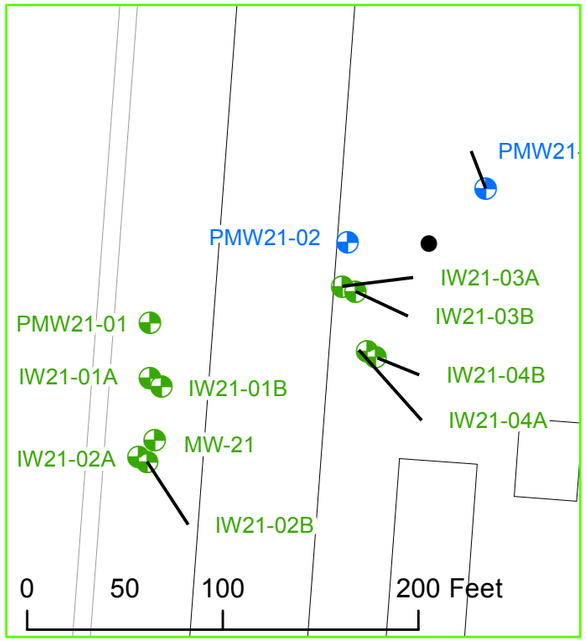
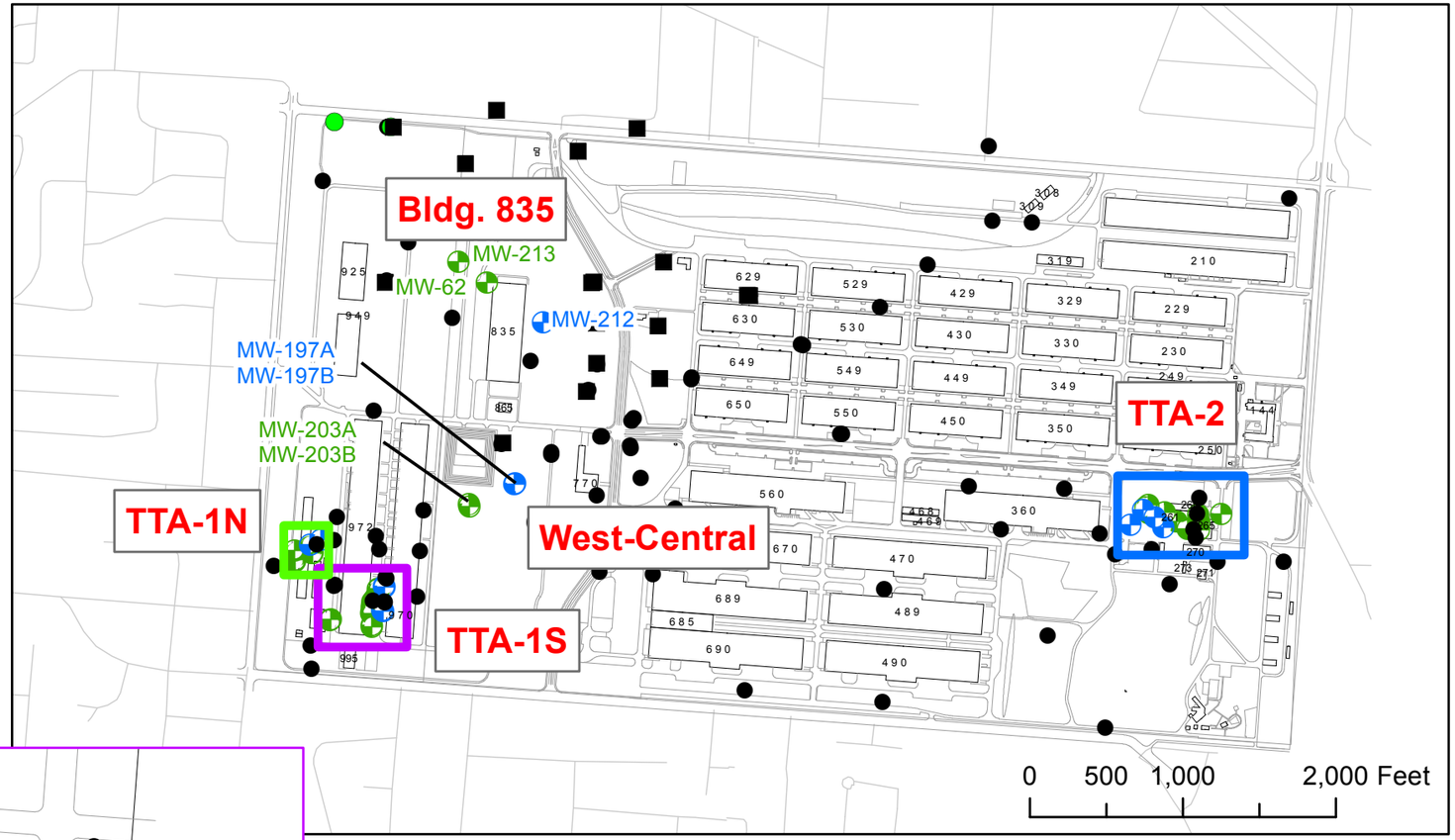
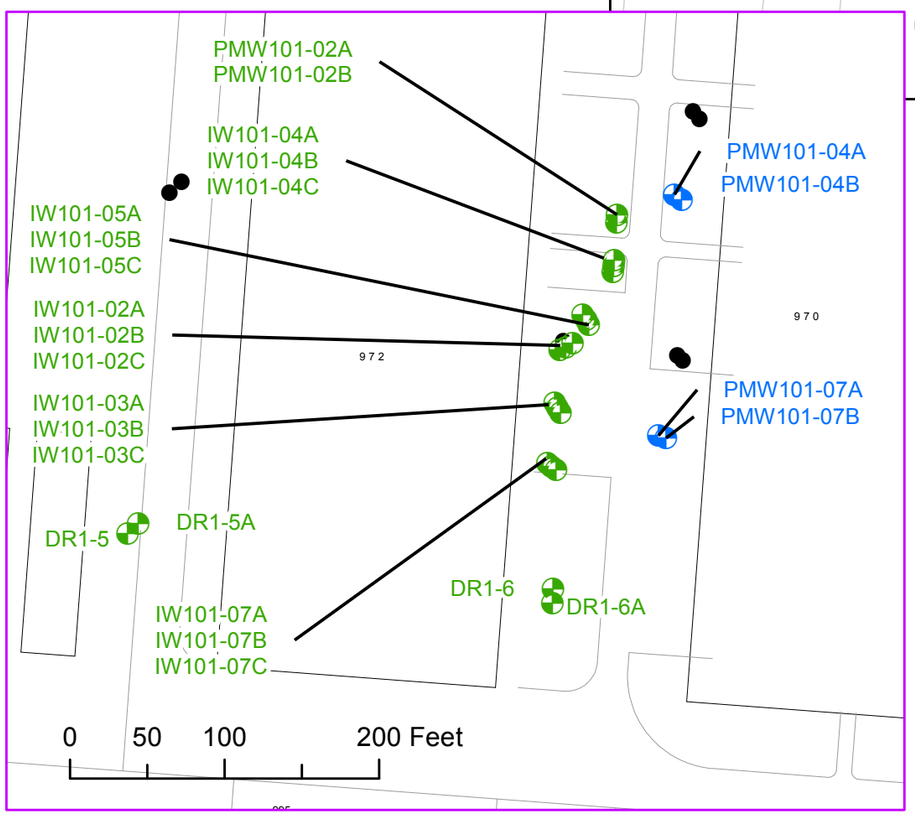






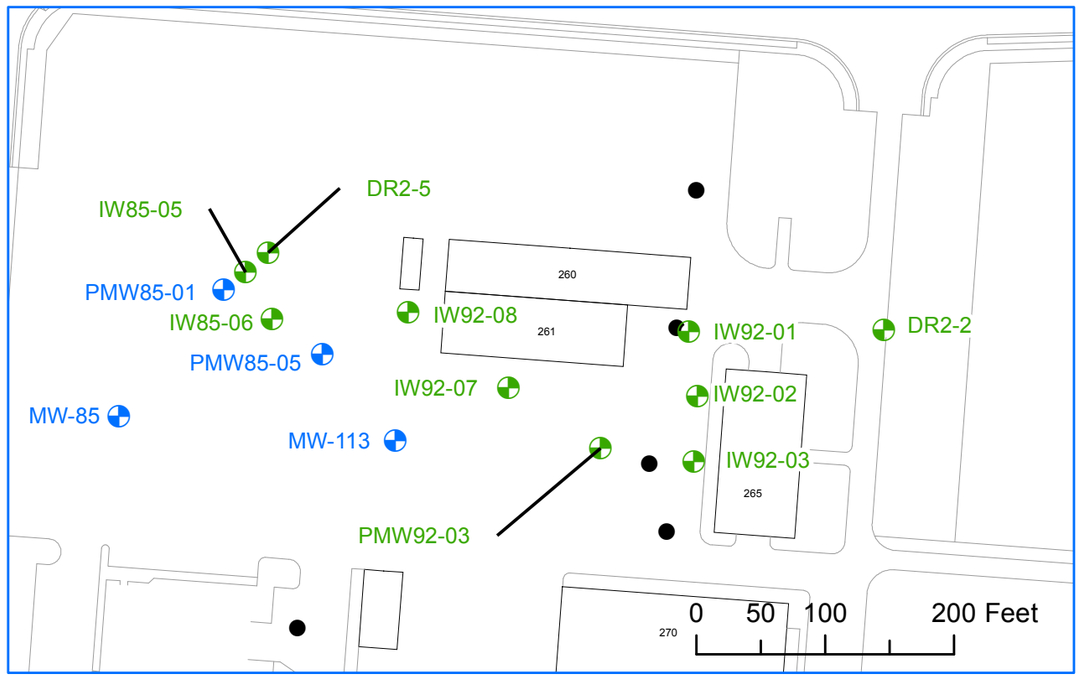


Figure 2

MAIN INSTALLATION EBT WELLS

ANNUAL LONG TERM MONITORING REPORT - 2013

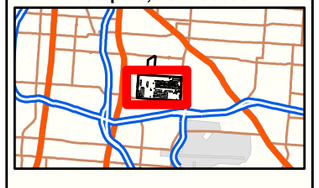
DEFENSE DEPOT MEMPHIS, TENNESSEE

Legend

- Monitoring Well Screened in the Fluvial Aquifer
- Monitoring Well Screened in the Transition Zone or Intermediate Aquifer
- Monitoring Well Screened in the Memphis Aquifer
- EBT Injection Well
- EBT Performance Monitoring Well

Projection: NAD 1927 StatePlane Tennessee
Units: Feet

Installation Location
Memphis, Tennessee



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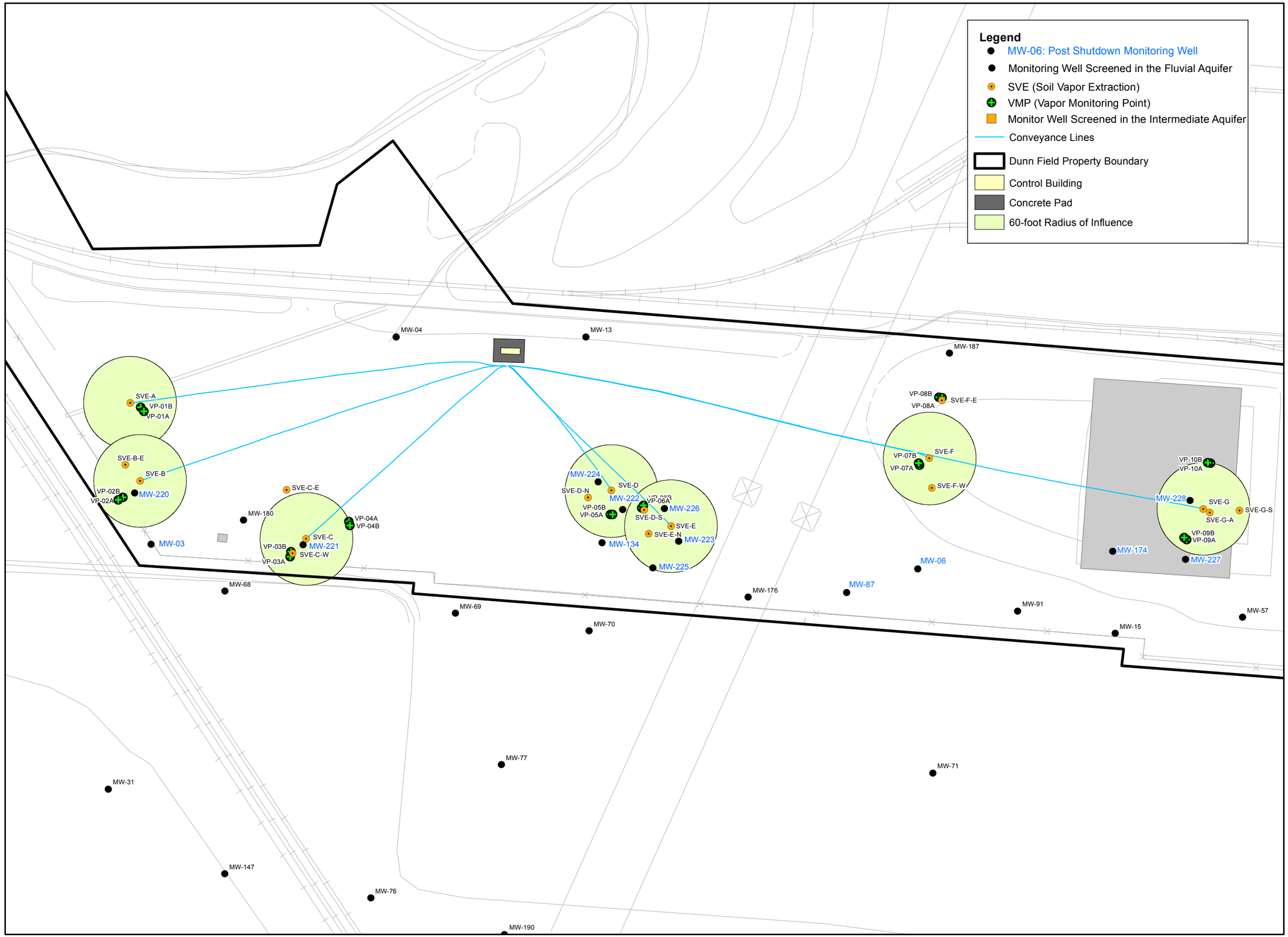

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Figure 3

FLUVIAL SVE SYSTEM

ANNUAL LONG TERM MONITORING REPORT - 2013

DEFENSE DEPOT MEMPHIS, TENNESSEE

0 25 50 100 150 200

Feet

Installation Location
Memphis, Tennessee

Date: December 2013
Edition: Rev 0

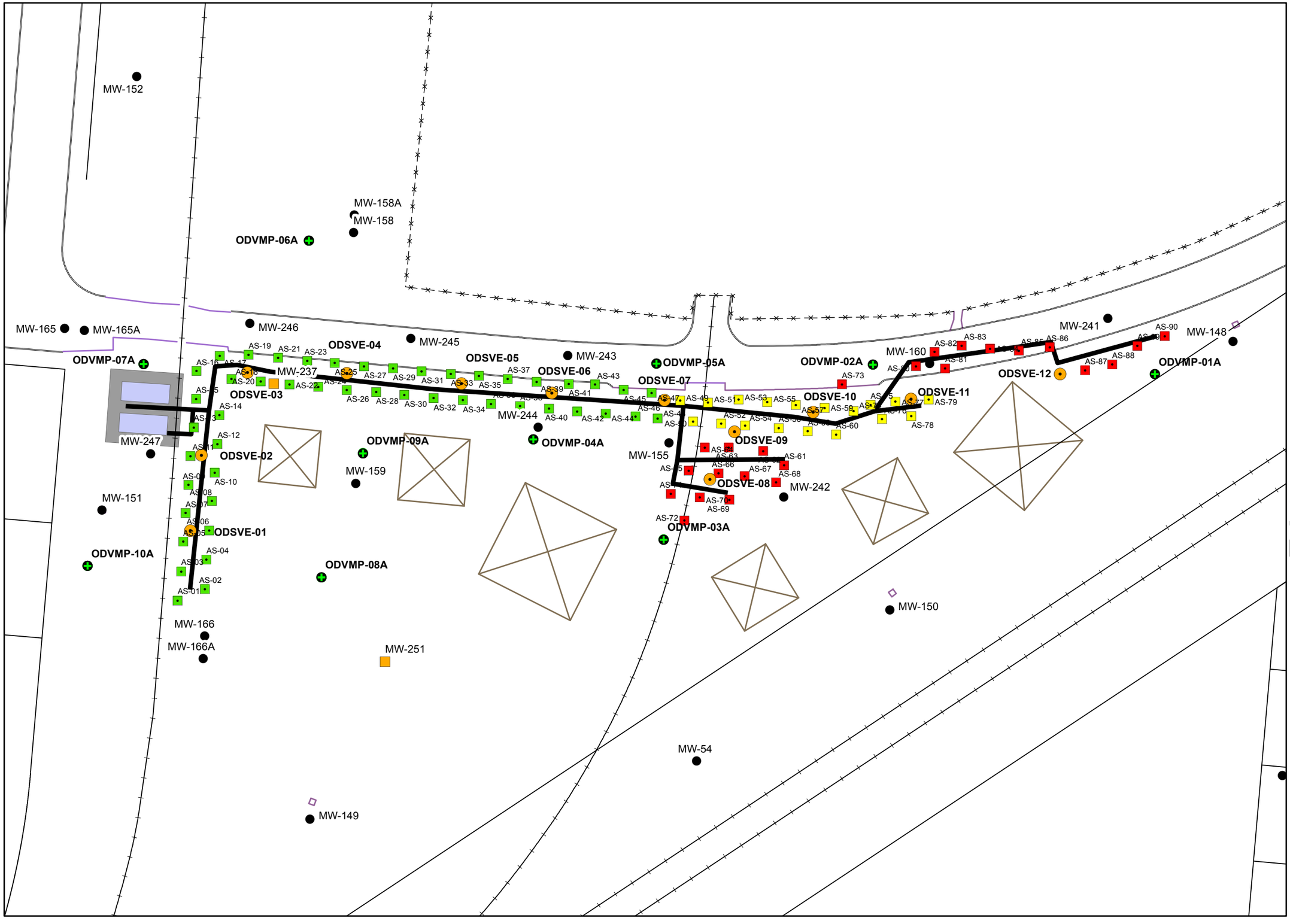

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Figure 4

AS-SVE SYSTEM

ANNUAL LONG TERM MONITORING REPORT - 2013

DEFENSE DEPOT MEMPHIS, TENNESSEE

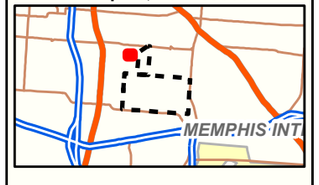
Legend

- Monitoring Well Screened in the Fluvial Aquifer
- Monitoring Well Screened in the Intermediate Aquifer
- AS Location (full time)
- AS Location (1/2 time)
- AS Location (closed)
- VMP Location
- SVE Location
- Conveyance Lines
- SVE Compound

0 25 50 75 100

Feet

Installation Location
Memphis, Tennessee



Date: December 2013
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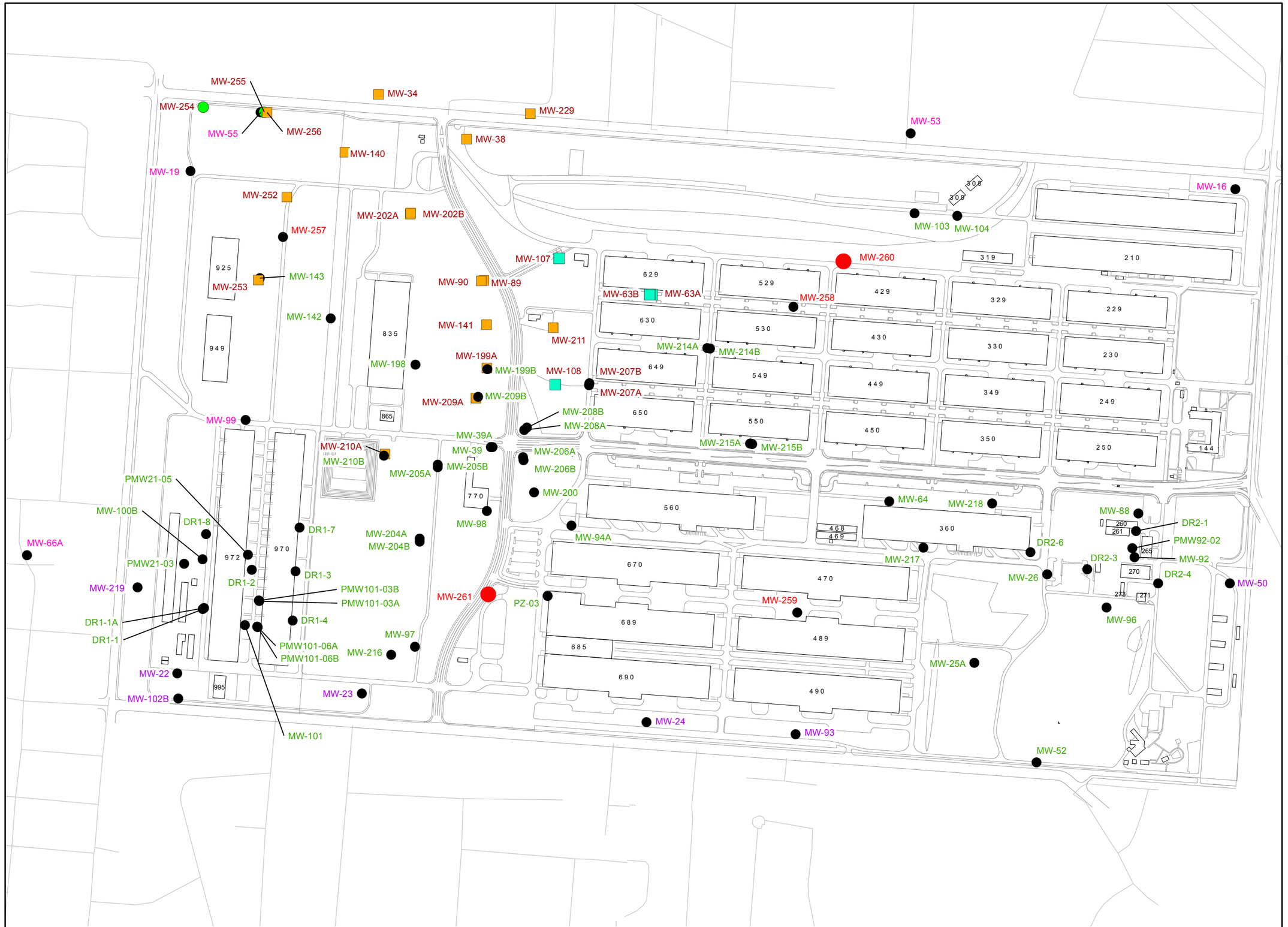

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Figure 5

MAIN INSTALLATION LTM WELLS

ANNUAL LONG TERM MONITORING REPORT - 2013

DEFENSE DEPOT MEMPHIS, TENNESSEE

Legend

- Monitoring 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
- New Monitoring Well (Installed July 2013)

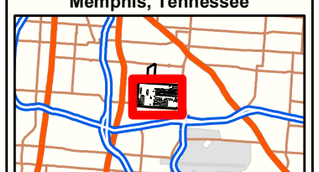
Well Classification

- MW-16 Background
- MW-34 Sentinel
- MW-88 Performance
- MW-219 Boundary
- MW-257 New - Not Classified

0 250 500 1,000

Feet

Installation Location
Memphis, Tennessee



Date: December 2013
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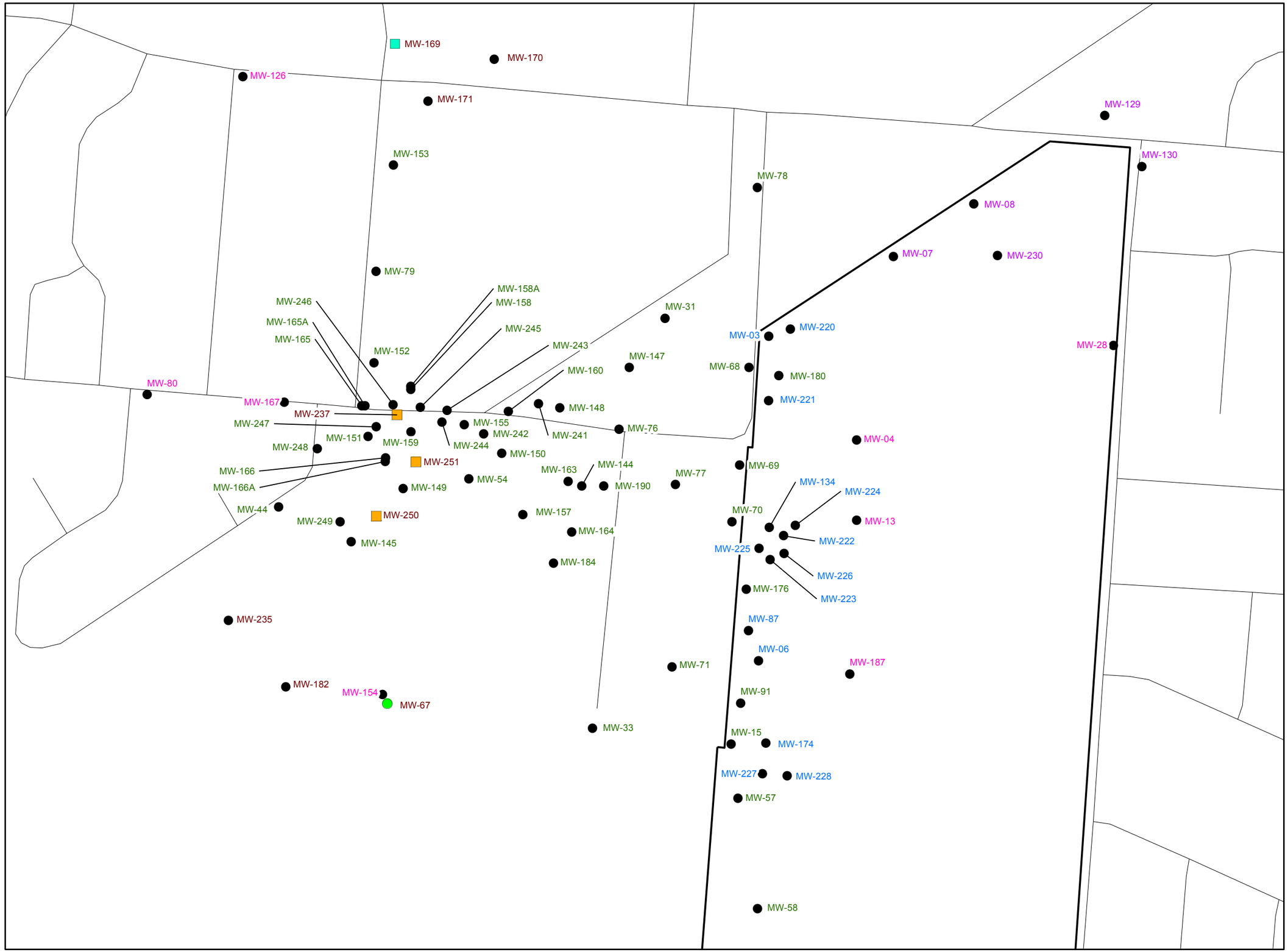

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Figure 6

DUNN FIELD LTM WELLS

ANNUAL LONG TERM MONITORING REPORT - 2013

DEFENSE DEPOT MEMPHIS, TENNESSEE

Legend

- Monitoring 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

Off Depot Well Classification

- MW-04 Background
- MW-07 Background-NE
- MW-250 Sentinel
- MW-15 Performance
- MW-03 Performance-FSVE

Dunn Field Boundary

0 150 300 450

Feet

Installation Location
Memphis, Tennessee

Date: December 2013
Edition: Rev 0

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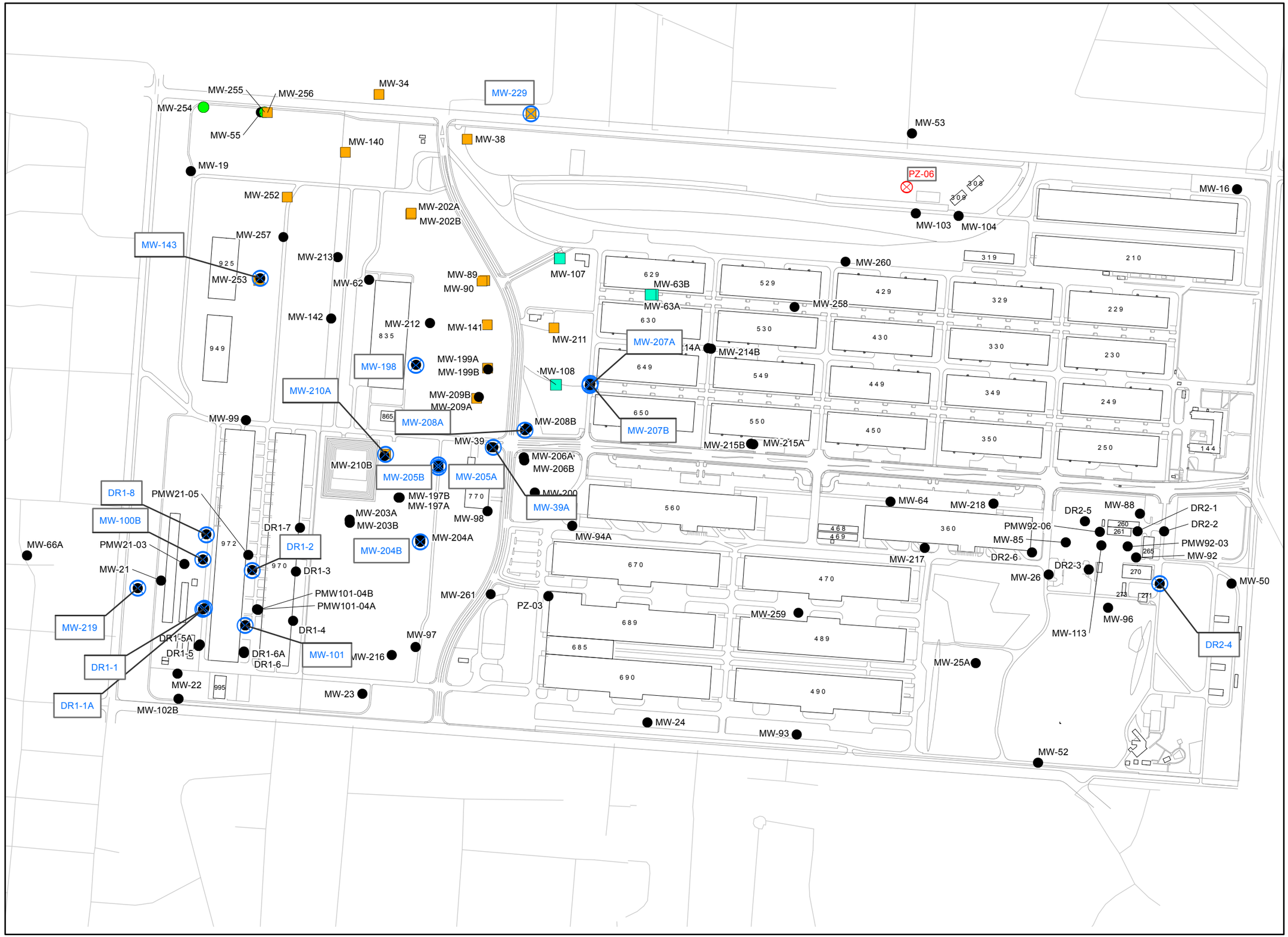

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Figure 7

MAIN INSTALLATION LTM WELL ABANDONMENT AND REPAIR

ANNUAL LONG TERM MONITORING REPORT - 2013

DEFENSE DEPOT MEMPHIS, TENNESSEE

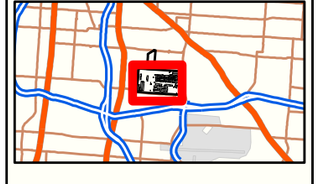
Legend

- Monitoring 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
- MW-54 Repaired Well
- MW-10 Abandoned Well

Projection: NAD 1927 StatePlane Tennessee
Units: Feet

0 250 500 1,000
Feet

Installation Location
Memphis, Tennessee



Date: December 2013
Edition: Rev 0

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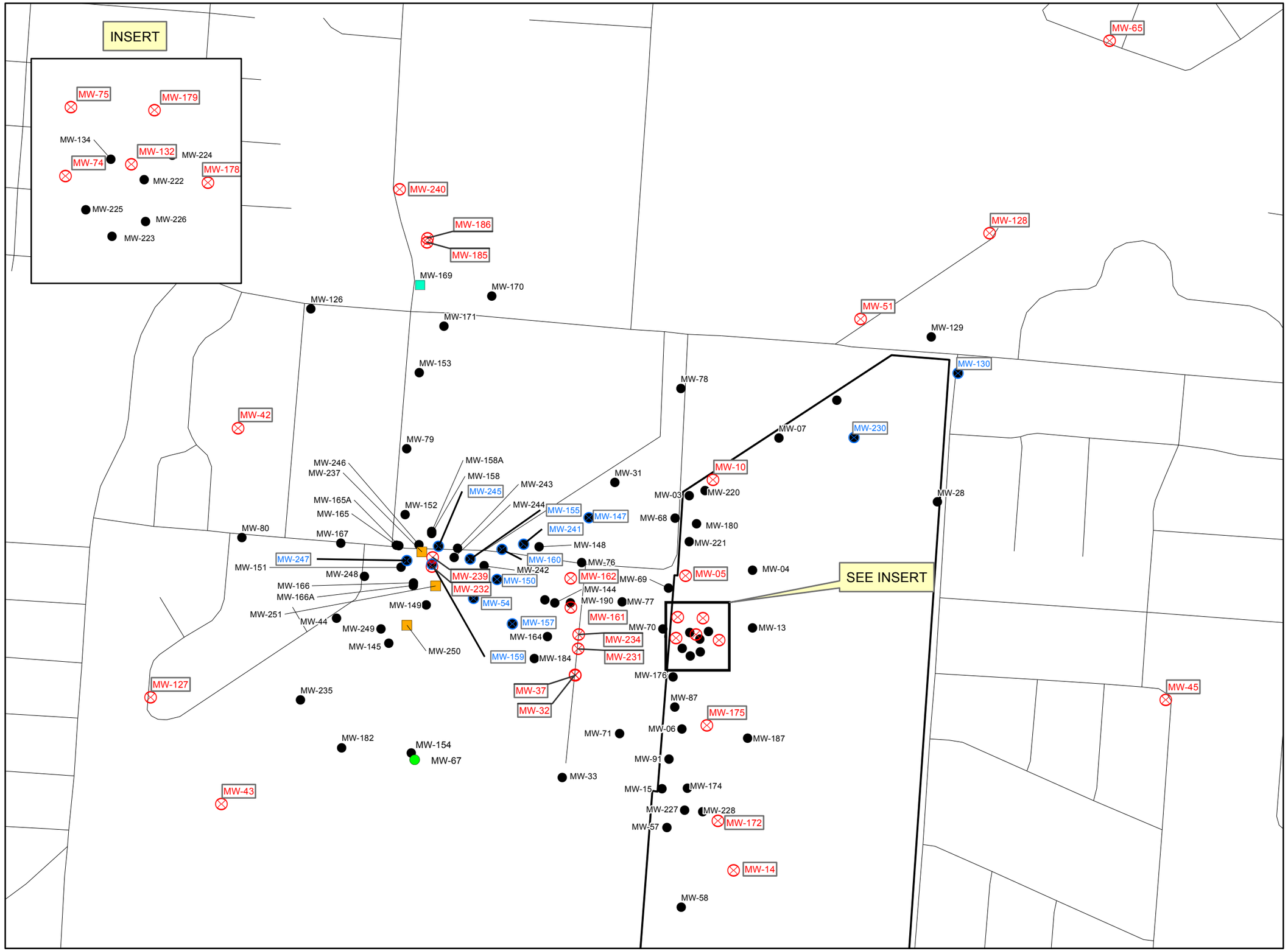

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Figure 8

DUNN FIELD WELL ABANDONMENT AND REPAIR

ANNUAL LONG TERM MONITORING REPORT - 2013

DEFENSE DEPOT MEMPHIS, TENNESSEE

Legend

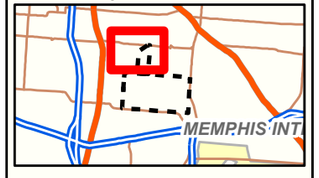
- Monitoring Well Screened in the Fluvial Aquifer
- Monitoring Well Screened in the Intermediate Aquifer
- Monitoring Well Screened in the Transition Zone
- Monitoring Well Screened in the Memphis Aquifer
- MW-54 Repaired Well
- MW-10 Abandoned Well

Dunn Field Boundary

0 150 300 450 600

Feet

Installation Location
Memphis, Tennessee



Date: December 2013
Edition: Rev 0

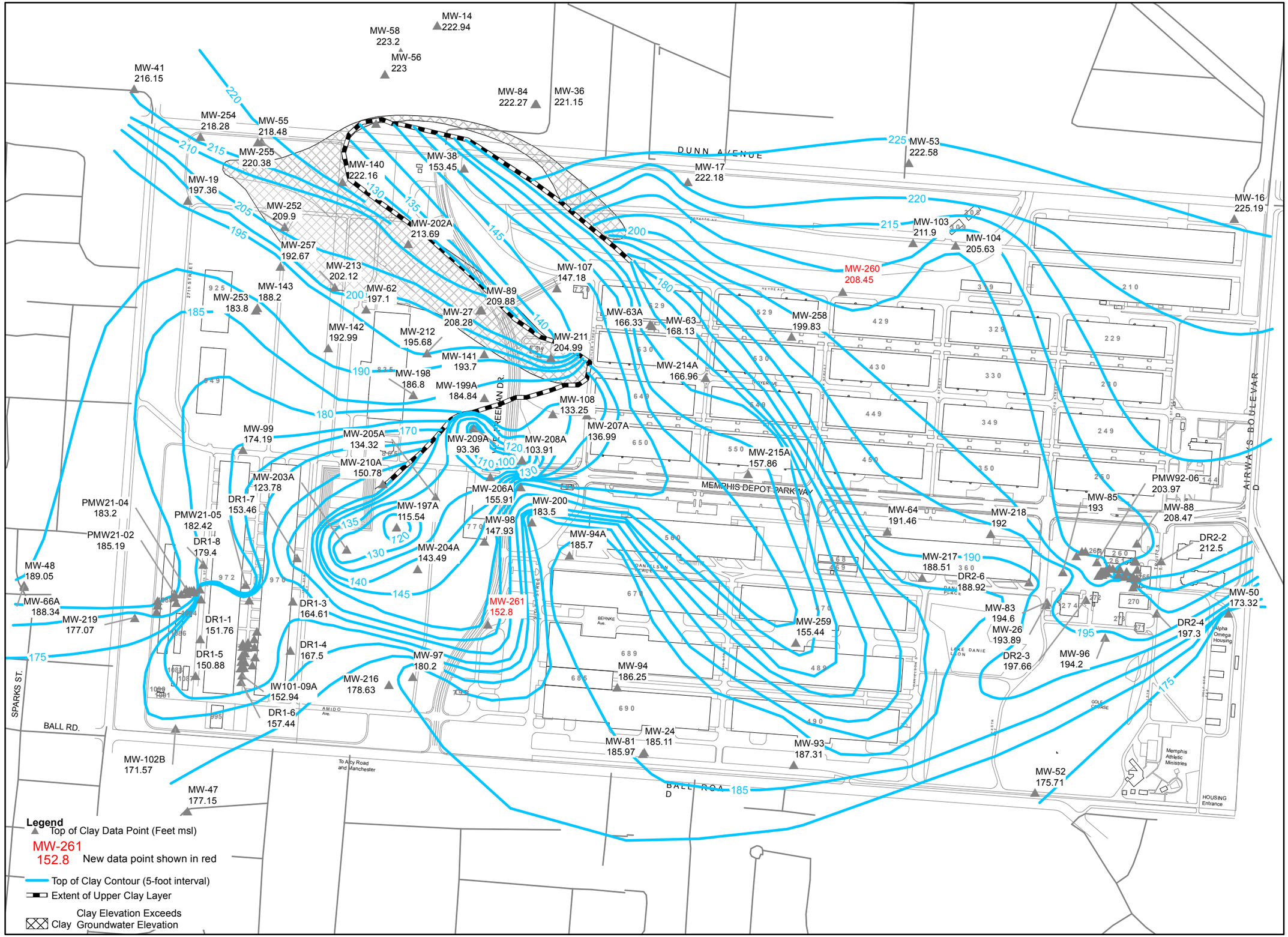


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Figure 9

MAIN INSTALLATION TOP OF CLAY ELEVATIONS

ANNUAL LONG TERM MONITORING REPORT - 2013

DEFENSE DEPOT MEMPHIS, TENNESSEE

Projection: NAD 1927 StatePlane Tennessee
Units: Feet

0 200 400 800

Feet

Installation Location
Memphis, Tennessee

Date: December 2013
Edition: Rev 0

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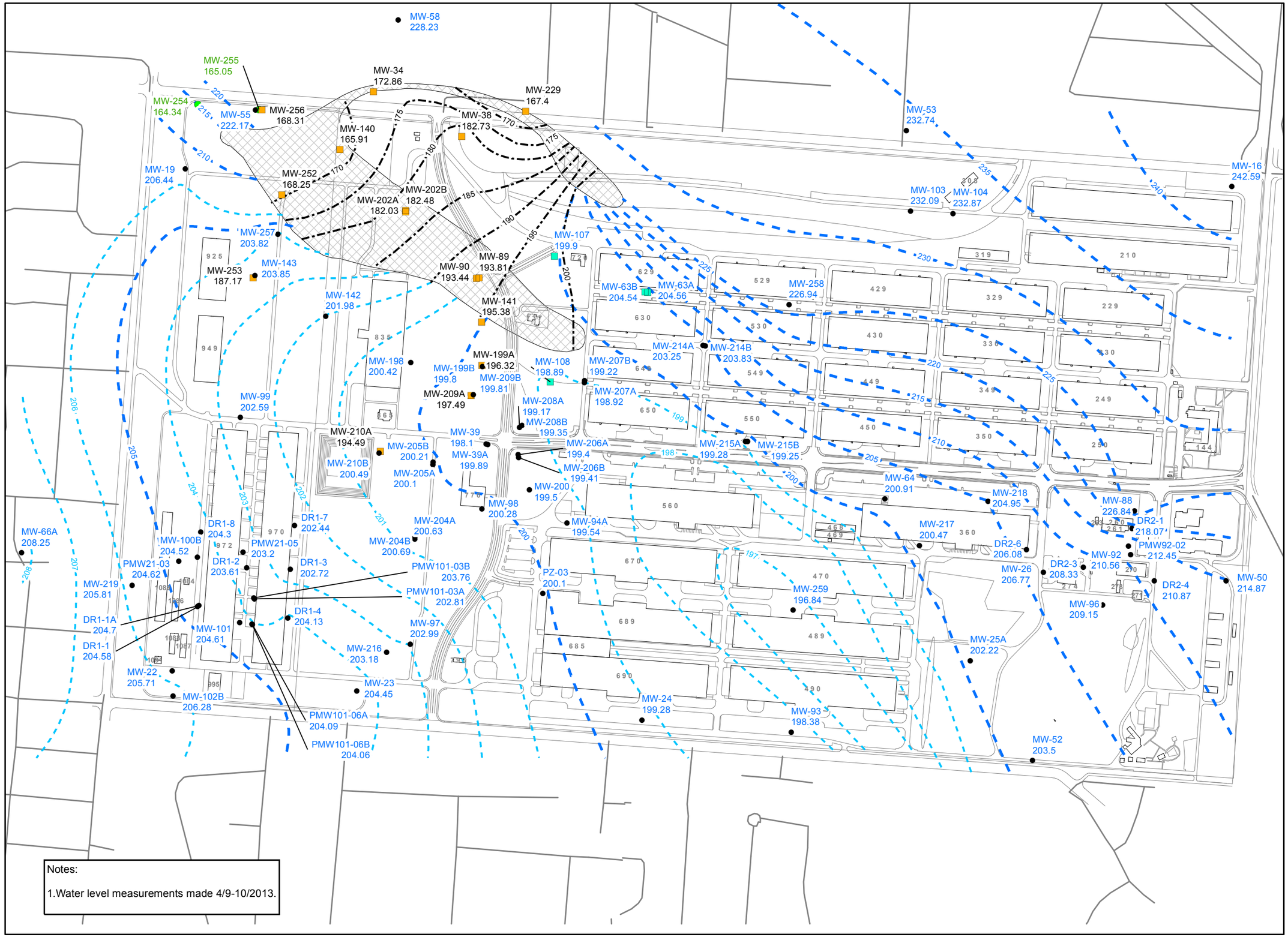

Notes:

1.Water level measurements made 4/9-10/2013.

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Figure 10

MAIN INSTALLATION GROUNDWATER ELEVATIONS, APRIL 2013

ANNUAL LONG TERM MONITORING REPORT - 2013

DEFENSE DEPOT MEMPHIS, TENNESSEE

Legend

- Monitoring Well Screened in the Fluvial Aquifer
- Monitoring Well Screened in the Intermediate Aquifer
- Monitoring Well Screened in the Transition Zone
- Potentiometric surface of the Fluvial Aquifer 1-ft. contour
- Potentiometric surface of the Fluvial Aquifer 5-ft. contour
- Potentiometric surface of the Intermediate Aquifer 5-ft. contour
- Clay Elevation Exceeds Groundwater Elevation

MW-03 100.12 Blue: value used for Fluvial Aquifer groundwater contours

MW-237 100.15 Black: value used for Intermediate Aquifer groundwater contours

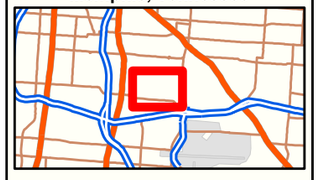
MW-254 156.83 Green: Memphis Aquifer, not contoured

Projection: NAD 1927 StatePlane Tennessee
Units: Feet

0 250 500 1,000

Feet

Installation Location
Memphis, Tennessee



Date: December 2013
Edition: Rev 0

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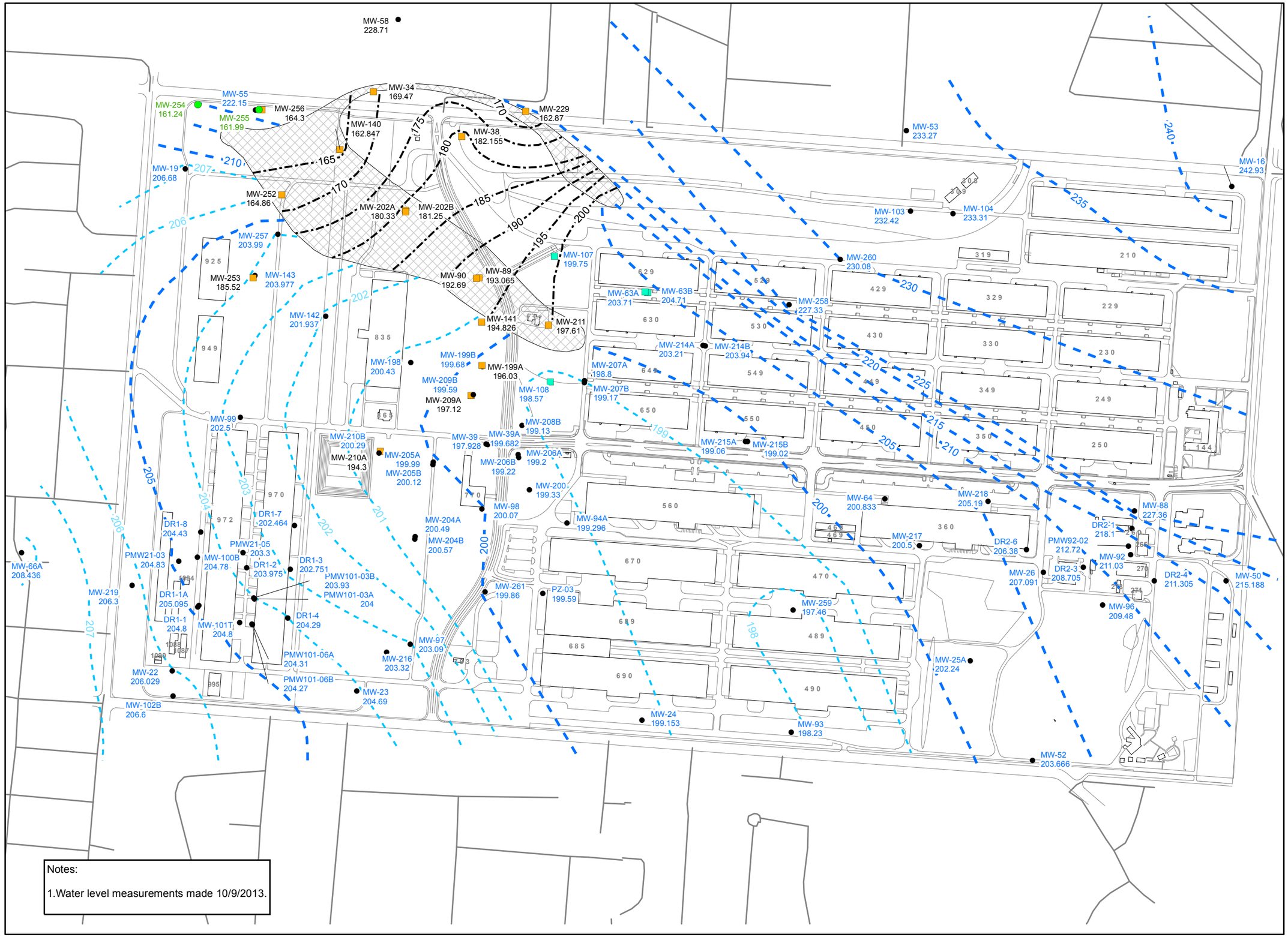

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Figure 11

MAIN INSTALLATION GROUNDWATER ELEVATIONS, OCTOBER 2013

ANNUAL LONG TERM MONITORING REPORT - 2013

DEFENSE DEPOT MEMPHIS, TENNESSEE

Legend

- Monitoring Well Screened in the Fluvial Aquifer
- Monitoring Well Screened in the Intermediate Aquifer
- Monitoring Well Screened in the Transition Zone
- Potentiometric surface of the Fluvial Aquifer 1-ft. contour
- Potentiometric surface of the Fluvial Aquifer 5-ft. contour
- Potentiometric surface of the Intermediate Aquifer 5-ft. contour
- Clay Elevation Exceeds Groundwater Elevation

MW-03 100.12 Blue: value used for Fluvial Aquifer groundwater contours

MW-237 100.15 Black: value used for Intermediate Aquifer groundwater contours

MW-254 156.83 Green: Memphis Aquifer, not contoured

Projection: NAD 1927 StatePlane Tennessee
Units: Feet

0 250 500 1,000
Feet

Installation Location
Memphis, Tennessee

Date: December 2013
Edition: Rev 0

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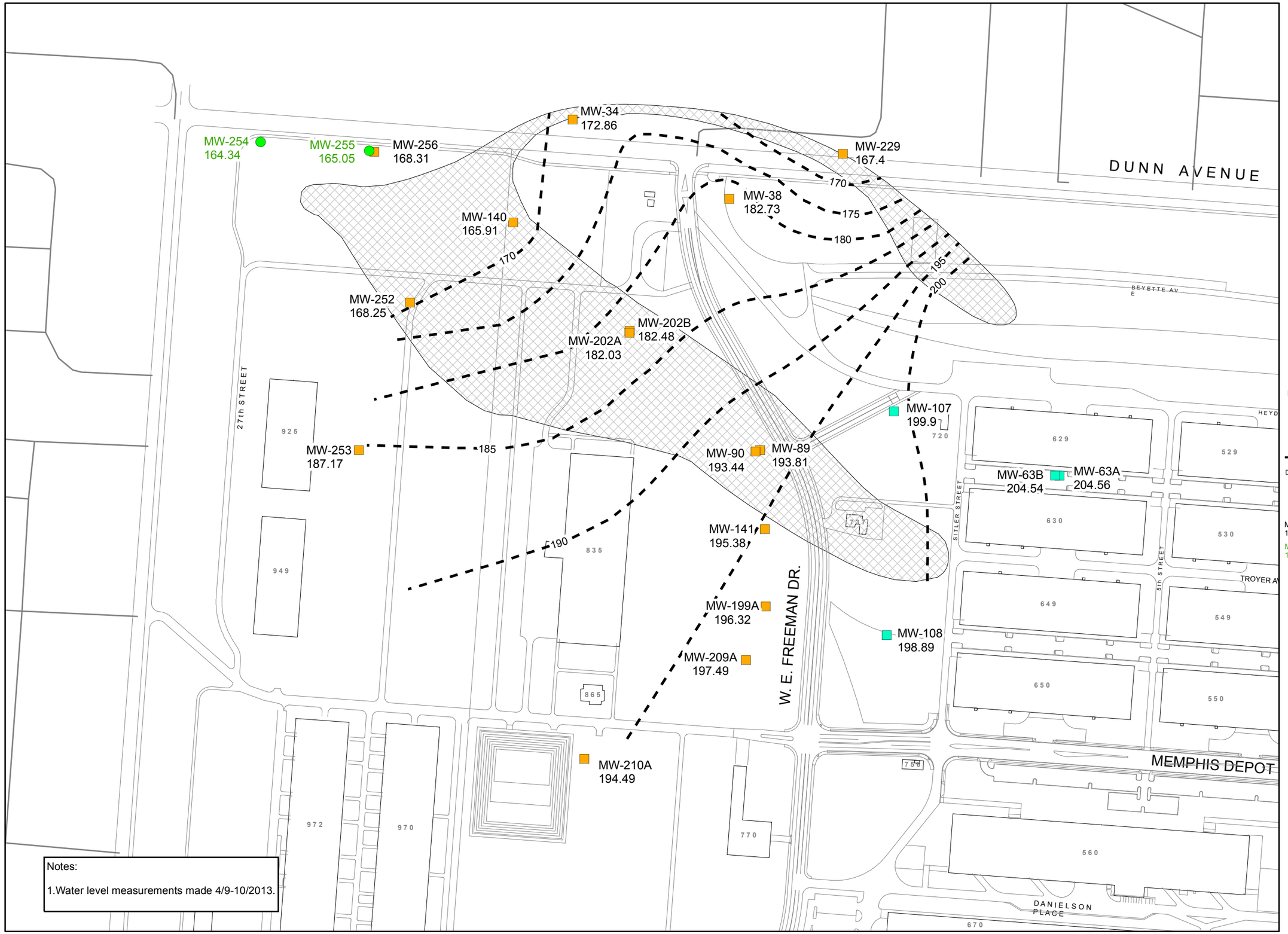

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Figure 12

MAIN INSTALLATION INTERMEDIATE AND MEMPHIS AQUIFER GROUNDWATER ELEVATIONS, APRIL 2013

ANNUAL LONG TERM MONITORING REPORT - 2013

DEFENSE DEPOT MEMPHIS, TENNESSEE

Legend

- Monitoring Well Screened in the Fluvial Aquifer
- Monitoring Well Screened in the Intermediate Aquifer
- Monitoring Well Screened in the Transition Zone
- Potentiometric surface of the Intermediate Aquifer 5-ft. contour
- Clay Elevation Exceeds Groundwater Elevation

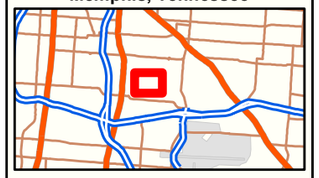
MW-237 100.15 Black: value used for Intermediate Aquifer groundwater contours

MW-254 156.83 Green: Memphis Aquifer, not contoured

Projection: NAD 1927 StatePlane Tennessee
Units: Feet

0 125 250 500
Feet

Installation Location
Memphis, Tennessee



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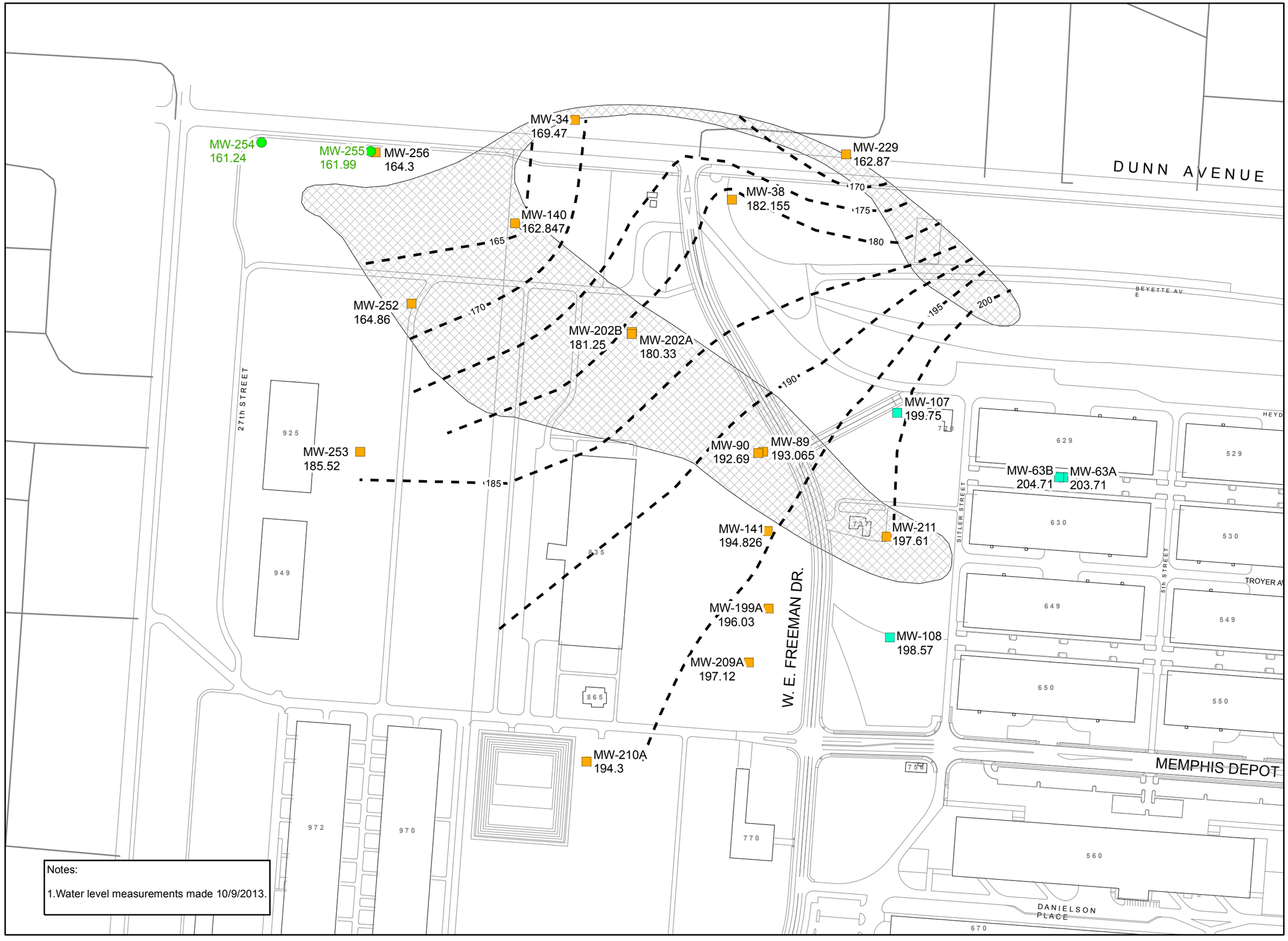

Notes:

1.Water level measurements made 10/9/2013.

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Figure 13

MAIN INSTALLATION INTERMEDIATE AND MEMPHIS AQUIFER GROUNDWATER ELEVATIONS, OCTOBER 2013

ANNUAL LONG TERM MONITORING REPORT - 2013

DEFENSE DEPOT MEMPHIS, TENNESSEE

Legend

- Monitoring Well Screened in the Fluvial Aquifer
- Monitoring Well Screened in the Intermediate Aquifer
- Monitoring Well Screened in the Transition Zone
- Potentiometric surface of the Intermediate Aquifer 5-ft. contour
- Clay Elevation Exceeds Groundwater Elevation

MW-237 100.15 Black: value used for Intermediate Aquifer groundwater contours

MW-254 156.83 Green: Memphis Aquifer, not contoured

Projection: NAD 1927 StatePlane Tennessee
Units: Feet

0 125 250 500

Feet

Installation Location
Memphis, Tennessee

Date: December 2013
Edition: Rev 0

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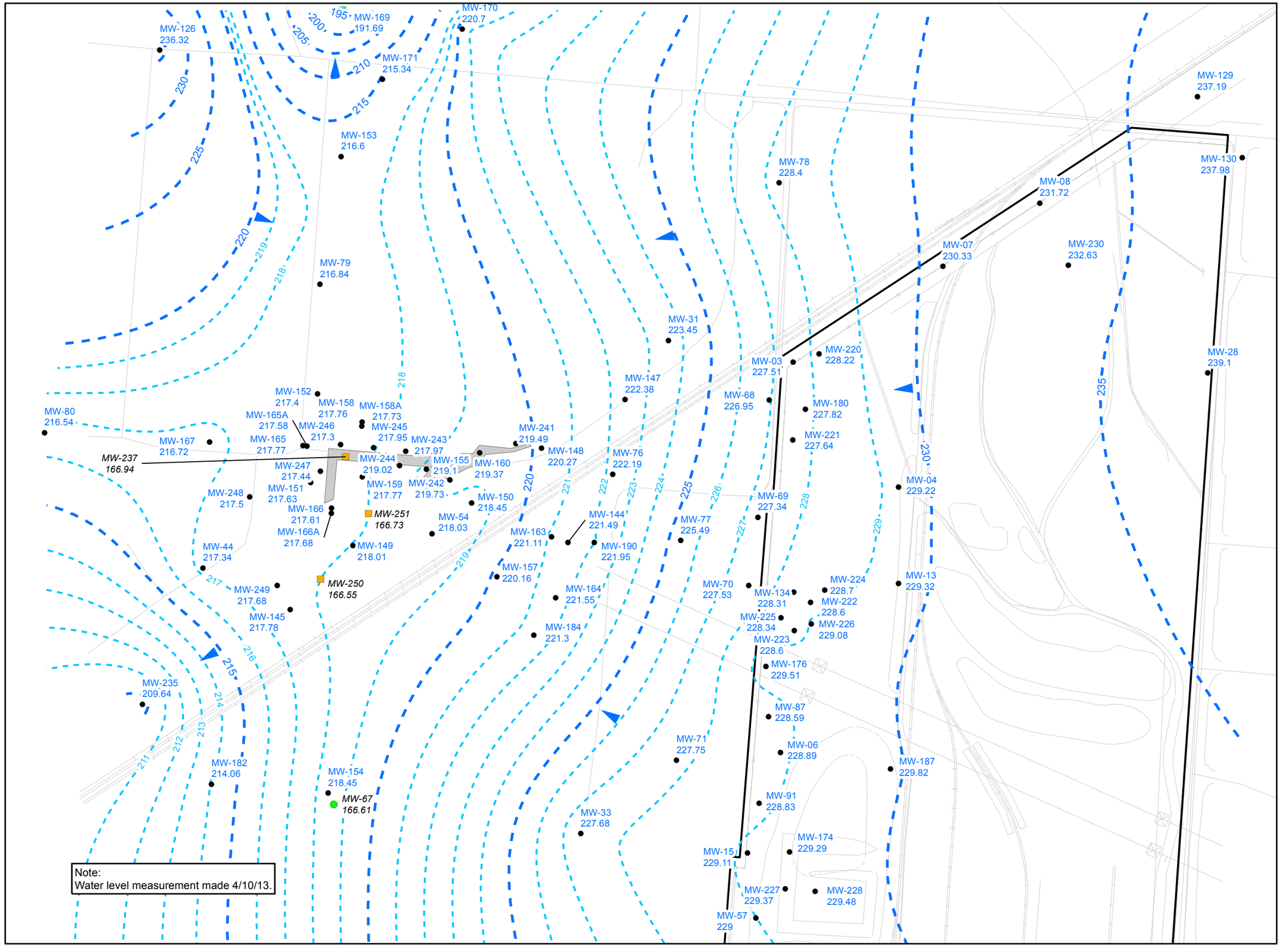

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Figure 14

DUNN FIELD GROUNDWATER ELEVATIONS, APRIL 2013

ANNUAL LONG TERM MONITORING REPORT - 2013

DEFENSE DEPOT MEMPHIS, TENNESSEE

Legend

- Monitoring 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
- Dunn Field Boundary
- Air Sparge Area

MW-03 100.12 Blue non-italics: value used for groundwater contours

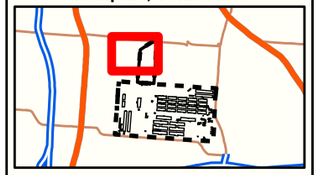
Groundwater Contours

- Potentiometric surface of the Fluvial Aquifer 1-ft. contour
- Potentiometric surface of the Fluvial Aquifer 5-ft. contour
- Groundwater Flow Direction

0 100 200 300

Feet

Installation Location
Memphis, Tennessee



Date: December 2013
Edition: Rev 0

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MW-126 232.82
MW-169 191.3
MW-170 219.21
MW-171 218.26
MW-153 217.01
MW-129 238.09
MW-130 239.15
MW-78 229.05
MW-08 232.42
MW-07 231.12
MW-230 233.48
MW-79 217.32
MW-31 224.25
MW-03 228.26
MW-220 228.94
MW-28 240.31
MW-152 217.86
MW-147 223.181
MW-68 227.75
MW-180 228.54
MW-80 217.41
MW-158A 218.33
MW-158 218.36
MW-245 218.32
MW-165A 218.14
MW-246 218.22
MW-221 228.36
MW-167 217.68
MW-165 217.84
MW-243 218.84
MW-241 220.13
MW-148 220.791
MW-247 217.85
MW-237 164.46
MW-155 219.44
MW-160 219.69
MW-76 222.97
MW-04 230.01
MW-151 218.32
MW-159 218.63
MW-244 218.81
MW-242 219.98
MW-248 218.2
MW-166 218.42
MW-166A 218.45
MW-251 163.75
MW-150 219.63
MW-69 227.98
MW-54 219.31
MW-163 221.83
MW-144 222.08
MW-77 226.06
MW-44 217.95
MW-149 218.78
MW-157 220.95
MW-190 222.66
MW-70 228.24
MW-134 228.96
MW-224 229.27
MW-13 229.99
MW-249 218.31
MW-250 163.54
MW-164 222.18
MW-225 228.97
MW-222 229.21
MW-145 218.42
MW-184 221.94
MW-226 229.25
MW-223 229.17
MW-235 210.99
MW-176 229.05
MW-87 229.18
MW-182 NM
MW-154 218.57
MW-67 163.81
MW-06 229.5
MW-71 228.29
MW-187 230.34
MW-91 229.35
MW-15 229.6
MW-174 229.69
MW-227 229.86
MW-228 229.94
MW-57 229.54

Note:
Water level measurement made 10/8/13.

Figure 15
DUNN FIELD GROUNDWATER ELEVATIONS, OCTOBER 2013

ANNUAL LONG TERM MONITORING REPORT - 2013

DEFENSE DEPOT MEMPHIS, TENNESSEE

Legend

- Monitoring 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
- Dunn Field Boundary
- Air Sparge Area

MW-03 100.12 Blue non-italics: value used for groundwater contours

Groundwater Contours

- Potentiometric surface of the Fluvial Aquifer 1-ft. contour
- Potentiometric surface of the Fluvial Aquifer 5-ft. contour
- Groundwater Flow Direction

0 100 200 300
Feet

Installation Location
Memphis, Tennessee

Date: December 2013
Edition: Rev 0

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Figure 16

MAIN INSTALLATION PCE CONCENTRATIONS, APRIL 2013

ANNUAL LONG TERM MONITORING REPORT - 2013

DEFENSE DEPOT MEMPHIS, TENNESSEE

Legend

PCE Ranges
ug/L

- 0 - 5
- 5 - 10
- 10 - 50
- 50 - 100
- 100 - 300
- Not Sampled

PCE Isopleth
ug/L

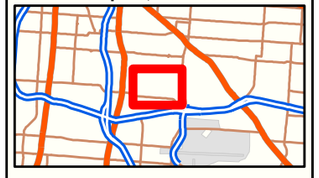
- 5
- 10
- 50
- 100

Clay Elevation Exceeds Groundwater Elevation

Potentiometric surface of the Fluvial Aquifer 1-ft. contour
Potentiometric surface of the Fluvial Aquifer 5-ft. contour
Potentiometric surface of the Intermediate Aquifer 5-ft. contour

0 200 400 800
Feet

Installation Location
Memphis, Tennessee



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Edition: Rev 0

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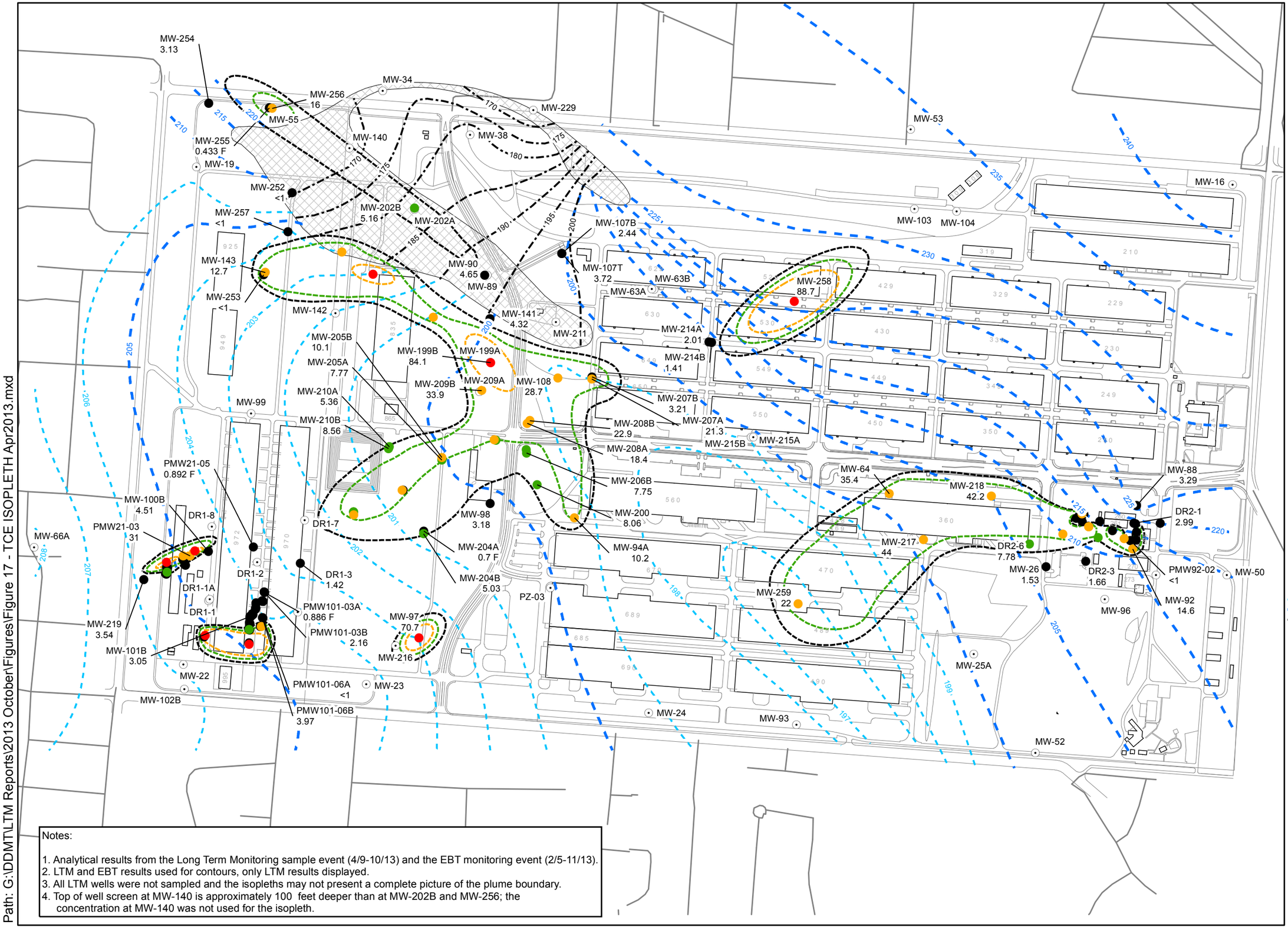
Notes:

1. Analytical results from the Long Term Monitoring sample event (4/9-10/13) and the EBT monitoring event (2/5-11/13).
2. LTM and EBT results used for contours, only LTM results displayed.
3. All LTM wells were not sampled and the isopleths may not present a complete picture of the plume boundary.
4. Top of well screen at MW-140 is approximately 100 feet deeper than at MW-202B and MW-256; the concentration at MW-140 was not used for the isopleth.



Notes:

1. Analytical results from the Long Term Monitoring sample event (4/9-10/13) and the EBT monitoring event (2/5-11/13).
2. LTM and EBT results used for contours, only LTM results displayed.
3. All LTM wells were not sampled and the isopleths may not present a complete picture of the plume boundary.
4. Top of well screen at MW-140 is approximately 100 feet deeper than at MW-202B and MW-256; the concentration at MW-140 was not used for the isopleth.

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Figure 17

MAIN INSTALLATION TCE CONCENTRATIONS, APRIL 2013

ANNUAL LONG TERM MONITORING REPORT - 2013

DEFENSE DEPOT MEMPHIS, TENNESSEE

Legend

TCE Ranges
ug/L

- 0 - 5
- 5 - 10
- 10 - 50
- 50 - 100
- 100 - 300
- Not Sampled

TCE Isopleth
ug/L

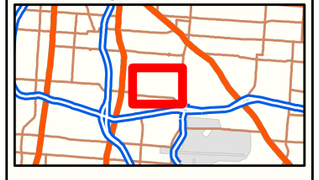
- 5
- 10
- 50
- 100

Clay Elevation Exceeds Groundwater Elevation

Potentiometric surface of the Fluvial Aquifer 1-ft. contour
Potentiometric surface of the Fluvial Aquifer 5-ft. contour
Potentiometric surface of the Intermediate Aquifer 5-ft. contour

0 200 400 800
Feet

Installation Location
Memphis, Tennessee



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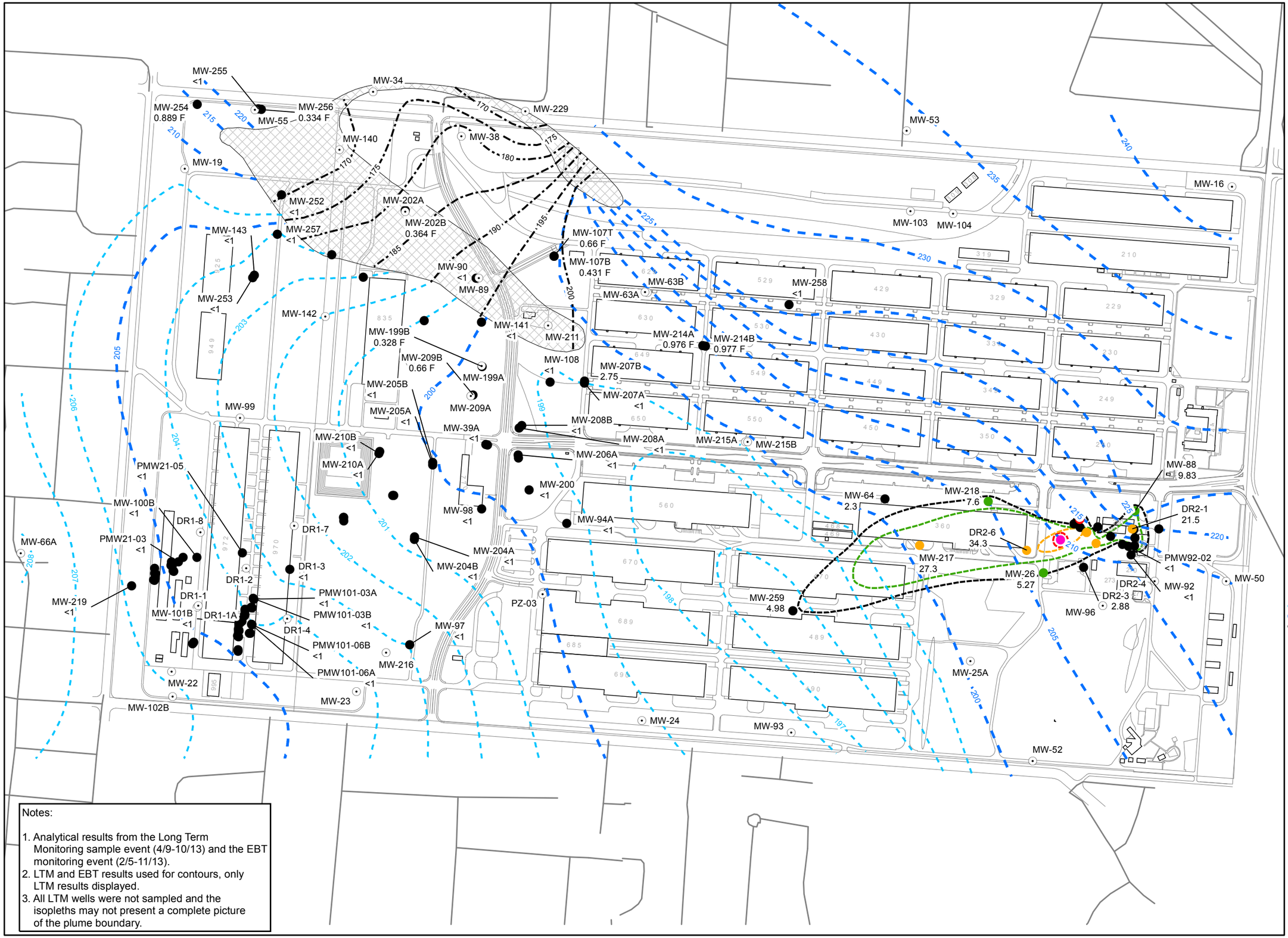

Notes:

1. Analytical results from the Long Term Monitoring sample event (4/9-10/13) and the EBT monitoring event (2/5-11/13).
2. LTM and EBT results used for contours, only LTM results displayed.
3. All LTM wells were not sampled and the isopleths may not present a complete picture of the plume boundary.

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Figure 18

MAIN INSTALLATION CT CONCENTRATIONS, APRIL 2013

ANNUAL LONG TERM MONITORING REPORT - 2013

DEFENSE DEPOT MEMPHIS, TENNESSEE

Legend

CT Ranges ug/L

- 0 - 5
- 5 - 10
- 10 - 50
- 50 - 100
- 100 - 300
- Not Sampled

CT Isopleth ug/L

- 5
- 10
- 50
- 100

Clay Elevation Exceeds Groundwater Elevation

- Potentiometric surface of the Fluvial Aquifer 1-ft. contour
- Potentiometric surface of the Fluvial Aquifer 5-ft. contour
- Potentiometric surface of the Intermediate Aquifer 5-ft. contour

0 200 400 800

Feet

Installation Location
Memphis, Tennessee

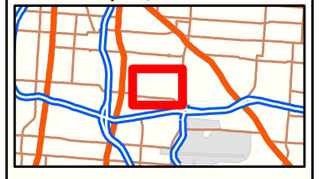

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Figure 19

MAIN INSTALLATION PCE CONCENTRATIONS, OCTOBER 2013

ANNUAL LONG TERM MONITORING REPORT - 2013

DEFENSE DEPOT MEMPHIS, TENNESSEE

Legend

PCE Ranges ug/L

- 0 - 5
- 5 - 10
- 10 - 50
- 50 - 100
- 100 - 300
- Not Sampled

PCE Isopleth ug/L

- 5
- 10
- 50
- 100
- Clay Elevation Exceeds Groundwater Elevation
- Potentiometric surface of the Fluvial Aquifer 1-ft. contour
- Potentiometric surface of the Fluvial Aquifer 5-ft. contour
- Potentiometric surface of the Intermediate Aquifer 5-ft. contour

0 200 400 800

Feet

Installation Location
Memphis, Tennessee

Date: December 2013
Edition: Rev 0

HDR

Notes:

1. Analytical results from the Long Term Monitoring sample event (10/11-1213) and the EBT monitoring event (11/5-11/13)
2. LTM and EBT results used for contours, only LTM results displayed.
3. Top of well screen at MW-140 is approximately 100 feet deeper than at MW-202B and MW-256; the concentration at MW-140 was not used for the isopleth.

Path: G:\DDMT\LTM Reports\2013 October\Figures\Figure 20 - TCE ISOPLETH OCT2013.mxd

Figure 20

MAIN INSTALLATION TCE CONCENTRATIONS, OCTOBER 2013

ANNUAL LONG TERM MONITORING REPORT - 2013

DEFENSE DEPOT MEMPHIS, TENNESSEE

Legend

TCE Ranges ug/L

- 0 - 5
- 5 - 10
- 10 - 50
- 50 - 100
- 100 - 300
- Not Sampled

TCE Isopleth ug/L

- 5
- 10
- 50
- 100
- Clay Elevation Exceeds Groundwater Elevation
- Potentiometric surface of the Fluvial Aquifer 1-ft. contour
- Potentiometric surface of the Fluvial Aquifer 5-ft. contour
- Potentiometric surface of the Intermediate Aquifer 5-ft. contour

0 200 400 800

Feet

Installation Location
Memphis, Tennessee

Date: December 2013
Edition: Rev 0

Notes:

1. Analytical results from the Long Term Monitoring sample event (10/11-1213) and the EBT monitoring event (11/5-11/13)
2. LTM and EBT results used for contours, only LTM results displayed.
3. Top of well screen at MW-140 is approximately 100 feet deeper than at MW-202B and MW-256; the concentration at MW-140 was not used for the isopleth.

Path: G:\DDMT\LTM Reports\2013 October\Figures\Figure 19 - PCE ISOPLETH OCT 2013.mxd

Figure 19

MAIN INSTALLATION PCE CONCENTRATIONS, OCTOBER 2013

ANNUAL LONG TERM MONITORING REPORT - 2013

DEFENSE DEPOT MEMPHIS, TENNESSEE

Legend

PCE Ranges ug/L

- 0 - 5
- 5 - 10
- 10 - 50
- 50 - 100
- 100 - 300
- Not Sampled

PCE Isopleth ug/L

- 5
- 10
- 50
- 100
- Clay Elevation Exceeds Groundwater Elevation
- Potentiometric surface of the Fluvial Aquifer 1-ft. contour
- Potentiometric surface of the Fluvial Aquifer 5-ft. contour
- Potentiometric surface of the Intermediate Aquifer 5-ft. contour

0 200 400 800

Feet

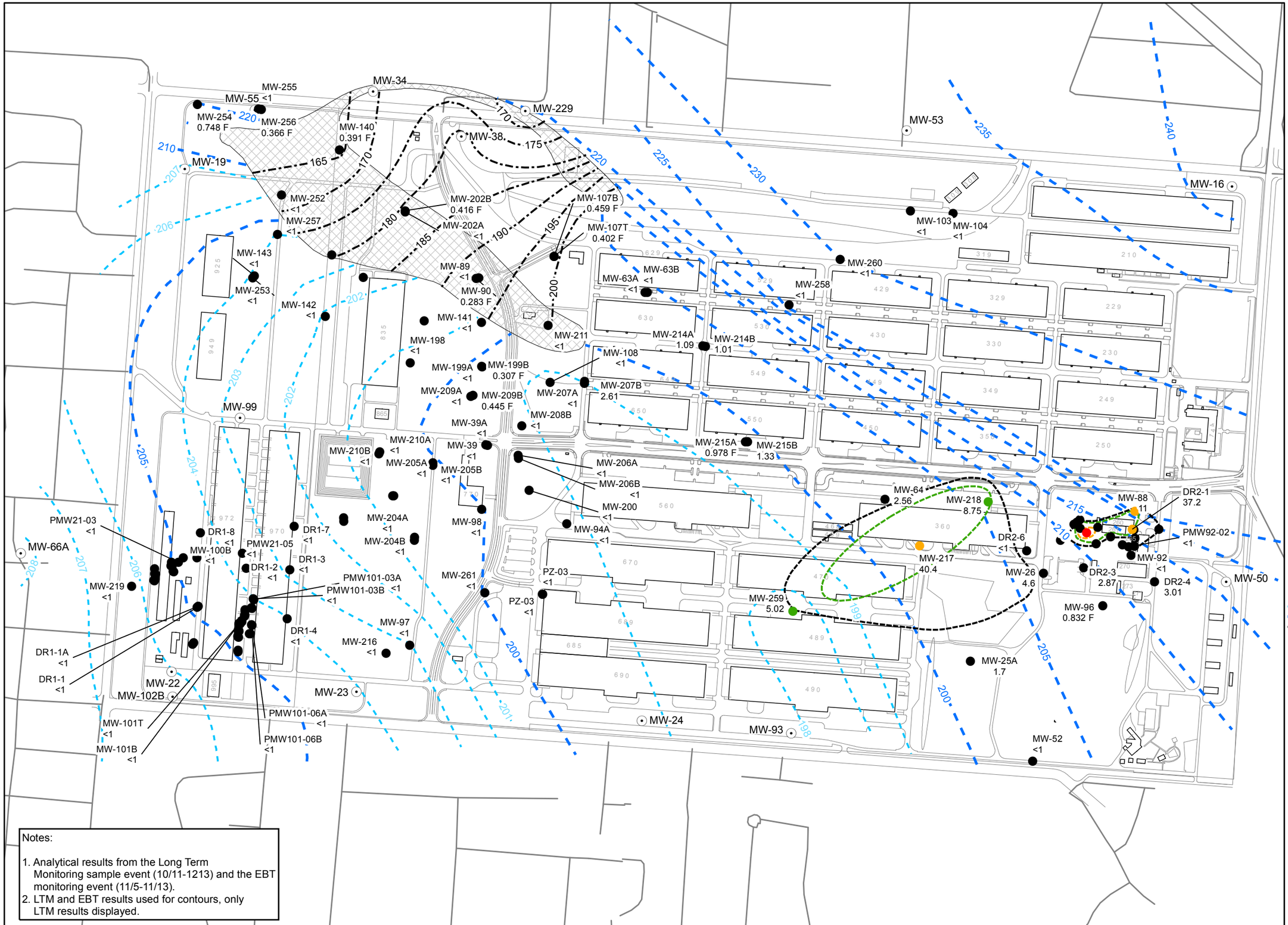
Installation Location
Memphis, Tennessee

Date: December 2013
Edition: Rev 0

HDR

Notes:

1. Analytical results from the Long Term Monitoring sample event (10/11-1213) and the EBT monitoring event (11/5-11/13)
2. LTM and EBT results used for contours, only LTM results displayed.



Notes:

1. Analytical results from the Long Term Monitoring sample event (10/11-1213) and the EBT monitoring event (11/5-11/13).
2. LTM and EBT results used for contours, only LTM results displayed.

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Figure 21

MAIN INSTALLATION CT CONCENTRATIONS

OCTOBER 2013 LONG TERM MONITORING REPORT

DEFENSE DEPOT MEMPHIS, TENNESSEE

Legend

CT Ranges ug/L

- 0 - 5
- 5 - 10
- 10 - 50
- 50 - 100
- 100 - 300
- Not Sampled

CT Isopleth ug/L

- 5
- 10
- 50
- 100

0 200 400 800

Feet

Installation Location
Memphis, Tennessee

Date: December 2013
Edition: Rev 0

HDR

Path: G:\DDMT\LTM Reports\2013 October\Figures\Figure 21 - CT ISOPLETH OCT2013.mxd

Path: G:\DDMT\LTM Reports\2013 October\Figures\Figure 22 MI Cross Section Location Map.mxd

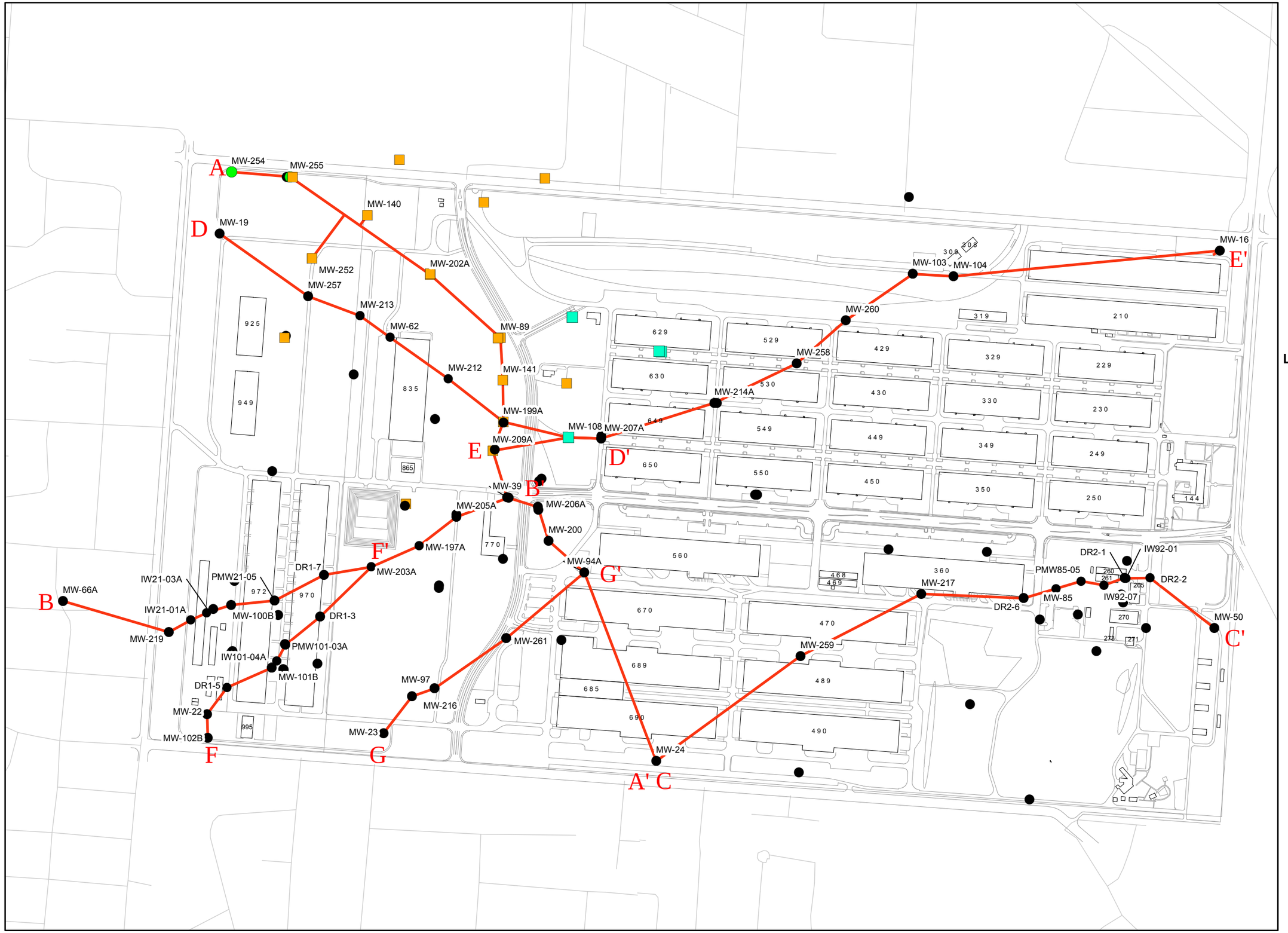

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Figure22

MAIN INSTALLATION CROSS-SECTION LOCATIONS

ANNUAL LONG TERM MONITORING REPORT - 2013

DEFENSE DEPOT MEMPHIS, TENNESSEE

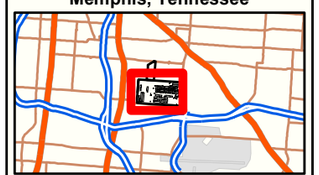
Legend

- Monitoring 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

0 250 500 1,000

Feet

Installation Location
Memphis, Tennessee



Date: December 2013
Edition: Rev 0

HDR

A NORTH

A' SOUTH

MW-254 | MW-55 MW-256 MW-255 | MW-252 offset 333-ft. from centerline | MW-140 offset 88-ft. from centerline | MW-202A/MW-202B | MW-89/MW-90 | MW-141 | MW-199A MW-199B | MW-209A MW-209B | MW-39 MW-39A | MW-206A MW-206B | MW-200 | MW-94A | MW-94 | MW-81/MW-24

300 280 260 240 220 200 180 160 140 120 100 80 60 40 20 0

Silty Clay to Clayey Silt

Sandy Clay to Clayey Sand

Sand with Gravel

Grey Clay

Clayey Sand

Silty Sand

Clay

Sand

Memphis Sand

MW-254 MW-255 MW-256 MW-55 MW-252 MW-140 MW-202A MW-202B MW-89 MW-90 MW-141 MW-199A MW-199B MW-209A MW-209B MW-39 MW-39A MW-206A MW-206B MW-200 MW-94A MW-94 MW-24 MW-81

PCE 41.9
TCE 16

PCE 0.651 F
TCE < 1

PCE 23.8
TCE 5.16

PCE 22.4
TCE 4.65

PCE 0.258F
TCE 84.1

MW-209A
195.45

PCE 0.342F
TCE 33.9

PCE 10.7
TCE 10.4

PCE 21.1
TCE 7.75

PCE 8.74
TCE 8.06

PCE 30.4
TCE 10.2

ABANDONED

PCE 18.9
TCE 9.65

PCE 31.9
TCE 4.32

PCE 28.9
TCE 6.88

ABANDONED

Silty Sandy Clay

B.T.

PCE 0.905 F
TCE 3.13

PCE <1
TCE 0.433 F

20 0 200

Note:
PCE and TCE concentrations in ug/L from samples collected April 2013.

N W E S

Figure 23

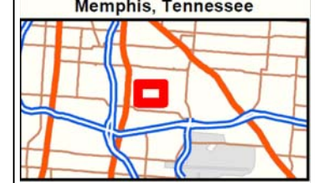
CROSS-SECTION A WITH PCE AND TCE RESULTS, APRIL 2013

ANNUAL LONG TERM MONITORING REPORT - 2013

DEFENSE DEPOT MEMPHIS, TENNESSEE

- Silty Clay to Clayey Silt
- Sandy Clay to Clayey Sand
- Fluvial Sand or Sand with Gravel
- Clayey Sand to Silty Clay
- Intermediate Sand
- Clay
- Memphis Sand
- Groundwater Elevation
- Fluvial Aquifer Groundwater Elevation 10/4/2010
- Intermediate Aquifer Groundwater Elevation 10/4/2010
- Memphis Aquifer Groundwater Elevation 10/4/2010
- Well Screen Interval

Installation Location
Memphis, Tennessee



Date: December 2013
Edition: Rev 0

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A NORTH

A' SOUTH

MW-254 | MW-55 MW-256 MW-255 | MW-252 offset 333-ft. from centerline | MW-140 offset 88-ft. from centerline | MW-202A/MW-202B | MW-89/MW-90 | MW-141 | MW-199A MW-199B | MW-209A MW-209B | MW-39 MW-39A | MW-206A MW-206B | MW-200 | MW-94A | MW-94 | MW-81/MW-24

300 280 260 240 220 200 180 160 140 120 100 80 60 40 20 0

Silty Clay to Clayey Silt

Sandy Clay to Clayey Sand

Sand with Gravel

Grey Clay

Clayey Sand

Silty Sand

Sand

Clay

Memphis Sand

MW-55

MW-256

MW-252

MW-140

MW-202B

MW-202A

MW-90

MW-89

MW-141

MW-199B

MW-199A

MW-209A 195.45

MW-209B

MW-39

MW-39A

MW-206B

MW-206A

MW-200

MW-94A

MW-94

MW-24

MW-81

MW-254

MW-255

PCE 37.7 J
TCE 14 J

PCE 0.273 F
TCE < 1

PCE 25.5
TCE 4.78

PCE 21.5
TCE 5.19

PCE 2.44
TCE 1.35

PCE 0.545F
TCE 74.6

PCE 31.9
TCE 4.22

PCE < 1
TCE 0.986

PCE 0.545 F
TCE 28.8

PCE 1.34
TCE 11.6

PCE 20.8
TCE 5.53

PCE 7.75
TCE 6.17

PCE 32.8
TCE 10.4

PCE 19.9
TCE 7.26

PCE 29.5
TCE 7.05

PCE 2.26
TCE 1.83

PCE 0.354F
TCE 4.97

PCE 2.8
TCE 1.73

PCE <1
TCE 0.353 F

PCE 0.77 F
TCE 2.7

ABANDONED

ABANDONED

B.T.

20
0
200

Note:
PCE and TCE concentrations in ug/L from samples collected October 2013.

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Figure 24

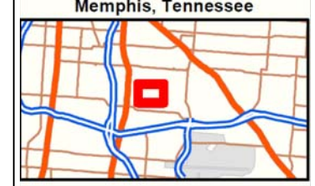
CROSS-SECTION A WITH PCE AND TCE RESULTS, OCTOBER 2013

ANNUAL LONG TERM MONITORING REPORT - 2013

DEFENSE DEPOT MEMPHIS, TENNESSEE

- Silty Clay to Clayey Silt
- Sandy Clay to Clayey Sand
- Fluvial Sand or Sand with Gravel
- Clayey Sand to Silty Clay
- Intermediate Sand
- Clay
- Memphis Sand
- Groundwater Elevation
- Fluvial Aquifer Groundwater Elevation 10/4/2010
- Intermediate Aquifer Groundwater Elevation 10/4/2010
- Memphis Aquifer Groundwater Elevation 10/4/2010
- Well Screen Interval

Installation Location
Memphis, Tennessee



Date: December 2013
Edition: Rev 0

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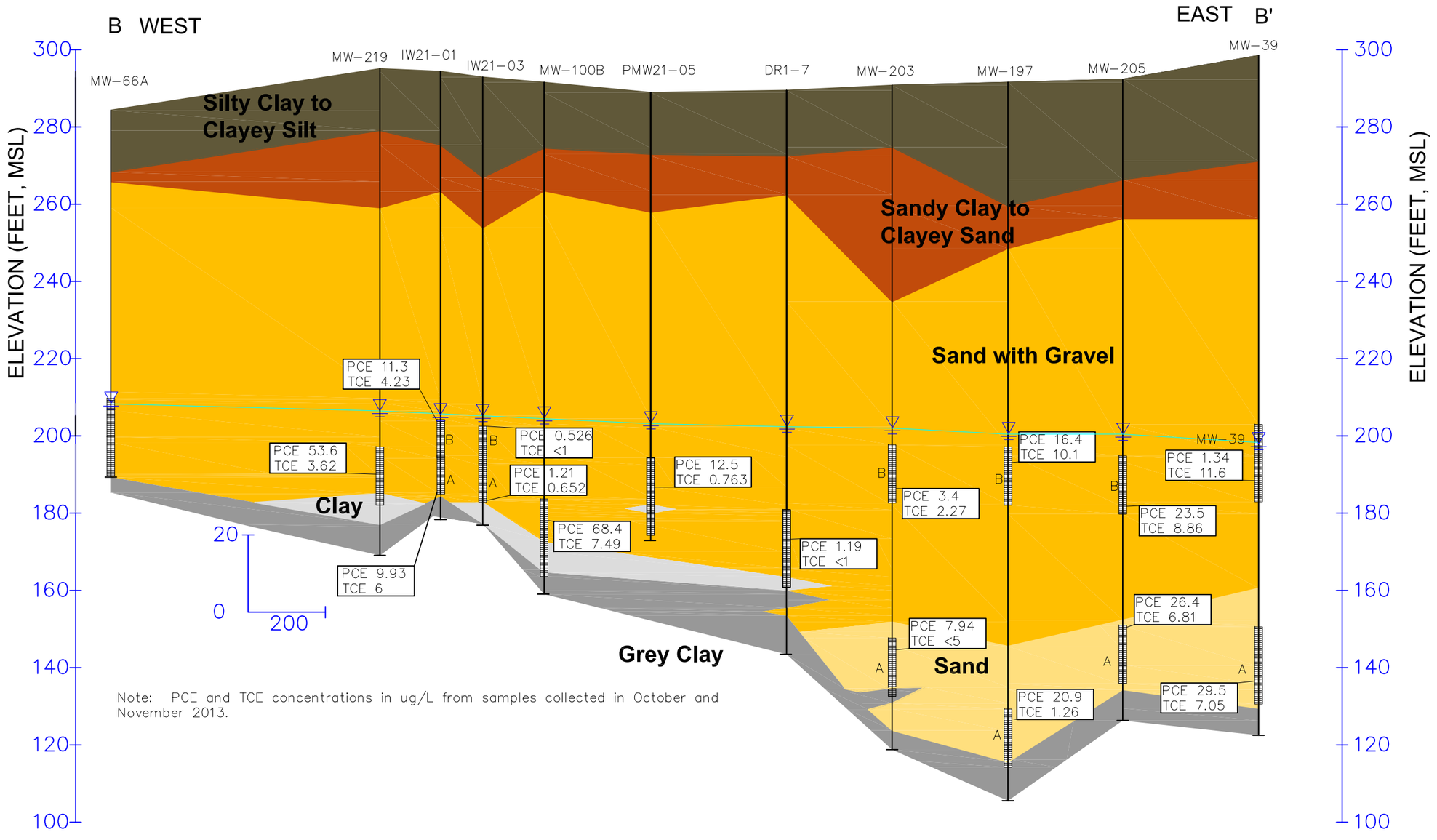


Note: PCE and TCE concentrations in ug/L from samples collected in October and November 2013.

Figure 25

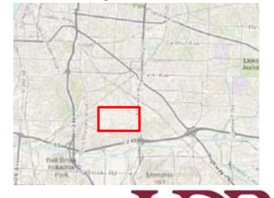
CROSS-SECTION B
WITH PCE AND TCE
RESULTS, OCTOBER
AND NOVEMBER 2013

ANNUAL LONG
TERM MONITORING REPORT
- 2013

DEFENSE DEPOT
MEMPHIS, TENNESSEE

- Silty Clay to Clayey Silt
- Sandy Clay to Clayey Sand
- Fluvial Sand or Sand with Gravel
- Clayey Sand to Silty Clay
- Intermediate Sand
- Clay
- Memphis Sand
- Groundwater Elevation
- Fluvial Aquifer Groundwater Elevation (10/09/13)
- Well Screen Interval

Installation Location
Memphis, Tennessee



Date: January 2014
Edition: Rev 0

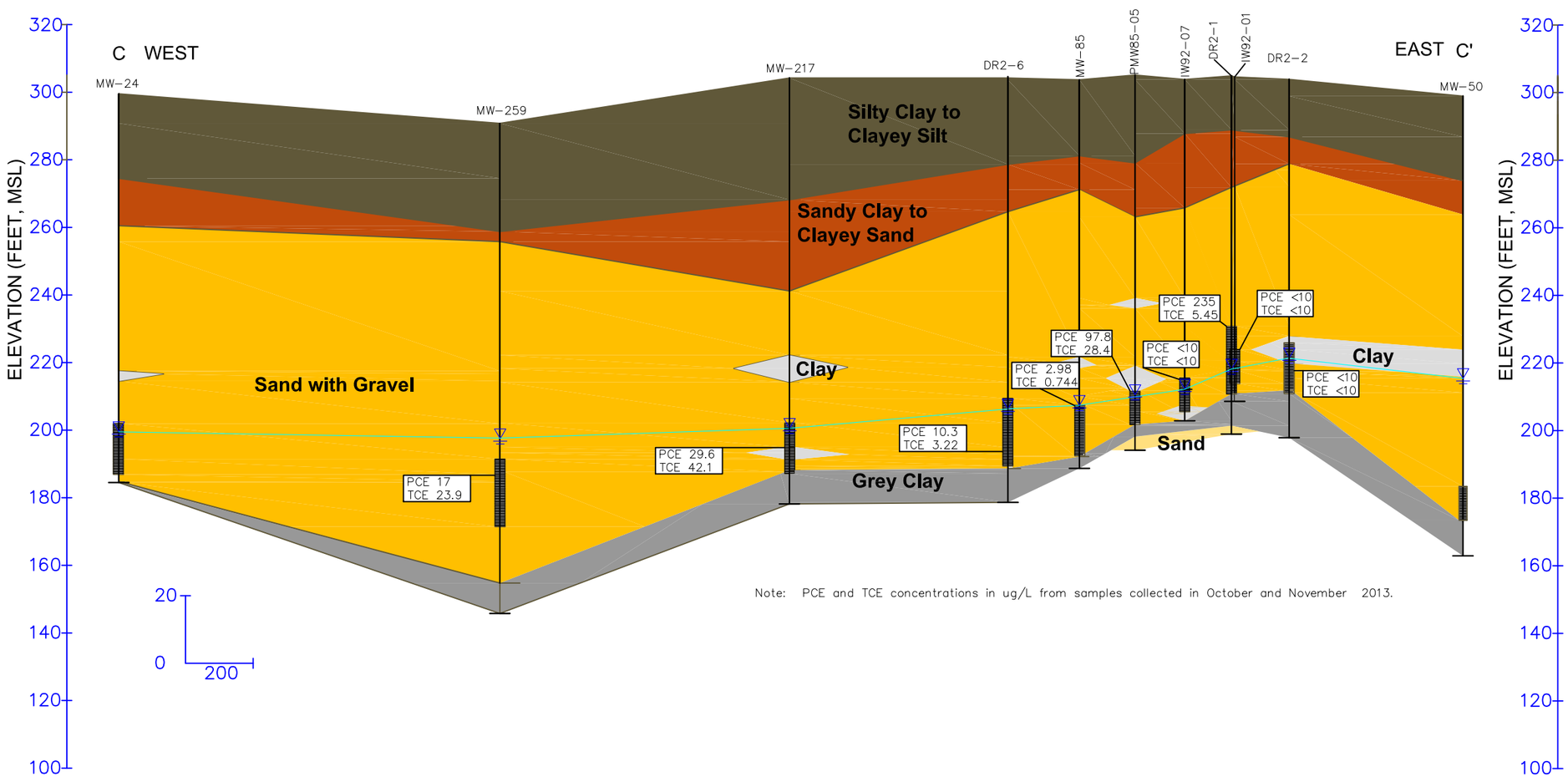
HDR

Figure 26

CROSS-SECTION C
WITH PCE AND TCE
RESULTS, OCTOBER
AND NOVEMBER 2013

ANNUAL LONG
TERM MONITORING REPORT
- 2013

DEFENSE DEPOT
MEMPHIS, TENNESSEE



Note: PCE and TCE concentrations in ug/L from samples collected in October and November 2013.

- Silty Clay to Clayey Silt
- Sandy Clay to Clayey Sand
- Fluvial Sand or Sand with Gravel
- Clayey Sand to Silty Clay
- Intermediate Sand
- Clay
- Memphis Sand
- Groundwater Elevation
- Fluvial Aquifer Groundwater Elevation (10/09/13)
- Well Screen Interval

Installation Location
Memphis, Tennessee

Date: January 2014
Edition: Rev 0

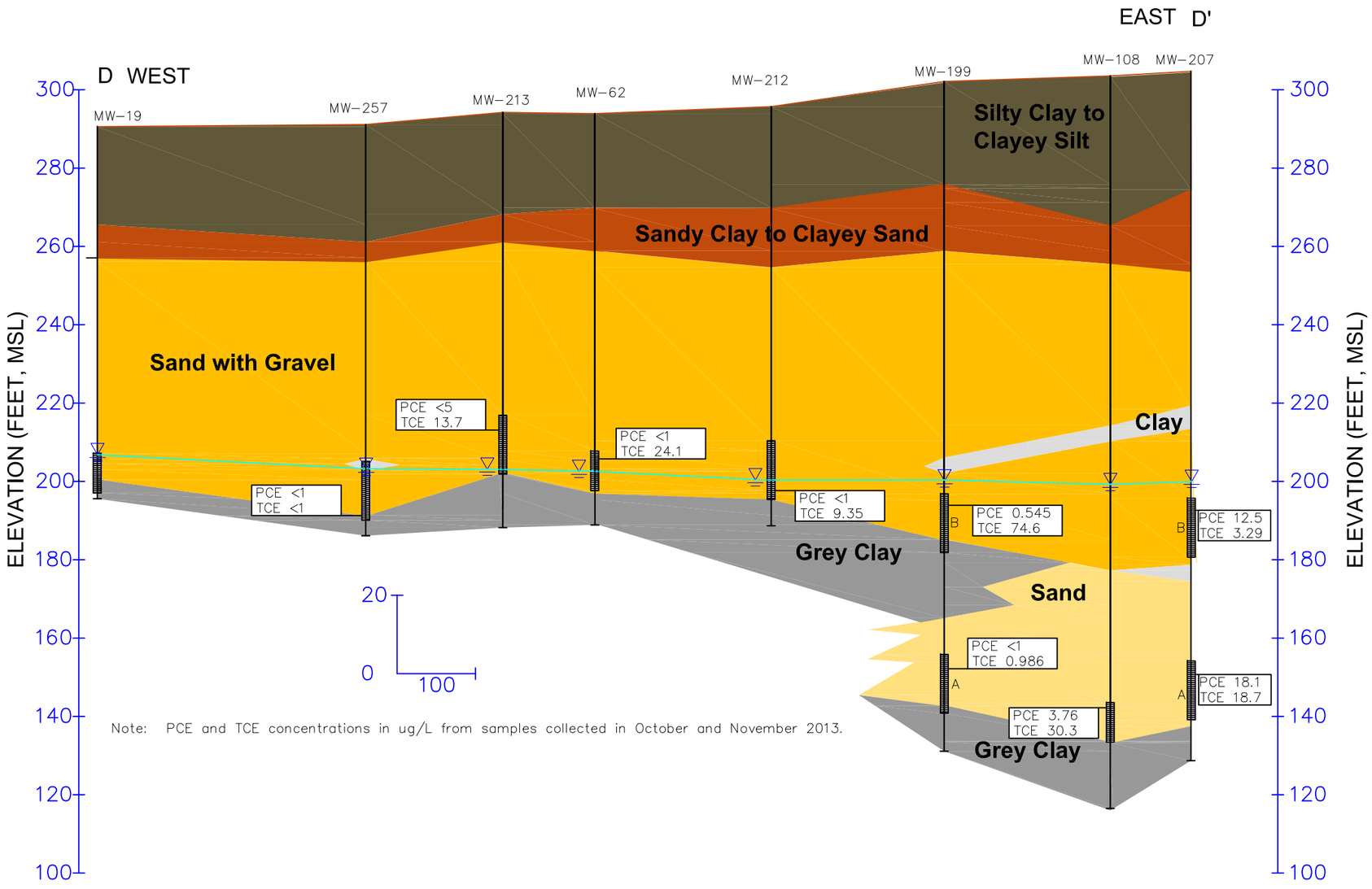
HDR

Figure 27

CROSS-SECTION D WITH PCE AND TCE RESULTS, OCTOBER AND NOVEMBER 2013

ANNUAL LONG TERM MONITORING REPORT - 2013

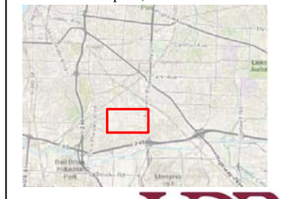
DEFENSE DEPOT MEMPHIS, TENNESSEE



Note: PCE and TCE concentrations in ug/L from samples collected in October and November 2013.

- Silty Clay to Clayey Silt
- Sandy Clay to Clayey Sand
- Fluvial Sand or Sand with Gravel
- Clayey Sand to Silty Clay
- Intermediate Sand
- Clay
- Memphis Sand
- Groundwater Elevation
- Groundwater Elevation Fluvial Aqulfer (10/09/13)
- Well Screen Interval

Installation Location
Memphis, Tennessee



Date: January 2014
Edition: Rev 0

HDR

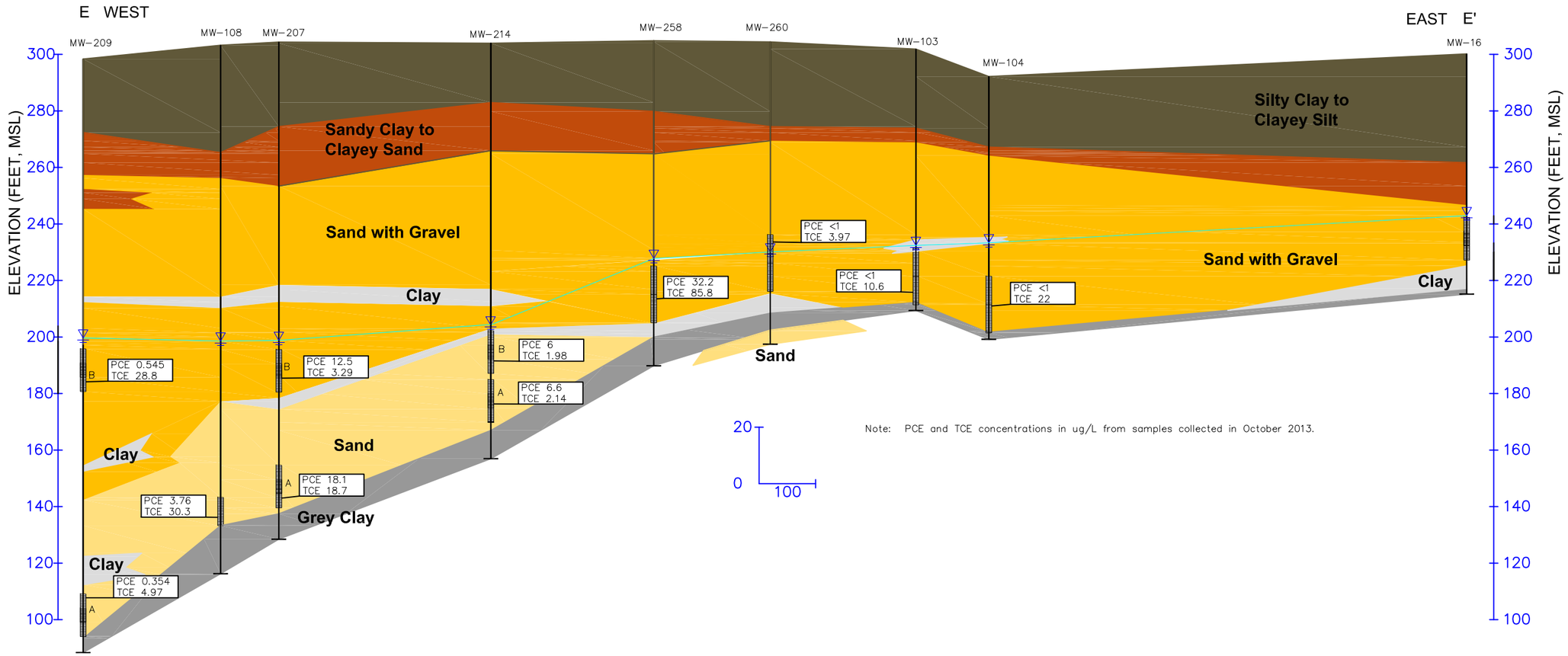


Figure 28

CROSS-SECTION E WITH PCE AND TCE RESULTS, OCTOBER 2013

ANNUAL LONG TERM MONITORING REPORT - 2013

DEFENSE DEPOT MEMPHIS, TENNESSEE

- Silty Clay to Clayey Silt
- Sandy Clay to Clayey Sand
- Fluvial Sand or Sand with Gravel
- Clayey Sand to Silty Clay
- Intermediate Sand
- Clay
- Memphis Sand
- Groundwater Elevation
- Fluvial Aquifer Groundwater Elevation (10/09/13)
- Well Screen Interval

Installation Location
Memphis, Tennessee

Date: January 2014
Edition: Rev 0

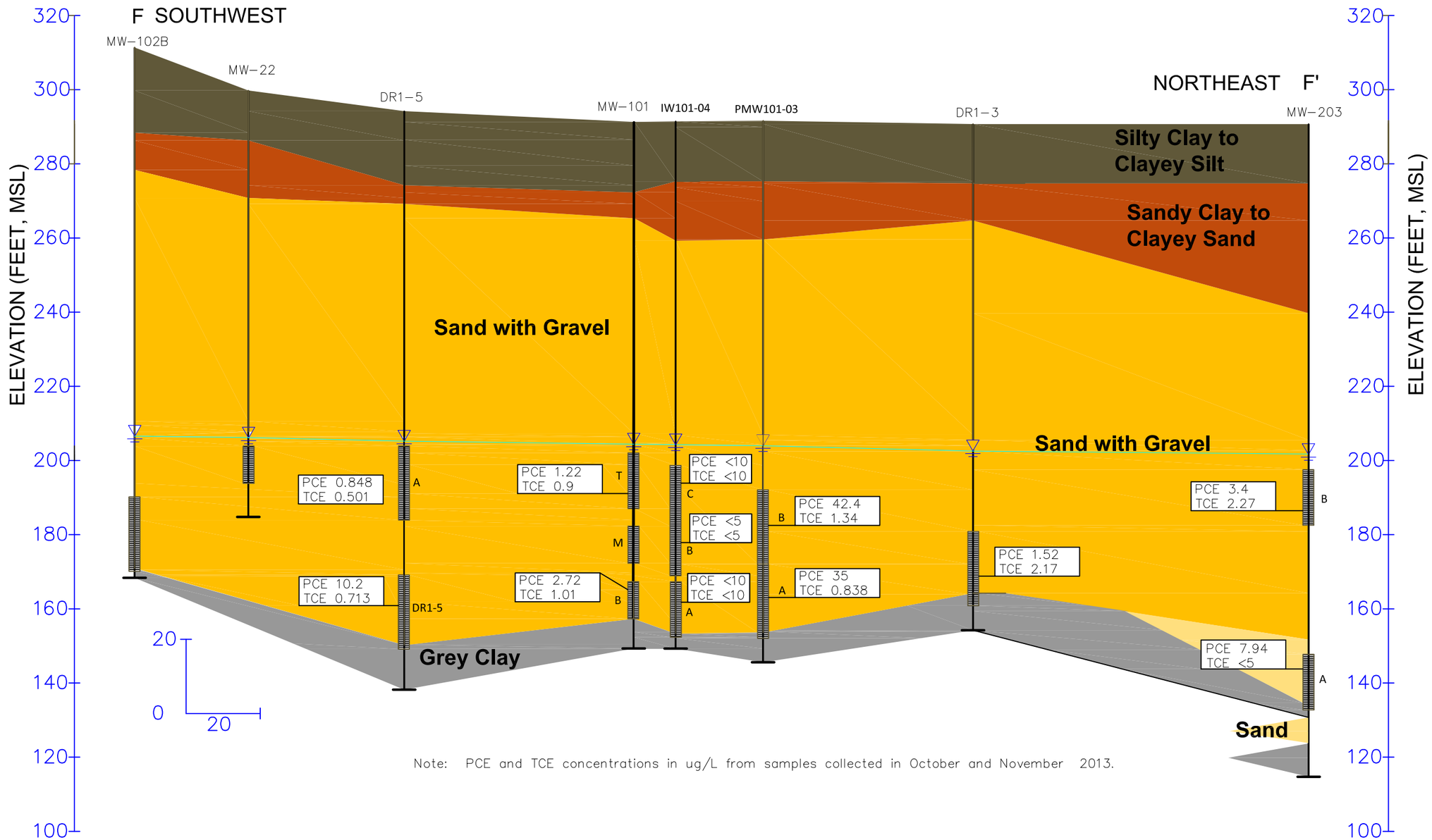
HDR

Figure 29

CROSS-SECTION F WITH PCE AND TCE RESULTS, OCTOBER AND NOVEMBER 2013

ANNUAL LONG TERM MONITORING REPORT - 2013

DEFENSE DEPOT MEMPHIS, TENNESSEE



Note: PCE and TCE concentrations in ug/L from samples collected in October and November 2013.

Silty Clay to Clayey Silt

Sandy Clay to Clayey Sand

Fluvial Sand or Sand with Gravel

Clayey Sand to Silty Clay

Intermediate Sand

Clay

Memphis Sand

Groundwater Elevation

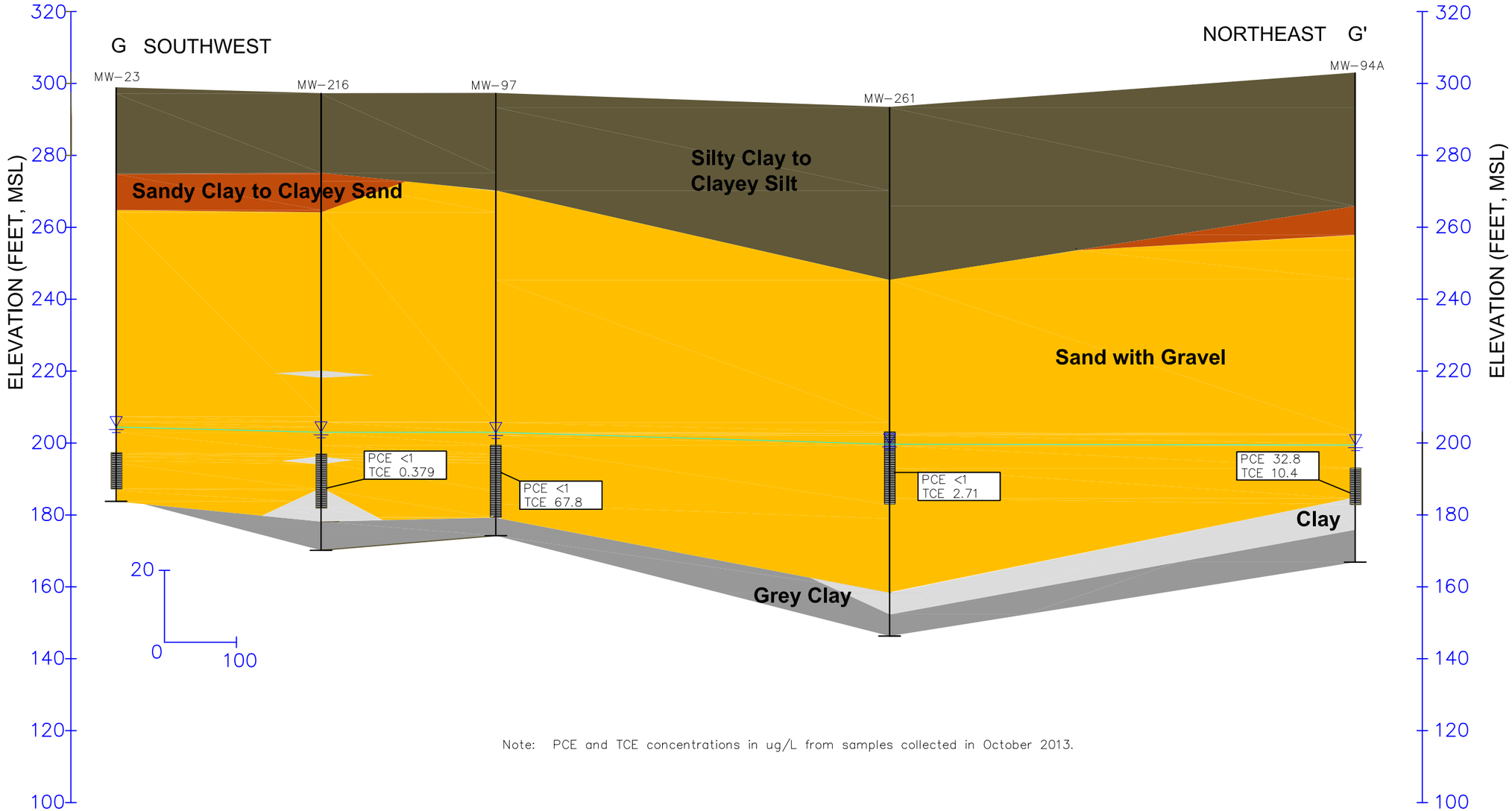
Fluvial Aqulfer Groundwater Elevation 10/8/2013

Well Screen Interval

Installation Location
Memphis, Tennessee

Date: January 2014
Edition: Rev 0

HDR



Note: PCE and TCE concentrations in ug/L from samples collected in October 2013.

Figure 30

CROSS-SECTION G WITH PCE AND TCE RESULTS, OCTOBER 2013

ANNUAL LONG TERM MONITORING REPORT - 2013

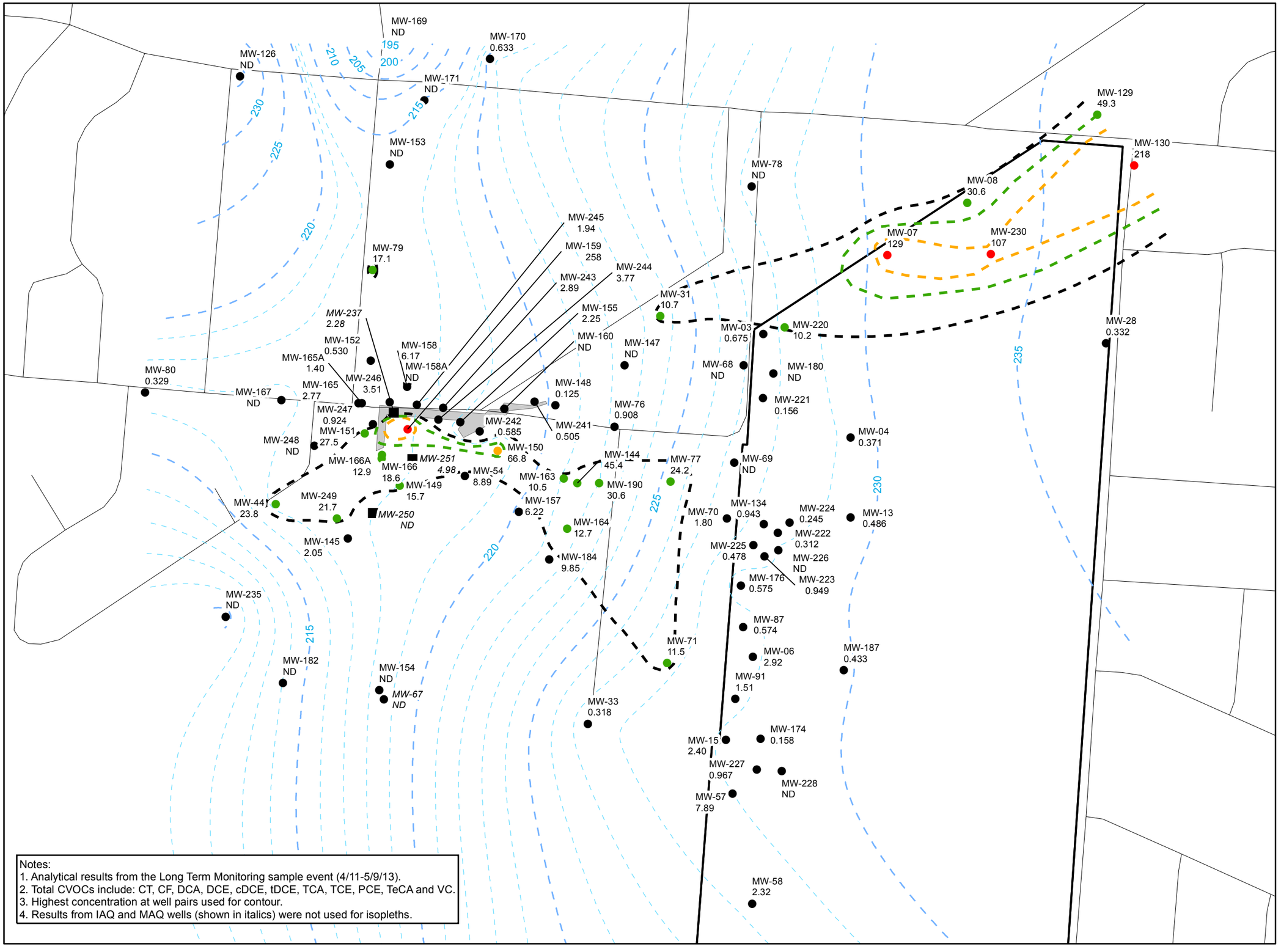
DEFENSE DEPOT MEMPHIS, TENNESSEE

- Silty Clay to Clayey Silt
- Sandy Clay to Clayey Sand
- Fluvial Sand or Sand with Gravel
- Clayey Sand to Silty Clay
- Intermediate Sand
- Clay
- Memphis Sand
- Groundwater Elevation
- Fluvial Aquifer Groundwater Elevation (10/09/13)
- Well Screen Interval

Installation Location
Memphis, Tennessee

Date: January 2014
Edition: Rev 0

HDR



Notes:
1. Analytical results from the Long Term Monitoring sample event (4/11-5/9/13).
2. Total CVOCs include: CT, CF, DCA, DCE, cDCE, tDCE, TCA, TCE, PCE, TeCA and VC.
3. Highest concentration at well pairs used for contour.
4. Results from IAQ and MAQ wells (shown in italics) were not used for isopleths.

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Figure 31

DUNN FIELD TOTAL CVOC CONCENTRATIONS, APRIL 2013

ANNUAL LONG TERM MONITORING REPORT - 2013

DEFENSE DEPOT MEMPHIS, TENNESSEE

Legend

Total CVOC Ranges (ug/L)
- 0 - 10
- 10 - 50
- 50 - 100
- 100 - 500

Total CVOC Isopleth (ug/L)
- 10
- 50
- 100

Air Sparge Well Area

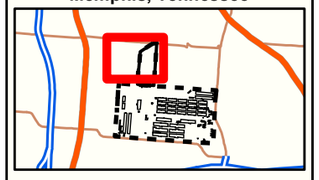
Original Dunn Field Property Boundary

Potentiometric surface of the Fluvial Aquifer 1-ft. contour

Potentiometric surface of the Fluvial Aquifer 5-ft. contour

0 100 200 300
Feet

Installation Location
Memphis, Tennessee



Date: December 2013
Edition: Rev 0

HDR

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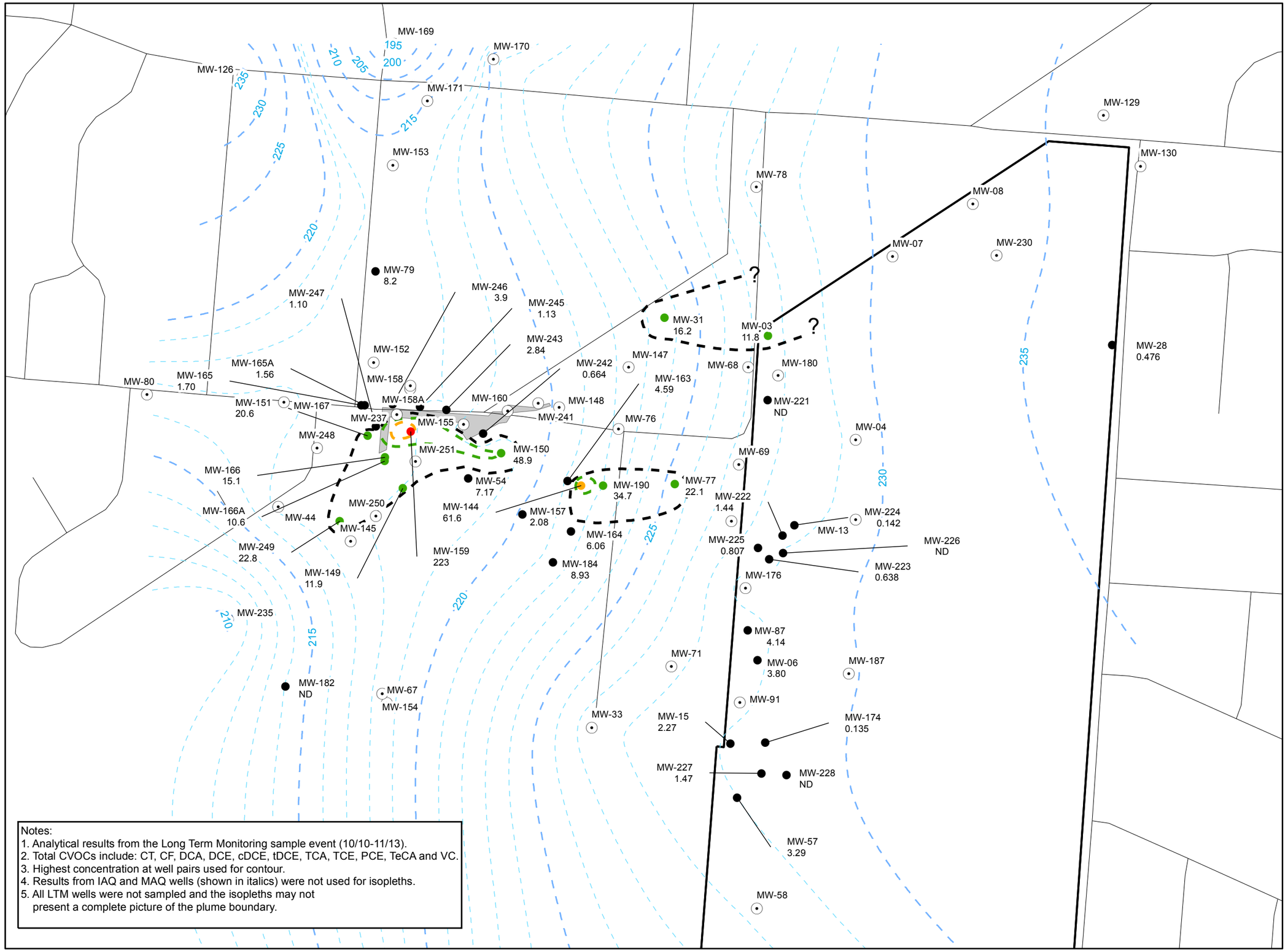

Notes:
1. Analytical results from the Long Term Monitoring sample event (10/10-11/13).
2. Total CVOCs include: CT, CF, DCA, DCE, cDCE, tDCE, TCA, TCE, PCE, TeCA and VC.
3. Highest concentration at well pairs used for contour.
4. Results from IAQ and MAQ wells (shown in italics) were not used for isopleths.
5. All LTM wells were not sampled and the isopleths may not present a complete picture of the plume boundary.

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Figure 32

DUNN FIELD TOTAL CVOC CONCENTRATIONS, OCTOBER 2013

ANNUAL LONG TERM MONITORING REPORT - 2013

DEFENSE DEPOT MEMPHIS, TENNESSEE

Legend

Total CVOC Ranges (ug/L)

- 0 - 10
- 10 - 50
- 50 - 100
- 100 - 500
- Not Sampled

Total CVOC Isopleth (ug/L)

- 10
- 50
- 100
- Air Sparge Well Area
- Original Dunn Field Property Boundary
- Potentiometric surface of the Fluvial Aquifer 1-ft. contour
- Potentiometric surface of the Fluvial Aquifer 5-ft. contour

0 100 200 300

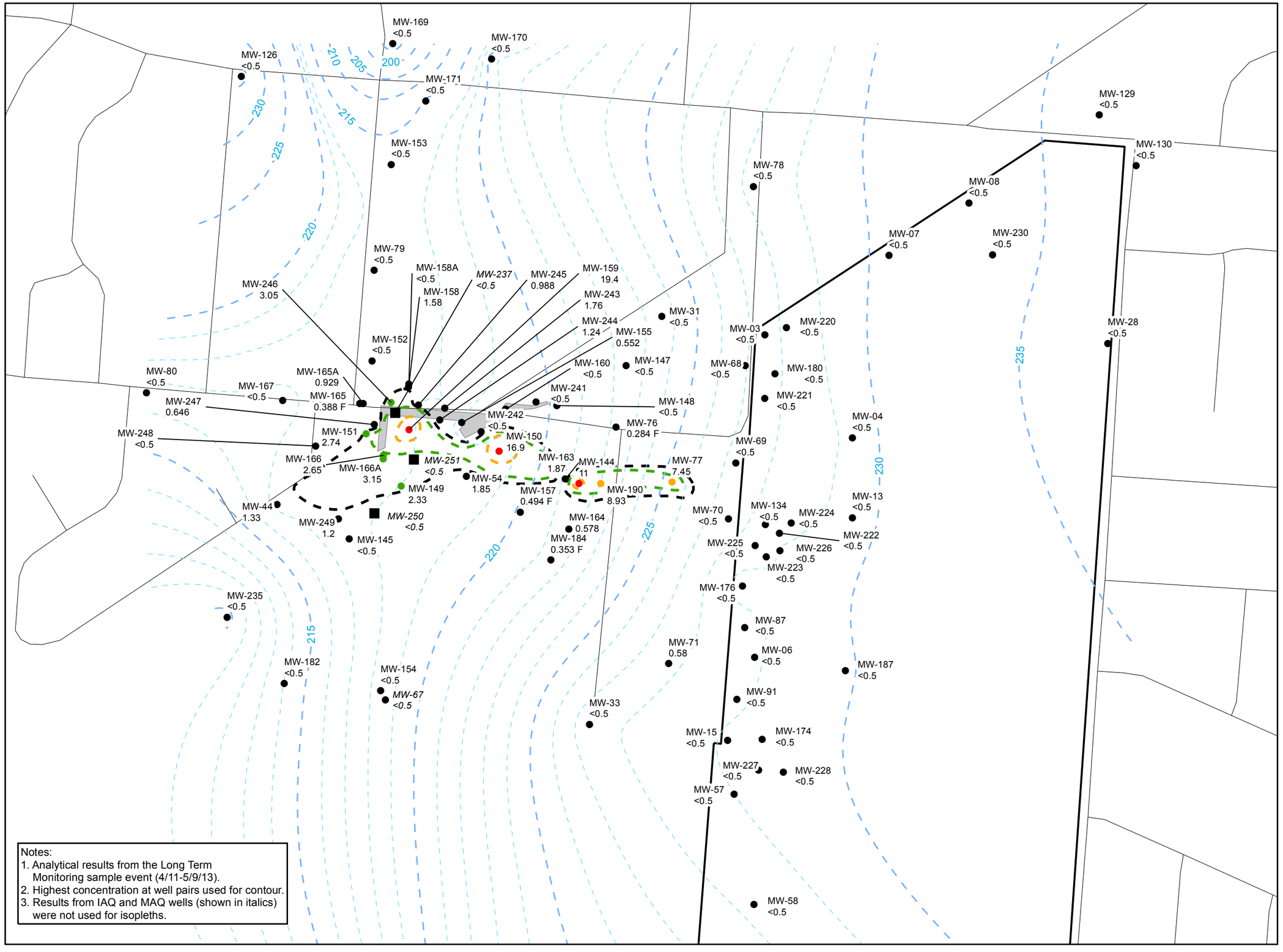
Feet

Installation Location
Memphis, Tennessee

Date: December 2013
Edition: Rev 0

HDR

Path: G:\DDMT\LTM Reports\2013 October\Figures\Figure 32 TOTAL CVOC OCT2013.mxd



Notes:
1. Analytical results from the Long Term Monitoring sample event (4/11-5/9/13).
2. Highest concentration at well pairs used for contour.
3. Results from IAQ and MAQ wells (shown in italics) were not used for isopleths.

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Figure 33

DUNN FIELD
TeCA
CONCENTRATIONS,
APRIL 2013

ANNUAL LONG TERM MONITORING REPORT - 2013

DEFENSE DEPOT
MEMPHIS, TENNESSEE

Legend

TeCA Ranges (ug/L)
- 0-2
- 2-5
- 5-10
- 10-50

TeCA Isopleth (ug/L)
- 2.2
- 5
- 10

Air Sparge Well Area

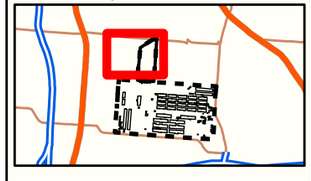
Original Dunn Field Property Boundary

Potentiometric surface of the Fluvial Aquifer 1-ft. contour

Potentiometric surface of the Fluvial Aquifer 5-ft. contour

0 100 200 300
Feet

Installation Location
Memphis, Tennessee



Date: December 2013
Edition: Rev 0

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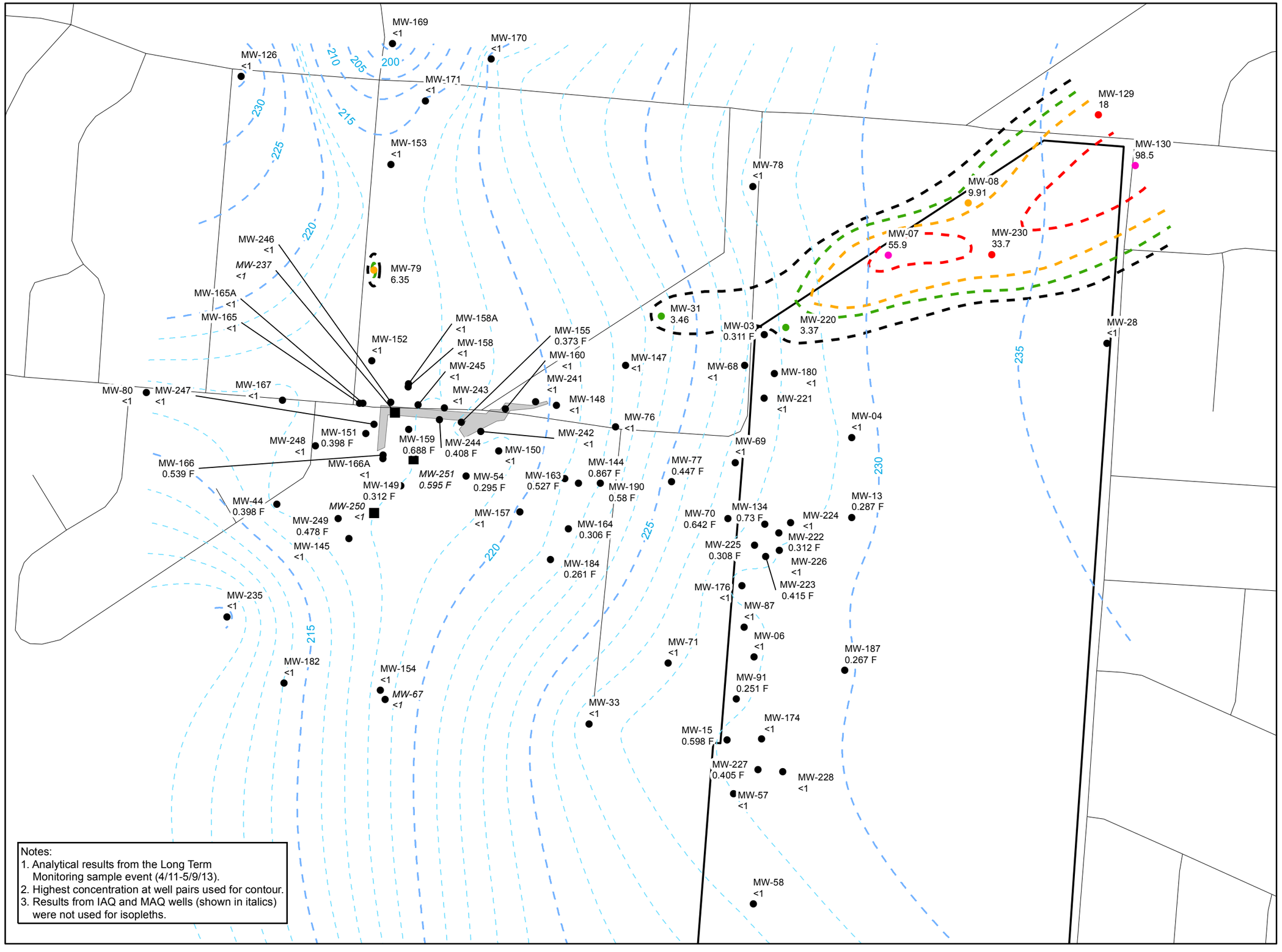

Notes:
1. Analytical results from the Long Term Monitoring sample event (4/11-5/9/13).
2. Highest concentration at well pairs used for contour.
3. Results from IAQ and MAQ wells (shown in italics) were not used for isopleths.

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Figure 34

DUNN FIELD PCE CONCENTRATIONS, APRIL 2013

ANNUAL LONG TERM MONITORING REPORT - 2013

DEFENSE DEPOT MEMPHIS, TENNESSEE

Legend

PCE Ranges (ug/L)
- 0 - 2.5
- 2.5 - 5
- 5 - 10
- 10 - 50
- 50 - 250

PCE Isopleth (ug/L)
- 2.5
- 5
- 10
- 50

Air Sparge Well Area

Original Dunn Field Property Boundary

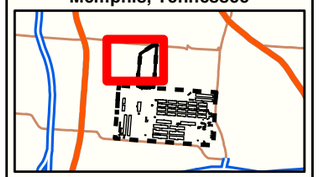
Potentiometric surface of the Fluvial Aquifer 1-ft. contour

Potentiometric surface of the Fluvial Aquifer 5-ft. contour

0 100 200 300

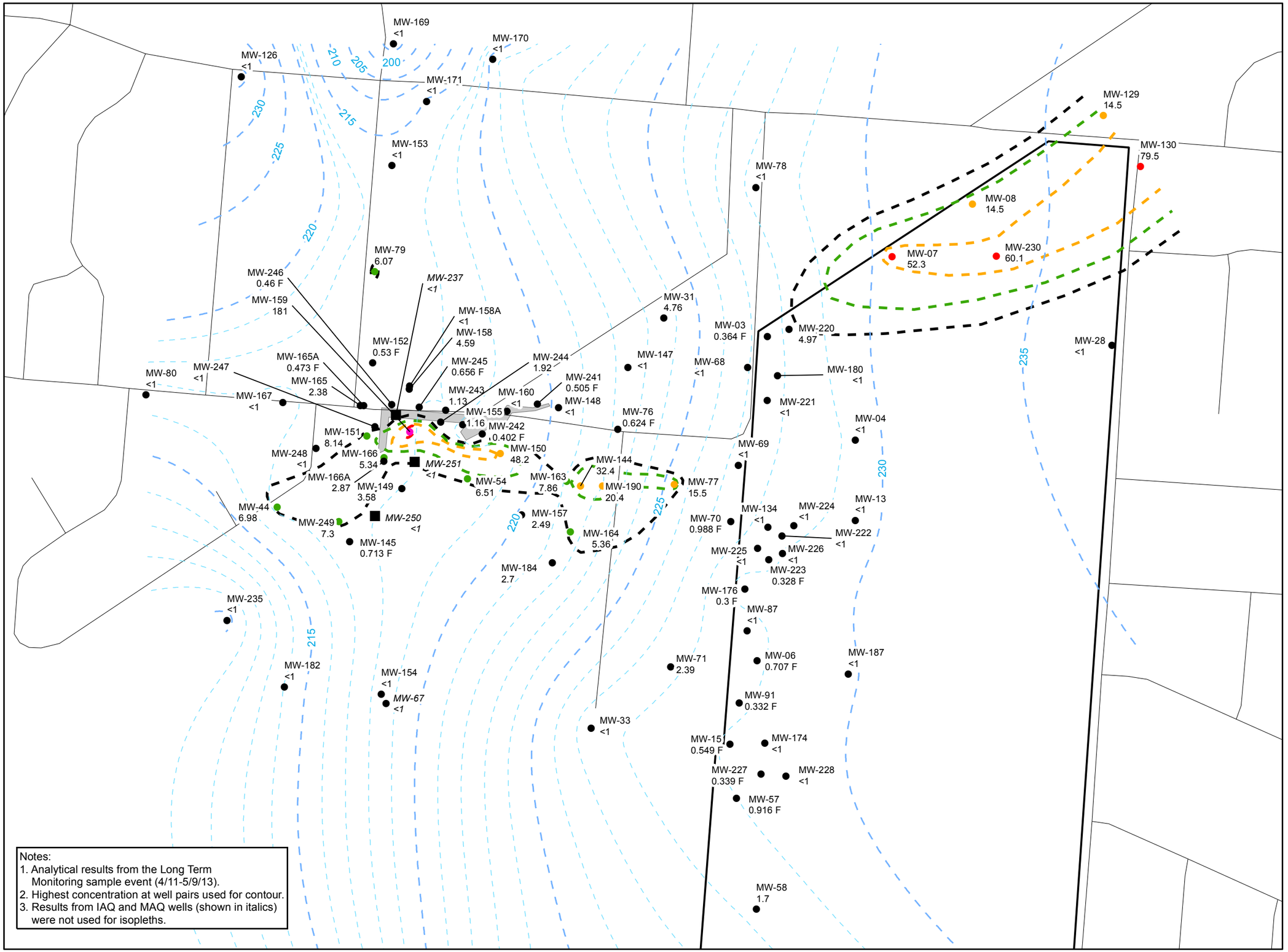
Feet

Installation Location
Memphis, Tennessee



Date: December 2013
Edition: Rev 0

HDR



Notes:
1. Analytical results from the Long Term Monitoring sample event (4/11-5/9/13).
2. Highest concentration at well pairs used for contour.
3. Results from IAQ and MAQ wells (shown in italics) were not used for isopleths.

Path: G:\DDMT\LTM Reports\2013 October\Figures\Figure 35 DF TCE Apr2013.mxd

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Figure 35

DUNN FIELD TCE CONCENTRATIONS, APRIL 2013

ANNUAL LONG TERM MONITORING REPORT - 2013

DEFENSE DEPOT MEMPHIS, TENNESSEE

Legend

TCE Ranges (ug/L)
- 0-5
- 5-10
- 10-50
- 50-100
- 100-300

TCE Isopleth (ug/L)
- 5
- 10
- 50
- 100

Air Sparge Well Area

Original Dunn Field Property Boundary

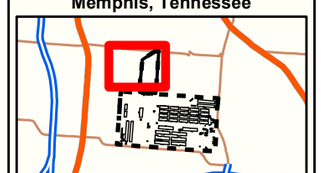
Potentiometric surface of the Fluvial Aquifer 1-ft. contour

Potentiometric surface of the Fluvial Aquifer 5-ft. contour

0 100 200 300

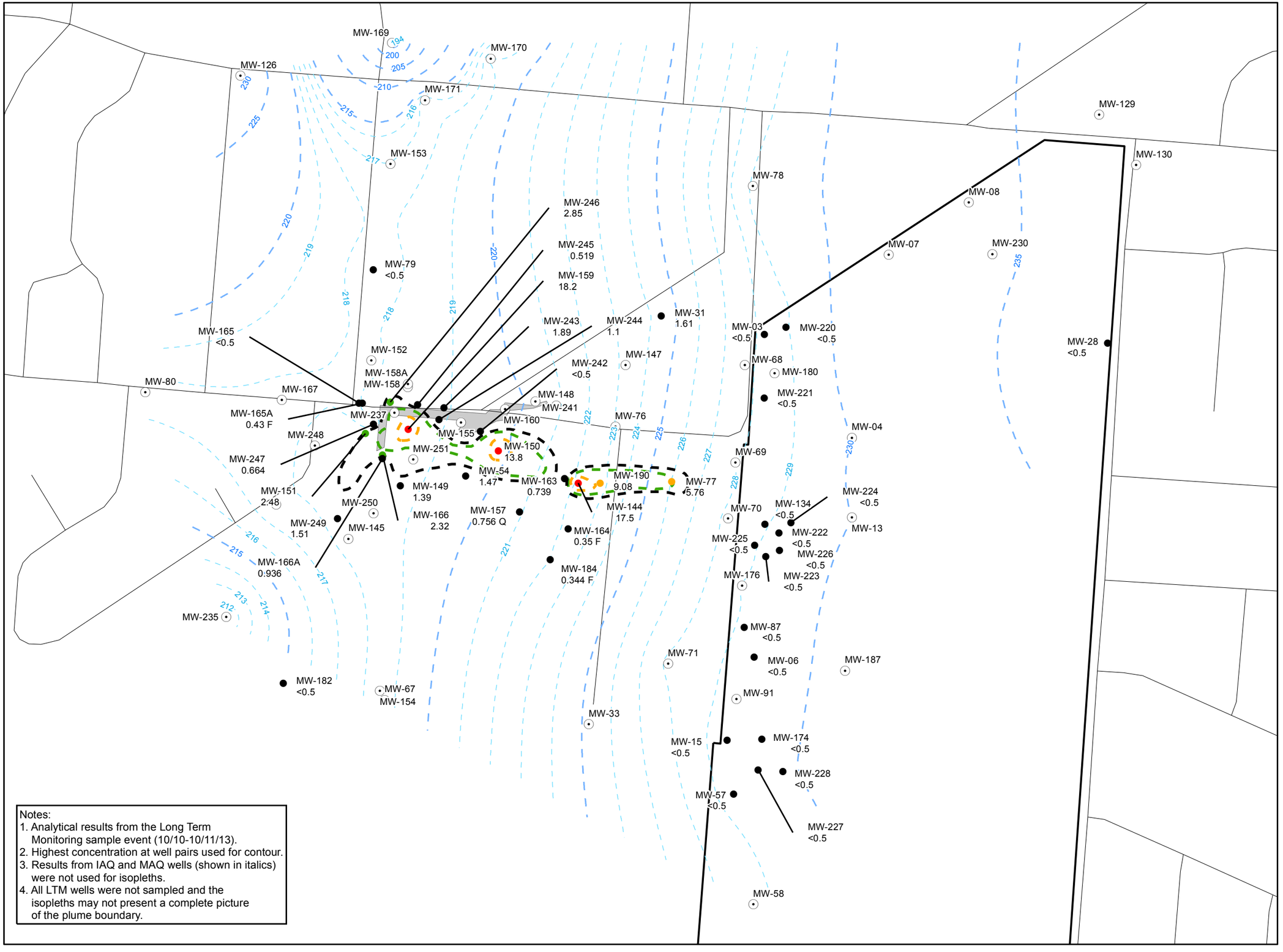
Feet

Installation Location
Memphis, Tennessee



Date: December 2013
Edition: Rev 0

HDR



Notes:
1. Analytical results from the Long Term Monitoring sample event (10/10-10/11/13).
2. Highest concentration at well pairs used for contour.
3. Results from IAQ and MAQ wells (shown in italics) were not used for isopleths.
4. All LTM wells were not sampled and the isopleths may not present a complete picture of the plume boundary.

Path: G:\DDMT\LTM Reports\2013 October\Figures\Figure 36 TeCA OCT2013.mxd

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Figure 36

DUNN FIELD TeCA CONCENTRATIONS, OCTOBER 2013

ANNUAL LONG TERM MONITORING REPORT - 2013

DEFENSE DEPOT MEMPHIS, TENNESSEE

Legend

TeCA Ranges (ug/L)

- 0-2
- 2-5
- 5-10
- 10-50
- Not Sampled

TeCA Isopleth (ug/L)

- 2.2
- 5
- 10

Air Sparge Well Area

Original Dunn Field Property Boundary

Potentiometric surface of the Fluvial Aquifer 1-ft. contour

Potentiometric surface of the Fluvial Aquifer 5-ft. contour

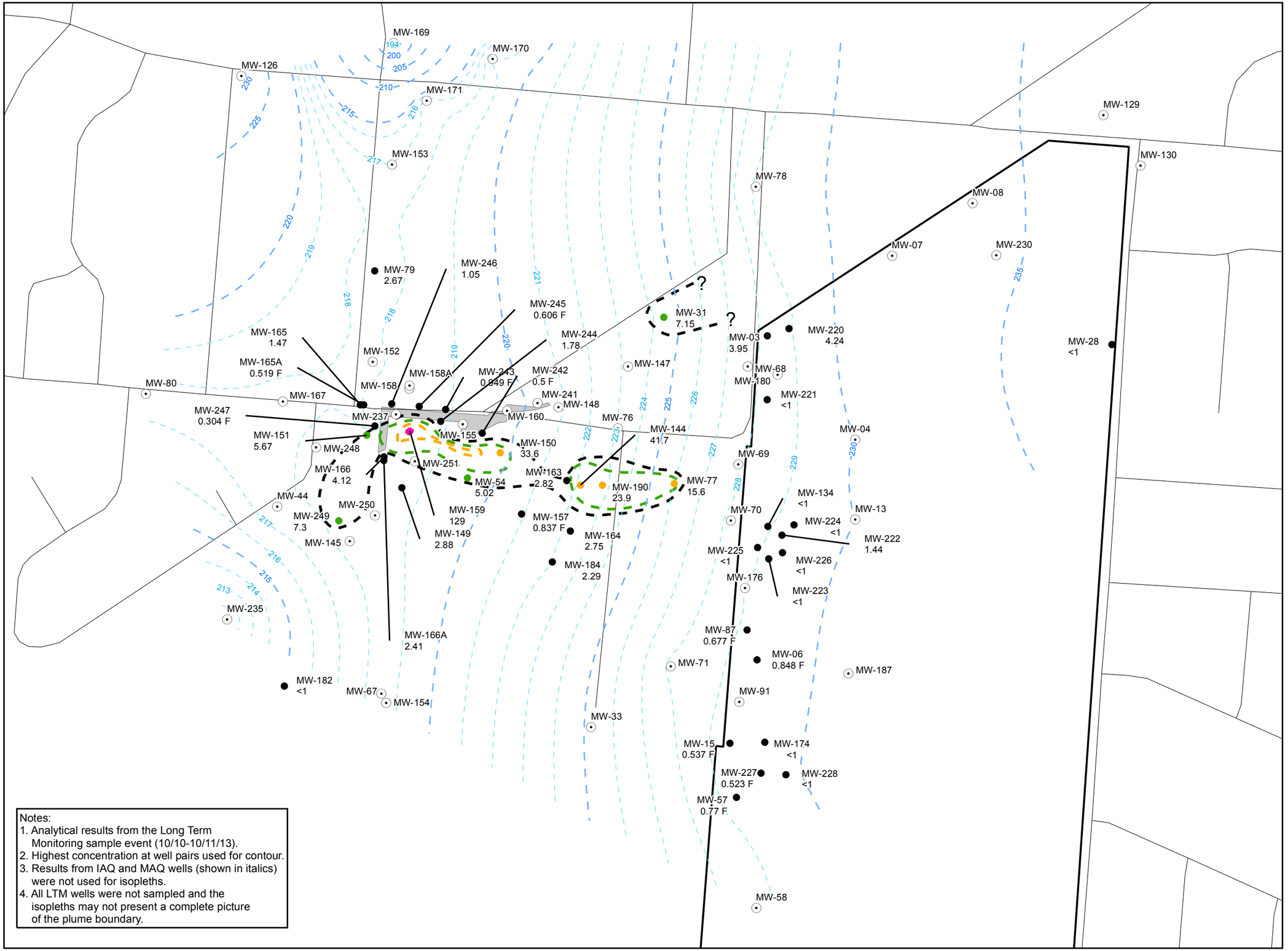
0 100 200 300

Feet

Installation Location
Memphis, Tennessee

Date: December 2013
Edition: Rev 0

HDR



Notes:
1. Analytical results from the Long Term Monitoring sample event (10/10-10/11/13).
2. Highest concentration at well pairs used for contour.
3. Results from IAQ and MAQ wells (shown in italics) were not used for isopleths.
4. All LTM wells were not sampled and the isopleths may not present a complete picture of the plume boundary.

Path: G:\DDMT\LTM Reports\2013 October\Figures\Figure 37 DF TCE OCT2013.mxd

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Figure 37

DUNN FIELD TCE CONCENTRATIONS, OCTOBER 2013

ANNUAL LONG TERM MONITORING REPORT - 2013

DEFENSE DEPOT MEMPHIS, TENNESSEE

Legend

TCE Ranges (ug/L)

- 0-5
- 5-10
- 10-50
- 50-100
- 100-300
- Not Sampled

TCE Isopleth (ug/L)

- 5
- 10
- 50
- 100

Air Sparge Well Area

Original Dunn Field Property Boundary

Potentiometric surface of the Fluvial Aquifer 1-ft. contour

Potentiometric surface of the Fluvial Aquifer 5-ft. contour

0 100 200 300

Feet

Installation Location
Memphis, Tennessee

Date: December 2013
Edition: Rev 0

HDR

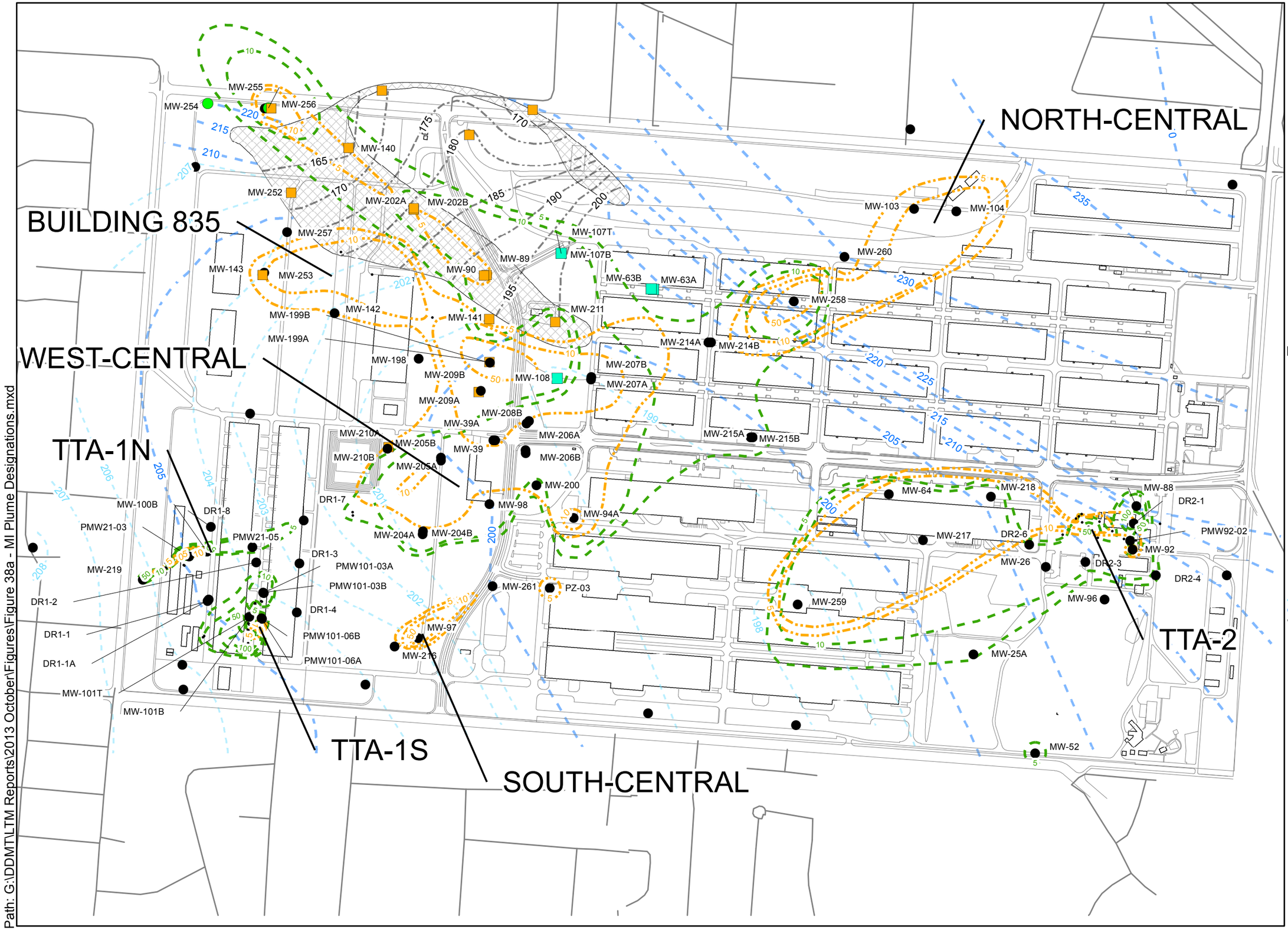
NORTH-CENTRAL
BUILDING 835
WEST-CENTRAL
TTA-1N
TTA-1S
SOUTH-CENTRAL
TTA-2
MW-255
MW-254
MW-256
MW-140
MW-252
MW-202A
MW-202B
MW-257
MW-143
MW-253
MW-89
MW-90
MW-107T
MW-107B
MW-103
MW-104
MW-260
MW-63B
MW-63A
MW-258
MW-211
MW-199B
MW-142
MW-141
MW-199A
MW-214A
MW-214B
MW-207B
MW-207A
MW-198
MW-209B
MW-108
MW-209A
MW-208B
MW-39A
MW-206A
MW-215A
MW-215B
MW-210A
MW-205B
MW-39
MW-206B
MW-210B
MW-205A
MW-200
MW-98
MW-94A
MW-64
MW-218
MW-88
DR2-1
DR1-7
MW-204A
MW-204B
MW-217
DR2-6
PMW92-02
MW-92
MW-100B
DR1-8
PMW21-03
PMW21-05
DR1-3
PMW101-03A
MW-219
PMW101-03B
MW-261
PZ-03
MW-26
DR2-3
DR2-4
DR1-2
DR1-4
MW-259
MW-96
DR1-1
MW-97
PMW101-06B
MW-25A
DR1-1A
MW-216
PMW101-06A
MW-101T
MW-101B
MW-52
0 200 400 800
Feet
Installation Location
Memphis, Tennessee
Date: December 2013
Edition: Rev 0
HDR
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Figure 38
MAIN INSTALLATION
PLUME DESIGNATIONS
ANNUAL LONG
TERM MONITORING
REPORT - 2013
DEFENSE DEPOT
MEMPHIS, TENNESSEE
Legend
Monitoring 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
PCE
TCE
Clay Elevation Exceeds Groundwater Elevation
Potentiometric surface of the Fluvial Aquifer 1-ft. contour
Potentiometric surface of the Fluvial Aquifer 5-ft. contour
Potentiometric surface of the Intermediate Aquifer 5-ft. contour
Path: G:\DDMT\LTM Reports\2013 October\Figures\Figure 38a - MI Plume Designations.mxd

APPENDIX A

RESPONSES TO COMMENTS

May 19, 2014

Responses to Comments from
U.S. Environmental Protection Agency (EPA) Region 4
Annual Long-Term Monitoring Report – 2013
Defense Depot Memphis, Tennessee
Revision 0, February 2014
Memphis, Shelby County
U.S. EPA ID Number TN4210020570

General Comments

1. Please revise the report cover page, the Introduction, and the CD label to include the EPA ID No. for DDMT: U.S. EPA ID Number TN4210020570.

   Army Response: The Army will include "U.S. EPA ID Number TN4210020570" on the report cover page and CD label and will move the sentence providing the ID from Section 1.1 to Section 1.0.

2. Section 1.2, Page 1-2, Para. 3. For clarity, please revise the last sentence in this paragraph to state the current State groundwater classification and EPA groundwater classification for DDMT.

   Army Response: The Army will add a final sentence to the referenced paragraph stating "The current Tennessee groundwater classification for DDMT is General Use (TDEC Chapter 1200-04-03).

3. This report focuses on post-implementation monitoring of the remedial actions at the Main Installation (MI) and Dunn Field (DF) portions of the Defense Depot Memphis, Tennessee (DDMT). The MI employs enhanced bioremediation treatment (EBT) and DF employs (most recently) an air sparge/soil vapor extraction (AS/SVE) system. Both areas have a relatively long history of groundwater monitoring of the progress of the remedial actions; approximately 6 years of semi-annual sampling. With this history of monitoring, EPA was able to evaluate the trends of the contaminant migration and contaminant attenuation. All the monitoring well installations have provided lithologic data to aid in understanding the layering of the sands and clays (the aquifer units and the confining layers). Water levels from the numerous monitoring wells provides a picture of the groundwater flow directions both horizontal and vertical. Because of this relatively large data set, EPA was able to evaluate the hydrogeology and the contaminant fate and transport and identify data gaps regarding (i) where the contaminants are not degrading and attenuating, and (ii) where up-gradient sources have not been identified. Annotated maps from the report are provided to illustrate the physical locations of the data gaps.

   Army Response: Comment noted.

4. EPA agrees with the Department of Army interpretation of the groundwater data presented in the 2013 LTM Report that contaminated groundwater migration is not stabilized at DDMT. For example, on the MI, PCE and TCE have migrated from the fluvial aquifer to the intermediate aquifer (IAQ) at concentrations above constituent-specific Maximum Contaminant Levels (MCLs). The IAQ plume extends to the northwest property boundary based on reported concentrations in MW-256 (Section 3.4.1, Page 3-6). Further, data from wells MW-141 and MW-202B in the IAQ "*demonstrate long-term increasing trends for PCE, from approximately 5*

ug/L to 25 ug/L" (page 3-10) and concentrations in MW-107, a transition zone well located in the "window" in the uppermost clay unit between the fluvial and intermediate aquifers in the northwest corner of the MI, "*increased significantly in 2011 and remain at elevated levels above the MCL….in April…and in October of 2013"* (page 3-10). PCE and TCE have been detected since 2012 above the MCL in MW-256, an IAQ sentinel well, and *"TCE was detected at 3.13 ug/L in April and 2.7 ug/L in October"* of 2013 in MW-254 (page 3-10), a sentinel well located in the Memphis Aquifer (MAQ).

Army Response: The first sentence in Section 4.1 states that the "Groundwater concentrations on the MI are generally stable …"; this was based on consideration of overall concentrations and plume extent. Thus, the comment that "Army interpretation … that contaminated groundwater migration is not stabilized at DDMT" is not accurate. However, the later statements in the comment regarding the plume extending to the northwest boundary and the wells with increasing concentrations are not disputed.

With regard to migration into the IAQ, PCE and TCE have been detected at concentrations above the MCL in the IAQ since the initial sample from MW-90 in 2002 (See: *Appendix H – Historical CVOC Results – MI LTM*). The conceptual site model was that contamination in the IAQ resulted from migration from the fluvial aquifer through the 'window'. When the ROD was completed in 2001, the consensus of the Defense Logistics Agency (DLA), USEPA and TDEC was that groundwater remediation in the fluvial aquifer would reduce contaminant concentrations in the IAQ and that only the higher contaminant concentrations in TTA-1 and TTA-2 warranted treatment. The Army will re-evaluate this position in 2014.

(EPA Comment 4, continued) Superfund Environmental Indicators (EI) under the Government Performance and Results Act (GPRA; 1993) are evaluated and updated by October 15 of each year for each Superfund site, or at any time when site conditions change. Based on the information presented in the 2013 LTM Report, EPA proposes changing the Contaminated Groundwater EI for DDMT to *Contaminated ground water migration not under control* – indicating that the migration of contaminated ground water at DDMT is not stabilized.

Army Response: Comment noted.

5. Unless stated otherwise in the body of this letter, EPA concurs with the Army recommendations for changes in well-specific long-term monitoring frequencies and well designations proposed in the 2013 LTM Report. EPA notes, however, that many of the wells involved in the long term monitoring program do not show much change or variation over the last several monitoring periods. EPA recommends a groundwater monitoring well program optimization effort in 2014: it may be reasonable to lengthen the period of time between sampling events for certain wells, resulting in a cost savings with minimal loss of understanding of contaminant behavior in the area around the well.

   Army Response: The Army agrees that many monitoring wells show little variation over time. We will include this as an agenda item for discussion during the regulatory meeting on May 29, 2014, including a discussion of revised criteria for sampling frequency.

6. It is EPA's view that the Mann-Kendall (M-K) test analyses are of limited usefulness in evaluating the DDMT data. The M-K analysis can tell a conflicting story when compared to visual examinations of the trend graphs.

- For the DF graphs, concentrations are decreasing and plain to see absent M-K analysis.
- In the MI, the picture is not as simple. For example, MW-92 is listed as 'probably decreasing' in Table 23, the Mann Kendall Trend Analysis. Examination of the graph shows that the PCE decreased, the DCE increased and then the PCE rebounded with minimal vinyl chloride produced. This extra detail is not captured in the M-K designation 'probably decreasing' and is highly relevant to developing a path forward for additional treatment and secondary source investigation/mitigation, as appropriate.

Army Response: Mann-Kendall analysis has been performed in accordance with the LTM plan in the 2004 MI Remedial Design report. The Army agrees that at this juncture this analysis is of limited use and will discontinue its usage in future reports, pending regulatory concurrence.

Main Installation (See: Figures 19 & 20, annotated by EPA)

1. There are numerous wells where the data indication that relatively small secondary source areas are nearby that require identification and mitigation in order to reach Remedial Action Objectives and Remedial Goals in a timely fashion. This is indicated by concentrations that have remained steady or have increased through time and data sets which do not show complete breakdown of the PCE. These wells are listed in the comments below and shown on the attached annotated figures. Starting in the southwest corner of the site, going clockwise:

   Army Response: Investigation of source areas based on wells with relatively low level contamination is not likely to provide useful results. In 2008, the DLA conducted a comprehensive data review to identify potential source areas in soil on the MI. Based on this information, a field investigation including a membrane interface probe survey and related soil confirmation sampling was performed to identify areas of soil contamination impacting the shallow groundwater and resulting in the observed groundwater plumes. Although areas of impacted soil were identified, the residual CVOC concentrations were low and not considered sufficient to warrant remedial action. See: *Main Installation Source Area Evaluation (*e^2M, 2008*)* and *Main Installation Source Area Investigation, Rev. 0 (*e^2M, 2008*).* Since the soil investigations were conducted in the areas with higher groundwater concentrations, additional investigations in areas with lower groundwater concentrations are not likely to provide actionable information.

   a. NE of MW-101B – What is the well number of the pink well? This spot indicates concentrations between 100 and 300 ug/L and it may not be delineated directly up gradient.

   Army Response: The wells referenced are DR1-6/6A. These wells were sampled most recently on November 9, 2013 with the following results:

   - DR1-6: 148 µg/L PCE, 1.69 µg/L TCE, 8.42 µg/L cDCE and <1 µg/L VC
   - DR1-6A: 1.49 µg/L PCE, 2.12 µg/L TCE, 132 µg/L cDCE and 0.398 µg/L VC.

   Monitoring wells MW-22 and MW-102B are considered upgradient of DR1-6/6A. No CVOCs were detected above method detection limits in the most recent groundwater samples collected on October 19, 2012 or in previous sampling rounds.

   b. MW-219 – VOCs in this well have been trending up over the last three years. There is no directly up gradient delineation of the source of these increasing concentrations.

Army Response: An upgradient well (for TTA-1N) was recommended in Section 4.1.2. The Army will include this as an agenda item for discussion during the regulatory meeting on May 29, 2014.

c. MW-256 – The source of the VOCs in this most up gradient location in the northwest corner of the site is not defined. Upon review of the A-A' cross section, the contamination in this well is connected to MW-202B and these plumes should be drawn as one.

Army Response: As noted above, contaminant migration from the fluvial aquifer is considered to be the source of VOCs in the IAQ. The Army agrees that VOCs in MW-256 and MW-202B are connected. Isopleths will be redrawn and a note added regarding the screen depth at MW-140.

d. MW-140 – This is an area where groundwater flow direction, and hence VOC migration, is unclear. Shallower portions of the aquifer could be flowing to the southeast. Deeper portions of the aquifer could be flowing to the northwest. There are distinct downward hydraulic gradients: as much as 2' in adjacent wells. Larger scale figures may help in future evaluations of this area.

Army Response: MW-140 is screened in the deeper section of the IAQ and groundwater flow is to the west-northwest (toward MW-255 and MW-254). The shallow fluvial aquifer is dry due to the elevation of the uppermost clay. The Army will consider using larger-scale figures for future work.

e. MW-258 – This well has increasing PCE concentrations without an obvious up gradient source.

Army Response: An additional well(s) in the North-central area was recommended in Section 4.1.2. The Army will include this as an agenda item for discussion during the regulatory meeting on May 29, 2014.

f. MW-104 – Concentrations of TCE in this well have been holding steady at +/- 20 ug/L. The source of this TCE is not defined up gradient.

Army Response: Agree, additional well(s) in the North-central area were recommended in Section 4.1.2. The Army will include this as an agenda item for discussion during the regulatory meeting on May 29, 2014.

g. MW-64 and MW-218 have steady concentrations of PCE and TCE. These locations are side gradient from the hot spot associated with DR 2-1 to the east. The up gradient source of these concentrations should be identified so it can be remediated.

Army Response: Agree, additional well(s) in TTA-2 area were recommended in Section 4.1.2. The Army will include this as an agenda item for discussion during the regulatory meeting on May 29, 2014.

h. DR 2-1 – Concentrations in this well have rebounded indicating that treatment was insufficient to remediate this portion of the MI aquifer.

Army Response: Agree, current injection well IW-92-01 is adjacent to DR2-1and the lack of apparent effect is surprising. Additional action in this area should be discussed following regulatory review of the Year 3 EBT Report dated April 2014. The Army will include this as an agenda item for discussion during the regulatory meeting on May 29, 2014.

i. PMW92-02 – The trend graph of the data indicates that the contamination has not degraded further past cis-DCE and additional treatment is warranted.

Army Response: The Army agrees that additional action is warranted where degradation of cDCE is not observed. Future actions will be determined as the Army re-evaluates the current remedial action on the MI.

j. MW-26 – Increasing concentrations in this well are likely from incomplete treatment in the area of DR 2-1.

Army Response: The Army agrees that additional action in this area is warranted. Future actions will be determined as the Army re-evaluates the current remedial action on the MI.

k. MW-52 – Concentrations of PCE are low, but still above the MCL. The source of the VOCs in this area has not been identified.

Army Response: The Army agrees that additional delineation is needed in this area. The Army will include this as an agenda item for discussion during the regulatory meeting on May 29, 2014, including the criteria for remedial action.

2. Section 3.5.1.2, *Boundary Wells* (Page 3-9), describes trends in PCE contamination concentrations at MW-219: this well is located immediately upgradient of TTA-1 North at the eastern property boundary. Specifically, PCE concentrations have fluctuated, but current levels in October 2013 (53.6 ug/L) are not significantly different from the previous high detection of 48 ug/L five (5) years ago in 2008. The 2013 LTM Report concludes that there is the potential for plume migration onto the MI. It is not clear, however, whether all possible on-site sources for the sustained levels of PCE have been investigated and mitigated. Please revise the 2013 LTM report to discuss possible on-site and off-site sources for the contamination observed in MW-219 and the proposed path forward for remediating this contamination to meet RAOs and RGs for the MI.

Army Response: Source investigation was performed in the TTA-1N area during the 2008 source area investigation, as referenced in Main Installation Comment 1 (page 3). Although areas of impacted soil were identified, the residual CVOC concentrations were low and not considered sufficient to warrant remedial action. See: *Main Installation Source Area Evaluation (*e^2M, 2008*)* and *Main Installation Source Area Investigation, Rev. 0 (*e^2M, 2008*).* There were no reported releases along the western boundary of DDMT. MW-219 was installed in 2007 to further delineate TTA-1N groundwater contamination. Results were well below the pretreatment concentrations in MW-21 and other downgradient wells. As stated above, an upgradient well (for TTA-1N) was recommended in Section 4.1.2.

Discussion of a path forward for the MI as a whole is envisioned following regulatory review of the Year 3 EBT report dated April 2014. Revision of the LTM report addressing this area alone

is not considered appropriate. The Army will include this as an agenda item for discussion during the regulatory meeting on May 29, 2014.

3. EPA agrees with the Department of Army recommendation that the natural attenuation study and groundwater modeling should be reviewed to determine if the modeling assumptions are still valid, to determine whether additional response action may be warranted, and to develop new estimated date for achieving RAOs and RGs. The evaluation should include a re-evaluation of the potential for VOC transport within the MAQ beneath the MI to the nearest pumping well at the Allen Well Field (and confirm the current location of the nearest pumping well).

   Army Response: The scope of additional investigation, consistent with this comment, is being planned by the Army. Discussions with USEPA and TDEC following regulatory review of the Year 3 EBT Report dated April 2014 and Year 4 Off Depot AS/SVE Operations Report dated March 2014 will be helpful. The Army will include this as an agenda item for discussion during the regulatory meeting on May 29, 2014.

   (EPA Comment 3, continued) As noted during our Site Management Plan discussions, EPA forecasts that, depending on the findings in the 2013 LTM Report and the annual EBT Report (currently under review by EPA), there will be a need for an MI ROD Amendment or Explanation of Significant Differences to update the RAOs and RGs to address: the need for response action in the IAQ; to clarify selection of monitored natural attenuation as an MI remedy component for fluvial groundwater; to address potential on-site impacts from a possible southeast off-site location; and possibly to select response actions in addition to, or other than, EBT in the fluvial aquifer at the MI.

   Army Response: The Army agrees that these issues warrant discussion and will include this as an agenda item for discussion during the regulatory meeting on May 29, 2014.

Dunn Field

1. The FY2014 Site Management Plan for DDMT projects a September 2015 date for abandonment of the treatment systems at DF. The contaminant distribution seen in Figures 31-37 of the report and the associated tables and graphs tells a good story of decreasing concentrations in response to AS/SVE treatment. EPA is less confident than the Army in the 2014 SMP schedule projecting that DF RAOs will be achieved in 2019 with AS/SVE system abandonment in September 2015. The 2013 LTM Report notes that a further 60% decrease is required to meet the active treatment objective (reduce individual CVOC concentrations to 50 ug/L or less). Although not captured as an explicit recommendation in the recent Third Five year Review, re-evaluation of the schedule for meeting RAOs and RGs for Dunn Field is needed in 2014 in conjunction with review of this 2013 LTM Report and the Year 4 AS/SVE Report. Regardless, EPA concurs with the recommendation to operate the AS/SVE system in alternating months to restore the northerly groundwater flow from MW-159 to the treatment zone, extending the operating period without additional cost.

   Army Response: The Army agrees that re-evaluation of the schedule for meeting RAOs at DF is appropriate at this time.

2. In addition to the contaminant concentrations at MW-159, the schedule for the DF groundwater remedial action appears to be impacted by imminent co-mingling of the inbound off-site plume

(originating northeast of Dunn Field in the general vicinity of the railroad right of way/Mclean Road/Persons Road area) with the central plume at DF. PCE and TCE contamination migrating in from the northeast has contaminated the fluvial aquifer underlying DF and is migrating westerly toward the general area of the AS/SVE system. The 2013 LTM Report notes (page 4-7) that the increase in contamination in MW-03 in the northwest corner of DF is attributed to the northeast off-site plume.

Army Response: While groundwater contamination does migrate on to the northeast corner of DF from an off-site source, there is little apparent co-mingling of contaminants. The contaminant source areas for the plumes originating on DF are located west of the north-south access road. See: *Enclosure 1, Site Management Plan, Figure 13 – Dunn Field Disposal Sites, Source Areas and Off-Depot Groundwater Remedial Actions* (attached).

Total CVOC plume maps prepared by HDR from 2006 to 2013 and more recent TCE and 1,1-dichloroethene (DCE) plume maps from 2011 to 2013 are attached. See: *Enclosure 2A, Total CVOC Plume Maps (2006-2013)* and *Enclosure 2B, TCE and DCE Plume Maps (2011-2013).* These maps show the reduction in groundwater concentrations following startup of the SVE system in 2007. The earlier maps show the off-site plume with the highest concentration upgradient of DF and decreasing concentrations as it moves on to DF. The earlier maps also show higher contaminant concentrations near the northwest corner of DF resulting primarily from on-site sources. Later maps show concentrations in the northwest corner reduced below MCLs while only the wells impacted by the off-site plume and upgradient of the remediated Source Areas exceed MCLs (MW-07, MW-08 and MW-230). In addition, all of these wells with higher concentrations have a significant concentration of DCE in comparison to other VOCs detected; DCE has not been detected in the DF Source Areas. The current situation appears to be due solely to contaminant migration from an off-site source rather than co-mingling of plumes. In regard to the recent increase at MW-03, concentrations did not increase at any other wells monitoring rebound from FSVE shutdown. The increased concentrations for TCE, PCE and DCE may be indicative of migration of the off-site plume alone.

(EPA Comment 2, continued) The **2004 Record of Decision** (ROD) for DF acknowledged the northeast off-site plume situation and includes the following language (page 2-55):

"DLA, EPA, and TDEC believe that the contamination in the northeast upgradient plume will be adequately addressed by groundwater treatment components of the selected remedy. In the meantime, TDEC has initiated the process of locating the source(s) of the upgradient contamination in light of identifying the responsible party. A contingency plan may be implemented to further address remediation of the offsite VOC groundwater plume entering the northeast portion of Dunn Field in the even the parties determine the on-site remedy is inadequate and poses unacceptable risk to human health and the environment."

Further, the 2004 ROD states (page 2-59) that, with respect to deed and or lease restrictions on the Northeast Open Area at DF, *"…due to groundwater contamination from an upgradient offsite source, the northern-most portion of his area will be subject to groundwater use restrictions until remediation goals are achieved."*

The **2009 ROD Amendment** for DF revises the remedy language to strike the contingency language as follows (page 4):

"DLA, EPA, and TDEC believe that the contamination in the northeast upgradient plume will be adequately addressed by groundwater treatment components of the selected remedy. In the meantime, TDEC has initiated the process of locating the source(s) of the upgradient contamination in light of identifying the responsible party. ~~A contingency plan may be implemented to further address remediation of the offsite VOC groundwater plume entering the northeast portion of Dunn Field in the even the parties determine the on-site remedy is inadequate and poses unacceptable risk to human health and the environment~~."

The November 2012 Third Five Year Review for DDMT appears to re-interpret the 2009 ROD language stating "The AS/SVE system will continue to operate until the upgradient concentrations from the Dunn Field plume do not exceed 50 ug/L for individual CVOCs for twelve months." This language does not address the expectation that the active treatment will also address the Northeast Plume contamination in the same manner.

Army Response: "… the system will continue to operate until the influent (upgradient) concentrations from the DF plume do not exceed 50 ug/L for individual CVOCs" is from page 21 of the 2009 ROD Amendment and was added at EPA's request. The period of twelve months was added per the Off Depot RD Section 6.4.6.

Concentrations from the off-site plume do not currently exceed that concentration beyond MW-07. Earlier maps also indicate MW-07 is the downgradient extent of the higher concentrations from the off-site plume and that the plume extent is relatively stable.

(EPA Comment 2, continued) In 2014, the DLA, EPA and TDEC plan of action regarding the northeast plume at DF requires re-evaluation and clarification to ensure that all parties on are the same page moving forward. As written, the selected remedy for Dunn Field groundwater states the expectation that the DLA treatment activities will remediate the off-site northeast plume that has migrated, and continues to migrate, onto the Superfund site. To support discussions in 2014, the 2013 LTM Report should consider the following:

Army Response: While Army accepts an invitation to discuss a plan of action regarding the off-site plume, including TDEC's investigation to find the source of contamination, Army continues to evaluate whether it has any obligation with respect to the off-site plume. It remains Army's position that the 2004 ROD and 2009 ROD Amendment do not assign liability for remediation of the off-site plume to DLA/Army. As such, to the extent that Army agrees to provide any of the following requested information, it is not an admission of liability or responsibility with respect to remediation of the off-site plume.

a. The 2013 LTM Report should evaluate, and draw conclusions regarding, whether the well coverage between the northeast corner of Dunn Field and across the upper half of Dunn Field is sufficient to know with reasonable certainty whether the northeast plume is, in fact, migrating to the AS/SVE system and is likely to be treated by that system pending source mitigation at some point in the future (TBD). Preliminary, it appears to EPA that the three largest detections in the NE plume would likely flow north of AS/SVE capture zones. Well MW-220 is on the southwest edge of the NE plume and it is also in the close vicinity of the two northern most units of the SVE system. A small portion of the NE plume would likely be captured by the northern-most parts of the AS/SVE system, were it running. Detections in MW-31 are past (to the west of) the capture zone and influence of the AS/SVE system. This preliminary analysis is inconsistent with the

2004 and 2009 ROD language that "…*that the contamination in the northeast upgradient plume will be adequately addressed by groundwater treatment components of the selected remedy"* and requires discussion among the parties regarding path forward.

Army Response: The extent of the off-site plume on DF is well defined by existing LTM wells. The northern extent of the off-site plume has also been delineated although several of the off-site wells have been abandoned. The isopleth maps for 2013 and earlier indicate the southern portion of the off-site plume migrates off DF near the mid-point of the northern boundary, before reaching the on-site Source Areas or the western boundary. Assuming that is the case, it is likely that the majority of the off-site plume would not reach the AS/SVE system's area of influence, whether it passed through a portion of DF or remained to the north. MW-79 located north of the AS/SVE system has had concentrations of DCE, PCE and TCE in excess of MCLs since the initial sample in 2001. MW-51, located north of DF on the 2011 map, contained similar concentrations of DCE and TCE above MCLs in samples from 1997 to 2011; it was abandoned in 2013.

b. Concurrently, efforts to identify and mitigate the off-site source(s) have been ongoing or planned since at least 2004. The status of those activities, including relevant TDEC investigation reports, need to be summarized in the revised 2013 LTM report in support of determining a path forward.

Army Response: The Army will request that TDEC provide a summary of the status of its investigations to date. Reviewing TDEC reports and developing a new summary are outside of the scope of this LTM report.

c. The 2013 LTM Report requires revision to include updated projections for AS/SVE treatment, or other treatment as necessary, of the northeast plume.

Army Response: Development of an updated projection for treatment of the off-site plume requires knowledge of the source and a schedule for source removal that is outside the scope of this LTM report. Moreover, Army continues to evaluate whether it has any responsibility for the off-site plume.

Specific Comments

Main Installation

1. Sections 1.4.1 and 3.5.1.4; Figure 2 - Please revise Figure 2, and other figures of the report as appropriate, to illustrate the new sixth and seventh plumes described for the MI in the current but not currently captured on the figures. The "North Central" plume (associated with MW-258) is introduced in Section 1.4.1 (Page 1-6) and the "South Central" plume (associated with MW-97) is introduced in Section 3.5.1.4 (pages 3-10 through 11). Also, evaluate the plume table on page 1-6 (describing six plumes) and revise as needed for consistency with the plume table on page 3-11 (describing seven plumes).

   Army Response: Figure 2 is only intended to show areas/plumes where EBT is underway per discussion of remedial action in Section 1.2.1. No other figures call out the plume names. The Army will include a new Figure 38 that will show TCE and PCE contours and identify each of the designated plumes; the figure will be introduced following the table in Section 3.5.1.4.

Section 1.4 discusses previous groundwater monitoring results. The six fluvial aquifer plumes and the Sentinel well plume, as listed on the table in Section 1.4.1, were initially described in the first LTM report (MACTEC, 2006). The names for the West-Central and North-Central plumes were changed in the 2007 LTM report (HDR, 2010) and have remained the same until this current LTM report. As noted, the South-Central plume is added in Section 3.5.1.4 based on the review performed for the current report; the table on the following page therefore includes it as the seventh fluvial aquifer plume. No change is considered necessary.

2. Section 4.1.2, Page 4-4, 1st bullet – MW-66 is not directly up gradient of MW-219: EPA recommends installation of an appropriately located well.

   Army Response: The Army agrees that a new well upgradient of MW-219 would be helpful. That location and several others are noted in the two paragraphs at the end of Section 4.1.2. The Army will include this as an agenda item for discussion during the regulatory meeting on May 29, 2014, including well locations and data quality objectives.

Dunn Field

1. A figure illustrating the AS/SVE location, the FSVE location, key monitoring wells associated with the two treatment systems, the "background wells" that are associated with the Northeast Plume originating off-site, the plume itself, the off-site geographic area to the northeast with roads and features (such as the railroad right of way) labeled, would support a path forward discussion in 2014 for the Northeast Plume.

   Army Response: As noted in our response to DF General Comment 2, while Army accepts EPA's invitation to discuss a path forward for the off-site plume, Army continues to evaluate whether it has any responsibility with respect to the off-site plume.

   Notwithstanding the foregoing, other than the off-site area, the information is provided on figures in the LTM report. Figure 6 identifies the Background-NE wells and the performance wells selected for monitoring potential rebound following the FSVE shutdown. A new figure with the well classification symbols from Figure 6 can be prepared on an aerial photo base with addition of the AS/SVE area and FSVE system and recent isopleths. Addition of the figure to the LTM report is not considered necessary.

ENCLOSURE 1

SITE MANAGEMENT PLAN, FIGURE 13

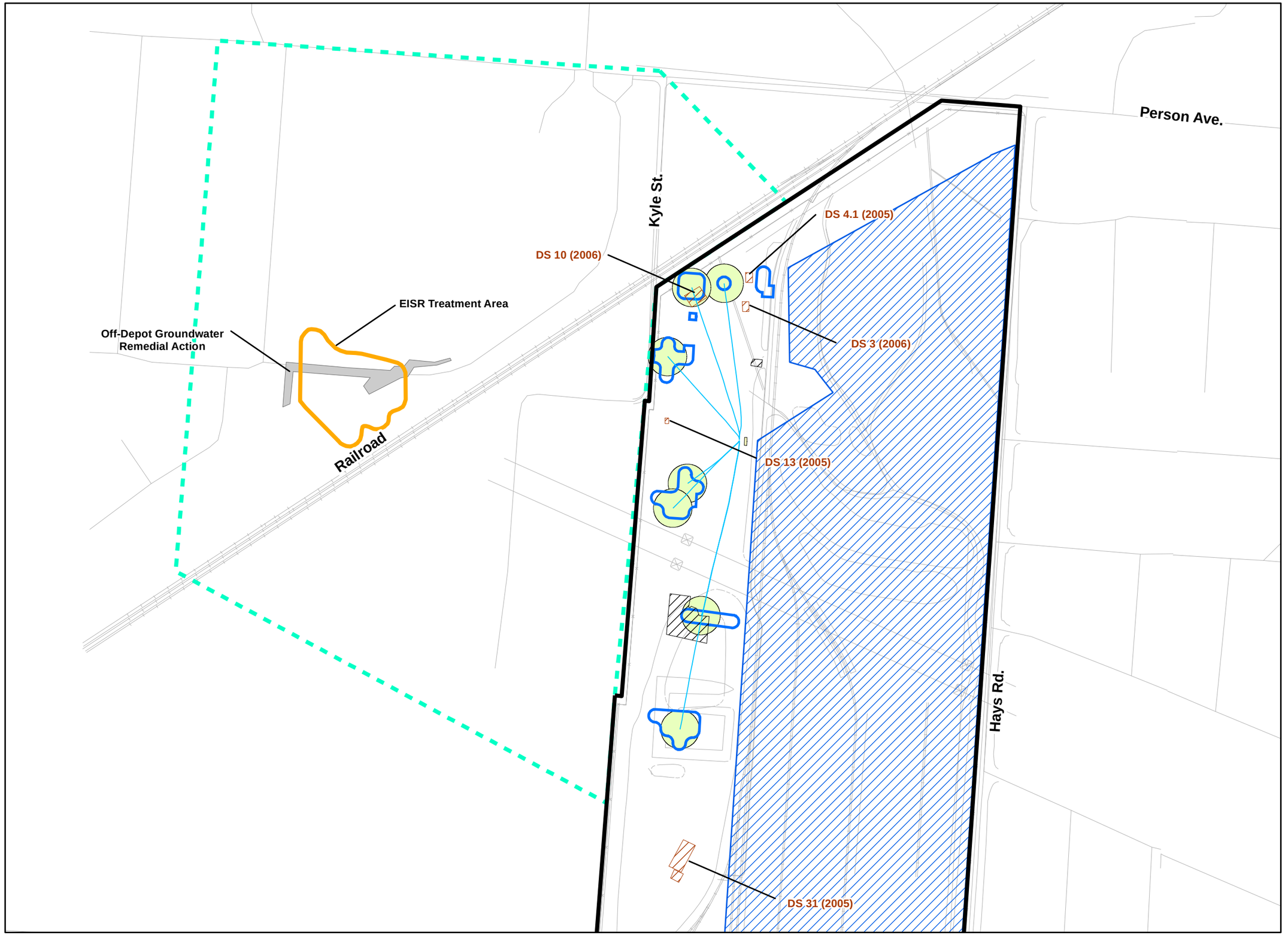

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Figure 13

DUNN FIELD DISPOSAL SITES, SOURCE AREAS AND OFF-DEPOT GROUNDWATER REMEDIAL ACTIONS

2014 SITE MANAGEMENT PLAN

DEFENSE DEPOT
MEMPHIS, TENNESSEE

Legend

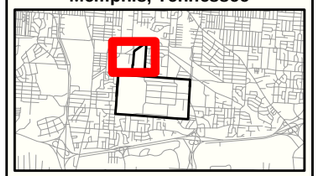
- Original Dunn Field Perimeter
- Unrestricted Use Area from ROD
- Off-Site Treatment Area
- EISR Treatment Area
- Disposal Sites Excavation Area
- Fluvial SVE Well - 60-foot radius of influence
- Fluvial SVE Conveyance Line
- SVE Control Building
- Loess Excavation Areas
- Loess Thermal-Enhanced SVE Treatment Areas
- Air Sparge-SVE Area

Projection: NAD 1927 StatePlane Tennessee
Units: Feet

Aerial Photo Date: 2006

0 100 200 400
Feet

Installation Location
Memphis, Tennessee



Date: November 2013
Edition: Rev 0

HDR

Path: G:\DDMT\2014 SMP\GIS\Figure 13.mxd

ENCLOSURE 2A

TOTAL CVOC PLUME MAPS (2006 – 2013)

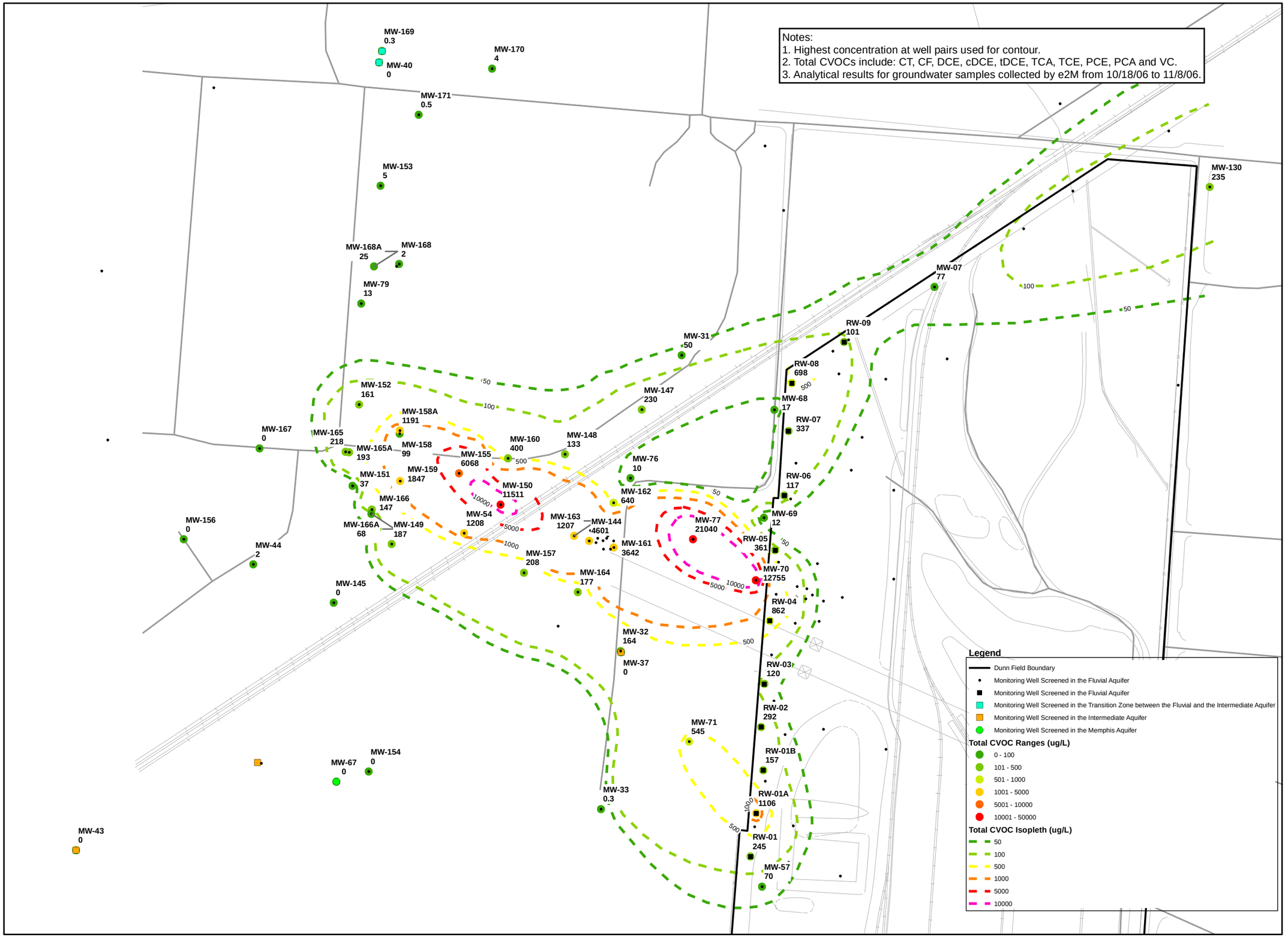


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Figure 4-4

TOTAL CVOC CONCENTRATIONS, OCTOBER 2006

ANNUAL OPERATIONS REPORT 2006

DUNN FIELD GROUNDWATER IRA YEAR EIGHT

DEFENSE DEPOT MEMPHIS, TENNESSEE

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

1:3,200

0 50 100 150 Feet
0 10 20 30 Meters

Installation Location
Memphis, Tennessee

Date: January 2007
Edition:DRAFT

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 10/5/2007 and 10/8/2007.

MW-169 <1
MW-40 <1
MW-170 4
MW-171 <1
MW-153 7
MW-168A 19
MW-168 1
MW-79 18
MW-130 290
MW-07 67
RW-09 67
MW-31 55
RW-08 57
MW-68 11
RW-07 63
MW-152 177
MW-158A 197
MW-158 28
MW-165A 231
MW-147 542
MW-160 968
MW-167 <1
MW-165 154
MW-148 157
MW-76 174
MW-159 3702
MW-155 5862
MW-151 36
MW-150 6652
MW-162 8391
RW-06 58
MW-69 1
MW-166 256
MW-77 3315
MW-156 <1
MW-163 1662
RW-05 195
MW-161 2752
MW-44 2
MW-70 779
MW-157 463
MW-144 1349
MW-149 108
MW-145 <1
MW-166A 172
MW-54 592
MW-164 223
RW-04 1105
MW-32 <1
RW-03 73
MW-37 15
RW-02 425
MW-71 72
MW-154 <1
MW-67 <1
RW-1B 327
MW-33 2
RW-1A 761
MW-43 <1
RW-01 372
MW-57 66

50
100
500
1000
5000

Legend
Total CVOC Ranges (ug/L)
0 - 100
101 - 500
501 - 1000
1001 - 5000
5001 - 10000
Total CVOC Isopleth (ug/L)
50
100
500
1000
5000

N
W E
S

0 150 300 600
Feet

Installation Location
Memphis, Tennessee

Date: March 2008
Edition: Rev 0

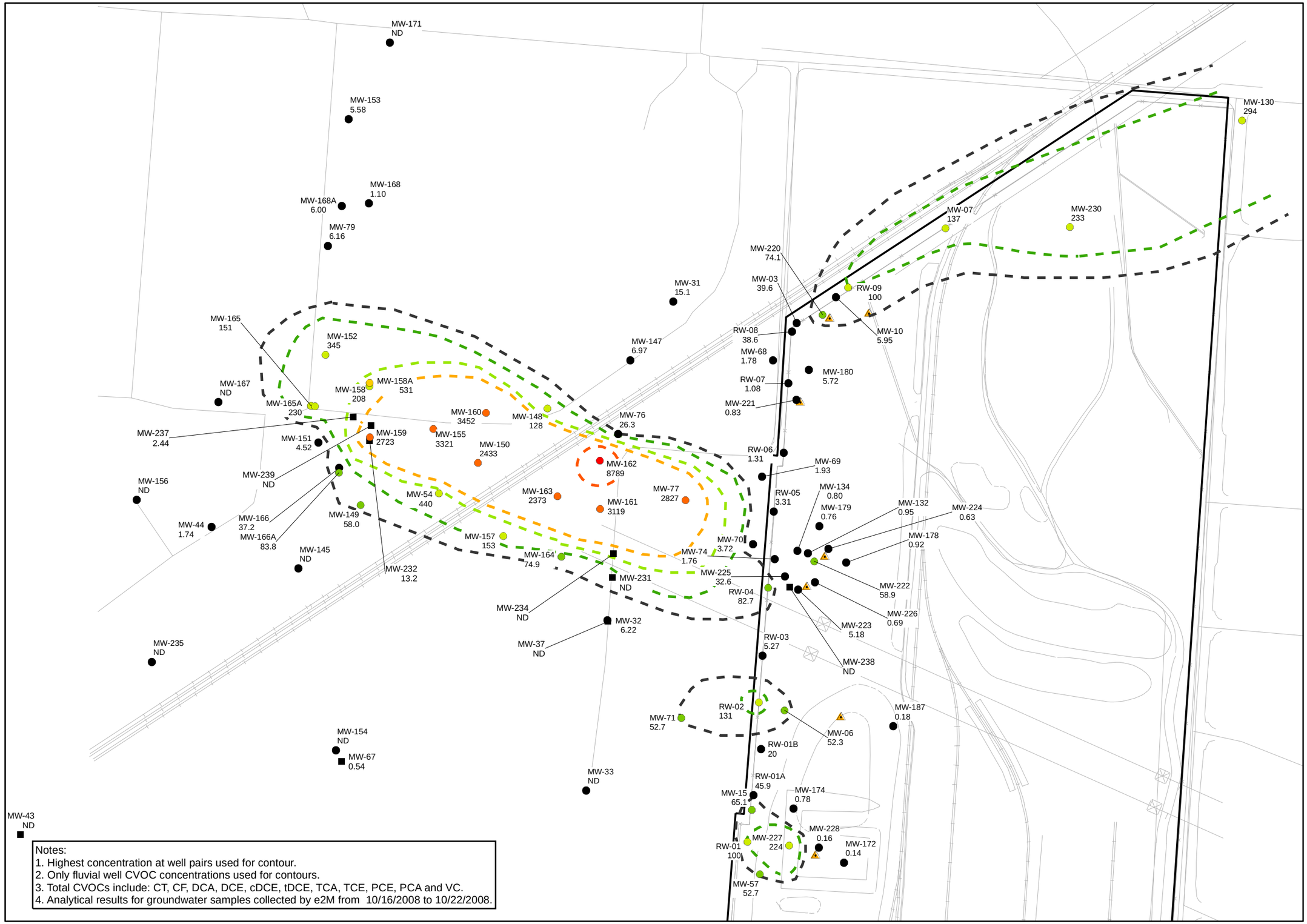
Figure 4-4

TOTAL CVOC CONCENTRATIONS, OCTOBER 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. Only fluvial well CVOC concentrations used for contours.
3. Total CVOCs include: CT, CF, DCA, DCE, cDCE, tDCE, TCA, TCE, PCE, PCA and VC.
4. Analytical results for groundwater samples collected by e2M from 10/16/2008 to 10/22/2008.

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Figure 4-4

TOTAL CVOC CONCENTRATIONS, OCTOBER 2008

ANNUAL OPERATIONS REPORT - 2008

DUNN FIELD GROUNDWATER IRA YEAR TEN

DEFENSE DEPOT MEMPHIS, TENNESSEE

Legend

CVOCs Fluvial Wells
ug/L
- 0 - 50
- 51 - 100
- 101 - 500
- 501 - 1000
- 1001 - 5000
- 5001 - 10000

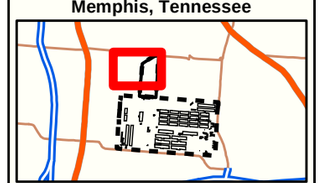
CVOCs Non-Fluvial Wells
ug/L
- 0 - 50

Total CVOC Isopleth (ug/L)
- 50
- 100
- 500
- 1000
- 5000

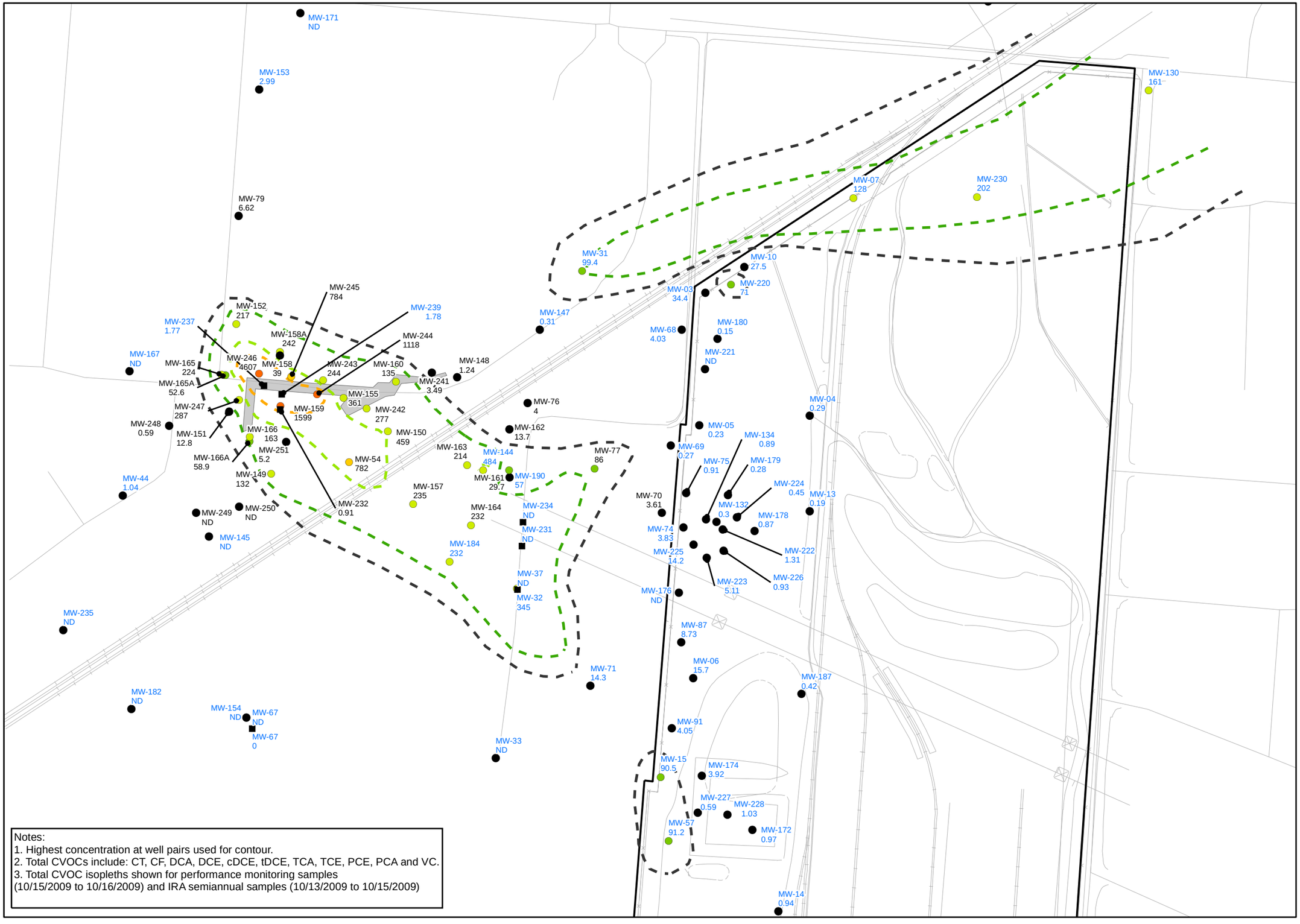
SVE -Soil Vapor Extraction Point

0 50 100 200 300 400
Feet

Installation Location
Memphis, Tennessee



Date: February 2009
Edition: Rev 0



Notes:
1. Highest concentration at well pairs used for contour.
2. Total CVOCs include: CT, CF, DCA, DCE, cDCE, tDCE, TCA, TCE, PCE, PCA and VC.
3. Total CVOC isopleths shown for performance monitoring samples (10/15/2009 to 10/16/2009) and IRA semiannual samples (10/13/2009 to 10/15/2009)

G:\121803\005 IRA Closure

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Figure 7

TOTAL CVOC CONCENTRATIONS, OCTOBER 2009

2009 OPERATIONS
AND CLOSURE REPORT
DUNN FIELD GROUNDWATER
INTERIM REMEDIAL ACTION

DEFENSE DEPOT
MEMPHIS, TENNESSEE

Legend

CVOCs Fluvial Wells
ug/L
- 0 - 50
- 50 - 100
- 100 - 500
- 500 - 1000
- 1000 - 5000

Total CVOC Isopleth (ug/L)
- 50
- 100
- 500
- 1000

CVOCs Non-Fluvial Wells
ug/L
- 0 - 50

AS-SVE Area

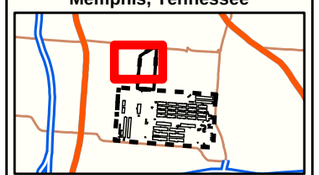
Original Dunn Field Property Boundary

MW-05 100 Blue: IRA Sample Event

MW-249 100 Black: Off Depot Performance Monitoring Sample Event

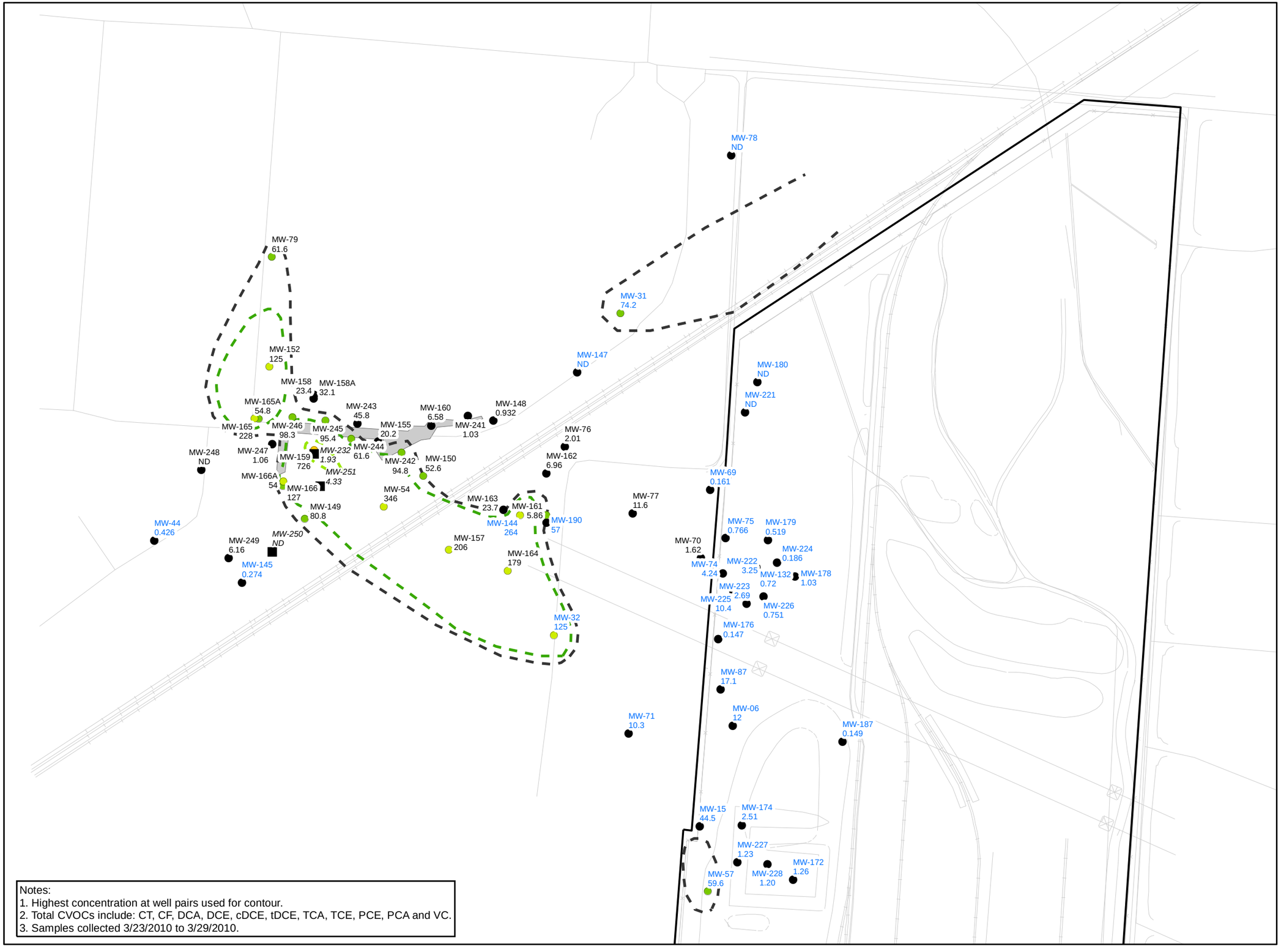
0 100 200 300 400
Feet

Installation Location
Memphis, Tennessee



Date: December 2010
Edition: Rev 0

HDR



Notes:
1. Highest concentration at well pairs used for contour.
2. Total CVOCs include: CT, CF, DCA, DCE, cDCE, tDCE, TCA, TCE, PCE, PCA and VC.
3. Samples collected 3/23/2010 to 3/29/2010.

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Figure 5

TOTAL CVOC CONCENTRATIONS, MARCH 2010

OFF DEPOT GROUNDWATER
ANNUAL LONG TERM
MONITORING REPORT - 2010

DUNN FIELD
DEFENSE DEPOT
MEMPHIS, TENNESSEE

Legend

CVOCs Fluvial Wells
ug/L
- 0 - 50
- 50 - 100
- 100 - 500
- 500 - 1000

Total CVOC Isopleth (ug/L)
- 50
- 100
- 500

CVOCs Non-Fluvial Wells
ug/L
- 0 - 50

SVE -Soil Vapor Extraction Point

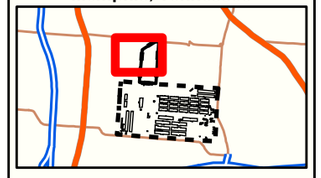
Original Dunn Field Property Boundary

MW-05
100
Blue: Off Depot LTM Sample Event

MW-249
100
Black: Off Depot Performance Monitoring Sample Event (Non-Fluvial Wells - Italics)

0 100 200 300
Feet

Installation Location
Memphis, Tennessee



Date: January 2011
Edition: Rev 0

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MW-171
ND

MW-153
0.4

MW-51
25

MW-78
ND

MW-79
52.4

MW-246
13.5

MW-158A
1.0

MW-237
2.1

MW-158
1.2

MW-165A
93.8

MW-152
1.8

MW-245
3.4

MW-239
1.6

MW-244
2.2

MW-165
27.5

MW-247
33

MW-241
0.5

MW-148
0.2

MW-160
0.4

MW-243
7.5

MW-155
3.2

MW-151
27.8

MW-242
6.6

MW-248
ND

MW-159
364

MW-150
26.8

MW-166
183

MW-251
4.9

MW-54
12.1

MW-166A
73.5

MW-149
143

MW-44
0.7

MW-163
13.3

MW-144
69.4

MW-190
31.1

MW-161
7.47

MW-77
54.5

MW-157
21.1

MW-250
ND

MW-249
6.2

MW-145
1.7

MW-164
42.4

MW-234
ND

MW-231
ND

MW-184
27.4

MW-232
0.6

MW-32
26.5

MW-37
ND

MW-235
ND

MW-182
ND

MW-31
5.8

MW-147
0.2

MW-180
ND

MW-221
ND

MW-76
1.1

MW-162
0.4

MW-05
0.43

MW-04
0.3

MW-69
0.2

MW-75
0.9

MW-179
0.2

MW-132
0.74

MW-13
0.5

MW-70
3.3

MW-74
6.6

MW-224
1.0

MW-178
1.4

MW-225
2.9

MW-222
0.5

MW-226
1.5

MW-176
0.2

MW-223
2.3

MW-87
5.9

MW-06
13.8

MW-71
35.2

MW-187
0.6

MW-91
4.97

MW-33
0.8

MW-15
6.2

MW-174
1.9

MW-227
1.5

MW-228
1.5

MW-172
1.8

MW-57
22.5

Notes:
1. Highest concentration at well pairs used for contour.
2. Total CVOCs include: CT, CF, DCA, DCE, cDCE, tDCE, TCA, TCE, PCE, TeCA and VC.
3. Samples collected 3/28/2011 to 4/28/2011.
4. Results from intermediate aquifer wells (shown in italics) were not used for isopleths.

Results for Wells Outside the Mapped Area:

Total CVOCs (µg/L)

MW-14	0.6
MW-58	1.4
MW-65	ND
MW-128	ND
MW-169	ND
MW-170	ND
MW-185	0.3
MW-186	ND
MW-240	2.1

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Figure 8

TOTAL CVOC CONCENTRATIONS, MARCH - APRIL 2011

OFF DEPOT
ANNUAL GROUNDWATER
MONITORING REPORT – 2011

DUNN FIELD
DEFENSE DEPOT
MEMPHIS, TENNESSEE

Legend

Total CVOC Ranges (ug/L)

- 0 - 10
- 10 - 50
- 50 - 100
- 100 - 500

Total CVOC Isopleth (ug/L)

- 10
- 50
- 100

Air Sparge Well Area

Original Dunn Field Property Boundary

MW-05 100 — Blue: Off Depot LTM Sample Event

MW-249 100 — Black: Off Depot Performance Monitoring Sample Event (Non-Fluvial Wells - Italics)

0 100 200 300
Feet

Installation Location
Memphis, Tennessee

Date: March 2012
Edition: Rev 0

HDR

Path: G:\121842\Off Depot GW 2011 Annual Report\GIS\Fig 8 TOTAL CVOC Apr2011.mxd

Path: G:\DDMT\MI_LTM\LTM 2012 Annual Report\GIS\Figure 21 TOTAL CVOC Apr2012.mxd

MW-126 ND
MW-169
MW-170
MW-171
MW-153
MW-78
MW-129 42.1
MW-130 162
MW-08 15.2
MW-07 82.1
MW-230 104
MW-28 ND
MW-79 32.7
MW-237 3.46
MW-245 1.27
MW-243 4.55
MW-244 3.28
MW-31 12.2
MW-158A ND
MW-158 1.90
MW-165A 8.88
MW-246 12.1
MW-165 13.2
MW-152 0.277
MW-247 2.62
MW-80 ND
MW-155 2.13
MW-241 0.803
MW-147 ND
MW-03 1.87
MW-220 14.3
MW-68 ND
MW-180 ND
MW-221 ND
MW-148 ND
MW-76 1.32
MW-160 ND
MW-167
MW-151 66.4
MW-248 ND
MW-242 1.30
MW-166 65.0
MW-159 389
MW-150 19.1
MW-166A 53.0
MW-144 68.6
MW-77 15.5
MW-69 ND
MW-04 0.162
MW-134 0.701
MW-54 12.6
MW-163 14.0
MW-190 34.1
MW-44 4.87
MW-251 5.24
MW-157 7.86
MW-250 ND
MW-224 0.563
MW-13
MW-222 ND
MW-70 2.61
MW-164 16.3
MW-149 29.1
MW-225 1.41
MW-226 0.571
MW-249 43.2
MW-184 10.6
MW-32
MW-176 0.187
MW-223 1.17
MW-145 2.45
MW-87 0.737
MW-235 ND
MW-71 15.4
MW-06 4.77
MW-187
MW-91 0.633
MW-182 ND
MW-154
MW-67
MW-33
MW-15 2.68
MW-174 1.30
MW-227 2.57
MW-228 0.450
MW-57 9.07
MW-58

Notes:
1. Highest concentration at well pairs used for contour.
2. Total CVOCs include: CT, CF, DCA, DCE, cDCE, tDCE, TCA, TCE, PCE, TeCA and VC.
3. Samples collected 4/17 - 20/2012.
4. Results from intermediate aquifer wells (shown in italics) were not used for isopleths.

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Figure 21

DUNN FIELD TOTAL CVOC CONCENTRATIONS, APRIL 2012

ANNUAL LONG TERM MONITORING REPORT - 2012

DEFENSE DEPOT MEMPHIS, TENNESSEE

Legend

Total CVOC Ranges (ug/L)
- 0 - 10
- 10 - 50
- 50 - 100
- 100 - 500
- Not Sampled

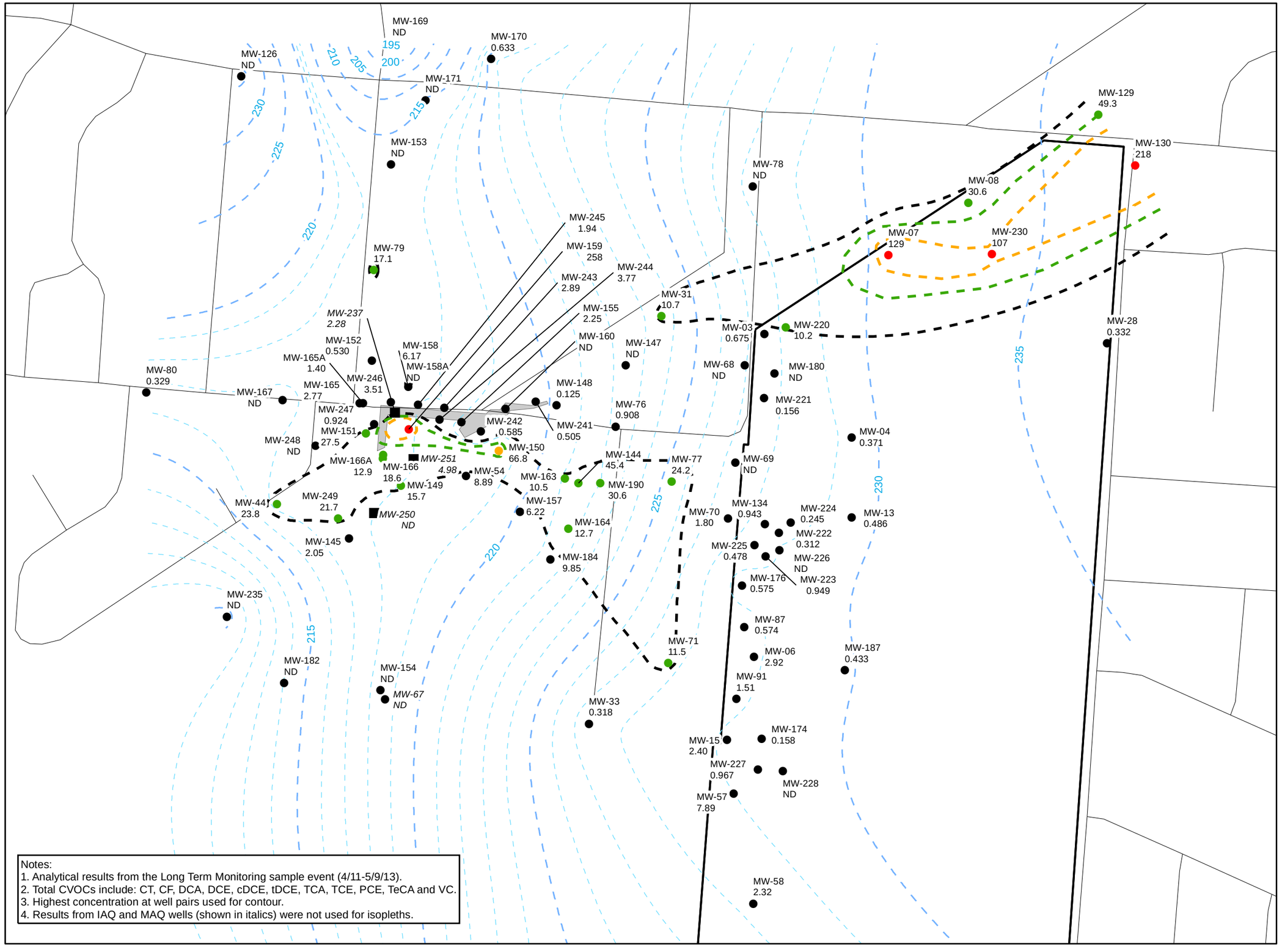
Total CVOC Isopleth (ug/L)
- 10
- 50
- 100
- Air Sparge Well Area
- Original Dunn Field Property Boundary
- Potentiometric surface of the Fluvial Aquifer 1-ft. contour
- Potentiometric surface of the Fluvial Aquifer 5-ft. contour

0 100 200 300
Feet

Installation Location
Memphis, Tennessee

Date: December 2012
Edition: Rev 0

HDR



Notes:
1. Analytical results from the Long Term Monitoring sample event (4/11-5/9/13).
2. Total CVOCs include: CT, CF, DCA, DCE, cDCE, tDCE, TCA, TCE, PCE, TeCA and VC.
3. Highest concentration at well pairs used for contour.
4. Results from IAQ and MAQ wells (shown in italics) were not used for isopleths.

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Figure 31

DUNN FIELD TOTAL CVOC CONCENTRATIONS, APRIL 2013

ANNUAL LONG TERM MONITORING REPORT - 2013

DEFENSE DEPOT MEMPHIS, TENNESSEE

Legend

Total CVOC Ranges (ug/L)

- 0 - 10
- 10 - 50
- 50 - 100
- 100 - 500

Total CVOC Isopleth (ug/L)

- 10
- 50
- 100

Air Sparge Well Area

Original Dunn Field Property Boundary

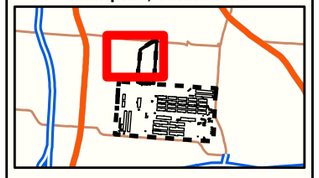
Potentiometric surface of the Fluvial Aquifer 1-ft. contour

Potentiometric surface of the Fluvial Aquifer 5-ft. contour

0 100 200 300

Feet

Installation Location
Memphis, Tennessee



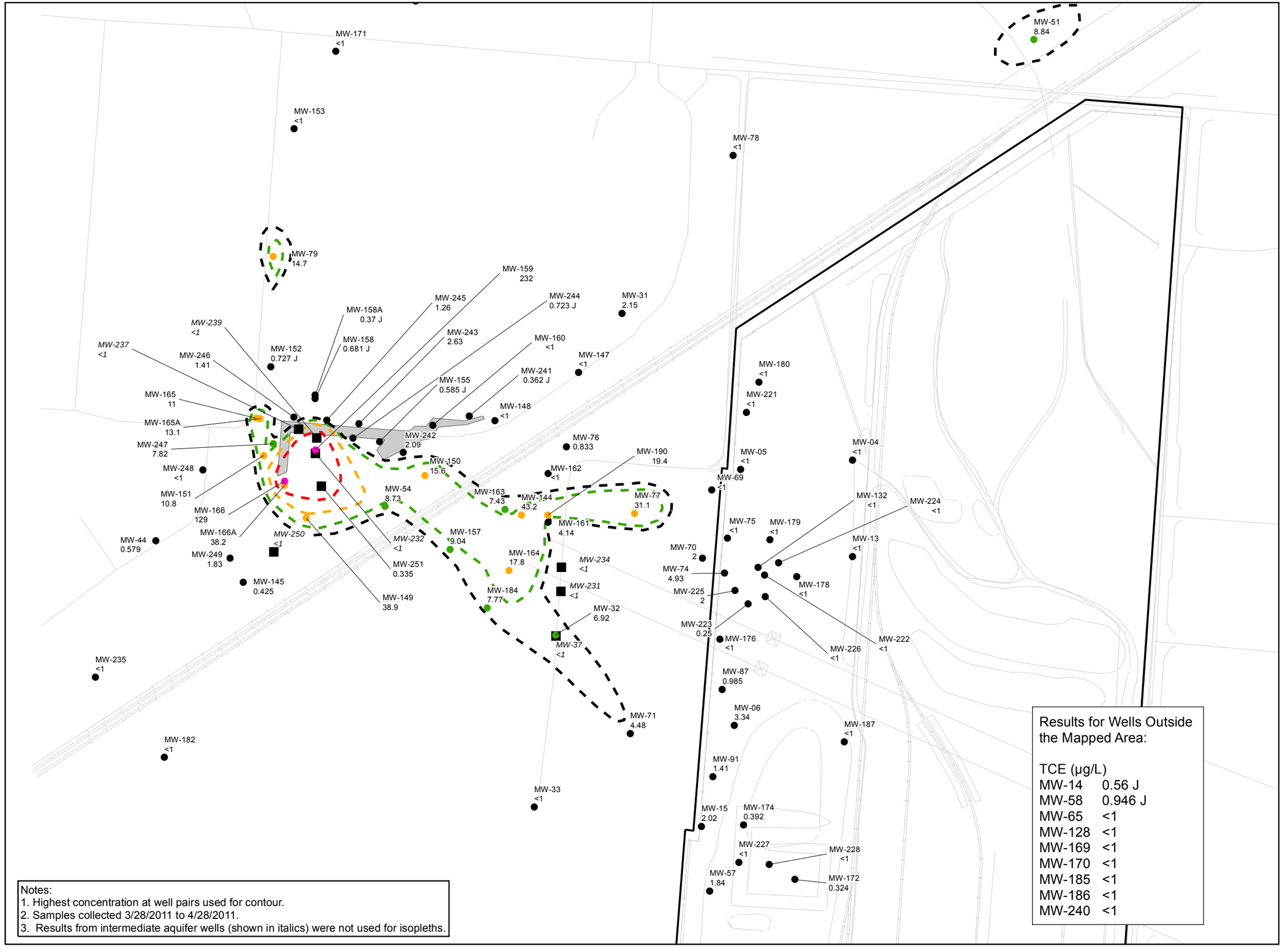
Date: December 2013
Edition: Rev 0

HDR

Path: G:\DDMT\LTM Reports\2013 October\Figures\Figure 31 TOTAL CVOC Apr2013.mxd

ENCLOSURE 2B

TCE AND DCE PLUME MAPS (2011 – 2013)



Notes:
1. Highest concentration at well pairs used for contour.
2. Samples collected 3/28/2011 to 4/28/2011.
3. Results from intermediate aquifer wells (shown in italics) were not used for isopleths.

Results for Wells Outside the Mapped Area:

TCE (µg/L)	
MW-14	0.56 J
MW-58	0.946 J
MW-65	<1
MW-128	<1
MW-169	<1
MW-170	<1
MW-185	<1
MW-186	<1
MW-240	<1

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Figure 12

TCE CONCENTRATIONS, MARCH - APRIL 2011

OFF DEPOT
ANNUAL GROUNDWATER
MONITORING REPORT – 2011

DUNN FIELD
DEFENSE DEPOT
MEMPHIS, TENNESSEE

Legend

TCE Ranges (ug/L)
- 0-5
- 5-10
- 10-50
- 50-100
- 100-250

TCE Isopleth (ug/L)
- 5
- 10
- 50
- 100

Air Sparge Well Area

Original Dunn Field Property Boundary

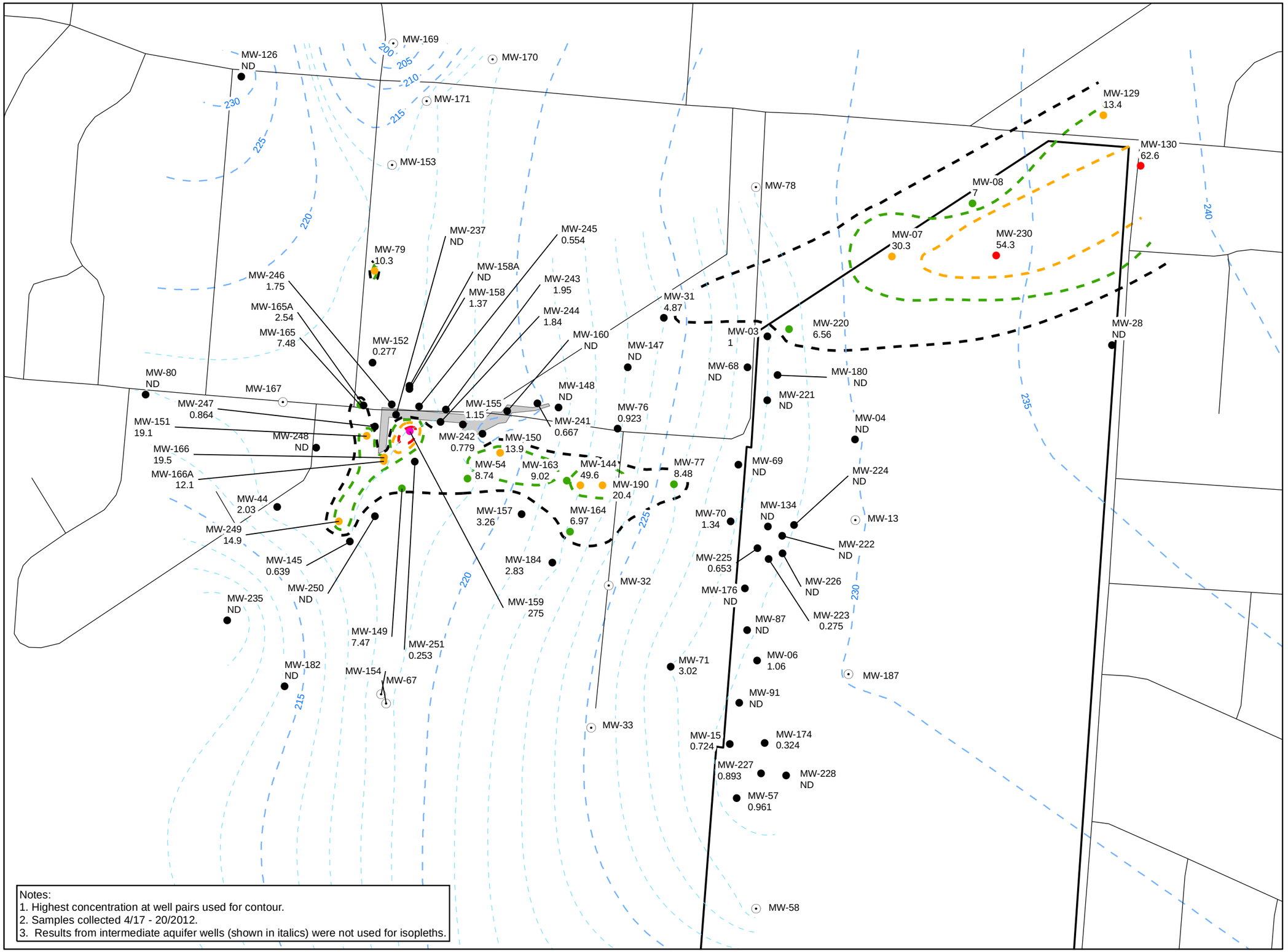
0 100 200 300
Feet

Installation Location
Memphis, Tennessee

Date: March 2012
Edition: Rev 0

HDR

Path: G:\121842\Off Depot GW 2011 Annual Report\GIS\Fig 12 TCE Mar2011.mxd



Notes:
1. Highest concentration at well pairs used for contour.
2. Samples collected 4/17 - 20/2012.
3. Results from intermediate aquifer wells (shown in italics) were not used for isopleths.

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Figure 25

DUNN FIELD TCE CONCENTRATIONS, APRIL 2012

ANNUAL LONG TERM MONITORING REPORT - 2012

DEFENSE DEPOT MEMPHIS, TENNESSEE

Legend

TCE Ranges (ug/L)

- 0-5
- 5-10
- 10-50
- 50-100
- 100-300
- Not Sampled

TCE Isopleth (ug/L)

- 5
- 10
- 50
- 100

Air Sparge Well Area

Original Dunn Field Property Boundary

Potentiometric surface of the Fluvial Aquifer 1-ft. contour

Potentiometric surface of the Fluvial Aquifer 5-ft. contour

0 100 200 300

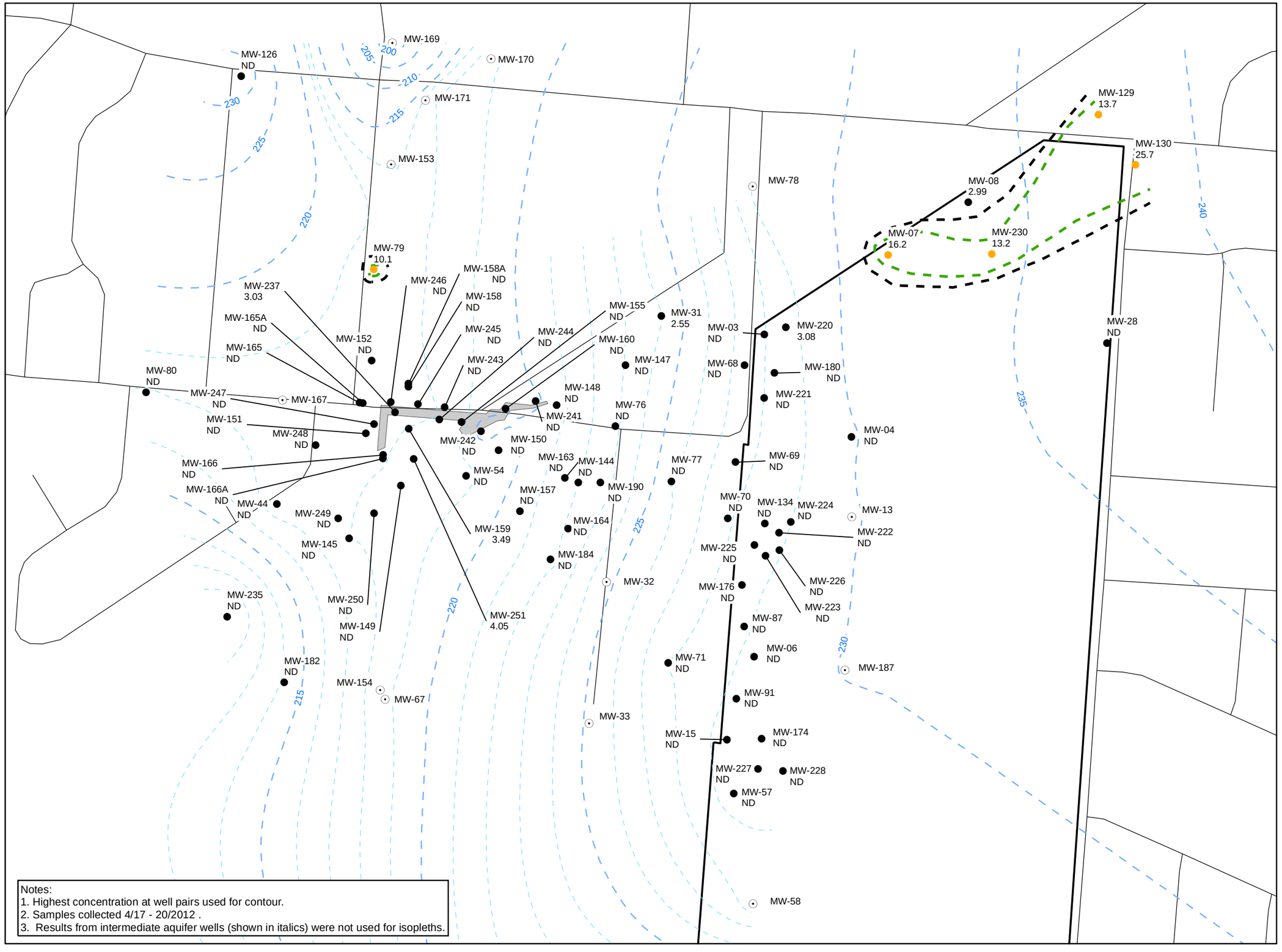
Feet

Installation Location
Memphis, Tennessee

Date: December 2012
Edition: Rev 0

HDR

Path: G:\DDMT\MI_LTM\LTM 2012 Annual Report\GIS\Figure 25 DF TCE Apr2012.mxd



Notes:
1. Highest concentration at well pairs used for contour.
2. Samples collected 4/17 - 20/2012 .
3. Results from intermediate aquifer wells (shown in italics) were not used for isopleths.

Path: G:\DDMTM_LTM\LTM 2012 Annual Report\GIS\Figure 26 DCE Apr2012.mxd

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Figure 26

DUNN FIELD DCE CONCENTRATIONS, APRIL 2012

ANNUAL LONG TERM MONITORING REPORT - 2012

DEFENSE DEPOT MEMPHIS, TENNESSEE

Legend

DCE Ranges (ug/L)

- 0-7
- 7-10
- 10-50
- Not Sampled

DCE Isopleth (ug/L)

- 7
- 10

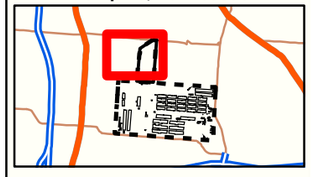
Air Sparge Well Area

Original Dunn Field Property Boundary

0 100 200 300

Feet

Installation Location
Memphis, Tennessee



Date: December 2012
Edition: Rev 0

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MW-169 <1
MW-126 <1
MW-170 <1
MW-171 <1
MW-153 <1
MW-129 14.5
MW-130 79.5
MW-78 <1
MW-08 14.5
MW-07 52.3
MW-230 60.1
MW-79 6.07
MW-246 0.46 F
MW-159 181
MW-237 <1
MW-158A <1
MW-158 4.59
MW-31 4.76
MW-03 0.364 F
MW-220 4.97
MW-28 <1
MW-152 0.53 F
MW-165A 0.473 F
MW-165 2.38
MW-245 0.656 F
MW-244 1.92
MW-241 0.505 F
MW-147 <1
MW-68 <1
MW-180 <1
MW-80 <1
MW-247 <1
MW-167 <1
MW-243 1.13
MW-160 <1
MW-148 <1
MW-155 1.16
MW-76 0.624 F
MW-221 <1
MW-04 <1
MW-151 8.14
MW-242 0.402 F
MW-248 <1
MW-166 5.34
MW-150 48.2
MW-69 <1
MW-251 <1
MW-166A 2.87
MW-149 3.58
MW-54 6.51
MW-163 7.86
MW-144 32.4
MW-190 20.4
MW-77 15.5
MW-44 6.98
MW-249 7.3
MW-250 <1
MW-157 2.49
MW-70 0.988 F
MW-134 <1
MW-224 <1
MW-13 <1
MW-222 <1
MW-145 0.713 F
MW-164 5.36
MW-225 <1
MW-226 <1
MW-223 0.328 F
MW-184 2.7
MW-176 0.3 F
MW-87 <1
MW-235 <1
MW-71 2.39
MW-06 0.707 F
MW-187 <1
MW-182 <1
MW-154 <1
MW-67 <1
MW-91 0.332 F
MW-33 <1
MW-15 0.549 F
MW-174 <1
MW-227 0.339 F
MW-228 <1
MW-57 0.916 F
MW-58 1.7

200 205 210 215 220 225 230 235

Notes:
1. Analytical results from the Long Term Monitoring sample event (4/11-5/9/13).
2. Highest concentration at well pairs used for contour.
3. Results from IAQ and MAQ wells (shown in italics) were not used for isopleths.

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Figure 35

DUNN FIELD TCE CONCENTRATIONS, APRIL 2013

ANNUAL LONG TERM MONITORING REPORT - 2013

DEFENSE DEPOT MEMPHIS, TENNESSEE

Legend

TCE Ranges (ug/L)
- 0-5
- 5-10
- 10-50
- 50-100
- 100-300

TCE Isopleth (ug/L)
- 5
- 10
- 50
- 100

Air Sparge Well Area

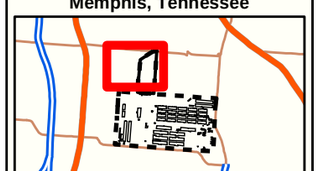
Original Dunn Field Property Boundary

Potentiometric surface of the Fluvial Aquifer 1-ft. contour

Potentiometric surface of the Fluvial Aquifer 5-ft. contour

0 100 200 300
Feet

Installation Location
Memphis, Tennessee



Date: December 2013
Edition: Rev 0

HDR

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSTYH STREET
ATLANTA, GEORGIA 30303-8960

July 18, 2014

United Parcel Service

Ms. Carolyn Jones
Program Manager
Office of the Chief of Staff for Installation Management
Attn: BRAC Division (DAIM-ODB)
2530 Crystal Drive (Taylor Bldg.), Room 5000
Arlington, VA 22202-3940

Subject: Annual Long-Term Monitoring Report – 2013, Defense Depot Memphis, Tennessee, Revision 0, February 2014; Revised June 2014: EPA Concurrence

Dear Ms. Jones:

This correspondence transmits EPA Region 4's concurrence on the June 2014 revisions to the 2013 Annual Long-Term Monitoring Report for the Defense Depot Memphis, Tennessee (DDMT), U.S. EPA ID Number TN4210020570, in Shelby County, Tennessee. The revisions adequately respond to EPA comments on the February 2014 draft document and our team discussions on May 29, 2014.

If you have any questions about this correspondence, please do not hesitate to contact me at 404-562-8547 or via electronic mail at corkran.julie@epa.gov.

Sincerely,

Julie L. Corkran, Ph.D.
Senior Remedial Project Manager
Federal Facilities Branch
Superfund Division

cc: Jamie Woods, TDEC
Ben Bentkowski, EPA R4 Technical Services Section

June 10, 2014

Responses to Comments from
Tennessee Department of Environment and Conservation (TDEC)
Annual Long-Term Monitoring Report – 2013
Defense Depot Memphis, Tennessee
Revision 0, February 2014
Memphis Shelby County
U.S. EPA ID Number TN4210020570

Specific Comments

1. **Section 1.3.2, Dunn Field; page 1-5, 3rd paragraph**: *"The AS/SVE .system is set to continue operation until the upgradient concentrations from the Dunn Field plume do not exceed 50 ppb for individual CVOC's for 12 months."*- Please clarify the rationale for 12 months. Was this travel/migration time supported by modeling?

   HDR Response: The 12 month period was proposed in Section 6.46 of the Off Depot RD. There is no discussion of modeling, The groundwater data does not indicate CVOC sources are present in the off depot area; concentrations should not rebound unless concentrations increase in the Dunn Field Source Areas.

2. **Section 1.4.1, Main Installation Long-term Monitoring; page 1-6**: *"Additional wells have been installed in phases since the MI LTM was initiated in 2004.*" - I know this is a chronological summary, and the current number of LTM wells is stated in the next section, but I think the current number of wells should also be clarified in this section to avoid confusion.

   HDR Response: Will add the following: "; there were 99 MI LTM wells in 2013."

3. **Section 1.4.1, Main Installation Long-term Monitoring; page 1-7, 2nd paragraph**: *"Two additional monitoring wells were proposed with one downgradient of MW-97 and the other upgradient of MW-258.*"- Please clarify the current number of LTM wells somewhere in this section.

   HDR Response: The number of MI LTM wells was added per a previous comment.

4. **Section 1.4.1, Main Installation Long-term .Monitoring; page 1-7, 3rd paragraph**: *"Twenty LTM wells were selected for use in the EBT injections or performance monitoring which began in November 2012. These wells were sampled during EBT and therefore omitted from MI LTM: MW-21, MW-62, MW-85, MW-113, MW-197 A/B, MW-203A/B, MW-212, MW-213, PMW85-05, PMW92-03, PMW101-04A/B, DR1-515A, DR1-616A, DR2-2 and DR2-5. Five former EBT performance MWs that were not selected for abandonment were incorporated into LTM in 2013: PMW92-02, PMW101-03A/B and PMW101-6A/B.* "- Please clarify the current number of LTM wells somewhere in this section.

HDR Response: The number of LTM wells in 2013 was added at the beginning of this section.

5. **Section 1.4.2, Dunn Field Long-term Monitoring; page 1-7, last paragraph**: *"The LTM plan established an initial sampling frequency for 58 existing wells: biennial, annual and semiannual."* - Was this the 2010 LTM? Please clarify.

   HDR Response: Yes. Will add "in 2010" to the highlighted text.

6. **Section 1.4.2, Dunn Field Long-term Monitoring; page 1-8, 2nd paragraph**: *"One well, MW-32, could not be sampled; the well was damaged in 2011 and could not be repaired.*"- Is there a need for this well to be replaced?

   HDR Response: It was not considered necessary and was not recommended in the 2012 LTM report when abandonment of MW-32 was recommended. While CVOC concentrations have exceeded MCLs in that well, there is sufficient delineation of the groundwater plume west of Dunn Field.

7. **Section 1.4.2, Dunn Field Long-term Monitoring; page 1-8, 4th paragraph**: *"Only one LTM well in the Source Areas on Dunn Field or the Off Depot area, MW-159, exceeded the treatment goal of 50 µg/L for individual CVOCs; TCE was reported at 275 µg/L in April and 247 µg/L in October 2012.*"-A few months back we talked about doing a potential injection at this location, has anymore thought been given to that possibility?

   HDR Response: Discussions were held with contractors re: in situ chemical oxidation injections in that area but it was not considered cost-effective due to the decreasing trend. A recommendation to modify AS/SVE operations in order to re-establish groundwater flow to the north (toward the treatment area) is recommended in Section 4.2.

8. **Section 1.4.2, Dunn Field Long-term Monitoring; page 1-8, 5th paragraph**: *"Abandonment of 27 wells recommended in the 2011 LTM report and MW-32 was scheduled for March 2013.*" - Please clarify the current number of existing LTM wells on Dunn Field after abandonment.

   HDR Response: Will add the following sentence to the paragraph:" The remaining 86 wells were used for Dunn Field LTM in 2013.

9. **Section 2.1, Well Abandonment; page 2-1, 4th paragraph**: *"The Off Depot Annual Groundwater Monitoring Report - 2011 (HDR 2012b) identified 27 wells at Dunn Field for abandonment; an additional well, MW-32, was added after it was found to be damaged and could not be repaired.*"-Is there a need for MW-32 to be replaced?

   HDR Response: See response to Comment #6.

10. **Section 2.2, Well Installation; page 2-3, 1st paragraph**, *"Two wells were installed on the MI based on increasing TCE concentrations outside EBT areas. The well locations*

were discussed during a project review meeting with USEPA and TDEC in February 2013; the new well locations are shown on Figure 5." - Please identify these 2 wells for clarification.

HDR Response: Will revise sentence to "Two wells, MW-260 and MW-261, were ..."

11. **Section 2.4.1, April 2013; page 2-6, 4th paragraph**, *"HDR staff found that MW-33 located west of Dunn Field was no longer blocked by debris; they installed PDBs in both wells.*"- Please clarify the location of the debris, on the ground surface or inside the well casing.

    HDR Response: Correct. Will revise to "... no longer blocked by surface debris ..."

12. **Section 3.5.1.3, Sentinel Wells; page 3-9, last paragraph**, *"The remaining sentinel wells had CVOCs detected above the RLs and nine wells (MW-90, MW-107, MW-108, MW-141, MW-202B, MW-207A/B, MW-210A and MW-256) had PCE and/or TCE at concentrations above the MCL.*" - Given the trend, should these wells be reclassified as performance monitoring wells?

    HDR Response: Re-classification is not considered necessary. The description for sentinel wells in Section 1.4 still applies. The sample interval is not determined by the classification and these wells are sampled at the same frequency as performance wells.

13. **Section 3.5.1.3, Sentinel Wells; page 3-10, 2nd paragraph**: *"Wells MW-141 and MW-202B have long-term increasing trends for PCE, from approximately 5 µg/L to 25 µg/L.*" - Given the trend, should these wells be reclassified as performance monitoring wells?

    HDR Response: Not considered necessary as stated in response to Comment #12. The trend will continue to be monitored.

14. **Section 3.5.1.3, Sentinel Wells; page 3-10, 3rd paragraph, 3rd bullet**: *"MW-256 (IAQ) - PCE and TCE were detected above the MCL and CF was detected above the RL. PCE and TCE concentrations were 41.9 µg/L and 16 µg/L in April and 37.7 µg/L and 14 µg/L in October; the concentrations are similar to the October 2012 results but increased from the initial sample results of 8.71 µg/L and 2.43 µg/L in August 2010.* "-Intermediate Aquifer trend and potential impact to the Memphis Sand (MW-254) noted.

    HDR Response: Comment noted. The increase in concentrations in MW-256 leveled off in 2013. Results for April LTM will be reported in June 2014.

15. **Section 3.5.1.3, Performance Wells; page 3-11**, **LTM Well Table**: Please clarify "DR" nomenclature for wells mentioned in this table.

    HDR Response: The DR wells were installed in 2004 to provide data on groundwater conditions for use in the MI remedial design and remedial action work plan. Well installation was described in the Report of Design-Related Investigation (MACTEC,

2005) in Appendix A of the MI RAWP. The Design Related wells were installed in TTA-1 (DR1-_) and TTA-2 (DR2-_). Will add "DR - Design Related" to list of acronyms.

16. **Section 3.6.2.2, MCL or TC Exceedance; page 3-22, 1st paragraph**: *"The maximum concentration for performance wells is TCE at 181 µg/L in MW-159 and no other performance wells have any CVOCs at concentrations above 50 µg/L.* " - See previous comment (#7) in Section 1.4.2 regarding possible in-situ injections at this location.

    HDR Response: As stated in response to Comment #7, in situ injections were not considered cost-effective; a recommendation to modify AS/SVE operations is made in Section 4.2.3.

17. **Section 4.2, Dunn Field; page 4-5, last paragraph**: *"The only CVOC to exceed the goal was TCE at 181 µg/L in April and 129 µg/L in October 2013, a decrease from 247 µg/L in October 2012.*"-Nice downward trend noted.

    HDR Response: Agreed.

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
MEMPHIS ENVIRONMENTAL FIELD OFFICE
8383 WOLF LAKE DRIVE
BARLETT, TN 38133-4119
PHONE (901) 371-3000 STATEWIDE 1-888-891-8332 FAX (901) 371-3170

July 10, 2014

Carolyn Jones
Program Manager
Office of the Chief of Staff for Installation Management
Attn: BRAC Division (DAIM-ODB)
2530 Crystal Drive (Taylor Bldg.), Room 5000
Arlington, VA 22202-3940

Subject: **2013 Annual LTM Repot Revisons**
Defense Depot Memphis, Tennessee
TDoR ID # 79-736
EPA ID # TN 4210020570

Dear Ms. Jones,

TDEC-DoR has reviewed the 2013 Annual LTM Repot Revisons, as submitted by T. Holmes (HDRInc) on 6/11/14, and approves of the changes made in response to EPA and TDoR comments. If there are questions or concerns, please contact me at (901) 371-3041 or at jamie.woods@tn.gov .

Regards,

Jamie A. Woods, P.G.
Project Manager
Division of Remediation
Memphis Environmental Field Office

cc: Thomas C. Holmes (HDRInc)
Julie Corkran (EPA-PM)
Ben Bentkowski (EPA R4 Technical Services Section)
Joan Hutton (CALIBRE)
TDoR NCO: file 79-736
TDoR MEFO: file 79-736

APPENDIX B

WELL PERMITS

(FRI) MAR 22 2013 12:49/ST. 12:48/No. 7600000358 P 2

SHELBY COUNTY HEALTH DEPARTMENT
WATER QUALITY CONTROL
FILL AND ABANDONMENT CONSTRUCTION PERMIT

Public Health
Prevent. Promote. Protect.

WELL DRILLING COMPANY Boart Longyear

ADDRESS 5789 SW 6th Place Ocala, FL 34474

DATE ISSUED 3/7/2013 **EXPIRATION DATE** 6/5/2013 **PERMIT #** 13-037

DESCRIPTION OF WORK – Fill and Abandonment of Monitoring Well(s) at: 2163 Airways Blvd. Emergency Owner HDR Inc. MW-05, MW-10, MW-14, MW-32, MW-37, MW-42, MW-43, MW-45, MW-51, MW-65, MW-74, MW-75, MW-127, MW-128, MW-132, MW-161, MW-162, MW-172, MW-175, MW-178, MW-179, MW-185, MW-186, MW-234, MW-239, MW-240, PZ-06, MW-231, MW-232 *(29 MWs)*

This permit is issued based on signed commitment by the driller and the owner of the well to fully comply with the requirements set forth in the approved application or as directed by the Memphis and Shelby County Health Department. Deviation from the approved application or any conditions set forth by the Health Department shall void this permit.

CONDITIONS:

1. The abandoned well shall be sealed only by a licensed well contractor.
2. All procedures used in sealing the well shall be witnessed by a representative of the Memphis and Shelby County Health department.
3. All water lines to the well are to be disconnected.
4. The well is to be dismantled in such a way that all working parts from inside the casing are removed.
5. Any obstructions found in the well are to be removed.
6. The empty casing is to be filled by one of two methods:
   a. With a Portland Class A or quick setting cement in a ratio not over seven (7) gallons of water per ninety-four (94) pounds of cement.
   b. A course-grained high solids non-drilling mud grade bentonite slurry such as Baroid Benseal, American Colloid or equal. The bentonite grout shall be mixed in accordance with the manufacturer's recommendations.
7. The grout shall be pumped from the bottom of the well upward through a tremmie pipe in one continuous operation in order to avoid separation or dilution of the seal material. A return shall be seen at the top as the same consistency as the material that is pumped into the well.
8. Chlorine shall be added at the beginning and during the sealing process.
9. The well must be sealed within thirty days of receipt of this permit.
10. The Health Department shall be notified before procedures are to begin in sealing the well. This includes all dismantling procedures and lowering the pipe used for grouting.
11. Abandoned wells on this site shall be sealed as required by Chapter 29, Article III, Water Quality Control of the Code of Shelby County, Tennessee.

Robert Rogers

Robert Rogers, P.E., Technical Manager
POLLUTION CONTROL

No authority is granted by this permit to construct, operate or maintain any well in violation of any law, statute, code, ordinance, rule or regulation of Memphis and Shelby County, Tennessee.

NON-TRANSFERABLE POST OR FILE AT CONSTRUCTION SITE

FROM 901-544-7349

13-090

SHELBY COUNTY HEALTH DEPARTMENT
WATER QUALITY BRANCH
MONITORING WELL CONSTRUCTION PERMIT

Public Health
Prevent. Promote. Protect.

DRILLING COMPANY Boart Longyear Company

ADDRESS 5785 SW 6th Place Ocala, FL 34474

DATE ISSUED 7/13/2013 **EXPIRATION DATE** 10/11/2013 **PERMIT #** 13-090

DESCRIPTION OF WORK Monitoring Well Construction: Memphis Defense Depot Base-Amido Avenue Emergency Permit Owner MW-261

This permit is issued based on a signed commitment by the well driller and owner of the well that all work performed at this site will be in full compliance with the requirements outlined in the Shelby County Well Construction Code or as directed by the Water Quality Branch of the Memphis and Shelby County Health Department. Any deviation from the approved conditions outlined in this permit by the drilling company will void this permit immediately.

CONDITIONS:

1. Water used to drill these monitoring wells must be obtained from a potable source.
2. A protective device must be placed over the well opening by the well driller and it will be the owner's responsibility to maintain the integrity of this device.
3. All applicable fees must be paid to the Memphis and Shelby County Health Department.
4. An annual fee of twenty ($20.00) dollars per well will be assessed for all active monitoring wells at this location with the maximum annual fee not to exceed one hundred ($100.00) dollars per site.
5. The Water Quality Branch shall be notified at least twenty-four (24) hours before construction of the monitoring wells.
6. Within thirty days after completion of the monitoring wells, a copy of the well logs must be submitted to the Water Quality Branch.
7. A copy of the sample results must be submitted to this office within sixty days of completion of the monitoring wells.
8. The driller shall comply with all requirements outlined in the Shelby County Well Construction Code.
9. The Water Quality Branch must be notified should the number of monitoring wells change from the number permitted.
10. Abandoned wells shall be properly sealed as required by Chapter 29, Article III, Water Quality Control of the Code of Shelby County, Tennessee.
11. This permit is valid only for the construction site referenced above.

Robert Rogers

Robert Rogers, P.E., Technical Manager
POLLUTION CONTROL

No authority is granted by this permit to construct, operate or maintain any well in violation of any law, statute, code, ordinance, rule or regulation of Memphis and Shelby County, Tennessee.

NON -TRANSFERABLE **POST OR FILE AT INSTALLATION ADDRESS**

13-089

SHELBY COUNTY HEALTH DEPARTMENT
WATER QUALITY BRANCH
MONITORING WELL CONSTRUCTION PERMIT

Public Health
Prevent. Promote. Protect.

DRILLING COMPANY Boart Longyear Company

ADDRESS 5785 SW 6th Place Ocala, FL 34474

DATE ISSUED 7/13/2013 **EXPIRATION DATE** 10/11/2013 **PERMIT #** 13-089

DESCRIPTION OF WORK Monitoring Well Construction: Memphis Defense Depot Base-Heyde Avenue Emergency Permit Owner HDR Inc. MW-260

This permit is issued based on a signed commitment by the well driller and owner of the well that all work performed at this site will be in full compliance with the requirements outlined in the Shelby County Well Construction Code or as directed by the Water Quality Branch of the Memphis and Shelby County Health Department. Any deviation from the approved conditions outlined in this permit by the drilling company will void this permit immediately.

CONDITIONS:

1. Water used to drill these monitoring wells must be obtained from a potable source.
2. A protective device must be placed over the well opening by the well driller and it will be the owner's responsibility to maintain the integrity of this device.
3. All applicable fees must be paid to the Memphis and Shelby County Health Department.
4. An annual fee of twenty ($20.00) dollars per well will be assessed for all active monitoring wells at this location with the maximum annual fee not to exceed one hundred ($100.00) dollars per site.
5. The Water Quality Branch shall be notified at least twenty-four (24) hours before construction of the monitoring wells.
6. Within thirty days after completion of the monitoring wells, a copy of the well logs must be submitted to the Water Quality Branch.
7. A copy of the sample results must be submitted to this office within sixty days of completion of the monitoring wells.
8. The driller shall comply with all requirements outlined in the Shelby County Well Construction Code.
9. The Water Quality Branch must be notified should the number of monitoring wells change from the number permitted.
10. Abandoned wells shall be properly sealed as required by Chapter 29, Article III, Water Quality Control of the Code of Shelby County, Tennessee.
11. This permit is valid only for the construction site referenced above.

Robert Rogers

Robert Rogers, P.E., Technical Manager
POLLUTION CONTROL

No authority is granted by this permit to construct, operate or maintain any well in violation of any law, statute, code, ordinance, rule or regulation of Memphis and Shelby County, Tennessee.

NON -TRANSFERABLE **POST OR FILE AT INSTALLATION ADDRESS**

APPENDIX C

DEBRIS DISPOSAL

Waste Connections of Tennessee, Inc.

621 E. Brooks Rd
Memphis, TN 38116
901-398-5400
901- 398-4288 Fax

FAX TRANSMISSION COVER SHEET

To: Oliver Peterson Fax: 352- 237- 6551

Date: 3-11-13
Subject: Service Agreement
Sender: Carolyn Walters

You should receive___page(s). Including this cover sheet. If you Do not receive all of the pages, Please call 901-508-4502

Oliver -

Please sign & fax back to 901-398-4288 asap -

Thank you -

Carolyn -

Carolyn Walters
Construction Sales
Waste Connections of Tn.
Cell 901-508-4502
carolynw@wasteconnections.com

. STATION
OAD

Y

SITE	TICKET	GRID	WEIGHMASTER
01	000865		William Perry

DATE IN	DATE OUT	TIME IN	TIME OUT	VEHICLE	ROLL OFF
03/19/13	03/19/13	16:30	16:30	115	

REFERENCE	ORIGIN
695538	1102642-COD BOART LONGYEAR

Out 7:25
In 5:05
2.5

Inbound - Cash ticket

ıal Gross Wt.	45820	LB
ıal Tare Wt.	31820	LB
Weight	14000	LB

UNH	DESCRIPTION	RATE	EXTENSION	FEE	TOTAL
TON	Commodity weight ref. only	0.00	0.00	0.00	0.00

NET AMOUNT
0.00
TENDERED
CHANGE
CHECK NO.

fy that this load does not contain any
als, medical waste or liquids of any

OD BOART LONGYEAR

SIGNATURE _____

LF: RAILROAD AVENUE SL
LF Tic# 1015 WGHT 45820 / 31820
HT 6 Tons 7
ST.ML In 4678 ST.ML out 4700
FINAL PULL 15
TN 38114
MEMPHIS
Contact BILL LINDSEY

Date _____
Customer's Name: COD BOART LONGYEAR
Address: 1102642
Type: Construction / Demolition Debris
Driver #: 115 - S. Mallory -
Price Per Yd.: 20 (D)
Cubic Yd.: 695538
TOTAL: _____
SIGNATURE _____

ALL INVOICES ARE DUE AND PAYABLE UPON RECEIPT.

NOTE: There will be a service charge equal to 10% on the unpaid balance on all accounts not paid within 30 days. If collection of this transaction becomes necessary by an attorney or outside agency, customer agrees to pay all costs incurred including reasonable attorney's fees.

(Rev. 8/06)

95538 1102642 COD BOART LONGYEAR
ddress 2241 TRUITT ST
IAP PAGE 53-M
UST NEEDS TONNAGE FOR DISPOSAL.
PH# 352-427-2587

ALLIED WASTE
3840 Homewood Ave
Memphis, TN 38118-6131

A division of REPUBLIC SERVICES

TRI STATE TESTING SRVCS

Invoice

Account Summary

Account Number	3-0837-0029350
Invoice Date	July 31, 2013
Invoice Number	0837-000564752
Previous Balance	$0.00
Payments/Adjustments	$0.00
Unpaid Balance	$0.00
Current Invoice Charges	$65.17

Pay This Amount

$65.17

Due By: 08/20/13

Contact Information

Customer Service **(901) 794-3800**

Important Information

Your next invoice may reflect a rate adjustment, if you have any questions after receiving your next invoice, please contact us.

As a reminder, our remit to address has changed. If you have not done so already, please use this invoice message to support the address change. The new address is: Allied Waste Services #837 PO Box 9001099 Louisville, KY 40290-109999

To pay on-line or sign up for convenient auto pay, go to: www.disposal.com

Current Invoice Charges

Administrative Fee $1.92

Tri State Testing Srvcs 6756 Buckles Cv (L1) CSA 6839072313
Memphis, TN

Contract: 15frf (C15)

1 - Rolloff (30 Yd) On Call Service (S1)

Date	Description	Reference	Quantity	Unit Price	Amount
07/24	Container Delivery	Charlie	1.0000	$50.00	$50.00
	Receipt Number 51603				
	Total Fuel/Environmental Recovery Fee				$13.25
	Current Invoice Charges				**$65.17**

RECEIVED
AUG 09 2013
BY:

63.25
1.92

Rolloff for Side Yard (Defense Dept) A-1-6 13

CURRENT	30 DAYS	60 DAYS	90+ DAYS
65.17	0.00	0.00	0.00

I A

- **Visit our website, www.disposal.com to make your payment electronically or to sign up for our convenient automatic payment plan.**
- **Please see reverse side for terms and conditions**

ALLIED WASTE
3840 Homewood Ave
Memphis, TN 38118-6131

Please Return This Portion With Payment

Pay This Amount	**$65.17**
Account Number	**3-0837-0029350**
Invoice Date	**July 31, 2013**
Invoice Number	**0837-000564752**
Payment Due Date	**August 20, 2013**

TOTAL ENCLOSED
65.17

For Billing Address Changes, Check Box and Complete Reverse.

036519 L2TAMA14
Return Service Requested
036519-000000-000001-000001 2319485 2240ST03_S 5D
TRI STATE TESTING SRVCS
DAVID MCCRARY
6756 BUCKLES CV
MEMPHIS TN 38133-7062

Make Checks Payable To:

ALLIED WASTE SERVICES #837
PO BOX 9001099
LOUISVILLE, KY 40290-1099

30837002935000000005647520000065170000065177

ALLIED WASTE
3840 Homewood Ave
Memphis, TN 38118-6131

A division of REPUBLIC SERVICES

Account Summary

Account Number	3-0837-0029350
Invoice Date	August 31, 2013
Invoice Number	0837-000583951
Previous Balance	$65.17
Payments/Adjustments	-$65.17
Unpaid Balance	$0.00
Current Invoice Charges	$564.28

Pay This Amount

$564.28

Due By: 09/20/13

Contact Information

Customer Service **(901) 794-3800**

Important Information

The fuel and environmental recovery fees and the adminitrative fee have increased. Visit www.republicservices.com for more information.

Your next invoice may reflect a rate adjustment, if you have any questions after receiving your next invoice, please contact us.

As a reminder, our remit to address has changed. If you have not done so already, please use this invoice message to support the address change. The new address is: Allied Waste Services #837 PO Box 9001099 Louisville, KY 40290-109999

To pay on-line or sign up for convenient auto pay, go to: www.disposal.com

TRI STATE TESTING SRVCS

Invoice

Payments/Adjustments

Date	Description	Reference	Amount
08/21	Payment - Thank You	2419	-$65.17

Current Invoice Charges

Administrative Fee $3.25

Tri State Testing Srvcs 6756 Buckles Cv (L1) CSA 6839072313
Memphis, TN

Contract: 15frf (C15)

1 - Rolloff (30 Yd) On Call Service (S1)

Date	Description	Reference	Quantity	Unit Price	Amount
08/12	Excess Disposal	928521	4.6500 Tons	$30.00	$139.50
	Receipt Number 57129				
08/12	Basic Service	Greg353198 1	1.0000	$300.00	$300.00
	Receipt Number 57129				
	Total Fuel/Environmental Recovery Fee				$121.53
	Current Invoice Charges				**$564.28**

RECEIVED
SEP 13 2013
BY:

A-1-613 (Defense Depot)

9/16/13

CURRENT	30 DAYS	60 DAYS	90+ DAYS
564.28	0.00	0.00	0.00

I A

- **Visit our website, www.disposal.com to make your payment electronically or to sign up for our convenient automatic payment plan.**
- **Please see reverse side for terms and conditions**

ALLIED WASTE
3840 Homewood Ave
Memphis, TN 38118-6131

Please Return This Portion With Payment

TOTAL ENCLOSED

For Billing Address Changes, Check Box and Complete Reverse.

Pay This Amount	**$564.28**
Account Number	**3-0837-0029350**
Invoice Date	**August 31, 2013**
Invoice Number	**0837-000583951**
Payment Due Date	**September 20, 2013**

042984 L2TAMA47
Return Service Requested
042984-000000-000001-000001 2320696 2240ST03_S 5D
TRI STATE TESTING SRVCS
DAVID MCCRARY
6756 BUCKLES CV
MEMPHIS TN 38133-7062

Make Checks Payable To:

ALLIED WASTE SERVICES #837
PO BOX 9001099
LOUISVILLE, KY 40290-1099

30837002935000000005839510000564280000564288

L2TAMA47 042984 247181207013 1NNNN NNNNN NNNNN 000001 0 0A AMA 096067

APPENDIX D

SOIL BORING LOGS

FIELD BOREHOLE LOG

BOREHOLE NO.: MW-260
TOTAL DEPTH (FT BGS): 107

PROJECT INFORMATION

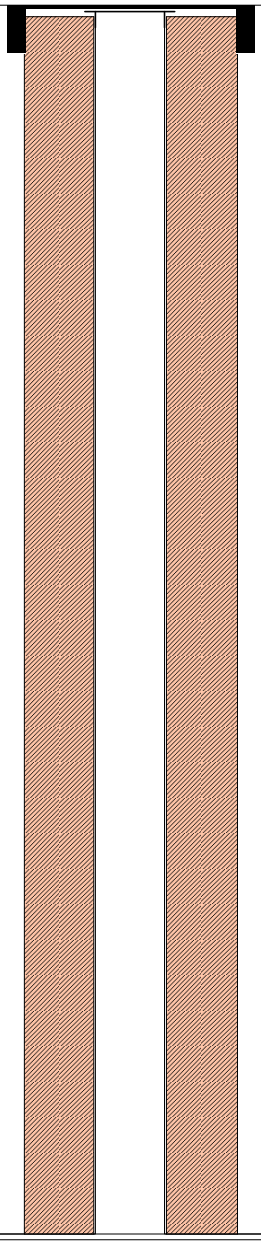
PROJECT: DDMT, MI LTM
PROJECT NO.: 145803
SITE LOCATION: Main Installation
PROJECT MANAGER: T. Holmes
FIELD STAFF: C. Lowe
BOREHOLE STARTED: 07/09/13
BOREHOLE FINISHED: 07/10/13

DRILLING INFORMATION

DRILLING CO.: Boart Longyear
DRILLER: Vernon Scott
DRILLING METHOD/RIG: Sonic
BOREHOLE DIAMETER: 6"
GROUND SURFACE ELEVATION (FT MSL): 304.5
WATER DEPTH/ DATE: 74.4 ft. bgs 7/16/2013
BOREHOLE USE: Monitoring Well

NOTES:

Depth (ft, bgs)	Soil Symbol	Soil Description	Well Completion	Well Description
10		**CL** Silty clay, brown/yellow, dry, low plasticity		Grouted Annulus
20		**CH** Silty clay, brown/red, moist, high plasticity		
30		**CH** Silty clay, brown, high plasticity		
		SW Fine sand with trace clay, orange/brown		
40		**SP** Fine to medium sand, orange, dry		
50		**SP** Fine to coarse sand, some gravel, orange, dry		

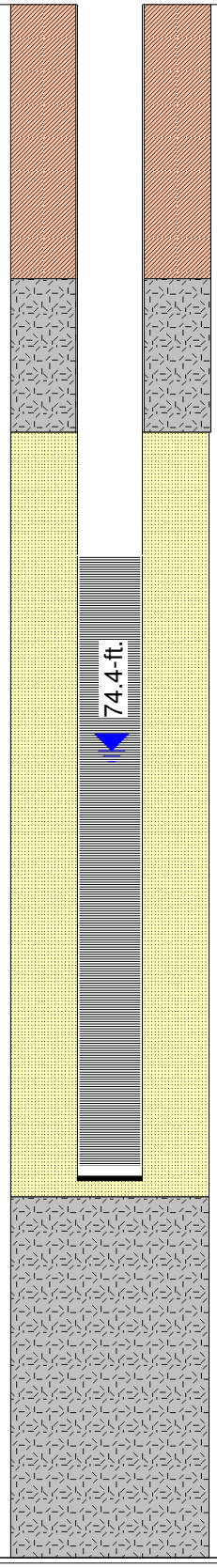


Created By: WTR
Checked By: CAL

FIELD BOREHOLE LOG

BOREHOLE NO.: MW-260
TOTAL DEPTH (FT BGS): 107

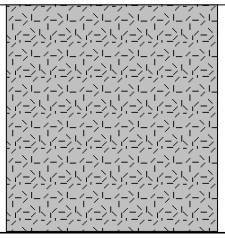
Depth	Soil Symbol	Soil Description	Well Completion	Well Description
60				Bentonite Plug
70				Sand Pack
80		**SP** Fine sand, yellow, wet		Screened Interval
90		**CH** Silty clay with trace sand, yellow, high plasticity		Bentonite Plug
100		**CH** Silty clay, dark grey, stiff, high plasticity		



Created By: WTR
Checked By: CAL

FIELD BOREHOLE LOG

BOREHOLE NO.: MW-260
TOTAL DEPTH (FT BGS): 107

Depth	Soil Symbol	Soil Description	Well Completion	Well Description
		SW Fine to coarse sand, dark grey, wet		
110 120 130 140 150		End of Log		

Created By: WTR
Checked By: CAL

FIELD BOREHOLE LOG

BOREHOLE NO.: MW-261
TOTAL DEPTH (FT BGS): 147

PROJECT INFORMATION

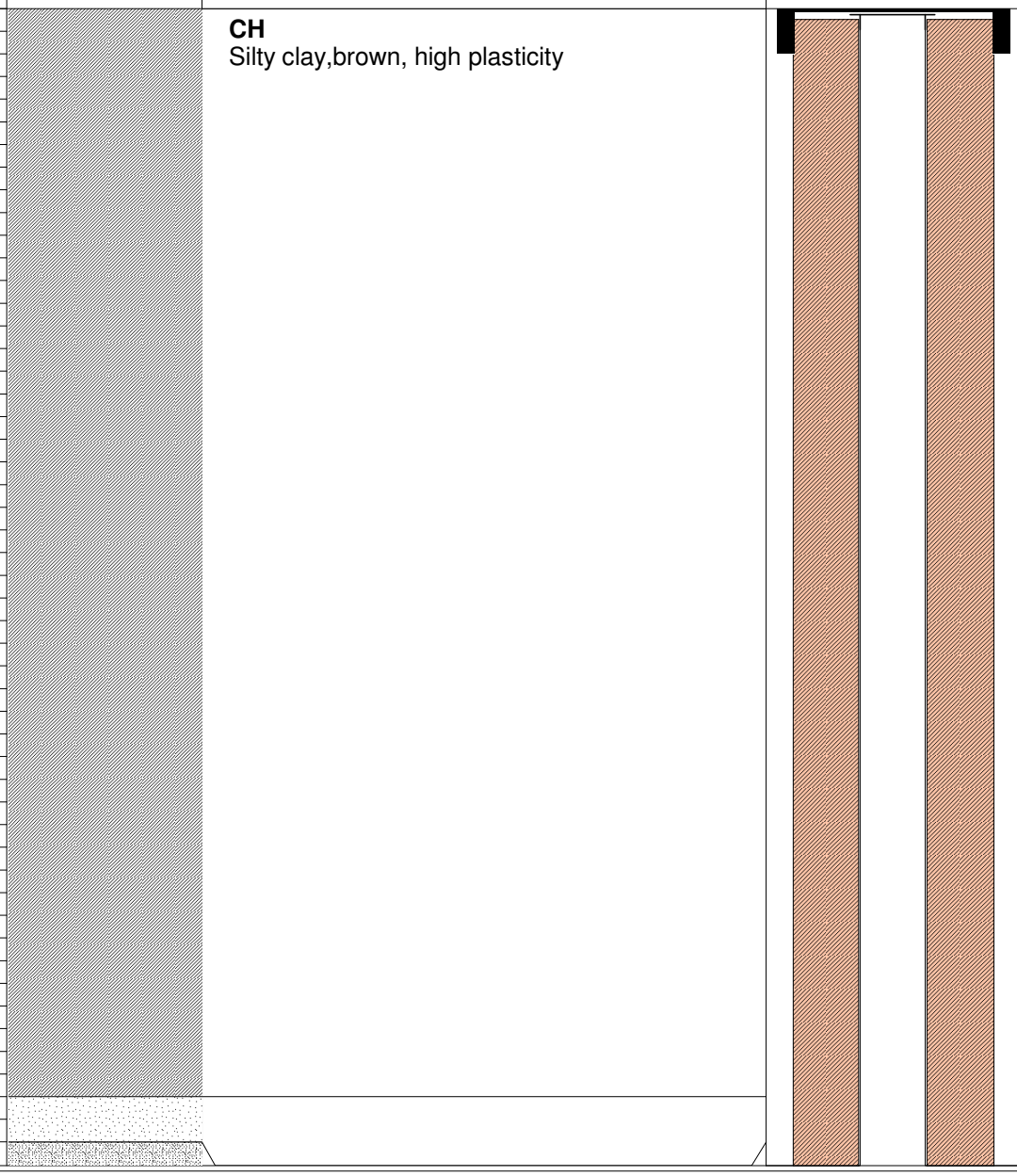
PROJECT: DDMT, MI LTM
PROJECT NO.: 145803
SITE LOCATION: Main Installation
PROJECT MANAGER: T. Holmes
FIELD STAFF: C. Lowe
BOREHOLE STARTED: 07/10/13
BOREHOLE FINISHED: 07/11/13

DRILLING INFORMATION

DRILLING CO.: Boart Longyear
DRILLER: Vernon Scott
DRILLING METHOD/RIG: Sonic
BOREHOLE DIAMETER: 6"
GROUND SURFACE ELEVATION (FT MSL): 293.8
WATER DEPTH/ DATE: 93.5 ft. bgs 7/16/2013
BOREHOLE USE: Monitoring Well

NOTES:

Depth (ft, bgs)	Soil Symbol	Soil Description	Well Completion	Well Description
10		**CH** Silty clay,brown, high plasticity		Grouted Annulus
20				
30				
40				
50				

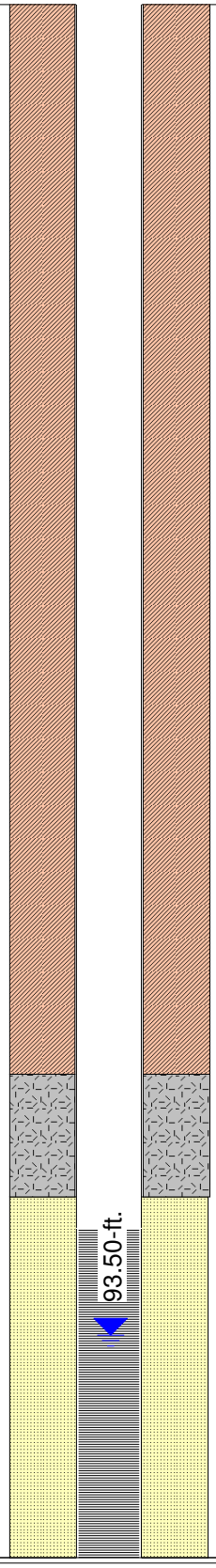


Created By: WTR
Checked By: CAL

FIELD BOREHOLE LOG

BOREHOLE NO.: MW-261
TOTAL DEPTH (FT BGS): 147

Depth	Soil Symbol	Soil Description
		SW Fine to coarse sand and gravel with some clay
		SP Sand, fine to medium with angular gravel, red
		SW Sand, fine to medium grained with angular gravel, red/yellow
60		
		SW Sand, fine to coarse, yellow/red, well graded
70		
80		
		SW Sand - fine to coarse with some gravel, red/brown
		SW Coarse sand and gravel, yellow, moist
		SP Sand, fine to medium, yellow
90		
		SP Sand, fine to medium, yellow, with interlaced pink clay
		SP Sand, fine to medium, yellow , moist
100		



Bentonite Plug

Sand Pack

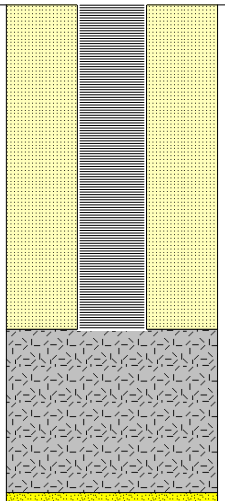
Screened Interval

Created By: WTR

Checked By: CAL

FIELD BOREHOLE LOG

BOREHOLE NO.: MW-261
TOTAL DEPTH (FT BGS): 147

Depth	Soil Symbol	Soil Description	Well Completion	Well Description
110				Bentonite Plug
120		**SW** Sand, fine to coarse grained with angular gravel, some clay, dark brown, moist		
130		**SW** Sand, fine to coarse grained with angular gravel, some clay, orange/brown, moist		Native Material
140		**CH** Silty clay, tan, stiff, high plasticity		
		CH Silty clay, very stiff, gray, high plasticity		
150		End of Log		

Created By: WTR
Checked By: CAL

APPENDIX E

WELL INSTALLATION DIAGRAMS

WELL INSTALLATION DIAGRAM

WELL NO.: MW-260

PROJECT: DDMT, MI LTM
PROJECT NUMBER: 145803-008
SITE LOCATION: Main Installation
PROJECT MANAGER: T. Holmes
FIELD STAFF: C. Lowe
DATE COMPLETED: 7/10/13
WELL LOCATION: MI-Kottck and Heyde/ SW corner of median

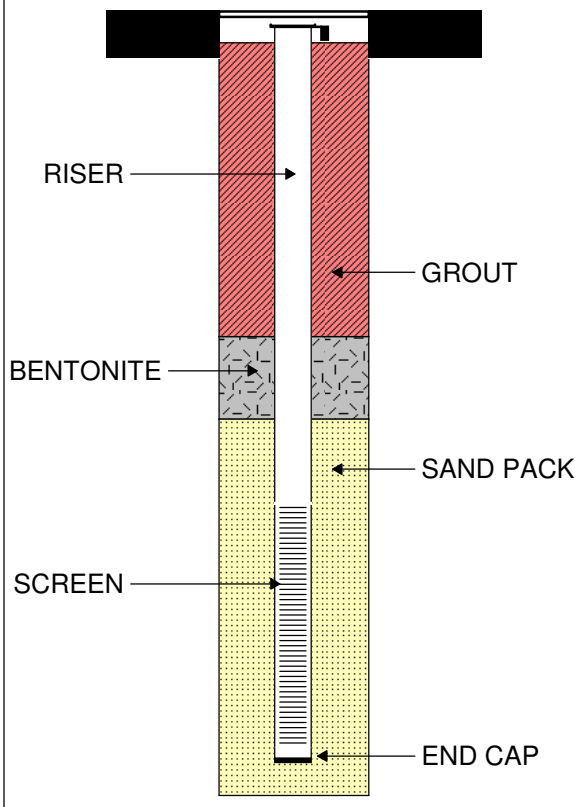
NORTHING: 278398.46
EASTING: 804736.22
GROUND SURFACE ELEVATION (ft, msl): 304.45
TOP OF CASING ELEVATION (ft, msl): 304.16
TOP OF SCREEN ELEVATION (ft, msl): 236.16

DRILLING CO.: Boart Longyear
DRILLING METHOD: Sonic
BOREHOLE DIAMETER (in): 6
SURFACE COMPLETION: Flush Mount
BOLLARDS: No
WELL DIAMETER (in): 2
TYPE OF SCREEN/RISER MATERIAL: PVC 40
SLOT SIZE OF SCREEN: 0.010 inch

TYPE OF FILTER PACK: Silica Sand
GRADATION OF FILTER PACK: #5 (8-16) Sand
QUANTITY OF FILTER PACK: 6-50 lb. bags
TYPE OF BENTONITE IN SEAL: Medium chips
QUANTITY OF BENTONITE IN SEAL: 2-50 lb. bags
TYPE OF GROUT: Portland Cement Type I/II
QUANTITY OF GROUT: 10-90 lb. bags
DEVELOPMENT METHOD: Waterra Surge
DATE DEVELOPED: 7/12/13
DEPTH TO WATER (ft.btoc): 74.4

NOTES:

Well Completion (Not to Scale)



Well Details

DIMENSIONS OF CONCRETE PAD:

LENGTH OF RISER (ft): 68

DEPTH TO TOP OF BENTONITE (ft, bgs): 59

DEPTH TO TOP OF SAND PACK (ft, bgs): 64

LENGTH OF SCREEN (ft): 20

LENGTH OF END CAP: 0.30-ft.

TOTAL DEPTH OF WELL (ft, btoc): 88

TOTAL DEPTH OF BORING (ft, bgs): 107

Prepared by: WTR **Date: 8/20/13** **Checked by: CAL** **Date: 8/20/13**

WELL INSTALLATION DIAGRAM

WELL NO.: MW-261

PROJECT: DDMT, MI LTM
PROJECT NUMBER: 145803-008
SITE LOCATION: Main Installation
PROJECT MANAGER: T. Holmes
FIELD STAFF: C. Lowe
DATE COMPLETED: 7/11/13
WELL LOCATION: MI-Kottck and Heyde/ SW corner of median

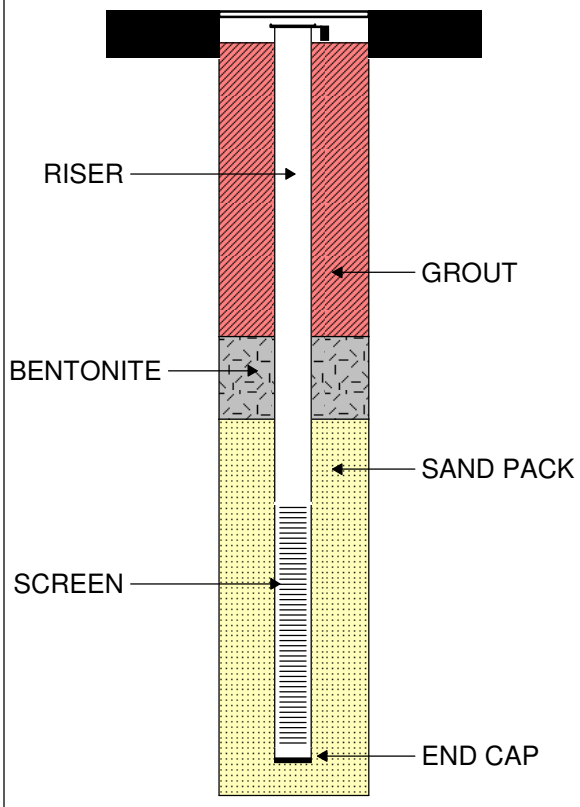
NORTHING: 276390.64
EASTING: 802591.62
GROUND SURFACE ELEVATION (ft, msl): 293.79
TOP OF CASING ELEVATION (ft, msl): 293.52
TOP OF SCREEN ELEVATION (ft, msl): 203.52

DRILLING CO.: Boart Longyear
DRILLING METHOD: Sonic
BOREHOLE DIAMETER (in): 6
SURFACE COMPLETION: Flush Mount
BOLLARDS: No
WELL DIAMETER (in): 2
TYPE OF SCREEN/RISER MATERIAL: PVC 40
SLOT SIZE OF SCREEN: 0.010 inch

TYPE OF FILTER PACK: Silica Sand
GRADATION OF FILTER PACK: #5 (8-16) Sand
QUANTITY OF FILTER PACK: 8-50 lb. bags
TYPE OF BENTONITE IN SEAL: Medium chips
QUANTITY OF BENTONITE IN SEAL: 2-50 lb. bags
TYPE OF GROUT: Portland Cement Type I/II
QUANTITY OF GROUT: 12-90 lb. bags
DEVELOPMENT METHOD: Waterra Surge
DATE DEVELOPED: 7/12/13
DEPTH TO WATER (ft.btoc): 93.5

NOTES:

Well Completion (Not to Scale)



Well Details

DIMENSIONS OF CONCRETE PAD:

LENGTH OF RISER (ft): 90

DEPTH TO TOP OF BENTONITE (ft, bgs): 85

DEPTH TO TOP OF SAND PACK (ft, bgs): 88

LENGTH OF SCREEN (ft): 20

LENGTH OF END CAP: 0.30-ft.

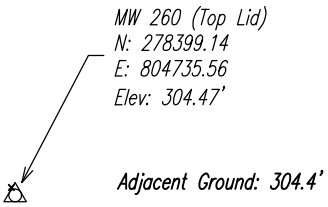
TOTAL DEPTH OF WELL (ft, btoc): 110

TOTAL DEPTH OF BORING (ft, bgs): 147

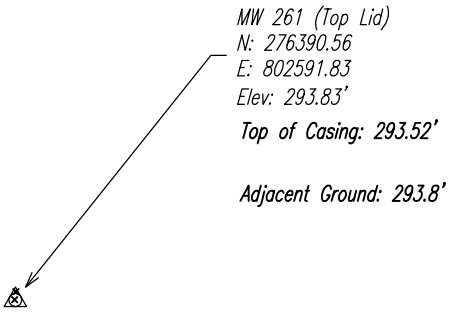
Prepared by: WTR **Date: 8/20/13** **Checked by: CAL** **Date: 8/20/13**

APPENDIX F

WELL LOCATION SURVEY PLATS



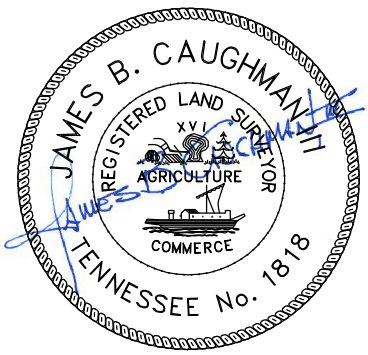
Point Table				
Point #	Northing	Easting	Elevation	Description
1028	278401.19	804734.59	304.45'	Ground Elevation
1029	278399.93	804735.12	304.49'	Concrete Elevation
1030	278399.14	804735.56	304.47'	MW 260
1031	278398.46	804736.22	304.16'	Top of Casing

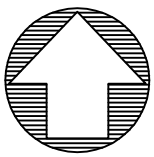


Point Table				
Point #	Northing	Easting	Elevation	Description
1000	276392.75	802591.96	293.79'	Ground Elevation
1001	276391.15	802591.60	293.84'	Concrete Elevation
1002	276390.56	802591.83	293.83'	MW 261 (Top Lid)
1003	276390.64	802591.62	293.52'	Top of Casing

Site Location: at The Memphis Depot.
Elevations shown are dated: July 22, 2013.

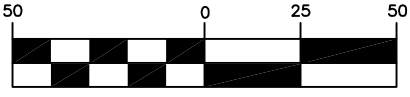
Monitoring Well Data





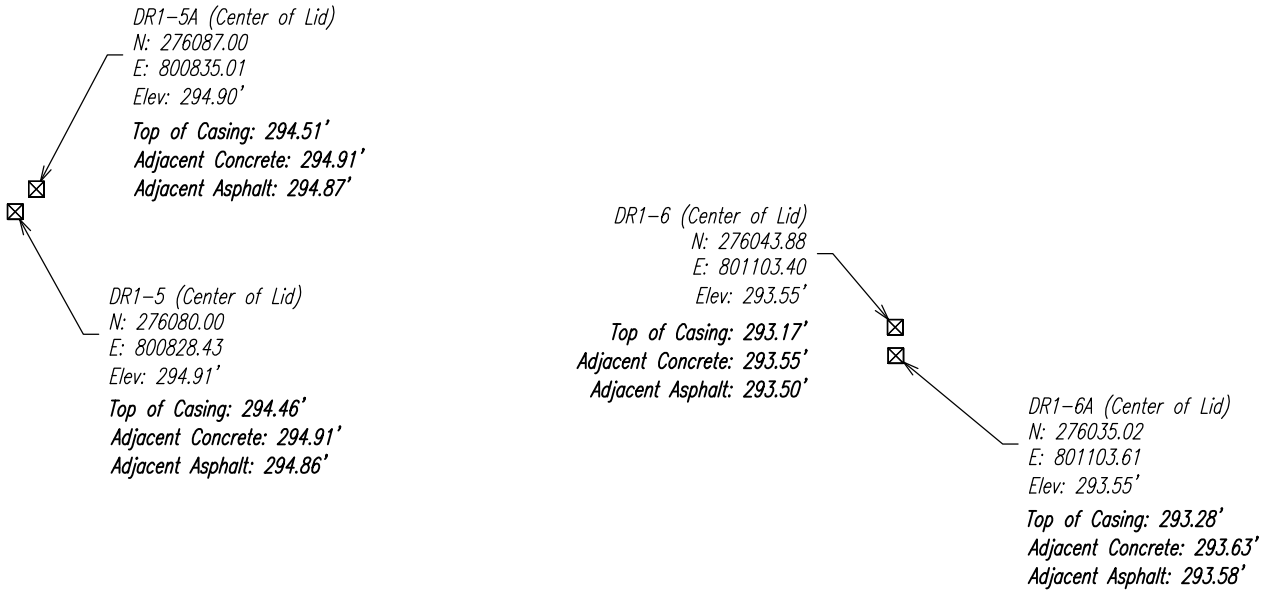
Grid North, NAD27

GRAPHIC SCALE



(IN FEET)
1 inch = 50 ft.

Survey data by: Allen&Hoshall, Inc.
1661 International Drive, #100
Memphis, TN 38120
(901) 820-0820
Date of Survey: 7-22-13
Proj #: 77482
Sheet 1 of 1



Point Table

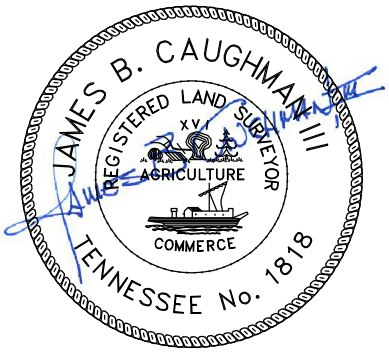
Point #	Northing	Easting	Top of Lid Elevation	Well ID
330	276080.00	800828.43	294.91'	DR1-5
340	276087.00	800835.01	294.90'	DR1-5A
350	276043.88	801103.40	293.55'	DR1-6
360	276035.02	801103.61	293.55'	DR1-6A

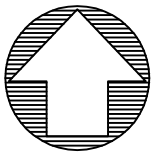
Site Location: at The Memphis Depot.

Elevations shown are dated:
July 22, 2013.

Survey data by: Allen&Hoshall, Inc.
1661 International Drive, #100
Memphis, TN 38120
(901) 820-0820
Date of Survey: 7-22-13
Proj #: 77482
Sheet 1 of 1

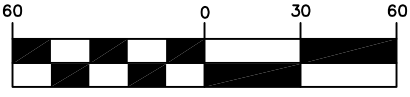
Monitoring Well Data



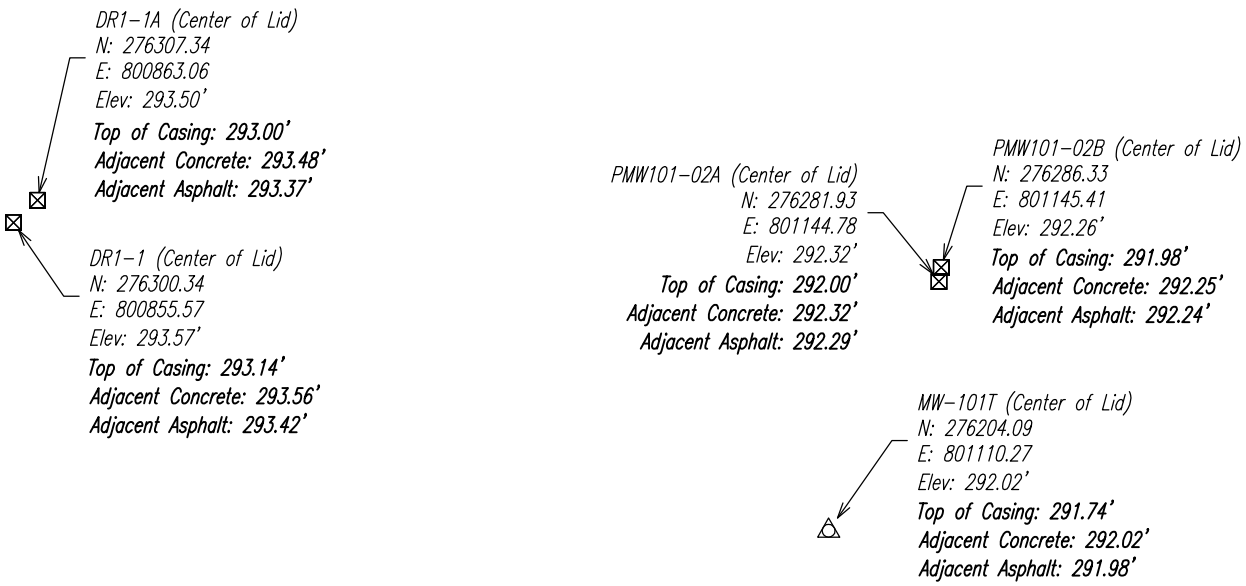


Grid North, NAD27

GRAPHIC SCALE



(IN FEET)
1 inch = 60 ft.



Point Table

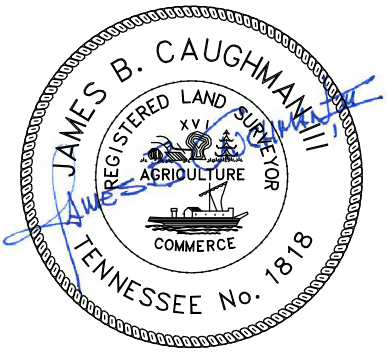
Point #	Northing	Easting	Top of Lid Elevation	Well ID
80	276204.09	801110.27	292.02'	MW-101T
370	276281.93	801144.78	292.32'	PMW101-02A
380	276286.33	801145.41	292.26'	PMW101-02B
1000	276300.34	800855.57	293.57'	DR1-1
1001	276307.34	800863.06	293.50'	DR1-1A

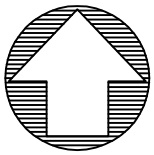
Site Location: at The Memphis Depot.

Elevations shown are dated:
July 22, 2013.

Survey data by: Allen&Hoshall, Inc.
1661 International Drive, #100
Memphis, TN 38120
(901) 820-0820
Date of Survey: 7-22-13
Proj #: 77482
Sheet 1 of 1

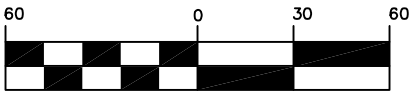
Monitoring Well Data



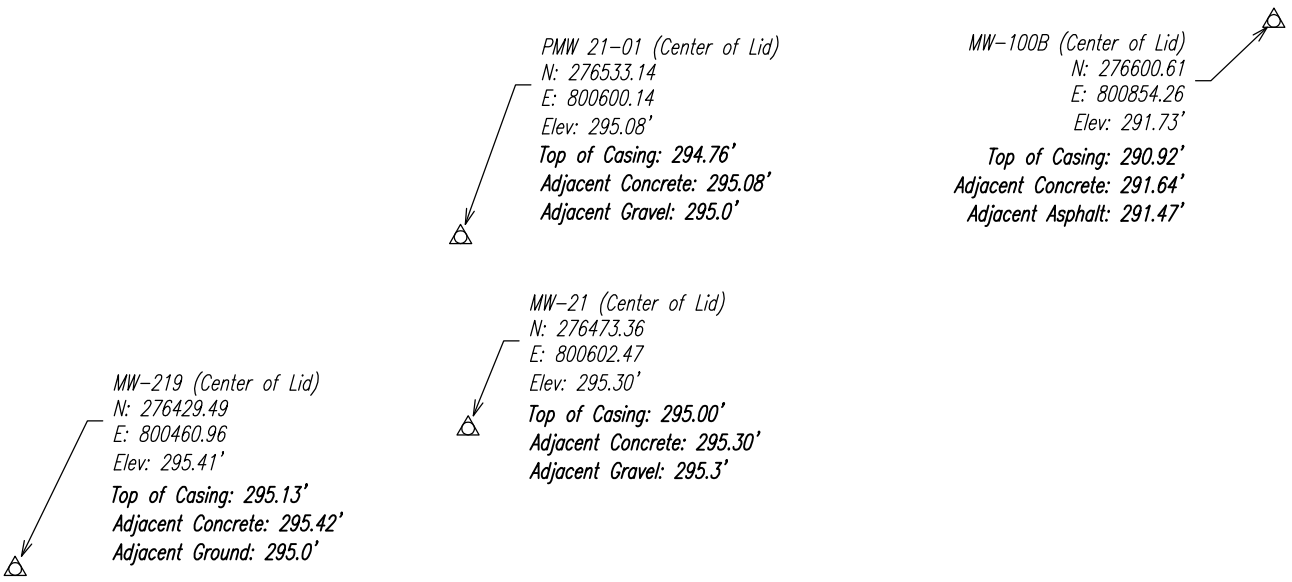


Grid North, NAD27

GRAPHIC SCALE



(IN FEET)
1 inch = 60 ft.



Point Table

Point #	Northing	Easting	Top of Lid Elevation	Well ID
70	276600.61	800854.26	291.73'	MW-100B
180	276429.49	800460.96	295.41'	MW-219
320	276473.36	800602.47	295.30'	MW-21
344	276533.14	800600.14	295.08'	PMW 21-01

Site Location: at The Memphis Depot.

Elevations shown are dated:
July 22, 2013.

Survey data by: Allen&Hoshall, Inc.
1661 International Drive, #100
Memphis, TN 38120
(901) 820-0820
Date of Survey: 7-22-13
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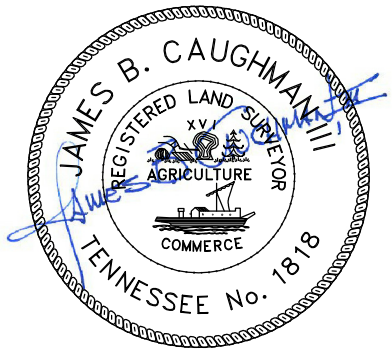
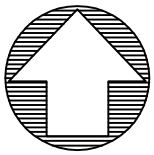
Monitoring Well Data





Grid North, NAD27

GRAPHIC SCALE

60 0 30 60

(IN FEET)
1 inch = 60 ft.

DR1-2 (Center of Lid)
N: 276536.64
E: 801152.66
Elev: 290.47'
Top of Casing: 290.00'
Adjacent Concrete: 291.47'
Adjacent Asphalt: 291.39'

DR1-8 (Center of Lid)
N: 276752.48
E: 800875.32
Elev: 290.58'
Top of Casing: 290.09'
Adjacent Concrete: 290.58'
Adjacent Asphalt: 290.47'

Point Table

Point #	Northing	Easting	Top of Lid Elevation	Well ID
3	276536.64	801152.66	290.47'	DR1-2
40	276752.48	800875.32	290.58'	DR1-8

Site Location: at The Memphis Depot.

Elevations shown are dated:
July 22, 2013.

Survey data by: Allen&Hoshall, Inc.
1661 International Drive, #100
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Monitoring Well Data

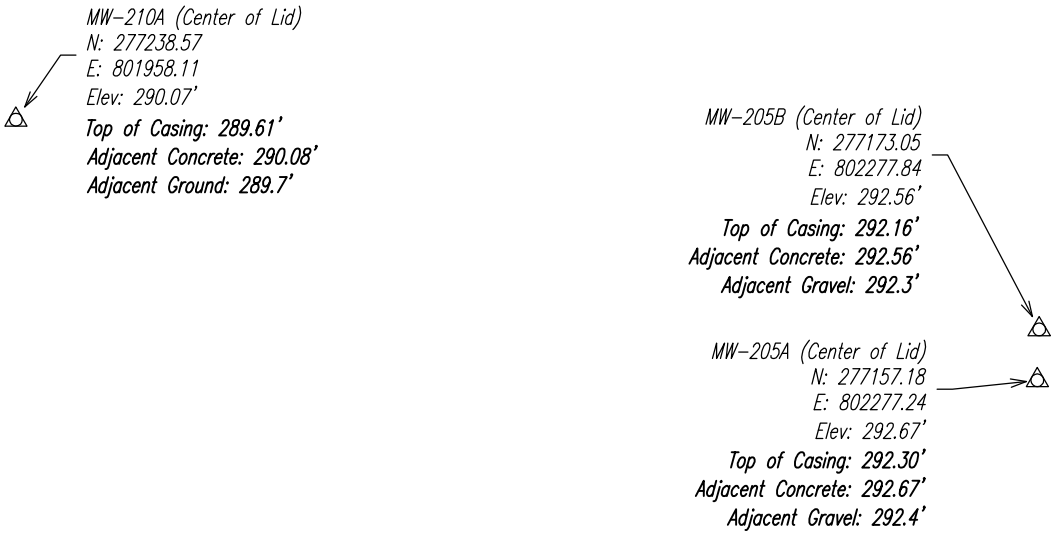
JAMES B. CAUGHMAN III
REGISTERED LAND SURVEYOR
AGRICULTURE
COMMERCE
TENNESSEE No. 1818

Grid North, NAD27

GRAPHIC SCALE

60 0 30 60

(IN FEET)
1 inch = 60 ft.



Point Table				
Point #	Northing	Easting	Top of Lid Elevation	Well ID
120	277157.18	802277.24	292.67'	MW-205A
130	277173.05	802277.84	292.56'	MW-205B
170	277238.57	801958.11	290.07'	MW-210A

Site Location: at The Memphis Depot.

Elevations shown are dated:
July 22, 2013.

Survey data by: Allen&Hoshall, Inc.
1661 International Drive, #100
Memphis, TN 38120
(901) 820-0820
Date of Survey: 7-22-13
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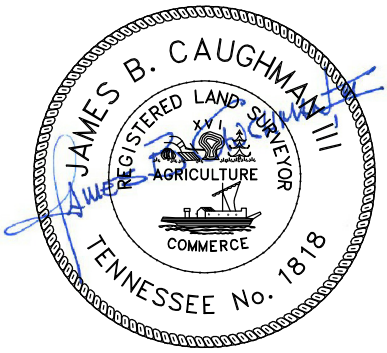
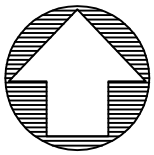
Sheet 1 of 1

Monitoring Well Data





Grid North, NAD27

GRAPHIC SCALE

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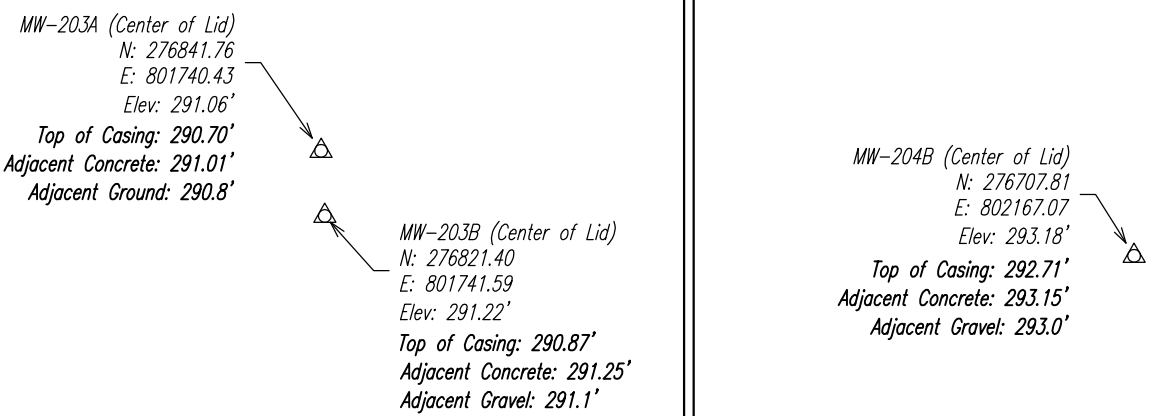
(IN FEET)
1 inch = 60 ft.



Point Table

Point #	Northing	Easting	Top of Lid Elevation	Well ID
110	276707.81	802167.07	293.18'	MW-204B
390	276841.76	801740.43	291.06'	MW-203A
400	276821.40	801741.59	291.22'	MW-203B

Site Location: at The Memphis Depot.

Elevations shown are dated:
July 22, 2013.

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1661 International Drive, #100
Memphis, TN 38120
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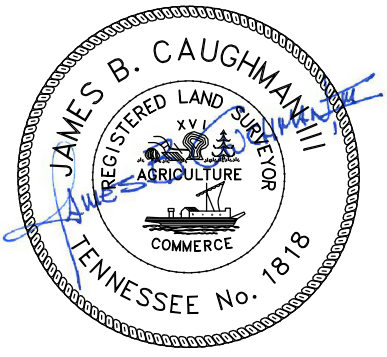
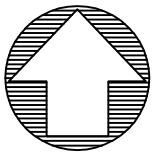
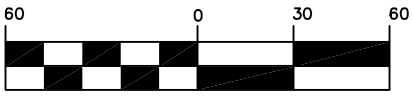
Monitoring Well Data



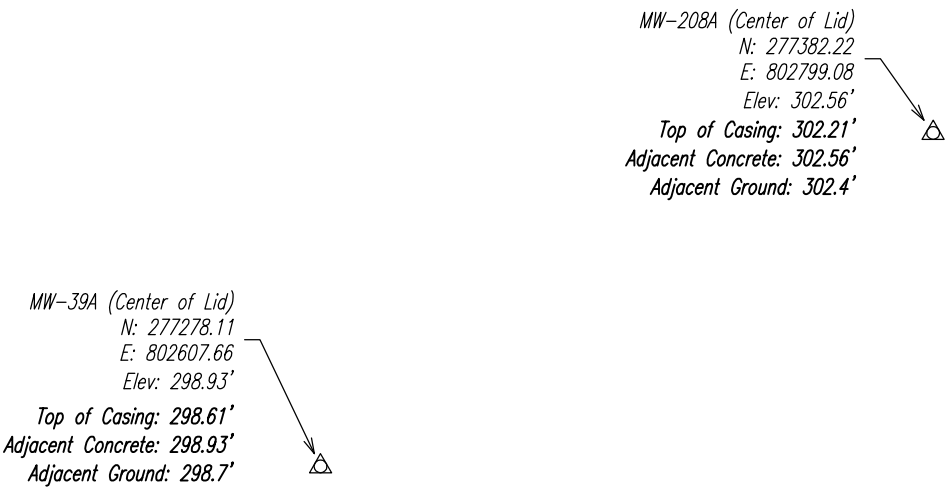


Grid North, NAD27

GRAPHIC SCALE



(IN FEET)
1 inch = 60 ft.



Point Table

Point #	Northing	Easting	Top of Lid Elevation	Well ID
60	277278.11	802607.66	298.93'	MW-39A
160	277382.22	802799.08	302.56'	MW-208A

Site Location: at The Memphis Depot.

Elevations shown are dated:
July 22, 2013.

Survey data by: Allen&Hoshall, Inc.
1661 International Drive, #100
Memphis, TN 38120
(901) 820-0820
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Monitoring Well Data

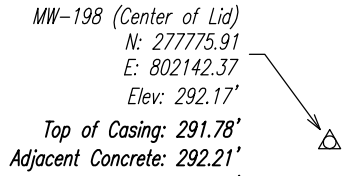
JAMES B. CAUGHMAN III
REGISTERED LAND SURVEYOR
AGRICULTURE
COMMERCE
TENNESSEE No. 1818

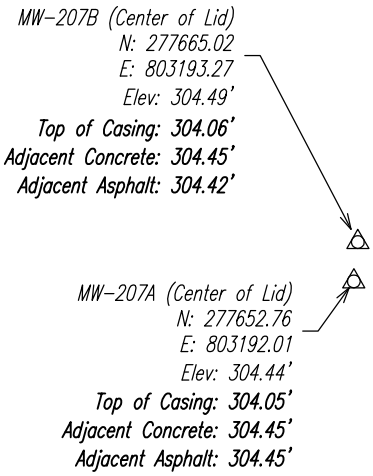
Grid North, NAD27

GRAPHIC SCALE

60 0 30 60

(IN FEET)
1 inch = 60 ft.





Point Table

Point #	Northing	Easting	Top of Lid Elevation	Well ID
100	277775.91	802142.37	292.17'	MW-198
140	277652.76	803192.01	304.44'	MW-207A
150	277665.02	803193.27	304.49'	MW-207B

Site Location: at The Memphis Depot.

Elevations shown are dated:
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1661 International Drive, #100
Memphis, TN 38120
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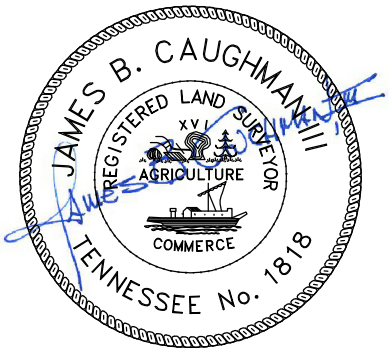
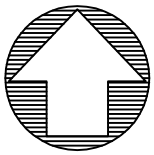
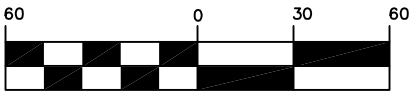
Monitoring Well Data





Grid North, NAD27

GRAPHIC SCALE



(IN FEET)
1 inch = 60 ft.

MW-143 (Center of Lid)
N: 278301.35
E: 801201.48
Elev: 291.06'
Top of Casing: 290.66'
Adjacent Concrete: 291.08'
Adjacent Gravel: 290.9'

MW-213 (Center of Lid)
N: 278427.08
E: 801669.11
Elev: 294.58'
Top of Casing: 294.22'
Adjacent Concrete: 294.56'
Adjacent Ground: 294.2'

MW-62 (Center of Lid)
N: 278289.65
E: 801857.92
Elev: 294.03'
Top of Casing: 293.71'
Adjacent Concrete: 294.01'
Adjacent Ground: 293.9'

Point Table

Point #	Northing	Easting	Top of Lid Elevation	Well ID
90	278301.35	801201.48	291.06'	MW-143
410	278289.65	801857.92	294.03'	MW-62
420	278427.08	801669.11	294.58'	MW-213

Site Location: at The Memphis Depot.

Elevations shown are dated:
July 22, 2013.

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1661 International Drive, #100
Memphis, TN 38120
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Monitoring Well Data

JAMES B. CAUGHMAN III
REGISTERED LAND SURVEYOR
AGRICULTURE
COMMERCE
TENNESSEE No. 1818

Grid North, NAD27

GRAPHIC SCALE

60 0 30 60

(IN FEET)
1 inch = 60 ft.

DR2-5 (Center of Lid)
N: 276830.98
E: 806180.40
Elev: 305.83'
Top of Casing: 305.41'
Adjacent Concrete: 305.82'
Adjacent Asphalt: 305.72'

DR2-2 (Center of Lid)
N: 276770.85
E: 806658.86
Elev: 304.65'
Top of Casing: 304.30'
Adjacent Concrete: 304.66'
Adjacent Asphalt: 304.67'

DR2-4 (Center of Lid)
N: 276455.62
E: 806633.07
Elev: 303.98'
Top of Casing: 303.55'
Adjacent Concrete: 303.98'
Adjacent Asphalt: 303.96'

Point Table

Point #	Northing	Easting	Top of Lid Elevation	Well ID
50	276455.62	806633.07	303.98'	DR2-4
430	276770.85	806658.86	304.65'	DR2-2
440	276830.98	806180.40	305.83'	DR2-5

Site Location: at The Memphis Depot.

Elevations shown are dated:
July 22, 2013.

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1661 International Drive, #100
Memphis, TN 38120
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Monitoring Well Data

JAMES B. CAUGHMAN III
REGISTERED LAND SURVEYOR
AGRICULTURE
COMMERCE
TENNESSEE No. 1818

Grid North, NAD27

GRAPHIC SCALE

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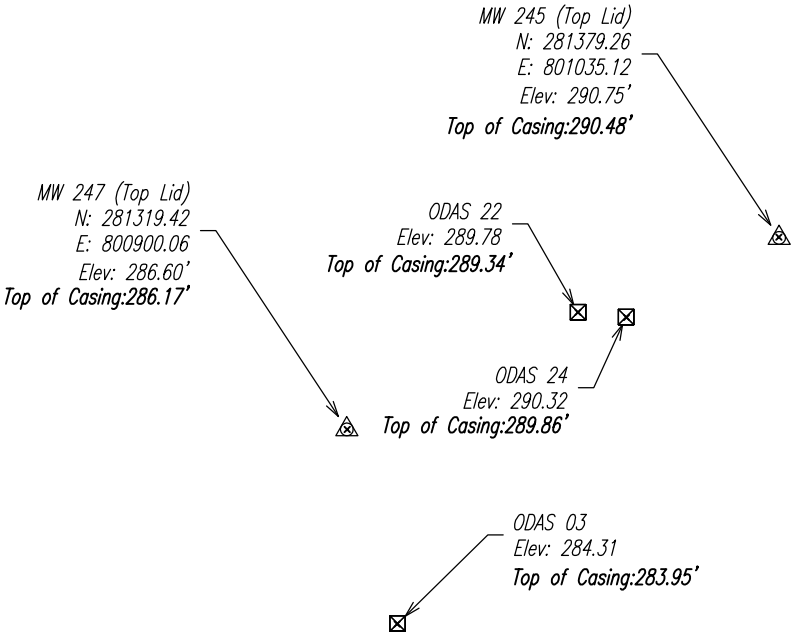
(IN FEET)
1 inch = 60 ft.



Point #	Northing	Easting	Elevation	Description
1057	281321.75	800899.98	286.63'	Ground Elev.
1058	281319.63	800900.09	286.60'	Concrete Elev.
1059	281319.42	800900.06	286.60'	MW-247
1060	281319.40	800900.12	286.17'	Top of Casing
1108	281380.95	801034.86	290.62'	Asphalt Elev.
1109	281379.75	801034.87	290.73'	Concrete Elev.
1110	281379.26	801035.12	290.75'	MW-245
1111	281379.46	801035.00	290.48'	Top of Casing
1112	281355.33	800987.35	290.25'	Ground Elev.
1113	281354.65	800987.29	290.33'	Concrete Elev.
1114	281354.49	800987.30	290.32'	ODAS 24
1115	281354.34	800987.46	289.86'	Top of Casing

Point #	Northing	Easting	Elevation	Description
1116	281357.01	800972.12	289.74'	Ground Elev.
1117	281356.33	800972.16	289.78'	Concrete Elev.
1118	281356.06	800972.32	289.78'	ODAS 22
1119	281356.03	800972.29	289.34'	Top of Casing
1120	281259.86	800915.88	284.34'	Ground Elev.
1121	281259.08	800915.74	284.32'	Concrete Elev.
1122	281258.71	800915.91	284.31'	ODAS 03
1123	281258.59	800915.77	283.95'	Top of Casing

Site Location: at The Memphis Depot.

Elevations shown are dated:
July 22, 2013.

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1661 International Drive, #100
Memphis, TN 38120
(901) 820-0820
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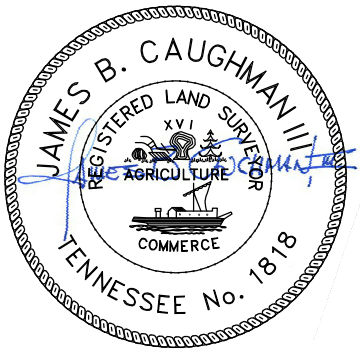
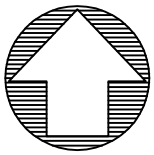
Sheet 1 of 1

Monitoring Well Data





Grid North, NAD27

GRAPHIC SCALE

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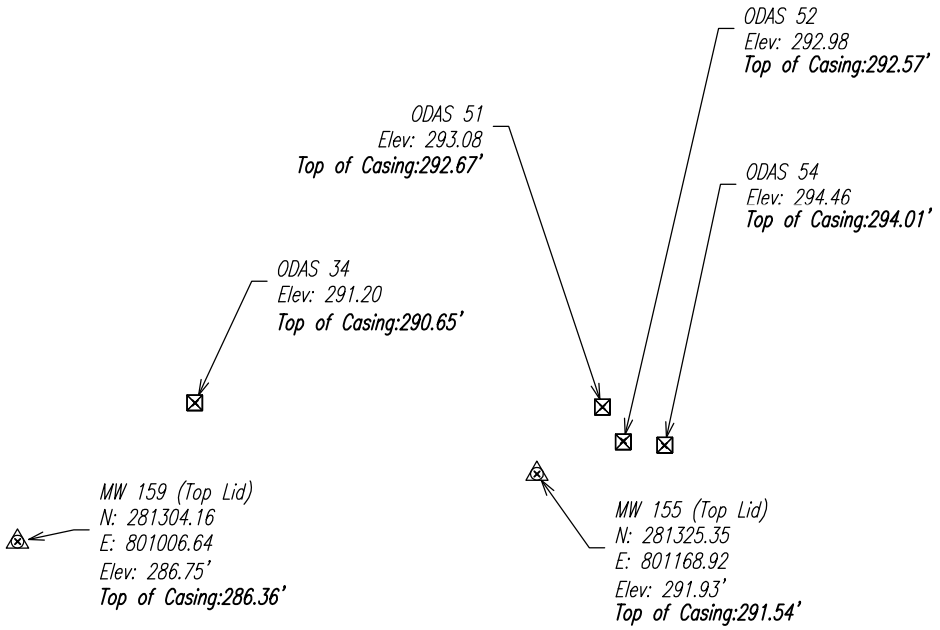
(IN FEET)
1 inch = 60 ft.



Point #	Northing	Easting	Elevation	Description
1061	281305.95	801006.72	286.68'	Ground Elev.
1062	281304.51	801006.55	286.77'	Concrete Elev.
1063	281304.16	801006.64	286.75'	MW-159
1064	281304.17	801006.69	286.36'	Top of Casing
1088	281335.37	801208.55	294.28'	Ground Elev.
1089	281334.63	801208.62	294.45'	Concrete Elev.
1090	281334.31	801208.92	294.46'	ODAS 54
1091	281334.18	801208.77	294.01'	Top of Casing
1092	281336.79	801196.15	292.82'	Ground Elev.
1093	281336.07	801195.87	293.00'	Concrete Elev.
1094	281335.35	801195.93	292.98'	ODAS 52
1095	281335.64	801195.96	292.57'	Top of Casing

Point #	Northing	Easting	Elevation	Description
1096	281347.33	801189.31	292.93'	Ground Elev.
1097	281346.62	801189.37	293.08'	Concrete Elev.
1098	281346.25	801189.42	293.08'	ODAS 51
1099	281346.21	801189.40	292.67'	Top of Casing
1100	281326.85	801169.23	291.83'	Ground Elev.
1101	281325.68	801168.97	291.94'	Concrete Elev.
1102	281325.35	801168.92	291.93'	MW-155
1103	281325.32	801168.98	291.54'	Top of Casing
1104	281348.64	801062.13	291.10'	Ground Elev.
1105	281347.90	801062.14	291.24'	Concrete Elev.
1106	281347.55	801062.06	291.20'	ODAS 34
1107	281347.49	801062.15	290.65'	Top of Casing

Site Location: at The Memphis Depot.

Elevations shown are dated:
July 22, 2013.

Survey data by: Allen&Hoshall, Inc.
1661 International Drive, #100
Memphis, TN 38120
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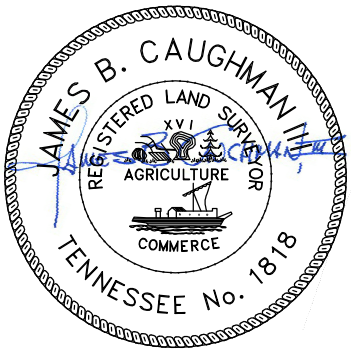
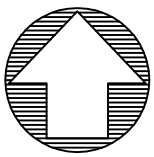
Monitoring Well Data





Grid North, NAD27

GRAPHIC SCALE

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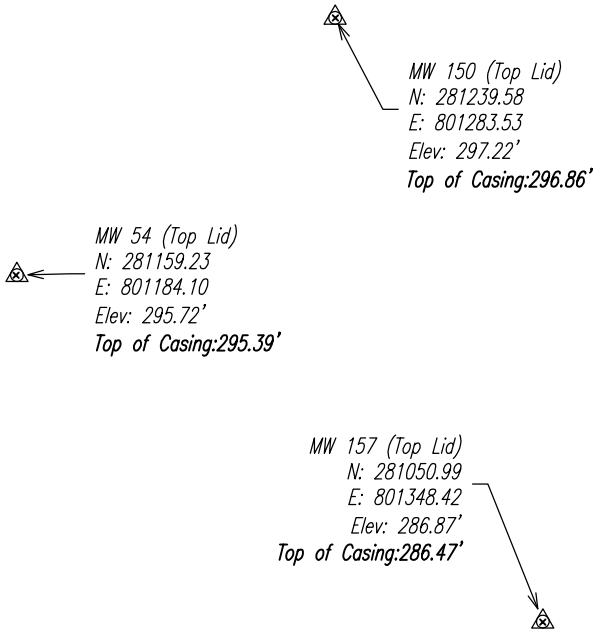
(IN FEET)
1 inch = 60 ft.



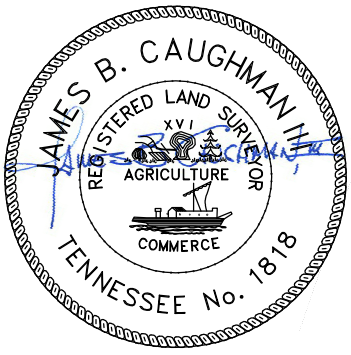
Point #	Northing	Easting	Elevation	Description
1065	281161.15	801184.34	295.57'	Ground Elev.
1066	281159.70	801183.86	295.70'	Concrete Elev.
1067	281159.23	801184.10	295.72'	MW-54
1068	281159.21	801183.83	295.39'	Top of Casing
1069	281242.07	801284.01	297.00'	Ground Elev.
1070	281239.95	801283.55	297.22'	Concrete Elev.
1071	281239.58	801283.53	297.22'	MW-150
1072	281239.57	801283.62	296.86'	Top of Casing
1143	281052.64	801348.02	286.55'	Ground Elev.
1144	281051.34	801348.21	286.86'	Concrete Elev.
1145	281050.99	801348.42	286.87'	MW-157
1146	281050.86	801348.37	286.47'	Top of Casing

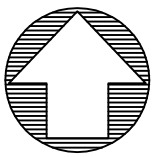
Site Location: at The Memphis Depot.

Elevations shown are dated:
July 22, 2013.

Survey data by: Allen&Hoshall, Inc.
1661 International Drive, #100
Memphis, TN 38120
(901) 820-0820
Date of Survey: 7-22-13
Proj #: 77482
Sheet 1 of 1

Monitoring Well Data



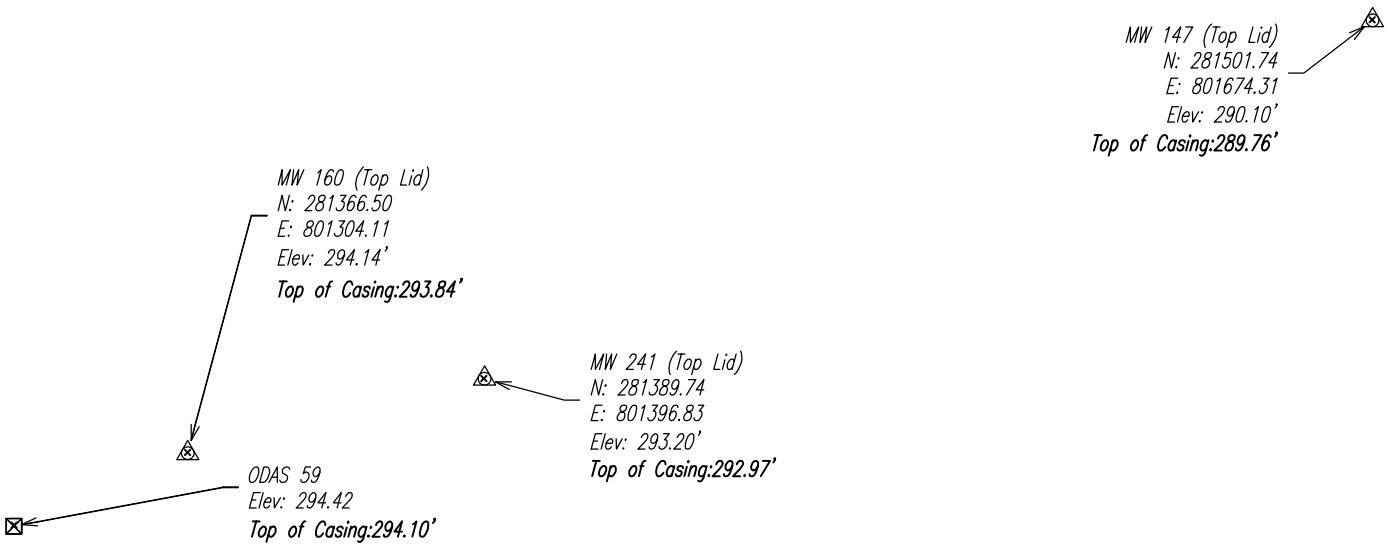


Grid North, NAD27

GRAPHIC SCALE

60 0 30 60

(IN FEET)
1 inch = 60 ft.



Point #	Northing	Easting	Elevation	Description
1073	281344.97	801249.53	294.20'	Ground Elev.
1074	281344.33	801249.70	294.37'	Concrete Elev.
1075	281343.70	801249.78	294.42'	ODAS 59
1076	281344.05	801249.80	294.10'	Top of Casing
1080	281368.20	801303.64	294.13'	Asphalt Elev.
1081	281367.14	801303.81	294.18'	Concrete Elev.
1082	281366.50	801304.11	294.14'	MW-160
1083	281366.70	801304.05	293.84'	Top of Casing
1084	281391.23	801396.43	293.16'	Asphalt Elev.
1085	281390.09	801396.54	293.19'	Concrete Elev.
1086	281389.74	801396.83	293.20'	MW-241
1087	281389.82	801396.64	292.97'	Top of Casing

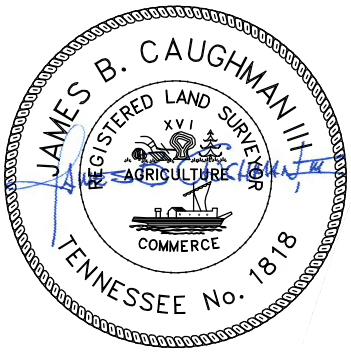
Point #	Northing	Easting	Elevation	Description
1220	281504.24	801674.43	289.93'	Ground Elev.
1221	281502.29	801674.17	290.08'	Concrete Elev.
1222	281501.74	801674.31	290.10'	MW-147
1223	281501.94	801674.17	289.76'	Top of Casing

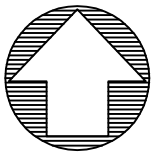
Site Location: at The Memphis Depot.

Elevations shown are dated:
July 22, 2013.

Survey data by: Allen&Hoshall, Inc.
1661 International Drive, #100
Memphis, TN 38120
(901) 820-0820
Date of Survey: 7-22-13
Proj #: 77482
Sheet 1 of 1

Monitoring Well Data



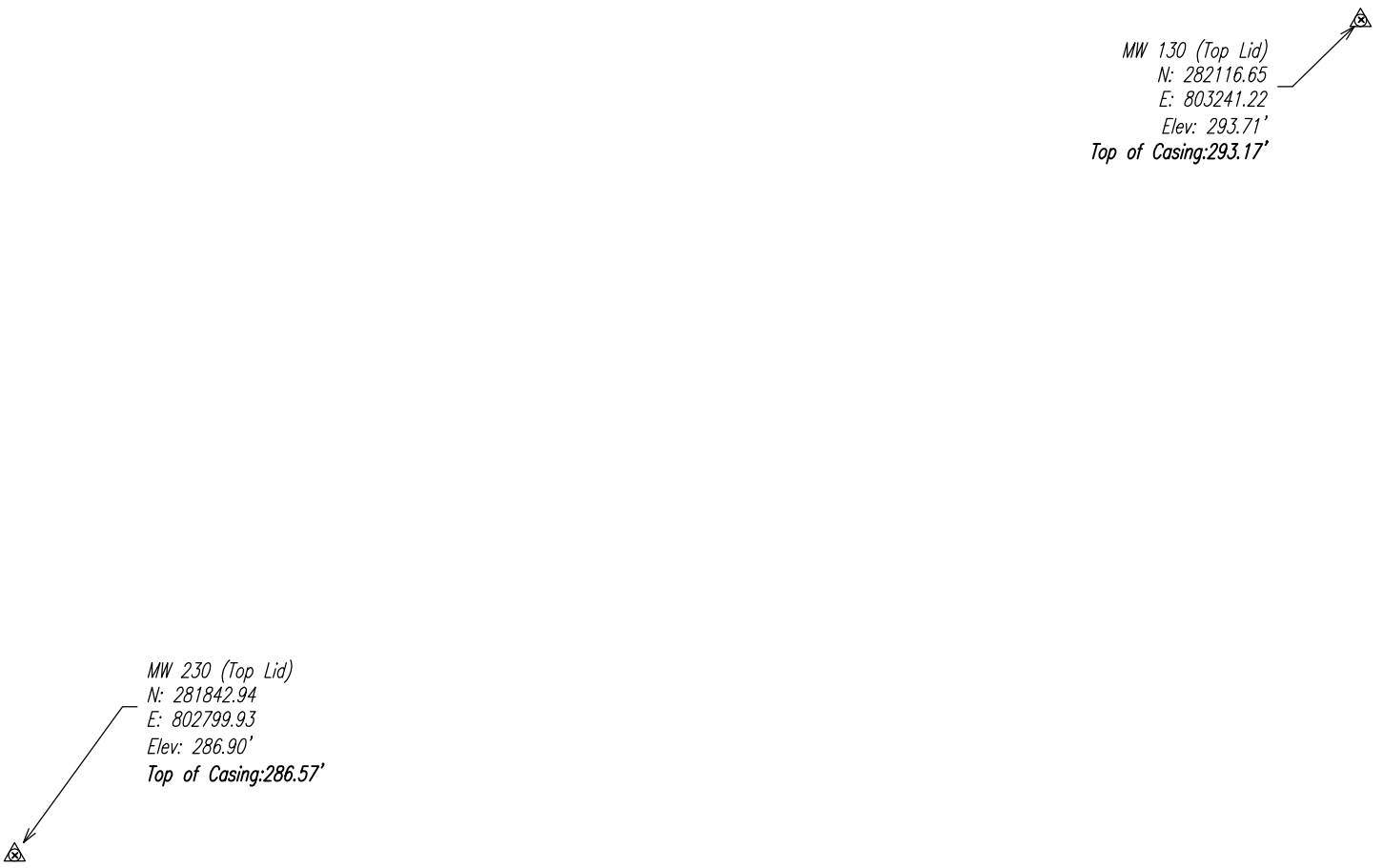


Grid North, NAD27

GRAPHIC SCALE

60 0 30 60

(IN FEET)
1 inch = 60 ft.



Point #	Northing	Easting	Elevation	Description
1135	282118.55	803241.72	293.77'	Ground Elev.
1136	282117.15	803241.56	293.78'	Concrete Elev.
1137	282116.65	803241.22	293.71'	MW-130
1138	282116.80	803241.45	293.17'	Top of Casing
1139	281845.14	802800.19	286.66'	Ground Elev.
1140	281843.25	802800.00	286.89'	Concrete Elev.
1141	281842.94	802799.93	286.90'	MW-230
1142	281842.79	802800.06	286.57'	Top of Casing

Site Location: at The Memphis Depot.

Elevations shown are dated:
July 22, 2013.

Survey data by: Allen&Hoshall, Inc.
1661 International Drive, #100
Memphis, TN 38120
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Date of Survey: 7-22-13
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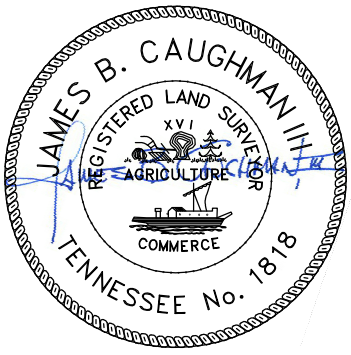
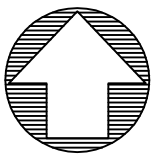
Sheet 1 of 1

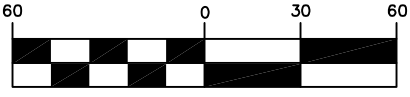
Monitoring Well Data



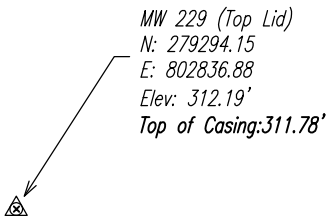


Grid North, NAD27

GRAPHIC SCALE



(IN FEET)
1 inch = 60 ft.



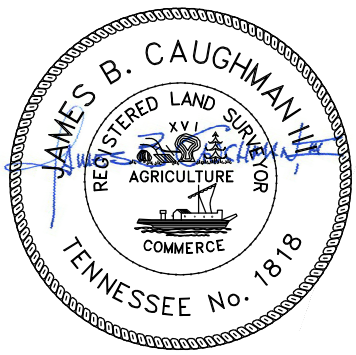
Point Table				
Point #	Northing	Easting	Elevation	Description
1128	279295.94	802836.57	312.09'	Ground Elev.
1129	279294.45	802836.88	312.18'	Concrete Elev.
1130	279294.15	802836.88	312.19'	MW-229
1131	279294.17	802836.96	311.78'	Top of Casing

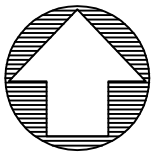
Site Location: at The Memphis Depot.

Elevations shown are dated:
July 22, 2013.

Survey data by: Allen&Hoshall, Inc.
1661 International Drive, #100
Memphis, TN 38120
(901) 820-0820
Date of Survey: 7-22-13
Proj #: 77482
Sheet 1 of 1

Monitoring Well Data





Grid North, NAD27

GRAPHIC SCALE

60 0 30 60

(IN FEET)
1 inch = 60 ft.

From: Jay Caughman [mailto:jcaughman@allenhoshall.com]
Sent: Thursday, November 14, 2013 11:45 AM
To: Holmes, Thomas C
Subject: RE: Well elevation MW-182

Tom,

Here's what we measured on MW-182 (11-13-2013)

Ground Elevation: 272.9'
Concrete Pad Elevation: 273.04'
Top of Lid Elevation: 273.05'
Top of Casing Elevation: 272.63'

Let me know if you need anything further.

From: Holmes, Thomas C [mailto:Thomas.Holmes@hdrinc.com]
Sent: Tuesday, November 12, 2013 3:14 PM
To: Jay Caughman
Cc: Bills, Justin M
Subject: RE: Well elevation

Jay,

We had to repair another well, MW-182, at the Depot. Could you send a crew to resurvey the location and elevation this week or early next? The elevation is the only thing that changed.

Air photo location map attached, initial survey coordinates below.

The well casing was burned and we changed it from a stick-up to flush mount.

Well	Northing (ft)	Easting (ft)	TOC Elevation (ft, msl)	Ground Elevation (ft, msl)
MW-182	280524.22	800623.13	275.40	272.98

APPENDIX G

COMPLETE ANALYTICAL RESULTS

TABLE F-1
MAIN INSTALLATION ANALYTICAL RESULTS, APRIL 2013
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

Analyte	Well ID / Lab ID / Date	Units	DR1-3 L13040650-23 4/11/2013	DR2-1 L13040604-34 4/10/2013	DR2-1-DUP-6 L13040604-38 4/10/2013	DR2-3 L13040604-35 4/10/2013	DR2-6 L13040604-36 4/10/2013	PMW21-03 L13040650-21 4/11/2013	PMW21-05 L13040650-22 4/11/2013
1,1,1,2-Tetrachloroethane		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane		µg/L	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane		µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane		µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloropropene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane		µg/L	<1	<1	<1	<1	12.4	<1	<1
1,2,4-Trichlorobenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane		µg/L	<2	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane		µg/L	<1	<1	<1	<1	0.397 J	<1	<1
1,3,5-Trimethylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane		µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane		µg/L	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane		µg/L	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene		µg/L	<1	<1	<1	<1	<1	<1	<1
2-Hexanone		µg/L	<10	<10	<10	<10	<10	<10	<10
4-Chlorotoluene		µg/L	<1	<1	<1	<1	<1	<1	<1
Acetone		µg/L	<10	4.31 J	5.67 J	<10	4.43 J	4.86 J	3.56 J
Benzene		µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane		µg/L	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform		µg/L	<1	<1	<1	<1	<1	<1	<1
Bromomethane		µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon disulfide		µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride		µg/L	<1	21.5	23.5	2.88	34.3	<1	<1
Chlorobenzene		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane		µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	<0.3	9.08	9.77	0.585	9.44	<0.3	<0.3
Chloromethane		µg/L	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene		µg/L	3.64	1.85	1.98	0.36 J	12.4	2.31	<1
cis-1,3-Dichloropropene		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane		µg/L	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane		µg/L	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene		µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
m-,p-Xylene		µg/L	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)		µg/L	<10	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)		µg/L	2.73 J	<5	<5	<5	<5	12.4	<5
Methylene chloride		µg/L	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)		µg/L	<10	<10	<10	<10	<10	<10	<10
Naphthalene		µg/L	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
o-Xylene		µg/L	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene		µg/L	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
Styrene		µg/L	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene		µg/L	3.18	176	183	17.4	43.8	112	14.4
Toluene		µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene		µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	1.42	2.99	2.95	1.66	7.78	31	0.892 J
Trichlorofluoromethane		µg/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride		µg/L	<1	<1	<1	<1	1	<1	<1

Notes:
µg/L: micrograms per liter
DQE Flags:
J: Estimated
UJ: Estimated Non-Detect
<: Analyte not detected above RL
Methods:
8260B: Volatile Organic Compounds

TABLE F-1
MAIN INSTALLATION ANALYTICAL RESULTS, APRIL 2013
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

Analyte	Well ID / Lab ID / Date	Units	PMW92-02 L13040649-01 4/11/2013	PMW101-03A L13040603-01 4/10/2013	PMW101-03A-DUP-5 L13040603-05 4/10/2013	PMW101-03B L13040603-02 4/10/2013	PMW101-06A L13040603-03 4/10/2013	PMW101-06B L13040603-04 4/10/2013	MW-26 L13040604-01 4/10/2013
1,1,1,2-Tetrachloroethane		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane		µg/L	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane		µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane		µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloropropene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane		µg/L	<2	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane		µg/L	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane		µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane		µg/L	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane		µg/L	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene		µg/L	<1	<1	<1	<1	<1	<1	<1
2-Hexanone		µg/L	<10	<10	<10	<10	<10	<10	<10
4-Chlorotoluene		µg/L	<1	<1	<1	<1	<1	<1	<1
Acetone		µg/L	107	<10	<10	<10	<10	<10	<10
Benzene		µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane		µg/L	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform		µg/L	<1	<1	<1	<1	<1	<1	<1
Bromomethane		µg/L	<1	<1	<1 UJ	<1	<1 UJ	<1 UJ	<1 UJ
Carbon disulfide		µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1	5.27
Chlorobenzene		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane		µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	0.588
Chloromethane		µg/L	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene		µg/L	122	0.637 J	0.654 J	0.637 J	0.36 J	0.998 J	0.504 J
cis-1,3-Dichloropropene		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane		µg/L	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane		µg/L	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene		µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
m-,p-Xylene		µg/L	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)		µg/L	<10	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)		µg/L	<5	4.34 J	4.63 J	10.7	2.13 J	9.19	<5
Methylene chloride		µg/L	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)		µg/L	<10	<10	<10	<10	<10	<10	<10
Naphthalene		µg/L	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
o-Xylene		µg/L	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene		µg/L	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
Styrene		µg/L	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene		µg/L	0.327 J	33.9	33.4	41.4	1.29	18	29.7
Toluene		µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene		µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	<1	0.886 J	0.979 J	2.16	<1	3.97	1.53
Trichlorofluoromethane		µg/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride		µg/L	0.54 J	<1	<1	<1	<1	<1	<1

Notes:
µg/L: micrograms per liter
DQE Flags:
J: Estimated
UJ: Estimated Non-Detect
<: Analyte not detected above RL
Methods:
8260B: Volatile Organic Compounds

TABLE F-1
MAIN INSTALLATION ANALYTICAL RESULTS, APRIL 2013
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

	Well ID	MW-39	MW-39A	MW-64	MW-88	MW-90	MW-92	MW-94A
	Lab ID	L13040604-02	L13040604-03	L13040604-04	L13040604-05	L13040604-08	L13040604-09	L13040604-10
	Date	4/10/2013	4/10/2013	4/10/2013	4/10/2013	4/10/2013	4/10/2013	4/10/2013
Analyte	**Units**							
1,1,1,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	0.704	<0.5	<0.5	<0.5	0.925
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	µg/L	<1	<1	<1	<1	0.794 J	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	0.745 J	<1	<1	<1	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5	0.583	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	0.353 J
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
Acetone	µg/L	3.9 J	5.26 J	3.45 J	<10	<10	<10	<10
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromomethane	µg/L	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1 UJ
Carbon disulfide	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	2.3	9.83	<1	<1	<1
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<0.3	<0.3	1.02	1.32	1.76	<0.3	0.149 J
Chloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	3.38	10.6	0.436 J	1.91	0.384 J	45.7	1.35
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	<5	<5	<5	<5	<5	<5	<5
Methylene chloride	µg/L	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	10.7	28.9	17.6	44.5 J	22.4	59.1	30.4
Toluene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	10.4	6.88	35.4	3.29	4.65	14.6	10.2
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	1.37	<1	<1	<1	12.7	<1

Notes:
µg/L: micrograms per liter
DQE Flags:
J: Estimated
UJ: Estimated Non-Detect
<: Analyte not detected above RL
Methods:
8260B: Volatile Organic Compounds

TABLE F-1
MAIN INSTALLATION ANALYTICAL RESULTS, APRIL 2013
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

Analyte	Well ID / Lab ID / Date / Units	MW-97 L13040604-11 4/10/2013	MW-97-DUP-1 L13040604-37 4/10/2013	MW-98 L13040604-12 4/10/2013	MW-100B L13040650-01 4/11/2013	MW-101T L13040650-02 4/11/2013	MW-101B L13040650-03 4/11/2013	MW-107T L13040650-04 4/11/2013
1,1,1,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	1.02	<1	<1	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
Acetone	µg/L	5.14 J	5.16 J	3.79 J	5.93 J	8.86 J	9.11 J	4.17 J
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromomethane	µg/L	<1 UJ	<1	<1 UJ	<1	<1	<1	<1
Carbon disulfide	µg/L	<1	<1	<1	<1	6.08	4.81	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	0.66 J
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.261 J	0.272 J	<0.3	<0.3	<0.3	<0.3	0.389
Chloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	<1	<1	0.43 J	18.5	25.5	23.6	<1
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10	<10	<10	<10	10.6	12.7	<10
Methyl t-butyl ether (MTBE)	µg/L	<5	<5	<5	9.67	4.36 J	4.16 J	<5
Methylene chloride	µg/L	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	41.2	33	7.45	9.71	54
Toluene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	0.977 J	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	70.7	66.1	3.18	4.51	2.25	3.05	3.72
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	172	<1	<1	<1

Notes:
µg/L: micrograms per liter
DQE Flags:
J: Estimated
UJ: Estimated Non-Detect
<: Analyte not detected above RL
Methods:
8260B: Volatile Organic Compounds

TABLE F-1
MAIN INSTALLATION ANALYTICAL RESULTS, APRIL 2013
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

	Well ID	MW-107B	MW-108	MW-108-DUP-2	MW-141	MW-143	MW-199B	MW-200
	Lab ID	L13040650-05	L13040650-06	L13040650-24	L13040604-13	L13040650-07	L13040604-16	L13040604-17
	Date	4/11/2013	4/11/2013	4/11/2013	4/10/2013	4/11/2013	4/10/2013	4/10/2013
Analyte	**Units**							
1,1,1,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	µg/L	<1	0.697 J	0.84 J	0.374 J	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	1.21	1.49	<1	<1	<1	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
Acetone	µg/L	<10	5.29 J	4.1 J	<10	5.26 J	5.54 J	7.11 J
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromomethane	µg/L	<1 UJ	<1 UJ	<1	<1	<1 UJ	<1 UJ	<1 UJ
Carbon disulfide	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	0.431 J	<1	<1	<1	<1	0.328 J	<1
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.272 J	8.95	9.32	3.24	<0.3	0.138 J	<0.3
Chloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	<1	0.733 J	0.871 J	<1	<1	<1	2.69
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	<5	<5	<5	<5	1.28 J	<5	<5
Methylene chloride	µg/L	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	20.3	2.75	3.11	31.9 J	0.384 J	0.258 J	8.74
Toluene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	2.44	28.7	31.1	4.32	12.7	84.1	8.06
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

Notes:
µg/L: micrograms per liter
DQE Flags:
J: Estimated
UJ: Estimated Non-Detect
<: Analyte not detected above RL
Methods:
8260B: Volatile Organic Compounds

TABLE F-1
MAIN INSTALLATION ANALYTICAL RESULTS, APRIL 2013
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

Analyte	Well ID / Lab ID / Date	Units	MW-200B L13040650-08 4/11/2013	MW-204A L13040604-18 4/10/2013	MW-204B L13040604-21 4/10/2013	MW-205A L13040604-22 4/10/2013	MW-205B L13040604-23 4/10/2013	MW-206A L13040604-24 4/10/2013	MW-206B L13040604-25 4/10/2013
1,1,1,2-Tetrachloroethane		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane		µg/L	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane		µg/L	<0.5	<0.5	0.656	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane		µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane		µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloropropene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane		µg/L	<2	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane		µg/L	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane		µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane		µg/L	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane		µg/L	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene		µg/L	<1	<1	<1	<1	<1	<1	<1
2-Hexanone		µg/L	<10	<10	<10	<10	<10	<10	<10
4-Chlorotoluene		µg/L	<1	<1	<1	<1	<1	<1	<1
Acetone		µg/L	4.49 J	<10	3.74 J	5.29 J	3.77 J	4.01 J	3.48 J
Benzene		µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane		µg/L	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform		µg/L	<1	<1	<1	<1	<1	<1	<1
Bromomethane		µg/L	<1 UJ	<1	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1
Carbon disulfide		µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride		µg/L	0.364 J	<1	<1	<1	<1	<1	<1
Chlorobenzene		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane		µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	0.534	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chloromethane		µg/L	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene		µg/L	0.379 J	1.02	0.805 J	5.65	4.3	3.45	2.01
cis-1,3-Dichloropropene		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane		µg/L	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane		µg/L	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene		µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
m-,p-Xylene		µg/L	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)		µg/L	<10	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)		µg/L	<5	<5	<5	<5	1.1 J	<5	<5
Methylene chloride		µg/L	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)		µg/L	<10	<10	<10	<10	<10	<10	<10
Naphthalene		µg/L	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
o-Xylene		µg/L	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene		µg/L	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
Styrene		µg/L	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene		µg/L	23.8	40.2 J	11.8	27	23.8	18.9	21.1
Toluene		µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene		µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	5.16	0.7 J	5.03	7.77	10.1	9.65	7.75
Trichlorofluoromethane		µg/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride		µg/L	<1	<1	<1	<1	0.609 J	<1	<1

Notes:
µg/L: micrograms per liter
DQE Flags:
J: Estimated
UJ: Estimated Non-Detect
<: Analyte not detected above RL
Methods:
8260B: Volatile Organic Compounds

TABLE F-1
MAIN INSTALLATION ANALYTICAL RESULTS, APRIL 2013
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

	Well ID	MW-207A	MW-207B	MW-208A	MW-208B	MW-209B	MW-210A	MW-210B
	Lab ID	L13040650-09	L13040650-10	L13040604-26	L13040604-27	L13040604-28	L13040604-29	L13040604-30
	Date	4/11/2013	4/11/2013	4/10/2013	4/10/2013	4/10/2013	4/10/2013	4/10/2013
Analyte	**Units**							
1,1,1,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	µg/L	0.924 J	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	0.906 J	<1	<1	<1	<1	<1	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	2.86	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
Acetone	µg/L	3.52 J	2.73 J	3.34 J	3.98 J	3.48 J	3.19 J	4.25 J
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromomethane	µg/L	<1 UJ	<1 UJ	<1	<1	<1	<1	<1
Carbon disulfide	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	2.75	<1	<1	0.66 J	<1	<1
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	10.2	0.535	<0.3	0.614	0.262 J	<0.3	<0.3
Chloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	0.429 J	0.269 J	10.9	1.36	<1	2.15	0.717 J
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	<5	<5	<5	<5	<5	0.652 J	<5
Methylene chloride	µg/L	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	14.9	11.5	21.5	26	0.342 J	8.42	4.7
Toluene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	21.3	3.21	18.4	22.9	33.9	5.36	8.56
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	1.55	<1	<1	<1	<1

Notes:
µg/L: micrograms per liter
DQE Flags:
J: Estimated
UJ: Estimated Non-Detect
<: Analyte not detected above RL
Methods:
8260B: Volatile Organic Compounds

TABLE F-1
MAIN INSTALLATION ANALYTICAL RESULTS, APRIL 2013
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

Analyte	Well ID / Lab ID / Date	Units	MW-214A L13040650-11 4/11/2013	MW-214A-DUP-3 L13040650-25 4/11/2013	MW-214B L13040650-12 4/11/2013	MW-217 L13040604-31 4/10/2013	MW-218 L13040604-32 4/10/2013	MW-219 L13040650-13 4/11/2013	MW-252 L13040650-14 4/11/2013
1,1,1,2-Tetrachloroethane		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane		µg/L	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane		µg/L	<0.5	0.202 J	<0.5	0.443 J	1.3	<0.5	<0.5
1,1,2-Trichloroethane		µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane		µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene		µg/L	<1	<1	<1	<1	1.15	<1	<1
1,1-Dichloropropene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane		µg/L	<2	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane		µg/L	<0.5	<0.5	<0.5	0.403 J	0.462 J	1.64	<0.5
1,2-Dichloropropane		µg/L	<1	<1	<1	0.367 J	0.386 J	<1	<1
1,3,5-Trimethylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane		µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane		µg/L	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane		µg/L	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene		µg/L	<1	<1	<1	<1	<1	<1	<1
2-Hexanone		µg/L	<10	<10	<10	<10	<10	<10	<10
4-Chlorotoluene		µg/L	<1	<1	<1	<1	<1	<1	<1
Acetone		µg/L	<10	<10	<10	3.44 J	2.71 J	<10	6.21 J
Benzene		µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane		µg/L	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform		µg/L	<1	<1	<1	<1	<1	<1	<1
Bromomethane		µg/L	<1 UJ	<1	<1 UJ	<1	<1	<1 UJ	<1 UJ
Carbon disulfide		µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride		µg/L	0.976 J	1	0.977 J	27.3	7.6	<1	<1
Chlorobenzene		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane		µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	2.27	2.35	1.61	3.74	2.55	<0.3	<0.3
Chloromethane		µg/L	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene		µg/L	<1	<1	<1	0.707 J	0.252 J	2.04	<1
cis-1,3-Dichloropropene		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane		µg/L	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane		µg/L	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene		µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
m-,p-Xylene		µg/L	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)		µg/L	<10	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)		µg/L	0.65 J	0.773 J	<5	<5	<5	<5	<5
Methylene chloride		µg/L	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)		µg/L	<10	<10	<10	<10	<10	<10	<10
Naphthalene		µg/L	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
o-Xylene		µg/L	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene		µg/L	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
Styrene		µg/L	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene		µg/L	6.06	6.54	5.42	23.8	18.1	39.6	0.651 J
Toluene		µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene		µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	2.01	2.14	1.41	44	42.2	3.54	<1
Trichlorofluoromethane		µg/L	<1	<1	<1	1.49	1.51	<1	<1
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1	<1

Notes:
µg/L: micrograms per liter
DQE Flags:
J: Estimated
UJ: Estimated Non-Detect
<: Analyte not detected above RL
Methods:
8260B: Volatile Organic Compounds

TABLE F-1
MAIN INSTALLATION ANALYTICAL RESULTS, APRIL 2013
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

Analyte	Well ID / Lab ID / Date	Units	MW-252-DUP-4 L13040650-26 4/11/2013	MW-253 L13040650-4/11/2013	MW-254 L13040650-4/11/2013	MW-255 L13040650-4/11/2013	MW-256 L13040650-4/11/2013	MW-257 L13040650-4/11/2013	MW-258 L13040650-4/11/2013	MW-259 L13040604-33 4/10/2013
1,1,1,2-Tetrachloroethane		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane		µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.213 J
1,1,2-Trichloroethane		µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane		µg/L	<1	<1	<1	<1	0.425 J	<1	0.266 J	<1
1,1-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1	1.55	<1
1,1-Dichloropropene		µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene		µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane		µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene		µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane		µg/L	<2	<2	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane		µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene		µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.29
1,2-Dichloropropane		µg/L	<1	<1	<1	<1	<1	<1	<1	0.495 J
1,3,5-Trimethylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene		µg/L	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane		µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane		µg/L	<1	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane		µg/L	<1	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene		µg/L	<1	<1	<1	<1	<1	<1	<1	<1
2-Hexanone		µg/L	<10	<10	<10	<10	<10	<10	<10	<10
4-Chlorotoluene		µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Acetone		µg/L	5.11 J	4.86 J	4.14 J	4.58 J	3.58 J	<10	3.33 J	2.76 J
Benzene		µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene		µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane		µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform		µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Bromomethane		µg/L	<1	<1 UJ	<1 UJ	<1 UJ	<1	<1	<1	<1
Carbon disulfide		µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride		µg/L	<1	<1	0.889 J	<1	0.334 J	<1	<1	4.98
Chlorobenzene		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane		µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	<0.3	<0.3	0.185 J	<0.3	2.32	<0.3	2.95	3.08
Chloromethane		µg/L	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene		µg/L	<1	<1	0.34 J	<1	0.28 J	<1	2.22	0.278 J
cis-1,3-Dichloropropene		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane		µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane		µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene		µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1	<1
m-,p-Xylene		µg/L	<2	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)		µg/L	<10	<10	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)		µg/L	<5	<5	<5	<5	<5	<5	3.66 J	<5
Methylene chloride		µg/L	<1	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)		µg/L	<10	<10	<10	<10	<10	<10	<10	<10
Naphthalene		µg/L	<1	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1	<1
o-Xylene		µg/L	<1	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene		µg/L	<1	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Styrene		µg/L	<1	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene		µg/L	0.699 J	<1	0.905 J	<1	41.9	<1	25.9	16.1
Toluene		µg/L	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene		µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	<1	<1	3.13	0.433 J	16	<1	88.7	22
Trichlorofluoromethane		µg/L	<1	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1	<1	<1

Notes:
µg/L: micrograms per liter
DQE Flags:
J: Estimated
UJ: Estimated Non-Detect
<: Analyte not detected above RL
Methods:
8260B: Volatile Organic Compounds

TABLE F-2
MAIN INSTALLATION ANALYTICAL RESULTS, OCTOBER 2013
ANNUAL LONG-TERM MONITORING REPORT
Defense Depot Memphis, Tennessee

	Well ID	DR1-1A	DR1-1	DR1-2	DR1-3	DR1-4	DR1-7	DR1-8
	Lab ID	L13101112-30	L13101112-29	L13101112-31	L13101112-32	L13101112-33	L13101112-01	L13101112-02
Analyte	**Date**	10/12/2013	10/12/2013	10/12/2013	10/12/2013	10/12/2013	10/12/2013	10/12/2013
1,1,1,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2 UJ	<2 UJ	<2 UJ	<2	<2 UJ	<2	<2
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
Acetone	µg/L	7.82 J	7.03 J	<10	7.73 J	8.91 J	2.63	<10
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon disulfide	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.51	<0.3	0.142 J	<0.3	<0.3	0.156 J	<0.3
Chloromethane	µg/L	0.67 J	0.64 J	0.785 J	<1	0.81 J	0.681 J	<1
cis-1,2-Dichloroethene	µg/L	<1	0.734 J	0.369 J	7.5	0.523 J	0.286 J	<1
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	<5	<5	<5	4.97 J	1.19 J	<5	<5
Methylene chloride	µg/L	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	0.389 J	1.77	1.3	1.52	<1	1.19	<1
Toluene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	0.973 J	<1	<1	2.17	0.41 J	<1	<1
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

Notes:
µg/L: micrograms per liter
DQE Flags:
J: Estimated
UJ: Estimated Non-Detect
<: Analyte not detected above RL
Methods:
8260B: Volatile Organic Compounds

TABLE F-2
MAIN INSTALLATION ANALYTICAL RESULTS, OCTOBER 2013
ANNUAL LONG-TERM MONITORING REPORT
Defense Depot Memphis, Tennessee

Analyte	Well ID / Lab ID / Date	DR1-8-DUP-8-LA-18 L13101112-12 10/12/2013	DR2-1 L13101117-01 10/12/2013	DR2-3 L13101117-02 10/12/2013	DR2-4 L13101117-03 10/12/2013	DR2-6 L13101117-04 10/12/2013	PMW21-03 L13101112-03 10/12/2013	PMW21-05 L13101112-04 10/12/2013
1,1,1,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1	<1	<1	9.06 J	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
Acetone	µg/L	<10	24 J	7.71 J	5.02 J	17.1 J	9.33	3.21
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon disulfide	µg/L	<1	<1	<1	<1	5.34	<1	<1
Carbon tetrachloride	µg/L	<1	37.2	2.87	3.01	<1	<1	<1
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<0.3	8.82	0.567	0.645	7.85	<0.3	<0.3
Chloromethane	µg/L	<1	0.587 J	<1	<1	<1	<1	0.876 J
cis-1,2-Dichloroethene	µg/L	<1	10.2	<1	<1	24	3.76	<1
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10	21.2	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	<5	<5	<5	<5	<5	13.5	<5
Methylene chloride	µg/L	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	235	14	9.58	10.3	115	12.5
Toluene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	5.45	1.29	0.898 J	3.22	33.4	0.763 J
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	7.52	<1	<1

Notes:
µg/L: micrograms per liter
DQE Flags:
J: Estimated
UJ: Estimated Non-Detect
<: Analyte not detected above RL
Methods:
8260B: Volatile Organic Compounds

TABLE F-2
MAIN INSTALLATION ANALYTICAL RESULTS, OCTOBER 2013
ANNUAL LONG-TERM MONITORING REPORT
Defense Depot Memphis, Tennessee

	Well ID	PMW92-02	PMW101-03A	PMW101-03B	PMW101-03B-DUP-9-LA-18	PMW101-06A	PMW101-06B	PZ-03
	Lab ID	L13101117-07	L13101112-05	L13101112-06	L13101112-13	L13101112-07	L13101112-10	L13101116-01
Analyte	**Date**	10/12/2013	10/12/2013	10/12/2013	10/12/2013	10/12/2013	10/12/2013	10/11/2013
1,1,1,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2	<2	<2	<2	<2	<2	<2 UJ
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
Acetone	µg/L	10.9 J	6.79	5.02	5.27	6.55	6.07	<10 UJ
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon disulfide	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	0.263 J
Chloromethane	µg/L	0.512 J	0.808 J	<1	<1	<1	<1	0.679 J
cis-1,2-Dichloroethene	µg/L	149	5.83	6.35	6.16	1.76	2.37	<1
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	0.41 J	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	0.64 J	<2	<2	<2	1.95 J	<2	<2
MEK (2-Butanone)	µg/L	<10	<10	<10	<10	3.47	<10	<10 UJ
Methyl t-butyl ether (MTBE)	µg/L	<5	4.08 J	11.1	10.7	2.88 J	8.47	<5
Methylene chloride	µg/L	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	0.451 J	<1	<1	<1	0.64 J	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	0.385 J	35	42.4	44.2	1.28	16	2.43 J
Toluene	µg/L	0.791 J	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	0.273 J	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	0.559 J	0.838 J	1.34	1.18	0.312 J	2.98	5.81 J
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1	<1	0.29 J
Vinyl chloride	µg/L	0.902 J	<1	1.27	1.19	<1	<1	<1

Notes:
µg/L: micrograms per liter
DQE Flags:
J: Estimated
UJ: Estimated Non-Detect
<: Analyte not detected above RL
Methods:
8260B: Volatile Organic Compounds

TABLE F-2
MAIN INSTALLATION ANALYTICAL RESULTS, OCTOBER 2013
ANNUAL LONG-TERM MONITORING REPORT
Defense Depot Memphis, Tennessee

Analyte	Well ID / Lab ID / Date	MW-25A L13101116-05 10/11/2013	MW-25A-DUP-1-LA-18 L13101116-02 10/11/2013	MW-26 L13101117-11 10/12/2013	MW-39A L13101114-04 10/11/2013	MW-39 L13101114-03 10/11/2013	MW-52 L13101116-06 10/11/2013	MW-63A L13101117-12 10/12/2013
1,1,1,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2 UJ	<2	<2	<2	<2	<2 UJ	<2
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	0.141 J	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
Acetone	µg/L	<10 UJ	<10	3.72 J	6.67 J	8.71 J	<10 UJ	2.91 J
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon disulfide	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	1.7	2.01	4.6	<1	<1	<1	<1
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.261 J	0.335	0.642	<0.3	<0.3	0.841	<0.3
Chloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	<1	<1	0.462 J	7.28	12.3	0.562 J	<1
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10 UJ	<10	<10	<10	<10	<10 UJ	<10
Methyl t-butyl ether (MTBE)	µg/L	<5	<5	<5	0.591 J	0.535 J	<5	<5
Methylene chloride	µg/L	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	5.83	7.11	25	29.5	1.34	7.16	2.52
Toluene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	0.36 J	1.24	7.05	11.6	0.995 J	1.83
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	1.67	<1	<1	<1

Notes:
µg/L: micrograms per liter
DQE Flags:
J: Estimated
UJ: Estimated Non-Detect
<: Analyte not detected above RL
Methods:
8260B: Volatile Organic Compounds

TABLE F-2
MAIN INSTALLATION ANALYTICAL RESULTS, OCTOBER 2013
ANNUAL LONG-TERM MONITORING REPORT
Defense Depot Memphis, Tennessee

Analyte	Well ID / Lab ID / Date	MW-63B L13101117-13 10/12/2013	MW-64 L13101117-14 10/12/2013	MW-88 L13101117-15 10/12/2013	MW-89 L13101114-05 10/11/2013	MW-90 L13101114-06 10/11/2013	MW-92 L13101117-16 10/12/2013	MW-92-DUP-2-LA-18 L13101117-08 10/12/2013
1,1,1,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<0.5	1.57 J	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	µg/L	0.466 J	<1	<1	<1	0.849 J	<1	<1
1,1-Dichloroethene	µg/L	<1	0.879 J	<1	<1	0.69 J	<1	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	0.391 J	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
Acetone	µg/L	3.26 J	18 J	8.81 J	<10	5.53 J	12 J	13.2 J
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon disulfide	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	2.56	11	<1	0.283 J	<1	<1
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.399	0.821	1.49	0.205 J	1.72	<0.3	<0.3
Chloromethane	µg/L	<1	<1	<1	<1	0.938 J	<1	<1
cis-1,2-Dichloroethene	µg/L	0.34 J	0.431 J	2.17	<1	0.428 J	39.7	40.5
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	<5	<5	<5	<5	<5	<5	<5
Methylene chloride	µg/L	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	1.23	18	45.2	2.44	21.5	79.7	79.9
Toluene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	2.07	28	2.77	1.35	5.19	10.8	10.9
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	5.28	5.37

Notes:
µg/L: micrograms per liter
DQE Flags:
J: Estimated
UJ: Estimated Non-Detect
<: Analyte not detected above RL
Methods:
8260B: Volatile Organic Compounds

TABLE F-2
MAIN INSTALLATION ANALYTICAL RESULTS, OCTOBER 2013
ANNUAL LONG-TERM MONITORING REPORT
Defense Depot Memphis, Tennessee

	Well ID	MW-94A	MW-96	MW-97	MW-98	MW-100B	MW-101B	MW-101T
	Lab ID	L13101117-17	L13101116-07	L13101114-07	L13101114-08	L13101112-16	L13101112-18	L13101112-17
Analyte	**Date**	10/12/2013	10/11/2013	10/11/2013	10/11/2013	10/12/2013	10/12/2013	10/12/2013
1,1,1,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	0.41 J	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	1.21	<1	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2 UJ	<2 UJ	<2	<2	<2 UJ	<2 UJ	<2 UJ
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L	0.481 J	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
Acetone	µg/L	6.15 J	<10 UJ	8.79 J	4.15 J	8.83 J	13.9	13.2
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon disulfide	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	0.832 J	<1	<1	<1	<1	<1
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.19 J	0.21 J	0.308	<0.3	<0.3	<0.3	<0.3
Chloromethane	µg/L	0.643 JB	<1	<1	<1	<1	<1	0.58 J
cis-1,2-Dichloroethene	µg/L	1.38	<1	<1	0.541 J	21.8	31	36.5
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<2	<1	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10	<10 UJ	<10	<10	<10	25.9	29.5
Methyl t-butyl ether (MTBE)	µg/L	<5	<5	<5	<5	24.4	6.02	6.96
Methylene chloride	µg/L	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	32.8	0.318 J	<1	40.5	68.4	2.72	1.22
Toluene	µg/L	<1	<1	<1	<1	0.435 J	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	1.7	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	10.4	<1	67.8	3.16	7.49	1.01	0.9 J
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	188	<1	<1

Notes:
µg/L: micrograms per liter
DQE Flags:
J: Estimated
UJ: Estimated Non-Detect
<: Analyte not detected above RL
Methods:
8260B: Volatile Organic Compounds

TABLE F-2
MAIN INSTALLATION ANALYTICAL RESULTS, OCTOBER 2013
ANNUAL LONG-TERM MONITORING REPORT
Defense Depot Memphis, Tennessee

Analyte	Well ID / Lab ID / Date	MW-103 L13101117-18 10/12/2013	MW-104 L13101117-19 10/12/2013	MW-107B L13101117-21 10/12/2013	MW-107T L13101117-20 10/12/2013	MW-107T-DUP-3-LA-18 L13101117-09 10/12/2013	MW-108 L13101117-24 10/12/2013	MW-140 L13101114-09 10/11/2013
1,1,1,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	µg/L	2.19	1.17	<1	<1	<1	0.8 J	<1
1,1-Dichloroethene	µg/L	2.25	3.23	<1	<1	<1	1.38	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2 UJ	<2 UJ	<2 UJ	<2 UJ	<2	<2 UJ	<2
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
Acetone	µg/L	5 J	<10	<10	<10	5.03 J	7.18 J	2.98 J
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon disulfide	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	0.459 J	0.402 J	0.4 J	<1	0.391 J
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	9.07	7.71	0.328	0.31	0.314	9.41	0.219 J
Chloromethane	µg/L	<1	0.525 JB	<1	<1	<1	<1	1.11
cis-1,2-Dichloroethene	µg/L	0.373 J	0.833 J	<1	<1	<1	0.842 J	<1
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<2	<2	<2	<2	<1	<2	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	<5	<5	<5	<5	<5	<5	<5
Methylene chloride	µg/L	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	25.1 J	18.3	17.7	3.76	2.8
Toluene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	10.6	22	2.72	2.08	1.83	30.3	1.73
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

Notes:
µg/L: micrograms per liter
DQE Flags:
J: Estimated
UJ: Estimated Non-Detect
<: Analyte not detected above RL
Methods:
8260B: Volatile Organic Compounds

TABLE F-2
MAIN INSTALLATION ANALYTICAL RESULTS, OCTOBER 2013
ANNUAL LONG-TERM MONITORING REPORT
Defense Depot Memphis, Tennessee

Analyte	Well ID / Lab ID / Date	MW-141 L13101114-10 10/11/2013	MW-142 L13101114-11 10/11/2013	MW-143 L13101112-19 10/12/2013	MW-198 L13101114-12 10/11/2013	MW-199A L13101114-13 10/11/2013	MW-199B L13101114-14 10/11/2013	MW-200 L13101117-25 10/12/2013
1,1,1,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	µg/L	0.399 J	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2	<2	<2 UJ	<2	<2	<2	<2 UJ
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
Acetone	µg/L	3.2 J	6.52 J	6.3 J	3.31 J	<10	8.4 J	8.18 J
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon disulfide	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	0.307 J	<1
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	3.36	<0.3	<0.3	<0.3	<0.3	0.149 J	<0.3
Chloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	1.8
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<2
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	<5	2.93 J	0.834 J	<5	3.72 J	<5	<5
Methylene chloride	µg/L	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	31.9	<1	0.353 J	<1	<1	0.545 J	7.75
Toluene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	4.22	5.77	10	1.06	0.986 J	74.6	6.17
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

Notes:
µg/L: micrograms per liter
DQE Flags:
J: Estimated
UJ: Estimated Non-Detect
<: Analyte not detected above RL
Methods:
8260B: Volatile Organic Compounds

TABLE F-2
MAIN INSTALLATION ANALYTICAL RESULTS, OCTOBER 2013
ANNUAL LONG-TERM MONITORING REPORT
Defense Depot Memphis, Tennessee

Analyte	Well ID / Lab ID / Date	MW-202A L13101114-15 10/11/2013	MW-202A-DUP-4-LA-18 L13101114-01 10/11/2013	MW-202B L13101114-16 10/11/2013	MW-204A L13101114-17 10/11/2013	MW-204B L13101114-18 10/11/2013	MW-205A L13101114-19 10/11/2013	MW-205B L13101114-20 10/11/2013
1,1,1,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	1.46 J	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2	<2	<2 UJ	<2	<2	<2	<2
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
Acetone	µg/L	<10	2.68 J	6.84 J	6.22 J	8.59 J	7.77 J	11.3
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon disulfide	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	0.416 J	<1	<1	<1	<1
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.216 J	0.231 J	0.539	<0.3	0.161 J	<0.3	<0.3
Chloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	<1	<1	0.332 J	0.528 J	0.998 J	4.69	4.61
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1	<2	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	<5	<5	<5	<5	<5	0.689 J	1.78 J
Methylene chloride	µg/L	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	2.26	2.08	25.5	38.6	13.9	26.4	23.5
Toluene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	1.83	1.72	4.78	0.695 J	4.64	6.81	8.86
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	0.559 J

Notes:
µg/L: micrograms per liter
DQE Flags:
J: Estimated
UJ: Estimated Non-Detect
<: Analyte not detected above RL
Methods:
8260B: Volatile Organic Compounds

TABLE F-2
MAIN INSTALLATION ANALYTICAL RESULTS, OCTOBER 2013
ANNUAL LONG-TERM MONITORING REPORT
Defense Depot Memphis, Tennessee

	Well ID	MW-206A	MW-206B	MW-207A	MW-207B	MW-208B	MW-208B-DUP-5-LA-18	MW-209A
	Lab ID	L13101114-23	L13101114-24	L13101117-26	L13101117-27	L13101114-25	L13101114-02	L13101114-26
Analyte	**Date**	10/11/2013	10/11/2013	10/12/2013	10/12/2013	10/11/2013	10/11/2013	10/11/2013
1,1,1,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	µg/L	<1	<1	1.04	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	1.09	<1	<1	<1	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2	<2	<2 UJ	<2 UJ	<2	<2	<2
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5	<0.5	3.03	<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
Acetone	µg/L	13.5	11.5	7.23 J	2.55 J	9.81 J	5.46 J	6.87 J
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon disulfide	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	2.61	<1	<1	<1
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<0.3	0.127 J	10.2	0.565	0.929	0.921	<0.3
Chloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	2.85	1.68	0.555 J	0.325 J	0.937 J	1.05	<1
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1	<2	<2	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	0.543 J	<5	<5	<5	<5	<5	4.25 J
Methylene chloride	µg/L	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	19.9	20.8	18.1	12.5	22.2	23.1	0.354 J
Toluene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	7.26	5.53	18.7	3.29	12.7	15.8	4.97
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

Notes:
µg/L: micrograms per liter
DQE Flags:
J: Estimated
UJ: Estimated Non-Detect
<: Analyte not detected above RL
Methods:
8260B: Volatile Organic Compounds

TABLE F-2
MAIN INSTALLATION ANALYTICAL RESULTS, OCTOBER 2013
ANNUAL LONG-TERM MONITORING REPORT
Defense Depot Memphis, Tennessee

	Well ID	MW-209B	MW-210A	MW-210B	MW-211	MW-214A	MW-214B	MW-215A
	Lab ID	L13101114-27	L13101114-28	L13101114-29	L13101117-28	L13101117-29	L13101117-30	L13101117-31
Analyte	Date	10/11/2013	10/11/2013	10/11/2013	10/12/2013	10/12/2013	10/12/2013	10/12/2013
1,1,1,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	0.219 J	0.256 J	0.244 J
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2 UJ	<2 UJ	<2 UJ	<2 UJ	<2 UJ	<2 UJ	<2 UJ
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
Acetone	µg/L	7.92 J	6.04 J	5.83 J	<10	<10	<10	<10
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon disulfide	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	0.445 J	<1	<1	<1	1.09	1.01	0.978 J
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.257 J	<0.3	<0.3	<0.3	2.18	1.7	2.39
Chloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	<1	2	0.635 J	<1	<1	<1	<1
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1	<1	<2	<2	<2	<2
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	<5	0.514 J	<5	<5	0.651 J	0.581 J	1.12 J
Methylene chloride	µg/L	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	0.545 J	5.79	3.59	0.686 J	6.6	6	6.93
Toluene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	28.8	4.52	6.93	0.461 J	2.14	1.98	3.46
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

Notes:
µg/L: micrograms per liter
DQE Flags:
J: Estimated
UJ: Estimated Non-Detect
<: Analyte not detected above RL
Methods:
8260B: Volatile Organic Compounds

TABLE F-2
MAIN INSTALLATION ANALYTICAL RESULTS, OCTOBER 2013
ANNUAL LONG-TERM MONITORING REPORT
Defense Depot Memphis, Tennessee

Analyte	Well ID / Lab ID / Date	MW-215B L13101117-32 10/12/2013	MW-216 L13101114-30 10/11/2013	MW-217 L13101117-33 10/12/2013	MW-217-DUP-6-LA-18 L13101117-10 10/12/2013	MW-218 L13101117-34 10/12/2013	MW-219 L13101112-20 10/12/2013	MW-252 L13101112-21 10/12/2013
1,1,1,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	0.312 J	1.1 J	1.14	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	0.548 J	<1	<1	<1	1.02	<1	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2 UJ	<2 UJ	<2 UJ	<2	<2 UJ	<2 UJ	<2 UJ
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5	0.333 J	0.361 J	0.494 J	1.66	<0.5
1,2-Dichloropropane	µg/L	<1	<1	0.295 J	0.363 J	0.495 J	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
Acetone	µg/L	<10	<10 UJ	10.9	15.2 J	11.4	<10	8.67 J
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon disulfide	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	1.33	<1	40.4	42.3	8.75	<1	<1
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.685	<0.3	3.88	3.98	2.8	<0.3	<0.3
Chloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	<1	<1	0.791 J	0.795 J	0.33 J	2.48	<1
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<2	<1	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10	<10 UJ	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	0.991 J	<5	<5	<5	<5	<5	<5
Methylene chloride	µg/L	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	6.24	<1	29.6	27.8	18.9	53.6	0.273 J
Toluene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	1.55	0.379 J	42.1	32.8	40.3	3.62	<1
Trichlorofluoromethane	µg/L	<1	<1	1.33	1.45	1.65	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

Notes:
µg/L: micrograms per liter
DQE Flags:
J: Estimated
UJ: Estimated Non-Detect
<: Analyte not detected above RL
Methods:
8260B: Volatile Organic Compounds

TABLE F-2
MAIN INSTALLATION ANALYTICAL RESULTS, OCTOBER 2013
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Defense Depot Memphis, Tennessee

	Well ID	MW-253	MW-254	MW-255	MW-256	MW-257	MW-258	MW-259
	Lab ID	L13101112-22	L13101112-23	L13101112-24	L13101112-25	L13101112-28	L13101117-35	L13101117-36
Analyte	**Date**	10/12/2013	10/12/2013	10/12/2013	10/12/2013	10/12/2013	10/12/2013	10/12/2013
1,1,1,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.294 J
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	µg/L	<1	<1	<1	<1	<1	0.199 J	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	1.22	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2 UJ	<2 UJ	<2 UJ	<2 UJ	<2 UJ	<2 UJ	<2 UJ
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	2.6
1,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	0.517 J
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
Acetone	µg/L	10.2	15.2	11.2 J	8.94 J	<10	9.26 J	10.3
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon disulfide	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	0.748 J	<1	0.366 J	<1	<1	5.02
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<0.3	0.162 J	<0.3	2.29 J	<0.3	2.54	3
Chloromethane	µg/L	0.929 J	0.527 J	<1	0.552 J	0.521 J	<1	0.953 J
cis-1,2-Dichloroethene	µg/L	<1	0.347 J	<1	<1	<1	2.25	0.277 J
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	<5	<5	<5	<5	<5	3.94 J	<5
Methylene chloride	µg/L	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	0.77 J	<1	37.7 J	<1	32.2	17
Toluene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	2.7	0.353 J	14 J	<1	85.8	23.9
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

Notes:
µg/L: micrograms per liter
DQE Flags:
J: Estimated
UJ: Estimated Non-Detect
<: Analyte not detected above RL
Methods:
8260B: Volatile Organic Compounds

TABLE F-2
MAIN INSTALLATION ANALYTICAL RESULTS, OCTOBER 2013
ANNUAL LONG-TERM MONITORING REPORT
Defense Depot Memphis, Tennessee

Analyte	Well ID / Lab ID / Date		MW-260 L13101116-08 10/11/2013	MW-261 L13101116-09 10/11/2013	MW-261-DUP-7-LA-18 L13101116-03 10/11/2013
1,1,1,2-Tetrachloroethane	µg/L		<0.5	<0.5	<0.5
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-Dichloroethane	µg/L		1.12	<1	<1
1,1-Dichloroethene	µg/L		1.39	<1	<1
1,1-Dichloropropene	µg/L		<1	<1	<1
1,2,3-Trichlorobenzene	µg/L		<1	<1	<1
1,2,3-Trichloropropane	µg/L		<1	<1	<1
1,2,4-Trichlorobenzene	µg/L		<1	<1	<1
1,2,4-Trimethylbenzene	µg/L		<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L		<2 UJ	<2 UJ	<2 UJ
1,2-Dibromoethane	µg/L		<1	<1	<1
1,2-Dichlorobenzene	µg/L		<1	<1	<1
1,2-Dichloroethane	µg/L		<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L		<1	<1	<1
1,3,5-Trimethylbenzene	µg/L		<1	<1	<1
1,3-Dichlorobenzene	µg/L		<1	<1	<1
1,3-Dichloropropane	µg/L		<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L		<0.5	<0.5	<0.5
1-Chlorohexane	µg/L		<1	<1	<1
2,2-Dichloropropane	µg/L		<1	<1	<1
2-Chlorotoluene	µg/L		<1	<1	<1
2-Hexanone	µg/L		<10	<10	<10
4-Chlorotoluene	µg/L		<1	<1	<1
Acetone	µg/L		<10 UJ	<10 UJ	<10 UJ
Benzene	µg/L		<0.4	<0.4	<0.4
Bromobenzene	µg/L		<1	<1	<1
Bromochloromethane	µg/L		<1	<1	<1
Bromodichloromethane	µg/L		<0.5	<0.5	<0.5
Bromoform	µg/L		<1	<1	<1
Bromomethane	µg/L		<1	<1	<1
Carbon disulfide	µg/L		<1	<1	<1
Carbon tetrachloride	µg/L		<1	<1	<1
Chlorobenzene	µg/L		<0.5	<0.5	<0.5
Chloroethane	µg/L		<1	<1	<1
Chloroform	µg/L		1.37	<0.3	<0.3
Chloromethane	µg/L		<1	<1	<1
cis-1,2-Dichloroethene	µg/L		<1	<1	<1
cis-1,3-Dichloropropene	µg/L		<0.5	<0.5	<0.5
Dibromochloromethane	µg/L		<0.5	<0.5	<0.5
Dibromomethane	µg/L		<1	<1	<1
Dichlorodifluoromethane	µg/L		<1	<1	<1
Ethylbenzene	µg/L		<1	<1	<1
Hexachlorobutadiene	µg/L		<0.6	<0.6	<0.6
Isopropylbenzene	µg/L		<1	<1	<1
m-,p-Xylene	µg/L		<2	<2	<2
MEK (2-Butanone)	µg/L		<10 UJ	<10 UJ	<10 UJ
Methyl t-butyl ether (MTBE)	µg/L		<5	<5	<5
Methylene chloride	µg/L		<1	<1	<1
MIBK (methyl isobutyl ketone)	µg/L		<10	<10	<10
Naphthalene	µg/L		<1	<1	<1
n-Butylbenzene	µg/L		<1	<1	<1
n-Propylbenzene	µg/L		<1	<1	<1
o-Xylene	µg/L		<1	<1	<1
p-Isopropyltoluene	µg/L		<1	<1	<1
sec-Butylbenzene	µg/L		<1	<1	<1
Styrene	µg/L		<1	<1	<1
tert-Butylbenzene	µg/L		<1	<1	<1
Tetrachloroethene	µg/L		<1	<1	<1
Toluene	µg/L		<1	<1	<1
trans-1,2-Dichloroethene	µg/L		<1	<1	<1
trans-1,3-Dichloropropene	µg/L		<1	<1	<1
Trichloroethene	µg/L		3.97	2.71 J	2.67
Trichlorofluoromethane	µg/L		<1	<1	<1
Vinyl chloride	µg/L		<1	<1	<1

Notes:
µg/L: micrograms per liter
DQE Flags:
J: Estimated
UJ: Estimated Non-Detect
<: Analyte not detected above RL
Methods:
8260B: Volatile Organic Compounds

TABLE F-3
DUNN FIELD ANALYTICAL RESULTS, APRIL 2013
ANNUAL LONG-TERM MONITORING - 2013
Defense Depot Memphis, Tennessee

Analyte	Well ID / LabID / Date	Units	MW-03 L13040809-01 4/13/2013	MW-04 L13040809-02 4/13/2013	MW-06 L13040687-01 4/12/2013	MW-07 L13040809-03 4/13/2013	MW-08 L13040687-02 4/12/2013	MW-13 L13040680-01 4/12/2013	MW-15 L13040687-03 4/12/2013
1,1,1,2-Tetrachloroethane		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane		µg/L	<1	<1	<1	0.435 J	0.288 J	<1	<1
1,1,2,2-Tetrachloroethane		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane		µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane		µg/L	<1	<1	<1	1.15	0.355 J	<1	<1
1,1-Dichloroethene		µg/L	<1	<1	<1	20	5.64	<1	<1
1,1-Dichloropropene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane		µg/L	<2	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane		µg/L	<0.5	<0.5	<0.5	0.338 J	<0.5	<0.5	<0.5
1,2-Dichloropropane		µg/L	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane		µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane		µg/L	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane		µg/L	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene		µg/L	<1	<1	<1	<1	<1	<1	<1
2-Hexanone		µg/L	<10	<10	<10	<10	<10	<10	<10
4-Chlorotoluene		µg/L	<1	<1	<1	<1	<1	<1	<1
Acetone		µg/L	<10	<10 UJ	<10	4.26 J	<10	<10	<10
Benzene		µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane		µg/L	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform		µg/L	<1	<1	<1	<1	<1	<1	<1
Bromomethane		µg/L	<1 UJ	<1	<1	<1	<1	<1	<1
Carbon disulfide		µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane		µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	<0.3	0.371	2.21	0.276 J	0.197 J	0.199 J	1.25
Chloromethane		µg/L	<1 UJ	<1 UJ	<1	<1 UJ	<1	<1	<1
cis-1,2-Dichloroethene		µg/L	<1	<1	<1	0.535 J	0.345 J	<1	<1
cis-1,3-Dichloropropene		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane		µg/L	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane		µg/L	<1 UJ	<1	<1	<1	<1	<1	<1
Ethylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene		µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
m-,p-Xylene		µg/L	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)		µg/L	<10 UJ	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)		µg/L	<5	<5	<5	<5	<5	<5	<5
Methylene chloride		µg/L	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)		µg/L	<10	<10	<10	<10	<10	<10	<10
Naphthalene		µg/L	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
o-Xylene		µg/L	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene		µg/L	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
Styrene		µg/L	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene		µg/L	0.311 J	<1	<1	55.9	9.91	0.287 J	0.598 J
Toluene		µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene		µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	0.364 J	<1	0.707 J	52.3	14.5	<1	0.549 J
Trichlorofluoromethane		µg/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1	<1

Notes:
µg/L: micrograms per liter
DQE Flags:
J: Estimated
UJ: Estimated Non-Detect
<: Analyte not detected above RL
Methods:
8260B: Volatile Organic Compounds

TABLE F-3
DUNN FIELD ANALYTICAL RESULTS, APRIL 2013
ANNUAL LONG-TERM MONITORING - 2013
Defense Depot Memphis, Tennessee

Analyte	Well ID LabID Date Units	MW-28 L13040809-04 4/13/2013	MW-28-DUP-1 L13040809-29 4/13/2013	MW-31 L13040810-01 4/13/2013	MW-33 L13040809-05 4/13/2013	MW-33-DUP-2 L13040809-06 4/13/2013	MW-44 L13040808-02 4/14/2013	MW-44-RE L13050701-01 5/9/2013
1,1,1,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5 UJ	<0.5 UJ	<0.5	<0.5	1.21	1.33
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	µg/L	<1	<1	0.125 J	0.192 J	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	2.36	<1	<1	<1	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1 UJ	<1 UJ	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2	<2 UJ	<2 UJ	<2	<2	<2	<2 UJ
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	0.125 J	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
Acetone	µg/L	<10 UJ	<10	<10	7.37 J	7.4 J	3.95 J	4.45 J
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromomethane	µg/L	<1	<1 UJ	<1 UJ	<1	<1	<1	<1
Carbon disulfide	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	0.827 J	0.678 J
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.332	0.275 J	0.145 J	0.318	0.277 J	13.6	12.3
Chloromethane	µg/L	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	0.547 J	0.633 J
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1 UJ	<1 UJ	<1	<1	<1 UJ	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10	<10 UJ	<10 UJ	<10	<10	<10	2.9 J
Methyl t-butyl ether (MTBE)	µg/L	<5	<5	<5	<5	<5	<5	<5
Methylene chloride	µg/L	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	3.46	<1	<1	0.398 J	0.329 J
Toluene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	4.76	<1	<1	6.98	6.55
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

Notes:
µg/L: micrograms per liter
DQE Flags:
J: Estimated
UJ: Estimated Non-Detect
<: Analyte not detected above RL
Methods:
8260B: Volatile Organic Compounds

TABLE F-3
DUNN FIELD ANALYTICAL RESULTS, APRIL 2013
ANNUAL LONG-TERM MONITORING - 2013
Defense Depot Memphis, Tennessee

Analyte	Well ID	MW-44-RE-DUP-10	MW-54	MW-57	MW-58	MW-67	MW-68	MW-69
	LabID	L13050701-18	L13050701-02	L13040687-05	L13040680-03	L13040808-04	L13040809-10	L13040809-11
	Date	5/9/2013	5/9/2013	4/12/2013	4/12/2013	4/14/2013	4/13/2013	4/13/2013
	Units							
1,1,1,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	1.15	1.85	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1 UJ	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2 UJ	<2 UJ	<2	<2	<2	<2	<2
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
Acetone	µg/L	2.92 J	3.09 J	<10	<10	2.87 J	<10	<10
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1 UJ	<1	<1	<1	<1	<1	<1
Bromomethane	µg/L	<1	<1	<1	<1	<1	<1 UJ	<1 UJ
Carbon disulfide	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	0.718 J	<1	<1	0.277 J	<1	<1	<1
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	12.4	0.23 J	6.97	0.343	<0.3	<0.3	<0.3
Chloromethane	µg/L	<1	<1	<1	<1	<1 UJ	<1 UJ	<1 UJ
cis-1,2-Dichloroethene	µg/L	0.651 J	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1	<1	<1	<1 UJ	<1 UJ	<1 UJ
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10 UJ	<10	<10	<10	<10	<10 UJ	<10 UJ
Methyl t-butyl ether (MTBE)	µg/L	<5	<5	<5	<5	<5	<5	<5
Methylene chloride	µg/L	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	0.295 J	<1	<1	<1	<1	<1
Toluene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	6.69	6.51	0.916 J	1.7	<1	<1	<1
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

Notes:
µg/L: micrograms per liter
DQE Flags:
J: Estimated
UJ: Estimated Non-Detect
<: Analyte not detected above RL
Methods:
8260B: Volatile Organic Compounds

TABLE F-3
DUNN FIELD ANALYTICAL RESULTS, APRIL 2013
ANNUAL LONG-TERM MONITORING - 2013
Defense Depot Memphis, Tennessee

Analyte	Well ID / LabID / Date	Units	MW-70 L13040809-12 4/13/2013	MW-71 L13040809-13 4/13/2013	MW-76 L13040810-04 4/13/2013	MW-77 L13050701-03 5/9/2013	MW-78 L13040687-06 4/12/2013	MW-79 L13040810-05 4/13/2013	MW-80 L13040648-02 4/11/2013
1,1,1,2-Tetrachloroethane		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane		µg/L	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane		µg/L	<0.5	0.58	0.284 J	7.45	<0.5	<0.5 UJ	<0.5
1,1,2-Trichloroethane		µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane		µg/L	<1	<1	<1	<1	<1	0.179 J	<1
1,1-Dichloroethene		µg/L	<1	<1	<1	<1	<1	4.71	<1
1,1-Dichloropropene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane		µg/L	<1	<1	<1 UJ	<1	<1	<1 UJ	<1
1,2,4-Trichlorobenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane		µg/L	<2	<2	<2 UJ	<2 UJ	<2	<2 UJ	<2
1,2-Dibromoethane		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane		µg/L	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane		µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane		µg/L	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane		µg/L	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene		µg/L	<1	<1	<1	<1	<1	<1	<1
2-Hexanone		µg/L	<10	<10	<10	<10	<10	<10	<10
4-Chlorotoluene		µg/L	<1	<1	<1	<1	<1	<1	<1
Acetone		µg/L	<10	<10	<10	3.02 J	<10	<10	<10
Benzene		µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane		µg/L	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform		µg/L	<1	<1	<1	<1	<1	<1	<1
Bromomethane		µg/L	<1 UJ	<1 UJ	<1 UJ	<1	<1	<1 UJ	<1 UJ
Carbon disulfide		µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride		µg/L	<1	0.452 J	<1	<1	<1	<1	<1
Chlorobenzene		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane		µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	0.166 J	8.06	<0.3	0.426	<0.3	<0.3	0.329
Chloromethane		µg/L	<1 UJ	<1 UJ	<1 UJ	<1	<1	<1 UJ	<1 UJ
cis-1,2-Dichloroethene		µg/L	<1	<1	<1	0.381 J	<1	<1	<1
cis-1,3-Dichloropropene		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane		µg/L	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane		µg/L	<1 UJ	<1 UJ	<1 UJ	<1	<1	<1 UJ	<1
Ethylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene		µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
m-,p-Xylene		µg/L	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)		µg/L	<10 UJ	<10 UJ	<10 UJ	<10	<10	<10 UJ	<10 UJ
Methyl t-butyl ether (MTBE)		µg/L	<5	<5	<5	<5	<5	<5	<5
Methylene chloride		µg/L	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)		µg/L	<10	<10	<10	<10	<10	<10	<10
Naphthalene		µg/L	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
o-Xylene		µg/L	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene		µg/L	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
Styrene		µg/L	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene		µg/L	0.642 J	<1	<1	0.447 J	<1	6.35	<1
Toluene		µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene		µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	0.988 J	2.39	0.624 J	15.5	<1	6.07	<1
Trichlorofluoromethane		µg/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1	<1

Notes:
µg/L: micrograms per liter
DQE Flags:
J: Estimated
UJ: Estimated Non-Detect
<: Analyte not detected above RL
Methods:
8260B: Volatile Organic Compounds

TABLE F-3
DUNN FIELD ANALYTICAL RESULTS, APRIL 2013
ANNUAL LONG-TERM MONITORING - 2013
Defense Depot Memphis, Tennessee

Analyte	Well ID LabID Date Units	MW-87 L13040687-09 4/12/2013	MW-91 L13040687-10 4/12/2013	MW-126 L13040680-04 4/12/2013	MW-129 L13040810-06 4/13/2013	MW-130 L13040809-14 4/13/2013	MW-134 L13040809-15 4/13/2013	MW-134-RE L13050701-04 5/9/2013
1,1,1,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5 UJ	<0.5
1,1,1-Trichloroethane	µg/L	<1	<1	<1	0.661 J	1.44	<1 UJ	<1
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5 UJ	<0.5	<0.5 UJ	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1 UJ	<1
1,1-Dichloroethane	µg/L	<1	<1	<1	1.48	2.13	<1 UJ	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	16.8	38.6	<1 UJ	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1 UJ	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1 UJ	<1
1,2,3-Trichloropropane	µg/L	<1	<1	<1	<1 UJ	<1	<1 UJ	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1 UJ	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1 UJ	<1
1,2-Dibromo-3-chloropropane	µg/L	<2	<2	<2	<2 UJ	<2	<2 UJ	<2
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1 UJ	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1 UJ	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	0.485 J	<0.5 UJ	<0.5
1,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1 UJ	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1 UJ	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1 UJ	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4 UJ	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5 UJ	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1 UJ	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1 UJ	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1 UJ	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10	<10 UJ	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1 UJ	<1
Acetone	µg/L	<10	<10	<10	4.41 J	3.26 J	6.57 J	3.84 J
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4 UJ	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1 UJ	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1 UJ	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5 UJ	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1	<1 UJ	<1
Bromomethane	µg/L	<1	<1	<1	<1 UJ	<1	<1 UJ	<1 UJ
Carbon disulfide	µg/L	<1	<1	<1	<1	<1	<1 UJ	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1 UJ	<1
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5 UJ	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1	<1 UJ	<1
Chloroform	µg/L	0.254 J	0.926	<0.3	<0.3	0.274 J	0.213 J	0.14 J
Chloromethane	µg/L	<1	<1	<1	<1 UJ	<1 UJ	<1 UJ	<1
cis-1,2-Dichloroethene	µg/L	0.32 J	<1	<1	<1	1.04	<1 UJ	<1
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5 UJ	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5 UJ	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1 UJ	<1
Dichlorodifluoromethane	µg/L	<1	<1	<1	<1 UJ	<1	<1 UJ	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1 UJ	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6 UJ	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1 UJ	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2 UJ	<2
MEK (2-Butanone)	µg/L	<10	<10	<10	<10 UJ	<10	<10 UJ	<10
Methyl t-butyl ether (MTBE)	µg/L	<5	<5	<5	<5	<5	<5 UJ	<5
Methylene chloride	µg/L	<1	<1	<1	<1	<1	<1 UJ	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10 UJ	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1 UJ	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1 UJ	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1 UJ	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1 UJ	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1 UJ	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1 UJ	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1 UJ	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1 UJ	<1
Tetrachloroethene	µg/L	<1	0.251 J	<1	18	98.5	0.73 J	0.685 J
Toluene	µg/L	<1	<1	<1	<1	<1	<1 UJ	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1 UJ	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1 UJ	<1
Trichloroethene	µg/L	<1	0.332 J	<1	14.5	79.5	<1 UJ	<1
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1	<1 UJ	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1 UJ	<1

Notes:
µg/L: micrograms per liter
DQE Flags:
J: Estimated
UJ: Estimated Non-Detect
<: Analyte not detected above RL
Methods:
8260B: Volatile Organic Compounds

TABLE F-3
DUNN FIELD ANALYTICAL RESULTS, APRIL 2013
ANNUAL LONG-TERM MONITORING - 2013
Defense Depot Memphis, Tennessee

Analyte	Well ID / LabID / Date	Units	MW-144 L13040809-16 4/13/2013	MW-144-RE L13050701-05 5/9/2013	MW-145 L13040809-17 4/13/2013	MW-147 L13040810-07 4/13/2013	MW-148 L13040810-08 4/13/2013	MW-149 L13040809-18 4/13/2013	MW-150 L13040810-09 4/13/2013
1,1,1,2-Tetrachloroethane		µg/L	<0.5 UJ	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane		µg/L	<1 UJ	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane		µg/L	11 J	5.41	<0.5	<0.5 UJ	<0.5 UJ	2.33	16.9 J
1,1,2-Trichloroethane		µg/L	<1 UJ	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane		µg/L	<1 UJ	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene		µg/L	<1 UJ	<1	<1	<1	<1	<1	<1
1,1-Dichloropropene		µg/L	<1 UJ	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene		µg/L	<1 UJ	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane		µg/L	<1 UJ	<1	<1	<1 UJ	<1 UJ	<1	<1 UJ
1,2,4-Trichlorobenzene		µg/L	<1 UJ	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene		µg/L	<1 UJ	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane		µg/L	<2 UJ	<2	<2	<2 UJ	<2 UJ	<2	<2 UJ
1,2-Dibromoethane		µg/L	<1 UJ	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene		µg/L	<1 UJ	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane		µg/L	<0.5 UJ	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane		µg/L	<1 UJ	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene		µg/L	<1 UJ	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene		µg/L	<1 UJ	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane		µg/L	<0.4 UJ	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene		µg/L	<0.5 UJ	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane		µg/L	<1 UJ	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane		µg/L	<1 UJ	<1	<1	<1	<1	<1	<1
2-Chlorotoluene		µg/L	<1 UJ	<1	<1	<1	<1	<1	<1
2-Hexanone		µg/L	<10 UJ	<10	<10	<10	<10	<10	<10
4-Chlorotoluene		µg/L	<1 UJ	<1	<1	<1	<1	<1	<1
Acetone		µg/L	6.29 J	5.26 J	<10	<10	<10	2.93 J	5.88 J
Benzene		µg/L	<0.4 UJ	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene		µg/L	<1 UJ	<1	<1	<1	<1	<1	<1
Bromochloromethane		µg/L	<1 UJ	<1	<1	<1	<1	<1	<1
Bromodichloromethane		µg/L	<0.5 UJ	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform		µg/L	<1 UJ	<1	<1	<1	<1	<1	<1
Bromomethane		µg/L	<1 UJ	<1 UJ	<1	<1 UJ	<1 UJ	<1	<1 UJ
Carbon disulfide		µg/L	<1 UJ	<1	<1	<1	<1	<1	<1
Carbon tetrachloride		µg/L	<1 UJ	<1	0.493 J	<1	<1	0.397 J	<1
Chlorobenzene		µg/L	<0.5 UJ	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane		µg/L	<1 UJ	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	0.305 J	0.222 J	0.844	<0.3	0.125 J	7.47	0.698
Chloromethane		µg/L	<1 UJ	<1	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1 UJ
cis-1,2-Dichloroethene		µg/L	0.822 J	0.327 J	<1	<1	<1	1.6	0.803 J
cis-1,3-Dichloropropene		µg/L	<0.5 UJ	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane		µg/L	<0.5 UJ	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane		µg/L	<1 UJ	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane		µg/L	<1 UJ	<1	<1	<1 UJ	<1 UJ	<1	<1 UJ
Ethylbenzene		µg/L	<1 UJ	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene		µg/L	<0.6 UJ	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene		µg/L	<1 UJ	<1	<1	<1	<1	<1	<1
m-,p-Xylene		µg/L	<2 UJ	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)		µg/L	<10 UJ	<10	<10	<10 UJ	<10 UJ	<10	<10 UJ
Methyl t-butyl ether (MTBE)		µg/L	<5 UJ	<5	<5	<5	<5	<5	<5
Methylene chloride		µg/L	<1 UJ	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)		µg/L	<10 UJ	<10	<10	<10	<10	<10	<10
Naphthalene		µg/L	<1 UJ	<1	<1	<1	<1	<1	<1
n-Butylbenzene		µg/L	<1 UJ	<1	<1	<1	<1	<1	<1
n-Propylbenzene		µg/L	<1 UJ	<1	<1	<1	<1	<1	<1
o-Xylene		µg/L	<1 UJ	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene		µg/L	<1 UJ	<1	<1	<1	<1	<1	<1
sec-Butylbenzene		µg/L	<1 UJ	<1	<1	<1	<1	<1	<1
Styrene		µg/L	<1 UJ	<1	<1	<1	<1	<1	<1
tert-Butylbenzene		µg/L	<1 UJ	<1	<1	<1	<1	<1	<1
Tetrachloroethene		µg/L	0.867 J	0.476 J	<1	<1	<1	0.312 J	<1
Toluene		µg/L	<1 UJ	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene		µg/L	<1 UJ	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene		µg/L	<1 UJ	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	32.4 J	14	0.713 J	<1	<1	3.58	48.2
Trichlorofluoromethane		µg/L	<1 UJ	<1	<1	<1	<1	<1	<1
Vinyl chloride		µg/L	<1 UJ	<1	<1	<1	<1	<1	<1

Notes:
µg/L: micrograms per liter
DQE Flags:
J: Estimated
UJ: Estimated Non-Detect
<: Analyte not detected above RL
Methods:
8260B: Volatile Organic Compounds

TABLE F-3
DUNN FIELD ANALYTICAL RESULTS, APRIL 2013
ANNUAL LONG-TERM MONITORING - 2013
Defense Depot Memphis, Tennessee

Analyte	Well ID	MW-150-RE	MW-150-RE-DUP-11	MW-151	MW-152	MW-153	MW-154	MW-155
	LabID	L13050701-06	L13050701-19	L13040810-10	L13050701-07	L13040680-05	L13040808-05	L13040810-11
	Date	5/9/2013	5/9/2013	4/13/2013	5/9/2013	4/12/2013	4/14/2013	4/13/2013
	Units							
1,1,1,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	16.4	15.7	2.74 J	<0.5	<0.5	<0.5	0.552 J
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1 UJ	<1 UJ	<1	<1	<1	<1 UJ
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2	<2 UJ	<2 UJ	<2	<2	<2	<2 UJ
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	0.169 J	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
Acetone	µg/L	5.49 J	4.25 J	3.04 J	3.72 J	<10	<10 UJ	<10
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1 UJ	<1	<1	<1	<1	<1
Bromomethane	µg/L	<1 UJ	<1	<1 UJ	<1 UJ	<1	<1	<1 UJ
Carbon disulfide	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	0.892 J	<1	<1	<1	<1
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	0.375 J	<0.5	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.695	0.781	14.5	<0.3	<0.3	<0.3	0.16 J
Chloromethane	µg/L	<1	<1	<1 UJ	<1	<1	<1 UJ	<1 UJ
cis-1,2-Dichloroethene	µg/L	1.01	1.03	0.87 J	<1	<1	<1	<1
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1	<1 UJ	<1	<1	<1 UJ	<1 UJ
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10	<10 UJ	<10 UJ	<10	<10	<10	<10 UJ
Methyl t-butyl ether (MTBE)	µg/L	<5	<5	<5	<5	<5	<5	<5
Methylene chloride	µg/L	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	0.398 J	<1	<1	<1	0.373 J
Toluene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	47.7	50.1	8.14	0.53 J	<1	<1	1.16
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

Notes:
µg/L: micrograms per liter
DQE Flags:
J: Estimated
UJ: Estimated Non-Detect
<: Analyte not detected above RL
Methods:
8260B: Volatile Organic Compounds

TABLE F-3
DUNN FIELD ANALYTICAL RESULTS, APRIL 2013
ANNUAL LONG-TERM MONITORING - 2013
Defense Depot Memphis, Tennessee

Analyte	Well ID LabID Date Units	MW-157 L13040809-19 4/13/2013	MW-157-DUP-4 L13040810-02 4/13/2013	MW-158 L13040810-12 4/13/2013	MW-158A L13040810-13 4/13/2013	MW-159 L13050701-08 5/9/2013	MW-159-DUP-12 L13050701-20 5/9/2013	MW-160 L13040810-14 4/13/2013
1,1,1,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	0.494 J	<0.5 UJ	1.58 J	<0.5 UJ	19.4	20.6	<0.5 UJ
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	4.15	4.69	<1
1,1-Dichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	3.39	3.68	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1 UJ	<1 UJ	<1 UJ	<1	<1 UJ	<1 UJ
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2	<2 UJ	<2 UJ	<2 UJ	<2	<2 UJ	<2 UJ
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
Acetone	µg/L	5.66 J	<10	2.94 J	<10	3.95 J	3.08 J	<10
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1	<1 UJ	<1
Bromomethane	µg/L	<1	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1	<1 UJ
Carbon disulfide	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	2.88 J	<0.3 UJ	<0.3	<0.3	0.296 J	0.288 J	<0.3
Chloromethane	µg/L	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1	<1	<1 UJ
cis-1,2-Dichloroethene	µg/L	0.351 J	<1	<1	<1	28.4	33.9	<1
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1 UJ	<1 UJ	<1 UJ	<1	<1	<1 UJ
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10	<10 UJ	<10 UJ	<10 UJ	<10	<10 UJ	<10 UJ
Methyl t-butyl ether (MTBE)	µg/L	<5	<5	<5	<5	<5	<5	<5
Methylene chloride	µg/L	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	0.688 J	0.681 J	<1
Toluene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	3.41	3.97	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	2.49 J	<1 UJ	4.59	<1	181	225	<1
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	17.3	17.2	<1

Notes:
µg/L: micrograms per liter
DQE Flags:
J: Estimated
UJ: Estimated Non-Detect
<: Analyte not detected above RL
Methods:
8260B: Volatile Organic Compounds

TABLE F-3
DUNN FIELD ANALYTICAL RESULTS, APRIL 2013
ANNUAL LONG-TERM MONITORING - 2013
Defense Depot Memphis, Tennessee

Analyte	Well ID / LabID / Date / Units	MW-163 L13050701-09 5/9/2013	MW-164 L13040809-20 4/13/2013	MW-165 L13040810-15 4/13/2013	MW-165A L13040810-16 4/13/2013	MW-166 L13040808-06 4/14/2013	MW-166A L13040808-07 4/14/2013	MW-167 L13040810-17 4/13/2013
1,1,1,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	1.87	0.578	0.388 J	0.929	2.65	3.15	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
Acetone	µg/L	4.31 J	5.99 J	<10 UJ	<10 UJ	5.06 J	3.14 J	4.6 J
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromomethane	µg/L	<1 UJ	<1	<1	<1	<1	<1	<1
Carbon disulfide	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	0.9 J	<1	<1	0.838 J	0.276 J	<1
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.277 J	4.65	<0.3	<0.3	7.67	5.47	<0.3
Chloromethane	µg/L	<1	<1 UJ	<1 UJ	<1 UJ	<1	<1	<1 UJ
cis-1,2-Dichloroethene	µg/L	<1	0.905 J	<1	<1	1.58	1.1	<1
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1	<1 UJ	<1 UJ	<1	<1	<1 UJ
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	µg/L	<5	<5	<5	<5	<5	<5	<5
Methylene chloride	µg/L	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	0.527 J	0.306 J	<1	<1	0.539 J	<1	<1
Toluene	µg/L	<1	<1	<1	<1	<1	<1	0.863 J
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	7.86	5.36	2.38	0.473 J	5.34	2.87	<1
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

Notes:
µg/L: micrograms per liter
DQE Flags:
J: Estimated
UJ: Estimated Non-Detect
<: Analyte not detected above RL
Methods:
8260B: Volatile Organic Compounds

TABLE F-3
DUNN FIELD ANALYTICAL RESULTS, APRIL 2013
ANNUAL LONG-TERM MONITORING - 2013
Defense Depot Memphis, Tennessee

Analyte	Well ID / LabID / Date	Units	MW-169 L13040648-05 4/11/2013	MW-170 L13040648-06 4/11/2013	MW-171 L13040680-06 4/12/2013	MW-174 L13040687-11 4/12/2013	MW-174-DUP-6 L13040687-04 4/12/2013	MW-176 L13040809-21 4/13/2013	MW-180 L13050701-10 5/9/2013
1,1,1,2-Tetrachloroethane		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane		µg/L	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane		µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane		µg/L	<1	<1	0.19 J	<1	<1	<1	<1
1,1-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloropropene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane		µg/L	<2	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane		µg/L	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane		µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene		µg/L	<0.5	0.13 J	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane		µg/L	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane		µg/L	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene		µg/L	<1	<1	<1	<1	<1	<1	<1
2-Hexanone		µg/L	<10	<10	<10	<10	<10	<10	<10
4-Chlorotoluene		µg/L	<1	<1	<1	<1	<1	<1	<1
Acetone		µg/L	<10	<10	<10	<10	<10	<10	4.6 J
Benzene		µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane		µg/L	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform		µg/L	<1	<1	<1	<1	<1	<1	<1
Bromomethane		µg/L	<1 UJ	<1 UJ	<1	<1	<1	<1	<1 UJ
Carbon disulfide		µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene		µg/L	0.591	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane		µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	<0.3	<0.3	<0.3	0.158 J	0.152 J	0.275 J	<0.3
Chloromethane		µg/L	<1 UJ	<1 UJ	<1	<1	<1	<1 UJ	<1
cis-1,2-Dichloroethene		µg/L	<1	0.633 J	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane		µg/L	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane		µg/L	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene		µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
m-,p-Xylene		µg/L	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)		µg/L	<10 UJ	<10 UJ	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)		µg/L	<5	<5	<5	<5	<5	<5	<5
Methylene chloride		µg/L	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)		µg/L	<10	<10	<10	<10	<10	<10	<10
Naphthalene		µg/L	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
o-Xylene		µg/L	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene		µg/L	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
Styrene		µg/L	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene		µg/L	<1	<1	<1	<1	<1	<1	<1
Toluene		µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene		µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	<1	<1	<1	<1	<1	0.3 J	<1
Trichlorofluoromethane		µg/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1	<1

Notes:
µg/L: micrograms per liter
DQE Flags:
J: Estimated
UJ: Estimated Non-Detect
<: Analyte not detected above RL
Methods:
8260B: Volatile Organic Compounds

TABLE F-3
DUNN FIELD ANALYTICAL RESULTS, APRIL 2013
ANNUAL LONG-TERM MONITORING - 2013
Defense Depot Memphis, Tennessee

Analyte	Well ID / LabID / Date	Units	MW-182 L13040808-08 4/14/2013	MW-184 L13050701-13 5/9/2013	MW-187 L13040687-12 4/12/2013	MW-190 L13050701-14 5/9/2013	MW-220 L13040809-22 4/13/2013	MW-221 L13040809-23 4/13/2013	MW-222 L13040809-24 4/13/2013
1,1,1,2-Tetrachloroethane		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane		µg/L	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane		µg/L	<0.5	0.353 J	<0.5	8.93	<0.5	<0.5	<0.5
1,1,2-Trichloroethane		µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane		µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene		µg/L	<1	<1	<1	<1	1.76	<1	<1
1,1-Dichloropropene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane		µg/L	<1	<1 UJ	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane		µg/L	<2	<2 UJ	<2	<2	<2	<2	<2
1,2-Dibromoethane		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane		µg/L	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane		µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane		µg/L	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane		µg/L	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene		µg/L	<1	<1	<1	<1	<1	<1	<1
2-Hexanone		µg/L	<10	<10	<10	<10	<10	<10	<10
4-Chlorotoluene		µg/L	<1	<1	<1	<1	<1	<1	<1
Acetone		µg/L	<10 UJ	3.08 J	<10	4.61 J	5.15 J	<10	4.69 J
Benzene		µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane		µg/L	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform		µg/L	<1	<1 UJ	<1	<1	<1	<1	<1
Bromomethane		µg/L	<1	<1	<1	<1 UJ	<1	<1	<1
Carbon disulfide		µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride		µg/L	<1	0.923 J	<1	<1	<1	<1	<1
Chlorobenzene		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane		µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	<0.3	5.03	0.166 J	0.274 J	0.138 J	0.156 J	<0.3
Chloromethane		µg/L	<1 UJ	<1	<1	<1	<1 UJ	<1 UJ	<1 UJ
cis-1,2-Dichloroethene		µg/L	<1	0.587 J	<1	0.429 J	<1	<1	<1
cis-1,3-Dichloropropene		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane		µg/L	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane		µg/L	<1 UJ	<1	<1	<1	<1	<1	<1
Ethylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene		µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
m-,p-Xylene		µg/L	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)		µg/L	<10	<10 UJ	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)		µg/L	<5	<5	<5	<5	<5	<5	<5
Methylene chloride		µg/L	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)		µg/L	<10	<10	<10	<10	<10	<10	<10
Naphthalene		µg/L	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
o-Xylene		µg/L	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene		µg/L	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
Styrene		µg/L	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene		µg/L	<1	0.261 J	0.267 J	0.58 J	3.37	<1	0.312 J
Toluene		µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene		µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	<1	2.7	<1	20.4	4.97	<1	<1
Trichlorofluoromethane		µg/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1	<1

Notes:
µg/L: micrograms per liter
DQE Flags:
J: Estimated
UJ: Estimated Non-Detect
<: Analyte not detected above RL
Methods:
8260B: Volatile Organic Compounds

TABLE F-3
DUNN FIELD ANALYTICAL RESULTS, APRIL 2013
ANNUAL LONG-TERM MONITORING - 2013
Defense Depot Memphis, Tennessee

Analyte	Well ID / LabID / Date	Units	MW-223 L13040809-25 4/13/2013	MW-224 L13040809-26 4/13/2013	MW-224-DUP-7 L13040809-08 4/13/2013	MW-225 L13050701-15 5/9/2013	MW-226 L13040809-27 4/13/2013	MW-227 L13040687-13 4/12/2013	MW-228 L13040687-16 4/12/2013
1,1,1,2-Tetrachloroethane		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane		µg/L	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane		µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane		µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloropropene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane		µg/L	<2	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane		µg/L	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane		µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane		µg/L	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane		µg/L	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene		µg/L	<1	<1	<1	<1	<1	<1	<1
2-Hexanone		µg/L	<10	<10	<10	<10	<10	<10	<10
4-Chlorotoluene		µg/L	<1	<1	<1	<1	<1	<1	<1
Acetone		µg/L	5.27 J	<10	<10	4.22 J	<10 UJ	<10	<10
Benzene		µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane		µg/L	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform		µg/L	<1	<1	<1	<1	<1	<1	<1
Bromomethane		µg/L	<1	<1	<1 UJ	<1 UJ	<1	<1	<1
Carbon disulfide		µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane		µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	0.206 J	0.245 J	0.178 J	0.17 J	<0.3	0.223 J	<0.3
Chloromethane		µg/L	<1 UJ	<1 UJ	<1 UJ	<1	<1 UJ	<1	<1
cis-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane		µg/L	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane		µg/L	<1	<1	<1 UJ	<1	<1	<1	<1
Ethylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene		µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
m-,p-Xylene		µg/L	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)		µg/L	<10	<10	<10 UJ	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)		µg/L	<5	<5	<5	<5	<5	<5	<5
Methylene chloride		µg/L	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)		µg/L	<10	<10	<10	<10	<10	<10	<10
Naphthalene		µg/L	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
o-Xylene		µg/L	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene		µg/L	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
Styrene		µg/L	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene		µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene		µg/L	0.415 J	<1	<1	0.308 J	<1	0.405 J	<1
Toluene		µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene		µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	0.328 J	<1	<1	<1	<1	0.339 J	<1
Trichlorofluoromethane		µg/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1	<1

Notes:
µg/L: micrograms per liter
DQE Flags:
J: Estimated
UJ: Estimated Non-Detect
<: Analyte not detected above RL
Methods:
8260B: Volatile Organic Compounds

TABLE F-3
DUNN FIELD ANALYTICAL RESULTS, APRIL 2013
ANNUAL LONG-TERM MONITORING - 2013
Defense Depot Memphis, Tennessee

	Well ID	MW-230	MW-235	MW-235-DUP-8	MW-237	MW-241	MW-242	MW-243
	LabID	L13050701-16	L13040808-09	L13040808-01	L13040808-10	L13040808-11	L13040808-12	L13040808-13
	Date	5/9/2013	4/14/2013	4/14/2013	4/14/2013	4/14/2013	4/14/2013	4/14/2013
Analyte	**Units**							
1,1,1,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	µg/L	0.432 J	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.76
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	µg/L	1.06	<1	<1	0.22 J	<1	<1	<1
1,1-Dichloroethene	µg/L	12.6	<1	<1	1.93	<1	<1	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
Acetone	µg/L	4.3 J	<10 UJ	<10 UJ	<10 UJ	<10 UJ	<10 UJ	<10 UJ
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromomethane	µg/L	<1 UJ	<1	<1	<1	<1 UJ	<1 UJ	<1 UJ
Carbon disulfide	µg/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.288 J	<0.3	<0.3	<0.3	<0.3	0.183 J	<0.3
Chloromethane	µg/L	<1	<1	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1 UJ
cis-1,2-Dichloroethene	µg/L	0.562 J	<1	<1	0.353 J	<1	<1	<1
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1 UJ
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10	<10	<10	<10	<10 UJ	<10 UJ	<10 UJ
Methyl t-butyl ether (MTBE)	µg/L	<5	<5	<5	<5	<5	<5	<5
Methylene chloride	µg/L	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	33.7	<1	<1	<1	<1	<1	<1
Toluene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	60.1	<1	<1	<1	0.505 J	0.402 J	1.13
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

Notes:
µg/L: micrograms per liter
DQE Flags:
J: Estimated
UJ: Estimated Non-Detect
<: Analyte not detected above RL
Methods:
8260B: Volatile Organic Compounds

TABLE F-3
DUNN FIELD ANALYTICAL RESULTS, APRIL 2013
ANNUAL LONG-TERM MONITORING - 2013
Defense Depot Memphis, Tennessee

	Well ID	MW-244	MW-245	MW-246	MW-247	MW-248	MW-248-DUP-9	MW-249
	LabID	L13040808-14	L13040808-17	L13040808-18	L13040808-19	L13040810-18	L13040810-03	L13050701-17
	Date	4/14/2013	4/14/2013	4/14/2013	4/14/2013	4/13/2013	4/13/2013	5/9/2013
Analyte	**Units**							
1,1,1,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	1.24	0.988	3.05	0.646	<0.5	<0.5 UJ	1.2
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1	<1	<1	<1	<1 UJ	<1 UJ
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2	<2	<2	<2	<2	<2 UJ	<2 UJ
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
Acetone	µg/L	<10 UJ	<10 UJ	<10 UJ	<10 UJ	<10 UJ	<10	3.51 J
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1	<1	<1 UJ
Bromomethane	µg/L	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1	<1 UJ	<1
Carbon disulfide	µg/L	<1 J	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	1.67
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.205 J	0.292 J	<0.3	0.278 J	<0.3	<0.3	10.5
Chloromethane	µg/L	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	0.517 J
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10 UJ	<10 UJ	<10 UJ	<10 UJ	<10	<10 UJ	<10 UJ
Methyl t-butyl ether (MTBE)	µg/L	<5	<5	<5	<5	<5	<5	<5
Methylene chloride	µg/L	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	0.408 J	<1	<1	<1	<1	<1	0.478 J
Toluene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	1.92	0.656 J	0.46 J	<1	<1	<1	7.3
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

Notes:
µg/L: micrograms per liter
DQE Flags:
J: Estimated
UJ: Estimated Non-Detect
<: Analyte not detected above RL
Methods:
8260B: Volatile Organic Compounds

TABLE F-3
DUNN FIELD ANALYTICAL RESULTS, APRIL 2013
ANNUAL LONG-TERM MONITORING - 2013
Defense Depot Memphis, Tennessee

	Well ID	MW-250	MW-251
	LabID	L13040809-28	L13040808-20
	Date	4/13/2013	4/14/2013
Analyte	**Units**		
1,1,1,2-Tetrachloroethane	µg/L	<0.5	<0.5
1,1,1-Trichloroethane	µg/L	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<0.5 UJ	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1
1,1-Dichloroethane	µg/L	<1	0.603 J
1,1-Dichloroethene	µg/L	<1	4
1,1-Dichloropropene	µg/L	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1
1,2,3-Trichloropropane	µg/L	<1 UJ	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2 UJ	<2
1,2-Dibromoethane	µg/L	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5
1,2-Dichloropropane	µg/L	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1
2,2-Dichloropropane	µg/L	<1	<1
2-Chlorotoluene	µg/L	<1	<1
2-Hexanone	µg/L	<10	<10
4-Chlorotoluene	µg/L	<1	<1
Acetone	µg/L	<10	<10 UJ
Benzene	µg/L	<0.4	<0.4
Bromobenzene	µg/L	<1	<1
Bromochloromethane	µg/L	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5
Bromoform	µg/L	<1	<1
Bromomethane	µg/L	<1 UJ	<1 UJ
Carbon disulfide	µg/L	<1	<1
Carbon tetrachloride	µg/L	<1	<1
Chlorobenzene	µg/L	<0.5	<0.5
Chloroethane	µg/L	<1	<1
Chloroform	µg/L	<0.3	0.387
Chloromethane	µg/L	<1 UJ	<1 UJ
cis-1,2-Dichloroethene	µg/L	<1	<1
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5
Dibromomethane	µg/L	<1	<1
Dichlorodifluoromethane	µg/L	<1 UJ	<1 UJ
Ethylbenzene	µg/L	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1
m-,p-Xylene	µg/L	<2	<2
MEK (2-Butanone)	µg/L	<10 UJ	<10 UJ
Methyl t-butyl ether (MTBE)	µg/L	<5	<5
Methylene chloride	µg/L	<1	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10
Naphthalene	µg/L	<1	<1
n-Butylbenzene	µg/L	<1	<1
n-Propylbenzene	µg/L	<1	<1
o-Xylene	µg/L	<1	<1
p-Isopropyltoluene	µg/L	<1	<1
sec-Butylbenzene	µg/L	<1	<1
Styrene	µg/L	<1	<1
tert-Butylbenzene	µg/L	<1	<1
Tetrachloroethene	µg/L	<1	0.595 J
Toluene	µg/L	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1
Trichloroethene	µg/L	<1	<1
Trichlorofluoromethane	µg/L	<1	<1
Vinyl chloride	µg/L	<1	<1

Notes:
µg/L: micrograms per liter
DQE Flags:
J: Estimated
UJ: Estimated Non-Detect
<: Analyte not detected above RL
Methods:
8260B: Volatile Organic Compounds

TABLE F-4
DUNN FIELD ANALYTICAL RESULTS, OCTOBER 2013
ANNUAL LONG-TERM MONITORING - 2013
Defense Depot Memphis, Tennessee

Analyte	Well ID / Lab ID / Date	Units	MW-03 L13100923-01 10/10/2013	MW-06 L13100923-02 10/10/2013	MW-15 L13100923-03 10/10/2013	MW-28 L13100923-04 10/10/2013	MW-31 L13100923-25 10/10/2013	MW-54 L13100923-26 10/10/2013	MW-57 L13100923-05 10/10/2013
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	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane		ug/L	<0.5	<0.5	<0.5	<0.5	1.61	1.47	<0.5
1,1,2-Trichloroethane		ug/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane		ug/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene		ug/L	2.52	<1	<1	<1	1.91	<1	<1
1,1-Dichloropropene		ug/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene		ug/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane		ug/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene		ug/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene		ug/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane		ug/L	<2	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane		ug/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene		ug/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane		ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane		ug/L	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene		ug/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene		ug/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane		ug/L	<0.4	<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	<0.5
1-Chlorohexane		ug/L	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane		ug/L	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene		ug/L	<1	<1	<1	<1	<1	<1	<1
2-Hexanone		ug/L	<10	<10	<10	<10	<10	<10	<10
4-Chlorotoluene		ug/L	<1	<1	<1	<1	<1	<1	<1
Acetone		ug/L	<10	<10	<10	<10	5.49 J	8.13 J	<10
Benzene		ug/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene		ug/L	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane		ug/L	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane		ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform		ug/L	<1	<1	<1	<1	<1	<1	<1
Bromomethane		ug/L	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1 UJ
Carbon disulfide		ug/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride		ug/L	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene		ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane		ug/L	<1	<1	<1	<1	<1	<1	<1
Chloroform		ug/L	<0.3	2.38	1.25	0.476	0.175 J	0.246 J	2.52
Chloromethane		ug/L	<1 UJ	<1 UJ	<1 UJ	<1 UJ	0.616 J	0.937 J	<1 UJ
cis-1,2-Dichloroethene		ug/L	<1	0.572 J	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene		ug/L	<0.5	<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	<0.5
Dibromomethane		ug/L	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane		ug/L	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene		ug/L	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene		ug/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene		ug/L	<1	<1	<1	<1	<1	<1	<1
m-,p-Xylene		ug/L	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)		ug/L	<10	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)		ug/L	<5	<5	<5	<5	<5	<5	<5
Methylene chloride		ug/L	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)		ug/L	<10	<10	<10	<10	<10	<10	<10
Naphthalene		ug/L	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene		ug/L	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene		ug/L	<1	<1	<1	<1	<1	<1	<1
o-Xylene		ug/L	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene		ug/L	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene		ug/L	<1	<1	<1	<1	<1	<1	<1
Styrene		ug/L	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene		ug/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene		ug/L	5.32	<1	0.478 J	<1	5.32	0.436 J	<1
Toluene		ug/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene		ug/L	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene		ug/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene		ug/L	3.95	0.848 J	0.537 J	<1	7.15	5.02	0.77 J
Trichlorofluoromethane		ug/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride		ug/L	<1	<1	<1	<1	<1	<1	<1

Notes:
µg/L: micrograms per liter
DQE Flags:
J: Estimated
UJ: Estimated Non-Detect
<: Analyte not detected above RL
Methods:
8260B: Volatile Organic Compounds

TABLE F-4
DUNN FIELD ANALYTICAL RESULTS, OCTOBER 2013
ANNUAL LONG-TERM MONITORING - 2013
Defense Depot Memphis, Tennessee

Analyte	Well ID / Lab ID / Date	Units	MW-77 L13100923-06 10/10/2013	MW-77-DUP-1 L13100923-23 10/10/2013	MW-79 L13100923-27 10/10/2013	MW-87 L13100923-07 10/10/2013	MW-134 L13100923-08 10/10/2013	MW-144 L13100923-28 10/10/2013	MW-149 L13100923-29 10/10/2013
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	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane		ug/L	5.76	5.13	<0.5	<0.5	<0.5	17.5	1.39
1,1,2-Trichloroethane		ug/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane		ug/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene		ug/L	<1	<1	1.93	<1	<1	<1	<1
1,1-Dichloropropene		ug/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene		ug/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane		ug/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene		ug/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene		ug/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane		ug/L	<2	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane		ug/L	<1	<1	<1 J	<1	<1	<1	<1
1,2-Dichlorobenzene		ug/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane		ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane		ug/L	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene		ug/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene		ug/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane		ug/L	<0.4	<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	<0.5
1-Chlorohexane		ug/L	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane		ug/L	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene		ug/L	<1	<1	<1	<1	<1	<1	<1
2-Hexanone		ug/L	<10	<10	<10	<10	<10	<10	<10
4-Chlorotoluene		ug/L	<1	<1	<1	<1	<1	<1	<1
Acetone		ug/L	<10	3.72 J	<10	<10	<10	6.48 J	2.76 J
Benzene		ug/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene		ug/L	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane		ug/L	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane		ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform		ug/L	<1	<1	<1	<1	<1	<1	<1
Bromomethane		ug/L	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1	<1
Carbon disulfide		ug/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride		ug/L	<1	<1	<1	<1	<1	<1	0.502 J
Chlorobenzene		ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane		ug/L	<1	<1	<1	<1	<1	<1	<1
Chloroform		ug/L	0.41	0.351	<0.3	3.46	0.129 J	0.549	5.56
Chloromethane		ug/L	<1 UJ	<1	<1 UJ	<1 UJ	<1	<1	<1
cis-1,2-Dichloroethene		ug/L	<1	<1	<1	<1	<1	1.08	1.1
cis-1,3-Dichloropropene		ug/L	<0.5	<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	<0.5
Dibromomethane		ug/L	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane		ug/L	<1	<1	<1	<1	<1	<2	<2
Ethylbenzene		ug/L	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene		ug/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene		ug/L	<1	<1	<1	<1	<1	<1	<1
m-,p-Xylene		ug/L	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)		ug/L	<10	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)		ug/L	<5	<5	<5	<5	<5	<5	<5
Methylene chloride		ug/L	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)		ug/L	<10	<10	<10	<10	<10	<10	<10
Naphthalene		ug/L	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene		ug/L	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene		ug/L	<1	<1	<1	<1	<1	<1	<1
o-Xylene		ug/L	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene		ug/L	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene		ug/L	<1	<1	<1	<1	<1	<1	<1
Styrene		ug/L	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene		ug/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene		ug/L	0.371 J	0.569 J	3.6	<1	0.883 J	0.788 J	0.437 J
Toluene		ug/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene		ug/L	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene		ug/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene		ug/L	15.6	12.3	2.67	0.677 J	<1	41.7	2.88
Trichlorofluoromethane		ug/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride		ug/L	<1	<1	<1	<1	<1	<1	<1

Notes:
µg/L: micrograms per liter
DQE Flags:
J: Estimated
UJ: Estimated Non-Detect
<: Analyte not detected above RL
Methods:
8260B: Volatile Organic Compounds

TABLE F-4
DUNN FIELD ANALYTICAL RESULTS, OCTOBER 2013
ANNUAL LONG-TERM MONITORING - 2013
Defense Depot Memphis, Tennessee

Analyte	Well ID / Lab ID / Date	Units	MW-150 L13100923-30 10/10/2013	MW-151 L13100923-31 10/10/2013	MW-157 L13100923-32 10/10/2013	MW-157-DUP-2 L13100923-51 10/10/2013	MW-159 L13100923-33 10/10/2013	MW-163 L13100923-34 10/10/2013	MW-164 L13100923-35 10/10/2013
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	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane		ug/L	13.8	2.48	0.756 J	<0.5	18.2	0.739	0.35 J
1,1,2-Trichloroethane		ug/L	<1	<1	<1	<1	3.87	<1	<1
1,1-Dichloroethane		ug/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene		ug/L	<1	<1	<1	<1	4.66	<1	<1
1,1-Dichloropropene		ug/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene		ug/L	<1	<1	<1	<1	0.237 JB	0.174 JB	<1
1,2,3-Trichloropropane		ug/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene		ug/L	<1	<1	<1	<1	0.324 JB	0.285 JB	0.228 JB
1,2,4-Trimethylbenzene		ug/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane		ug/L	<2	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane		ug/L	<1	<1	<1	<1 J	<1	<1	<1
1,2-Dichlorobenzene		ug/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane		ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane		ug/L	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene		ug/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene		ug/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane		ug/L	<0.4	<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	<0.5
1-Chlorohexane		ug/L	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane		ug/L	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene		ug/L	<1	<1	<1	<1	<1	<1	<1
2-Hexanone		ug/L	<10	<10	<10	<10	<10	<10	<10
4-Chlorotoluene		ug/L	<1	<1	<1	<1	<1	<1	<1
Acetone		ug/L	6.65 J	4.86 J	3.73 J	<10	5.15 J	5.93 J	4.5 J
Benzene		ug/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene		ug/L	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane		ug/L	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane		ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform		ug/L	<1	<1	<1	<1	<1	<1	<1
Bromomethane		ug/L	<1	<1	<1	<1 UJ	<1	<1	<1
Carbon disulfide		ug/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride		ug/L	<1	0.709 J	<1	<1	<1	<1	0.454 J
Chlorobenzene		ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane		ug/L	<1	<1	<1	<1	<1	<1	<1
Chloroform		ug/L	0.574	10.6	0.486	0.434	0.197 J	0.178 J	2.03
Chloromethane		ug/L	<1	<1	<1	<1 UJ	<1	<1	0.678 J
cis-1,2-Dichloroethene		ug/L	0.743 J	0.801 J	<1	<1	47.3	<1	0.474 J
cis-1,3-Dichloropropene		ug/L	<0.5	<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	<0.5
Dibromomethane		ug/L	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane		ug/L	<2	<2	<1	<1	<1	<1	<1
Ethylbenzene		ug/L	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene		ug/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene		ug/L	<1	<1	<1	<1	<1	<1	<1
m-,p-Xylene		ug/L	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)		ug/L	<10	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)		ug/L	<5	<5	<5	<5	<5	<5	<5
Methylene chloride		ug/L	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)		ug/L	<10	<10	<10	<10	<10	<10	<10
Naphthalene		ug/L	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene		ug/L	<1	<1	<1	<1	0.436 JB	<1	<1
n-Propylbenzene		ug/L	<1	<1	<1	<1	<1	<1	<1
o-Xylene		ug/L	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene		ug/L	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene		ug/L	<1	<1	<1	<1	<1	<1	<1
Styrene		ug/L	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene		ug/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene		ug/L	0.275 J	0.347 J	<1	<1	0.789 J	0.856 J	<1
Toluene		ug/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene		ug/L	<1	<1	<1	<1	3.41	<1	<1
trans-1,3-Dichloropropene		ug/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene		ug/L	33.6	5.67	0.837 J	0.872 J	129	2.82	2.75
Trichlorofluoromethane		ug/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride		ug/L	<1	<1	<1	<1	15.4	<1	<1

Notes:
µg/L: micrograms per liter
DQE Flags:
J: Estimated
UJ: Estimated Non-Detect
<: Analyte not detected above RL
Methods:
8260B: Volatile Organic Compounds

TABLE F-4
DUNN FIELD ANALYTICAL RESULTS, OCTOBER 2013
ANNUAL LONG-TERM MONITORING - 2013
Defense Depot Memphis, Tennessee

Analyte	Well ID Lab ID Date Units	MW-165A L13100923-37 10/10/2013	MW-165 L13100923-36 10/10/2013	MW-166A L13100923-39 10/10/2013	MW-166 L13100923-38 10/10/2013	MW-174 L13100923-11 10/10/2013	MW-182-101113 L13100994-01 10/11/2013	MW-184 L13100923-40 10/10/2013
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	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	0.43 J	<0.5	0.936	2.32	<0.5	<0.5	0.344 J
1,1,2-Trichloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloropropene	ug/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	<1	0.212 JB	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	<2 UJ	<2	<2 UJ	<2 UJ	<2	<2	<2 UJ
1,2-Dibromoethane	ug/L	<1	<1	<1	<1	<1	<1 J	<1
1,2-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	ug/L	<0.4	<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	<0.5
1-Chlorohexane	ug/L	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	ug/L	<1	<1	<1	<1	<1	<1	<1
2-Hexanone	ug/L	<10 UJ	<10	<10 UJ	<10 UJ	<10	<10	<10 UJ
4-Chlorotoluene	ug/L	<1	<1	<1	<1	<1	<1	<1
Acetone	ug/L	5.47 J	2.92 J	6.18 J	5.06 J	<10	<10	5.54 J
Benzene	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	ug/L	<1	<1	<1	<1	<1	<1	<1
Bromomethane	ug/L	<1	<1	<1	<1	<1 UJ	<1 UJ	<1
Carbon disulfide	ug/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	ug/L	<1	<1	0.506 J	0.396 J	<1	<1	0.879 J
Chlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	ug/L	0.612	0.225 J	5.92	6.4	0.135 J	<0.3	4.61
Chloromethane	ug/L	<1	<1	<1	<1	<1	<1 UJ	<1
cis-1,2-Dichloroethene	ug/L	<1	<1	0.42 J	1.52	<1	<1	0.442 J
cis-1,3-Dichloropropene	ug/L	<0.5	<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	<0.5
Dibromomethane	ug/L	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	ug/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1
m-,p-Xylene	ug/L	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	ug/L	<10	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	ug/L	<5	<5	<5	<5	<5	<5	<5
Methylene chloride	ug/L	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	ug/L	<10	<10	<10	<10	<10	<10	<10
Naphthalene	ug/L	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1
o-Xylene	ug/L	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	ug/L	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1
Styrene	ug/L	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	<1	<1	0.435 J	0.377 J	<1	<1	0.366 J
Toluene	ug/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	ug/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	ug/L	0.519 J	1.47	2.41	4.12	<1	<1	2.29
Trichlorofluoromethane	ug/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	ug/L	<1	<1	<1	<1	<1	<1	<1

Notes:
µg/L: micrograms per liter
DQE Flags:
J: Estimated
UJ: Estimated Non-Detect
<: Analyte not detected above RL
Methods:
8260B: Volatile Organic Compounds

TABLE F-4
DUNN FIELD ANALYTICAL RESULTS, OCTOBER 2013
ANNUAL LONG-TERM MONITORING - 2013
Defense Depot Memphis, Tennessee

	Well ID	MW-184-DUP-3	MW-190	MW-220	MW-221	MW-222	MW-223	MW-224
	Lab ID	L13100923-52	L13100923-41	L13100923-12	L13100923-15	L13100923-16	L13100923-17	L13100923-18
	Date	10/10/2013	10/10/2013	10/10/2013	10/10/2013	10/10/2013	10/10/2013	10/10/2013
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	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	0.231 J	9.08	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	<1	<1	1.16	<1	<1	<1	<1
1,1-Dichloropropene	ug/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	<2	<2 UJ	<2 UJ	<2	<2	<2	<2
1,2-Dibromoethane	ug/L	<1 J	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	ug/L	<0.4	<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	<0.5
1-Chlorohexane	ug/L	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	ug/L	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	ug/L	<1	<1	<1	<1	<1	<1	<1
2-Hexanone	ug/L	<10	<10 UJ	<10 UJ	<10	<10	<10	<10
4-Chlorotoluene	ug/L	<1	<1	<1	<1	<1	<1	<1
Acetone	ug/L	4.19 J	5.52 J	5.23 J	<10	4.91 J	<10	<10
Benzene	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	ug/L	<1	<1	<1	<1	<1	<1	<1
Bromomethane	ug/L	<1 UJ	<1	<1	<1 UJ	<1 UJ	<1 UJ	<1 UJ
Carbon disulfide	ug/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	ug/L	0.912 J	<1	<1	<1	<1	<1	<1
Chlorobenzene	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	ug/L	4.6	0.498	0.126 J	<0.3	<0.3	0.217 J	0.142 J
Chloromethane	ug/L	<1 UJ	0.56 J	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	0.383 J	0.401 J	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	ug/L	<0.5	<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	<0.5
Dibromomethane	ug/L	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	ug/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1
m-,p-Xylene	ug/L	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	ug/L	<10	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)	ug/L	<5	<5	<5	<5	<5	<5	<5
Methylene chloride	ug/L	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	ug/L	<10	<10	<10	<10	<10	<10	<10
Naphthalene	ug/L	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1
o-Xylene	ug/L	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	ug/L	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1
Styrene	ug/L	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	0.366 J	0.85 J	2.92	<1	<1	0.421 J	<1
Toluene	ug/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	ug/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	ug/L	2.14	23.9	4.24	<1	1.44	<1	<1
Trichlorofluoromethane	ug/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	ug/L	<1	<1	<1	<1	<1	<1	<1

Notes:
µg/L: micrograms per liter
DQE Flags:
J: Estimated
UJ: Estimated Non-Detect
<: Analyte not detected above RL
Methods:
8260B: Volatile Organic Compounds

TABLE F-4
DUNN FIELD ANALYTICAL RESULTS, OCTOBER 2013
ANNUAL LONG-TERM MONITORING - 2013
Defense Depot Memphis, Tennessee

Analyte	Well ID / Lab ID / Date	Units	MW-225 L13100923-19 10/10/2013	MW-226 L13100923-20 10/10/2013	MW-227 L13100923-21 10/10/2013	MW-228 L13100923-22 10/10/2013	MW-228-DUP-4 L13100923-24 10/10/2013	MW-242 L13100923-42 10/10/2013	MW-243 L13100923-43 10/10/2013
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	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane		ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.89
1,1,2-Trichloroethane		ug/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane		ug/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene		ug/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloropropene		ug/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene		ug/L	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane		ug/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene		ug/L	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene		ug/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane		ug/L	<2	<2	<2	<2	<2	<2 UJ	<2 UJ
1,2-Dibromoethane		ug/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene		ug/L	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane		ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane		ug/L	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene		ug/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene		ug/L	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane		ug/L	<0.4	<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	<0.5
1-Chlorohexane		ug/L	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane		ug/L	<1	<1	<1	<1	<1	<1	<1
2-Chlorotoluene		ug/L	<1	<1	<1	<1	<1	<1	<1
2-Hexanone		ug/L	<10	<10	<10	<10	<10	<10 UJ	<10 UJ
4-Chlorotoluene		ug/L	<1	<1	<1	<1	<1	<1	<1
Acetone		ug/L	<10	<10	<10	<10	<10	3.64 J	3.94 J
Benzene		ug/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene		ug/L	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane		ug/L	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane		ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform		ug/L	<1	<1	<1	<1	<1	<1	<1
Bromomethane		ug/L	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1	<1
Carbon disulfide		ug/L	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride		ug/L	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene		ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane		ug/L	<1	<1	<1	<1	<1	<1	<1
Chloroform		ug/L	0.207 J	<0.3	0.356	<0.3	<0.3	0.164 J	<0.3
Chloromethane		ug/L	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene		ug/L	<1	<1	0.268 J	<1	<1	<1	<1
cis-1,3-Dichloropropene		ug/L	<0.5	<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	<0.5
Dibromomethane		ug/L	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane		ug/L	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene		ug/L	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene		ug/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene		ug/L	<1	<1	<1	<1	<1	<1	<1
m-,p-Xylene		ug/L	<2	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)		ug/L	<10	<10	<10	<10	<10	<10	<10
Methyl t-butyl ether (MTBE)		ug/L	<5	<5	<5	<5	<5	<5	<5
Methylene chloride		ug/L	<1	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)		ug/L	<10	<10	<10	<10	<10	<10	<10
Naphthalene		ug/L	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene		ug/L	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene		ug/L	<1	<1	<1	<1	<1	<1	<1
o-Xylene		ug/L	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene		ug/L	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene		ug/L	<1	<1	<1	<1	<1	<1	<1
Styrene		ug/L	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene		ug/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene		ug/L	0.6 J	<1	0.318 J	<1	<1	<1	<1
Toluene		ug/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene		ug/L	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene		ug/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene		ug/L	<1	<1	0.523 J	<1	<1	0.5 J	0.949 J
Trichlorofluoromethane		ug/L	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride		ug/L	<1	<1	<1	<1	<1	<1	<1

Notes:
µg/L: micrograms per liter
DQE Flags:
J: Estimated
UJ: Estimated Non-Detect
<: Analyte not detected above RL
Methods:
8260B: Volatile Organic Compounds

TABLE F-4
DUNN FIELD ANALYTICAL RESULTS, OCTOBER 2013
ANNUAL LONG-TERM MONITORING - 2013
Defense Depot Memphis, Tennessee

Analyte	Well ID / Lab ID / Date	Units	MW-244 L13100923-44 10/10/2013	MW-245 L13100923-47 10/10/2013	MW-246 L13100923-48 10/10/2013	MW-247 L13100923-49 10/10/2013	MW-249 L13100923-50 10/10/2013	MW-249-DUP-5 L13100923-53 10/10/2013
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	1.1	0.519	2.85	0.664	1.51	1.52
1,1,2-Trichloroethane		ug/L	<1	<1	<1	<1	<1	<1
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 UJ	<2 UJ	<2 UJ	<2 UJ	<2	<2
1,2-Dibromoethane		ug/L	<1	<1	<1	<1	<1 J	<1 J
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 UJ	<10 UJ	<10 UJ	<10 UJ	<10	<10
4-Chlorotoluene		ug/L	<1	<1	<1	<1	<1	<1
Acetone		ug/L	4.47 J	5.26 J	3.8 J	3.63 J	7.32 J	5.41 J
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 UJ	<1 UJ
Carbon disulfide		ug/L	<1	<1	<1	<1	<1	<1
Carbon tetrachloride		ug/L	<1	<1	<1	<1	2.03	2.04
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	0.216 J	<0.3	<0.3	0.133 J	11	11
Chloromethane		ug/L	<1	0.517 J	0.568 J	0.728 J	<1 UJ	<1 UJ
cis-1,2-Dichloroethene		ug/L	<1	<1	<1	<1	0.41 J	0.354 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	0.462 J	<1	<1	<1	0.591 J	0.609 J
Toluene		ug/L	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene		ug/L	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene		ug/L	<1	<1	<1	<1	<1	<1
Trichloroethene		ug/L	1.78	0.606 J	1.05	0.304 J	7.3	7.17
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
DQE Flags:
J: Estimated
UJ: Estimated Non-Detect
<: Analyte not detected above RL
Methods:
8260B: Volatile Organic Compounds

TABLE F-5
MAIN INSTALLATION QA ANALYTICAL RESULTS, 2013
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

	Well ID	TB-2-LS-17	TB-1-LS-17	TB-2-LA-18	TB-2-LA-18	TB-1-LA-18	LTM-RB1-LA-18
	Lab ID	L13040649-02	L13040604-39	L13101112-14	L13101112-15	L13101116-04	L13101112-11
	Date	TB-2-LS-17	TB-1-LS-17	10/12/2013	10/7/2013	10/11/2013	10/12/2013
Analyte	**Units**	L13040649-02	L13040604-39	L13101112-14	L13101112-15	L13101116-04	L13101112-11
1,1,1,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	<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
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2	<2	<2	<2	<2 UJ	<2
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1
Acetone	µg/L	<10	<10	2.6	<10	<10 UJ	3.45
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1	<1
Bromomethane	µg/L	<1	<1	<1	<1	<1	<1
Carbon disulfide	µg/L	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chloromethane	µg/L	<1	<1	0.517 J	<1	<1	0.549 J
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10	<10	<10	<10	<10 UJ	<10
Methyl t-butyl ether (MTBE)	µg/L	<5	<5	<5	<5	<5	<5
Methylene chloride	µg/L	<1	<1	0.493 J	0.5 J	<1	0.276 J
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1
Toluene	µg/L	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
µg/L: micrograms per liter
DQE Flags:
J: Estimated
UJ: Estimated Non-Detect
<: Analyte not detected above RL
Methods:
8260B: Volatile Organic Compounds

TABLE F-6
DUNN FIELD QA ANALYTICAL RESULTS, 2013
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

Analyte	Well ID LabID Date Units	RB1-ODLB-6 L13040687-17 4/12/2013	RB2-ODLB-6 L13040687-18 4/12/2013	TB-1-ODLB-6 L13040648-01 4/11/2013	TB-2-ODLB-6 L13040680-02 4/12/2013	TB-4-ODLB-6 L13040808-03 4/14/2013	TB-3-ODLB-6 L13040809-09 4/13/2013
1,1,1,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	<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
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	µg/L	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	µg/L	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	µg/L	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	0.26 J	0.253 J	<0.5	<0.5	<0.5	<0.5
1-Chlorohexane	µg/L	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	µg/L	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1
2-Hexanone	µg/L	<10	<10	<10 UJ	<10	<10	<10
4-Chlorotoluene	µg/L	<1	<1	<1	<1	<1	<1
Acetone	µg/L	<10	<10	<10	<10	<10 UJ	<10
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<1	<1	<1	<1	<1	<1
Bromomethane	µg/L	<1	<1	<1 UJ	<1	<1	<1 UJ
Carbon disulfide	µg/L	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chloromethane	µg/L	<1	<1	<1 UJ	<1	<1 UJ	<1 UJ
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	µg/L	<1	<1	<1	<1	<1 UJ	<1 UJ
Ethylbenzene	µg/L	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1	<1
m-,p-Xylene	µg/L	<2	<2	<2	<2	<2	<2
MEK (2-Butanone)	µg/L	<10	<10	<10 UJ	<10	<10	<10 UJ
Methyl t-butyl ether (MTBE)	µg/L	<5	<5	<5	<5	<5	<5
Methylene chloride	µg/L	<1	<1	<1	<1	<1	<1
MIBK (methyl isobutyl ketone)	µg/L	<10	<10	<10 UJ	<10	<10	<10
Naphthalene	µg/L	<1	<1	<1	<1	<1	<1
n-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1
n-Propylbenzene	µg/L	<1	<1	<1	<1	<1	<1
o-Xylene	µg/L	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	µg/L	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1
Styrene	µg/L	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1
Toluene	µg/L	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	µg/L	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
µg/L: micrograms per liter
DQE Flags:
J: Estimated
UJ: Estimated Non-Detect
<: Analyte not detected above RL
Methods:
8260B: Volatile Organic Compounds

TABLE F-6
DUNN FIELD QA ANALYTICAL RESULTS, 2013
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

Analyte	Well ID / LabID / Date	Units	TB-9-ODLB-6 L13050701-21 5/9/2013	TB-1-ODLS-7 L13100923-54 10/10/2013
1,1,1,2-Tetrachloroethane		µg/L	<0.5	<0.5
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-Dichloroethane		µg/L	<1	<1
1,1-Dichloroethene		µg/L	<1	<1
1,1-Dichloropropene		µg/L	<1	<1
1,2,3-Trichlorobenzene		µg/L	<1	<1
1,2,3-Trichloropropane		µg/L	<1 UJ	<1
1,2,4-Trichlorobenzene		µg/L	<1	<1
1,2,4-Trimethylbenzene		µg/L	<1	<1
1,2-Dibromo-3-chloropropane		µg/L	<2 UJ	<2 UJ
1,2-Dibromoethane		µg/L	<1	<1
1,2-Dichlorobenzene		µg/L	<1	<1
1,2-Dichloroethane		µg/L	<0.5	<0.5
1,2-Dichloropropane		µg/L	<1	<1
1,3,5-Trimethylbenzene		µg/L	<1	<1
1,3-Dichlorobenzene		µg/L	<1	<1
1,3-Dichloropropane		µg/L	<0.4	<0.4
1,4-Dichlorobenzene		µg/L	<0.5	<0.5
1-Chlorohexane		µg/L	<1	<1
2,2-Dichloropropane		µg/L	<1	<1
2-Chlorotoluene		µg/L	<1	<1
2-Hexanone		µg/L	<10	<10 UJ
4-Chlorotoluene		µg/L	<1	<1
Acetone		µg/L	6.52 J	<10
Benzene		µg/L	<0.4	<0.4
Bromobenzene		µg/L	<1	<1
Bromochloromethane		µg/L	<1	<1
Bromodichloromethane		µg/L	<0.5	<0.5
Bromoform		µg/L	<1 UJ	<1
Bromomethane		µg/L	<1	<1
Carbon disulfide		µg/L	<1	<1
Carbon tetrachloride		µg/L	<1	<1
Chlorobenzene		µg/L	<0.5	<0.5
Chloroethane		µg/L	<1	<1
Chloroform		µg/L	<0.3	<0.3
Chloromethane		µg/L	<1	<1
cis-1,2-Dichloroethene		µg/L	<1	<1
cis-1,3-Dichloropropene		µg/L	<0.5	<0.5
Dibromochloromethane		µg/L	<0.5	<0.5
Dibromomethane		µg/L	<1	<1
Dichlorodifluoromethane		µg/L	<1	<1
Ethylbenzene		µg/L	<1	<1
Hexachlorobutadiene		µg/L	<0.6	<0.6
Isopropylbenzene		µg/L	<1	<1
m-,p-Xylene		µg/L	<2	<2
MEK (2-Butanone)		µg/L	<10 UJ	<10
Methyl t-butyl ether (MTBE)		µg/L	<5	<5
Methylene chloride		µg/L	0.631 J	<1
MIBK (methyl isobutyl ketone)		µg/L	<10	<10
Naphthalene		µg/L	<1	<1
n-Butylbenzene		µg/L	<1	<1
n-Propylbenzene		µg/L	<1	<1
o-Xylene		µg/L	<1	<1
p-Isopropyltoluene		µg/L	<1	<1
sec-Butylbenzene		µg/L	<1	<1
Styrene		µg/L	<1	<1
tert-Butylbenzene		µg/L	<1	<1
Tetrachloroethene		µg/L	<1	<1
Toluene		µg/L	<1	<1
trans-1,2-Dichloroethene		µg/L	<1	<1
trans-1,3-Dichloropropene		µg/L	<1	<1
Trichloroethene		µg/L	<1	<1
Trichlorofluoromethane		µg/L	<1	<1
Vinyl chloride		µg/L	<1	<1

Notes:
µg/L: micrograms per liter
DQE Flags:
J: Estimated
UJ: Estimated Non-Detect
<: Analyte not detected above RL
Methods:
8260B: Volatile Organic Compounds

APPENDIX H

DATA QUALITY EVALUATION

DATA QUALITY EVALUATION

Main Installation: Long-Term Monitoring (LTM) at the Main Installation was conducted by HDR during two sample events in 2013. Wells were selected for sampling in accordance with the MI LTM Plan in Appendix B of the *Main Installation Final Remedial Design, Rev.1* (CH2M Hill, 2004). Groundwater samples were submitted to Microbac Laboratories in Marietta, Ohio for analysis.

Dunn Field: Long-Term Monitoring at Dunn Field was conducted by HDR during two sample events in 2013. Wells were selected for sampling in accordance with the Dunn Field LTM Plan in Appendix C of *Off Depot Groundwater Final Remedial Design, Rev. 1* (CH2M HILL, 2008). Groundwater samples were submitted to Microbac Laboratories in Marietta, Ohio for analysis.

Field activities and laboratory analyses were performed in accordance with the *Remedial Action Sampling and Analysis Plan, Rev. 1* (RA SAP) (MACTEC 2005) and *Remedial Action Operations and Long Term Monitoring Quality Assurance Project Plan, Rev. 0* (QAPP) (HDR 2011c). The QAPP is consistent with the RA SAP but has not received final approval.

The data quality evaluation (DQE) process involves assessment of all field and laboratory procedures, including data validation, in accordance with the RA SAP/QAPP, completed by Diane Short and Associates, Inc (DSA). The data validation reports are included in this appendix. This assessment is designed to evaluate 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.

FIELD ACTIVITIES AND FIELD QUALITY CONTROL

Main Installation: The field effort included the collection of groundwater samples from designated wells and piezometers during the semiannual and annual Main Installation LTM events in April and October 2013, respectively. The Main Installation LTM well locations are shown on Figure 5 of the report.

Dunn Field: The field effort included the collection of groundwater samples from designated wells during the biennial and semiannual Dunn Field events in April and October 2013, respectively. The Dunn Field LTM well locations are shown on Figure 6 of the report.

Field QC samples were collected at selected wells to evaluate sampling technique and decontamination procedures. These samples included field duplicates, trip blanks and field equipment (rinsate) blanks. Additional samples were collected at selected locations for matrix spike/matrix spike duplicate (MS/MSD) analyses in the laboratory. Sample bottles met U.S. Environmental Protection Agency

(USEPA) requirements for environmentally clean containers. Sample labels were pre-printed to facilitate sample tracking from the field through the laboratory. Documentation of the sampling was performed in the field to ensure that the samples collected, sample labels, chain-of-custody (COC) records, which were generated electronically using a personal digital assistant (PDA) supplied by the laboratory, and request for analysis were consistent. Where necessary, additional COC forms were filled out manually. Custody seals were placed on each sample cooler prior to shipment by common carrier.

ANALYTICAL METHODS

The groundwater samples were analyzed for Target Compound List (TCL) volatile organic compounds (VOCs) by method SW 8260B.

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.

DQE SUMMARY

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 DQOs stated in the RA SAP/QAPP. 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/QAPP 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 (bias) and Precision (Surrogates, MS/MSD, LCS Recoveries)
- Laboratory Performance Criteria (Blanks, Instrument Performance Checks)

Field QC parameters were evaluated through field duplicates, rinsate 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 as attachments in this Appendix. The SDGs and associated groundwater samples are listed on Table G-1 (Main Installation) and Table G-2 (Dunn Field).

The following sections provide summary discussions of the required data qualifications for each sampling event. A Level III DQE was performed and the data quality indicators (DQIs), expressed in terms of precision, accuracy, representativeness, comparability, completeness, and sensitivity, were assessed. This included the evaluation of sample integrity, holding times, trip blanks, rinsate blanks, method blanks, internal standards, surrogate recoveries, MS/MSD recoveries, LCSs, and field duplicate precision. The results of the DQI assessment are provided 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).

Main Installation: Field precision goals were met for the duplicate sample pairs collected during the two LTM sampling events. Laboratory precision is discussed in more detail in the attached narratives.

Dunn Field: Field precision goals were generally met for the duplicate sample pairs collected during the two LTM sampling events. In one field duplicate pair at MW-157, acetone and TCE were detected above the reporting limit (RL) in the parent sample but were non-detect in the field duplicate. Laboratory precision is discussed in more detail in the attached narratives.

Accuracy

Accuracy or bias 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).

Main Installation: Although there were a number of elevated LCS recoveries, elevated MS/MSD recoveries and low MS/MSD recoveries observed in the two events, all associated data are qualified J or UJ and as such are valid. Accuracy goals based upon LCS were met. Further discussion of the LCS and MS/MSD recoveries is provided in the attached DQE narratives.

Dunn Field: Although there were a number of low LCS recoveries and low MS/MSD recoveries observed in the two events, all associated data are qualified J or UJ and as such are valid. Accuracy goals based upon LCS were met. Further discussion of the LCS and MS/MSD recoveries is provided in the attached DQE narratives.

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 rinsate blank analysis help in providing this assessment.

Main Installation: Sampling procedures followed the RA SAP/QAPP and were considered representative of the matrices collected. Laboratory preparation and analysis followed method guidelines.

Dunn Field: Sampling procedures followed the RA SAP/QAPP and were considered representative of the matrices collected Samples MW-134 and MW-144 in the April 2013 sampling event were analyzed two to four days past the holding time; these samples were recollected in May 2013. Laboratory preparation and analysis followed method guidelines.

Comparability

The selection of standardized methods and consistent laboratory practices facilitates the comparison of data between sampling events.

Main Installation: Past LTM data are comparable to recent events. Consistent methodology has been maintained throughout the LTM sampling events.

Dunn Field: Past LTM data are comparable to recent events. Consistent methodology has been maintained throughout the LTM sampling events.

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 RA SAP/QAPP.

Main Installation: Data from the two LTM events in April and October 2013 were 100% complete and therefore met the completeness DQO.

Dunn Field: Data from the two LTM events in April-May and October 2013 were 100% complete and therefore met the completeness DQO.

Sensitivity

Analytical sensitivity is the concentration at which the measurement system can quantitate target analytes in the environmental matrices of concern. Analytical sensitivity is expressed in terms of the RL, which is provided by the respective laboratories as their reasonable and defensible quantitation limit for environmental samples above the method detection limit (MDL), which is established by each laboratory using pure water or clean matrix.

Main Installation and Dunn Field: The analytical method RLs and MDLs were compared to groundwater protection standards as listed in the RA SAP/QAPP and were determined to meet the overall project objectives. (The MDLs for six VOCs [1,1,2,2-tetrachloroethane, 1,1,2-trichloroethane, 1,2-dichloroethane, bromodichloromethane, carbon tetrachloride, and dibromochloromethane] were above the standards; however, as noted in the QAPP, ... "MDLs for these VOC … compounds are higher than their corresponding screening levels because current VOC … analytical method technology can not achieve MDLs lower than those listed.")

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

Main Installation Semi-Annual Event – April 2013

A total of 69 water samples including 55 groundwater field samples and 14 QA/QC samples (duplicates, MS/MSD, trip blanks, rinsate blanks) were collected from 53 LTM wells in April 2013. Samples were collected from two screened intervals in MW-101 and MW-107. Samples were analyzed for TCL VOCs. The data are usable with qualifications as described below:

- Tetrachloroethene (PCE) was qualified as estimated J in three samples due to low MS/MSD recoveries. The sample results could be biased low approximately proportional to the recoveries.
- Thirty-two bromomethane results were qualified UJ due to low results in the continuing calibration standard. Bromomethane is not a contaminant of concern and will not impact the use of the data.

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

Main Installation Annual Event – October 2013

A total of 110 water samples including 87 groundwater field samples and 23 QA/QC samples (duplicates, MS/MSD, trip blanks, rinsate blanks) were collected from 108 LTM wells in October 2013. Samples were collected from two screened intervals in MW101 and MW107. Samples were analyzed for TCL VOCs. The data are usable with qualifications as described below:

- Acetone and 1,2,3-trichloropropane were qualified as estimated J in one sample (DR2-6-LA-18) due to high MS/MSD recoveries. PCE was qualified as estimated J in one sample (MW-107B-LA-18) due to low MS/MSD recoveries. The sample results could be biased high or low approximately proportional to the recoveries.
- When a high LCS recovery is associated with a non-detect in samples, no qualifier is added since the indicated bias is high. When the analyte is detected, the result is qualified as J. All results associated with low recoveries are qualified. Twenty-four results for acetone, methyl tert-butyl ether (MTBE), 1,1,2,2-tetrachloroethane and 1,2,3-trichloropropane in 19 samples were qualified J based on elevated LCS recoveries, and data could be biased high proportional to the LCS %R.
- Two chloromethane results were qualified B due to method blank contamination.
- Two 1,1,2,2-tetrachloroethane results were qualified J due to elevated response in a continuing calibration standard.
- Forty-seven results for 1,2-dibromo-3-chloropropane (DBCP), nine results for acetone and nine results for methyl ethyl ketone (MEK) were qualified J or UJ due to low responses in continuing calibration standards.
- Sixteen results for PCE, trichloroethene (TCE), acetone, carbon tetrachloride, chloroform, chloromethane and trichlorofluoromethane were qualified as estimated J in four samples due to high surrogate recoveries. The sample results could be biased high approximately proportional to the recoveries.
- Any result reported below the RL but above the MDL was qualified J and considered an estimated result (unless overridden by other QC flags).

Dunn Field Biennial Event – April 2013

A total of 115 water samples including 87 groundwater field samples and 28 QA/QC samples (duplicates, MS/MSD, trip blanks, rinsate blanks) were collected from 86 LTM wells in April and May 2013. A number of samples collected in April were received at the lab with all vials broken; these samples were re-collected in May 2013. Samples were also re-collected from wells MW-44, MW-134, MW-144 and MW-150 because hold times were exceeded or results differed from previous results. Samples were analyzed for TCL VOCs. The data are usable with qualifications as described below:

- All results in two samples (MW-134-ODLB-6 and MW-144-ODLB-6) were qualified J or UJ due to analysis two or four days past the holding time.
- One carbon disulfide result was qualified UJ due to low MS/MSD recoveries.
- Three bromomethane results were qualified UJ due to low responses in continuing calibration standards.
- Acetone and TCE in sample MW-157-ODLB-6 were detected above the RL but were non-detect in the associated field duplicate sample, DUP-4-ODLB-6. The detected results were qualified J and the non-detected results were qualified UJ.
- A total of 287 results for bromomethane, acetone, chloromethane, MEK, 4-methyl-2-pentanone (MIBK), 2-hexanone, 1,2,3-trichloropropane, dichlorodifluoromethane, 1,1,2,2-tetrachloroethane, 1,2-dibromo-3-chloropropane and bromoform were qualified J or UJ due to low responses in continuing calibration standards.
- Three carbon tetrachloride results were qualified J due to elevated responses in continuing calibration standards.
- Any result reported below the RL but above the MDL was qualified J and considered an estimated result (unless overridden by other QC flags).

Dunn Field Semiannual Event – October 2013

A total of 55 water samples including 43 groundwater field samples and 12 QA/QC samples (duplicates, MS/MSD, trip blanks) were collected from 43 LTM wells in October 2013. Samples were analyzed for TCL VOCs. The data are usable with qualifications as described below:

- A total of 66 results for 1,2-dibromo-3-chloropropane, 2-hexanone, bromomethane and chloromethane were qualified J or UJ due to low responses in continuing calibration standards.

- When a high LCS recovery is associated with a non-detect in samples, no qualifier is added since the indicated bias is high. When the analyte is detected, the result is qualified as J. All results associated with low recoveries are qualified. Eight results for acetone, 1,1,2,2-tetrachloroethane and 1,2-dibromoethane (EDB) in seven samples were qualified J or UJ based on low LCS recoveries, and data could be biased low proportional to the LCS %R.
- Seven results for n-butylbenzene, 1,2,3-trichlorobenzene and 1,2,4-trichlorobenzene in five samples were qualified B due to detection of the analyte in the method blank.
- Any result reported below the RL but above the MDL was qualified J and considered an estimated result (unless overridden by other QC flags).

SUMMARY

Main Installation: The sample data from the April and October 2013 LTM events at the Main Installation met the data quality objectives and are of sufficient quality to support the evaluation of remedial actions.

Dunn Field: The sample data from the April and October 2013 LTM events at Dunn Field met the data quality objectives and are of sufficient quality to support the evaluation of remedial actions.

TABLE G-1
MAIN INSTALLATION SAMPLE DATA GROUP SUMMARY TABLE
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

SDG	Groundwater Samples			Quality Control Samples
Semi-Annual Sampling Event - April 2013				
L13040603	PMW101-03A-LS-17	PMW101-06A-LS-17	PMW101-06B-LS-17	DUP-5-LS-17
	PMW101-03B-LS-17			
L13040604	DR2-1-LS-17	MW-98-LS-17	MW-206B-LS-17	DUP-1-LS-17
	DR2-3-LS-17	MW-141-LS-17	MW-208A-LS-17	DUP-6-LS-17
	DR2-6-LS-17	MW-199B-LS-17	MW-208B-LS-17	MW-88-LS-17-MS
	MW-26-LS-17	MW-200-LS-17	MW-209B-LS-17	MW-88-LS-17-MSD
	MW-39-LS-17	MW-204A-LS-17	MW-210A-LS-17	MW-141-LS-17-MS
	MW-90-LS-17	MW-204B-LS-17	MW-210B-LS-17	MW-141-LS-17-MSD
	MW-92-LS-17	MW-205A-LS-17	MW-217-LS-17	MW-204A-LS-17-MS
	MW-94A-LS-17	MW-205B-LS-17	MW-218-LS-17	MW-204A-LS-17-MSD
	MW-97-LS-17	MW-206A-LS-17	MW-259-LS-17	TB-1-LS-17
L13040649	PMW92-02-LS-17			TB-2-LS-17
L13040650	DR1-3-LS-17	MW-143-LS-17	MW-253-LS-17	DUP-2-LS-17
	MW-100B-LS-17	MW-202B-LS-17	MW-254-LS-17	DUP-3-LS-17
	MW-101T-LS-17	MW-207A-LS-17	MW-255-LS-17	DUP-4-LS-17
	MW-101B-LS-17	MW-207B-LS-17	MW-256-LS-17	
	MW-107T-LS-17	MW-214A-LS-17	MW-257-LS-17	
	MW-107B-LS-17	MW-214B-LS-17	MW-258-LS-17	
	MW-108-LS-17	MW-219-LS-17	PMW21-03-LS-17	
		MW-252-LS-17	PMW21-05-LS-17	

TABLE G-1
MAIN INSTALLATION SAMPLE DATA GROUP SUMMARY TABLE
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

SDG	Groundwater Samples			Quality Control Samples
Annual Sampling Event - October 2013				
L13100112	DR1-1-LA-18	MW101B-LA-18	MW-256-LA-18	DUP-8-LA-18
	DR1-1A-LA-18	MW108B -LA-18	MW-257-LA-18	DUP-9-LA-18
	DR1-2-LA-18	MW143-LA-18	PMW21-03-LA-18	MW-256-LA-18-MS
	DR1-3-LA-18	MW-219-LA-18	PMW21-05-LA-18	MW-256-LA-18-MSD
	DR1-4-LA-18	MW-252-LA-18	PMW101-03A-LA-18	PMW101-06A-LA-18-MS
	DR1-7-LA-18	MW-253-LA-18	PMW101-03B-LA-18	PMW101-06A-LA-18-MSD
	DR1-8-LA-18	MW-254-LA-18	PMW101-06A-LA-18	TB-2-LA-18
	MW101T-LA-18	MW-255-LA-18	PMW101-06B-LA-18	LTM-RB1-LA-18
L13100114	MW39 -LA-18	MW142 -LA-18	MW-205A-LA-18	DUP-4-LA-18
	MW39A -LA-18	MW-198-LA-18	MW-205B-LA-18	DUP-5-LA-18
	MW89 -LA-18	MW-199A-LA-18	MW-206A-LA-18	MW-205B-LA-18-MS
	MW90 -LA-18	MW-199B-LA-18	MW-206B-LA-18	MW-205B-LA-18-MSD
	MW97 -LA-18	MW-202A-LA-18	MW-208B-LA-18	
	MW98 -LA-18	MW-202B-LA-18	MW-209A-LA-18	
	MW140 -LA-18	MW-204A-LA-18	MW-209B-LA-18	
	MW141 -LA-18	MW-204B-LA-18	MW-210A-LA-18	
			MW-210B-LA-18	
L13100116	MW25A -LA-18	MW96 -LA-18	MW-261-LA-18	DUP-1-LA-18
	MW52-LA-18	MW-260-LA-18	PZ-03 -LA-18	DUP-7-LA-18
				TB-1-LA-18
L13100117	DR2-1-LA-18	MW100B -LA-18	MW-214A-LA-18	DUP-2-LA-18
	DR2-3-LA-18	MW103 -LA-18	MW-214B-LA-18	DUP-3-LA-18
	DR2-4-LA-18	MW104 -LA-18	MW-215A-LA-18	DUP-6-LA-18
	DR2-6-LA-18	MW107T -LA-18	MW-215B-LA-18	DR2-6-LA-18-MS
	MW26 -LA-18	MW107B -LA-18	MW-216-LA-18	DR2-6-LA-18-MSD
	MW63A -LA-18	MW108-LA-18	MW-217-LA-18	MW107B -LA-18-MS
	MW63B -LA-18	MW-200-LA-18	MW-218-LA-18	MW107B -LA-18-MSD
	MW64 -LA-18	MW-207A-LA-18	MW-258-LA-18	LTM-RB2-LA-18
	MW88 -LA-18	MW-207B-LA-18	MW-259-LA-18	
	MW92 -LA-18	MW-208A-LA-18	PMW92-02-LA-18	
	MW94A -LA-18	MW-211-LA-18		

TABLE G-2
DUNN FIELD SAMPLE DATA GROUP SUMMARY TABLE
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

SDG	Groundwater Samples			Quality Control Samples
Biennial Sampling Event - April - May 2013				
L13040648	MW-80-ODLB-6	MW-169-ODLB-6	MW-170-ODLB-6	MW-80-ODLB-6-MS MW-80-ODLB-6-MSD TB-1-ODLB-6
L13040680	MW-13-ODLB-6 MW-58-ODLB-6	MW-126-ODLB-6 MW-153-ODLB-6	MW-171-ODLB-6	TB-2-ODLB-6
L13040687	MW-06-ODLB-6 MW-08-ODLB-6 MW-15-ODLB-6 MW-57-ODLB-6	MW-78-ODLB-6 MW-87-ODLB-6 MW-91-ODLB-6 MW-174-ODLB-6	MW-187-ODLB-6 MW-227-ODLB-6 MW-228-ODLB-6	DUP-6-ODLB-6 MW-78-ODLB-6-MS MW-78-ODLB-6-MSD MW-227-ODLB-6-MS MW-227-ODLB-6-MSD RB1-ODLB-6 RB2-ODLB-6
L13040808	MW-44-ODLB-6 MW-67-ODLB-6 MW-154-ODLB-6 MW-166-ODLB-6 MW-166A-ODLB-6	MW-182-ODLB-6 MW-235-ODLB-6 MW-237-ODLB-6 MW-241-ODLB-6 MW-242-ODLB-6	MW-243-ODLB-6 MW-244-ODLB-6 MW-245-ODLB-6 MW-246-ODLB-6 MW-247-ODLB-6 MW-251-ODLB-6	DUP-8-ODLB-6 MW-244-ODLB-6-MS MW-244-ODLB-6-MSD TB-4-ODLB-6
L13040809	MW-03-ODLB-6 MW-04-ODLB-6 MW-07-ODLB-6 MW-28-ODLB-6 MW-33-ODLB-6 MW-68-ODLB-6 MW-69-ODLB-6 MW-70-ODLB-6	MW-71-ODLB-6 MW-130-ODLB-6 MW-134-ODLB-6 MW-144-ODLB-6 MW-145-ODLB-6 MW-149-ODLB-6 MW-157-ODLB-6 MW-164-ODLB-6	MW-176-ODLB-6 MW-220-ODLB-6 MW-221-ODLB-6 MW-222-ODLB-6 MW-223-ODLB-6 MW-224-ODLB-6 MW-226-ODLB-6 MW-250-ODLB-6	DUP-1-ODLB-6 DUP-2-ODLB-6 DUP-5-ODLB-6 DUP-7-ODLB-6 TB-3-ODLB-6
L13040810	MW-31-ODLB-6 MW-76-ODLB-6 MW-79-ODLB-6 MW-129-ODLB-6 MW-147-ODLB-6 MW-148-ODLB-6	MW-150-ODLB-6 MW-151-ODLB-6 MW-155-ODLB-6 MW-158-ODLB-6 MW-158A-ODLB-6	MW-160-ODLB-6 MW-165-ODLB-6 MW-165A-ODLB-6 MW-167-ODLB-6 MW-248-ODLB-6	DUP-4-ODLB-6 DUP-9-ODLB-6
L13050701	MW-44-ODLB-6-RE MW-54-ODLB-6 MW-77-ODLB-6 MW-134-ODLB-6 MW-144-ODLB-6	MW-150-ODLB-6 MW-152-ODLB-6 MW-159-ODLB-6 MW-163-ODLB-6 MW-180-ODLB-6	MW-184-ODLB-6 MW-190-ODLB-6 MW-225-ODLB-6 MW-230-ODLB-6 MW-249-ODLB-6	DUP-10-ODLB-6 DUP-11-ODLB-6 DUP-12-ODLB-6 MW-180-ODLB-6-MS MW-180-ODLB-6-MSD TB-9-ODLB-6

TABLE G-2
DUNN FIELD SAMPLE DATA GROUP SUMMARY TABLE
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

SDG	Groundwater Samples			Quality Control Samples
Semi-Annual Sampling Event - October 2013				
L13100923	MW-03-ODLS-7	MW-151-ODLS-7	MW-222-ODLS-7	DUP-1
	MW-06-ODLS-7	MW-157-ODLS-7	MW-223-ODLS-7	DUP-2
	MW-15-ODLS-7	MW-159-ODLS-7	MW-224-ODLS-7	DUP-3
	MW-28-ODLS-7	MW-163-ODLS-7	MW-225-ODLS-7	DUP-4
	MW-31-ODLS-7	MW-164-ODLS-7	MW-226-ODLS-7	DUP-5
	MW-54-ODLS-7	MW-165-ODLS-7	MW-227-ODLS-7	MW-134-ODLS-7-MS
	MW-57-ODLS-7	MW-165A-ODLS-7	MW-228-ODLS-7	MW-134-ODLS-7-MSD
	MW-77-ODLS-7	MW-166-ODLS-7	MW-242-ODLS-7	MW-220-ODLS-7-MS
	MW-79-ODLS-7	MW-166A-ODLS-7	MW-243-ODLS-7	MW-220-ODLS-7-MSD
	MW-87-ODLS-7	MW-174-ODLS-7	MW-244-ODLS-7	MW-244-ODLS-7-MS
	MW-134-ODLS-7	MW-184-ODLS-7	MW-245-ODLS-7	MW-244-ODLS-7-MSD
	MW-144-ODLS-7	MW-190-ODLS-7	MW-246-ODLS-7	TB-1-ODLS-7
	MW-149-ODLS-7	MW-220-ODLS-7	MW-247-ODLS-7	
	MW-150-ODLS-7	MW-221-ODLS-7	MW-249-ODLS-7	
L13100994	MW-182-ODLS-7			

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ORGANIC DATA QUALITY REVIEW REPORT
Volatile Organics by SW-846 Method 8260B (GC/MS)

SDG	L13040: 603, 604, 649, 650
PROJECT	Memphis Defense Depot, EBT-11 Sampling for HDR, Denver
LABORATORY	Microbac Laboratories, Inc., Marietta, OH
SAMPLE MATRIX	Water
SAMPLING DATE	04/2013
NUMBER OF SAMPLES	72 water, including 6 field duplicate pairs, 2 trip blanks
ANALYSES REQUESTED	SW-846 8260B (VOA by GC/MS)
SAMPLE NUMBER	See result forms attached and associated EDD

DATA REVIEWER: Diane Short

QA REVIEWER: Diane Short & Associates, Inc. INITIALS/DATE: __DLS 05/3/2013

Telephone Logs included Yes____ No __X_

Contractual Violations Yes____ No __X_

The project QAPP (09/11), the EPA Contract Laboratory Program National Functional Guidelines for Organic Review, 1999 and 2007, and the SW-846 Method 8260B 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 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 report has been requested to include the following review: QC, hold times, sample integrity (Chains of Custody, sample login), and summary calibrations. Note that there are 9 QC sets (days of analysis per instrument) and 3 instruments for the 72 samples. Note that some redundant QC has not been included in the count.

B. Chain of Custody documentation was complete and accurate.
Yes __X__ No _____
No qualifiers have been added for Chain of Custody (COC) issues, and the Project Manager will update COC per the following notes to complete the project record.
The laboratory has signed and affixed a receipt label on all pages. The relinquishment date and time are part of the electronically-generated COC and are present only on the last page of the COC. There is an electronic signature on the last page unless noted.
In addition, there are sample receipt acknowledgements from the laboratory. The log in forms contain the courier identification and air bill number.

C. Samples were received at the required temperature, preservation and intact with no bubbles.
Yes ____ No __X___
EPA regulations (See Federal Register, March 12, 2007, 40CFR Part 122) require only that the temperature of samples delivered to the laboratory be equal to or less than 6 °C. The sample temperature conditions are fully compliant with applicable regulations.

II. ANALYTICAL REPORT FORMS

A. The Analytical Report or Data Sheets are present and complete for all requested analyses.
Yes __X__ No _____
Note that the hard copy calibration data use alternate compound names for such compounds as 4-methyl-2-pentanone and 2-butanone, which are in the EDD and QC summaries as MIBK (methyl isobutyl ketone) and MEK (methyl ethyl ketone) .

B. Holding Times
1. The contract holding times were met for all analyses [time of sample receipt to time of analysis (VOA) or time of extraction to time of analysis].
Yes __X__ 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 __X__ 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 or > 0.01 for poor responding volatiles.
Yes __X__ No _____ NA _____
Method 8260: Per the Project Manager, the 2007 EPA CLP validation guidance has been applied to the common “poor responders.” Calibration response factors were acceptable for Acetone, MEK, MIBK, and 2-butanone and other 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 this data set. The laboratory has been tasked with providing to

the client verification that the 0.01 RF is valid. If the spectral verification is available, data are not qualified for response factors greater than 0.01 and less than 0.05 for "poor responders." No data have been qualified.

Most of 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 __X__ 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, the average % RSD was < 15%, or a linear curve was used.
Yes __X__ No _____ NA _____
Although MTBE is considered to be a 'poor responder', the laboratory has re-analyzed one sample MW-100B, for a high MTBE % RSD. Both sets of results are reported in the EDD and the 2 sets of results are fully comparable.

3. The 12 hour system Performance Check was performed as required in SW-846 and met the QC limits of 80 – 120%.
Yes ____ No __X___ NA _____
The following applies to the ICV for each initial calibration. The ICV for instrument 6 on 4/2/13 and instrument 8 on 3/29 was high for dichlorodifluoromethane. The ICV for instrument 11 on 4/20/13 was low for Acetone and MTBE and high for dichlorodifluoromethane. The compounds are not detected in the samples and no qualifier is applied. These are also EPA poor responders and the outliers are not qualified.

B. Continuing Calibrations
1. The midpoint standard was analyzed for each analysis at the required frequency, and the QC criterion of > 0.05 (> 0.01 for CLP 2001 VOA) was met.
Yes __X__ No _____ NA _____

2. The percent difference (% D) limits of ± 20% were met. The 2007 NFG also allow for 40% D for the "poor responders (pr)."
Yes _____ No __X__ NA _____
When there are no detections, no qualification is required unless the % D is biased low and so large as to indicate a significant probability of false negatives. Qualification is required for a % D biased high for detected compounds only. This requires that the RF is acceptable to verify the non-detect status, which is the case here. Data would be qualified "JC#", where # is the % D. There could be variability to the data as there is variability to the response. No qualifiers have been required. All the indicated 'low' poor responders (pr) were within the limits noted above of less than 40% and the RF was also within not only the 0.01 limit, but all were within the > 0.05 limit or > 0.04. There are some low bromomethane recoveries but the response factor is acceptable to verify the non-detects.

Instrument	2013				
MS 11	ICAL	ICV	CCAL		
	20-Apr		21-Apr	22-Apr	

	ok	pr	acetone (pr) low	pr's low	
MS8	29-Mar		19-Apr	21-Apr	22-Apr
	ok	dichlorodifluoro-methane 39%	pr's low, Bromo methane -28%	prs, low	pr's low
MS 6	2-Apr		20-Apr	24-Apr	22-Apr
	ok	dichlorodifluoro methane 26%	pr's low; Bromo methane -24.3	pr's low	pr's low; Bromo methane -53.4

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 STANDARDS
Surrogate spikes were analyzed with every sample.
Yes __X__ No _____

And met the recovery limits defined in the QAPP , which are the laboratory limits.
Yes __X__ No _____

VII. MATRIX SPIKE/MATRIX SPIKE DUPLICATE
A. Matrix Spike (MS) and Matrix Spike Duplicate (MSD) were analyzed for every analysis performed and for every 20 samples or for every matrix whichever is more frequent.
Yes __X__ No _____
The MS/MSDs include (all ending in LS-17):
MW-141, MW204A, MW-88.
This meets the recommendation of 1 per 20 field (not field QC or blank) samples. As this is an ongoing project an overall adherence to the 1:20 frequency is monitored by the Project Manager.
The lab notes they do not report non-client QC. In most, and not all cases, and LCS/LCSD is reported.

B. The MS and MSD percent recoveries were within the limits defined in the updated 2011 QAPP, which now references the laboratory limits.
Yes ____ No __X___ NA _____
The full target list has been spiked. For all 3 MS/MSDs , the results for tetrachloroethene (PCE) are low. In no case is the sample result over the 4x limit, where the result is statistically greater than the recovery of the spike. Data have been qualified JMS#, where # is the lower of the 2 recoveries. Data could be biased low proportional to the recovery.

Lab ID	Client ID	Parameter	Result ug/L	RDL	Qualifier

L13040604-05	MW-88-LS-17	Tetrachloroethene	44.5	1	JMS45
L13040604-13	MW-141-LS-17	Tetrachloroethene	31.9	1	JMS50.9
L13040604-18	MW-204A-LS-17	Tetrachloroethene	40.2	1	JMS45.

C. The MSD relative percent differences (RPD) were within the defined contract limits, which are 30%.
Yes __X__ No _____ NA _____

D. The MS/MSD were client samples.
Yes __X__ No _____ NA _____
Only client samples reported.

VIII. LABORATORY CONTROL SAMPLE

A. Laboratory Control Sample (LCS) was analyzed for every analysis performed and for every 20 samples.
Yes __X__ No _____
Although not required of the method, an LCS and LCSD are routinely reported when there is not an MS/MSD reported in the data set.

B. The LCS percent recoveries were within the limits defined in the updated 2011 QAPP, which are the laboratory limits. If an LCS and LCSD are analyzed, both samples must have the same compounds out for data to be qualified. The RPD is qualified only if the %R is also out.
Yes ____ No __X___
The full target list has been spiked. When a high LCS recovery is associated with a non-detect in samples, no qualifier is added since the indicated bias is high. When the target is detected, data are qualified "JL#", where # is the recovery. Data could be biased high proportional to the LCS percent recovery. All results associated with low recoveries are qualified and data could be biased low. The laboratory uses the same control limits on all 3 instruments used for analysis even though the responses are different on each instrument. The control limits should be instrument specific. No data have been qualified as all LCS outliers were high (all for Dichlorodifluoromethane) and the compound is not detected.

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__
Note that the method blanks are in the EDDs with the exception of L13040604 which does not contain any QC (method blanks or LCS).
SDG L13040604 reported method blank contamination of 1,2,3- trichlorobenzene for WG 427498. This is not a common laboratory contaminant and the source of the compounds is not specified in the narrative. The compound is not reported in client samples, and no qualifier is applied. For WG 427485, methylene chloride is reported at 0.286 ug/L. The compound is not detected in client samples.

C. If Field Blanks were identified, no blank contamination was found.
Yes __X___ No _____ NA ____
There are no field blanks. There has been acetone in past field blanks from these sites. It is possible that some of the low level results for acetone are due to field contamination. As no blanks are present, this cannot be verified.
Two trip blanks were collected and all were non-detected.

X. FIELD QC

If Field Duplicates were identified, they met guidance for VOA of RPD of < 30% for water or < 50% for soil. For values reported at < 5 × the reporting limit (RL), a difference of 2 × RL or 3.5 × RL for soil is used as guidance. This is referred to as the CRDL Rule. Data are not qualified for Field Duplicates as these are evaluated for the total project by the Project Manager.
Yes ___X__ No ____ NA _____
There are 6 identified field duplicates as described in the following table. If data were qualified they would be J, FD#, where # is the difference between the two values as both values are less than 5 x RL. All RPDs were acceptable or differences between low level values were less than 2 x RL.

MW-97-LS-17	DUP-1
MW-108-LS-17	DUP-2
MW-214A-LS-17	DUP-3
MW-252-LS-17	DUP-4
PMW101-03A-LS-17	DUP-5
DR2-1-LS-17	DUP-6

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 _____

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:

<u>Chain of Custody</u>
No qualifiers have been added for Chain of Custody issues, and the Project Manager will update documentation per the notes in the text to complete the project record.
This report has been requested to include the following review: QC, hold times, sample integrity (Chains of Custody, sample login), and summary calibrations. Note that there are 9 QC sets (days of analysis per

instrument) and 3 instruments for the 72 samples. Note that some redundant QC has not been included in the count.

Sample Preservation
EPA regulations (See Federal Register, March 12, 2007, 40CFR Part 122) require only that the temperature of samples delivered to the laboratory be equal to or less than 6 °C. The sample temperature conditions are fully compliant with applicable regulations.

Note that the hard copy calibration data use alternate compound names for such compounds as 4-methyl-2-pentanone and 2-butanone, which are in the EDD and QC summaries as MIBK (methyl isobutyl ketone) and MEK (methyl ethyl ketone) .

Initial Calibrations
Method 8260: Per the Project Manager, the 2007 EPA CLP validation guidance has been applied to the common "poor responders." Calibration response factors were acceptable for Acetone, MEK, MIBK, and 2-butanone and other 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 this data set. The laboratory has been tasked with providing to the client verification that the 0.01 RF is valid. If the spectral verification is available, data are not qualified for response factors greater than 0.01 and less than 0.05 for "poor responders." No data have been qualified. Although MTBE is considered to be a 'poor responder', the laboratory has re-analyzed one sample MW-100B, for a high MTBE % RSD. Both sets of results are reported in the EDD and the 2 sets of results are fully comparable.

The following applies to the ICV for each initial calibration. The ICV for instrument 6 on 4/2/13 and instrument 8 on 3/29 was high for dichlorodifluoromethane. The ICV for instrument 11 on 4/20/13 was low for Acetone and MTBE and high for dichlorodifluoromethane. The compounds are not detected in the samples and no qualifier is applied. These are also EPA poor responders and the outliers are not qualified.

Continuing Calibrations
When there are no detections, no qualification is required unless the % D is biased low and so large as to indicate a significant probability of false negatives. Qualification is required for a % D biased high for detected compounds only. This requires that the RF is acceptable to verify the non-detect status, which is the case here. Data would be qualified "JC#", where # is the % D. There could be variability to the data as there is variability to the response. No qualifiers have been required. All the indicated 'low' poor responders (pr) were within the limits noted above of less than 40% and the RF was also within not only the 0.01 limit, but all were within the > 0.05 limit or > 0.04. There are some low bromomethane recoveries but the response factor is acceptable to verify the non-detects.

Matrix Spikes
The MS/MSDs include (all ending in LS-17):
MW-141, MW204A, MW-88.
This meets the recommendation of 1 per 20 field (not field QC or blank) samples. As this is an ongoing project an overall adherence to the 1:20 frequency is monitored by the Project Manager.
The lab notes they do not report non-client QC. In most, and not all cases, and LCS/LCSD is reported.

The full target list has been spiked. For all 3 MS/MSDs , the results for tetrachloroethene (PCE) are low. In no case is the sample result over the 4x limit, where the result is statistically greater than the recovery of the spike. Data have been qualified JMS#, where # is the lower of the 2 recoveries. Data could be biased low proportional to the recovery.

Laboratory Control Samples

The full target list has been spiked. When a high LCS recovery is associated with a non-detect in samples, no qualifier is added since the indicated bias is high. When the target is detected, data are qualified "JL#", where # is the recovery. Data could be biased high proportional to the LCS percent recovery. All results associated with low recoveries are qualified and data could be biased low. The laboratory uses the same control limits on all 3 instruments used for analysis even though the responses are different on each instrument. The control limits should be instrument specific. No data have been qualified as all LCS outliers were high (all for Dichlorodifluoromethane) and the compound is not detected.

Method Blanks

Note that the method blanks are in the EDDs with the exception of L13040604 which does not contain any QC (method blanks or LCS).

SDG L13040604 reported method blank contamination of 1,2,3- trichlorobenzene for WG 427498. This is not a common laboratory contaminant and the source of the compounds is not specified in the narrative. The compound is not reported in client samples, and no qualifier is applied. For WG 427485, methylene chloride is reported at 0.286 ug/L. The compound is not detected in client samples.

Field Blanks

There are no field blanks. There has been acetone in past field blanks from these sites. It is possible that some of the low level results for acetone are due to field contamination. As no blanks are present, this cannot be verified.

Two trip blanks were collected and all were non-detected.

Field QC

There are 6 identified field duplicates as described in the following table. If data were qualified they would be J, FD#, where # is the difference between the two values as both values are less than 5 x RL. All RPDs were acceptable or differences between low level values were less than 2 x RL.

MW-97-LS-17	DUP-1
MW-108-LS-17	DUP-2
MW-214A-LS-17	DUP-3
MW-252-LS-17	DUP-4
PMW101-03A-LS-17	DUP-5
DR2-1-LS-17	DUP-6

TABLE OF QUALIFIED DATA

Lab ID	Client ID	Parameter	Result ug/L	RDL	Qualifier
L13040604-05	MW-88-LS-17	Tetrachloroethene	44.5	1	JMS45
L13040604-13	MW-141-LS-17	Tetrachloroethene	31.9	1	JMS50.9
L13040604-18	MW-204A-LS-17	Tetrachloroethene	40.2	1	JMS45.

Final Data Qualification and Usability Report

Project:	Defense Depot Memphis, TN (DDMT) Main Installation Long Term Monitoring
Sampling Event:	LS-17
Project / Task Number:	228-192672-008
Sample Data Package(s):	L13040603, L13040604, L13040649, L13040650
Data Validation Performed by:	Diane Short & Associates (DSA)
Final Data Qualification and Usability Report Prepared by:	Lynn K. Lutz, HDR Inc.

Data Validation Report Review and Comments

The validation report was acceptable except as noted below for final qualifiers.

The validator, in discussing relative response factors, noted that "[t]he laboratory has been tasked with providing to the client verification that the 0.01 RF is valid. If the spectral verification is available, data are not qualified for response factors greater than 0.01 and less than 0.05 for 'poor responders.'" The Project Chemist reviewed the area counts for the lowest standard included in the initial calibration for the low responders and found the areas to be adequate, and no qualifiers were applied.

The validator did not qualify bromomethane results based on low responses in the CCVs; the PC evaluated the %D values and qualified associated bromomethane results as non-detect estimated "UJ" as follows:

- 4/19/2013 Instrument HPMS8 workgroup # WG427430: %D = -28.0%
- 4/20/2013 Instrument HPMS6 workgroup # WG427483: %D = -24.3%
- 4/22/2013 Instrument HPMS6 workgroup # WG427598: %D = -53.4%

The lab reported multiple results for some analytes in samples that required dilution; the PC has selected the results to report.

Final Data Qualifiers

The final qualifier for some tetrachloroethene results was J where DSA had qualified JMS45 or JMS50.9.

The final qualifier for some bromomethane results was UJ where DSA had not qualified.

The final qualifier for some results was J where the lab had qualified as F.

Data Usability

There were no rejected sample results. All results are usable as qualified.

15 May 2013

Lynn K. Lutz, HDR Inc. Date

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ORGANIC DATA QUALITY REVIEW REPORT
Volatile Organics by SW-846 Method 8260B (GC/MS)

SDG L13040:	648	680	687	808	809	810	13050701

PROJECT	Memphis Defense Depot, OD-6 Sampling for HDR, Denver
LABORATORY	Microbac Laboratories, Inc., Marietta, OH
SAMPLE MATRIX	Water
SAMPLING DATE	04. 05/2013
NUMBER OF SAMPLES	104 water, including 12 field duplicate pairs, 5 trip blanks and 2 rinse blanks
ANALYSES REQUESTED	SW-846 8260B (VOA by GC/MS)
SAMPLE NUMBER	See result forms attached and associated EDD

DATA REVIEWER: Diane Short

QA REVIEWER: Diane Short & Associates, Inc. INITIALS/DATE: __ DLS 06/6/2013

Telephone Logs included Yes____ No __X_

Contractual Violations Yes____ No __X_

The project QAPP (09/11), the EPA Contract Laboratory Program National Functional Guidelines for Organic Review, 1999 and 2007, and the SW-846 Method 8260B 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 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 report has been requested to include the following review: QC, hold times, sample integrity (Chains of Custody, sample login), and summary calibrations. Note that there are 18 QC sets (days of analysis per instrument) and 3 instruments for the 104 non-MS/MSD samples.

B. Chain of Custody documentation was complete and accurate.
Yes __X__ No _____
No qualifiers have been added for Chain of Custody (COC) issues, and the Project Manager will update COC per the following notes to complete the project record.
The laboratory has signed and affixed a receipt label on all pages. The relinquishment date and time are part of the electronically-generated COC and are present only on the last page of the COC. There is an electronic signature on the last page unless noted.
In addition, there are sample receipt acknowledgements from the laboratory. The log-in forms contain the courier identification and air bill number.

C. Samples were received at the required temperature, preservation and intact with no bubbles.
Yes ____ No __X___
EPA regulations (See Federal Register, March 12, 2007, 40CFR Part 122) require only that the temperature of samples delivered to the laboratory be equal to or less than 6 °C. The sample temperature conditions are fully compliant with applicable regulations.
The Record of Sample Receipt notes the following
13040648: For MW80 1 MS and MSD not collected. 2 vials available from parent and used for QC.
13040687: MW-78 for the MS/MSD there was no ID on the label. Samples logged per client clarification
13040808: MW182 and MW-237 received with 2 of the 3 vials broken. 1 vial ok for the analysis. MW-244 all broken and an MSD vial from this QC sample used for the parent
13040809: 9 of the samples arrived with all 3 vials broken, 10 samples (2 of which are MS/MSD) arrived with 2 of the 3 vials broken. When possible, the 1 vial was used for analysis.
13040810: samples arrived with broken vials for MW-152, all broken for MW-159 and 1 broken for Dup-9 and MW-158A.
The samples that could not be retrieved from on unbroken vial were re-samples and analyzed in SDG 13050701.

II. ANALYTICAL REPORT FORMS

A. The Analytical Report or Data Sheets are present and complete for all requested analyses.
Yes __X__ No _____

B. Holding Times
1. The contract holding times were met for all analyses [time of sample receipt to time of analysis (VOA) or time of extraction to time of analysis].
Yes ____ No __X___
See B.2 as qualification is from the CFR holding time.

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 __X__ No _____
13040809: Sample MW-134 was a bit over 2 days out of hold time and MW-144 was close to 4 days over hold time. Data have been qualified JH#, where # is the rounded hold time. There could be a low bias to detected data or false undetected values at the MDL, although probably verified at the RL as the holding time is short.

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 or > 0.01 for poor responding volatiles.
Yes __X__ No _____ NA _____
Method 8260: Per the Project Manager, the 2007 EPA CLP validation guidance has been applied to the common "poor responders." Calibration response factors were acceptable for Acetone , 4-methyl-2-pentanone, and 2-butanone and other 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 this data set. The laboratory has been tasked with providing to the client verification that the 0.01 RF is valid. If the spectral verification is available, data are not qualified for response factors greater than 0.01 and less than 0.05 for "poor responders." No data have been qualified.

Most of 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 __X__ 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% (40% for the poor responders) limit for all other compounds, the average % RSD was < 15%, or a linear curve was used.
Yes __X__ No _____ NA _____

3. The 12 hour system Performance Check was performed as required in SW-846 and met the QC limits of 80 – 120%.
Yes ____ No __X___ NA _____
The following applies to the ICV for each initial calibration. Dichlorodifluoromethane is high is the ICVs for all 3 instruments (6, 8 and 11). Other poor responders (pr) have also been noted as slightly high. The compounds are not detected in the samples and no qualifier is applied. See table below.

B. Continuing Calibrations

1. The midpoint standard was analyzed for each analysis at the required frequency, and the QC criterion of > 0.05 (> 0.01 for CLP 2001 VOA) was met.
Yes __X__ No _____ NA _____

2. The percent difference (% D) limits of ± 20% were met. The 2007 NFG also allow for 40% D for the "poor responders (pr)."
Yes _____ No __X__ NA _____
When there are no detections, no qualification is required unless the % D is biased low and so large as to indicate a significant probability of false negatives. Qualification is required for a % D for detected compounds only. This requires that the RF is acceptable to verify the non-detect status, which is the case here.
Data would be qualified "JC#", where # is the % D. There could be variability to the data as there is variability to the response. No qualifiers have been required with the exception of one JC-53 for bromomethane for SDG 13040648 as this is an extensive drop in response. The response factor is still well within limits to verify the

non-detects. Also qualification of JC#, where # is the %D, of detected data for carbon tetrachloride as noted in the summary of qualifiers table. There could be slight high bias to the data.

Instrument			
MS 11	ICAL	ICV	CCAL
	20-Apr		
SDGs (L13040:) work group note in (x) as needed			
	OK	Pr's; DFM 55%	
808, 809, 810 (7959); 4/25/13			pr's; carbon Cl4 20.2
808 (8126); 4/25 & 26/ 13			pr's; carbon Cl4 20.2
809 (7891); 4/24 & 25/13			pr's
809 (8381); 4/29/13			pr's; Bromomethane -29.7%
809 (7814); 4/23 & 24/13			pr's
809 (8672); 4/30/13			2,2-dichloropropane 26.3%; CCl4 20.8%
13050701 (431172); 5/22/13	5/15/13 OK	Pr's ; DFM 66.2 %	pr's; bromoform -22.2%; 1,2,3trichloropropane -20.5%
13050701 (431243); 5/21/13			pr's
MS8	29-Mar	DFM 39.4%, pr's	
648, 680, 687 (7647); 4/23/13			OK
809, 810, (7918); 4/24/13			pr's; 1,2,3-trichloropropane -20.4%; Bromomethane -20.3%
13050701 (431180); 5/21/13	5/8/13 OK	DFM 49.1%	pr's; bromomethane -23%; CCl4 20.8
MS 6	4/2/13 OK, pr's	pr's	
648 (7598); 4/22/13			pr's; Bromomethane -53.4%
687 (7811) 4/23 & 24/13			pr's; Bromomethane -36.5%
808 (7972); 4/25/13			pr's
809 (7914); 4/24/13			pr's; Bromomethane -25.4%

pr = acetone; Chloromethane; 2-butanone; dichlorodifluoromethane; 4-methyl-2-pentanone; and / or 2-hexanone

DFM = dichlorodifluoromethane

LAB ID	CLIENT ID	Parameter	Result ug/L	Lab Flag	RL	Qualifier
L13040648-02	MW-80-ODLB-6	Bromomethane		U	1	JC-53
L13040648-05	MW-169-ODLB-6	Bromomethane		U	1	JC-53
L13040648-06	MW-170-ODLB-6	Bromomethane		U	1	JC-53
L13040808-02	MW-44-ODLB-6	Carbon tetrachloride	0.827	F	1	JC20.2
L13040808-06	MW-166-ODLB-6	Carbon tetrachloride	0.838	F	1	JC20.2
L13040808-07	MW-166A-ODLB-6	Carbon tetrachloride	0.276	F	1	JC20.2

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 STANDARDS
Surrogate spikes were analyzed with every sample.
Yes __X__ No _____

And met the recovery limits defined in the QAPP , which are the laboratory limits.
Yes __X__ No _____

VII. MATRIX SPIKE/MATRIX SPIKE DUPLICATE
A. Matrix Spike (MS) and Matrix Spike Duplicate (MSD) were analyzed for every analysis performed and for every 20 samples or for every matrix whichever is more frequent.
Yes __X__ No _____
The MS/MSDs include (all ending in ODLB-6):
MW-80, MW-78, MW-227, MW-244, MW-163, MS-180.

The client has designated the samples and this meets the recommendation of 1 per 20 field (not field QC or blank) samples. As this is an ongoing project an overall adherence to the 1:20 frequency is monitored by the Project Manager.
The lab notes they do not report non-client QC. In most, and not all cases, and LCS/LCSD is reported.

B. The MS and MSD percent recoveries were within the limits defined in the updated 2011 QAPP, which now references the laboratory limits.
Yes ____ No __X___ NA _____
The full target list has been spiked. For sample MW-244, the recovery for carbon disulfide was low. Data have been qualified JMS55.5 to indicate the %R and a possible low bias to the data.
Dichlorodifluoromethane was high for MW-78 MS; the MSD was within limits. The compound is not detected and no qualifier is required. The LCS is also high for this data set and the high recovery may also be a reflection of laboratory bias.

C. The MSD relative percent differences (RPD) were within the defined contract limits, which are 30%.
Yes __X__ No _____ NA _____

D. The MS/MSD were client samples.
Yes __X__ No _____ NA _____
Only client samples reported.

VIII. LABORATORY CONTROL SAMPLE
A. Laboratory Control Sample (LCS) was analyzed for every analysis performed and for every 20 samples.
Yes __X__ No _____
Although not required of the method, an LCS and LCSD are routinely reported when there is not an MS/MSD reported in the data set.

B. The LCS percent recoveries were within the limits defined in the updated 2011 QAPP, which are the laboratory limits. If an LCS and LCSD are analyzed, both samples must have the same compounds out for data to be qualified. The RPD is qualified only if the %R is also out.
Yes ____ No __X___
The full target list has been spiked. When a high LCS recovery is associated with a non-detect in samples, no qualifier is added since the indicated bias is high. When the target is detected, data are qualified "JL#", where # is the recovery. Data could be biased high proportional to the LCS percent recovery. All results associated with low recoveries are qualified and data could be biased low. The laboratory uses the same control limits on all 3 instruments used for analysis even though the responses are different on each instrument. The control limits should be instrument specific. No data have been qualified. Dichlorodifluoromethane is routinely high for all three instruments. In no case is the compound detected and non-detected data are not qualified for high recovery. Trichloromethane is high for SDG 13050701 and MTBE was slightly high in 13040809.

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__
Vinyl chloride was reported at 0.27 ug/L in the method blank for 13050701. The compound is not detected in client samples and no qualifier is required.

C. If Field Blanks were identified, no blank contamination was found.
Yes _____ No __X___ NA ____
The field blanks are RB1 and RB2. The samples contained 1,4 dichlorobenzene at 0.26 and 0.253 ug/L, respectively. This is not a common contaminant and the detection is unusual. No samples contained the compound. No data are qualified.

Five Trip blanks were collected and all were non-detected with the exception of one TB09 with detections of acetone, methylene chloride and styrene. Styrene is not reported in the associated samples. No qualifiers have been applied. Acetone and methylene chloride data are qualified UTB#, where # is the blank value. Data are fully usable as non-detected values. The trip blank was run twice in this SDG and both values would impact client data.

LAB ID	CLIENT ID	Parameter	Result ug/L	Lab Flag	RL	Qualifier
L13050701-01	MW-44-ODLB-6-RE	Acetone	4.45	F	10	UTB5.46
L13050701-01	MW-44-ODLB-6-RE	Methylene chloride		U	1	UTB.631
L13050701-02	MW-54-ODLB-6	Acetone	3.09	F	10	UTB5.46
L13050701-02	MW-54-ODLB-6	Methylene chloride		U	1	UTB.631
L13050701-03	MW-77-ODLB-6	Acetone	3.02	F	10	UTB5.46
L13050701-03	MW-77-ODLB-6	Methylene chloride		U	1	UTB.631
L13050701-04	MW-134-ODLB-6-RE	Acetone	3.84	F	10	UTB5.46
L13050701-04	MW-134-ODLB-6-RE	Methylene chloride		U	1	UTB.631
L13050701-05	MW-144-ODLB-6-RE	Acetone	5.26	F	10	UTB5.46
L13050701-05	MW-144-ODLB-6-RE	Methylene chloride		U	1	UTB.631
L13050701-06	MW-150-ODLB-6-RE	Acetone	5.49	F	10	UTB5.46
L13050701-06	MW-150-ODLB-6-RE	Methylene chloride		U	1	UTB.631
L13050701-07	MW-152-ODLB-6	Acetone	3.72	F	10	UTB5.46

L13050701-07	MW-152-ODLB-6	Methylene chloride		U	1	UTB.631
L13050701-08	MW-159-ODLB-6	Acetone	3.95	F	10	UTB5.46
L13050701-08	MW-159-ODLB-6	Methylene chloride		U	1	UTB.631
L13050701-09	MW-163-ODLB-6	Acetone	4.31	F	10	UTB5.46
L13050701-09	MW-163-ODLB-6	Methylene chloride		U	1	UTB.631
L13050701-10	MW-180-ODLB-6	Acetone	4.6	F	10	UTB5.46
L13050701-10	MW-180-ODLB-6	Methylene chloride		U	1	UTB.631
L13050701-13	MW-184-ODLB-6	Acetone	3.08	F	10	UTB5.46
L13050701-13	MW-184-ODLB-6	Methylene chloride		U	1	UTB.631
L13050701-14	MW-190-ODLB-6	Acetone	4.61	F	10	UTB5.46
L13050701-14	MW-190-ODLB-6	Methylene chloride		U	1	UTB.631
L13050701-15	MW-225-ODLB-6	Acetone	4.22	F	10	UTB5.46
L13050701-15	MW-225-ODLB-6	Methylene chloride		U	1	UTB.631
L13050701-16	MW-230-ODLB-6	Acetone	4.3	F	10	UTB5.46
L13050701-16	MW-230-ODLB-6	Methylene chloride		U	1	UTB.631
L13050701-17	MW-249-ODLB-6	Acetone	3.51	F	10	UTB5.46
L13050701-17	MW-249-ODLB-6	Methylene chloride		U	1	UTB.631
L13050701-18	DUP-10-ODLB-6	Acetone	2.92	F	10	UTB5.46
L13050701-18	DUP-10-ODLB-6	Methylene chloride		U	1	UTB.631
L13050701-19	DUP-11-ODLB-6	Acetone	4.25	F	10	UTB5.46
L13050701-19	DUP-11-ODLB-6	Methylene chloride		U	1	UTB.631
L13050701-20	DUP-12-ODLB-6	Acetone	3.08	F	10	UTB5.46
L13050701-20	DUP-12-ODLB-6	Methylene chloride		U	1	UTB.631

X. FIELD QC

If Field Duplicates were identified, they met guidance for VOA of RPD of < 30% for water or < 50% for soil. For values reported at < 5 × the reporting limit (RL), a difference of 2 × RL or 3.5 × RL for soil is used as guidance. This is referred to as the CRDL Rule. Data are not qualified for Field Duplicates as these are evaluated for the total project by the Project Manager.

Yes ___X__ No ____ NA _____

All field precision limits were met for these samples. The results which are non-detect for one sample and a low level result for the other are not calculated, but are noted for project management review. Only 2 cases have a value > 2 x the RL and a 'U'.

Parent (all ending in ODLB-6)	**Duplicate**
MW-28	DUP-1
MW-33	DUP-2
MW-130	DUP-3
MW-157	DUP-4
Broken, no parent	DUP-5
MW-174	DUP-6
MW-224	DUP-7
MW-235	DUP-8
MW-248	DUP-9
MW-44	DUP-10
MW-150	DUP-11
MW-159	DUP-12

	MW-157-ODLB-6	DUP-4
1,1,2,2-Tetrachloroethane	0.494	0.5U

Acetone	5.66	10U
Chloroform	*2.88*	*0.3U*
Trichloroethene	*2.49*	*1U*
cis-1,2-Dichloroethene	0.351	1U

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 _____

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:
This report has been requested to include the following review: QC, hold times, sample integrity (Chains of Custody, sample login), and summary calibrations. Note that there are 18 QC sets (days of analysis per instrument) and 3 instruments for the 104 non-MS/MSD samples.

Chain of Custody

The laboratory has signed and affixed a receipt label on all pages. The relinquishment date and time are part of the electronically-generated COC and are present only on the last page of the COC. There is an electronic signature on the last page unless noted.
In addition, there are sample receipt acknowledgements from the laboratory. The log in forms contain the courier identification and air bill number.

Sample Preservation

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

The Record of Sample Receipt notes the following
13040648: For MW80 1 MS and MSD not collected. 2 vials available from parent and used for QC.

13040687: MW-78 for the MS/MSD there was no ID on the label. Samples logged per client clarification
13040808: MW182 and MW-237 received with 2 of the 3 vials broken. 1 vial ok for the analysis. MW-244 all broken and an MSD vial from this QC sample used for the parent
13040809: 9 of the samples arrived with all 3 vials broken, 10 samples (2 of which are MS/MSD) arrived with 2 of the 3 vials broken. When possible, the 1 vial was used for analysis.
13040810: samples arrived with broken vials for MW-152, all broken for MW-159 and 1 broken for Dup-9 and MW-158A.
The samples that could not be retrieved from on unbroken vial were re-samples and analyzed in SDG 13050701.

Holding Times

13040809: Sample MW-134 was a bit over 2 days out of hold time and MW-144 was close to 4 days over hold time. Data have been qualified JH#, where # is the rounded hold time. There could be a low bias to detected data or false undetected values at the MDL, although probably verified at the RL as the holding time is short.

Initial Calibrations

Method 8260: Per the Project Manager, the 2007 EPA CLP validation guidance has been applied to the common "poor responders." Calibration response factors were acceptable for Acetone , 4-methyl-2-pentanone, and 2-butanone and other 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 this data set. The laboratory has been tasked with providing to the client verification that the 0.01 RF is valid. If the spectral verification is available, data are not qualified for response factors greater than 0.01 and less than 0.05 for "poor responders." No data have been qualified.
The following applies to the ICV for each initial calibration. Dichlorodifluoromethane is high is the ICVs for all 3 instruments (6, 8 and 11). Other poor responders (pr) have also been noted as slightly high. The compounds are not detected in the samples and no qualifier is applied. See table below.

Continuing Calibrations

When there are no detections, no qualification is required unless the % D is biased low and so large as to indicate a significant probability of false negatives. Qualification is required for a % D for detected compounds only. This requires that the RF is acceptable to verify the non-detect status, which is the case here.
Data would be qualified "JC#", where # is the % D. There could be variability to the data as there is variability to the response. No qualifiers have been required with the exception of one JC-53 for bromomethane for SDG 13040648 as this is an extensive drop in response. The response factor is still well within limits to verify the non-detects. Also qualification of JC#, where # is the %D, of detected data for carbon tetrachloride as noted in the summary of qualifiers table. There could be slight high bias to the data.

LAB ID	CLIENT ID	Parameter	Result ug/L	Lab Flag	RL	Qualifier
L13040648-02	MW-80-ODLB-6	Bromomethane		U	1	JC-53
L13040648-05	MW-169-ODLB-6	Bromomethane		U	1	JC-53
L13040648-06	MW-170-ODLB-6	Bromomethane		U	1	JC-53
L13040808-02	MW-44-ODLB-6	Carbon tetrachloride	0.827	F	1	JC20.2
L13040808-06	MW-166-ODLB-6	Carbon tetrachloride	0.838	F	1	JC20.2
L13040808-07	MW-166A-ODLB-6	Carbon tetrachloride	0.276	F	1	JC20.2

Matrix Spikes

The MS/MSDs include (all ending in ODLB-6):
MW-80, MW-78, MW-227, MW-244, MW-163, MS-180.

The client has designated the samples and this meets the recommendation of 1 per 20 field (not field QC or blank) samples. As this is an ongoing project an overall adherence to the 1:20 frequency is monitored by the Project Manager.
The lab notes they do not report non-client QC. In most, and not all cases, and LCS/LCSD is reported.
The full target list has been spiked. For sample MW-244, the recovery for carbon disulfide was low. Data have been qualified JMS55.5 to indicate the %R and a possible low bias to the data.
Dichlorodifluoromethane was high for MW-78 MS; the MSD was within limits. The compound is not detected and no qualifier is required. The LCS is also high for this data set and the high recovery may also be a reflection of laboratory bias.

Laboratory Control Samples
The full target list has been spiked. When a high LCS recovery is associated with a non-detect in samples, no qualifier is added since the indicated bias is high. When the target is detected, data are qualified "JL#", where # is the recovery. Data could be biased high proportional to the LCS percent recovery. All results associated with low recoveries are qualified and data could be biased low. The laboratory uses the same control limits on all 3 instruments used for analysis even though the responses are different on each instrument. The control limits should be instrument specific. No data have been qualified.
Dichlorodifluoromethane is routinely high for all three instruments. In no case is the compound detected and non-detected data are not qualified for high recovery. Trichloromethane is high for SDG 13050701 and MTBE was slightly high in 13040809.

Method Blanks
Vinyl chloride was reported at 0.27 ug/L in the method blank for 13050701. The compound is not detected in client samples and no qualifier is required.

Field Blanks
The field blanks are RB1 and RB2. The samples contained 1,4 dichlorobenzene at 0.26 and 0.253 ug/L, respectively. This is not a common contaminant and the detection is unusual. No samples contained the compound. No data are qualified.

Five Trip blanks were collected and all were non-detected with the exception of one TB09 with detections of acetone, methylene chloride and styrene. Styrene is not reported in the associated samples. No qualifiers have been applied. Acetone and methylene chloride data are qualified UTB#, where # is the blank value. Data are fully usable as non-detected values. The trip blank was run twice in this SDG and both values would impact client data. See table below of qualified data.

Field QC
All field precision limits were met for these samples. The results which are non-detect for one sample and a low level result for the other are not calculated, but are noted for project management review. Only 2 cases have a value > 2 x the RL and a 'U'.

Parent (all ending in ODLB-6)	**Duplicate**
MW-28	DUP-1
MW-33	DUP-2
MW-130	DUP-3
MW-157	DUP-4
Parent sample bottle broken	DUP-5
MW-174	DUP-6
MW-224	DUP-7
MW-235	DUP-8
MW-248	DUP-9

MW-44	DUP-10
MW-150	DUP-11
MW-159	DUP-12

	MW-157-ODLB-6	DUP-4
1,1,2,2-Tetrachloroethane	0.494	0.5U
Acetone	5.66	10U
Chloroform	*2.88*	*0.3U*
Trichloroethene	*2.49*	*1U*
cis-1,2-Dichloroethene	0.351	1U

TABLE OF QUALIFIED DATA

LAB ID	CLIENT ID	Parameter	Result ug/L	Lab Flag	RL	Qualifier
L13040648-02	MW-80-ODLB-6	Bromomethane		U	1	JC-53
L13040648-05	MW-169-ODLB-6	Bromomethane		U	1	JC-53
L13040648-06	MW-170-ODLB-6	Bromomethane		U	1	JC-53
L13040808-02	MW-44-ODLB-6	Carbon tetrachloride	0.827	F	1	JC20.2
L13040808-06	MW-166-ODLB-6	Carbon tetrachloride	0.838	F	1	JC20.2
L13040808-07	MW-166A-ODLB-6	Carbon tetrachloride	0.276	F	1	JC20.2
L13050701-01	MW-44-ODLB-6-RE	Acetone	4.45	F	10	UTB5.46
L13050701-01	MW-44-ODLB-6-RE	Methylene chloride		U	1	UTB.631
L13050701-02	MW-54-ODLB-6	Acetone	3.09	F	10	UTB5.46
L13050701-02	MW-54-ODLB-6	Methylene chloride		U	1	UTB.631
L13050701-03	MW-77-ODLB-6	Acetone	3.02	F	10	UTB5.46
L13050701-03	MW-77-ODLB-6	Methylene chloride		U	1	UTB.631
L13050701-04	MW-134-ODLB-6-RE	Acetone	3.84	F	10	UTB5.46
L13050701-04	MW-134-ODLB-6-RE	Methylene chloride		U	1	UTB.631
L13050701-05	MW-144-ODLB-6-RE	Acetone	5.26	F	10	UTB5.46
L13050701-05	MW-144-ODLB-6-RE	Methylene chloride		U	1	UTB.631
L13050701-06	MW-150-ODLB-6-RE	Acetone	5.49	F	10	UTB5.46
L13050701-06	MW-150-ODLB-6-RE	Methylene chloride		U	1	UTB.631
L13050701-07	MW-152-ODLB-6	Acetone	3.72	F	10	UTB5.46
L13050701-07	MW-152-ODLB-6	Methylene chloride		U	1	UTB.631
L13050701-08	MW-159-ODLB-6	Acetone	3.95	F	10	UTB5.46
L13050701-08	MW-159-ODLB-6	Methylene chloride		U	1	UTB.631
L13050701-09	MW-163-ODLB-6	Acetone	4.31	F	10	UTB5.46
L13050701-09	MW-163-ODLB-6	Methylene chloride		U	1	UTB.631
L13050701-10	MW-180-ODLB-6	Acetone	4.6	F	10	UTB5.46
L13050701-10	MW-180-ODLB-6	Methylene chloride		U	1	UTB.631
L13050701-13	MW-184-ODLB-6	Acetone	3.08	F	10	UTB5.46
L13050701-13	MW-184-ODLB-6	Methylene chloride		U	1	UTB.631
L13050701-14	MW-190-ODLB-6	Acetone	4.61	F	10	UTB5.46
L13050701-14	MW-190-ODLB-6	Methylene chloride		U	1	UTB.631
L13050701-15	MW-225-ODLB-6	Acetone	4.22	F	10	UTB5.46
L13050701-15	MW-225-ODLB-6	Methylene chloride		U	1	UTB.631
L13050701-16	MW-230-ODLB-6	Acetone	4.3	F	10	UTB5.46
L13050701-16	MW-230-ODLB-6	Methylene chloride		U	1	UTB.631
L13050701-17	MW-249-ODLB-6	Acetone	3.51	F	10	UTB5.46
L13050701-17	MW-249-ODLB-6	Methylene chloride		U	1	UTB.631
L13050701-18	DUP-10-ODLB-6	Acetone	2.92	F	10	UTB5.46
L13050701-18	DUP-10-ODLB-6	Methylene chloride		U	1	UTB.631
L13050701-19	DUP-11-ODLB-6	Acetone	4.25	F	10	UTB5.46
L13050701-19	DUP-11-ODLB-6	Methylene chloride		U	1	UTB.631
L13050701-20	DUP-12-ODLB-6	Acetone	3.08	F	10	UTB5.46
L13050701-20	DUP-12-ODLB-6	Methylene chloride		U	1	UTB.631
L13040809-16	MW-144-ODLB-6	All data				JH2
L13040809-15	MW-134-ODLB-6	All data				JH4
L13040808-14	MW-244-ODLB-6	Carbon disulfide		U	1	JMS55.5

Final Data Qualification and Usability Report

Project:	Defense Depot Memphis, TN (DDMT) Off-Depot LTM
Sampling Event:	ODLB-6
Project / Task Number:	228-192672-007
Sample Data Package(s):	L13040648, L13040680, L13040687, L13040808, L13040809, L13040810, L13050701
Data Validation Performed by:	Diane Short & Associates (DSA)
Final Data Qualification and Usability Report Prepared by:	Lynn K. Lutz, HDR Inc.

Data Validation Report Review and Comments

The data validation report was acceptable.

The data validator reported a sample count of 104 samples including field duplicates, trip blanks and rinse blanks, but the project chemist counted 107 samples. The data validator received all sample results.

The data validator noted that the responses of poor responders should be verified to show that the minimum relative response factor (RRF) was acceptable. The project chemist reviewed the initial calibration quantitation reports and determined that the responses of the poor responders were sufficient, and no qualification was required.

Final Data Qualifiers

Final qualifiers were J where detected results were between the MDL and RL.

Final qualifiers were J or UJ where DSA qualified JH2 or JH4 due to holding time exceedances.

Final qualifiers were UJ where DSA qualified JC-53 due to continuing calibration exceedances.

Final qualifiers were J where DSA qualified JC20.2 due to continuing calibration exceedances.

Final qualifiers were J or UJ where DSA did not qualify due to continuing calibration exceedances, for bromomethane (-29.7%D, -23.0%D, -36.5%D, -25.4%D, -32.2%D, -20.3%D, -38.7%D), acetone (-23.0%D, -31.5%D, -26.4%D, -34.3%D), chloromethane (-27.7%D, -23.2%D, -21.8%D, -27.2%D, -22.0%D, -24.3%D), 2-butanone (-24.8%D, -27.8%D, -26.2%D, -21.8%D, -25.3%D), 4-methyl-2-pentanone (-20.2%D), 2-hexanone (-20.1%D), 1,2,3-trichloropropane (-20.5%D, -20.4%D), dichlorodifluoromethane (-27.1%D, -36.4%D, -20.8%D, -29.5%D), 1,1,2,2-tetrachloroethane (-22.0%D), 1,2-dibromo-3-chloropropane (-20.1%D, -24.0%D, -20.6%D) and bromoform (-22.2%D). DSA used criteria from the National Functional Guidelines for qualification, but the Memphis project QAPP calls for qualification when the %D is greater than 20%.

Final qualifiers were J where DSA qualified JMS55.5 due to MS/MSD recoveries.

Final qualifiers were J where DSA qualified UTB5.46 for acetone due to the analyte being detected in the trip blank.

Final qualifiers were not applicable where DSA qualified UTB.631 for methylene chloride due to the analyte being detected in the trip blank, as all methylene chloride was non-detect in all associated samples.

Final qualifiers were J/UJ for chloroform and trichloroethene in MW-157-ODLB-6 and its field duplicate DUP-4 where DSA had not qualified due to parent/field duplicate results where one result was non-detect and the other result was greater than 2 times the reporting limit.

Data Usability

There were no rejected sample results. All results are usable as qualified.

19 June 2013

Lynn K. Lutz, HDR Inc. Date

DIANE SHORT & ASSOCIATES, INC.
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ORGANIC DATA QUALITY REVIEW REPORT
Volatile Organics by SW-846 Method 8260B (GC/MS)

SDG	L131: 01112, 01114, 01116, 01117
PROJECT	Memphis Defense Depot, LA-18 Sampling for HDR, Denver
LABORATORY	Microbac Laboratories, Inc., Marietta, OH
SAMPLE MATRIX	Water
SAMPLING DATE	10/2013
NUMBER OF SAMPLES	108, including 9 field duplicates, 2 trip blanks
ANALYSES REQUESTED	SW-846 8260B (VOA by GC/MS)
SAMPLE NUMBER	See result forms attached and associated EDD

DATA REVIEWER: Diane Short

QA REVIEWER: Diane Short & Associates, Inc. INITIALS/DATE: __ DLS 12/16/2013

Telephone Logs included Yes____ No __X_

Contractual Violations Yes____ No __X_

The project QAPP (09/11), the EPA Contract Laboratory Program National Functional Guidelines for Organic Review, 1999 and 2001, and the SW-846 Method 8260B 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 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 report has been requested to include the following review: QC, hold times, sample integrity (Chains of Custody, sample login), and summary calibrations.
The 2011 QAPP has been used for all review with the exception of the CCAL limits where the 25% NFG limits were applied as Method 8260B was used, not 8260C nor the CLP method. Final application of these limits is being considered by project management.

B. Chain of Custody documentation was complete and accurate.
Yes __X__ No _____
Computer generated chains are submitted for all SDGs.

C. Samples were received at the required temperature, preservation and intact with no bubbles.
Yes ____ No __X___
EPA regulations (See Federal Register, March 12, 2007, 40CFR Part 122) require only that the temperature of samples delivered to the laboratory be equal to or less than 6 °C. The sample temperature conditions are fully compliant with applicable regulations.

II. ANALYTICAL REPORT FORMS

A. The Analytical Report or Data Sheets are present and complete for all requested analyses.
Yes __X__ No _____

B. Holding Times
1. The contract holding times were met for all analyses [time of sample receipt to time of analysis (VOA) or time of extraction to time of analysis].
Yes __X__ 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 __X__ 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 or > 0.01 for poor responding volatiles.
Yes __X__ No _____ NA _____
Method 8260: Per the Project Manager, the 2001 EPA CLP validation guidance has been applied to the common “poor responders.” Calibration response factors below 0.05 have historically been observed for Acetone, 2-butanone and sometimes 4-methyl-2-pentanone. This is predominately for Instrument 6. 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 this data set. The laboratory has been tasked with providing to the client verification that the 0.01 RF is valid. If the spectral verification is available, data are not qualified for response factors greater than 0.01 and less than 0.05 for “poor responders.” No data have been qualified.

Most of 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 __X__ 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, the average % RSD was < 15%, or a linear curve was used.
Yes ____ No _____ NA _____
Linear curve values are reported.

3. The 12 hour system Performance Check was performed as required in SW-846 and met the QC limits of 80 – 120%.
Yes ____ No __X___ NA _____
Dichlorodifluoromethane is high in the ICV for all four instruments. It is also high in the CCAL for most of the calibrations. The compound is not detected in client samples and no qualification is required for high recovery.

B. Continuing Calibrations
1. The midpoint standard was analyzed for each analysis at the required frequency, and the QC criterion of > 0.05 (> 0.01 for CLP 2001 VOA) was met.
Yes __X__ No _____ NA _____
Note that the poor responders are out in the CCAL for the same compounds that were out in the ICAL.

2. The percent difference (% D) limits of ± 25% were met. The 2001 NFG also allow for 40% D for the "poor responders." For other compounds, the QAPP notes rejection of detected compounds with % D > 40%.
Yes _____ No __X__ NA _____
One or two of the poor responders are slightly high for Instruments 8, 9 and 17. For instrument 9, there are 15 compounds that do not meet the lab 20% limit, but only 6 do not meet the EPA 25% limit and 2 of those are poor responders. No detections are reported and no qualification has been required except for 1,1,2,2-tetrachloroethane which is also qualified for LCS outliers.

Lab ID	Client ID	Analyte	Result ug/L	MDL	Qualifier
L13101117-10	DUP-6-LA-18	1,1,2,2-Tetrachloroethane	1.1	0.2	JL150C28.9
L13101117-14	MW-64-LA-18	1,1,2,2-Tetrachloroethane	1.57	0.2	JL150C28.9

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 (IS) met the 100% upper and -50% lower limits criteria, and the Retention times were within the required windows.
Yes __X__ No _____ NA _____

VI. SURROGATE STANDARDS

Surrogate spikes were analyzed with every sample.
Yes __X__ No _____

And met the recovery limits defined in the QAPP , which are the laboratory limits.
Yes ____ No _X____
There are high surrogates for bromofluorobenzene for 4 samples. Data are qualified JSUR#, where # is the surrogate recovery. Per the validation guidance, all data are qualified although technically only compounds of similar chemical character would be expected to be impacted. There are only a few detected compounds and the outlier does not appear to have biased the data.

Lab ID	Client ID	Analyte	Result ug/L	MDL	Qualifier
L13101112-24	MW-255-LA-18	Acetone	11.2	2.5	JSUR121
L13101112-24	MW-255-LA-18	Trichloroethene	0.353	0.25	JSUR121
L13101112-25	MW-256-LA-18	Acetone	8.94	2.5	JSUR125
L13101112-25	MW-256-LA-18	Carbon tetrachloride	0.366	0.25	JSUR125
L13101112-25	MW-256-LA-18	Chloroform	2.29	0.125	JSUR125
L13101112-25	MW-256-LA-18	Chloromethane	0.552	0.5	JSUR125
L13101112-25	MW-256-LA-18	Tetrachloroethene	37.7	0.25	JSUR125
L13101112-25	MW-256-LA-18	Trichloroethene	14	0.25	JSUR125
L13101116-01	PZ-03-LA-18	Chloroform	0.263	0.125	JSUR120
L13101116-01	PZ-03-LA-18	Chloromethane	0.679	0.5	JSUR120
L13101116-01	PZ-03-LA-18	Tetrachloroethene	2.43	0.25	JSUR120
L13101116-01	PZ-03-LA-18	Trichloroethene	5.81	0.25	JSUR120
L13101116-01	PZ-03-LA-18	Trichlorofluoromethane	0.29	0.25	JSUR120
L13101116-01	PZ-03-LA-18	Tetrachloroethene	2.19	0.25	JSUR123
L13101116-01	PZ-03-LA-18	Trichloroethene	5.83	0.25	JSUR123
L13101116-09	MW-261-LA-18	Trichloroethene	2.71	0.25	JSUR127

VII. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A. Matrix Spike (MS) and Matrix Spike Duplicate (MSD) were analyzed for every analysis performed and for every 20 samples or for every matrix whichever is more frequent.
Yes __X__ No _____
There are five MS/MSD samples associated with the non-QC client samples. The QC samples are noted and all have an LA-18 as part of the ID at the end: MW-102B, MW-205B, MW256, and PW-101-06; DR2-6. This meets the recommendation of 1 per 20 field samples. As this is an ongoing project an overall adherence to the 1:20 frequency is monitored by the Project Manager.
Note that the laboratory has not submitted MS/MSD samples with every SDG and has reported only the client designated samples. LCS and LCSD are usually, but not always submitted. As only client samples are used for qualification and for frequency review, no further action is taken.

B. The MS and MSD percent recoveries were within the limits defined in the updated 2011 QAPP, which now references the laboratory limits.
Yes ____ No __X___ NA _____
The full target list has been spiked.

Data have been qualified JMS#, where # is the lowest or highest spike recovery. There could be a slight low or high bias to the results proportional to the recovery. The same compounds were high as were high for the LCS for the samples run on Instrument 9. High recoveries do not apply to non-detected data.

Lab ID	Client ID	Analyte	Result ug/L	MDL	Qualifier
L13101117-04	DR2-6-LA-18	1,2,3-Trichloropropane	9.06	0.5	JL131MS141
L13101117-04	DR2-6-LA-18	Acetone	17.1	2.5	JL146MS164
L13101117-21	MW-107B-LA-18	Tetrachloroethene	25.1	0.25	JMS62.8

C. The MSD relative percent differences (RPD) were within the defined contract limits, which are 30%.
Yes __X__ No _____ NA _____
Qualifiers are added only when the MS or MSD recovery is also out of limits or the RPD exceeds 30%. Data are qualified "JD#", where # is the RPD. As the RPD increases, the matrix precision decreases. All RPD limits are met.

D. The MS/MSD were client samples.
Yes __X__ No _____ NA _____

VIII. LABORATORY CONTROL SAMPLE
A. Laboratory Control Sample (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 updated 2011 QAPP, which are the laboratory limits. If an LCS and LCSD are analyzed, both samples must have the same compounds out for data to be qualified.
Yes ____ No __X___
The full target list has been spiked. When a high LCS recovery is associated with a non-detect in samples, no qualifier is added since the indicated bias is high. When the target is detected, data are qualified "JL#", where # is the recovery. Data could be biased high proportional to the LCS percent recovery. For instrument 9, there are 10 compounds that do not meet the lab limits, and all are high. Non-detected data are not qualified. No detections are reported and no qualification has been required except as noted below.

Lab ID	Client ID	Analyte	Result ug/L	MDL	Qualifier
L13101114-17	MW-204A-LA-18	Acetone	6.22	2.5	JL149
L13101114-18	MW-204B-LA-18	1,1,2,2-Tetrachloroethane	1.46	0.2	JL144
L13101114-18	MW-204B-LA-18	Acetone	8.59	2.5	JL149
L13101114-19	MW-205A-LA-18	Acetone	7.77	2.5	JL149
L13101114-19	MW-205A-LA-18	Methyl t-butyl ether (MTBE)	0.689	0.5	JL127
L13101114-23	MW-206A-LA-18	Methyl t-butyl ether (MTBE)	0.543	0.5	JL127
L13101114-26	MW-209A-LA-18	Methyl t-butyl ether (MTBE)	4.25	0.5	JL127
L13101117-01	DR2-1-LA-18	Acetone	24	2.5	JL146
L13101117-02	DR2-3-LA-18	Acetone	7.71	2.5	JL146
L13101117-03	DR2-4-LA-18	Acetone	5.02	2.5	JL146
L13101117-04	DR2-6-LA-18	1,2,3-Trichloropropane	9.06	0.5	JL131MS141
L13101117-04	DR2-6-LA-18	Acetone	17.1	2.5	JL146MS164

L13101117-07	PMW92-02-LA-18	Acetone	10.9	2.5	JL146
L13101117-08	DUP-2-LA-18	Acetone	13.2	2.5	JL146
L13101117-09	DUP-3-LA-18	Acetone	5.03	2.5	JL146
L13101117-10	DUP-6-LA-18	1,1,2,2-Tetrachloroethane	1.1	0.2	JL150C28.9
L13101117-10	DUP-6-LA-18	Acetone	15.2	2.5	JL146
L13101117-11	MW-26-LA-18	Acetone	3.72	2.5	JL146
L13101117-12	MW-63A-LA-18	Acetone	2.91	2.5	JL146
L13101117-13	MW-63B-LA-18	Acetone	3.26	2.5	JL146
L13101117-14	MW-64-LA-18	1,1,2,2-Tetrachloroethane	1.57	0.2	JL150C28.9
L13101117-14	MW-64-LA-18	Acetone	18	2.5	JL146
L13101117-15	MW-88-LA-18	Acetone	8.81	2.5	JL146
L13101117-16	MW-92-LA-18	Acetone	12	2.5	JL146

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__
Whenever Methylene Chloride, Acetone, 2-Butanone are detected in associated samples at a level less than 10 × the Method Blank (corrected for dilution), data are qualified "BMB#", where # is the corrected Method Blank level. Results are usable as non-detect. All method blanks were reported as non-detect with the exception of chloromethane.

Lab ID	Client ID	Analyte	Result ug/L	MDL	Qualifier
L13101117-17	MW-94A-LA-18	Chloromethane	0.643	0.5	BMB.501
L13101117-19	MW-104-LA-18	Chloromethane	0.525	0.5	BMB.501

C. If Field Blanks were identified, no blank contamination was found.
Yes _X____ No _____ NA ____
No field blank is reported and there are 4 trip blanks, one for each day of sampling although not one per cooler. The samples were clean and no qualifiers have been applied.

X. FIELD QC

If Field Duplicates were identified, they met guidance for VOA of RPD of < 30% for water or < 50% for soil. For values reported at < 5 × the reporting limit (RL), a difference of 2 × RL or 3.5 × RL for soil is used as guidance. This is referred to as the CRDL Rule. Data are not qualified for Field Duplicates as these are evaluated for the total project by the Project Manager.
Yes ___X__ No ____ NA _____
There are 9 identified field duplicates as described in the following table. If data were qualified they would be J, FD#, where # is the difference between the two values as both values are less than 5 x RL. All RPDs were acceptable or differences between low level values were less than 2 x RL.

MW-25A-LA-18	DUP-1

MW-92-LA-18	DUP-2
MW107B-LA-18	DUP-3
MW-202A-LA-18	DUP-4
MW-208B-LA-18	DUP-5
MW-217-LA-18	DUP-6
MW-261-LA-18	DUP-7
DR1-8-LA-18	DUP-8
PW101-03B-LA-18	DUP-9

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 _____

XII. 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:
This report has been requested to include the following review: QC, hold times, sample integrity (Chains of Custody, sample login), and summary calibrations.

The 2011 QAPP has been used for all review with the exception of the CCAL limits where the 25% NFG limits were applied as Method 8260B was used, not 8260C or the CLP method. Final application of these limits is being considered by project management.

Sample Preservation

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

Chains of Custody

Computer generated chains are submitted.

Initial Calibrations

Method 8260: Per the Project Manager, the 2001 EPA CLP validation guidance has been applied to the common "poor responders." Calibration response factors below 0.05 have historically been observed for Acetone, 2-butanone and sometimes 4-methyl-2-pentanone. This is predominately for Instrument 6. 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 this data set. The laboratory has been tasked with providing to the client verification that the 0.01 RF is valid. If the spectral verification is available, data are not qualified for response factors greater than 0.01 and less than 0.05 for "poor responders." No data have been qualified.

ICV

Dichlorodifluoromethane is high in the ICV for all four instruments. It is also high in the CCAL for most of the calibrations. The compound is not detected in client samples and no qualification is required for high recovery.

CCAL

One or two of the poor responders are slightly high for Instruments 8, 9 and 17. For instrument 9, there are 15 compounds that do not meet the lab 20% limit, but only 6 do not meet the EPA 25% limit and 2 of those are poor responders. No detections are reported and no qualification has been required except for 1,1,2,2-tetrachloroethane which is also qualified for LCS outliers.

Matrix Spikes

There are five MS/MSD samples associated with the non-QC client samples. The QC samples are noted and all have an LB-18 as part of the ID at the end: MW-102B, MW-205B, MW256, and PW-101-06; DR2-6. This meets the recommendation of 1 per 20 field samples. As this is an ongoing project an overall adherence to the 1:20 frequency is monitored by the Project Manager.

Note that the laboratory has not submitted MS/MSD samples with every SDG and has reported only the client designated samples. LCS and LCSD are usually, but not always submitted. As only client samples are used for qualification and for frequency review, no further action is taken.

Data have been qualified JMS#, where # is the lowest or highest spike recovery. There could be a slight low or high bias to the results proportional to the recovery. The same compounds were high as were high for the LCS for the samples run on Instrument 9. High recoveries do not apply to non-detected data.

Laboratory Control Samples

The full target list has been spiked. When a high LCS recovery is associated with a non-detect in samples, no qualifier is added since the indicated bias is high. When the target is detected, data are qualified "JL#", where # is the recovery. Data could be biased high proportional to the LCS percent recovery. For instrument 9, there are 10 compounds that do not meet the lab limits, and all are high. Non-detected data are not qualified. No detections are reported and no qualification has been required except as noted below.

Method Blanks

Whenever Methylene Chloride, Acetone, 2-Butanone are detected in associated samples at a level less than 10 × the Method Blank (corrected for dilution), data are qualified "BMB#", where # is the corrected Method Blank level. Results are usable as non-detect. All method blanks were reported as non-detect with the exception of chloromethane.

Surrogates

There are high surrogates for bromofluorobenzene for 4 samples. Data are qualified JSUR#, where # is the surrogate recovery. Per the validation guidance, all data are qualified although technically only compounds of similar chemical character would be expected to be impacted. There are only a few detected compounds and the outlier does not appear to have biased the data.

Field Blanks

No field blank is reported and there are 2 trip blanks. The samples were clean and no qualifiers have been applied.

Field QC

There are 9 identified field duplicates as described in the following table. If data were qualified they would be J, FD#, where # is the difference between the two values as both values are less than 5 x RL. All RPDs were acceptable or differences between low level values were less than 2 x RL.

MW-25A-LA-18	DUP-1
MW-92-LA-18	DUP-2
MW107B-LA-18	DUP-3
MW-202A-LA-18	DUP-4
MW-208B-LA-18	DUP-5
MW-217-LA-18	DUP-6
MW-261-LA-18	DUP-7
DR1-8-LA-18	DUP-8
PW101-03B-LA-18	DUP-9

TABLE OF QUALIFIED DATA

Lab ID	Client ID	Analyte	Result ug/L	MDL	Qualifier
L13101112-24	MW-255-LA-18	Acetone	11.2	2.5	JSUR121
L13101112-24	MW-255-LA-18	Trichloroethene	0.353	0.25	JSUR121
L13101112-25	MW-256-LA-18	Acetone	8.94	2.5	JSUR125
L13101112-25	MW-256-LA-18	Carbon tetrachloride	0.366	0.25	JSUR125
L13101112-25	MW-256-LA-18	Chloroform	2.29	0.125	JSUR125
L13101112-25	MW-256-LA-18	Chloromethane	0.552	0.5	JSUR125
L13101112-25	MW-256-LA-18	Tetrachloroethene	37.7	0.25	JSUR125
L13101112-25	MW-256-LA-18	Trichloroethene	14	0.25	JSUR125
L13101114-17	MW-204A-LA-18	Acetone	6.22	2.5	JL149
L13101114-18	MW-204B-LA-18	1,1,2,2-Tetrachloroethane	1.46	0.2	JL144
L13101114-18	MW-204B-LA-18	Acetone	8.59	2.5	JL149
L13101114-19	MW-205A-LA-18	Acetone	7.77	2.5	JL149
L13101114-19	MW-205A-LA-18	Methyl t-butyl ether (MTBE)	0.689	0.5	JL127
L13101114-23	MW-206A-LA-18	Methyl t-butyl ether (MTBE)	0.543	0.5	JL127
L13101114-26	MW-209A-LA-18	Methyl t-butyl ether (MTBE)	4.25	0.5	JL127
L13101117-01	DR2-1-LA-18	Acetone	24	2.5	JL146
L13101117-02	DR2-3-LA-18	Acetone	7.71	2.5	JL146
L13101117-03	DR2-4-LA-18	Acetone	5.02	2.5	JL146
L13101117-04	DR2-6-LA-18	1,2,3-Trichloropropane	9.06	0.5	JL131MS141
L13101117-04	DR2-6-LA-18	Acetone	17.1	2.5	JL146MS164
L13101117-07	PMW92-02-LA-18	Acetone	10.9	2.5	JL146
L13101117-08	DUP-2-LA-18	Acetone	13.2	2.5	JL146
L13101117-09	DUP-3-LA-18	Acetone	5.03	2.5	JL146
L13101117-10	DUP-6-LA-18	1,1,2,2-Tetrachloroethane	1.1	0.2	JL150C28.9
L13101117-10	DUP-6-LA-18	Acetone	15.2	2.5	JL146
L13101117-11	MW-26-LA-18	Acetone	3.72	2.5	JL146
L13101117-12	MW-63A-LA-18	Acetone	2.91	2.5	JL146
L13101117-13	MW-63B-LA-18	Acetone	3.26	2.5	JL146
L13101117-14	MW-64-LA-18	1,1,2,2-Tetrachloroethane	1.57	0.2	JL150C28.9

L13101117-14	MW-64-LA-18	Acetone	18	2.5	JL146
L13101117-15	MW-88-LA-18	Acetone	8.81	2.5	JL146
L13101117-16	MW-92-LA-18	Acetone	12	2.5	JL146
L13101117-17	MW-94A-LA-18	Chloromethane	0.643	0.5	BMB.501
L13101117-19	MW-104-LA-18	Chloromethane	0.525	0.5	BMB.501
L13101117-21	MW-107B-LA-18	Tetrachloroethene	25.1	0.25	JMS62.8
L13101116-01	PZ-03-LA-18	Chloroform	0.263	0.125	JSUR120
L13101116-01	PZ-03-LA-18	Chloromethane	0.679	0.5	JSUR120
L13101116-01	PZ-03-LA-18	Tetrachloroethene	2.43	0.25	JSUR120
L13101116-01	PZ-03-LA-18	Trichloroethene	5.81	0.25	JSUR120
L13101116-01	PZ-03-LA-18	Trichlorofluoromethane	0.29	0.25	JSUR120
L13101116-01	PZ-03-LA-18	Tetrachloroethene	2.19	0.25	JSUR123
L13101116-01	PZ-03-LA-18	Trichloroethene	5.83	0.25	JSUR123
L13101116-09	MW-261-LA-18	Trichloroethene	2.71	0.25	JSUR127

Final Data Qualification and Usability Report

Project:	Defense Depot Memphis, TN (DDMT) Main Installation Long Term Monitoring
Sampling Event:	LA-18
Project / Task Number:	228-192672-008
Sample Data Package(s):	L13101112, L13101114, L13101116, L13101117
Data Validation Performed by:	Diane Short & Associates (DSA)
Final Data Qualification and Usability Report Prepared by:	Lynn K. Lutz, HDR Inc.

Data Validation Report Review and Comments

The validation report was acceptable except as noted below for final qualifiers.

The validator, in discussing relative response factors, noted that "[t]he laboratory has been tasked with providing to the client verification that the 0.01 RF is valid. If the spectral verification is available, data are not qualified for response factors greater than 0.01 and less than 0.05 for 'poor responders.'" The Project Chemist reviewed the area counts for the lowest standard included in the initial calibration for the low responders and found the areas to be adequate, and no qualifiers were applied.

The validator did not qualify 1,2-dibromo-3-chloropropane (DBCP), acetone or MEK results based on low responses in the CCVs; the PC evaluated the %D values and qualified associated results as non-detect estimated "UJ" as follows, as both the project QAPP and the method require CCV results be within 20%D:

- DBCP - workgroup # WG450268: %D = -24.3%
- DBCP - workgroup # WG450101: %D = -20.4%
- DBCP - workgroup # WG450129: %D = -20.3%
- DBCP - workgroup # WG449964: %D = -23.1%
- Acetone - workgroup # WG449964: %D = -22.3%
- MEK - workgroup # WG449964: %D = -20.8%

Final Data Qualifiers

The final qualifier for some tetrachloroethene results was J where DSA had qualified JC28.9 for a high continuing calibration result.

The final qualifier for some 1,2-dibromo-3-chloropropane (DBCP), acetone and MEK results was UJ where DSA had not qualified.

The final qualifier for a total of 24 results was J where DSA had qualified as JL127, JL131, JL144, JL146, JL149 or JL150 for high LCS recoveries.

The final qualifier for a total of three results was J where DSA had qualified as JMS141 or JMS162 for high MS/MSD recoveries or JMS62.8 for low MS/MSD recoveries.

The final qualifier for 16 detected results was J where DSA had qualified as JSUR120, JSUR121, JSUR123, JSUR125 or JSUR127 for high surrogate recoveries.

The final qualifier for two chloromethane results was B where DSA had qualified as BMB.501 for method blank detection.

The final qualifier was J where the lab had qualified as F.

Data Usability

There were no rejected sample results. All results are usable as qualified.

17 December 2013

Lynn K. Lutz, HDR Inc. Date

DIANE SHORT & ASSOCIATES, INC.
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ORGANIC DATA QUALITY REVIEW REPORT
Volatile Organics by SW-846 Method 8260B (GC/MS)

SDG:	L13100923, L13100994
PROJECT	Memphis Defense Depot, ODLS-7 Sampling for HDR, Denver
LABORATORY	Microbac Laboratories, Inc., Marietta, OH
SAMPLE MATRIX	Water
SAMPLING DATE	10/2013
NUMBER OF SAMPLES	55 water, including 5 field duplicate pairs, 1 trip blank
ANALYSES REQUESTED	SW-846 8260B (VOA by GC/MS)
SAMPLE NUMBER	See result forms attached and associated EDD

DATA REVIEWER: Diane Short

QA REVIEWER: Diane Short & Associates, Inc. INITIALS/DATE: __ DLS 12/16/2013

Telephone Logs included Yes____ No __X_

Contractual Violations Yes____ No __X_

The project QAPP (09/11), the EPA Contract Laboratory Program National Functional Guidelines for Organic Review, 1999 and 2007, and the SW-846 Method 8260B 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 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 report has been requested to include the following review: QC, hold times, sample integrity (Chains of Custody, sample login), and summary calibrations. Note that there are 7 QC sets (days of analysis per instrument) and 5 instruments used in the analyes.

The EDD for L13100923 that was on the CD was missing data for samples 46 – 54. An updated EDD was submitted upon request.

B. Chain of Custody documentation was complete and accurate.

Yes __X__ No _____

No qualifiers have been added for Chain of Custody (COC) issues, and the Project Manager will update COC per the following notes to complete the project record.

The laboratory has signed and affixed a receipt label on all pages. The relinquishment date and time are part of the electronically-generated COC and are present only on the last page of the COC. There is an electronic signature on the last page unless noted. L13100994 has a standard manual entry COC.

In addition, there are sample receipt acknowledgements from the laboratory. The log in forms contain the courier identification and air bill number.

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

Yes _X___ No _____

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

II. ANALYTICAL REPORT FORMS

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

Yes __X__ No _____

B. Holding Times

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

Yes ____ No __X___

See B.2 as qualification is from the CFR holding time.

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 __X__ 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 or > 0.01 for poor responding volatiles.

Yes __X__ No _____ NA _____

Method 8260: Per the Project Manager, the 2007 EPA CLP validation guidance has been applied to the common “poor responders.” Calibration response factors were acceptable for Acetone , 4-methyl-2-pentanone, and 2-butanone and other 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 this data set. The laboratory has been tasked with providing to the client verification that the 0.01 RF is valid. If the spectral verification is available, data are not

qualified for response factors greater than 0.01 and less than 0.05 for "poor responders." No data have been qualified.

Most of 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 __X__ 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% (40% for the poor responders) limit for all other compounds, the average % RSD was < 15%, or a linear curve was used.
Yes __X__ No _____ NA _____

3. The 12 hour system Performance Check was performed as required in SW-846 and met the QC limits of 80 – 120%.
Yes ____ No __X___ NA _____
Dichlorodifluoromethane is high is the ICVs for 4 instruments (6, 8 and 11, 17). Other poor responders (pr) have also been noted as slightly high. The compounds are not detected in the samples and no qualifier is applied. See table below.

B. Continuing Calibrations
1. The midpoint standard was analyzed for each analysis at the required frequency, and the QC criterion of > 0.05 (> 0.01 for CLP 2001 VOA) was met.
Yes __X__ No _____ NA _____

2. The percent difference (% D) limits of ± 20% were met. The 2007 NFG also allow for 40% D for the "poor responders (pr)."
Yes _____ No __X__ NA _____
When there are no detections, no qualification is required unless the % D is biased low and so large as to indicate a significant probability of false negatives. Qualification is required for a % D for detected compounds only. This requires that the RF is acceptable to verify the non-detect status, which is the case here.
Data would be qualified "JC#", where # is the % D. There could be variability to the data as there is variability to the response. No qualifiers have been required.
There were extensive outliers for Instrument 9 but all response factors were acceptable to verify the non-detects. No data are qualified. Most of these same compounds are high in the LCS indicating a global calibration issue.

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 STANDARDS
Surrogate spikes were analyzed with every sample.
Yes __X__ No _____

And met the recovery limits defined in the QAPP , which are the laboratory limits.
Yes __X__ No _____

VII. MATRIX SPIKE/MATRIX SPIKE DUPLICATE
A. Matrix Spike (MS) and Matrix Spike Duplicate (MSD) were analyzed for every analysis performed and for every 20 samples or for every matrix whichever is more frequent.
Yes __X__ No _____
The MS/MSDs include (all ending in ODLS-7) and the 1/20 frequency is met:
MW-130, MW-220, MW-244.

The client has designated the samples and this meets the recommendation of 1 per 20 field (not field QC or blank) samples. As this is an ongoing project an overall adherence to the 1:20 frequency is monitored by the Project Manager.
The lab notes they do not report non-client QC. In most, and not all cases, and LCS/LCSD is reported.

B. The MS and MSD percent recoveries were within the limits defined in the updated 2011 QAPP, which now references the laboratory limits.
Yes ____ No __X___ NA _____
The full target list has been spiked. For MW-134-ODLS-7, there were high recoveries for 4 compounds and RPD that were out but %R's were in for 3 compounds. No qualifiers have been required as the parent sample results are non-detect.

C. The MSD relative percent differences (RPD) were within the defined contract limits, which are 30%.
Yes __X__ No _____ NA _____

D. The MS/MSD were client samples.
Yes __X__ No _____ NA _____
Only client samples reported.

VIII. LABORATORY CONTROL SAMPLE
A. Laboratory Control Sample (LCS) was analyzed for every analysis performed and for every 20 samples.
Yes __X__ No _____
Although not required of the method, an LCS and LCSD are routinely reported when there is not an MS/MSD reported in the data set.

B. The LCS percent recoveries were within the limits defined in the updated 2011 QAPP, which are the laboratory limits. If an LCS and LCSD are analyzed, both samples must have the same compounds out for data to be qualified. The RPD is qualified only if the %R is also out.
Yes ____ No __X___
The full target list has been spiked. When a high LCS recovery is associated with a non-detect in samples, no qualifier is added since the indicated bias is high. When the target is detected, data are qualified "JL#", where # is the recovery. Data could be biased high proportional to the LCS percent recovery. All results associated with low recoveries for 1,2 dibromoethane are qualified and data could be biased slightly low as the limit is 80%.

Lab ID	Client ID	Analyte	result ug/L	MDL	Qualifier
L13100923-32	MW-157-ODLS-7	1,1,2,2-Tetrachloroethane	0.756	0.2	JL144
L13100923-32	MW-157-ODLS-7	Acetone	3.73	2.5	JL149
L13100923-27	MW-79-ODLS-7	1,2-Dibromoethane	U	0.25	JL79.5
L13100923-50	MW-249-ODLS-7	1,2-Dibromoethane	U	0.25	JL79.5
L13100923-51	DUP-2-ODLS-7	1,2-Dibromoethane	U	0.25	JL79.5
L13100923-52	DUP-3-ODLS-7	1,2-Dibromoethane	U	0.25	JL79.5
L13100923-53	DUP-5-ODLS-7	1,2-Dibromoethane	U	0.25	JL79.5
L13100994-01	MW-182-101113	1,2-Dibromoethane	U	0.25	JL79.5

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__
Data have been qualified BMB#, where # is the blank result. Data are fully usable as non-detected values. These are unusual contaminants and may be the result of carryover from a previous sample.

Lab ID	Client ID	Analyte	result ug/L	MDL	Qualifier
L13100923-33	MW-159-ODLS-7	1,2,3-Trichlorobenzene	0.237	0.15	BMB.448
L13100923-33	MW-159-ODLS-7	1,2,4-Trichlorobenzene	0.324	0.2	BMB.529
L13100923-33	MW-159-ODLS-7	n-Butylbenzene	0.436	0.25	BMB.539
L13100923-34	MW-163-ODLS-7	1,2,3-Trichlorobenzene	0.174	0.15	BMB.448
L13100923-34	MW-163-ODLS-7	1,2,4-Trichlorobenzene	0.285	0.2	BMB.529
L13100923-35	MW-164-ODLS-7	1,2,4-Trichlorobenzene	0.228	0.2	BMB.529
L13100923-36	MW-165-ODLS-7	1,2,4-Trichlorobenzene	0.212	0.2	BMB.529

C. If Field Blanks were identified, no blank contamination was found.
Yes _____ No __X___ NA ____
The trip blank was clean.

X. FIELD QC

If Field Duplicates were identified, they met guidance for VOA of RPD of < 30% for water or < 50% for soil. For values reported at < 5 × the reporting limit (RL), a difference of 2 × RL or 3.5 × RL for soil is used as guidance. This is referred to as the CRDL Rule. Data are not qualified for Field Duplicates as these are evaluated for the total project by the Project Manager.
Yes ___X__ No ____ NA _____
All field precision limits were met for these samples. The results which are non-detect for one sample and a low level result for the other are not calculated, but are noted for project management review.

Parent (all ending in ODLS-7)	Duplicate
MW-77	DUP-1
MW-157	DUP-2
MW-184	DUP-3
MW-228	DUP-4
MW-249	DUP-5

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 _____

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:
This report has been requested to include the following review: QC, hold times, sample integrity (Chains of Custody, sample login), and summary calibrations. Note that there are 7 QC sets (days of analysis per instrument) and 5 instruments used for the analyses
The EDD for L13100923 that was on the CD was missing data for samples 46 – 54. An updated EDD was submitted upon request.

<u>Chain of Custody</u>

The laboratory has signed and affixed a receipt label on all pages. The relinquishment date and time are part of the electronically-generated COC and are present only on the last page of the COC. There is an electronic signature on the last page unless noted. L13100994 has a standard manual entry COC.
In addition, there are sample receipt acknowledgements from the laboratory. The log in forms contain the courier identification and air bill number.

<u>Sample Preservation</u>

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

Initial Calibrations

Method 8260: Per the Project Manager, the 2007 EPA CLP validation guidance has been applied to the common "poor responders." Calibration response factors were acceptable for Acetone , 4-methyl-2-pentanone, and 2-butanone and other 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 this data set. The laboratory has been tasked with providing to the client verification that the 0.01 RF is valid. If the spectral verification is available, data are not qualified for response factors greater than 0.01 and less than 0.05 for "poor responders." No data have been qualified.

Dichlorodifluoromethane is high is the ICVs for 4 instruments (6, 8 and 11, 17). Other poor responders (pr) have also been noted as slightly high. The compounds are not detected in the samples and no qualifier is applied. See table below.

Continuing Calibrations

When there are no detections, no qualification is required unless the % D is biased low and so large as to indicate a significant probability of false negatives. Qualification is required for a % D for detected compounds only. This requires that the RF is acceptable to verify the non-detect status, which is the case here.

Data would be qualified "JC#", where # is the % D. There could be variability to the data as there is variability to the response. No qualifiers have been required.

There were extensive outliers for Instrument 9 but all response factors were acceptable to verify the non-detects. No data are qualified. Most of these same compounds are high in the LCS indicating a global calibration issue.

Matrix Spikes

The MS/MSDs include (all ending in ODLS-7) and the 1/20 frequency is met:

MW-130, MW-220, MW-244.

The full target list has been spiked. For MW-134-ODLS-7, there were high recoveries for 4 compounds and RPD that were out but %R's were in for 3 compounds. No qualifiers have been required as the parent sample results are non-detect.

Laboratory Control Samples

The full target list has been spiked. When a high LCS recovery is associated with a non-detect in samples, no qualifier is added since the indicated bias is high. When the target is detected, data are qualified "JL#", where # is the recovery. Data could be biased high proportional to the LCS percent recovery. All results associated with 1,2 dibromoethane low recoveries are qualified and data could be biased slightly low as the limit is 80%.

Method Blanks

Data have been qualified BMB#, where # is the blank result. Data are fully usable as non-detected values. These are unusual contaminants and may be the result of carryover from a previous sample.

Field Blanks

The trip blank was clean.

Field QC

All field precision limits were met for these samples. The results which are non-detect for one sample and a low level result for the other are not calculated, but are noted for project management review.

Parent (all ending in ODLS-7)	**Duplicate**
MW-77	DUP-1
MW-157	DUP-2
MW-184	DUP-3
MW-228	DUP-4
MW-249	DUP-5

TABLE OF QUALIFIED DATA

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L13100923-33	MW-159-ODLS-7	n-Butylbenzene	0.436	0.25	BMB.539
L13100923-34	MW-163-ODLS-7	1,2,3-Trichlorobenzene	0.174	0.15	BMB.448
L13100923-34	MW-163-ODLS-7	1,2,4-Trichlorobenzene	0.285	0.2	BMB.529
L13100923-35	MW-164-ODLS-7	1,2,4-Trichlorobenzene	0.228	0.2	BMB.529
L13100923-36	MW-165-ODLS-7	1,2,4-Trichlorobenzene	0.212	0.2	BMB.529
L13100923-27	MW-79-ODLS-7	1,2-Dibromoethane	U	0.25	JL79.5
L13100923-50	MW-249-ODLS-7	1,2-Dibromoethane	U	0.25	JL79.5
L13100923-51	DUP-2-ODLS-7	1,2-Dibromoethane	U	0.25	JL79.5
L13100923-52	DUP-3-ODLS-7	1,2-Dibromoethane	U	0.25	JL79.5
L13100923-53	DUP-5-ODLS-7	1,2-Dibromoethane	U	0.25	JL79.5
L13100994-01	MW-182-101113	1,2-Dibromoethane	U	0.25	JL79.5

Final Data Qualification and Usability Report

Project:	Defense Depot Memphis, TN (DDMT) Dunn Field (Off Depot) Long Term Monitoring
Sampling Event:	ODLS-7
Project / Task Number:	228-192672-007
Sample Data Package(s):	L13100923, L13100994
Data Validation Performed by:	Diane Short & Associates (DSA)
Final Data Qualification and Usability Report Prepared by:	Lynn K. Lutz, HDR Inc.

Data Validation Report Review and Comments

The validation report was acceptable except as noted below for final qualifiers.

The validator, in discussing relative response factors, noted that "[t]he laboratory has been tasked with providing to the client verification that the 0.01 RF is valid. If the spectral verification is available, data are not qualified for response factors greater than 0.01 and less than 0.05 for 'poor responders.'" The Project Chemist reviewed the area counts for the lowest standard included in the initial calibration for the low responders and found the areas to be adequate, and no qualifiers were applied.

The validator did not qualify bromomethane, chloromethane or 1,2-dibromo-3-chloropropane (DBCP) results based on low responses in the CCVs; the PC evaluated the %D values and qualified associated results as non-detect estimated "UJ" as follows, as both the project QAPP and the method require CCV results be within 20%D:

- Chloromethane - workgroup # WG449664: %D = -26.6%
- Bromomethane - workgroup # WG449664: %D = -34.7%
- Bromomethane - workgroup # WG449667: %D = -20.8%
- DBCP - workgroup # WG449844: %D = -38.5%
- 2-Hexanone - workgroup # WG449844: %D = -21.2%
- Bromomethane - workgroup # WG449909: %D = -35.6%
- Chloromethane - workgroup # WG449909: %D = -24.2%

Final Data Qualifiers

The final qualifier for some 1,2-dibromo-3-chloropropane (DBCP), bromomethane and chloromethane results was UJ where DSA had not qualified.

The final qualifier for one 1,1,2,2-tetrachloroethane result was J where DSA had qualified as JL144 for a high LCS recovery.

The final qualifier for one acetone result was J where DSA had qualified as JL149 for a high LCS recovery.

The final qualifier for six 1,2-dibromoethane results was J where DSA had qualified as JL79.5 for a low LCS recovery.

The final qualifier for one n-butylbenzene result, two 1,2,3-trichlorobenzene results and four 1,2,4-trichlorobenzene results was B where DSA had qualified as BMB# for method blank detection.

The final qualifier was J where the lab had qualified as F.

Data Usability

There were no rejected sample results. All results are usable as qualified.

23 December 2013

Lynn K. Lutz, HDR Inc. Date

APPENDIX I

HISTORICAL CVOC RESULTS – MAIN INSTALLATION

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-16

Analyte	Sample Name / Sample Date	Unit	MW162 6/19/1997	MW163 9/23/1997	MW164 3/24/1998	MW364 3/24/1998	MW165 10/16/1998	MW16-63-68BL 3/20/2002
Carbon tetrachloride		µg/L	<10	<10	<10	<10	<10	<1
Chloroform		µg/L	<10	<10	<10	<10	<10	<1
cis-1,2-Dichloroethene		µg/L	--	--	--	--	--	<1
Tetrachloroethene		µg/L	<10	<10	<10	<10	<10	<1
trans-1,2-Dichloroethene		µg/L	--	--	--	--	--	<1
Trichloroethene		µg/L	<10	<10	<10	<10	<10	<1
Vinyl chloride		µg/L	<10	<10	<10	<10	<10	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

-- not analyzed

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-16

Analyte	Sample Name / Sample Date	Unit	MW-16 5/18/2004	MW-16-LB-1 10/16/2006	MW-16 10/10/2008	MW-16 10/13/2010	MW-16 10/21/2012
Carbon tetrachloride		µg/L	<1 J	<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
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 SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

-- not analyzed

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-19

	Sample Name	MW192	MW193	MW194	MW195	MW19-90-92BL	MW-19
	Sample Date	6/18/1997	9/24/1997	3/26/1998	10/17/1998	3/18/2002	5/5/2004
Analyte	Unit						
Carbon tetrachloride	µg/L	<10	<10	<10	<10	<1	<1
Chloroform	µg/L	<10	<10	<10	<10	<1	<1
cis-1,2-Dichloroethene	µg/L	--	--	--	--	<1	<1
Tetrachloroethene	µg/L	<10	<10	<10	<10	<1	<1
trans-1,2-Dichloroethene	µg/L	--	--	--	--	<1	<1J
Trichloroethene	µg/L	<10	<10	<10	<10	<1	<1
Vinyl chloride	µg/L	<10	<10	<10	<10	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

-- not analyzed

µg/L micrograms per liter

DQE Flags

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-19

	Sample Name	MW-19-LB-1	MW-19	MW-19	MW-19
	Sample Date	10/17/2006	10/9/2008	10/11/2010	10/19/2012
Analyte	Unit				
Carbon tetrachloride	µg/L	<1	<1	<1	<1
Chloroform	µg/L	<0.3	<0.3	<0.3	0.334
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	0.651 J
Vinyl chloride	µg/L	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

-- not analyzed

µg/L micrograms per liter

DQE Flags

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-22

Analyte	Sample Name / Sample Date	Unit	MW222 6/19/1997	MW223 9/25/1997	MW224 3/28/1998	MW225 10/19/1998	MW22NA 3/23/2000	MW22-99-104BL 3/18/2002
Carbon tetrachloride		µg/L	<10	<10	<10	<10	<1	<1
Chloroform		µg/L	<10	<10	<10	<10	<1	<1
cis-1,2-Dichloroethene		µg/L	--	--	--	--	0.5 J	<1
Tetrachloroethene		µg/L	<10	2 J	<10	<10	0.9 J	0.27 J
trans-1,2-Dichloroethene		µg/L	--	--	--	--	<1	<1
Trichloroethene		µg/L	2 J	4 J	1 J	<10	1	<1
Vinyl chloride		µg/L	<10	<10	<10	<10	<1	<1

Notes:
VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990
-- not analyzed
µg/L micrograms per liter

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-22

	Sample Name	MW-022	MW-22-LB-1	MW-22	MW-22	MW-22
	Sample Date	3/30/2004	10/18/2006	10/9/2008	10/12/2010	10/19/2012
Analyte	Unit					
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	0.527 J	<1	<1	<1
Tetrachloroethene	µg/L	<1	0.79 J	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	0.531 J	0.329 J	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

-- not analyzed

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-23

Analyte	Sample Name / Sample Date	Unit	MW232 6/18/1997	MW233 9/26/1997	MW234 3/26/1998	MW235 10/19/1998	MW23NA 3/23/2000	MW23-95-100BL 3/18/2002
Carbon tetrachloride		µg/L	<10	<10	<10	<10	<1	<1
Chloroform		µg/L	<10	<10	<10	<10	<1	<1
cis-1,2-Dichloroethene		µg/L	--	--	--	--	<1	<1
Tetrachloroethene		µg/L	<10	<10	<10	<10	<1	<1
trans-1,2-Dichloroethene		µg/L	--	--	--	--	<1	<1
Trichloroethene		µg/L	<10	<10	<10	<10	<1	<1
Vinyl chloride		µg/L	<10	<10	<10	<10	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

-- not analyzed

µg/L micrograms per liter

DQE Flags:

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-23

	Sample Name	MW-23	MW-23-LB-1	MW-23	MW-23	MW-23
	Sample Date	5/19/2004	10/18/2006	10/14/2008	10/12/2010	10/20/2012
Analyte	Unit					
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
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 SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

-- not analyzed

µg/L micrograms per liter

DQE Flags:

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-24

Analyte	Sample Name / Sample Date	Unit	MW242 6/19/1997	MW243 9/24/1997	MW244 4/2/1998	MW245 10/19/1998	MW24NA 3/22/2000	MW24-109-111BL 3/18/2002
Carbon tetrachloride		µg/L	<10	<10	<10	<10	<1	<1
Chloroform		µg/L	<10	<10	<10	<10	<1	<1
cis-1,2-Dichloroethene		µg/L	--	--	--	--	<1	<1
Tetrachloroethene		µg/L	<10	<10	<10	<10	<1	<1
trans-1,2-Dichloroethene		µg/L	--	--	--	--	<1	<1
Trichloroethene		µg/L	<10	<10	<10	<10	<1	<1
Vinyl chloride		µg/L	<10	<10	<10	<10	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

-- not analyzed

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-24

Analyte	Sample Name / Sample Date	Unit	MW-24 5/19/2004	MW-24-LB-1 10/18/2006	MW-24 10/14/2008	MW-24 10/14/2010	MW-24 10/21/2012
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1
Chloroform		µg/L	<1	<0.3	0.181 J	<0.3	0.241 J
cis-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1
Tetrachloroethene		µg/L	<1	<1	<1	<1	<1
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 SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

-- not analyzed

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-25A

Analyte	Sample Name / Sample Date	Unit	MW25A-111102 11/11/2002	MW-25A 5/12/2004	MW-25A 2/21/2005	MW-25A-LB-1 10/2/2006	MW-25A-LS-3 4/13/2007	MW-25A-LA-5 10/3/2007
Carbon tetrachloride		µg/L	2.01	2.3	2.4	2.66	2.54	2.38
Chloroform		µg/L	0.517 J	0.57J	0.59B	0.608	0.507	0.531
cis-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene		µg/L	5.64	8	9.3	8.61	10.3	9.24
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	0.453 J	0.6J	0.57J	0.352 J	0.525 J	0.433 J
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-25A

	Sample Name	MW-25A	MW-25A	MW-25A	MW-25A	MW-25A	MW-25A	MW-25A
	Sample Date	4/8/2008	10/10/2008	4/6/2009	10/7/2010	10/7/2011	10/19/2012	10/11/2013
Analyte	Unit							
Carbon tetrachloride	µg/L	2.15	1.67	1.54	2.74	2.22	2.07	1.7
Chloroform	µg/L	0.399	0.377	0.449	0.411	0.324	0.28 J	0.261 J
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	6.64	4.91	7.84	13.6	6.94	6.24	5.83
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	0.352 J	0.45 J	0.644 J	0.386 J	0.335 J	0.301 J	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-26

Analyte	Sample Name / Sample Date	Unit	MW262 6/20/1997	MW263 9/26/1997	MW264 3/28/1998	MW265 10/20/1998	MW-26-106-BL 3/21/2002	MW26-EBT-TS13 7/24/2003
Carbon tetrachloride		µg/L	4 J	4 J	4 J	4 J	3.7 J	3.29
Chloroform		µg/L	1 J	<10	2 J	1 J	<5	1.11
cis-1,2-Dichloroethene		µg/L	--	--	--	--	<5	<1
Tetrachloroethene		µg/L	12	11	14	16	8.1	7.92
trans-1,2-Dichloroethene		µg/L	--	--	--	--	<5	<1
Trichloroethene		µg/L	2 J	2 J	2 J	2 J	1.6 J	1.72
Vinyl chloride		µg/L	<10	<10	<10	<10	<10	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

-- not analyzed

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-26

	Sample Name	MW26-EBT-TS14	MW-26	MW-26	MW-26	MW-26	MW-26-LB-1
	Sample Date	8/18/2003	4/2/2004	11/13/2004	2/22/2005	5/24/2005	10/2/2006
Analyte	Unit						
Carbon tetrachloride	µg/L	5.17 J	5.3	7.2	7.5	7.2	5.24
Chloroform	µg/L	1.28	1.4 B	1.6	1.7	1.8 B	0.935
cis-1,2-Dichloroethene	µg/L	<1	0.76 J	0.64 J	0.71 J	0.57 J	0.45 J
Tetrachloroethene	µg/L	13.8	25	40	40	35	25.5
trans-1,2-Dichloroethene	µg/L	<1	<2.5	<1	<1	<1	<1
Trichloroethene	µg/L	1.9	2.1 J	2.3	2.2	2.5	1.77
Vinyl chloride	µg/L	<1	<2.5	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

-- not analyzed

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-26

Analyte	Sample Name / Sample Date	Unit	MW-26-LS-3 4/16/2007	MW-26-LA-5 10/1/2007	MW-26 4/7/2008	MW-26 10/8/2008	MW-26 4/7/2009	MW-26 10/8/2009
Carbon tetrachloride		µg/L	5.23	6.52	4.38	5.31	5.91	4.81
Chloroform		µg/L	1.05	1.29	0.976	1.14	1.16	0.871
cis-1,2-Dichloroethene		µg/L	0.313 J	0.41 J	<1	0.295 J	0.332 J	0.411 J
Tetrachloroethene		µg/L	20.1	29	13.7	21.1	25.3	27.3
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	1.56	1.75	1.3	1.54	1.33	1.59
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

-- not analyzed

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-26

Analyte	Sample Name / Sample Date	Unit	MW-26 3/31/2010	MW-26 10/7/2010	MW-26 3/31/2011	MW-26 10/3/2011	MW-26 4/23/2012	MW-26 10/21/2012
Carbon tetrachloride		µg/L	7.09	9.18	9.99	8.97	6.34 J	4.78
Chloroform		µg/L	1.14	1.79	1.33	1.4	0.74	0.683
cis-1,2-Dichloroethene		µg/L	0.466 J	0.606 J	1.23	1.01	0.589 J	0.496 J
Tetrachloroethene		µg/L	38.9	46.4	50.4	52.5	31.2	25.9
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	1.63	1.98	2.33	1.92	1.68	1.45
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

-- not analyzed

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-26

	Sample Name	MW-26	MW-26
	Sample Date	4/10/2013	10/12/2013
Analyte	Unit		
Carbon tetrachloride	µg/L	5.27	4.6
Chloroform	µg/L	0.588	0.642
cis-1,2-Dichloroethene	µg/L	0.504 J	0.462 J
Tetrachloroethene	µg/L	29.7	25
trans-1,2-Dichloroethene	µg/L	<1	<1
Trichloroethene	µg/L	1.53	1.24
Vinyl chloride	µg/L	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

-- not analyzed

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-34

	Sample Name	MW342	MW343	MW344	MW-34-Y1Q1	MW-34-Y1Q2	MW-34-Y1Q3
	Sample Date	6/19/1997	9/26/1997	3/27/1998	2/4/1999	5/25/1999	8/27/1999
Analyte	Unit						
Carbon tetrachloride	µg/L	<10	<10	<10	1.01	1.23	0.51 J
Chloroform	µg/L	2 J	1 J	<10	4.34	<1	0.66 J
cis-1,2-Dichloroethene	µg/L	--	--	--	1.03	<1	<1
Tetrachloroethene	µg/L	<10	<10	<10	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	--	--	--	<1	<1	<1
Trichloroethene	µg/L	<10	<10	<10	4.39	<1	0.64 J
Vinyl chloride	µg/L	<10	<10	<10	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

-- not analyzed

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-34

	Sample Name	MW-34-Y1Q4	MW-34-Y2Q1	MW-34	MW-34-Y2Q3	MW-34-Y2Q4	MW-34
	Sample Date	11/3/1999	2/16/2000	5/18/2000	8/24/2000	11/7/2000	2/20/2001
Analyte	Unit						
Carbon tetrachloride	µg/L	<1	1.04	1.03	0.86J	<1	0.82 J
Chloroform	µg/L	<1	1.98	3.49	<1	<1	4.24
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	0.85 J	2.15	2.55	1.43	1.62
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

-- not analyzed

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-34

Analyte	Sample Name / Sample Date	Unit	MW-34-Y3S2-A 10/3/2001	MW-34-Y3S2-B 10/3/2001	MW-34-Y3S2-C 10/3/2001	MW34-147-152BL 3/18/2002	MW-34-3_020410 4/10/2002	MW-34-2_020410 4/10/2002
Carbon tetrachloride		µg/L	<1	<1	0.96 J	0.7J	<1	<1
Chloroform		µg/L	1.46	<1	<1	3	<1	7.78
cis-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene		µg/L	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	<1	1.48	2	0.93 J	0.9J	0.97 J
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

-- not analyzed

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-34

	Sample Name	MW-34-1_020410	MW-34-3_021001	MW-34-1_021001	MW-34-2_021001	MW-34-3	MW-34-2
	Sample Date	4/10/2002	10/1/2002	10/1/2002	10/1/2002	4/8/2003	4/8/2003
Analyte	Unit						
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	10.5	<1	2.56	1.26	4.45	7.66
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	1.16	<1	<1	<1	0.74	120
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

-- not analyzed

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-34

Analyte	Sample Name / Sample Date	Unit	MW-34-1 4/8/2003	MW34-EBT-TS13 7/24/2003	MW-34-1 10/28/2003	MW-34-2 10/28/2003	MW-34-3 10/28/2003	MW-34,152 4/28/2004
Carbon tetrachloride		µg/L	1.08	<1	<1	<1	<1	<1
Chloroform		µg/L	13.9	<1	3	<1	<1	1.2
cis-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene		µg/L	<1	<0.5	<1	<1	<1	<1
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1 J
Trichloroethene		µg/L	1.75	0.476 J	<1	<1	<1	0.29 J
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:
VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990
-- not analyzed
µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-34

Analyte	Sample Name / Sample Date	Unit	MW-34,147 4/28/2004	MW-34,142 4/28/2004	MW-34,138 4/28/2004	MW-34 5/23/2004	MW34,152 10/20/2004	MW34,147.3 10/20/2004
Carbon tetrachloride		µg/L	0.19 J	<4	<4	0.4 J	0.35 J	0.64 J
Chloroform		µg/L	1.2	1.2 J	1.1 J	0.29 J	1.7	2.4
cis-1,2-Dichloroethene		µg/L	<1	<4	<4	<1	<1	<1
Tetrachloroethene		µg/L	<1	<4	<4	0.55 J	<1	<1
trans-1,2-Dichloroethene		µg/L	<1 J	<4 J	<4 J	<1	<1	<1
Trichloroethene		µg/L	0.39 J	<4	<4	0.5 J	0.54 J	0.83 J
Vinyl chloride		µg/L	<1	<4	<4	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

-- not analyzed

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-34

	Sample Name	MW34,142.3	MW-34	MW-34	MW-34	MW-34-LB-1	MW-34
	Sample Date	10/20/2004	11/11/2004	2/23/2005	5/23/2005	10/16/2006	10/1/2007
Analyte	Unit						
Carbon tetrachloride	µg/L	0.62 J	0.55 J	0.41 J	0.44 J	0.381 J	1.05
Chloroform	µg/L	3.8	0.51 B	1.1	0.31 B	0.531	0.434
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	0.52 J	0.37 J	0.46 J	0.336 J	0.753 J
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	0.98 J	0.49 J	0.4 J	0.67 J	1.06	1.38
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

-- not analyzed

µg/L micrograms per liter

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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HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-34

	Sample Name	MW-34	MW-34	MW-34	MW-34	MW-34	MW-34
	Sample Date	11/7/2007	10/13/2008	10/8/2009	10/6/2010	10/9/2011	10/19/2012
Analyte	Unit						
Carbon tetrachloride	µg/L	0.479	0.826 J	0.978 J	0.572	0.783 J	0.565 J
Chloroform	µg/L	0.371	0.345 J	0.236 J	0.325	0.406	0.4
cis-1,2-Dichloroethene	µg/L	<1	<1 J	<1	<1	<1	<1
Tetrachloroethene	µg/L	0.34	0.451 J	0.358 J	0.269 J	0.341 J	0.459 J
trans-1,2-Dichloroethene	µg/L	<1	<1 J	<1	<1	<1	<1
Trichloroethene	µg/L	1.39	0.885 J	1.11	0.756 J	1.48	0.718 J
Vinyl chloride	µg/L	<1	<1 J	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

-- not analyzed

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-38

Analyte	Sample Name / Sample Date	Unit	MW382 6/19/1997	MW383 9/25/1997	MW384 3/26/1998	MW385 10/17/1998	MW38-145-150BL 3/18/2002	MW-38 5/20/2004
Carbon tetrachloride		µg/L	<10	<10	<10	<10	<1	<9.1
Chloroform		µg/L	<10	<10	<10	<10	<1	<9.1
cis-1,2-Dichloroethene		µg/L	--	--	--	--	<1	<9.1
Tetrachloroethene		µg/L	<10	<10	<10	<10	<1	<9.1
trans-1,2-Dichloroethene		µg/L	--	--	--	--	<1	<9.1
Trichloroethene		µg/L	<10	1 J	1 J	<10	<1	<9.1
Vinyl chloride		µg/L	<10	<10	<10	<10	<1	<9.1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

-- not analyzed

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-38

Analyte	Sample Name / Sample Date	Unit	MW-38-LB-1 10/17/2006	MW-38-LA-5 10/1/2007	MW-38 10/8/2008	MW-38 10/5/2009	MW-38 10/9/2010	MW-38 10/3/2011	MW-38 10/21/2012
Carbon tetrachloride		µg/L	1.24	1.37	<1	<1	<1	<1	<1
Chloroform		µg/L	0.513	0.646	<0.3	<0.3	0.141 J	<0.3	0.211 J
cis-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene		µg/L	<1	0.446 J	<1	<1	<1	<1	0.591 J
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	4.63	4.37	<1	<1	0.717 J	0.291 J	4.86
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

-- not analyzed

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-39

Analyte	Sample Name / Sample Date	Unit	MW392 6/20/1997	MW393 9/26/1997	MW394 3/27/1998	MW395 10/19/1998	MW39NA 3/23/2000	MW39-107-112BL 3/18/2002
Carbon tetrachloride		µg/L	<10	<10	<10	<10	<1	<1
Chloroform		µg/L	<10	<10	<10	<10	<1	0.18 J
cis-1,2-Dichloroethene		µg/L	--	--	--	--	0.4 J	0.48 J
Tetrachloroethene		µg/L	6 J	9 J	8 J	8 J	12	8.2
trans-1,2-Dichloroethene		µg/L	--	--	--	--	<1	<1
Trichloroethene		µg/L	5 J	8 J	7 J	7 J	5	3.8
Vinyl chloride		µg/L	<10	<10	<10	<10	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

-- not analyzed

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-39

Analyte	Sample Name / Sample Date	Unit	MW-39 4/1/2004	MW-39 5/23/2004	MW-39 11/9/2004	MW-39 2/15/2005	MW-39 5/16/2005	MW-39-LB-1 10/17/2006
Carbon tetrachloride		µg/L	<3.3	<2.5	<4	<1	<1	<1
Chloroform		µg/L	<3.3	<2.5	<4	0.17 J	0.17 B	<0.3
cis-1,2-Dichloroethene		µg/L	<3.3	<2.5	<4	0.52 J	0.68 J	0.622 J
Tetrachloroethene		µg/L	120	95	130	79	110	149
trans-1,2-Dichloroethene		µg/L	<3.3	<2.5	<4	<1	<1	<1
Trichloroethene		µg/L	10	7.2	10	7.6	11	8.94
Vinyl chloride		µg/L	<3.3	<2.5	<4	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

-- not analyzed

µg/L micrograms per liter

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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HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-39

Analyte	Sample Name / Sample Date	Unit	MW-39-LS-3 4/13/2007	MW-39-LA-5 10/1/2007	MW-39 4/9/2008	MW-39 10/9/2008	MW-39 4/9/2009	MW-39 10/10/2009
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	0.155 J	0.225 J	0.161 J	0.237 J	<0.3	<0.3
cis-1,2-Dichloroethene		µg/L	0.462 J	0.435 J	0.525 J	1.26 J	17.5	21.3
Tetrachloroethene		µg/L	106	111	100	158 J	62.9 J	50.9
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	8.17	8.81	9.3	6.15 J	11.6	13.9
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

-- not analyzed

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-39

Analyte	Sample Name / Sample Date	Unit	MW-39 3/31/2010	MW-39 10/9/2010	MW-39 4/1/2011	MW-39 10/6/2011	MW-39 4/23/2012	MW-39 10/20/2012
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene		µg/L	17.7	18.3	13.5	9.96	3.94	7.24
Tetrachloroethene		µg/L	37.4	29.1	33.8	29	9.78	5.08
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	12.3	13.6	12.4	10.9	5.96	10.1
Vinyl chloride		µg/L	<1	0.414 J	0.6 J	0.914 J	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

-- not analyzed

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-39

	Sample Name	MW-39	MW-39
	Sample Date	4/10/2013	10/11/2013
Analyte	Unit		
Carbon tetrachloride	µg/L	<1	<1
Chloroform	µg/L	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	3.38	12.3
Tetrachloroethene	µg/L	10.7	1.34
trans-1,2-Dichloroethene	µg/L	<1	<1
Trichloroethene	µg/L	10.4	11.6
Vinyl chloride	µg/L	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

-- not analyzed

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-39A

	Sample Name	MW-39A	MW-39A	MW-39A	MW-39A	MW-39A-LB-1	MW-39A-LS-3
	Sample Date	5/23/2004	11/9/2004	2/15/2005	5/16/2005	10/17/2006	4/13/2007
Analyte	Unit						
Carbon tetrachloride	µg/L	<5 J	<6.7	<1	<1	<1	<1
Chloroform	µg/L	<5	<6.7	0.22 J	0.23 B	0.251 J	0.215 J
cis-1,2-Dichloroethene	µg/L	<5	<6.7	0.59 J	0.51 J	0.418 J	0.4 J
Tetrachloroethene	µg/L	140	150	190	150	196	176
trans-1,2-Dichloroethene	µg/L	<5	<6.7	<1	<1	<1	<1
Trichloroethene	µg/L	5.8	8.3	8.7	7.9	4.68	4.04
Vinyl chloride	µg/L	<5	<6.7	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-39A

Analyte	Sample Name / Sample Date	Unit	MW-39A-LA-5 10/2/2007	MW-39A 4/7/2008	MW-39A 10/9/2008	MW-39A 4/9/2009	MW-39A 10/5/2009	MW-39A 4/2/2010
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	0.215 J	0.257 J	0.16 J	0.145 J	<0.3	<0.3
cis-1,2-Dichloroethene		µg/L	0.362 J	0.499 J	12.2	7.61	24.4	35.4
Tetrachloroethene		µg/L	162	234	95.7	156	79.9	43.8
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	4.4	4.63	11.8	7.21	9.49	11.4
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-39A

Analyte	Sample Name / Sample Date	Unit	MW-39A 10/9/2010	MW-39A 4/1/2011	MW-39A 10/5/2011	MW-39A 4/23/2012	MW-39A 10/20/2012	MW-39A 4/10/2013	MW-39A 10/11/2013
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene		µg/L	36	40.8	30.9	19.3	14.5	10.6	7.28
Tetrachloroethene		µg/L	25.6	29.5	30.9	29	30.9	28.9	29.5
trans-1,2-Dichloroethene		µg/L	<1	<1	0.465 J	<1	<1	<1	<1
Trichloroethene		µg/L	10.9	11.4	8.74	7.4	8.18	6.88	7.05
Vinyl chloride		µg/L	<1	<1	1.06	1.93	1.94	1.37	1.67

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-50

Analyte	Sample Name / Sample Date	Unit	MW502 6/19/1997	MW503 9/24/1997	MW504 3/25/1998	MW505 10/16/1998	MW50-117.5-122.5BL 3/19/2002	MW-50 5/17/2004
Carbon tetrachloride		µg/L	<10	<10	<10	<10	<1	<1
Chloroform		µg/L	<10	<10	<10	<10	0.25 J	0.23 J
cis-1,2-Dichloroethene		µg/L	--	--	--	--	0.48 J	0.52 J
Tetrachloroethene		µg/L	<10	<10	<10	<10	<1	<1
trans-1,2-Dichloroethene		µg/L	--	--	--	--	<1	<1
Trichloroethene		µg/L	<10	<10	<10	<10	1.2	1.1
Vinyl chloride		µg/L	<10	<10	<10	<10	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

-- not analyzed

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-50

	Sample Name	MW-50-LB-1	MW-50	MW-50	MW-50
	Sample Date	10/18/2006	10/13/2008	10/13/2010	10/19/2012
Analyte	Unit				
Carbon tetrachloride	µg/L	<1	<1	<1	<1
Chloroform	µg/L	0.746	0.469	0.281 J	1.57
cis-1,2-Dichloroethene	µg/L	0.483 J	0.321 J	0.297 J	0.617 J
Tetrachloroethene	µg/L	0.263 J	0.335 J	0.46 J	0.492 J
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Trichloroethene	µg/L	1.5	1.12	1.24 B	2.65
Vinyl chloride	µg/L	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

-- not analyzed

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-52

Analyte	Sample Name / Sample Date	Unit	MW522 6/18/1997	MW523 9/24/1997	MW524 3/25/1998	MW525 10/16/1998	MW52-96.5-101.5BL 3/19/2002	MW-52 5/6/2004
Carbon tetrachloride		µg/L	<10	<10	<10	<10	<1	<1
Chloroform		µg/L	<10	<10	<10	<10	0.35 J	0.68 J
cis-1,2-Dichloroethene		µg/L	--	--	--	--	0.53 J	0.58 J
Tetrachloroethene		µg/L	4 J	2 J	4 J	<10	6.4	4.7
trans-1,2-Dichloroethene		µg/L	--	--	--	--	<1	<1 J
Trichloroethene		µg/L	<10	<10	1 J	<10	0.59 J	0.34 J
Vinyl chloride		µg/L	<10	<10	<10	<10	<1	<1 J

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

-- not analyzed

µg/L micrograms per liter

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

UJ Undetected, reporting limit is inaccurate or imprecise

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-52

	Sample Name	MW-52	MW-52	MW-52	MW-52	MW-52	MW-52
	Sample Date	2/21/2005	10/2/2006	4/16/2007	10/3/2007	4/8/2008	10/10/2008
Analyte	Unit						
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.77 B	0.899	0.828	0.75	0.861	1.12 J
cis-1,2-Dichloroethene	µg/L	0.6 J	0.639 J	0.938 J	0.993 J	0.805 J	0.866 J
Tetrachloroethene	µg/L	6.2	10.2	10.8	9.62	9.4	6.86 J
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	0.67 J	1.04	1.4	1.17	1.16	1.17 J
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

-- not analyzed

µg/L micrograms per liter

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

UJ Undetected, reporting limit is inaccurate or imprecise

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-52

	Sample Name	MW-52	MW-52	MW-52	MW-52	MW-52	MW-52
	Sample Date	4/6/2009	10/12/2009	10/7/2010	10/7/2011	10/19/2012	10/11/2013
Analyte	Unit						
Carbon tetrachloride	µg/L	<1	<1	<1	<1 UJ	<1	<1
Chloroform	µg/L	0.891	0.842	0.893	0.794 UJ	0.729	0.841
cis-1,2-Dichloroethene	µg/L	0.81 J	0.831 J	0.608 J	0.632 J	0.641 J	0.562 J
Tetrachloroethene	µg/L	5.85	6.07	5.25	6.19	7.55	7.16
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	1.12	1.06	0.838 J	0.98 J	1.15	0.995 J
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

-- not analyzed

µg/L micrograms per liter

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

UJ Undetected, reporting limit is inaccurate or imprecise

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-53

	Sample Name	MW532	MW533	MW534	MW535	MW53-75-80BL	MW-53
	Sample Date	6/19/1997	9/26/1997	3/26/1998	10/19/1998	3/18/2002	5/10/2004
Analyte	Unit						
Carbon tetrachloride	µg/L	<10	<10	<10	<10	<1	<1
Chloroform	µg/L	<10	<10	<10	<10	<1	<1
cis-1,2-Dichloroethene	µg/L	--	--	--	--	<1	<1
Tetrachloroethene	µg/L	<10	<10	<10	<10	0.6 J	0.59 J
trans-1,2-Dichloroethene	µg/L	--	--	--	--	<1	<1
Trichloroethene	µg/L	<10	<10	<10	<10	<1	<1
Vinyl chloride	µg/L	<10	<10	<10	<10	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

-- not analyzed

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-53

	Sample Name	MW-53-LB-1	MW-53	MW-53	MW-53
	Sample Date	10/17/2006	10/13/2008	10/13/2010	10/19/2012
Analyte	Unit				
Carbon tetrachloride	µg/L	<1	<1	<1	<1
Chloroform	µg/L	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Tetrachloroethene	µg/L	2.26	2.25	1.39	2.15
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 SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

-- not analyzed

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-55

	Sample Name	MW552	MW553	MW554	MW555	MW55-71-73BL	MW-55
	Sample Date	6/18/1997	9/26/1997	3/25/1998	10/16/1998	3/18/2002	5/20/2004
Analyte	Unit						
Carbon tetrachloride	µg/L	<10	<10	<10	<10	<1	<1
Chloroform	µg/L	<10	<10	<10	<10	<1	<1
cis-1,2-Dichloroethene	µg/L	--	--	--	--	<1	<1
Tetrachloroethene	µg/L	<10	<10	<10	<10	<1	<1
trans-1,2-Dichloroethene	µg/L	--	--	--	--	<1	<1
Trichloroethene	µg/L	<10	<10	<10	<10	<1	<1
Vinyl chloride	µg/L	<10	<10	<10	<10	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

-- not analyzed

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-55

	Sample Name	MW-55-LB-1	MW-55	MW-55	MW-55
	Sample Date	10/16/2006	10/13/2008	10/11/2010	10/21/2012
Analyte	Unit				
Carbon tetrachloride	µg/L	<1	<1 J	<1	<1
Chloroform	µg/L	<0.3	<0.3 J	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1 J	<1	<1
Tetrachloroethene	µg/L	<1	<1 J	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1 J	<1	<1
Trichloroethene	µg/L	<1	<1 J	<1	<1
Vinyl chloride	µg/L	<1	<1 J	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

-- not analyzed

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-63A

Analyte	Sample Name / Sample Date	Unit	MW63A 11/11/2002	MW-63A 5/7/2004	MW-63A 2/22/2005	MW-63A 10/23/2006	MW-63A 10/2/2007	MW-63A 10/8/2008
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	5.03	<1	<1	<0.3	<0.3	0.471 J
cis-1,2-Dichloroethene		µg/L	0.42 J	<1	<1	<1	<1	<1
Tetrachloroethene		µg/L	0.466 J	0.32 J	0.64 J	1.24	1.23	<1
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	1.67	0.68 J	0.63 J	0.765 J	1.09	1.66 J
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

-- not analyzed

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-63A

Analyte	Sample Name / Sample Date	Unit	MW-63A 10/10/2009	MW-63A 10/7/2010	MW-63A 10/6/2011	MW-63A 10/21/2012	MW-63A 10/12/2013
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1
Chloroform		µg/L	0.194 J	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1
Tetrachloroethene		µg/L	0.674 J	1.69	0.466 J	2.31	2.52
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1
Trichloroethene		µg/L	1.81	1.37	0.432 J	1.39	1.83
Vinyl chloride		µg/L	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

-- not analyzed

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-63B

	Sample Name	MW63B	MW63B	MW63B	MW-63B-LB-1	MW-63B-LA-5	MW-63B
	Sample Date	11/11/2002	5/7/2004	2/22/2005	10/23/2006	10/2/2007	10/7/2008
Analyte	Unit						
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	11.1	1.8	1.5	0.604	1.44	2.9
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	0.401 J
Tetrachloroethene	µg/L	6.78	2.3	2.8	3.71	2.95	4.6
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	7.9	0.92 J	1.1	1.12	2.1	4.56
Vinyl chloride	µg/L	<0.25	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-63B

Analyte	Sample Name / Sample Date	Unit	MW-63B 10/10/2009	MW-63B 10/7/2010	MW-63B 10/7/2011	MW-63B 10/21/2012	MW-63B 10/12/2013
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1
Chloroform		µg/L	1.23	1.71	0.759	0.578	0.399
cis-1,2-Dichloroethene		µg/L	0.253 J	0.372 J	<1	<1	0.34 J
Tetrachloroethene		µg/L	1.58	7.47	5.11	2.17	1.23
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1
Trichloroethene		µg/L	3.1	3.55	2.76	2.72	2.07
Vinyl chloride		µg/L	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-64

Analyte	Sample Name / Sample Date	Unit	MW645 10/25/1998	MW64-108-110BL 3/18/2002	MW-64 4/1/2004	MW-64 2/21/2005	MW-64-LB-1 10/23/2006	MW-64-LS-3 4/17/2007
Carbon tetrachloride		µg/L	2 J	3.3	3.3	3	2.9	3.26
Chloroform		µg/L	1 J	0.85 J	0.86 B	0.92 B	1.01	0.818
cis-1,2-Dichloroethene		µg/L	--	0.45 J	0.41 J	0.31 J	0.397	0.345 J
Tetrachloroethene		µg/L	10	10	16	18	18.2	18.1
trans-1,2-Dichloroethene		µg/L	--	<1	<1	<1	<1	<1
Trichloroethene		µg/L	28	45	39	34	28.9	30.6
Vinyl chloride		µg/L	<10	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

-- not analyzed

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-64

	Sample Name	MW-64-LA-5	MW-64	MW-64	MW-64	MW-64	MW-64
	Sample Date	10/3/2007	4/7/2008	10/8/2008	4/9/2009	10/8/2009	3/29/2010
Analyte	Unit						
Carbon tetrachloride	µg/L	2.82	3.68	3.3	3.37	2.78	3.56
Chloroform	µg/L	0.891	1.16	0.989	1.08	0.926	1.34
cis-1,2-Dichloroethene	µg/L	0.363 J	0.401 J	0.439 J	0.481 J	0.519 J	0.482 J
Tetrachloroethene	µg/L	17.1	22.5	22.3	23	23.8	23
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	30.2	35.7	36.4	38.1	41.5	38.8
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

-- not analyzed

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-64

Analyte	Sample Name / Sample Date	Unit	MW-64 10/7/2010	MW-64 3/31/2011	MW-64 10/3/2011	MW-64 4/23/2012	MW-64 10/21/2012	MW-64 4/10/2013	MW-64 10/12/2013
Carbon tetrachloride		µg/L	3.08	3.61	2.52	2.75	2.62	2.3	2.56
Chloroform		µg/L	1.17	1.45	1.41	0.876 B	1.16	1.02	0.821
cis-1,2-Dichloroethene		µg/L	0.423 J	0.514 J	0.544 J	0.475 J	0.488 J	0.436 J	0.431 J
Tetrachloroethene		µg/L	20.8	21.4	16.2	20.8	20.8	17.6	18
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	34.1	38.8	26.1	35.7	34.8	35.4	28
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

-- not analyzed

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-66A

Analyte	Sample Name / Sample Date	Unit	MW-66A 6/23/2004	MW-66A 11/13/2004	MW-66A 2/22/2005	MW-66A 5/23/2005	MW-66A-LB-1 10/18/2006	MW-66A 10/10/2008
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	<1	<1	<1	<1	<0.3	<0.3
cis-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene		µg/L	1.7	2.2	1.8	2	1.79	1.78
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 SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-66A

	Sample Name	MW-66A	MW-66A
	Sample Date	10/12/2010	10/19/2012
Analyte	Unit		
Carbon tetrachloride	µg/L	<1	<1
Chloroform	µg/L	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1
Tetrachloroethene	µg/L	3.31	2.48
trans-1,2-Dichloroethene	µg/L	<1	<1
Trichloroethene	µg/L	<1	<1
Vinyl chloride	µg/L	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-88

	Sample Name	MW-88-1	MW-88-2	MW-88-3	MW-88-4	MW-88-5	MW-88-6
	Sample Date	11/30/2001	11/30/2001	11/30/2001	11/30/2001	11/30/2001	11/30/2001
Analyte	Unit						
Carbon tetrachloride	µg/L	3.2	2.9	1.8	1.3	1	3.1
Chloroform	µg/L	1.1	1	0.64 J	0.51 J	0.42 J	1.2
cis-1,2-Dichloroethene	µg/L	2.1	1.8	1.1	0.81 J	0.63 J	0.94 J
Tetrachloroethene	µg/L	8.1	5.3	2.5	2.3	2.2	8.8
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	1.1	0.97 J	0.71 J	0.58 J	0.52 J	3.8
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-88

	Sample Name	MW-88-7	MW-88-8	MW-88	MW-88	MW-88	MW-88
	Sample Date	11/30/2001	11/30/2001	7/8/2002	7/29/2002	9/3/2002	10/7/2002
Analyte	Unit						
Carbon tetrachloride	µg/L	5.2	5.6	4.7	5.54	6.61	5.3
Chloroform	µg/L	1.9	1.9	1.9	2.1	1.86	1.81
cis-1,2-Dichloroethene	µg/L	1.4	1.5	1.5	1.37	0.93 J	1.23
Tetrachloroethene	µg/L	29	27	17	17.2	21.8	16.1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5.6	6.1	7.1	7.55	7.72	6.9
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-88

Analyte	Sample Name / Sample Date	Unit	MW-88 11/11/2002	MW-88 12/16/2002	MW-88 1/20/2003	MW-88 3/24/2003	MW-88 4/21/2003	MW-88 5/19/2003
Carbon tetrachloride		µg/L	5.79	6.76 J	6.98	4.63	5.61 J	5.08
Chloroform		µg/L	1.89	1.88	1.64	1.23	1.43	1.71
cis-1,2-Dichloroethene		µg/L	1.66	1.22	0.99 J	0.793 J	0.869 J	1.1
Tetrachloroethene		µg/L	23.8	22.2	19.8	13.4	18.2	14.5
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	7.66	7.41	7.24	6.49	6.65	5.34
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-88

Analyte	Sample Name / Sample Date	Unit	MW-88 6/23/2003	MW-88 7/21/2003	MW-88 8/18/2003	MW-88 4/1/2004	MW-88 11/13/2004	MW-88 2/22/2005
Carbon tetrachloride		µg/L	6.17 J	8.17	7.3	7.9	6	6.2
Chloroform		µg/L	1.93	2.08	1.51	1.9 B	2.5	1.6
cis-1,2-Dichloroethene		µg/L	1.32	1.41 J	1.34	1.5	1.8	1.2
Tetrachloroethene		µg/L	19.9	21.8	21	22	22	20
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	5.98	6.26	5.37	4.8	3.6	3.8
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-88

	Sample Name	MW-088	MW-88-LB-1	MW-88-LS-3	MW-88-LA-5	MW-88	MW-88
	Sample Date	5/23/2005	10/3/2006	4/13/2007	10/4/2007	4/7/2008	10/6/2008
Analyte	Unit						
Carbon tetrachloride	µg/L	3.5	8.59	3.88	4.83	2.66	3.69
Chloroform	µg/L	1.1 B	1.78	0.671	0.827	0.406	0.878
cis-1,2-Dichloroethene	µg/L	0.87 J	1.3	0.588 J	0.751 J	0.325 J	1.21
Tetrachloroethene	µg/L	14	26.4	18.5	21.3	16.6	32.8
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	2.7	3.5	2.94	3.42	3.11	3.65
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-88

Analyte	Sample Name / Sample Date	Unit	MW-88 4/9/2009	MW-88 10/11/2009	MW-88 3/30/2010	MW-88 10/4/2010	MW-88 3/31/2011	MW-88 10/2/2011
Carbon tetrachloride		µg/L	4.87	7.12	10.4	10.5	12.2	7.56
Chloroform		µg/L	0.825	1.32	1.74	1.85	1.93	1.34
cis-1,2-Dichloroethene		µg/L	0.732 J	1.53	2.15	2.54	2.34	1.68
Tetrachloroethene		µg/L	31.7	39.4	46.2	56.1	47.2	35.2
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	3.26	3.83	3.83	4.11	4.15	2.92
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-88

	Sample Name	MW-88	MW-88	MW-88	MW-88
	Sample Date	4/23/2012	10/21/2012	4/10/2013	10/12/2013
Analyte	Unit				
Carbon tetrachloride	µg/L	9.96 J	11.8	9.83	11
Chloroform	µg/L	1.38	1.7	1.32	1.49
cis-1,2-Dichloroethene	µg/L	1.88	2.47	1.91	2.17
Tetrachloroethene	µg/L	38.4	46.3	44.5 J	45.2
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Trichloroethene	µg/L	3.47	3.69	3.29	2.77
Vinyl chloride	µg/L	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-89

Analyte	Sample Name / Sample Date	Unit	MW-89 3/19/2002	MW-89 3/19/2002	MW-89 5/22/2004	MW-89 2/16/2005	MW-89-LB-1 10/24/2006	MW-89-LA-5 10/1/2007
Carbon tetrachloride		µg/L	<1	<1	0.49 J	0.44 J	0.7 J	0.56 J
Chloroform		µg/L	<1	<1	0.32 J	0.3B	0.348	0.224 J
cis-1,2-Dichloroethene		µg/L	<1	<1	0.27 J	0.37 J	0.404 J	0.279 J
Tetrachloroethene		µg/L	<1	<1	0.3 J	0.29 J	0.363 J	0.644 J
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	0.89 J	<1	2	2.1	2.13	1.55
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-89

Analyte	Sample Name / Sample Date	Unit	MW-89 10/6/2008	MW-89 10/5/2009	MW-89 10/8/2010	MW-89 10/1/2011	MW-89 10/20/2012	MW-89 10/11/2013
Carbon tetrachloride		µg/L	0.252 J	<1	0.261 J	0.38 J	0.325 J	<1
Chloroform		µg/L	0.156 J	0.145 J	0.212 J	0.278 J	0.305	0.205 J
cis-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene		µg/L	<1	0.251 J	1.43	3.68	4.25	2.44
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	1.1	1.27	1.63	1.95	1.9	1.35
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-90

Analyte	Sample Name	--	--	MW-90	MW-90	MW-90-LB-1	MW-90-LS-3
	Sample Date	3/19/2002	3/19/2002	5/22/2004	2/16/2005	10/24/2006	4/16/2007
	Unit						
Carbon tetrachloride	µg/L	0.65 J	0.32 J	0.3 J	0.33 J	0.466 J	0.401 J
Chloroform	µg/L	8.9	3.5	7.4	6.1	3.11	3.18
cis-1,2-Dichloroethene	µg/L	0.44 J	<1	0.29 J	0.29 J	0.294 J	0.313 J
Tetrachloroethene	µg/L	58	8.8	19	19	26.7	26.7
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	10	2.7	7.2	4.3	2.53	2.4
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

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HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-90

Analyte	Sample Name / Sample Date	Unit	MW-90-LA-5 10/1/2007	MW-90 4/7/2008	MW-90 10/6/2008	MW-90 4/7/2009	MW-90 10/10/2009	MW-90 4/2/2010
Carbon tetrachloride		µg/L	0.462 J	<1	0.288 J	0.268 J	<1	<1
Chloroform		µg/L	3.64	4.66	4.65	4.91	0.817	3.94
cis-1,2-Dichloroethene		µg/L	0.36 J	0.484 J	0.335 J	0.481 J	<1	0.424 J
Tetrachloroethene		µg/L	50.7	77.7	79.3	80.8	35	58.3
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	3.69	5.9	6.08	8.47	2.41	8.55
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-90

Analyte	Sample Name / Sample Date	Unit	MW-90 10/8/2010	MW-90 4/1/2011	MW-90 10/1/2011	MW-90 4/23/2012	MW-90 10/20/2012	MW-90 4/10/2013	MW-90 10/11/2013
Carbon tetrachloride		µg/L	<1	0.355 J	<1	0.452 J	0.291 J	<1	0.283 J
Chloroform		µg/L	4.07	2.77	3.07	2.07	1.64	1.76	1.72
cis-1,2-Dichloroethene		µg/L	0.483 J	0.303 J	0.322 J	0.267 J	0.34 J	0.384 J	0.428 J
Tetrachloroethene		µg/L	47.9	31.1	29.2	25.6	25.6	22.4	21.5
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	8.17	5.25	5.64	4.37	4.08	4.65	5.19
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-92

	Sample Name	MW-92	MW-92	MW-92	MW-92	MW-92	MW-92
	Sample Date	11/30/2001	11/30/2001	11/30/2001	11/30/2001	11/30/2001	11/30/2001
Analyte	Unit						
Carbon tetrachloride	µg/L	18	19	18	20	20	18
Chloroform	µg/L	6.2	6.5	6.1	6.7	6.9	7.7
cis-1,2-Dichloroethene	µg/L	6.1	6.6	6.2	7	7	3.2
Tetrachloroethene	µg/L	130	160	150	160	150	110
trans-1,2-Dichloroethene	µg/L	0.21 J	0.19 J	<1	<1	<1	<1
Trichloroethene	µg/L	4.3	4.5	4.2	4.5	4.5	3
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-92

Analyte	Sample Name / Sample Date	Unit	MW-92 4/1/2004	MW-92 11/14/2004	MW-92 2/24/2005	MW-92 5/20/2005	MW-92-LB-1 10/5/2006	MW-92-LS-3 4/16/2007
Carbon tetrachloride		µg/L	24	23	25	21	27.2	7.67
Chloroform		µg/L	9 B	9.4	8.6	7.6	8.02	13.2
cis-1,2-Dichloroethene		µg/L	12	12	11	11	10.8	7.32
Tetrachloroethene		µg/L	170	180	140	160	193	159
trans-1,2-Dichloroethene		µg/L	<5	<6.7	<1	<1	<1	<1
Trichloroethene		µg/L	5.2	5.7 J	5.8	5.5	6.14	5.01
Vinyl chloride		µg/L	<5	<6.7	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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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HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-92

	Sample Name	MW-92-LA-5	MW-92	MW-92	MW-92	MW-92	MW-92
	Sample Date	10/4/2007	4/8/2008	10/9/2008	4/10/2009	10/10/2009	4/7/2010
Analyte	Unit						
Carbon tetrachloride	µg/L	6.45	6.3	<1	<1	<1	<1
Chloroform	µg/L	11	8.91	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	67.5	66.2	119	119	120	123
Tetrachloroethene	µg/L	55	65.9	0.499 J	<1	1.3	4.76
trans-1,2-Dichloroethene	µg/L	<1	0.727 J	<1	<1	<1	<1
Trichloroethene	µg/L	3.12	4.22	<1	<1	1.72	1.99
Vinyl chloride	µg/L	<1	<1	<1	1.64	<1	0.791 J

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-92

Analyte	Sample Name / Sample Date	Unit	MW-92 10/9/2010	MW-92 4/2/2011	MW-92 10/3/2011	MW-92 4/23/2012	MW-92 10/21/2012	MW-92 4/10/2013	MW-92 10/12/2013
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene		µg/L	119	86.7	64.2	66.1	50.9	45.7	39.7
Tetrachloroethene		µg/L	20.7	50.9	78.4	51.6	78.3	59.1	79.7
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	8.64	13.8	13.6	26.7	21	14.6	10.8
Vinyl chloride		µg/L	0.314 J	13.6 J	3.02	0.353 J	0.61 J	12.7	5.28

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-93

Analyte	Sample Name / Sample Date	Unit	MW-93 11/30/2001	MW-93 11/30/2001	MW-93 11/30/2001	MW-93 11/30/2001	MW-93 11/30/2001	MW-93 11/30/2001
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	0.69 J	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene		µg/L	<1	<1	2.4	7	7.5	7.1
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	<1	<1	0.19 J	0.64 J	0.84 J	0.77 J
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-93

Analyte	Sample Name / Sample Date	Unit	MW-93 11/30/2001	MW-93 5/7/2004	MW-93-LB-1 10/18/2006	MW-93 10/4/2007	MW-93 10/13/2008	MW-93 10/11/2009
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1 J	<1
Chloroform		µg/L	<1	<1	<0.3	<0.3	<0.3 J	<0.3
cis-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1 J	<1
Tetrachloroethene		µg/L	7.3	0.16 J	<1	<1	<1 J	<1
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1 J	<1
Trichloroethene		µg/L	0.86 J	<1	<1	<1	<1 J	<1
Vinyl chloride		µg/L	<1	<1	<1	<1	<1 J	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-93

	Sample Name	MW-93	MW-93
	Sample Date	10/14/2010	10/21/2012
Analyte	Unit		
Carbon tetrachloride	µg/L	<1	<1
Chloroform	µg/L	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1
Tetrachloroethene	µg/L	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1
Trichloroethene	µg/L	<1	<1
Vinyl chloride	µg/L	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-94A

	Sample Name	MW-94A	MW-94A	MW-94A	MW-94A	MW-94A-LB-1	MW-94A-LS-3
	Sample Date	5/23/2004	11/10/2004	2/20/2005	5/17/2005	10/24/2006	4/16/2007
Analyte	Unit						
Carbon tetrachloride	µg/L	<1.4 J	<2	<1	<1	<1	<1
Chloroform	µg/L	<1.4	<2	0.19 J	<1	0.139 J	0.196 J
cis-1,2-Dichloroethene	µg/L	0.52 J	0.71 J	0.82 J	0.68 J	0.624 J	0.532 J
Tetrachloroethene	µg/L	37	47	42	47	52.2	48
trans-1,2-Dichloroethene	µg/L	<1.4	<2	<1	<1	<1	<1
Trichloroethene	µg/L	4.2	6	6.5	5.8	5.58	6.08
Vinyl chloride	µg/L	<1.4	<2	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-94A

Analyte	Sample Name / Sample Date	Unit	MW-94A-LA-5 10/4/2007	MW-94A 4/8/2008	MW-94A 10/13/2008	MW-94A 4/9/2009	MW-94A 10/12/2009	MW-94A 3/29/2010
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	0.129 J	0.138 J	0.147 J	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene		µg/L	0.61 J	0.42 J	1.93	3.06	2.74	3.15
Tetrachloroethene		µg/L	43.5	27.3	32.8	30	27.7	27.7
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	7.44	9.49	6.89	6.78	7.46	7.83
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-94A

	Sample Name	MW-94A	MW-94A	MW-94A	MW-94A	MW-94A	MW-94A	MW-94A
	Sample Date	10/11/2010	4/2/2011	10/4/2011	4/23/2012	10/21/2012	4/10/2013	10/12/2013
Analyte	Unit							
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<0.3	<0.3	<0.3	<0.3	0.149 J	0.149 J	0.19 J
cis-1,2-Dichloroethene	µg/L	3.17	3.29	3.41	1.51	1.63	1.35	1.38
Tetrachloroethene	µg/L	30	28.8	24.9	15.3	32.1	30.4	32.8
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	6.89	6.59	6.29	8.04	10.2	10.2	10.4
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-96

	Sample Name	MW-96-1	MW-96-2	MW-96-3	MW-96-4	MW-96-5	MW-96-6
	Sample Date	11/30/2001	11/30/2001	11/30/2001	11/30/2001	11/30/2001	11/30/2001
Analyte	Unit						
Carbon tetrachloride	µg/L	1.8	<1	<1	<1	<1	<1
Chloroform	µg/L	2	2.7	3.8	5.6	6.3	5.9
cis-1,2-Dichloroethene	µg/L	0.23 J	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	19	0.88 J	0.21 J	0.3 J	0.13 J	0.14 J
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	0.19 J	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-96

	Sample Name	MW-96	MW-96	MW-96	MW-96	MW-96	MW-96-LS-3
	Sample Date	3/31/2004	11/15/2004	2/21/2005	5/20/2005	5/20/2005	4/16/2007
Analyte	Unit						
Carbon tetrachloride	µg/L	3.6	2.9	1.5	3.4	3.4	3.47
Chloroform	µg/L	0.69 B	0.6 J	0.5 B	0.64 B	0.64 B	0.901
cis-1,2-Dichloroethene	µg/L	0.67 J	0.52 J	0.34 J	19	0.6 J	0.814 J
Tetrachloroethene	µg/L	8.9	6.1	3.4	6.5	6.5	4.35
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	0.22 J	<1	<1	<1	<1	0.419 J
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-96

	Sample Name	MW-96-LA-5	MW-96	MW-96	MW-96	MW-96	MW-96
	Sample Date	10/4/2007	10/10/2008	4/6/2009	10/8/2009	10/7/2010	10/7/2011
Analyte	Unit						
Carbon tetrachloride	µg/L	3.4	1.03 J	0.69 J	2	2.45	4.64
Chloroform	µg/L	0.739	0.663 J	0.73	0.58	0.557	0.972
cis-1,2-Dichloroethene	µg/L	0.836 J	<1	<1	<1	0.34 J	0.631 J
Tetrachloroethene	µg/L	4.33	1.46 J	3	7.78	3.99	2.42
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 SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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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HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-96

	Sample Name	MW-96	MW-96
	Sample Date	10/19/2012	10/11/2013
Analyte	Unit		
Carbon tetrachloride	µg/L	1.15	0.832 J
Chloroform	µg/L	0.288 J	0.21 J
cis-1,2-Dichloroethene	µg/L	<1	<1
Tetrachloroethene	µg/L	0.306 J	0.318 J
trans-1,2-Dichloroethene	µg/L	<1	<1
Trichloroethene	µg/L	<1	<1
Vinyl chloride	µg/L	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-97

	Sample Name	MW-97	MW-97	MW-97	MW-97	MW-97	MW-97
	Sample Date	11/30/2001	11/30/2001	11/30/2001	11/30/2001	11/30/2001	11/30/2001
Analyte	Unit						
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
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 SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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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HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-97

	Sample Name	MW-97	MW-97	MW-97	MW-97	MW-97-LB-1	MW-97-LS-3
	Sample Date	11/30/2001	11/30/2001	3/31/2004	2/21/2005	10/25/2006	4/16/2007
Analyte	Unit						
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	<1	0.16 B	0.228 J	0.292 J
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	0.14 J	2.2	5.8	14.7	18.8
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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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HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-97

Analyte	Sample Name / Sample Date	Unit	MW-97-LA-5 10/2/2007	MW-97 4/8/2008	MW-97 10/13/2008	MW-97 4/10/2009	MW-97 10/7/2009	MW-97 3/31/2010
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	0.255 J	0.164 J	0.267 J	0.316	0.277 J	0.249 J
cis-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene		µg/L	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	25.7	21.8	29.6	31.3	37.4	36.8
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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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HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-97

Analyte	Sample Name / Sample Date	Unit	MW-97 10/9/2010	MW-97 3/31/2011	MW-97 10/5/2011	MW-97 4/23/2012	MW-97 10/20/2012	MW-97 4/10/2013	MW-97 10/11/2013
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	0.368	0.235 J	0.238 J	0.346 B	0.311	0.261 J	0.308
cis-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene		µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	49.8	40.7	53.8	54.7	62	70.7	67.8
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

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HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-98

	Sample Name	MW-98	MW-98	MW-98	MW-98	MW-98	MW-98
	Sample Date	11/30/2001	11/30/2001	11/30/2001	11/30/2001	11/30/2001	4/1/2004
Analyte	Unit						
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.23 J	0.26 J	0.24 J	0.26 J	0.24 J	<1
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	1.5	3.7	7.7	5.5	4.4	17
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	0.46 J	0.9 J	0.88 J	0.89 J	0.83 J	1.2
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-98

	Sample Name	MW-98	MW-98	MW-98	MW-98	MW-98	MW-98
	Sample Date	11/10/2004	2/16/2005	5/19/2005	10/25/2006	4/13/2007	10/3/2007
Analyte	Unit						
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.17 B	<1	<1	0.133 J	0.147 J	<0.3
cis-1,2-Dichloroethene	µg/L	0.22 J	<1	<1	0.252 J	<1	<1
Tetrachloroethene	µg/L	31	33	28	33.1	35.2	36.9
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	2.2	2.1	2	2.37	2.63	2.69
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-98

Analyte	Sample Name / Sample Date	Unit	MW-98 4/7/2008	MW-98 10/10/2008	MW-98 4/10/2009	MW-98 10/7/2009	MW-98 4/5/2010	MW-98 10/9/2010
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	<0.3	<0.3	<0.3	<0.3	0.128 J	0.127 J
cis-1,2-Dichloroethene		µg/L	<1	8.6 J	0.346 J	0.304 J	0.367 J	0.502 J
Tetrachloroethene		µg/L	34.8	25.5 J	30.1	38.8	40.1	35.4
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	1.93	2.34 J	2.18	2.79	2.99	2.85
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-98

Analyte	Sample Name / Sample Date	Unit	MW-98 4/1/2011	MW-98 10/4/2011	MW-98 4/23/2012	MW-98 10/20/2012	MW-98 4/10/2013	MW-98 10/11/2013
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	0.125 J	<0.3	0.135 JB	0.134 J	<0.3	<0.3
cis-1,2-Dichloroethene		µg/L	0.448 J	0.374 J	0.358 J	0.5 J	0.43 J	0.541 J
Tetrachloroethene		µg/L	38	41.7	21.7	41.7	41.2	40.5
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	3.44	3.05	3.03	3.1	3.18	3.16
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-99

	Sample Name	MW-99	MW-99	MW-99	MW-99	MW-99	MW-99
	Sample Date	11/30/2001	11/30/2001	11/30/2001	11/30/2001	11/30/2001	11/30/2001
Analyte	Unit						
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.14 J	0.14 J	0.13 J	0.15 J	<1	0.15 J
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1	<1	0.14 J
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-99

	Sample Name	MW-99	MW-99	MW-99	MW-99	MW-99	MW-99-LB-1
	Sample Date	11/30/2001	11/30/2001	11/30/2001	11/30/2001	5/18/2004	10/18/2006
Analyte	Unit						
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1 J	<1
Chloroform	µg/L	0.13 J	<1	<1	<1	<1	0.22 J
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	0.28 J	0.38 J	0.58 J	0.28 J	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990
µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-99

	Sample Name	MW-99-LA-5	MW-99	MW-99	MW-99	MW-99
	Sample Date	10/3/2007	10/9/2008	10/7/2009	10/12/2010	10/19/2012
Analyte	Unit					
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1
Chloroform	µg/L	0.2 J	0.265 J	0.238 J	0.252 J	0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1
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 SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-100B

	Sample Name	MW100B-EBT-TS1-110-115	MW100B-EBT-TS2-110-115	MW100B-EBT-TS3-110-115	MW100B-EBT-TS4-110-115	MW100B-EBT-TS5-110-115	MW100B-EBT-TS6-100-115
	Sample Date	7/8/2002	7/29/2002	9/3/2002	10/7/2002	11/11/2002	12/16/2002
Analyte	Unit						
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.19 J	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	1.3	0.509 J	17.7	33.4	31.4	24.1
Tetrachloroethene	µg/L	49	1.56	25.3	14.5	1.77	2.35
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	0.269 J	<1	0.321 J
Trichloroethene	µg/L	72	22.8	33.1	11.6	2.27	2.06
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-100B

	Sample Name	MW100B-EBT-TS7	MW100B-EBT-TS8-110-115	MW100B-EBT-TS9-100-115	MW100B-EBT-TS10-110-115	MW100B-EBT-TS11-110-115	MW100B-EBT-TS12-110-115
	Sample Date	1/20/2003	2/24/2003	3/24/2003	4/21/2003	5/19/2003	6/23/2003
Analyte	Unit						
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	26.4	28.7	59.4	61.3	75.2	88.2
Tetrachloroethene	µg/L	0.395 J	0.53	0.341 J	<0.5	<0.5	<0.5
trans-1,2-Dichloroethene	µg/L	<1	<1	0.274 J	0.323 J	0.333 J	0.356 J
Trichloroethene	µg/L	0.4 J	0.407 J	<1	<1	<1	<1
Vinyl chloride	µg/L	2.57	0.436 J	0.968 J	0.797 J	0.819 J	0.646 J

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-100B

Analyte	Sample Name / Sample Date	Unit	MW100B-EBT-TS13-110-115 7/21/2003	MW-100B 3/30/2004	MW-100B 11/12/2004	MW-100B 2/18/2005	MW-100B 5/18/2005	MW-100B 10/23/2006
Carbon tetrachloride		µg/L	<1	<5	<5	<1	<1	<1
Chloroform		µg/L	<1	<5	<5	<1	<1	<0.3
cis-1,2-Dichloroethene		µg/L	89	140	160	120	100	112
Tetrachloroethene		µg/L	<0.5	<5	<5	2.8	5.8	101
trans-1,2-Dichloroethene		µg/L	0.312 J	<5	<5	<1	<1	0.39 J
Trichloroethene		µg/L	<1	<5	<5	3.4	6.2	43.1
Vinyl chloride		µg/L	0.66 J	<5	<5	<1	0.29 J	0.716 J

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-100B

	Sample Name	MW-100B	MW-100B	MW-100B	MW-100B	MW-100B	MW-100B	MW-100B
	Sample Date	4/13/2007	10/2/2007	4/7/2008	10/8/2008	4/8/2009	10/7/2009	3/30/2010
Analyte	Unit							
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	94.4	143	89.3	158	22.3	21.5	8.8
Tetrachloroethene	µg/L	98.9	29.6	64.2	0.706 J	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	0.432 J	0.605 J	0.92 J	0.783 J	<1	<1	<1
Trichloroethene	µg/L	39.4	12.6	31.4	0.309 J	<1	<1	<1
Vinyl chloride	µg/L	0.595 J	1.02	0.836 J	1.75	94.6	85.2 J	131 J

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-100B

	Sample Name	MW-100B	MW-100B	MW-100B	MW-100B	MW-100B	MW-100B	MW-100B
	Sample Date	10/6/2010	4/4/2011	10/7/2011	4/21/2012	10/19/2012	4/11/2013	10/12/2013
Analyte	Unit							
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	11	23.6	9.9	5.94	16.3	18.5	21.8
Tetrachloroethene	µg/L	<1	3.87	28.7	44.1	66.5	33	68.4
trans-1,2-Dichloroethene	µg/L	<1	0.269 J	0.845 J	1.11	1.27	0.977 J	1.7
Trichloroethene	µg/L	<1	0.62 J	0.521 J	0.811 J	3.02	4.51	7.49
Vinyl chloride	µg/L	132	153	181 J	132	164 J	172	188

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-101

Analyte	Sample Name / Sample Date	Unit	MW-101-89 12/21/2001	MW-101-109 12/21/2001	MW-101-124 12/21/2001	MW-101 3/30/2004	MW-101 11/11/2004	MW-101,97.5 2/18/2005
Carbon tetrachloride		µg/L	<1	<1	<1	<20	<17	<1.4
Chloroform		µg/L	0.38 J	<1	0.42 J	<20	<17	0.27 B
cis-1,2-Dichloroethene		µg/L	0.34 J	0.27 J	0.39 J	<20	<17	<1.4
Tetrachloroethene		µg/L	530	450	460	450	450 J	470
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<20	<17	<1.4
Trichloroethene		µg/L	0.95 J	0.87 J	0.84 J	<20	<17	0.47 J
Vinyl chloride		µg/L	<1	<1	<1	<20	<17	<1.4

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-101

	Sample Name	MW-101,129	MW-101,97.5	MW-101,129	MW-101T	MW-101B	MW-101T
	Sample Date	2/18/2005	5/20/2005	5/20/2005	8/25/2006	8/25/2006	12/7/2006
Analyte	Unit						
Carbon tetrachloride	µg/L	<1.3	<1.2	<1.2	<1	<1	<1
Chloroform	µg/L	0.31 B	0.24 B	0.23 B	0.261 J	0.233 J	0.155 J
cis-1,2-Dichloroethene	µg/L	0.3 J	0.32 J	<1.2	0.266 J	0.279 J	<1
Tetrachloroethene	µg/L	460	350	340	251	239	196
trans-1,2-Dichloroethene	µg/L	<1.3	<1.2	<1.2	<1	<1	<1
Trichloroethene	µg/L	0.43 J	<1.2	0.35 J	0.298 J	0.293 J	<1
Vinyl chloride	µg/L	<1.3	<1.2	<1.2	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-101

	Sample Name	MW-101B	MW-101T	MW-101B	MW-101T	MW-101B	MW-101T
	Sample Date	12/7/2006	3/6/2007	3/6/2007	5/30/2007	5/30/2007	9/11/2007
Analyte	Unit						
Carbon tetrachloride	µg/L	<1	<1	<1	<1 J	<1 J	<1
Chloroform	µg/L	0.156 J	0.164 J	0.129 J	0.148 J	0.206 J	0.162 J
cis-1,2-Dichloroethene	µg/L	<1	0.621 J	9.4	0.428 J	1.01	0.609 J
Tetrachloroethene	µg/L	192	192	193	123	135	134
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	0.358 J	0.364 J	0.311 J	0.46 J
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-101

Analyte	Sample Name / Sample Date	Unit	MW-101B 9/11/2007	MW-101T 12/11/2007	MW-101B 12/11/2007	MW-101T 3/14/2008	MW-101B 3/14/2008	MW-101T 6/10/2008
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	0.164 J	<0.3	<0.3	0.149 J	<0.3	0.137 J
cis-1,2-Dichloroethene		µg/L	7.35	0.578	5.26	10.1	35.6	3.22
Tetrachloroethene		µg/L	147	125	120	113	81.3	101
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	0.646 J	0.305	0.843	1.37	2.17	1.09
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-101

Analyte	Sample Name / Sample Date	Unit	MW-101B 6/10/2008	MW-101T 12/10/2008	MW-101B 12/10/2008	MW-101T 3/11/2009	MW-101B 3/11/2009	MW-101T 10/7/2009
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene		µg/L	23.3	51.2	29.1	35.2	31.2	1.85
Tetrachloroethene		µg/L	78.9	16.5	47	46.9	55.6	76.5
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	4.15	1.63	0.923 J	2.16	3.53	0.746 J
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-101

Analyte	Sample Name / Sample Date	Unit	MW-101B 10/7/2009	MW-101T 4/5/2010	MW-101B 4/5/2010	MW-101T 10/13/2010	MW-101B 10/13/2010	MW-101T 4/5/2011
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene		µg/L	2.03	0.512 J	0.498 J	<1	0.264 J	0.342 J
Tetrachloroethene		µg/L	96.2	82.9	99.6	75.6	66.4	80
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	0.809 J	0.307 J	0.325 J	<1	<1	<1
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-101

Analyte	Sample Name / Sample Date	Unit	MW-101B 4/5/2011	MW-101T 10/7/2011	MW-101B 10/7/2011	MW-101T 4/23/2012	MW-101B 4/23/2012	MW-101T 10/19/2012
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene		µg/L	0.253 J	<1	<1	0.395 J	<1	<1
Tetrachloroethene		µg/L	76.3	53.1	72.3	66.6	64.1	66.2
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 SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-101

	Sample Name	MW-101B	MW-101T	MW-101B	MW-101T	MW-101B
	Sample Date	10/19/2012	4/11/2013	4/11/2013	10/12/2013	10/12/2013
Analyte	Unit					
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1
Chloroform	µg/L	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	25.5	23.6	36.5	31
Tetrachloroethene	µg/L	63.2	7.45	9.71	1.22	2.72
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	2.25	3.05	0.9 J	1.01
Vinyl chloride	µg/L	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-102B

	Sample Name	MW-102B	MW-102B	MW-102B	MW-102B	MW-102B	MW-102B	MW-102B
	Sample Date	5/8/2004	10/19/2006	10/3/2007	10/13/2008	10/8/2009	10/11/2010	10/19/2012
Analyte	Unit							
Carbon tetrachloride	µg/L	<1	<1	<1	<1 J	<1	<1	<1
Chloroform	µg/L	<1	<0.3	<0.3	<0.3 J	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1 J	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	0.308 J	<1 J	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1 J	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1 J	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1 J	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-103

	Sample Name	MW-103-10	MW-103-9	MW-103-8	MW-103-7	MW-103-6	MW-103-5
	Sample Date	11/30/2001	11/30/2001	11/30/2001	11/30/2001	11/30/2001	11/30/2001
Analyte	Unit						
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	16	17	16	17	16	15
cis-1,2-Dichloroethene	µg/L	0.39 J	0.37 J	0.36 J	0.39 J	0.36 J	0.34 J
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5.8	5.6	4.9	4.9	4.6	4.4
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990
µg/L micrograms per liter

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-103

	Sample Name	MW-103-4	MW-103-3	MW-103-2	MW-103-1	MW-103	MW-103
	Sample Date	11/30/2001	11/30/2001	11/30/2001	11/30/2001	5/11/2004	2/20/2005
Analyte	Unit						
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	14	16	4.3	1.9	12	13
cis-1,2-Dichloroethene	µg/L	0.33 J	0.39 J	<1	<1	0.44 J	0.43 J
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	3.9	4.8	0.69 J	0.3 J	4	4.4
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990
µg/L micrograms per liter

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-103

	Sample Name	MW-103	MW-103	MW-103	MW-103	MW-103	MW-103
	Sample Date	10/3/2006	10/4/2007	10/6/2008	10/11/2009	10/7/2010	10/7/2011
Analyte	Unit						
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	12.2	11.7	11.1	8.02	7.78	9.61
cis-1,2-Dichloroethene	µg/L	0.322 J	0.35 J	<1	0.314 J	0.386 J	0.439 J
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5.04	6.63	5.27	5.44	3.98	7.2
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990
µg/L micrograms per liter

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-103

	Sample Name	MW-103	MW-103
	Sample Date	10/21/2012	10/12/2013
Analyte	Unit		
Carbon tetrachloride	µg/L	<1	<1
Chloroform	µg/L	10.4	9.07
cis-1,2-Dichloroethene	µg/L	0.419 J	0.373 J
Tetrachloroethene	µg/L	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1
Trichloroethene	µg/L	10.6	10.6
Vinyl chloride	µg/L	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-104

	Sample Name	MW-104-10	MW-104-9	MW-104-8	MW-104-7	MW-104-6	MW-104-5
	Sample Date	11/30/2001	11/30/2001	11/30/2001	11/30/2001	11/30/2001	11/30/2001
Analyte	Unit						
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	20	19	14	18	17	10
cis-1,2-Dichloroethene	µg/L	0.46 J	0.45 J	0.36 J	0.47 J	0.4 J	0.22 J
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	24	20	19	19	16	6.4
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990
µg/L micrograms per liter

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-104

	Sample Name	MW-104-4	MW-104-3	MW-104-2	MW-104-1	MW-104	MW-104
	Sample Date	11/30/2001	11/30/2001	11/30/2001	11/30/2001	5/11/2004	2/21/2005
Analyte	Unit						
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	5	4.8	4.6	4	13	16
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	0.36 J	0.38 J
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	1.3	1.1	1.1	0.89 J	11	14
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-104

Analyte	Sample Name / Sample Date	Unit	MW-104 10/3/2006	MW-104 4/13/2007	MW-104 10/4/2007	MW-104 4/8/2008	MW-104 10/6/2008	MW-104 10/11/2009
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	15.9	13.7	12.8	13.6	11.2	8.45
cis-1,2-Dichloroethene		µg/L	0.446 J	0.589 J	0.554 J	0.63 J	0.305 J	0.473 J
Tetrachloroethene		µg/L	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	17.6	17	17.8	18.2	12.6	14.1
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-104

	Sample Name	MW-104	MW-104	MW-104	MW-104
	Sample Date	10/7/2010	10/9/2011	10/21/2012	10/12/2013
Analyte	Unit				
Carbon tetrachloride	µg/L	<1	<1	<1	<1
Chloroform	µg/L	10.2	8.78	9.89	7.71
cis-1,2-Dichloroethene	µg/L	0.477 J	0.574 J	0.637 J	0.833 J
Tetrachloroethene	µg/L	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Trichloroethene	µg/L	14.4	17.3	21.9	22
Vinyl chloride	µg/L	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-107

Analyte	Sample Name / Sample Date	Unit	MW-107-147 12/21/2001	MW-107-125B 12/21/2001	MW-107 5/26/2004	MW-107,153 2/20/2005	MW-107,135.5 2/20/2005	MW-107T-LB-1 10/17/2006
Carbon tetrachloride		µg/L	0.6 J	0.52 J	0.28 J	0.31 J	0.34 J	<1
Chloroform		µg/L	0.16 J	0.14 J	<1	<1	<1	<0.3
cis-1,2-Dichloroethene		µg/L	0.29 J	0.34 J	0.25 J	<1	<1	<1
Tetrachloroethene		µg/L	0.67 J	0.95 J	<1	0.21 J	0.32 J	0.564 J
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	2.6	2.8	0.7 J	0.57 J	0.63 J	0.999 J
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-107

Analyte	Sample Name / Sample Date	Unit	MW-107B-LB-1 10/17/2006	MW-107B-LA-5 10/2/2007	MW-107T 4/9/2008	MW-107B 4/9/2008	MW-107T 10/10/2008	MW-107B 10/10/2008
Carbon tetrachloride		µg/L	<1	0.415 J	0.616 J	0.574 J	<1	<1
Chloroform		µg/L	<0.3	<0.3	0.324	0.262 J	0.287 J	0.32 J
cis-1,2-Dichloroethene		µg/L	<1	<1	0.283 J	0.265 J	0.385 J	0.449 J
Tetrachloroethene		µg/L	0.377 J	0.476 J	0.411 J	0.291 J	1.93	0.965 J
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	0.585 J	0.95 J	1.67	1.56	2.11	1.8 J
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-107

	Sample Name	MW-107T	MW-107B	MW-107T	MW-107B	MW-107T	MW-107B
	Sample Date	10/7/2009	10/7/2009	10/13/2010	10/13/2010	10/8/2011	10/8/2011
Analyte	Unit						
Carbon tetrachloride	µg/L	0.787 J	0.773 J	0.6	0.629	0.704 J	0.655 J
Chloroform	µg/L	0.239 J	0.238 J	0.357	0.375	0.3 J	0.308
cis-1,2-Dichloroethene	µg/L	0.257 J	<1	<1	0.252 J	<1	<1
Tetrachloroethene	µg/L	5.05	3.36	4.26	4.22	31.7	32.1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	2.51	2.12	2.17 U	2.2	2.84	2.86
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-107

	Sample Name	MW-107T	MW-107T	MW-107B	MW-107B	MW-107T	MW-107B
	Sample Date	4/23/2012	10/21/2012	4/23/2012	10/21/2012	4/11/2013	4/11/2013
Analyte	Unit						
Carbon tetrachloride	µg/L	0.815 J	0.579 J	0.966 J	0.719 J	0.66 J	0.431 J
Chloroform	µg/L	0.392 B	0.391	0.492 B	0.422	0.389	0.272 J
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	47	36.5	62.5	46.5	54	20.3
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	3.44	3.17	4.15	3.47	3.72	2.44
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-107

	Sample Name	MW-107T	MW-107B
	Sample Date	10/12/2013	10/12/2013
Analyte	Unit		
Carbon tetrachloride	µg/L	0.402 J	0.459 J
Chloroform	µg/L	0.31	0.328
cis-1,2-Dichloroethene	µg/L	<1	<1
Tetrachloroethene	µg/L	18.3	25.1 J
trans-1,2-Dichloroethene	µg/L	<1	<1
Trichloroethene	µg/L	2.08	2.72
Vinyl chloride	µg/L	<1	<1

Notes:
VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990
µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-108

Analyte	Sample Name / Sample Date	Unit	MW-108 12/21/2001	MW-108 5/25/2004	MW-108 2/22/2005	MW-108-LB-1 10/24/2006	MW-108-LS-3 4/16/2007	MW-108 10/1/2007
Carbon tetrachloride		µg/L	<1	0.19 J	0.26 J	<1	<1	0.461 J
Chloroform		µg/L	6.4	8.2	6.9	11.7	10.8	12.1
cis-1,2-Dichloroethene		µg/L	0.18 J	0.46 J	0.33 J	0.75 J	0.634 J	0.71 J
Tetrachloroethene		µg/L	2.6	3.3	3.3	5.41	6.03	5.03
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	6.4	15	28	32	33.5	38.4 J
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:
VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990
µg/L micrograms per liter

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-108

	Sample Name	MW-108	MW-108	MW-108	MW-108	MW-108	MW-108
	Sample Date	4/7/2008	10/10/2008	4/7/2009	10/5/2009	4/1/2010	10/12/2010
Analyte	Unit						
Carbon tetrachloride	µg/L	0.477 J	0.272 J	<1	<1	<1	<1
Chloroform	µg/L	11.7	12.3 J	10.1	9.44	9.62	11.9
cis-1,2-Dichloroethene	µg/L	0.647 J	0.598 J	0.674 J	0.584 J	0.627 J	0.744 J
Tetrachloroethene	µg/L	3.93	3.72 J	4.49	4.39	4.29	5.23
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	32.7	28.5 J	28.1	29.1	34.7	37.7
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990
µg/L micrograms per liter

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-108

	Sample Name	MW-108	MW-108	MW-108	MW-108	MW-108	MW-108
	Sample Date	4/1/2011	10/6/2011	4/23/2012	10/21/2012	4/11/2013	10/12/2013
Analyte	Unit						
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	11.9	11.6	9.86	10.1	8.95	9.41
cis-1,2-Dichloroethene	µg/L	0.677 J	0.619 J	0.646 J	0.927 J	0.733 J	0.842 J
Tetrachloroethene	µg/L	7.25	6.06	3.61	2.67	2.75	3.76
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	33.1	26	25.4	31.5	28.7	30.3
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-140

	Sample Name	MW-140	MW-140	MW-140	MW-140	MW-140-LB-1	MW-140-LA-5
	Sample Date	5/27/2004	11/10/2004	2/17/2005	5/17/2005	10/23/2006	10/2/2007
Analyte	Unit						
Carbon tetrachloride	µg/L	<1	0.48 J	0.44 J	0.92 J	0.313 J	<1
Chloroform	µg/L	0.42 J	0.21 B	0.18 J	0.16 B	0.162 J	0.16 J
cis-1,2-Dichloroethene	µg/L	<1	0.28 J	0.22 J	0.22 J	<1	<1
Tetrachloroethene	µg/L	<1	0.38 J	0.42 J	0.42 J	0.424 J	0.59 J
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	0.54 J	1.4	1.4	1.3	1.49	1.19
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-140

Analyte	Sample Name / Sample Date	Unit	MW-140 10/9/2008	MW-140 10/12/2009	MW-140 10/13/2010	MW-140 10/3/2011	MW-140 10/20/2012	MW-140 10/11/2013
Carbon tetrachloride		µg/L	<1	0.558 J	<1	0.27 J	0.313 J	0.391 J
Chloroform		µg/L	0.259 J	0.205 J	0.242 J	<0.3	0.146 J	0.219 J
cis-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	0.294 J	<1
Tetrachloroethene		µg/L	0.933 J	0.806 J	1.18	1.19	2.51	2.8
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	1.41	1.25	0.971 J	1.43	1.6	1.73
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-141

	Sample Name	MW-141	MW-141	MW-141	MW-141	MW-141-LB-1	MW-141-LS-3
	Sample Date	6/24/2004	11/9/2004	2/15/2005	5/17/2005	10/23/2006	4/17/2007
Analyte	Unit						
Carbon tetrachloride	µg/L	<1	<1	<1	0.82 J	<1	<1
Chloroform	µg/L	1.4	1.5 B	1.8	2 B	2.37	2.46
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	5.9	19	26	31	27.6	21.3
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	1.2	2.1	2.2	2.8	3.56	3.02
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-141

Analyte	Sample Name / Sample Date	Unit	MW-141 10/2/2007	MW-141 4/8/2008	MW-141 10/10/2008	MW-141 4/9/2009	MW-141 10/5/2009	MW-141 4/2/2010
Carbon tetrachloride		µg/L	<1	0.418 J	<1	<1	<1	<1
Chloroform		µg/L	2.09	2.31	2.48 J	1.85	1.78	1.54
cis-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene		µg/L	18	16.9	19.7 J	15.7	17.1	16.6
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	2.52	2.47	3.24 J	2.48	3.02	2.58
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-141

Analyte	Sample Name / Sample Date / Unit	MW-141 10/8/2010	MW-141 4/1/2011	MW-141 10/2/2011	MW-141 4/23/2012	MW-141 10/20/2012	MW-141 4/10/2013	MW-141 10/11/2013
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	2.06	2.67	2.68	2.58	3.04	3.24	3.36
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	19.6	30.4	23.7	24.9	27.4	31.9 J	31.9
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	3.18	3.86	3.6	3.46	3.68	4.32	4.22
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-142

	Sample Name	MW 142	MW-142	MW-142	MW-142	MW-142-LB-1	MW-142-LA-5
	Sample Date	5/26/2004	11/9/2004	2/16/2005	5/17/2005	10/2/2006	10/3/2007
Analyte	Unit						
Carbon tetrachloride	µg/L	<1	0.36 J	<1	0.77 J	<1	<1
Chloroform	µg/L	<1	0.25 B	0.17 B	<1	<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
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	0.3 J	1.4	0.65 J	0.39 J	0.371 J	0.709 J
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-142

Analyte	Sample Name / Sample Date	Unit	MW-142 10/8/2008	MW-142 10/8/2009	MW-142 10/9/2010	MW-142 10/9/2011	MW-142 10/20/2012	MW-142 10/11/2013
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	<0.3	0.128 J	<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
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	1.61	2.74	6.71	11	4.16	5.77
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-143

Analyte	Sample Name / Sample Date	Unit	MW-143 5/5/2004	MW-143 11/11/2004	MW-143 2/17/2005	MW-143 5/17/2005	MW-143 10/19/2006	MW-143 10/13/2008
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1 J
Chloroform		µg/L	<1	<1	<1	<1	<0.3	<0.3 J
cis-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1 J
Tetrachloroethene		µg/L	<1	<1 J	<1	<1	<1	<1 J
trans-1,2-Dichloroethene		µg/L	<1 J	<1	<1	<1	<1	<1 J
Trichloroethene		µg/L	<1	<1	<1	0.31 J	0.7 J	1.19 J
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1 J

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-143

Analyte	Sample Name / Sample Date	Unit	MW-143 10/12/2010	MW-143 4/5/2011	MW-143 10/7/2011	MW-143 4/23/2012	MW-143 10/19/2012	MW-143 4/11/2013	MW-143 10/12/2013
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene		µg/L	<1	<1	<1	0.431 J	0.368 J	0.384 J	0.353 J
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	8.83	10.1	12.6	12.5	13.5	12.7	10
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-198

	Sample Name	MW-198-LB-1	MW-198-RW-	MW-198-LS-3	MW-198-LQ-4	MW-198-LA-5	MW-198
	Sample Date	10/2/2006	1/24/2007	4/15/2007	7/10/2007	10/2/2007	4/9/2008
Analyte	Unit						
Carbon tetrachloride	µg/L	<1	0.915 J	0.32 J	0.267 J	0.438 J	0.326 J
Chloroform	µg/L	<0.3	0.2 J	0.146 J	<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
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	3.28	25.8	20.2	15.1	6.53	8.36
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-198

Analyte	Sample Name / Sample Date	Unit	MW-198 10/8/2008	MW-198 4/9/2009	MW-198 10/12/2009	MW-198 10/8/2010	MW-198 10/8/2011	MW-198 10/20/2012	MW-198 10/11/2013
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	0.171 J	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene		µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	10.4 J	3.73	8.39	3.14	0.44 J	2.63	1.06
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-199A

	Sample Name	MW-199A-LB-1	MW-199A-RW-	MW-199A-LS-3	MW-199A-LQ-4	MW-199A-LA-5	MW-199A
	Sample Date	10/23/2006	1/24/2007	4/13/2007	7/12/2007	10/2/2007	10/9/2008
Analyte	Unit						
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.126 J	<0.3	<0.3	0.132 J	<0.3	0.137 J
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	0.361 J	<1	<1
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 SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-199A

Analyte	Sample Name / Sample Date	Unit	MW-199A 10/5/2009	MW-199A 10/7/2010	MW-199A 10/3/2011	MW-199A 10/20/2012	MW-199A 10/11/2013
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1
Chloroform		µg/L	<0.3	<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
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1
Trichloroethene		µg/L	0.419 J	0.968 J	0.963 J	1	0.986 J
Vinyl chloride		µg/L	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-199B

	Sample Name	MW-199B-LB-1	MW-199B-RW-	MW-199B-LS-3	MW-199B-LQ-4	MW-199B-LA-5	MW-199B
	Sample Date	10/23/2006	1/24/2007	4/13/2007	7/11/2007	10/2/2007	4/8/2008
Analyte	Unit						
Carbon tetrachloride	µg/L	0.719 J	0.949 J	0.555 J	1.05	0.376 J	0.6 J
Chloroform	µg/L	0.197 J	0.179 J	0.232 J	0.279 J	0.146 J	0.177 J
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	0.632 J	0.497 J	0.715 J	0.517 J	0.393 J	23.4
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	99.2 J	115	115	136	78.6	56.5
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-199B

Analyte	Sample Name / Sample Date	Unit	MW-199B 10/9/2008	MW-199B 4/9/2009	MW-199B 10/7/2009	MW-199B 4/2/2010	MW-199B 10/8/2010	MW-199B 4/2/2011
Carbon tetrachloride		µg/L	<1	0.476 J	0.324 J	0.378 J	0.287 J	0.545 J
Chloroform		µg/L	0.24 J	0.217 J	0.158 J	0.154 J	<0.3	<0.3
cis-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene		µg/L	0.612 J	0.494 J	0.694 J	0.511 J	0.707 J	0.567 J
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	124	115	93.2	87.5	53.8	71.5
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-199B

Analyte	Sample Name / Sample Date	Unit	MW-199B 10/3/2011	MW-199B 4/23/2012	MW-199B 10/20/2012	MW-199B 4/10/2013	MW-199B 10/11/2013
Carbon tetrachloride		µg/L	0.324 J	0.379 J	0.386 J	0.328 J	0.307 J
Chloroform		µg/L	<0.3	0.159 JB	<0.3	0.138 J	0.149 J
cis-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1
Tetrachloroethene		µg/L	0.881 J	0.412 J	0.676 J	0.258 J	0.545 J
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1
Trichloroethene		µg/L	59.7	76.7	84.9	84.1	74.6
Vinyl chloride		µg/L	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-200

	Sample Name	MW-200A-LB-1	MW-200-RW-2	MW-200-LS-3	MW-200-LQ-4	MW-200-LA-5	MW-200-LQ-6
	Sample Date	10/25/2006	1/24/2007	4/15/2007	7/10/2007	10/3/2007	4/8/2008
Analyte	Unit						
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<0.3	<0.3	0.146 J	<0.3	<0.3	0.206 J
cis-1,2-Dichloroethene	µg/L	0.466 J	0.303 J	0.532 J	0.543 J	0.419 J	0.345 J
Tetrachloroethene	µg/L	72	81.9	70.2	62.9	73.9	132
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5.47	5.94	7.49	7.49	6.88	4.13
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-200

	Sample Name	MW-200-LB-8	MW-200	MW-200	MW-200	MW-200	MW-200
	Sample Date	10/6/2008	4/7/2009	10/10/2009	3/29/2010	10/11/2010	4/1/2011
Analyte	Unit						
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.175 J	<0.3	<0.3	0.157 J	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	0.531 J	5.68	11.6	8.57	16.7	13
Tetrachloroethene	µg/L	125	74.7	25.6	23.8	31.5	31.8
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	3.42	4.82	8.04	7.99	7.24	6.66
Vinyl chloride	µg/L	<1	<1	<1	<1	<1 J	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-200

Analyte	Sample Name / Sample Date	Unit	MW-200 10/4/2011	MW-200 4/23/2012	MW-200 10/20/2012	MW-200 4/10/2013	MW-200 10/12/2013
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1
Chloroform		µg/L	<0.3	0.159 JB	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene		µg/L	15.3	2.98	3.08	2.69	1.8
Tetrachloroethene		µg/L	25.6	3	11.8	8.74	7.75
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1
Trichloroethene		µg/L	5.05	3.94	7.14	8.06	6.17
Vinyl chloride		µg/L	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-202A

	Sample Name	MW-202A-LB-1	MW-202A-RW-2	MW-202A-LS-3	MW-202A-LQ-4	MW-202A-LA-5	MW-202A
	Sample Date	10/23/2006	1/24/2007	4/16/2007	7/11/2007	10/1/2007	4/7/2008
Analyte	Unit						
Carbon tetrachloride	µg/L	0.365 J	0.749 J	0.382 J	0.904 J	0.552 J	0.695 J
Chloroform	µg/L	0.232 J	0.198 J	0.213 J	0.249 J	0.238 J	0.225 J
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	0.251 J	<1	<1
Tetrachloroethene	µg/L	0.257 J	0.326 J	0.316 J	0.371 J	0.672 J	0.443 J
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	1.85	1.59	1.88	2.22	1.66	1.77
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-202A

Analyte	Sample Name / Sample Date	Unit	MW-202A 10/7/2008	MW-202A 4/7/2009	MW-202A 10/6/2009	MW-202A 10/9/2010	MW-202A 10/1/2011	MW-202A 10/20/2012	MW-202A 10/11/2013
Carbon tetrachloride		µg/L	<1	<1	0.466 J	<1	0.265 J	<1	<1
Chloroform		µg/L	0.17 J	0.171 J	<0.3	0.21 J	0.222 J	0.23 J	0.216 J
cis-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene		µg/L	0.262 J	0.399 J	0.294 J	1	1.56	2.28	2.26
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	1.21	1.35	1.45	1.43	1.5	1.57	1.83
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-202B

	Sample Name	MW-202B-LB-1	MW-202B-RW-2	MW-202B-LS-3	MW-202B-LQ-4	MW-202B-LA-5	MW-202B
	Sample Date	10/24/2006	1/24/2007	4/16/2007	7/11/2007	10/2/2007	4/9/2008
Analyte	Unit						
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	0.263 J
Chloroform	µg/L	0.778	0.857	0.752	1.05	0.907	1.46
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	5.51	8.42	8.6	8.16	3.82	16.3
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	0.811 J	1.27	1.46	2.2	1.36	2.21
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-202B

Analyte	Sample Name / Sample Date	Unit	MW-202B 10/7/2008	MW-202B 4/7/2009	MW-202B 10/6/2009	MW-202B 4/6/2010	MW-202B 10/9/2010	MW-202B 4/2/2011
Carbon tetrachloride		µg/L	<1	<1	0.506 J	<1	<1	0.45 J
Chloroform		µg/L	1.92	1.96	1.92	1.81	1.46	1.24
cis-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	0.299 J	0.477 J
Tetrachloroethene		µg/L	21.3	19.5	18.6	21.4	23.1	26.6
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	2.57	3.3	3.79	3.78	3.43	4.98
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-202B

Analyte	Sample Name / Sample Date	Unit	MW-202B 10/1/2011	MW-202B 4/23/2012	MW-202B 10/20/2012	MW-202B 4/11/2013	MW-202B 10/11/2013
Carbon tetrachloride		µg/L	0.31 J	0.297 J	0.353 J	0.364 J	0.416 J
Chloroform		µg/L	0.712	0.655 B	0.606	0.534	0.539
cis-1,2-Dichloroethene		µg/L	0.411 J	0.485 J	0.401 J	0.379 J	0.332 J
Tetrachloroethene		µg/L	27.1	10.9	21.3	23.8	25.5
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1
Trichloroethene		µg/L	5.13	4.83	5.11	5.16	4.78
Vinyl chloride		µg/L	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-204A

Analyte	Sample Name / Sample Date	Unit	MW-204A 4/23/2007	MW-204A-LQ-4 7/10/2007	MW-204A-LA-5 10/2/2007	MW-204A-LQ-6 1/8/2008	MW-204A 4/7/2008	MW-204A 10/6/2008
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene		µg/L	0.763 J	0.785 J	0.846 J	0.922 J	1.05	0.769 J
Tetrachloroethene		µg/L	38.8	36.2	37	42.7	44.6 J	42
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	1.19	1.17	1.06	1.12	1.04	0.852 J
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-204A

Analyte	Sample Name / Sample Date	Unit	MW-204A 4/7/2009	MW-204A 10/7/2009	MW-204A 4/6/2010	MW-204A 10/8/2010	MW-204A 4/2/2011	MW-204A 10/4/2011
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene		µg/L	1.21	6.45	6.88	4.36	2.7	1.53
Tetrachloroethene		µg/L	47.4	39.2 J	37.3	47.2	46.8	50.2
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	0.981 J	1.21	1.79	1.83	1.48	0.91 J
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-204A

	Sample Name	MW-204A	MW-204A	MW-204A	MW-204A
	Sample Date	4/23/2012	10/20/2012	4/10/2013	10/11/2013
Analyte	Unit				
Carbon tetrachloride	µg/L	<1	<1	<1	<1
Chloroform	µg/L	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	1.11	0.937 J	1.02	0.528 J
Tetrachloroethene	µg/L	42.7	47.9	40.2 J	38.6
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Trichloroethene	µg/L	0.723 J	0.756 J	0.7 J	0.695 J
Vinyl chloride	µg/L	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-204B

	Sample Name	MW-204B	MW-204B-LQ-4	MW-204B-LA-5	MW-204B-LQ-6	MW-204B	MW-204B
	Sample Date	4/23/2007	7/11/2007	10/2/2007	1/8/2008	4/9/2008	10/6/2008
Analyte	Unit						
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<0.3	0.125 J	<0.3	<0.3	0.13	<0.3
cis-1,2-Dichloroethene	µg/L	0.906 J	0.916 J	1.05	2.3	1.39	1.26
Tetrachloroethene	µg/L	26.3	17.2	19	24.5	20.2	29.4
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	2.37	4.88	4.7	3.2	4.27	2.53
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-204B

Analyte	Sample Name / Sample Date	Unit	MW-204B 4/8/2009	MW-204B 10/6/2009	MW-204B 4/6/2010	MW-204B 10/11/2010	MW-204B 4/2/2011	MW-204B 10/4/2011
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	<0.3	0.177 J	<0.3	<0.3	0.166 J	<0.3
cis-1,2-Dichloroethene		µg/L	1.29	6.13	2.33	1.11	1.25	0.793 J
Tetrachloroethene		µg/L	16.3	14.9	23.5	15.7	13.9	27.8
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	4.98	4.95	3.71	5.35	5.92	2.99
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-204B

	Sample Name	MW-204B	MW-204B	MW-204B	MW-204B
	Sample Date	4/23/2012	10/20/2012	4/10/2013	10/11/2013
Analyte	Unit				
Carbon tetrachloride	µg/L	<1	<1	<1	<1
Chloroform	µg/L	<0.3	0.134 J	<0.3	0.161 J
cis-1,2-Dichloroethene	µg/L	0.937 J	1.08	0.805 J	0.998 J
Tetrachloroethene	µg/L	14.2	13.8	11.8	13.9
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Trichloroethene	µg/L	4.23	5.33	5.03	4.64
Vinyl chloride	µg/L	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-205A

Analyte	Sample Name / Sample Date	Unit	MW-205A 4/23/2007	MW-205A-LQ-4 7/10/2007	MW-205A-LA-5 10/3/2007	MW-205A-LQ-6 1/8/2008	MW-205A 4/7/2008	MW-205A 10/9/2008
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	0.238 J	0.222 J	0.185 J	0.165 J	0.212 J	0.223 J
cis-1,2-Dichloroethene		µg/L	0.337 J	0.465 J	0.538 J	3.12	1.14	9.58 J
Tetrachloroethene		µg/L	102	180	145	153	141	126 J
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	3.69	5.84	6.25	6.14	6.02	7.56 J
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-205A

Analyte	Sample Name / Sample Date	Unit	MW-205A 4/10/2009	MW-205A 10/5/2009	MW-205A 4/6/2010	MW-205A 10/8/2010	MW-205A 4/2/2011	MW-205A 10/4/2011
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	0.132 J	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene		µg/L	16.8	23.5	31.8	25.2	24.6	13.4
Tetrachloroethene		µg/L	82.6	53.1	32.3	39.1	30.1	30.9
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	7.12	7.28	7.77	9.03	9.18	8.03
Vinyl chloride		µg/L	<1	<1	<1	1.2	2.34 J	1.83

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-205A

	Sample Name	MW-205A	MW-205A	MW-205A	MW-205A
	Sample Date	4/23/2012	10/20/2012	4/10/2013	10/11/2013
Analyte	Unit				
Carbon tetrachloride	µg/L	<1	<1	<1	<1
Chloroform	µg/L	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	9.21	8.84	5.65	4.69
Tetrachloroethene	µg/L	28.9	33.1	27	26.4
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Trichloroethene	µg/L	7.04	8.38	7.77	6.81
Vinyl chloride	µg/L	1.43	0.393 J	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-205B

	Sample Name	MW-205B	MW-205B-LQ-4	MW-205B-LA-5	MW-205B-LQ-6	MW-205B	MW-205B
	Sample Date	4/23/2007	7/10/2007	10/4/2007	1/8/2008	4/9/2008	10/9/2008
Analyte	Unit						
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.206 J	<0.3	0.15 J	0.146 J	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	0.546 J	0.616 J	4.41	26.4	22.4	43
Tetrachloroethene	µg/L	129	149	100	82.3	31.2	24.9
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	7.2	9.22	8.74	9.75	5.15	8.48
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-205B

Analyte	Sample Name / Sample Date	Unit	MW-205B 4/7/2009	MW-205B 10/7/2009	MW-205B 4/6/2010	MW-205B 10/11/2010	MW-205B 4/2/2011	MW-205B 10/4/2011
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene		µg/L	38.8	29.5	19.8	13.5	10.4	6.46
Tetrachloroethene		µg/L	19.7	24.4	24	30.8	31.3	28.9
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	9.36	11.8	10.9	10.7	9.9	8.38
Vinyl chloride		µg/L	<1	2.06 J	5.05	4.59 J	2.6 J	1.73

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-205B

	Sample Name	MW-205B	MW-205B	MW-205B	MW-205B
	Sample Date	4/23/2012	10/20/2012	4/10/2013	10/11/2013
Analyte	Unit				
Carbon tetrachloride	µg/L	<1	<1	<1	<1
Chloroform	µg/L	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	5.01	5.29	4.3	4.61
Tetrachloroethene	µg/L	26.9	27.1	23.8	23.5
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Trichloroethene	µg/L	8.17	10.4	10.1	8.86
Vinyl chloride	µg/L	1.32	0.87 J	0.609 J	0.559 J

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-206A

	Sample Name	MW-206A	MW-206A-LQ-4	MW-206A-LA-5	MW-206A-LQ-6	MW-206A	MW-206A
	Sample Date	4/15/2007	7/11/2007	10/3/2007	1/8/2008	4/9/2008	10/13/2008
Analyte	Unit						
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.155 J	<0.3	0.166 J	0.174 J	0.173 J	0.134 J
cis-1,2-Dichloroethene	µg/L	0.607 J	0.765 J	0.762 J	0.717 J	0.78 J	5.2
Tetrachloroethene	µg/L	76.6	99.2	76.4	114	96.5	80.5
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	9.81	10.1	12.4	12	13.9	13.2
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-206A

Analyte	Sample Name / Sample Date	Unit	MW-206A 4/7/2009	MW-206A 10/7/2009	MW-206A 4/6/2010	MW-206A 10/8/2010	MW-206A 4/2/2011	MW-206A 10/4/2011
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene		µg/L	14.2	18.6	14.8	13.5	15.6	7.81
Tetrachloroethene		µg/L	46.5	25.6	22.3	15.6	18.1	14
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	12.6	12.3	11.5	12.2	13.9	12.5
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-206A

	Sample Name	MW-206A	MW-206A	MW-206A	MW-206A
	Sample Date	4/23/2012	10/20/2012	4/10/2013	10/11/2013
Analyte	Unit				
Carbon tetrachloride	µg/L	<1	<1	<1	<1
Chloroform	µg/L	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	5.94	4.21	3.45	2.85
Tetrachloroethene	µg/L	16	18.5	18.9	19.9
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Trichloroethene	µg/L	11.5	10.5	9.65	7.26
Vinyl chloride	µg/L	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-206B

	Sample Name	MW-206B	MW-206B-LQ-4	MW-206B-LA-5	MW-206B-LQ-6	MW-206B	MW-206B
	Sample Date	4/15/2007	7/11/2007	10/3/2007	1/9/2008	4/9/2008	10/13/2008
Analyte	Unit						
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.139 J	0.14 J	0.148 J	0.147 J	0.136 J	<0.3
cis-1,2-Dichloroethene	µg/L	0.582 J	0.722 J	0.698 J	0.688 J	2.51	7.85
Tetrachloroethene	µg/L	57.2	77.5	64.9	69.5	69.1	36.4
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	8.94	11	11	11.7	11.5	9.91
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-206B

Analyte	Sample Name / Sample Date	Unit	MW-206B 4/7/2009	MW-206B 10/7/2009	MW-206B 4/6/2010	MW-206B 10/8/2010	MW-206B 4/2/2011	MW-206B 10/4/2011
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene		µg/L	9.78	11	6.56	6.68	5	2.38
Tetrachloroethene		µg/L	22.8	17.3	12.3	12.3	13.7	15.4
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	9.31	9.57	7.5	8.81	9.57	8.08
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-206B

	Sample Name	MW-206B	MW-206B	MW-206B	MW-206B
	Sample Date	4/23/2012	10/20/2012	4/10/2013	10/11/2013
Analyte	Unit				
Carbon tetrachloride	µg/L	<1	<1	<1	<1
Chloroform	µg/L	<0.3	<0.3	<0.3	0.127 J
cis-1,2-Dichloroethene	µg/L	1.76	2.14	2.01	1.68
Tetrachloroethene	µg/L	15.2	19.1	21.1	20.8
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Trichloroethene	µg/L	6.51	7.83	7.75	5.53
Vinyl chloride	µg/L	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-207A

	Sample Name	MW-207A	MW-207A-LQ-4	MW-207A-LA-5	MW-207A-LQ-6	MW-207A	MW-207A
	Sample Date	4/16/2007	7/10/2007	10/3/2007	1/9/2008	4/9/2008	10/7/2008
Analyte	Unit						
Carbon tetrachloride	µg/L	<1	<1	<1	0.44 J	<1	<1
Chloroform	µg/L	5.86	9.99	8.28	10.6	9.12	9.13
cis-1,2-Dichloroethene	µg/L	0.468 J	0.387 J	0.479 J	0.382 J	0.475 J	0.476 J
Tetrachloroethene	µg/L	7.92	8.32	10.3	10.5	12.1	13.7
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	21.4	18.6	21.6	24.3	24.2	26.9
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-207A

Analyte	Sample Name / Sample Date	Unit	MW-207A 4/10/2009	MW-207A 10/5/2009	MW-207A 4/1/2010	MW-207A 10/14/2010	MW-207A 4/1/2011	MW-207A 10/2/2011
Carbon tetrachloride		µg/L	<1	<1	<1	<1	0.307 J	<1
Chloroform		µg/L	10.3	9.72	9.02	12.1	11	11.8
cis-1,2-Dichloroethene		µg/L	0.561 J	0.974 J	0.893 J	0.768 J	0.627 J	0.592 J
Tetrachloroethene		µg/L	9.75	11	10.7	18.1	18.6	14.4
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	47.4	52.7	46.4	36.2	27.9	21.3
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-207A

	Sample Name	MW-207A	MW-207A	MW-207A	MW-207A
	Sample Date	4/23/2012	10/21/2012	4/11/2013	10/12/2013
Analyte	Unit				
Carbon tetrachloride	µg/L	<1	<1	<1	<1
Chloroform	µg/L	8.14	11	10.2	10.2
cis-1,2-Dichloroethene	µg/L	0.442 J	0.599 J	0.429 J	0.555 J
Tetrachloroethene	µg/L	10.5	16.4	14.9	18.1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Trichloroethene	µg/L	15.7	23.6	21.3	18.7
Vinyl chloride	µg/L	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-207B

	Sample Name	MW-207B	MW-207B-LQ-4	MW-207B-LA-5	MW-207B-LQ-6	MW-207B	MW-207B
	Sample Date	4/16/2007	7/11/2007	10/3/2007	1/9/2008	4/9/2008	10/7/2008
Analyte	Unit						
Carbon tetrachloride	µg/L	1.36	1.91	1.37	1.13	1.22	0.916 J
Chloroform	µg/L	3.09	2.54	1.9	1.26	1.27	1.41
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	35.7	32.5	23.7	13	13.1	18
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	12.1	17.6	62	109	96.2	75.3
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-207B

Analyte	Sample Name / Sample Date	Unit	MW-207B 4/10/2009	MW-207B 10/6/2009	MW-207B 4/2/2010	MW-207B 10/12/2010	MW-207B 4/1/2011	MW-207B 10/6/2011
Carbon tetrachloride		µg/L	0.851 J	1.23	0.752 J	1.85 J	1.89	2.08
Chloroform		µg/L	1.6	3.64	1.35	6.99	7.34	4.01
cis-1,2-Dichloroethene		µg/L	<1	0.558 J	<1	0.9 J	0.777 J	0.544 J
Tetrachloroethene		µg/L	25.5	63.1	15.3	113	99.4	55
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	102	67.5	92.1	53.6	38.4	16.2
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-207B

Analyte	Sample Name / Sample Date	Unit	MW-207B 4/23/2012	MW-207B 10/21/2012	MW-207B 4/11/2013	MW-207B 10/12/2013
Carbon tetrachloride		µg/L	1.15	2.78	2.75	2.61
Chloroform		µg/L	7.73	0.519	0.535	0.565
cis-1,2-Dichloroethene		µg/L	0.881 J	<1	0.269 J	0.325 J
Tetrachloroethene		µg/L	124	11.8	11.5	12.5
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1
Trichloroethene		µg/L	30.5	3.24	3.21	3.29
Vinyl chloride		µg/L	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-208A

Analyte	Sample Name / Sample Date	Unit	MW-208A 4/16/2007	MW-208A-LQ-4 7/10/2007	MW-208A-LA-5 10/4/2007	MW-208A-LQ-6 1/8/2008	MW-208A 4/8/2008	MW-208A 10/13/2008
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	0.216 J	0.228 J	0.214 J	0.221 J	0.217 J	0.21 J
cis-1,2-Dichloroethene		µg/L	0.554 J	0.541 J	0.557 J	0.56 J	0.538 J	0.517 J
Tetrachloroethene		µg/L	174 J	193	163	198	189	182
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	8.12	8.26	8.44	8.45	7.64	9.8
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-208A

Analyte	Sample Name / Sample Date	Unit	MW-208A 4/7/2009	MW-208A 10/8/2009	MW-208A 4/5/2010	MW-208A 10/8/2010	MW-208A 4/2/2011	MW-208A 10/6/2011
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	0.18 J	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene		µg/L	3.61	23.5	20.9	25.7	41	39.7
Tetrachloroethene		µg/L	163	92.8	24.4	38	3.94	10.5
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	9.8	10.9	6.48	12.2	16.5	19.1
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-208A

	Sample Name	MW-208A	MW-208A	MW-208A
	Sample Date	4/23/2012	10/20/2012	4/10/2013
Analyte	Unit			
Carbon tetrachloride	µg/L	<1	<1	<1
Chloroform	µg/L	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	21.3	18.2	10.9
Tetrachloroethene	µg/L	19.3	21.4	21.5
trans-1,2-Dichloroethene	µg/L	<1	<1	<1
Trichloroethene	µg/L	18.9	20.2	18.4
Vinyl chloride	µg/L	<1	1.97 J	1.55

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-208B

	Sample Name	MW-208B	MW-208B-LQ-4	MW-208B-LA-5	MW-208B-LQ-6	MW-208B	MW-208B
	Sample Date	4/16/2007	7/11/2007	10/4/2007	1/9/2008	4/8/2008	10/13/2008
Analyte	Unit						
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<0.3	0.131 J	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	1.12	1.3	1.08	0.932 J	1.51	1.4
Tetrachloroethene	µg/L	3.42	2.8	3.02	1.68	2.22	2.94
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	18.4	15.7	15	13.2	17.1	21.3
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-208B

Analyte	Sample Name / Sample Date	Unit	MW-208B 4/7/2009	MW-208B 10/8/2009	MW-208B 4/5/2010	MW-208B 10/8/2010	MW-208B 4/2/2011	MW-208B 10/6/2011
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	0.165 J	0.136 J	0.184 J	0.262 J	0.328	0.384
cis-1,2-Dichloroethene		µg/L	2.14	2.06	1.81	1.45	1.91	1.67
Tetrachloroethene		µg/L	3.81	5.39	9.29	16.5	16.9	19.8
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	28	37.8	45.1	42.9	41.2	34.8
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-208B

Analyte	Sample Name / Sample Date	Unit	MW-208B 4/23/2012	MW-208B 10/20/2012	MW-208B 4/10/2013	MW-208B 10/11/2013
Carbon tetrachloride		µg/L	<1	<1	<1	<1
Chloroform		µg/L	0.373 B	0.688	0.614	0.929
cis-1,2-Dichloroethene		µg/L	1.39	1.13	1.36	0.937 J
Tetrachloroethene		µg/L	24.2	26.5	26	22.2
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1
Trichloroethene		µg/L	25	17.9	22.9	12.7
Vinyl chloride		µg/L	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-209A

	Sample Name	MW-209A	MW-209A-LQ-4	MW-209A-LA-5	MW-209A-LQ-6	MW-209A	MW-209A
	Sample Date	4/23/2007	7/10/2007	10/4/2007	1/9/2008	4/9/2008	10/9/2008
Analyte	Unit						
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<0.3	0.165 J	0.136 J	0.131 J	0.159 J	0.175 J
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	0.326 J	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	0.576 J	0.487 J	0.404 J	0.467 J	0.523 J	0.611 J
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-209A

Analyte	Sample Name / Sample Date	Unit	MW-209A 4/9/2009	MW-209A 10/5/2009	MW-209A 10/9/2010	MW-209A 10/3/2011	MW-209A 10/20/2012	MW-209A 10/11/2013
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	<0.3	0.132 J	0.134 J	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene		µg/L	0.323 J	<1	<1	<1	<1	0.354 J
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	0.495 J	0.568 J	0.659 J	1.04	3.06	4.97
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-209B

	Sample Name	MW-209B	MW-209B-LQ-4	MW-209B-LA-5	MW-209B-LQ-6	MW-209B	MW-209B
	Sample Date	4/23/2007	7/11/2007	10/5/2007	1/8/2008	4/9/2008	10/9/2008
Analyte	Unit						
Carbon tetrachloride	µg/L	0.327 J	0.962 J	1.86	0.474 J	0.681 J	0.611 J
Chloroform	µg/L	0.251 J	0.56	0.215 J	0.198 J	0.22 J	0.183 J
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1 J
Tetrachloroethene	µg/L	<1	<1	<1	0.357 J	<1	0.33 J
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1 J
Trichloroethene	µg/L	6.4	7.2	14.8	11.7	13	20 J
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1 J

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-209B

Analyte	Sample Name / Sample Date	Unit	MW-209B 4/9/2009	MW-209B 10/10/2009	MW-209B 4/6/2010	MW-209B 10/8/2010	MW-209B 4/2/2011	MW-209B 10/3/2011
Carbon tetrachloride		µg/L	0.668 J	0.725 J	0.658 J	0.659 J	0.932 J	0.563 J
Chloroform		µg/L	0.272 J	0.194 J	0.243 J	0.217 J	0.353	0.173 J
cis-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene		µg/L	0.278 J	0.278 J	<1	0.479 J	0.342 J	0.492 J
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	22.4	30.8	21.2	31.8	29.5	30.6
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-209B

Analyte	Sample Name / Sample Date / Unit	MW-209B 4/23/2012	MW-209B 10/20/2012	MW-209B 4/10/2013	MW-209B 10/11/2013
Carbon tetrachloride	µg/L	0.814 J	0.526 J	0.66 J	0.445 J
Chloroform	µg/L	0.227 JB	0.208 J	0.262 J	0.257 J
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Tetrachloroethene	µg/L	0.392 J	0.557 J	0.342 J	0.545 J
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Trichloroethene	µg/L	24.3	32	33.9	28.8
Vinyl chloride	µg/L	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-210A

	Sample Name	MW-210A	MW-210A-LQ-4	MW-210A-LA-5	MW-210A-LQ-6	MW-210A	MW-210A
	Sample Date	4/27/2007	7/9/2007	10/4/2007	1/8/2008	4/8/2008	10/6/2008
Analyte	Unit						
Carbon tetrachloride	µg/L	<1 J	<1	<1	<1	<1	<1
Chloroform	µg/L	0.201 J	0.199 J	<0.3	0.149 J	0.183 J	<0.3
cis-1,2-Dichloroethene	µg/L	0.828 J	0.813 J	0.727 J	0.757 J	0.887 J	1.02
Tetrachloroethene	µg/L	38.2	36.1	28.8	23.3	28.2	19.4
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	5.85	6.05	5.63	5.55	6.2	6.09
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-210A

Analyte	Sample Name / Sample Date	Unit	MW-210A 4/6/2009	MW-210A 10/6/2009	MW-210A 4/2/2010	MW-210A 10/11/2010	MW-210A 4/3/2011	MW-210A 10/4/2011
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	<0.3	<0.3	0.156 J	0.13 J	<0.3	<0.3
cis-1,2-Dichloroethene		µg/L	1.47	1.63	2.18	2.25	2.11	1.81
Tetrachloroethene		µg/L	16.9	8.48	14.7	13.6	13.3	12.6
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	6.28	4.92	6.37	6.16	5.54	5.4
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-210A

	Sample Name	MW-210A	MW-210A	MW-210A	MW-210A
	Sample Date	4/23/2012	10/20/2012	4/10/2013	10/11/2013
Analyte	Unit				
Carbon tetrachloride	µg/L	<1	<1	<1	<1
Chloroform	µg/L	0.127 JB	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	1.92	2.08	2.15	2
Tetrachloroethene	µg/L	10.4	8.21	8.42	5.79
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Trichloroethene	µg/L	4.43	4.62	5.36	4.52
Vinyl chloride	µg/L	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-210B

Analyte	Sample Name / Sample Date	Unit	MW-210B 4/27/2007	MW-210B-LQ-4 7/9/2007	MW-210B-LA-5 10/5/2007	MW-210B-LQ-6 1/8/2008	MW-210B 4/8/2008	MW-210B 10/6/2008
Carbon tetrachloride		µg/L	<1 J	<1	<1	<1	<1	<1
Chloroform		µg/L	0.15 J	<0.3	0.143 J	0.14 J	0.155 J	<0.3
cis-1,2-Dichloroethene		µg/L	0.646 J	0.57 J	0.433 J	0.529 J	0.613 J	0.462 J
Tetrachloroethene		µg/L	32.4	24.4	21	19.8	20	12.6
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	7.29	8.42	10.7	8.46	7.84	7.49
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-210B

Analyte	Sample Name / Sample Date	Unit	MW-210B 4/6/2009	MW-210B 10/6/2009	MW-210B 4/2/2010	MW-210B 10/11/2010	MW-210B 4/3/2011	MW-210B 10/4/2011
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene		µg/L	0.889 J	0.995 J	1.3	1.1	1.1	0.781 J
Tetrachloroethene		µg/L	12.2	9.39	10.3	9.27	8.64	7.24
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	7.2	7.78	7.06	7.77	8.21	9.73
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-210B

	Sample Name	MW-210B	MW-210B	MW-210B	MW-210B
	Sample Date	4/23/2012	10/20/2012	4/10/2013	10/11/2013
Analyte	Unit				
Carbon tetrachloride	µg/L	<1	<1	<1	<1
Chloroform	µg/L	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	0.902 J	0.723 J	0.717 J	0.635 J
Tetrachloroethene	µg/L	7.42	4.8	4.7	3.59
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Trichloroethene	µg/L	6.76	10.2	8.56	6.93
Vinyl chloride	µg/L	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-211

Analyte	Sample Name / Sample Date	Unit	MW-211 4/16/2007	MW-211-LQ-4 7/10/2007	MW-211-LA-5 10/2/2007	MW-211-LQ-6 1/9/2008	MW-211 10/10/2008	MW-211 4/10/2009
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	0.139 J	<0.3	<0.3	0.214 J	2.24 J	2.71
cis-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene		µg/L	<1	<1	<1	0.502 J	0.431 J	0.469 J
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	0.536 J	0.576 J	0.436 J	0.602 J	1.18 J	1.38
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-211

Analyte	Sample Name / Sample Date	Unit	MW-211 10/7/2009	MW-211 10/13/2010	MW-211 10/3/2011	MW-211 10/21/2012	MW-211 10/12/2013
Carbon tetrachloride		µg/L	<1	0.344	<1	<1	<1
Chloroform		µg/L	1.24	0.218 J	0.152 J	0.166 J	<0.3
cis-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1
Tetrachloroethene		µg/L	0.811 J	0.745 J	0.275 J	<1	0.686 J
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1
Trichloroethene		µg/L	1.2	1.3	0.512 J	0.39 J	0.461 J
Vinyl chloride		µg/L	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-214A

Analyte	Sample Name / Sample Date	Unit	MW-214A 4/16/2007	MW-214A 7/10/2007	MW-214A 10/3/2007	MW-214A 1/9/2008	MW-214A 4/7/2008	MW-214A 10/7/2008
Carbon tetrachloride		µg/L	0.601 J	0.476 J	0.725 J	0.575 J	0.709 J	0.647 J
Chloroform		µg/L	2.63	2.32	2.26	2.02	2.06	1.58
cis-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene		µg/L	8.83	6.81	6.99	7.29	6.22	4.81
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	5.59	4.49	4.11	3.65	3.02	1.95
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-214A

	Sample Name	MW-214A	MW-214A	MW-214A	MW-214A	MW-214A	MW-214A
	Sample Date	4/10/2009	10/11/2009	10/7/2010	10/2/2011	4/23/2012	10/21/2012
Analyte	Unit						
Carbon tetrachloride	µg/L	0.752 J	0.891 J	1.12 J	1.18	1.03	1.01
Chloroform	µg/L	2.22	2.21	5.01 J	4.34	2.93	2.7
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	4.51	4.64	10.5 J	11.1	7.59	6.54
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	2.31	2.6	7.88 J	6.71	2.69	2.46
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-214A

	Sample Name	MW-214A	MW-214A
	Sample Date	4/11/2013	10/12/2013
Analyte	Unit		
Carbon tetrachloride	µg/L	0.976 J	1.09
Chloroform	µg/L	2.27	2.18
cis-1,2-Dichloroethene	µg/L	<1	<1
Tetrachloroethene	µg/L	6.06	6.6
trans-1,2-Dichloroethene	µg/L	<1	<1
Trichloroethene	µg/L	2.01	2.14
Vinyl chloride	µg/L	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-214B

	Sample Name	MW-214B	MW-214B-LQ-4	MW-214B-LA-5	MW-214B-LQ-6	MW-214B	MW-214B
	Sample Date	4/17/2007	7/11/2007	10/3/2007	1/9/2008	4/7/2008	10/21/2008
Analyte	Unit						
Carbon tetrachloride	µg/L	0.645 J	1.05	0.76 J	0.959 J	0.843 J	0.772 J
Chloroform	µg/L	2.06	1.85	1.47	1.44	1.22	1.27
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	6.4	6	4.89	5.44	4.55	4.39
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	4.24	3.83	3.06	2.88	2.36	2.28
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-214B

Analyte	Sample Name / Sample Date	Unit	MW-214B 4/10/2009	MW-214B 10/11/2009	MW-214B 10/12/2010	MW-214B 10/2/2011	MW-214B 4/23/2012	MW-214B 10/21/2012
Carbon tetrachloride		µg/L	0.797 J	0.92 J	1.08	1.27	0.942 J	1.19
Chloroform		µg/L	1.47	1.8	3.79	3.94	2.7	2.53
cis-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene		µg/L	4	4.14	10	9.24	5.78	6.79
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	1.93	2.25	5.65 B	5.16	2.6	2.28
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-214B

	Sample Name	MW-214B	MW-214B
	Sample Date	4/11/2013	10/12/2013
Analyte	Unit		
Carbon tetrachloride	µg/L	0.977 J	1.01
Chloroform	µg/L	1.61	1.7
cis-1,2-Dichloroethene	µg/L	<1	<1
Tetrachloroethene	µg/L	5.42	6
trans-1,2-Dichloroethene	µg/L	<1	<1
Trichloroethene	µg/L	1.41	1.98
Vinyl chloride	µg/L	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-215A

Analyte	Sample Name / Sample Date	Unit	MW-215A 4/16/2007	MW-215A-LQ-4 7/10/2007	MW-215A-LA-5 10/4/2007	MW-215A-LQ-6 1/9/2008	MW-215A 4/9/2008	MW-215A 10/7/2008
Carbon tetrachloride		µg/L	0.679 J	0.538 J	0.671 J	0.552 J	0.651 J	0.382 J
Chloroform		µg/L	1.66	1.67	1.76	1.68	1.66	1.44
cis-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene		µg/L	5.81	5.58	6.95	7.01	6.27	5.85
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	7.82	8.12	7.79	10.2	8.96	7.99
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-215A

Analyte	Sample Name / Sample Date	Unit	MW-215A 4/10/2009	MW-215A 10/12/2009	MW-215A 10/6/2010	MW-215A 10/7/2011	MW-215A 10/21/2012	MW-215A 10/12/2013
Carbon tetrachloride		µg/L	0.591 J	0.579 J	0.747 J	0.596 J	1.09	0.978 J
Chloroform		µg/L	1.52	1.43	1.03	0.908	2.4	2.39
cis-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene		µg/L	4.91	4.91	4.19	3.51	6.06	6.93
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	6.2	4.88	2.72	2.08	3	3.46
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-215B

	Sample Name	MW-215B	MW-215B-LQ-4	MW-215B-LA-5	MW-215B-LQ-6	MW-215B	MW-215B
	Sample Date	4/16/2007	7/9/2007	10/4/2007	1/9/2008	4/9/2008	10/7/2008
Analyte	Unit						
Carbon tetrachloride	µg/L	0.956 J	1.01	0.894 J	0.856 J	0.988 J	0.271 J
Chloroform	µg/L	0.68	0.71	0.651	0.61	0.663	0.474
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	4.36	4.39	4.49	4.71	4.7	2.1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	1.52	1.53	1.47	1.36	1.46	1.25
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-215B

	Sample Name	MW-215B	MW-215B	MW-215B	MW-215B	MW-215B	MW-215B
	Sample Date	4/9/2009	10/12/2009	10/12/2010	10/4/2011	10/21/2012	10/12/2013
Analyte	Unit						
Carbon tetrachloride	µg/L	0.97 J	1.17	1.23 J	1.12	1.3	1.33
Chloroform	µg/L	0.767	0.686	0.63	0.589	0.845	0.685
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	4.99	5.66	5.81	4.82	5.91	6.24
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	1.66	1.76	1.5	1.42	1.71	1.55
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-216

Analyte	Sample Name / Sample Date	Unit	MW-216 4/27/2007	MW-216-LQ-4 7/10/2007	MW-216-LA-5 10/2/2007	MW-216-LQ-6 1/8/2008	MW-216 10/6/2008	MW-216 4/6/2009
Carbon tetrachloride		µg/L	<1 J	<1	<1	<1	<1	<1
Chloroform		µg/L	<0.3	0.169 J	0.183 J	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	0.288 J	<1
Tetrachloroethene		µg/L	<1	<1	<1	<1	34.2	<1
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	<1	<1	<1	<1	1.5	<1
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-216

Analyte	Sample Name / Sample Date	Unit	MW-216 10/12/2009	MW-216 10/9/2010	MW-216 10/5/2011	MW-216 10/20/2012	MW-216 10/11/2013
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1
Chloroform		µg/L	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1
Tetrachloroethene		µg/L	<1	0.285 J	<1	<1	<1
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1
Trichloroethene		µg/L	<1	<1	<1	0.363 J	0.379 J
Vinyl chloride		µg/L	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-217

Analyte	Sample Name / Sample Date	Unit	MW-217 4/27/2007	MW-217-LQ-4 7/9/2007	MW-217-LA-5 10/2/2007	MW-217-LQ-6 1/9/2008	MW-217 4/7/2008	MW-217 10/8/2008
Carbon tetrachloride		µg/L	34.8	42.3 J	53.4	57.3	72.1	96.3 J
Chloroform		µg/L	5.05	5.33	5.18	7.43	8.56	13.4 J
cis-1,2-Dichloroethene		µg/L	1.34	1.45	1.89	2.43	2.88	4.8 J
Tetrachloroethene		µg/L	18.4	25.4 J	31.3	31.7	34.7	26.5 J
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	29.5	40.6 J	39.4	35.9	34.4	25.6 J
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-217

Analyte	Sample Name / Sample Date	Unit	MW-217 4/8/2009	MW-217 10/8/2009	MW-217 3/31/2010	MW-217 10/7/2010	MW-217 3/31/2011	MW-217 10/4/2011
Carbon tetrachloride		µg/L	92.4	55.6	65.6	48.8	47.7	32.1
Chloroform		µg/L	9.43	5.24	4.4	3.73	4.25	3.77
cis-1,2-Dichloroethene		µg/L	3.58	1.8	1.33	0.819 J	0.871 J	0.581 J
Tetrachloroethene		µg/L	31.2	29.9	29.7	27.4	27.7	24.6
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	28.7	32.9	34.6	37.9	46.1	44.1
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-217

Analyte	Sample Name / Sample Date	Unit	MW-217 4/23/2012	MW-217 10/21/2012	MW-217 4/10/2013	MW-217 10/12/2013
Carbon tetrachloride		µg/L	33.7	23.9	27.3	40.4
Chloroform		µg/L	3.54	4.12	3.74	3.88
cis-1,2-Dichloroethene		µg/L	0.555 J	0.519 J	0.707 J	0.791 J
Tetrachloroethene		µg/L	17.9	23.7	23.8	29.6
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1
Trichloroethene		µg/L	41.7	45 J	44	42.1
Vinyl chloride		µg/L	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-218

Analyte	Sample Name / Sample Date	Unit	MW-218 4/17/2007	MW-218-LQ-4 7/9/2007	MW-218-LA-5 10/2/2007	MW-218-LQ-6 1/9/2008	MW-218 4/7/2008	MW-218 10/8/2008
Carbon tetrachloride		µg/L	15.1	13.3	17.6	15	17.7	15.6 J
Chloroform		µg/L	3.15	2.79	2.45	2.58	2.62	2.78 J
cis-1,2-Dichloroethene		µg/L	0.459 J	0.468 J	0.508 J	0.352 J	0.392 J	0.373 J
Tetrachloroethene		µg/L	17.7	16.7	18.5	17.2	17.4	12.2 J
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	44.2	47.6	42.8	42.5	40.7	35.9 J
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-218

Analyte	Sample Name / Sample Date	Unit	MW-218 4/8/2009	MW-218 10/8/2009	MW-218 3/31/2010	MW-218 10/14/2010	MW-218 4/3/2011	MW-218 10/7/2011
Carbon tetrachloride		µg/L	15.7	10.1	7.56	8.81	9.84 J	9.75
Chloroform		µg/L	2.75	2.49	2.42	2.98	2.79	2.52
cis-1,2-Dichloroethene		µg/L	0.426 J	0.404 J	0.303 J	0.373 J	0.419 J	0.436 J
Tetrachloroethene		µg/L	15.2	16.3	11.2	13.7	16.8	19.5
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	37.1	42.5	32.8	37.6	46.2	49.2
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-218

Analyte	Sample Name / Sample Date	Unit	MW-218 4/23/2012	MW-218 10/21/2012	MW-218 4/10/2013	MW-218 10/12/2013
Carbon tetrachloride		µg/L	6.73	8.22	7.6	8.75
Chloroform		µg/L	2.28	2.82	2.55	2.8
cis-1,2-Dichloroethene		µg/L	<1	0.379 J	0.252 J	0.33 J
Tetrachloroethene		µg/L	17.9	20.3	18.1	18.9
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1
Trichloroethene		µg/L	44.7	43.9	42.2	40.3
Vinyl chloride		µg/L	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-219

Analyte	Sample Name / Sample Date	Unit	MW-219 4/27/2007	MW-219-LQ-4 7/10/2007	MW-219-LA-5 10/3/2007	MW-219-LQ-6 1/9/2008	MW-219 4/7/2008	MW-219 10/10/2008
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene		µg/L	0.643 J	1.06	1.01	0.875 J	0.928 J	1.14 J
Tetrachloroethene		µg/L	16.3	27.6	33.9	48	41.4	47 J
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	1.72	2.79	3.37	3.74	3.26	3.53 J
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-219

Analyte	Sample Name / Sample Date	Unit	MW-219 4/6/2009	MW-219 10/8/2009	MW-219 4/1/2010	MW-219 10/6/2010	MW-219 4/3/2011	MW-219 10/6/2011
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene		µg/L	1.15	0.935 J	0.393 J	<1	<1	<1
Tetrachloroethene		µg/L	39.4	26.9	10.6	5.57	4.55	6.51
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	2.84	2.09	0.868 J	0.575 J	0.439 J	0.614 J
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-219

Analyte	Sample Name / Sample Date	Unit	MW-219 4/23/2012	MW-219 10/19/2012	MW-219 4/11/2013	MW-219 10/12/2013
Carbon tetrachloride		µg/L	<1	<1	<1	<1
Chloroform		µg/L	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene		µg/L	0.677 J	1.64	2.04	2.48
Tetrachloroethene		µg/L	11	25.2	39.6	53.6
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1
Trichloroethene		µg/L	1.36	2.9	3.54	3.62
Vinyl chloride		µg/L	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-229

Analyte	Sample Name / Sample Date	Unit	MW-229 10/5/2007	MW-229 1/9/2008	MW-229 10/8/2008	MW-229 4/8/2009	MW-229 10/8/2009	MW-229 10/6/2010
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	<0.3	<0.3	<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
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 SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-229

	Sample Name	MW-229	MW-229
	Sample Date	10/2/2011	10/19/2012
Analyte	Unit		
Carbon tetrachloride	µg/L	<1	<1
Chloroform	µg/L	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1
Tetrachloroethene	µg/L	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1
Trichloroethene	µg/L	<1	<1
Vinyl chloride	µg/L	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-252

Analyte	Sample Name / Sample Date	Unit	MW-252 6/18/2010	MW-252 10/6/2010	MW-252 12/9/2010	MW-252 3/31/2011	MW-252 10/6/2011	MW-252 4/23/2012
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	<0.3	<0.3	0.332	1.07	<0.3	<0.3
cis-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene		µg/L	<1	<1	2.75	5.64	<1	1.65
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	<1	<1	1.62	3.73	<1	0.891 J
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-252

	Sample Name	MW-252	MW-252	MW-252
	Sample Date	10/19/2012	4/11/2013	10/12/2013
Analyte	Unit			
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	<1	0.651 J	0.273 J
trans-1,2-Dichloroethene	µg/L	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-253

Analyte	Sample Name / Sample Date	Unit	MW-253 6/18/2010	MW-253 10/6/2010	MW-253 12/9/2010	MW-253 3/31/2011	MW-253 9/30/2011	MW-253 4/23/2012
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	0.156	<0.3	<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
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	0.344	2.99	4.87	7.75	9.81	<1
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-253

	Sample Name	MW-253	MW-253	MW-253
	Sample Date	10/19/2012	4/11/2013	10/12/2013
Analyte	Unit			
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	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-254

Analyte	Sample Name / Sample Date	Unit	MW-254 8/16/2010	MW-254 10/5/2010	MW-254 12/8/2010	MW-254 3/31/2011	MW-254 9/30/2011	MW-254 4/23/2012
Carbon tetrachloride		µg/L	0.695	0.872 J	1.18	1.06	0.869 J	0.888 J
Chloroform		µg/L	0.241	0.223 J	0.29	0.249 J	0.205 J	0.201 J
cis-1,2-Dichloroethene		µg/L	<1	<1	0.299	<1	0.303 J	0.321 J
Tetrachloroethene		µg/L	0.814	0.623 J	0.854	<1	0.578 J	0.573 J
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	2.28	2.07	2.58	1.8	2.28	2.63
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-254

	Sample Name	MW-254	MW-254	MW-254
	Sample Date	10/19/2012	4/11/2013	10/12/2013
Analyte	Unit			
Carbon tetrachloride	µg/L	1.15	0.889 J	0.748 J
Chloroform	µg/L	0.295 J	0.185 J	0.162 J
cis-1,2-Dichloroethene	µg/L	<1	0.34 J	0.347 J
Tetrachloroethene	µg/L	0.649 J	0.905 J	0.77 J
trans-1,2-Dichloroethene	µg/L	<1	<1	<1
Trichloroethene	µg/L	2.37	3.13	2.7
Vinyl chloride	µg/L	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-255

Analyte	Sample Name / Sample Date	Unit	MW-255 8/9/2010	MW-255 10/5/2010	MW-255 12/8/2010	MW-255 3/31/2011	MW-255 9/30/2011	MW-255 4/23/2012
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	<0.3	<0.3	<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
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	<1	0.297 J	0.269	0.345 J	0.298 J	0.586 J
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-255

	Sample Name	MW-255	MW-255	MW-255
	Sample Date	10/19/2012	4/11/2013	10/12/2013
Analyte	Unit			
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	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1
Trichloroethene	µg/L	0.532 J	0.433 J	0.353 J
Vinyl chloride	µg/L	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-256

Analyte	Sample Name / Sample Date	Unit	MW-256 8/9/2010	MW-256 10/5/2010	MW-256 12/9/2010	MW-256 3/31/2011	MW-256 9/30/2011	MW-256 4/23/2012
Carbon tetrachloride		µg/L	0.302	0.32	0.613 J	0.36	0.268 J	0.524 J
Chloroform		µg/L	1.74	2.01	1.95	2.35	2.27	2.25
cis-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene		µg/L	8.71	9.44	8.64	12.1	20	34.3
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	2.43	2.77	2.9	3.51	4.68	7.82
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-256

	Sample Name	MW-256	MW-256	MW-256
	Sample Date	10/19/2012	4/11/2013	10/12/2013
Analyte	Unit			
Carbon tetrachloride	µg/L	0.404 J	0.334 J	0.366 J
Chloroform	µg/L	2.47	2.32	2.29 J
cis-1,2-Dichloroethene	µg/L	<1	0.28 J	<1
Tetrachloroethene	µg/L	39.5	41.9	37.7 J
trans-1,2-Dichloroethene	µg/L	<1	<1	<1
Trichloroethene	µg/L	13.7	16	14 J
Vinyl chloride	µg/L	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-257

	Sample Name	MW-257	MW-257	MW-257	MW-257
	Sample Date	4/23/2012	10/21/2012	4/11/2013	10/12/2013
Analyte	Unit				
Carbon tetrachloride	µg/L	<1	<1	<1	<1
Chloroform	µg/L	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1
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 SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-258

	Sample Name	MW-258	MW-258	MW-258	MW-258
	Sample Date	4/22/2012	10/21/2012	4/11/2013	10/12/2013
Analyte	Unit				
Carbon tetrachloride	µg/L	<1	<1	<1	<1
Chloroform	µg/L	2.34	4.1	2.95	2.54
cis-1,2-Dichloroethene	µg/L	1.75	2.54	2.22	2.25
Tetrachloroethene	µg/L	19.4	22.1	25.9	32.2
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Trichloroethene	µg/L	57.7 J	93	88.7	85.8
Vinyl chloride	µg/L	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-259

	Sample Name	MW-259	MW-259	MW-259	MW-259
	Sample Date	4/22/2012	10/21/2012	4/10/2013	10/12/2013
Analyte	Unit				
Carbon tetrachloride	µg/L	4.69	5.12	4.98	5.02
Chloroform	µg/L	2.69	3.07	3.08	3
cis-1,2-Dichloroethene	µg/L	<1	<1	0.278 J	0.277 J
Tetrachloroethene	µg/L	15.1	15.1	16.1	17
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Trichloroethene	µg/L	15.7	15.9	22	23.9
Vinyl chloride	µg/L	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-260

	Sample Name	MW-260
	Sample Date	10/11/2013
Analyte	Unit	
Carbon tetrachloride	µg/L	<1
Chloroform	µg/L	1.37
cis-1,2-Dichloroethene	µg/L	<1
Tetrachloroethene	µg/L	<1
trans-1,2-Dichloroethene	µg/L	<1
Trichloroethene	µg/L	3.97
Vinyl chloride	µg/L	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-261

	Sample Name	MW-261
	Sample Date	10/11/2013
Analyte	Unit	
Carbon tetrachloride	µg/L	<1
Chloroform	µg/L	<0.3
cis-1,2-Dichloroethene	µg/L	<1
Tetrachloroethene	µg/L	<1
trans-1,2-Dichloroethene	µg/L	<1
Trichloroethene	µg/L	2.71 J
Vinyl chloride	µg/L	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

DR1-1

Analyte	Sample Name / Sample Date	Unit	DR1-1 5/21/2004	DR1-1 11/12/2004	DR1-1 2/17/2005	DR1-1 5/18/2005	DR1-1-LB-1 10/23/2006	DR1-1-LA-5 10/1/2007
Carbon tetrachloride		µg/L	<1 J	<1	<1	<1	<1	<1
Chloroform		µg/L	0.24 J	<1	<1	<1	<0.3	<0.3
cis-1,2-Dichloroethene		µg/L	0.8 J	1.2	1	1.1	1.02	0.969 J
Tetrachloroethene		µg/L	2.8	3.3	3.3 J	3	2.46	2.49
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	<1	0.3 J	0.29 J	0.3 J	0.255 J	<1
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

UJ Undetected, reporting limit is inaccurate or imprecise

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

DR1-1

Analyte	Sample Name / Sample Date / Unit	DR1-1-LB-8 10/8/2008	DR1-1-LA-10 10/6/2009	DR1-1-LB-12 10/9/2010	DR1-1-LA-14 10/6/2011	DR1-1-LB-16 10/19/2012	DR1-1-LA-18 10/12/2013
Carbon tetrachloride	µg/L	<1	<1	<1	<1 UJ	<1	<1
Chloroform	µg/L	0.126 J	<0.3	<0.3	<0.3 UJ	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	1.08	1.26	1.31	1.52	0.734 J
Tetrachloroethene	µg/L	2.69	2.12	2.56	3	2.97	1.77
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	0.399 J	0.328 J	0.304 J	0.326 J	0.309 J	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

UJ Undetected, reporting limit is inaccurate or imprecise

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

DR1-1A

	Sample Name	DR1	DR1-1A	DR1-1A	DR1-1A	DR1-1A-LB-1	DR1-1A-LS-3
	Sample Date	5/27/04	11/13/04	2/16/05	5/18/05	10/2/06	4/13/07
Analyte	Unit						
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.66 J	0.18 J	0.21 B	0.16 B	0.324	0.313
cis-1,2-Dichloroethene	µg/L	0.72 J	0.85 J	1	0.75 J	0.634	0.416 J
Tetrachloroethene	µg/L	1.5	1.8	1.8	1.6	1.18	0.959 J
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	3.5	4	6.9	5.2	6.28	4.57
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

UJ Undetected, reporting limit is inaccurate or imprecise

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

DR1-1A

	Sample Name	DR1-1A-LA-5	DR1-1A-LS-7	DR1-1A-LB-8	DR1-1A-LQ-9	DR1-1A-LA-10	DR1-1A-LB-12
	Sample Date	10/1/2007	4/8/2008	10/8/2008	4/8/2009	10/6/2009	10/9/2010
Analyte	Unit						
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.307	0.274 J	0.372 J	0.424	0.518	0.348
cis-1,2-Dichloroethene	µg/L	0.312 J	0.273 J	0.262 J	0.295 J	<1	0.42 J
Tetrachloroethene	µg/L	0.813 J	0.776 J	0.747 J	0.838 J	0.749 J	1.33
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	3.61	3.21	3.03 J	3.85	2.33	3.6
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

UJ Undetected, reporting limit is inaccurate or imprecise

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

DR1-1A

	Sample Name	DR1-1A-LA-14	DR1-1A-LB-16	DR1-1A-LA-18
	Sample Date	10/6/2011	10/19/2012	10/12/2013
Analyte	Unit			
Carbon tetrachloride	µg/L	<1 UJ	<1	<1
Chloroform	µg/L	0.288 J	0.427	0.51
cis-1,2-Dichloroethene	µg/L	0.356 J	<1	<1
Tetrachloroethene	µg/L	1.08	0.612 J	0.389 J
trans-1,2-Dichloroethene	µg/L	<1	<1	<1
Trichloroethene	µg/L	2.35	2.3	0.973 J
Vinyl chloride	µg/L	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

UJ Undetected, reporting limit is inaccurate or imprecise

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

DR1-2

	Sample Name	DR1-2	DR1-2	DR1-2	DR1-2	DR1-2-LB-1	DR1-2-LA-5
	Sample Date	5/17/2004	11/11/2004	2/16/2005	5/19/2005	10/24/2006	10/1/2007
Analyte	Unit						
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	<1	<1	0.163	<0.3
cis-1,2-Dichloroethene	µg/L	0.68 J	0.77 J	0.67 J	0.75 J	0.602	0.48 J
Tetrachloroethene	µg/L	1.8	2.5 J	2.3	2.1	1.82	1.52
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 SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

DR1-2

Analyte	Sample Name / Sample Date	Unit	DR1-2-LB-8 10/7/2008	DR1-2-LA-10 10/6/2009	DR1-2-LB-12 10/5/2010	DR1-2-LA-14 10/5/2011	DR1-2-LB-16 10/19/2012	DR1-2-LA-18 10/12/2013
Carbon tetrachloride		µg/L	<1 J	<1	<1	<1	<1	<1
Chloroform		µg/L	0.131 J	0.17 J	0.179 J	<0.3	0.129 J	0.142 J
cis-1,2-Dichloroethene		µg/L	0.595 J	0.607 J	0.805 J	0.791 J	0.856 J	0.369 J
Tetrachloroethene		µg/L	1.5 J	1.47	2.1	1.92	2.2	1.3
trans-1,2-Dichloroethene		µg/L	<1 J	<1	<1	<1	<1	<1
Trichloroethene		µg/L	1.83 J	<1	<1	<1	<1	<1
Vinyl chloride		µg/L	<1 J	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

DR1-3

	Sample Name	DR1-3	DR1-3	DR1-3	DR1-3	DR1-3-BL	DR1-3-EBT-1
	Sample Date	5/10/2004	11/11/2004	2/15/2005	5/17/2005	8/25/2006	12/5/2006
Analyte	Unit						
Carbon tetrachloride	µg/L	<1	<1.2	<1	<1	<1	<1
Chloroform	µg/L	<1	<1.2	<1	<1	<0.3	<1
cis-1,2-Dichloroethene	µg/L	<1	<1.2	<1	0.22 J	<1	<1
Tetrachloroethene	µg/L	34	43 J	46	47	45.7	54.7
trans-1,2-Dichloroethene	µg/L	<1	<1.2	<1	<1	<1	<1
Trichloroethene	µg/L	2.6	3.2	3.7	4.1	4.18	5.13
Vinyl chloride	µg/L	<1	<1.2	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

DR1-3

	Sample Name	DR1-3-EBT-2	DR1-3-EBT-3	DR1-3-EBT-4	DR1-3-EBT-5	DR1-3-EBT-6	DR1-3-EBT-7
	Sample Date	3/7/2007	6/1/2007	9/19/2007	12/13/2007	3/14/2008	6/13/2008
Analyte	Unit						
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<0.3	<0.3	<1	<1	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	27.6	32.9	30.7	22.6	17	19.5
Tetrachloroethene	µg/L	8.31	2.18	0.45 J	0.904 J	2.12	2.95
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	2.74	0.572 J	<1	0.303 J	1.28	2.02
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

DR1-3

	Sample Name	DR1-3-EBT-8	DR1-3-EBT-9	DR1-3-LA-10	DR1-3-LS-11	DR1-3-LB-12	DR1-3-LS-13
	Sample Date	12/11/2008	3/12/2009	10/6/2009	4/5/2010	10/6/2010	4/1/2011
Analyte	Unit						
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	16.5	13.3	1.5	0.29 J	<1	<1
Tetrachloroethene	µg/L	2.59	2.43	10	13.9	9.13	13.2
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	1.32	1.26	2.15	2.47	1.75	2.1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

DR1-3

	Sample Name	DR1-3-LA-14	DR1-3-LS-15	DR1-3-LB-16	DR1-3-LS-17	DR1-3-LA-18
	Sample Date	10/4/2011	4/23/2012	10/19/2012	4/11/2013	10/12/2013
Analyte	Unit					
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1
Chloroform	µg/L	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	3.64	7.5
Tetrachloroethene	µg/L	13.9	11.2	16.2	3.18	1.52
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Trichloroethene	µg/L	1.81	1.48	1.93	1.42	2.17
Vinyl chloride	µg/L	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

DR1-4

Analyte	Sample Name / Sample Date	Unit	DR1-4 5/21/2004	DR1-4 11/11/2004	DR1-4 2/15/2005	DR1-4 5/17/2005	DR1-4 10/25/2006	DR1-4 4/13/2007
Carbon tetrachloride		µg/L	<1 J	<1	<1	<1	<1	<1
Chloroform		µg/L	<1	<1	<1	<1	<0.3	<0.3
cis-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	8.09
Tetrachloroethene		µg/L	4.8	8.3 J	9.3	8.9	12.4	<1
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	0.72 J	1.1	1.1	1	1.33	<1
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

DR1-4

Analyte	Sample Name / Sample Date	Unit	DR1-4 10/1/2007	DR1-4 4/7/2008	DR1-4 10/7/2008	DR1-4 4/8/2009	DR1-4 10/6/2009	DR1-4 10/6/2010
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene		µg/L	5.29	0.582 J	0.987 J	0.755 J	<1	<1
Tetrachloroethene		µg/L	<1	2.74	1.22	0.947 J	0.844 J	0.435 J
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	<1	0.573 J	1.69	0.393 J	0.64 J	0.543 J
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

DR1-4

	Sample Name	DR1-4-LA-14	DR1-4-LB-16	DR1-4-LA-18
	Sample Date	10/4/2011	10/19/2012	10/12/2013
Analyte	Unit			
Carbon tetrachloride	µg/L	<1	<1	<1
Chloroform	µg/L	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	0.523 J
Tetrachloroethene	µg/L	0.831 J	1.25	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1
Trichloroethene	µg/L	0.252 J	<1	0.41 J
Vinyl chloride	µg/L	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

DR1-7

Analyte	Sample Name / Sample Date	Unit	DR1-7 6/24/2004	DR1-7 11/12/2004	DR1-7 2/21/2005	DR1-7 5/17/2005	DR1-7 10/25/2006	DR1-7 10/1/2007
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	0.18 J	0.19 J	<1	<1	<0.3	<0.3
cis-1,2-Dichloroethene		µg/L	0.46 J	0.58 J	0.45 J	0.48 J	0.374 J	0.344 J
Tetrachloroethene		µg/L	30	26	27	27	5.68	5.15
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	1.6	1.8	2.2	2	0.76 J	0.812 J
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

DR1-7

Analyte	Sample Name / Sample Date	Unit	DR1-7 10/7/2008	DR1-7 10/6/2009	DR1-7 10/5/2010	DR1-7 10/4/2011	DR1-7 10/19/2012	DR1-7 10/12/2013
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	0.163 J	<0.3	0.169 J	0.174 J	<0.3	0.156 J
cis-1,2-Dichloroethene		µg/L	0.787 J	0.449 J	0.525 J	0.532 J	0.401 J	0.286 J
Tetrachloroethene		µg/L	4.35	4.75	3.81	2.62	1.6	1.19
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	1.6	0.622 J	0.549 J	0.441 J	<1	<1
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

DR1-8

	Sample Name	DR1-8	DR1-8	DR1-8	DR1-8	DR1-8	DR1-8
	Sample Date	6/24/2004	11/11/2004	2/18/2005	5/19/2005	10/18/2006	10/1/2007
Analyte	Unit						
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	<1	<1	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1 J	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1	<1	0.341 J
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

DR1-8

Analyte	Sample Name / Sample Date	Unit	DR1-8 10/7/2008	DR1-8 10/5/2009	DR1-8 10/6/2010	DR1-8 10/6/2011	DR1-8 10/19/2012	DR1-8 10/12/2013
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	<0.3	<0.3	<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
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	1.03	<1	<1	<1	<1	<1
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

DR2-1

Analyte	Sample Name / Sample Date	Unit	DR2-1 6/23/2004	DR2-1 11/14/2004	DR2-1 2/22/2005	DR2-1 5/19/2005	DR2-1-BL 8/31/2006	DR2-1-EBT-1 12/6/2006
Carbon tetrachloride		µg/L	25	35	24	32	32.3	29 J
Chloroform		µg/L	16	16	12	13	9.91	13.3
cis-1,2-Dichloroethene		µg/L	16	24	21	22	17	34.7
Tetrachloroethene		µg/L	180	280	190	250	176	191
trans-1,2-Dichloroethene		µg/L	<5.3	<8.3	<1	<1	0.319 J	<1
Trichloroethene		µg/L	7.3	9.8	7.8	9.1	8.51	8.49
Vinyl chloride		µg/L	<5.3	<8.3	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

DR2-1

Analyte	Sample Name / Sample Date	Unit	DR2-1-EBT-2 3/8/2007	DR2-1-EBT-3 5/29/2007	DR2-1-EBT-4 9/12/2007	DR2-1-EBT-5 12/10/2007	DR2-1 3/10/2008	DR2-1 6/9/2008
Carbon tetrachloride		µg/L	22.6	25.7 J	13.4	15.5	1.26	2.8
Chloroform		µg/L	10	8.76	8.58	11.3	4.19	5.75
cis-1,2-Dichloroethene		µg/L	19.3	15.2	50.4	7.71	86.4	38.1
Tetrachloroethene		µg/L	194	160	138	192	33.7	50.7
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	7.91	7.21	4.54	5.72	12.7	5.36
Vinyl chloride		µg/L	<1	<1	1.25	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

DR2-1

Analyte	Sample Name / Sample Date	Unit	DR2-1 12/12/2008	DR2-1 3/12/2009	DR2-1 10/10/2009	DR2-1 3/30/2010	DR2-1 10/14/2010	DR2-1 4/2/2011
Carbon tetrachloride		µg/L	20.4	22.7	7.39	10.1	13.2	19.2
Chloroform		µg/L	9.18	7.53	3.76	5.25	6.9	6.75
cis-1,2-Dichloroethene		µg/L	9.14	7.59	4.89	9.88	14.3	15.3
Tetrachloroethene		µg/L	137	150	66.2	98.5	106	152
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	5.46	5.09	2.61	4.21	5.23	6.02
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

DR2-1

Analyte	Sample Name / Sample Date	Unit	DR2-1 10/2/2011	DR2-1 4/23/2012	DR2-1 10/21/2012	DR2-1 4/10/2013	DR2-1 10/12/2013
Carbon tetrachloride		µg/L	23.3	25.7 J	26.6	21.5	37.2
Chloroform		µg/L	7.87	6.09	6.38	9.08	8.82
cis-1,2-Dichloroethene		µg/L	17.8	13.5	13.9	1.85	10.2
Tetrachloroethene		µg/L	151	119	180	176	235
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1
Trichloroethene		µg/L	7.07	6.95	6.85	2.99	5.45
Vinyl chloride		µg/L	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

DR2-3

	Sample Name	DR2-3	DR2-3	DR2-3	DR2-3	DR2-3-LB-1	DR2-3-LS-3	DR2-3-LA-5
	Sample Date	5/23/2004	11/14/2004	2/24/2005	5/20/2005	10/3/2006	4/15/2007	10/1/2007
Analyte	Unit							
Carbon tetrachloride	µg/L	4.1 J	5.6	6.1	4.7	4.2	4.29	4.12
Chloroform	µg/L	1.8	1.9	1.8 B	1.2 B	0.939	0.913	0.76
cis-1,2-Dichloroethene	µg/L	1.4 J	1.8	1.8	1.2	0.601 J	0.673 J	0.549 J
Tetrachloroethene	µg/L	47	43	33	33	22.8	23.9	20.6
trans-1,2-Dichloroethene	µg/L	<1.7	<1.4	<1	<1	<1	<1	<1
Trichloroethene	µg/L	2	2.7	2.7	2.6	2.47	2.28	2.15
Vinyl chloride	µg/L	<1.7	<1.4	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

DR2-3

Analyte	Sample Name / Sample Date	Unit	DR2-3 4/8/2008	DR2-3 10/10/2008	DR2-3 4/8/2009	DR2-3 10/10/2009	DR2-3 4/7/2010	DR2-3 10/6/2010
Carbon tetrachloride		µg/L	4.72	4.97 J	6.66	4.62	5.88	5.81
Chloroform		µg/L	0.933	0.978 J	1.19	0.861	0.925	0.828
cis-1,2-Dichloroethene		µg/L	0.683 J	0.594 J	1.41	0.816 J	0.888 J	0.674 J
Tetrachloroethene		µg/L	28.3	22.1 J	38.9	33.3	34.2	31.6
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	2.15	2.03 J	2.47	2.09	2.03	2.07
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

DR2-3

Analyte	Sample Name / Sample Date	Unit	DR2-3 4/1/2011	DR2-3 10/2/2011	DR2-3 4/23/2012	DR2-3 10/21/2012	DR2-3 4/10/2013	DR2-3 10/12/2013
Carbon tetrachloride		µg/L	7.38	6.7	4.23 J	4.24	2.88	2.87
Chloroform		µg/L	1.3	1.04	0.677	0.727	0.585	0.567
cis-1,2-Dichloroethene		µg/L	1.7	1.19	0.55 J	0.617 J	0.36 J	<1
Tetrachloroethene		µg/L	50.3	33.5	21.7	24.9	17.4	14
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	2.41	2.38	1.87	1.85	1.66	1.29
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

DR2-4

	Sample Name	DR2-4	DR2-4	DR2-4	DR2-4	DR2-4	DR2-4
	Sample Date	5/24/2004	11/14/2004	2/22/2005	5/20/2005	10/5/2006	10/1/2007
Analyte	Unit						
Carbon tetrachloride	µg/L	2.2	3.8	3.7	3.6	4.06	3.96
Chloroform	µg/L	1	0.94 J	0.84 J	0.77 B	1.06	0.973
cis-1,2-Dichloroethene	µg/L	<1	0.27 J	0.22 J	0.22 J	<1	<1
Tetrachloroethene	µg/L	12	14	12	10	7.15	9.28
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	1.9	2.2	1.9	1.7	1.61	1.54
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020
SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

DR2-4

	Sample Name	DR2-4	DR2-4	DR2-4	DR2-4	DR2-4	DR2-4
	Sample Date	10/8/2008	10/11/2009	10/13/2010	10/2/2011	10/21/2012	10/12/2013
Analyte	Unit						
Carbon tetrachloride	µg/L	3.55	3.34	4.56	4.45	3.47	3.01
Chloroform	µg/L	0.715	0.575	0.716	0.835	0.683	0.645
cis-1,2-Dichloroethene	µg/L	0.304 J	0.414 J	0.373 J	0.412 J	0.375 J	<1
Tetrachloroethene	µg/L	14.5	18	19.8	13.7	11	9.58
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	1.74	1.7	1.7	1.58	1.12	0.898 J
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020
SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

DR2-6

Analyte	Sample Name / Sample Date	Unit	DR2-6 6/22/2004	DR2-6 11/13/2004	DR2-6 2/24/2005	DR2-6 5/23/2005	DR2-6-LB-1 10/17/2006	DR2-6-LS-3 4/15/2007
Carbon tetrachloride		µg/L	34	66	7.2	68	82.7	92
Chloroform		µg/L	16	25	1.5 B	29	27.3	33.1
cis-1,2-Dichloroethene		µg/L	7.3	13	0.69 J	16	9.97	14.1
Tetrachloroethene		µg/L	44	75	36	78	77.2	90.8
trans-1,2-Dichloroethene		µg/L	<1.7	<2	<1	<1	<1	<1
Trichloroethene		µg/L	11	13	2.2	16	15.5	16.4
Vinyl chloride		µg/L	<1.7	<2	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020
SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

DR2-6

Analyte	Sample Name / Sample Date	Unit	DR2-6-LA-5 10/1/2007	DR2-6 4/8/2008	DR2-6 10/8/2008	DR2-6 4/7/2009	DR2-6 10/8/2009	DR2-6 3/31/2010
Carbon tetrachloride		µg/L	82.8	29.2	39.6	12.9	26.4	8.59
Chloroform		µg/L	43.1	16.3	18.4	7.83	10.3	3.31
cis-1,2-Dichloroethene		µg/L	31.6	36	33	29	23.8	24.9
Tetrachloroethene		µg/L	115	48.3	70.5	24.5	44.5	20.9
trans-1,2-Dichloroethene		µg/L	<1	<1	0.552 J	<1	<1	<1
Trichloroethene		µg/L	19.7	7.55	12.4	5.33	8.79	3.81
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020 SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

DR2-6

Analyte	Sample Name / Sample Date	Unit	DR2-6 10/7/2010	DR2-6 4/1/2011	DR2-6 10/3/2011	DR2-6 4/23/2012	DR2-6 10/21/2012	DR2-6 4/10/2013	DR2-6 10/12/2013
Carbon tetrachloride		µg/L	74.4	14.9	27.1	27.4 J	46.5 J	34.3	<1
Chloroform		µg/L	16.1	5.76	7.82	11	10.6	9.44	7.85
cis-1,2-Dichloroethene		µg/L	18.5	43.7	50.5	22	29.6	12.4	24
Tetrachloroethene		µg/L	52.9	22.3	32.7	25.2	50.2 J	43.8	10.3
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	10.1	4.09	11.7	8.5	11.6	7.78	3.22
Vinyl chloride		µg/L	<1	<1	0.302 J	0.394 J	0.76 J	1	7.52

Notes:

VOC samples analyzed using methods SW8010/8020
SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

PMW21-03

Analyte	Sample Name / Sample Date	Unit	PMW21-03 8/10/2006	PMW21-03 12/6/2006	PMW21-03 3/7/2007	PMW21-03 6/4/2007	PMW21-03 9/19/2007	PMW21-03 12/18/2007
Carbon tetrachloride		µg/L	<1	J	<1	<1	<1	<1
Chloroform		µg/L	0.173 J	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene		µg/L	2.55	0.527 J	0.485 J	0.355 J	0.636 J	0.403 J
Tetrachloroethene		µg/L	185	46.3	32.5	25.6	49	28.5
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	58	14.6	9.78	6.73	15.9	9.84
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

PMW21-03

Analyte	Sample Name / Sample Date	Unit	PMW21-03 3/17/2008	PMW21-03 6/13/2008	PMW21-03 12/12/2008	PMW21-03 3/12/2009	PMW21-03 3/30/2010	PMW21-03 10/5/2010
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene		µg/L	0.407 J	0.504 J	19.2	57.4	1.11	0.687 J
Tetrachloroethene		µg/L	36.9	30.8	22.2	18.7	59.7	45.9
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	8.96	9.73	9.79	8.01	16.2	11.4
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

PMW21-03

Analyte	Sample Name / Sample Date	Unit	PMW21-03 4/4/2011	PMW21-03 10/5/2011	PMW21-03 4/23/2012	PMW21-03 10/19/2012	PMW21-03 4/11/2013	PMW21-03 10/12/2013
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene		µg/L	1.07	1.11	1.83	2.11	2.31	3.76
Tetrachloroethene		µg/L	39.5	55	83.5	88.8	112	115
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	11.6	14.4	19.9	21.2	31	33.4
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

PMW21-05

Analyte	Sample Name / Sample Date	Unit	PMW21-05 8/10/2006	PMW21-05 12/5/2006	PMW21-05 3/7/2007	PMW21-05 6/5/2007	PMW21-05 9/18/2007	PMW21-05 12/18/2007
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene		µg/L	0.525 J	0.278 J	0.346 J	0.442 J	0.52 J	0.527 J
Tetrachloroethene		µg/L	6.37	8.66	18.7	27.9	36.3	50.3
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	34.4	18.3	14	17.1	30.2	18.2
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

PMW21-05

Analyte	Sample Name / Sample Date	Unit	PMW21-05 3/14/2008	PMW21-05 6/16/2008	PMW21-05 12/11/2008	PMW21-05 3/12/2009	PMW21-05 4/1/2010	PMW21-05 10/6/2010
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene		µg/L	0.29 J	<1	0.865 J	1.47	0.851 J	0.798 J
Tetrachloroethene		µg/L	43.2	36.9	40.3	61.2	57.7	43.1
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	34.6	10.3	10.4	13	5.71	4.24
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

PMW21-05

Analyte	Sample Name / Sample Date	Unit	PMW21-05 4/4/2011	PMW21-05 10/5/2011	PMW21-05 4/23/2012	PMW21-05 10/19/2012	PMW21-05 4/11/2013	PMW21-05 10/12/2013
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene		µg/L	0.939 J	0.298 J	0.378 J	<1	<1	<1
Tetrachloroethene		µg/L	40.6	19.5	20.3	12.3	14.4	12.5
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	3.78	1.46	1.34	0.867 J	0.892 J	0.763 J
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

PMW92-02

Analyte	Sample Name / Sample Date / Unit	PMW92-02 8/31/2006	PMW92-02 12/7/2006	PMW92-02 3/8/2007	PMW92-02 5/30/2007	PMW92-02 9/12/2007	PMW92-02 12/12/2007
Carbon tetrachloride	µg/L	19.8	0.462 J	<1	<1 J	<1	<1
Chloroform	µg/L	12.2	4.42	8.75	8.52	0.751	<0.3
cis-1,2-Dichloroethene	µg/L	10.9	172 J	171	150	130	123
Tetrachloroethene	µg/L	157	13	1.58	1.47 B	0.689 J	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	0.334 J	<1	<1	<1
Trichloroethene	µg/L	5.81	4.03	0.518 J	0.283 J	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990
µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

PMW92-02

Analyte	Sample Name / Sample Date	Unit	PMW92-02 3/10/2008	PMW92-02 6/10/2008	PMW92-02 12/11/2008	PMW92-02 3/16/2009	PMW92-02 12/12/2011	PMW92-02 4/11/2013	PMW92-02 10/12/2013
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene		µg/L	87.7	130	99.2	124	184	122	149
Tetrachloroethene		µg/L	<1	<1	<1	<1	<1	0.327 J	0.385 J
trans-1,2-Dichloroethene		µg/L	<1	0.254 J	<1	<1	<1	<1	0.273 J
Trichloroethene		µg/L	<1	<1	<1	<1	<1	<1	0.559 J
Vinyl chloride		µg/L	<1	<1	<1	<1	0.337 J	0.54 J	0.902 J

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

PMW101-03A

Analyte	Sample Name / Sample Date	Unit	PMW101-03A 8/23/2006	PMW101-03A 12/4/2006	PMW101-03A 3/5/2007	PMW101-03A 5/30/2007	PMW101-03A 9/17/2007	PMW101-03A 12/13/2007
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	0.17 J	0.153 J	0.139 J	0.138 J	<0.3	<0.3
cis-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	12.2	38
Tetrachloroethene		µg/L	100	112	99.7	88	60.1	24.9
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	0.322 J
Trichloroethene		µg/L	<1	<1	<1	<1	0.471 J	0.325 J
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

PMW101-03A

Analyte	Sample Name / Sample Date	Unit	PMW101-03A 3/11/2008	PMW101-03A 6/10/2008	PMW101-03A 12/8/2008	PMW101-03A 3/9/2009	PMW101-03A 12/8/2011	PMW101-03A 4/10/2013
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene		µg/L	38.1	56.5	73	68.1	1.97	0.637 J
Tetrachloroethene		µg/L	9.23	1.93	0.766 J	0.885 J	36.5	33.9
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	0.278 J	<1	<1	0.534 J	1.59	0.886 J
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

PMW101-03A

	Sample Name	PMW101-03A
	Sample Date	10/12/2013
Analyte	**Unit**	
Carbon tetrachloride	µg/L	<1
Chloroform	µg/L	<0.3
cis-1,2-Dichloroethene	µg/L	5.83
Tetrachloroethene	µg/L	35
trans-1,2-Dichloroethene	µg/L	<1
Trichloroethene	µg/L	0.838 J
Vinyl chloride	µg/L	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

PMW101-03B

Analyte	Sample Name / Sample Date	Unit	PMW101-03B 8/23/2006	PMW101-03B 12/4/2006	PMW101-03B 3/5/2007	PMW101-03B 5/29/2007	PMW101-03B 9/17/2007	PMW101-03B 12/13/2007
Carbon tetrachloride		µg/L	<1	<1	<1	<1 J	<1	<1
Chloroform		µg/L	0.186 J	0.182 J	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene		µg/L	<1	<1	26.4	19.9	91.5	87.6
Tetrachloroethene		µg/L	144	194	134	123	14.4	13.8
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	2.41	1.66	1.7	2	1.02	1.57
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

PMW101-03B

Analyte	Sample Name / Sample Date	Unit	PMW101-03B 3/11/2008	PMW101-03B 6/10/2008	PMW101-03B 12/8/2008	PMW101-03B 3/9/2009	PMW101-03B 12/8/2011	PMW101-03B 4/10/2013
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene		µg/L	87.6	86.8	60.8	58.1	0.884 J	0.637 J
Tetrachloroethene		µg/L	8.59	3.3	5.75	10.4	40.4	41.4
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	1.08	0.975 J	0.958 J	3.31	1.46	2.16
Vinyl chloride		µg/L	<1	<1	<1	<1	0.595 J	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

PMW101-03B

	Sample Name	PMW101-03B
	Sample Date	10/12/2013
Analyte	**Unit**	
Carbon tetrachloride	µg/L	<1
Chloroform	µg/L	<0.3
cis-1,2-Dichloroethene	µg/L	6.35
Tetrachloroethene	µg/L	42.4
trans-1,2-Dichloroethene	µg/L	<1
Trichloroethene	µg/L	1.34
Vinyl chloride	µg/L	1.27

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

PMW101-06A

Analyte	Sample Name / Sample Date	Unit	PMW101-06A 8/23/2006	PMW101-06A 12/4/2006	PMW101-06A 3/6/2007	PMW101-06A 5/31/2007	PMW101-06A 9/18/2007	PMW101-06A 12/17/2007
Carbon tetrachloride		µg/L	<1	<1	<1	<1 J	<1	<1
Chloroform		µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene		µg/L	<1	<1	0.68 J	2.9	0.798 J	0.364 J
Tetrachloroethene		µg/L	4.16	5.66	5.86	4.62 B	7.26	7.19
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 SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

PMW101-06A

Analyte	Sample Name / Sample Date	Unit	PMW101-06A 3/12/2008	PMW101-06A 6/12/2008	PMW101-06A 12/10/2008	PMW101-06A 3/10/2009	PMW101-06A 12/9/2011	PMW101-06A 4/10/2013
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene		µg/L	0.917 J	0.414 J	3.63	1.71	<1	0.36 J
Tetrachloroethene		µg/L	7.13	5.52	0.341 J	1.17	2.32	1.29
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	0.252 J	<1	0.266 J	0.607 J	<1	<1
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

PMW101-06A

	Sample Name	PMW101-06A
	Sample Date	10/12/2013
Analyte	**Unit**	
Carbon tetrachloride	µg/L	<1
Chloroform	µg/L	<0.3
cis-1,2-Dichloroethene	µg/L	1.76
Tetrachloroethene	µg/L	1.28
trans-1,2-Dichloroethene	µg/L	<1
Trichloroethene	µg/L	0.312 J
Vinyl chloride	µg/L	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

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

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

PMW101-06B

Analyte	Sample Name / Sample Date	Unit	PMW101-06B 8/24/2006	PMW101-06B 12/5/2006	PMW101-06B 3/6/2007	PMW101-06B 5/31/2007	PMW101-06B 9/18/2007	PMW101-06B 12/14/2007
Carbon tetrachloride		µg/L	<1	<1	<1	<1 J	<1	<1
Chloroform		µg/L	0.166 J	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene		µg/L	0.687 J	0.722 J	45	40.3	39.7	40.5
Tetrachloroethene		µg/L	23.3	37.6	0.294 J	<1	<1	2.63
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	16.2	18.6	<1	<1	<1	1.04
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE FLAGS:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

PMW101-06B

Analyte	Sample Name / Sample Date	Unit	PMW101-06B 3/12/2008	PMW101-06B 6/11/2008	PMW101-06B 12/10/2008	PMW101-06B 3/11/2009	PMW101-06B 12/9/2011	PMW101-06B 4/10/2013
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene		µg/L	45.8	39.3 J	31.9	25.5	<1	0.998 J
Tetrachloroethene		µg/L	3.24	1.15 J	<1	<1	16.6	18
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	1.72	1.28 J	<1	<1	4.32	3.97
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE FLAGS:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

PMW101-06B

	Sample Name	PMW101-06B
	Sample Date	10/12/2013
Analyte	**Unit**	
Carbon tetrachloride	µg/L	<1
Chloroform	µg/L	<0.3
cis-1,2-Dichloroethene	µg/L	2.37
Tetrachloroethene	µg/L	16
trans-1,2-Dichloroethene	µg/L	<1
Trichloroethene	µg/L	2.98
Vinyl chloride	µg/L	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE FLAGS:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

PZ-03

Analyte	Sample Name / Sample Date	Unit	PZ-03 3/20/2002	PZ-03 5/26/2004	PZ-03 2/23/2005	PZ-03 10/5/2006	PZ-03 10/5/2007	PZ-03 10/14/2008
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	<1	<1	0.2J	0.198 J	0.139 J	0.29 J
cis-1,2-Dichloroethene		µg/L	0.55J	<1	0.26J	<1	<1	<1
Tetrachloroethene		µg/L	7.1	4.4	5	3.89	0.523 J	4.38
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	0.86J	0.6J	0.85J	0.917 J	0.321 J	1.07
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - MI LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

PZ-03

Analyte	Sample Name / Sample Date / Unit	PZ-03 10/11/2009	PZ-03 10/15/2010	PZ-03 10/8/2011	PZ-03 10/22/2012	PZ-03 10/11/2013
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1
Chloroform	µg/L	0.192 J	0.203 J	0.235 J	0.261 J	0.263 J
cis-1,2-Dichloroethene	µg/L	<1	0.287 J	<1	<1	<1
Tetrachloroethene	µg/L	3.99	2.04	3.39	3.34	2.43 J
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Trichloroethene	µg/L	1.23	1.23	2.64	3.76	5.81 J
Vinyl chloride	µg/L	<1	<1	<1	<1	<1

Notes:

VOC samples analyzed using methods SW8010/8020, SW8240, SW8260, SW8260A, SW8260B, or CV3990

µg/L micrograms per liter

DQE Flags:

J Estimated results based on QC data or reported below RL

< Not detected at sample reporting limit

APPENDIX J

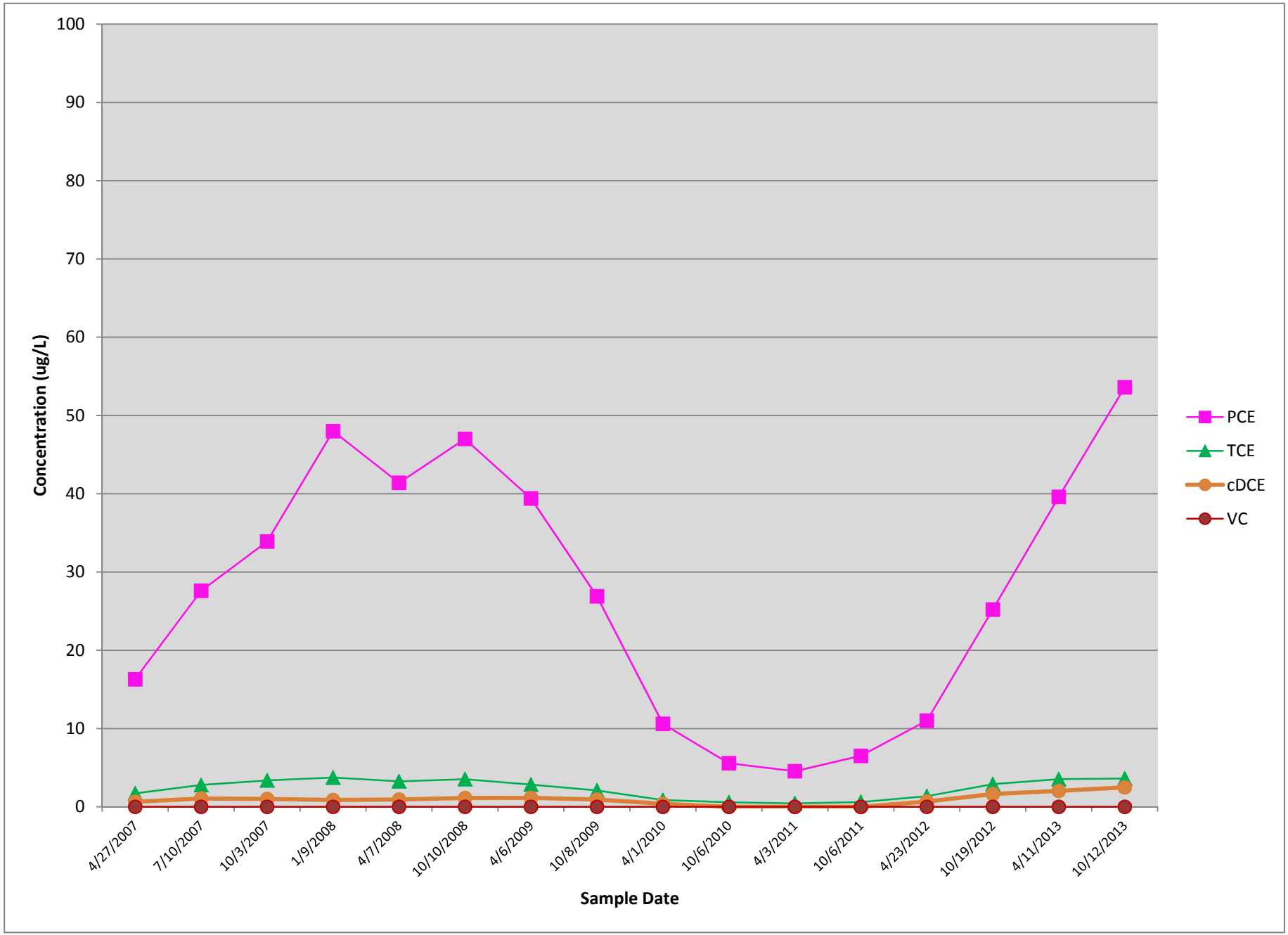
CVOC TIME-TREND PLOTS –
MAIN INSTALLATION

APPENDIX J-1

CVOC TIME-TREND PLOTS –
MAIN INSTALLATION

BOUNDARY WELLS

MW-219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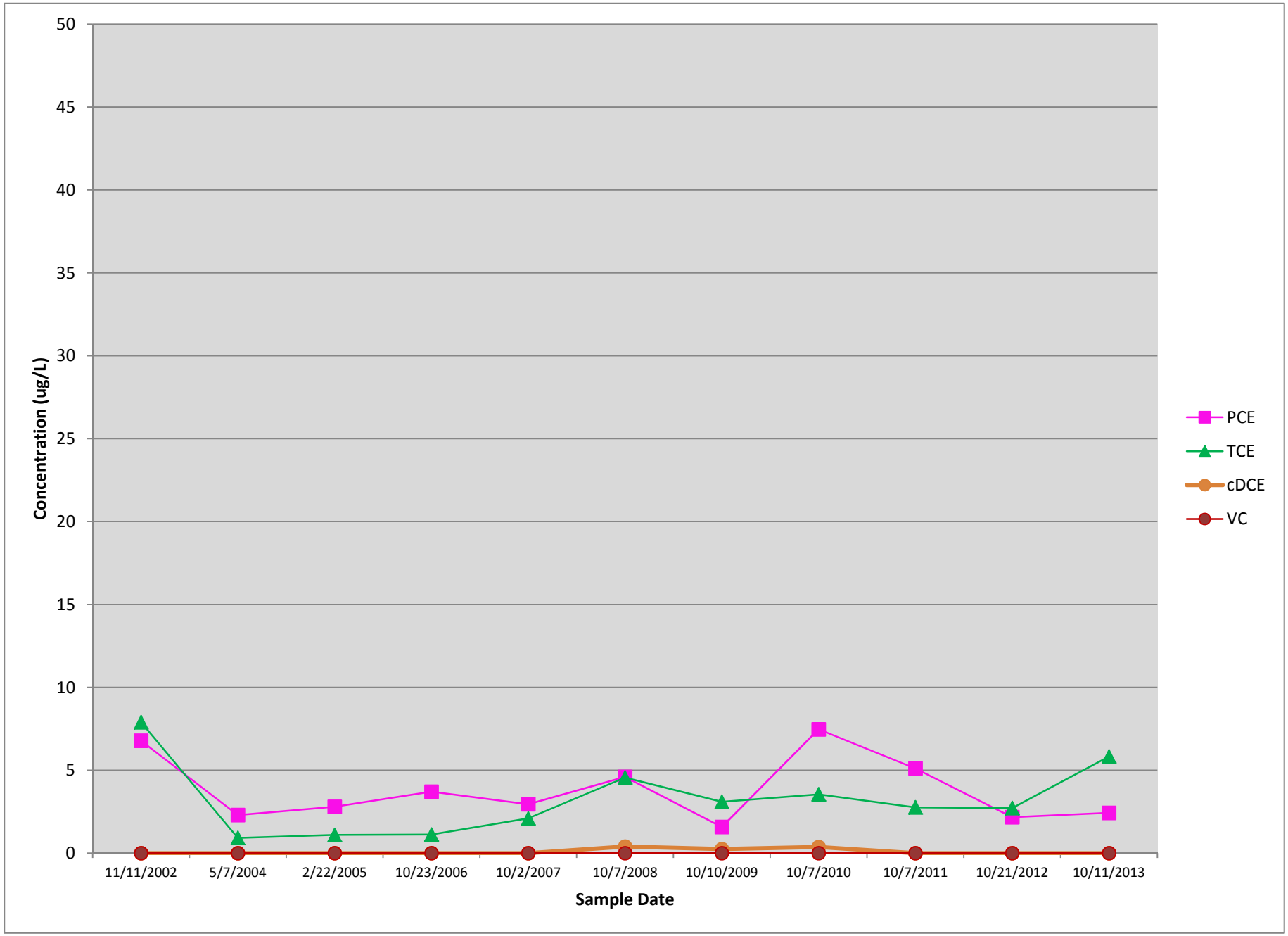
90
80
70
60
50
40
30
20
10
0
Concentration (ug/L)
4/27/2007
7/10/2007
10/3/2007
1/9/2008
4/7/2008
10/10/2008
4/6/2009
10/8/2009
4/1/2010
10/6/2010
4/3/2011
10/6/2011
4/23/2012
10/19/2012
4/11/2013
10/12/2013
Sample Date
PCE
TCE
cDCE
VC

APPENDIX J-2

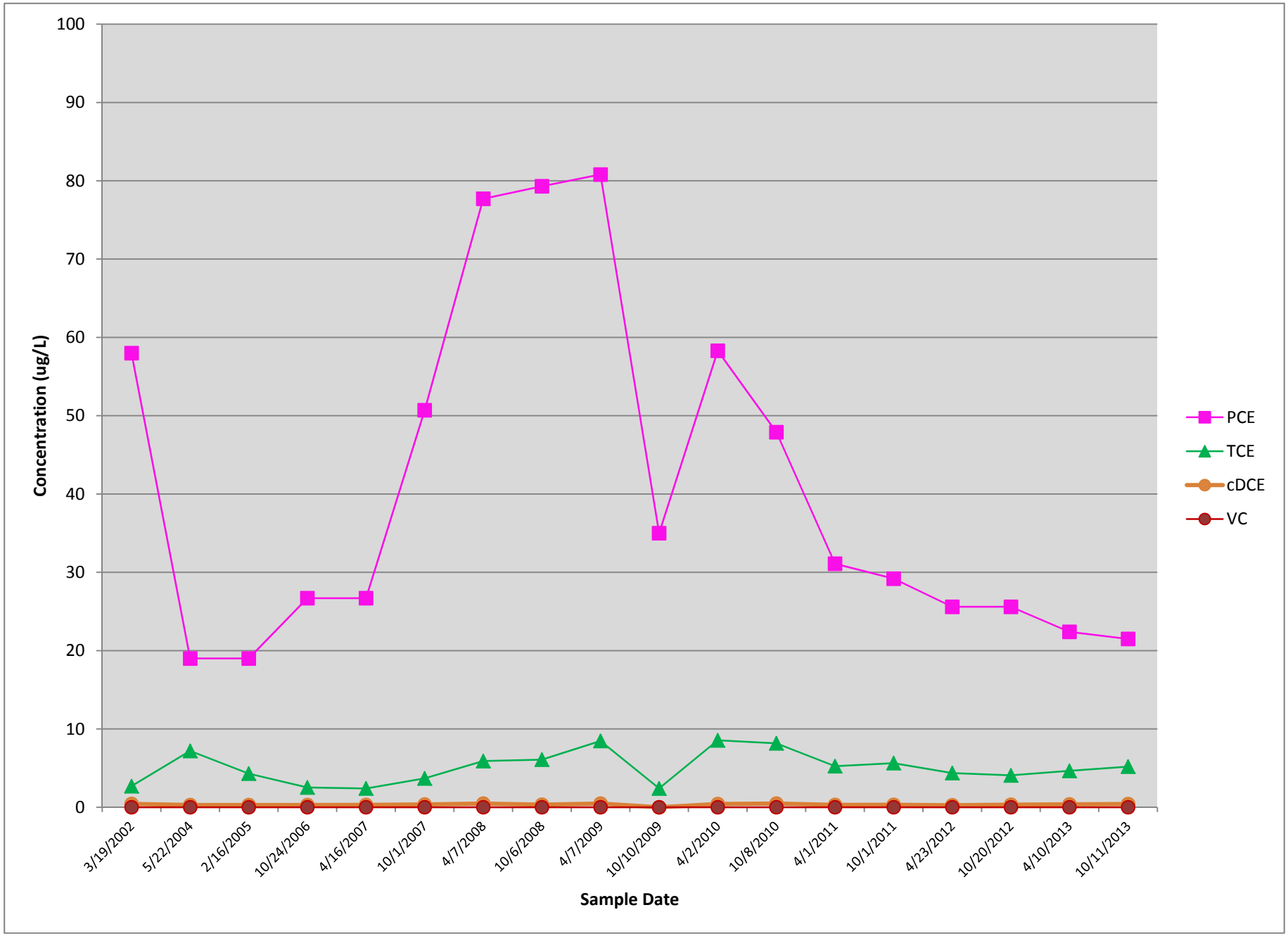
CVOC TIME-TREND PLOTS –
MAIN INSTALLATION

SENTINEL WELLS

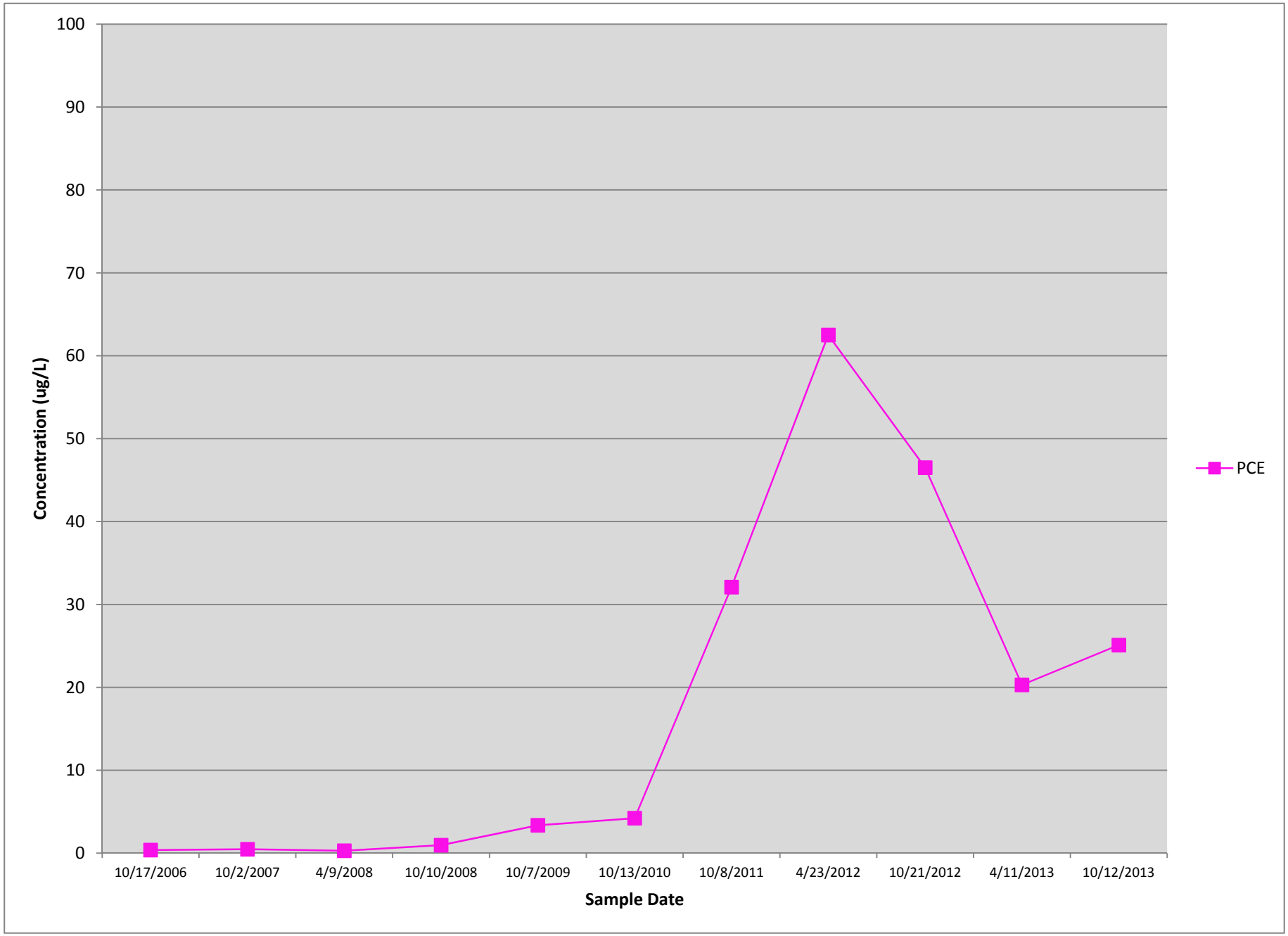
MW-63B


50
45
40
35
30
25
20
15
10
5
0
Concentration (ug/L)
11/11/2002
5/7/2004
2/22/2005
10/23/2006
10/2/2007
10/7/2008
10/10/2009
10/7/2010
10/7/2011
10/21/2012
10/11/2013
Sample Date
PCE
TCE
cDCE
VC

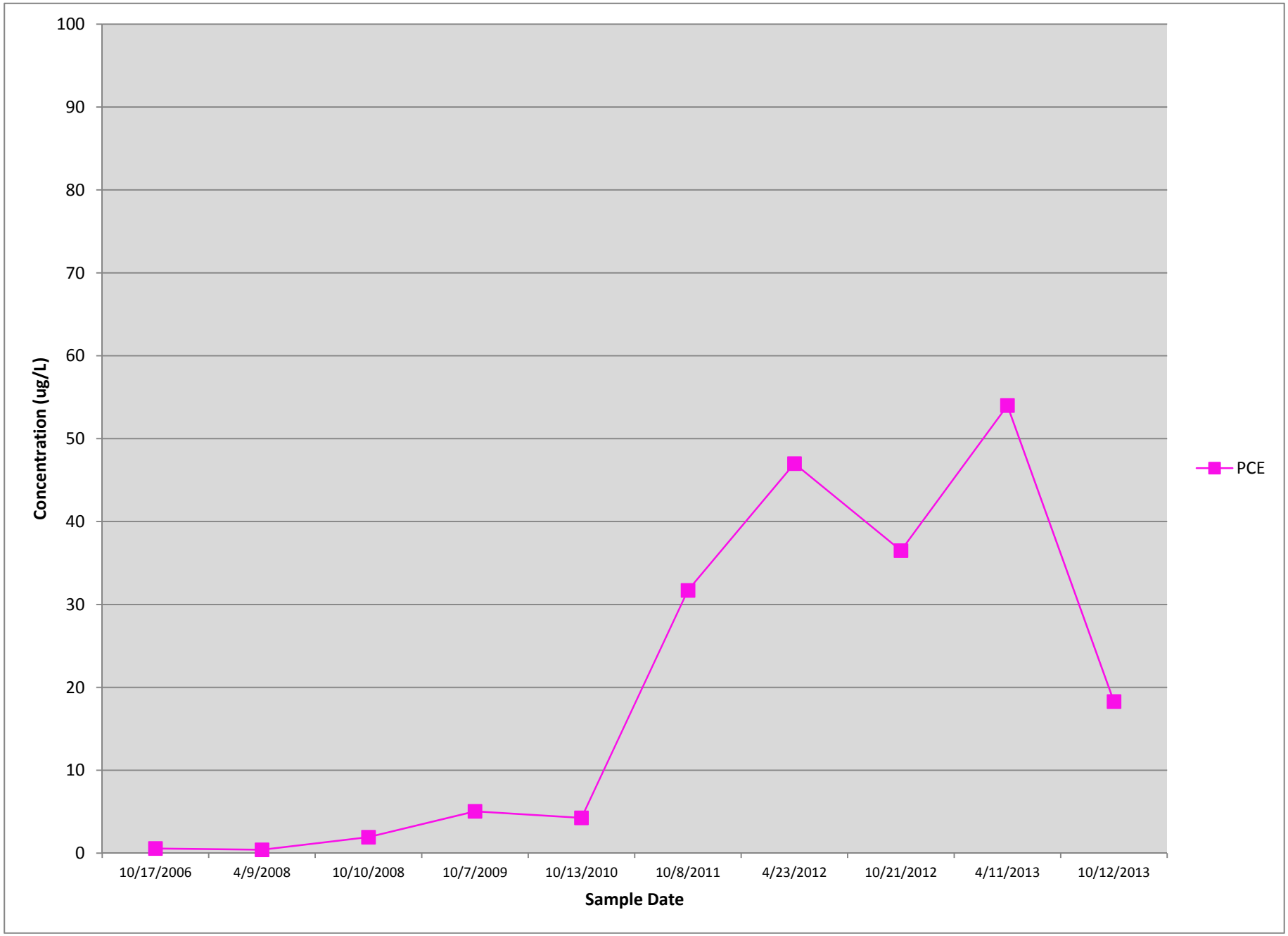
MW-90


100
90
80
70
60
50
40
30
20
10
0
Concentration (ug/L)
3/19/2002
5/22/2004
2/16/2005
10/24/2006
4/16/2007
10/1/2007
4/7/2008
10/6/2008
4/7/2009
10/10/2009
4/2/2010
10/8/2010
4/1/2011
10/1/2011
4/23/2012
10/20/2012
4/10/2013
10/11/2013
Sample Date
PCE
TCE
cDCE
VC

MW-107 Bottom



MW-107Top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40
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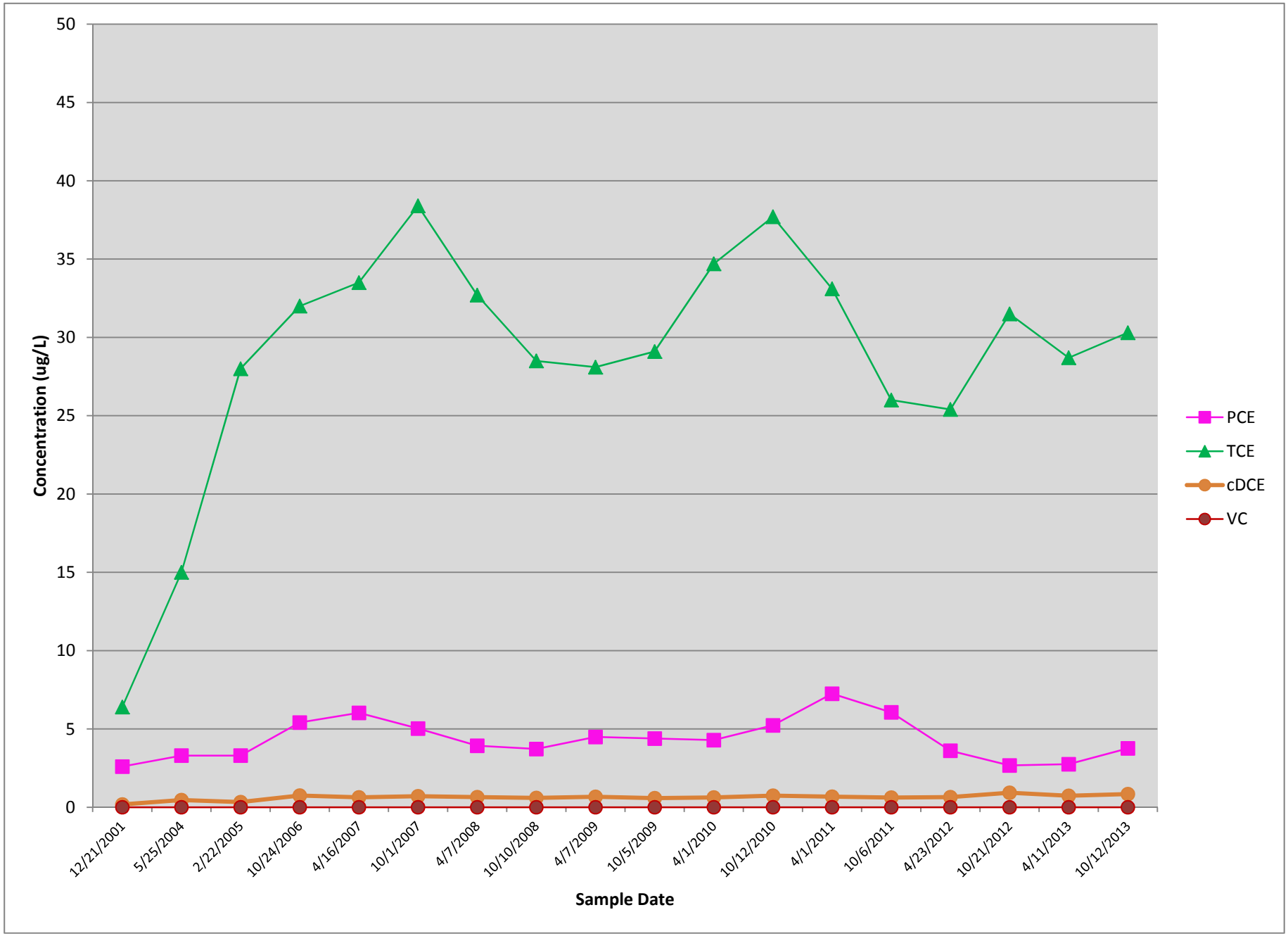
20
10
0
Concentration (ug/L)
10/17/2006
4/9/2008
10/10/2008
10/7/2009
10/13/2010
10/8/2011
4/23/2012
10/21/2012
4/11/2013
10/12/2013
Sample Date
PCE

MW-108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45
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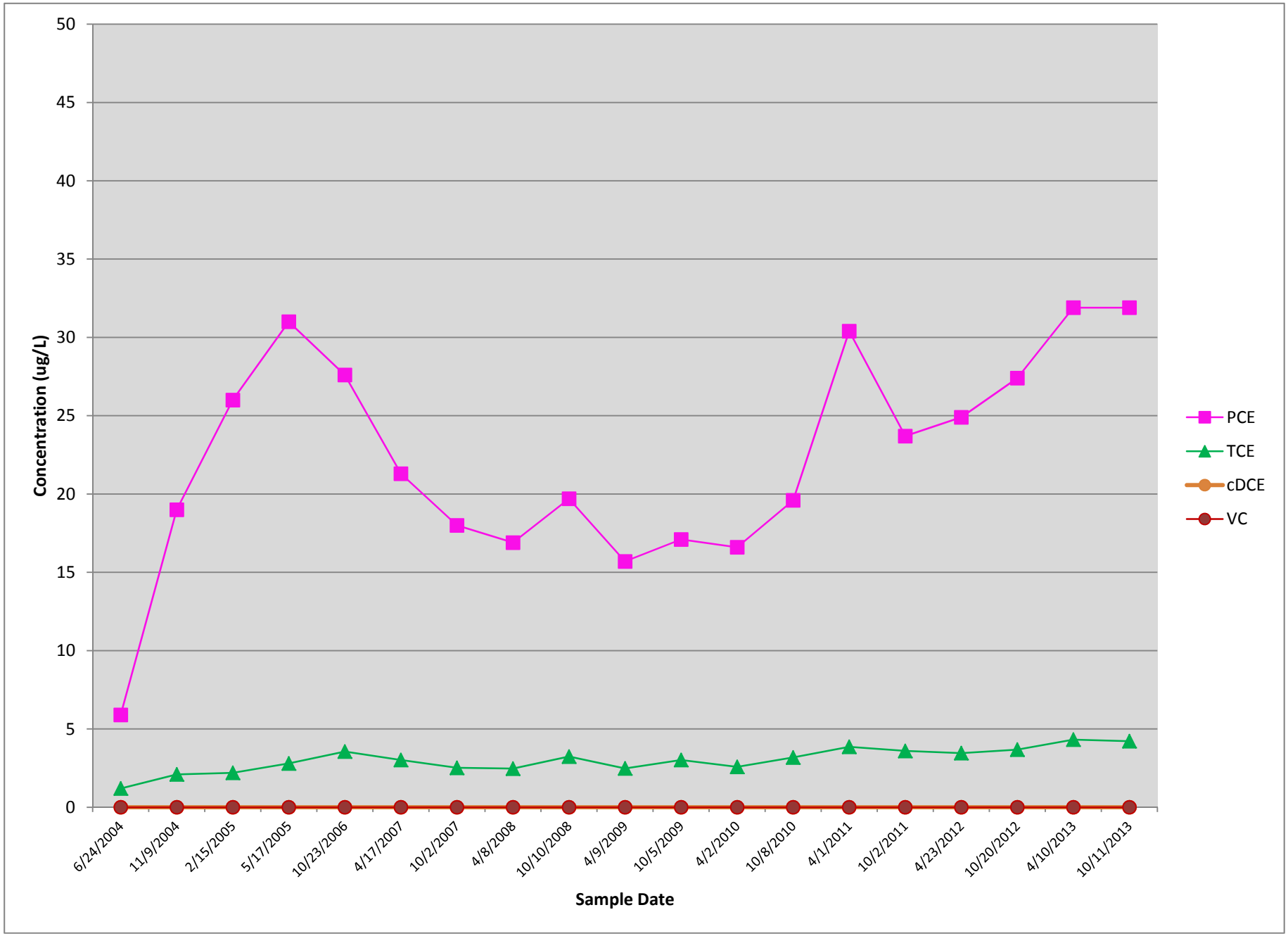
30
25
20
15
10
5
0
Concentration (ug/L)
12/21/2001
5/25/2004
2/22/2005
10/24/2006
4/16/2007
10/1/2007
4/7/2008
10/10/2008
4/7/2009
10/5/2009
4/1/2010
10/12/2010
4/1/2011
10/6/2011
4/23/2012
10/21/2012
4/11/2013
10/12/2013
Sample Date
PCE
TCE
cDCE
VC

MW-141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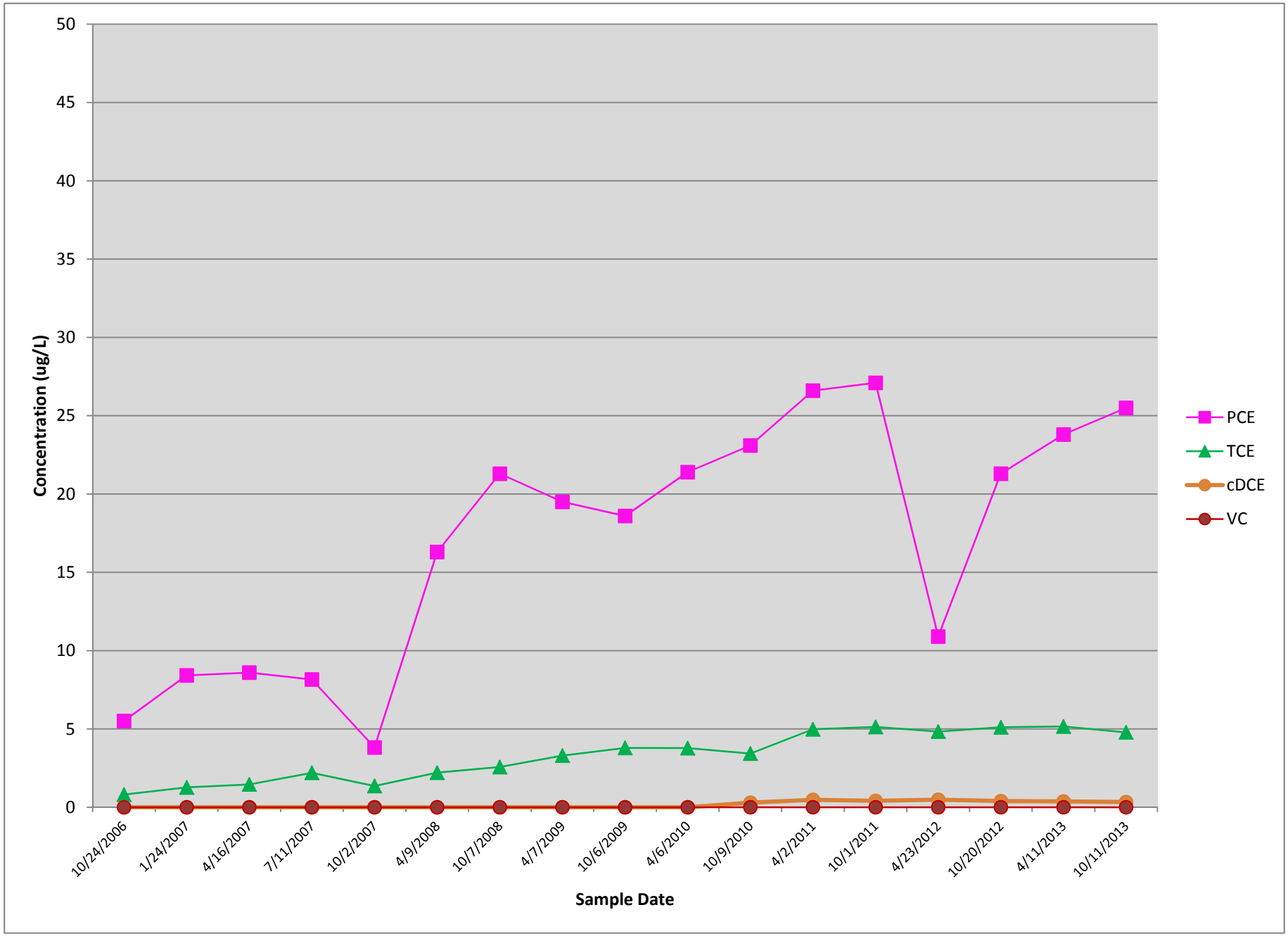
35
30
25
20
15
10
5
0
Concentration (ug/L)
6/24/2004
11/9/2004
2/15/2005
5/17/2005
10/23/2006
4/17/2007
10/2/2007
4/8/2008
10/10/2008
4/9/2009
10/5/2009
4/2/2010
10/8/2010
4/1/2011
10/2/2011
4/23/2012
10/20/2012
4/10/2013
10/11/2013
Sample Date
PCE
TCE
cDCE
VC

MW-202B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45
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35
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25
20
15
10
5
0
Concentration (ug/L)
10/24/2006
1/24/2007
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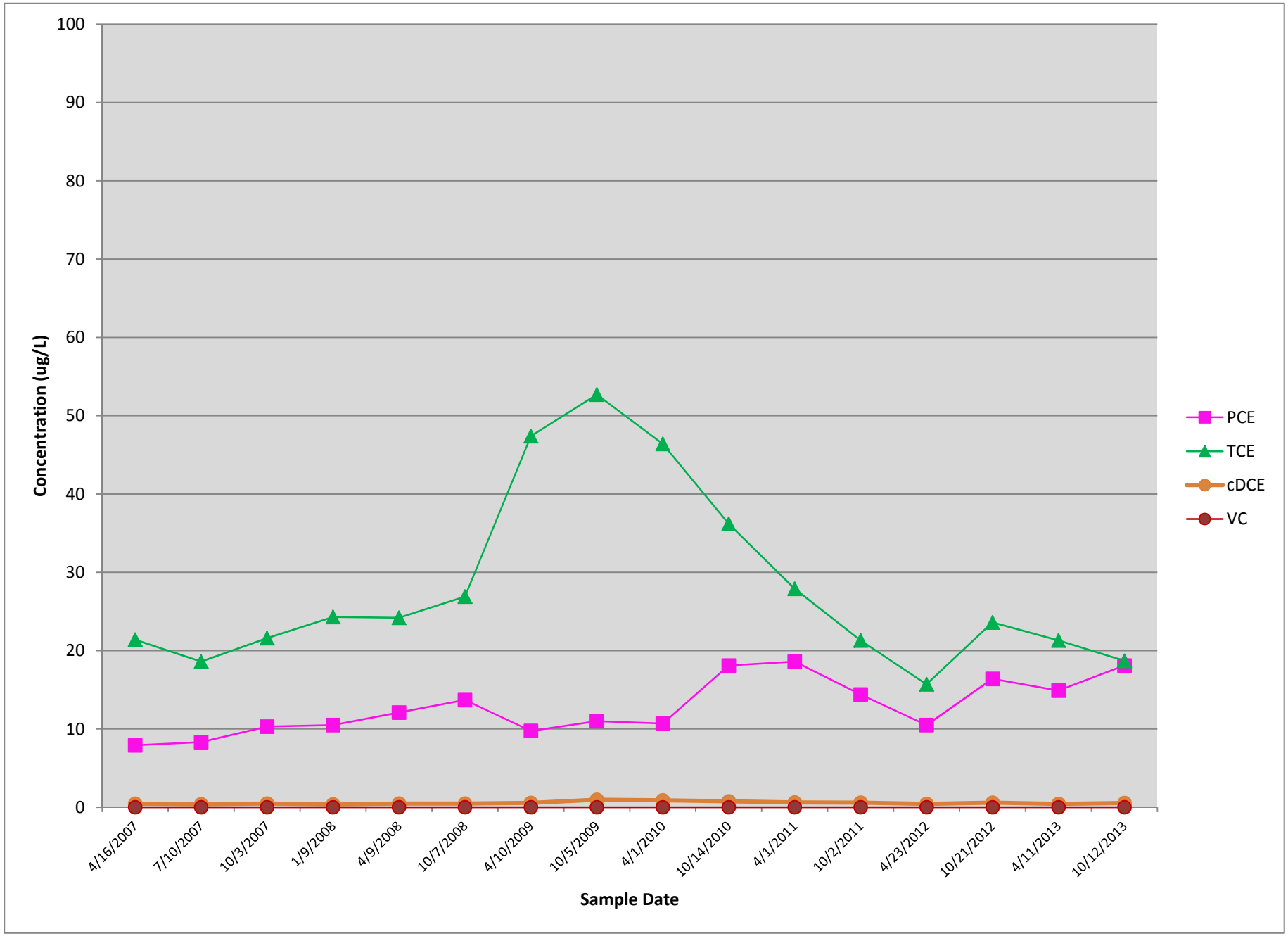
7/11/2007
10/2/2007
4/9/2008
10/7/2008
4/7/2009
10/6/2009
4/6/2010
10/9/2010
4/2/2011
10/1/2011
4/23/2012
10/20/2012
4/11/2013
10/11/2013
Sample Date
PCE
TCE
cDCE
VC

MW-207A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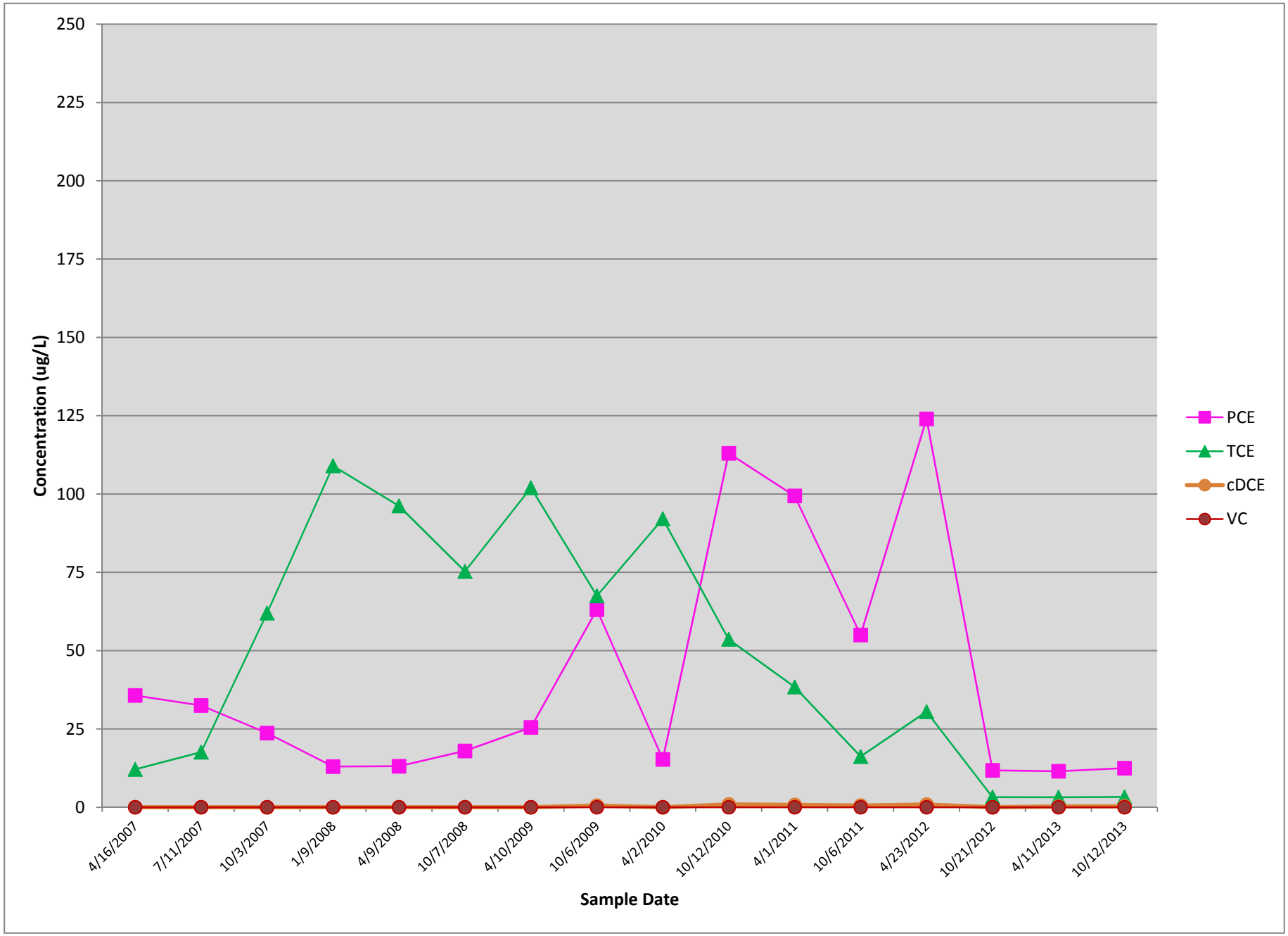
90
80
70
60
50
40
30
20
10
0
Concentration (ug/L)
4/16/2007
7/10/2007
10/3/2007
1/9/2008
4/9/2008
10/7/2008
4/10/2009
10/5/2009
4/1/2010
10/14/2010
4/1/2011
10/2/2011
4/23/2012
10/21/2012
4/11/2013
10/12/2013
Sample Date
PCE
TCE
cDCE
VC

MW-207B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225
200
175
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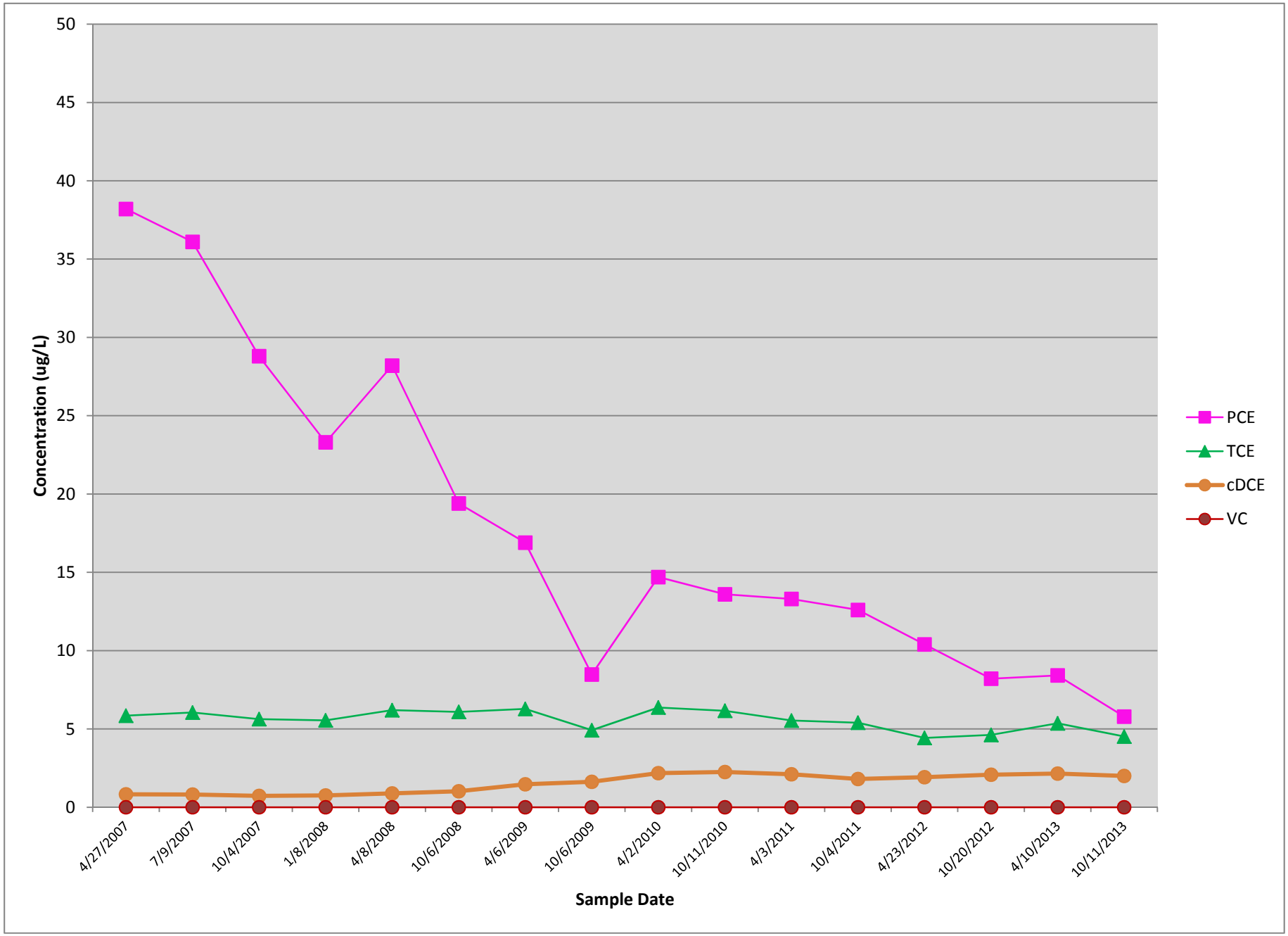
125
100
75
50
25
0
Concentration (ug/L)
4/16/2007
7/11/2007
10/3/2007
1/9/2008
4/9/2008
10/7/2008
4/10/2009
10/6/2009
4/2/2010
10/12/2010
4/1/2011
10/6/2011
4/23/2012
10/21/2012
4/11/2013
10/12/2013
Sample Date
PCE
TCE
cDCE
VC

MW-210A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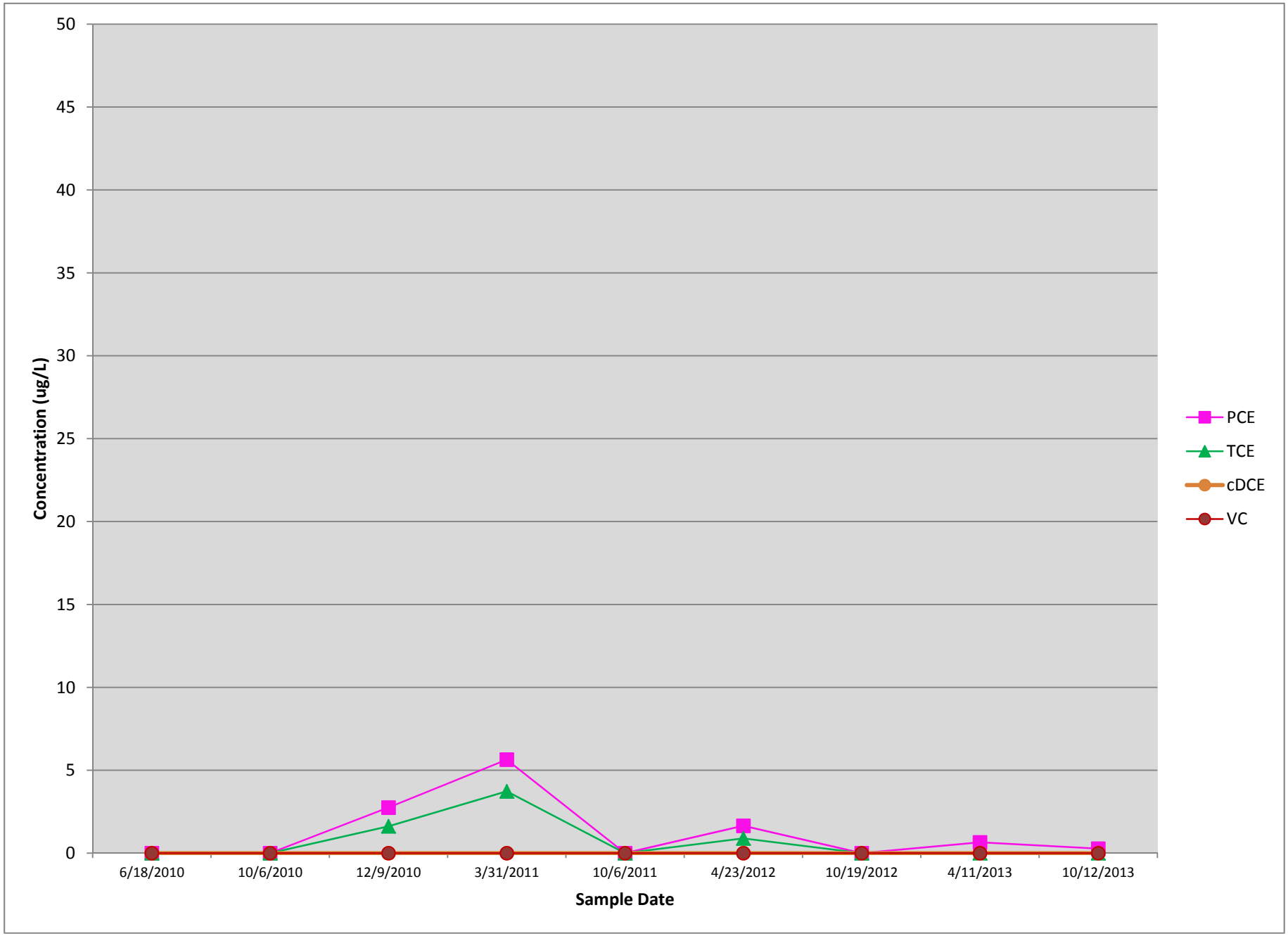
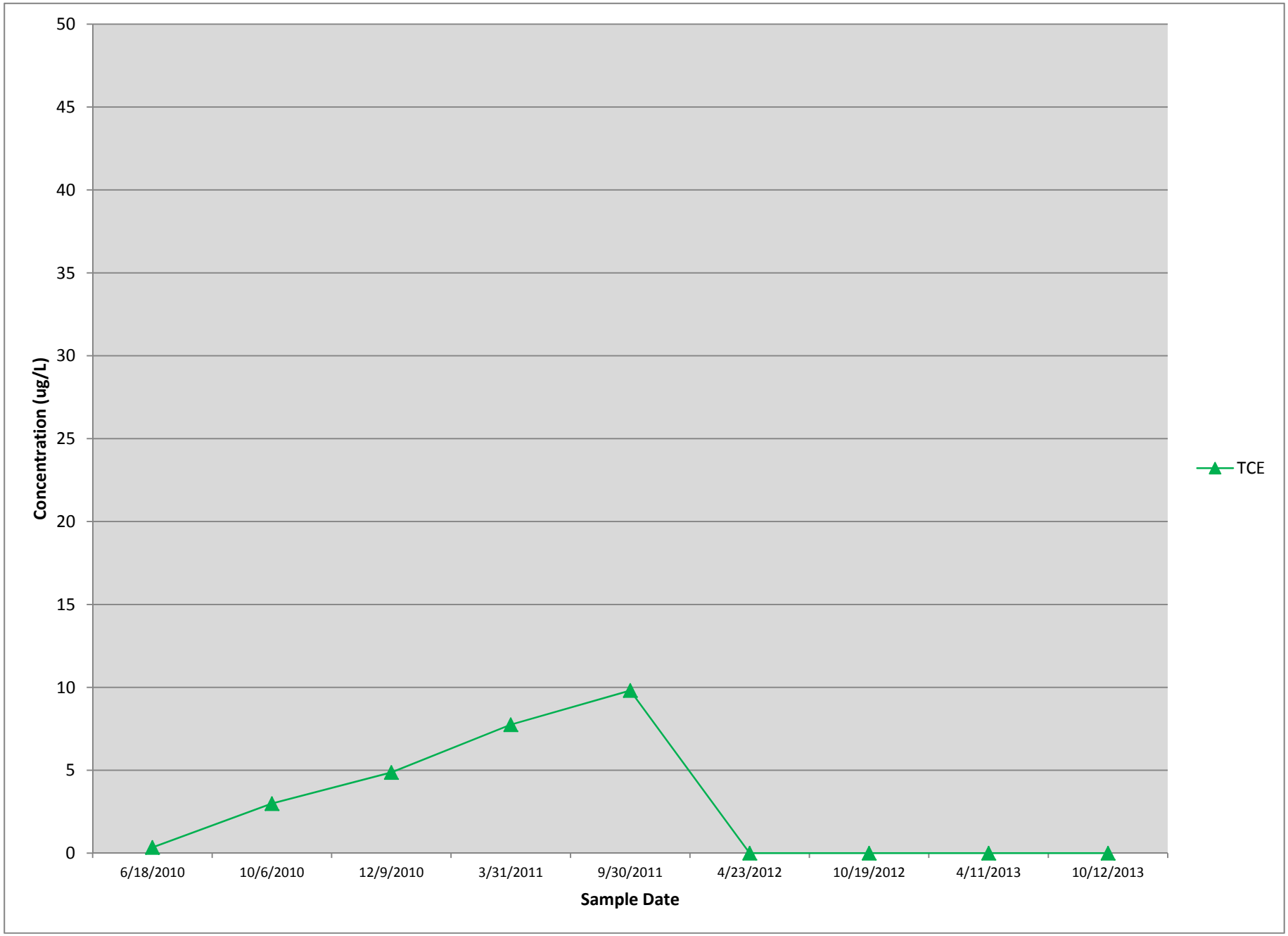
35
30
25
20
15
10
5
0
Concentration (ug/L)
4/27/2007
7/9/2007
10/4/2007
1/8/2008
4/8/2008
10/6/2008
4/6/2009
10/6/2009
4/2/2010
10/11/2010
4/3/2011
10/4/2011
4/23/2012
10/20/2012
4/10/2013
10/11/2013
Sample Date
PCE
TCE
cDCE
VC

MW-252


50
45
40
35
30
25
20
15
10
5
0
Concentration (ug/L)
6/18/2010
10/6/2010
12/9/2010
3/31/2011
10/6/2011
4/23/2012
10/19/2012
4/11/2013
10/12/2013
Sample Date
PCE
TCE
cDCE
VC

MW-253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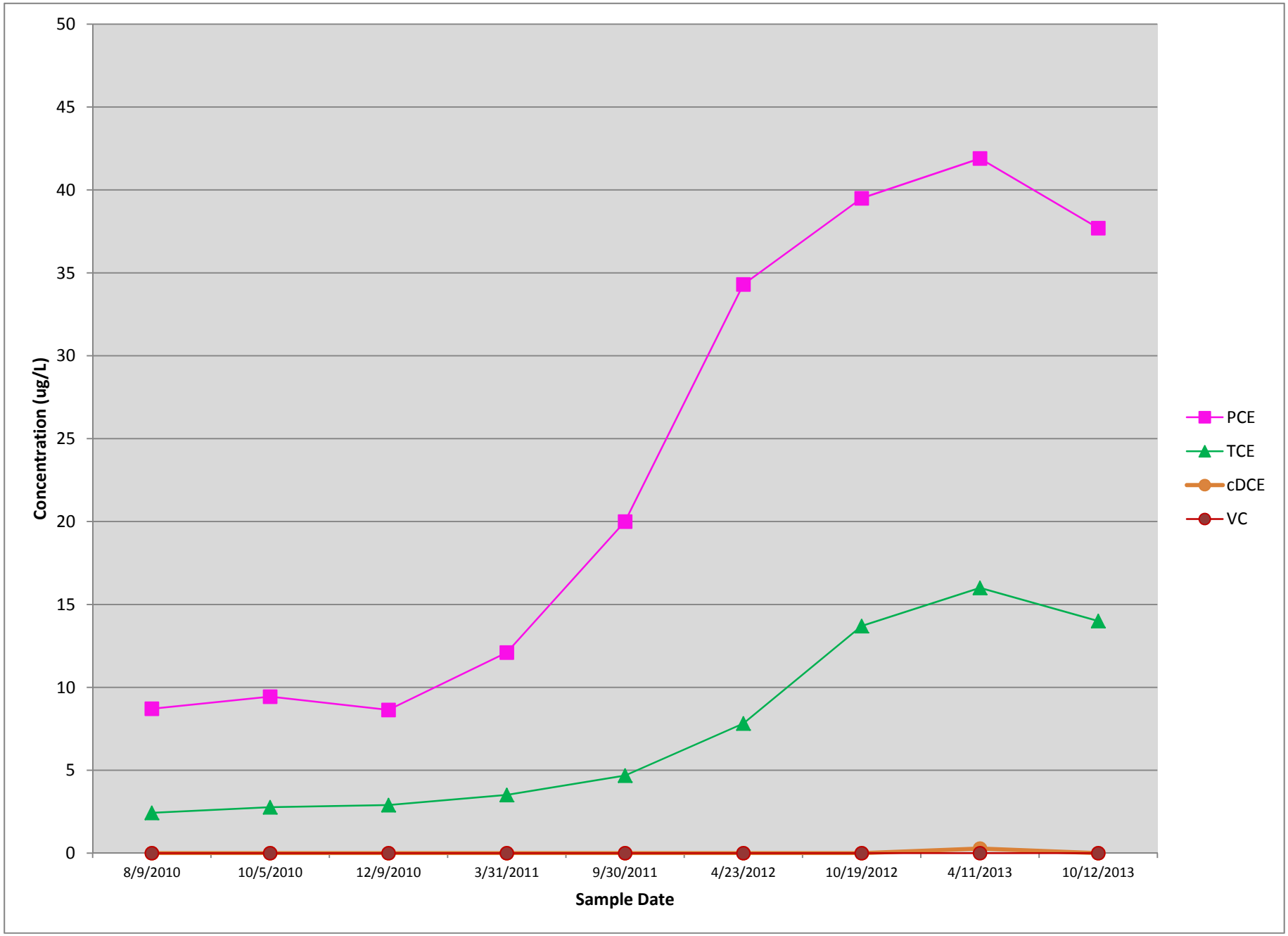
45
40
35
30
25
20
15
10
5
0
Concentration (ug/L)
6/18/2010
10/6/2010
12/9/2010
3/31/2011
9/30/2011
4/23/2012
10/19/2012
4/11/2013
10/12/2013
Sample Date
TCE

MW-256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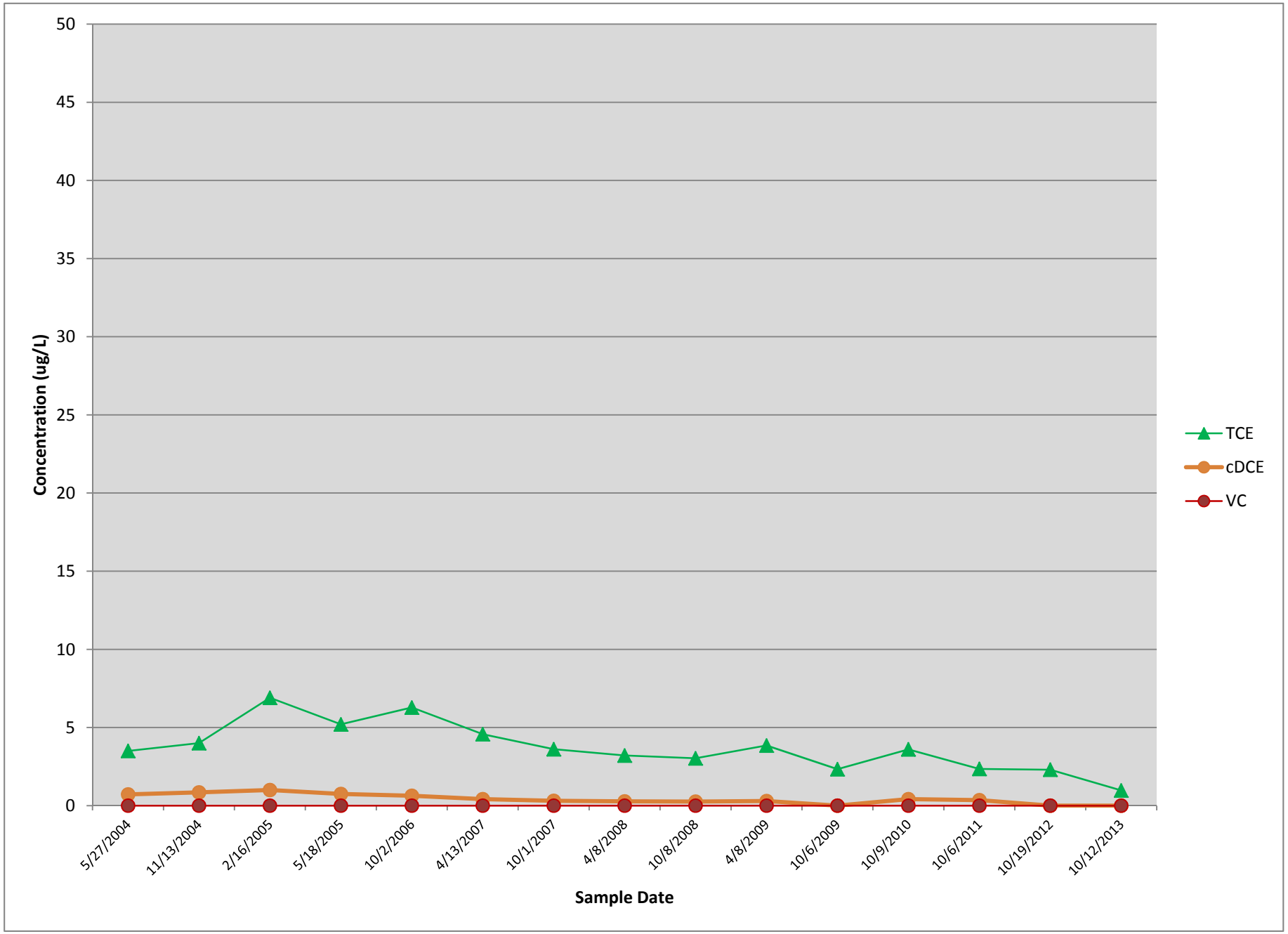
45
40
35
30
25
20
15
10
5
0
Concentration (ug/L)
8/9/2010
10/5/2010
12/9/2010
3/31/2011
9/30/2011
4/23/2012
10/19/2012
4/11/2013
10/12/2013
Sample Date
PCE
TCE
cDCE
VC

APPENDIX J-3

CVOC TIME-TREND PLOTS –
MAIN INSTALLATION

PERFORMANCE WELLS

DR1-1A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35
30
25
20
15
10
5
0
Concentration (ug/L)
5/27/2004
11/13/2004
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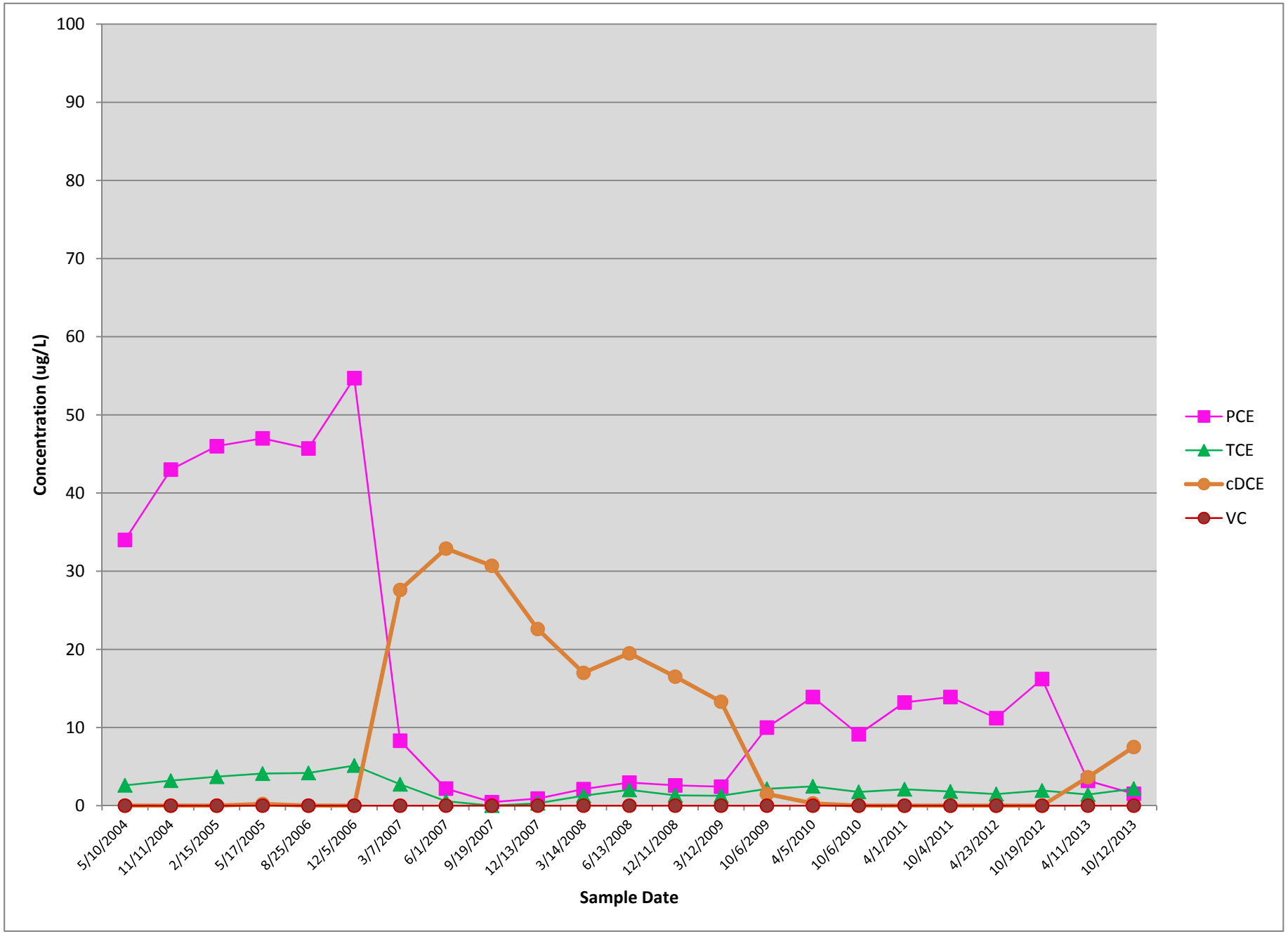
5/18/2005
10/2/2006
4/13/2007
10/1/2007
4/8/2008
10/8/2008
4/8/2009
10/6/2009
10/9/2010
10/6/2011
10/19/2012
10/12/2013
Sample Date
TCE
cDCE
VC

DR1-3


100
90
80
70
60
50
40
30
20
10
0
Concentration (ug/L)
5/10/2004
11/11/2004
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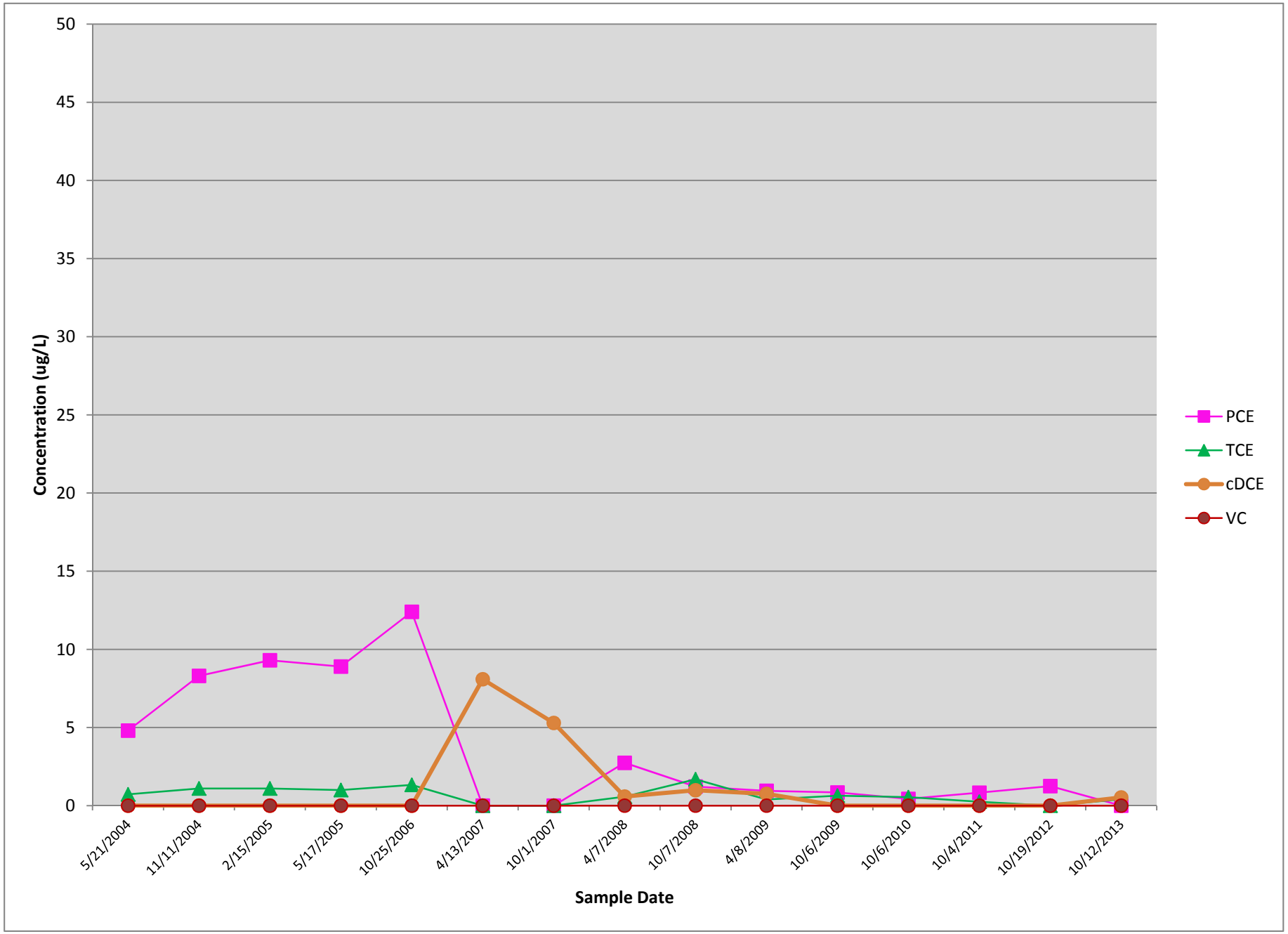
8/25/2006
12/5/2006
3/7/2007
6/1/2007
9/19/2007
12/13/2007
3/14/2008
6/13/2008
12/11/2008
3/12/2009
10/6/2009
4/5/2010
10/6/2010
4/1/2011
10/4/2011
4/23/2012
10/19/2012
4/11/2013
10/12/2013
Sample Date
PCE
TCE
cDCE
VC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45
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35
30
25
20
15
10
5
0
Concentration (ug/L)
5/21/2004
11/11/2004
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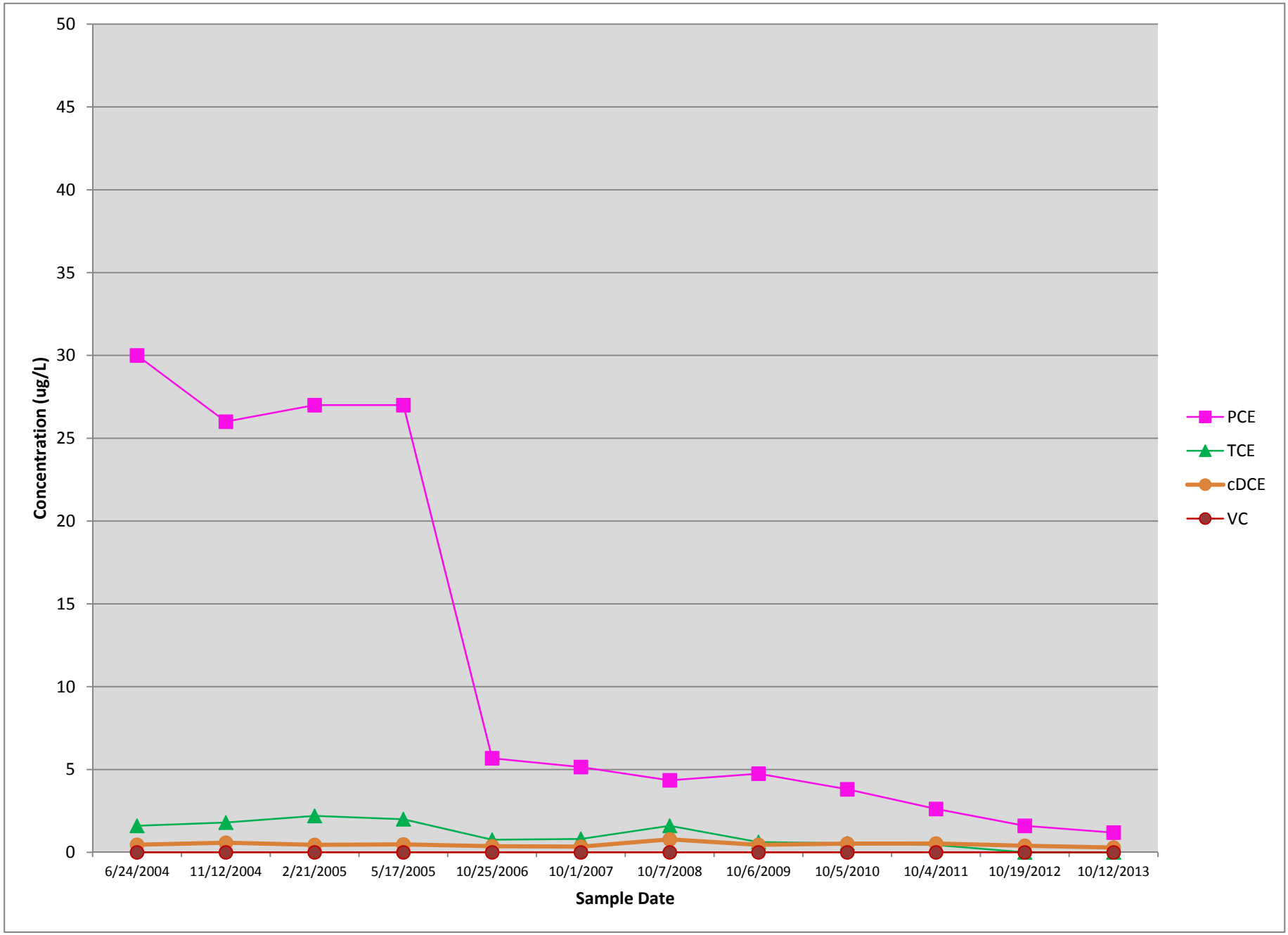
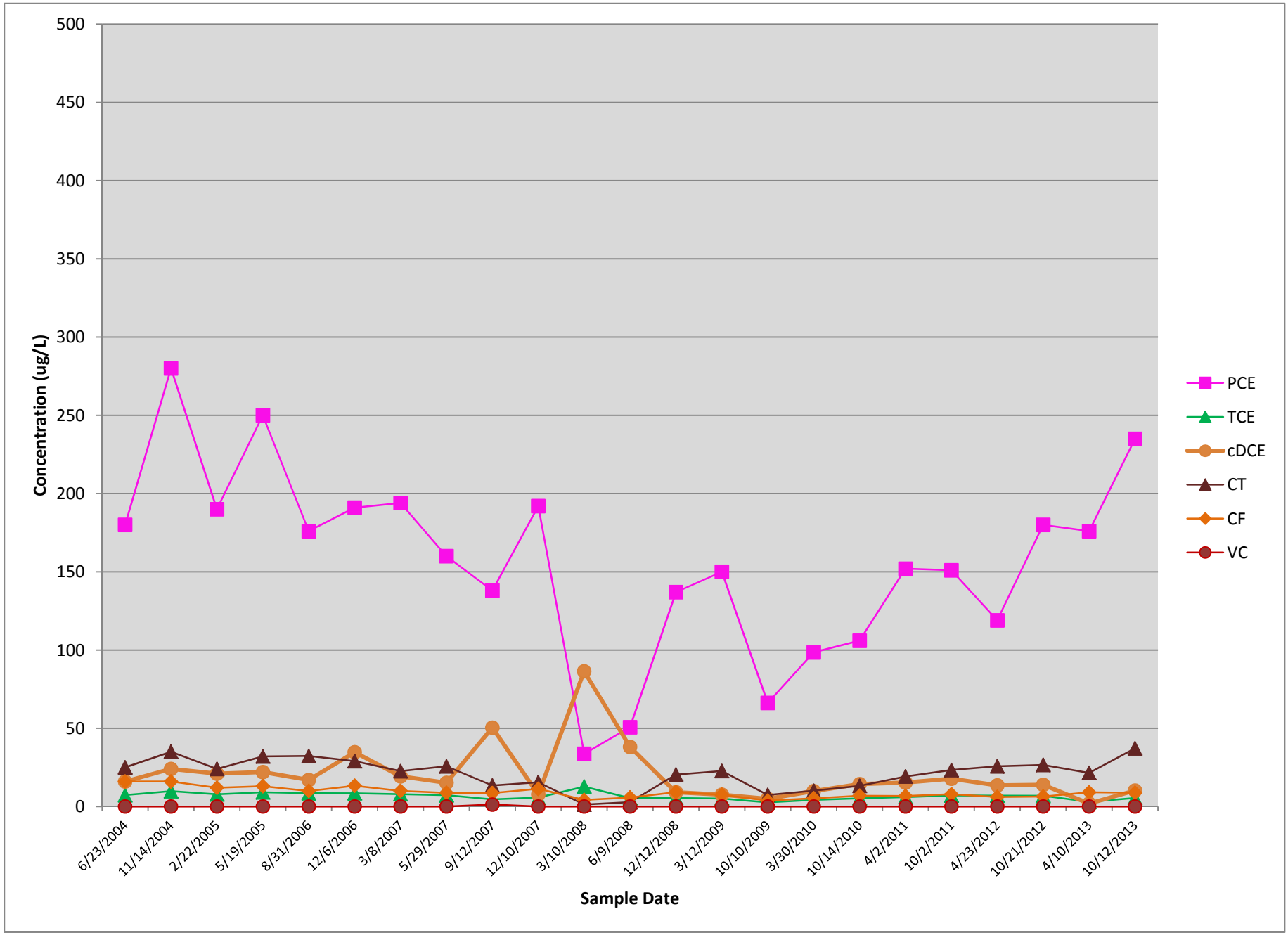
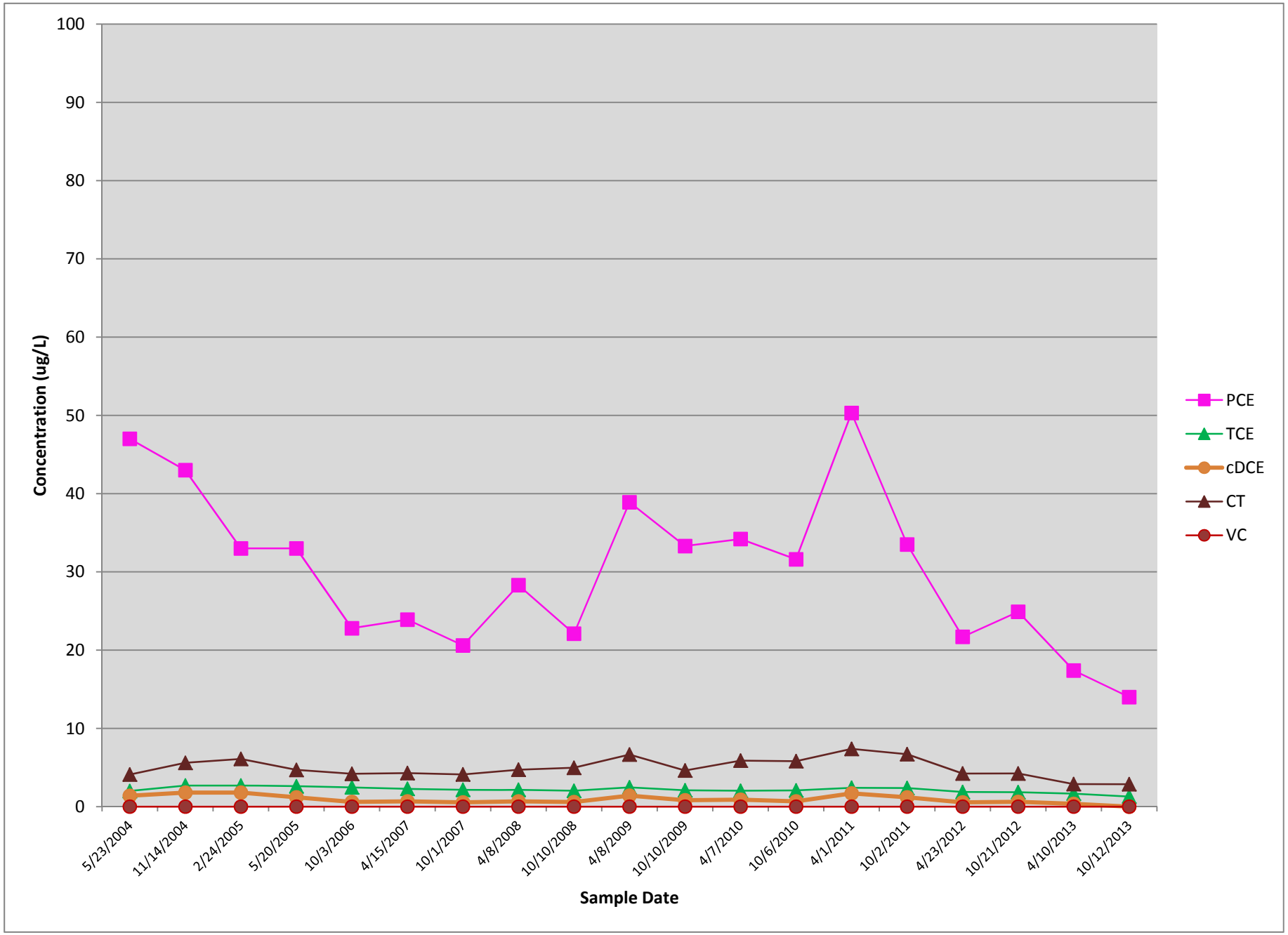
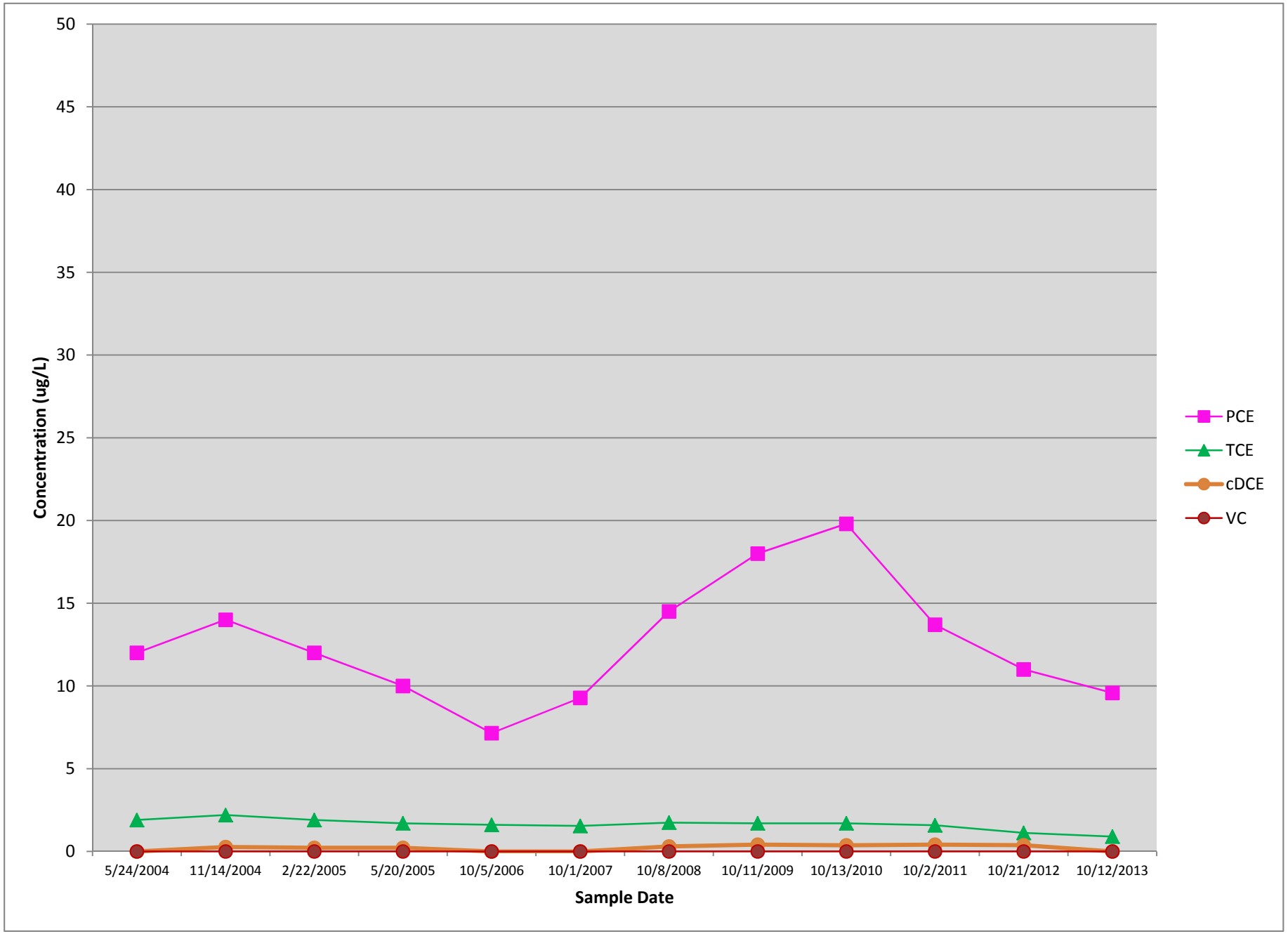
5/17/2005
10/25/2006
4/13/2007
10/1/2007
4/7/2008
10/7/2008
4/8/2009
10/6/2009
10/6/2010
10/4/2011
10/19/2012
10/12/2013
Sample Date
PCE
TCE
cDCE
VC


50
45
40
35
30
25
20
15
10
5
0
Concentration (ug/L)
6/24/2004
11/12/2004
2/21/2005
5/17/2005
10/25/2006
10/1/2007
10/7/2008
10/6/2009
10/5/2010
10/4/2011
10/19/2012
10/12/2013
Sample Date
PCE
TCE
cDCE
VC


500
450
400
350
300
250
200
150
100
50
0
Concentration (ug/L)
6/23/2004
11/14/2004
2/22/2005
5/19/2005
8/31/2006
12/6/2006
3/8/2007
5/29/2007
9/12/2007
12/10/2007
3/10/2008
6/9/2008
12/12/2008
3/12/2009
10/10/2009
3/30/2010
10/14/2010
4/2/2011
10/2/2011
4/23/2012
10/21/2012
4/10/2013
10/12/2013
Sample Date
PCE
TCE
cDCE
CT
CF
VC

DR2-3


100
90
80
70
60
50
40
30
20
10
0
Concentration (ug/L)
5/23/2004
11/14/2004
2/24/2005
5/20/2005
10/3/2006
4/15/2007
10/1/2007
4/8/2008
10/10/2008
4/8/2009
10/10/2009
4/7/2010
10/6/2010
4/1/2011
10/2/2011
4/23/2012
10/21/2012
4/10/2013
10/12/2013
Sample Date
PCE
TCE
cDCE
CT
VC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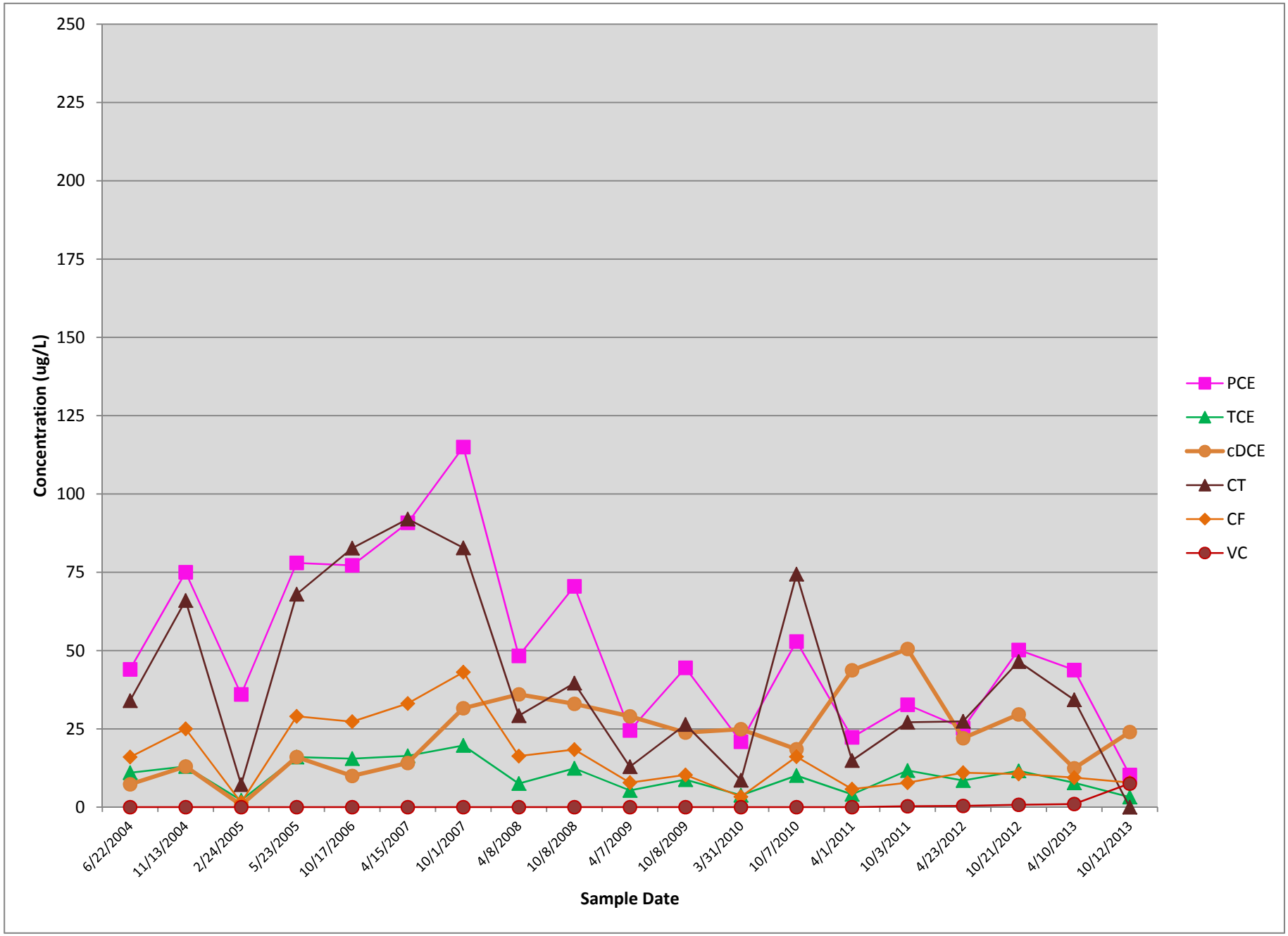
20
15
10
5
0
Concentration (ug/L)
5/24/2004
11/14/2004
2/22/2005
5/20/2005
10/5/2006
10/1/2007
10/8/2008
10/11/2009
10/13/2010
10/2/2011
10/21/2012
10/12/2013
Sample Date
PCE
TCE
cDCE
VC

DR2-6


250
225
200
175
150
125
100
75
50
25
0
Concentration (ug/L)
6/22/2004
11/13/2004
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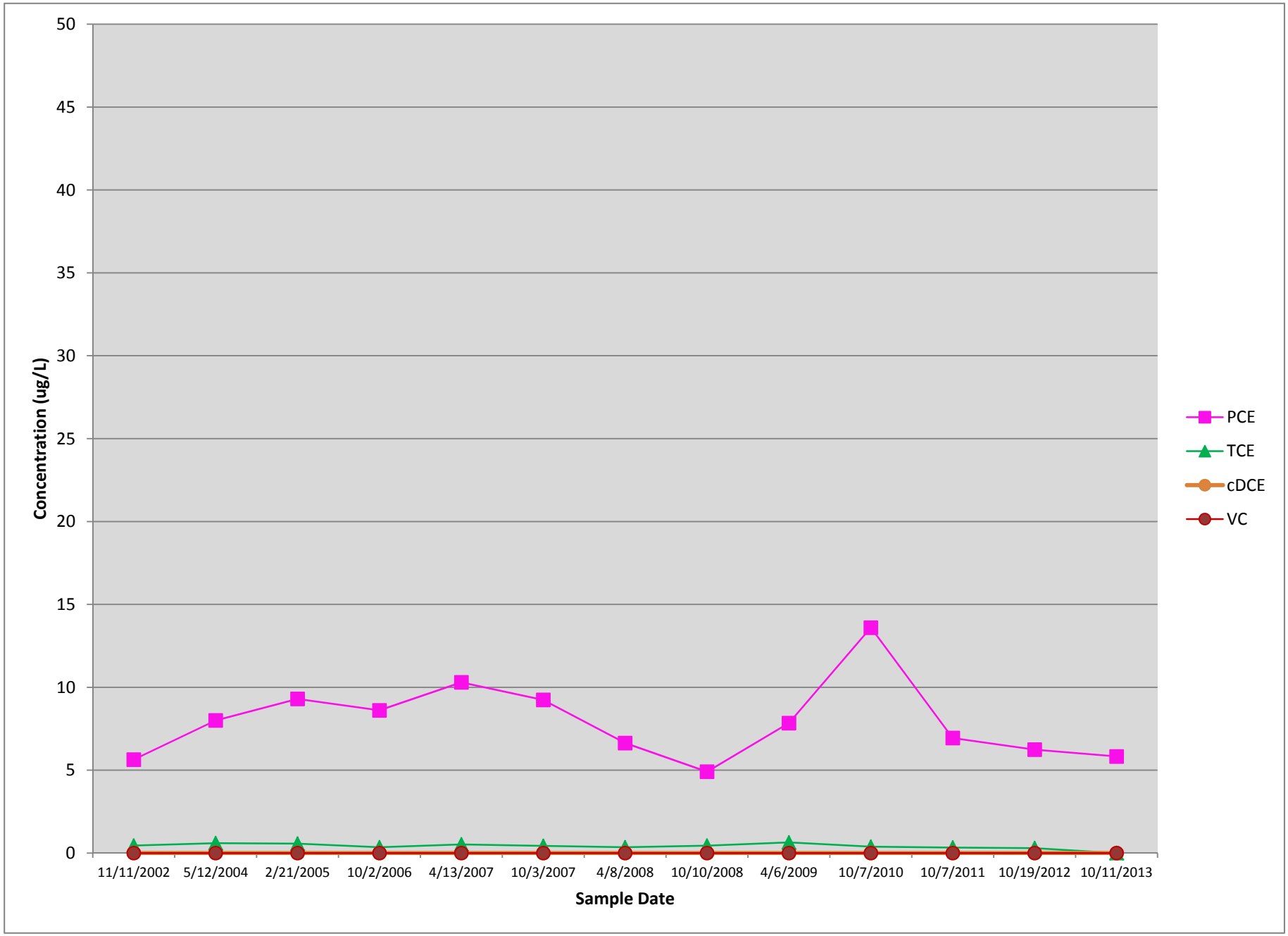
5/23/2005
10/17/2006
4/15/2007
10/1/2007
4/8/2008
10/8/2008
4/7/2009
10/8/2009
3/31/2010
10/7/2010
4/1/2011
10/3/2011
4/23/2012
10/21/2012
4/10/2013
10/12/2013
Sample Date
PCE
TCE
cDCE
CT
CF
VC

MW-25A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20
15
10
5
0
Concentration (ug/L)
11/11/2002
5/12/2004
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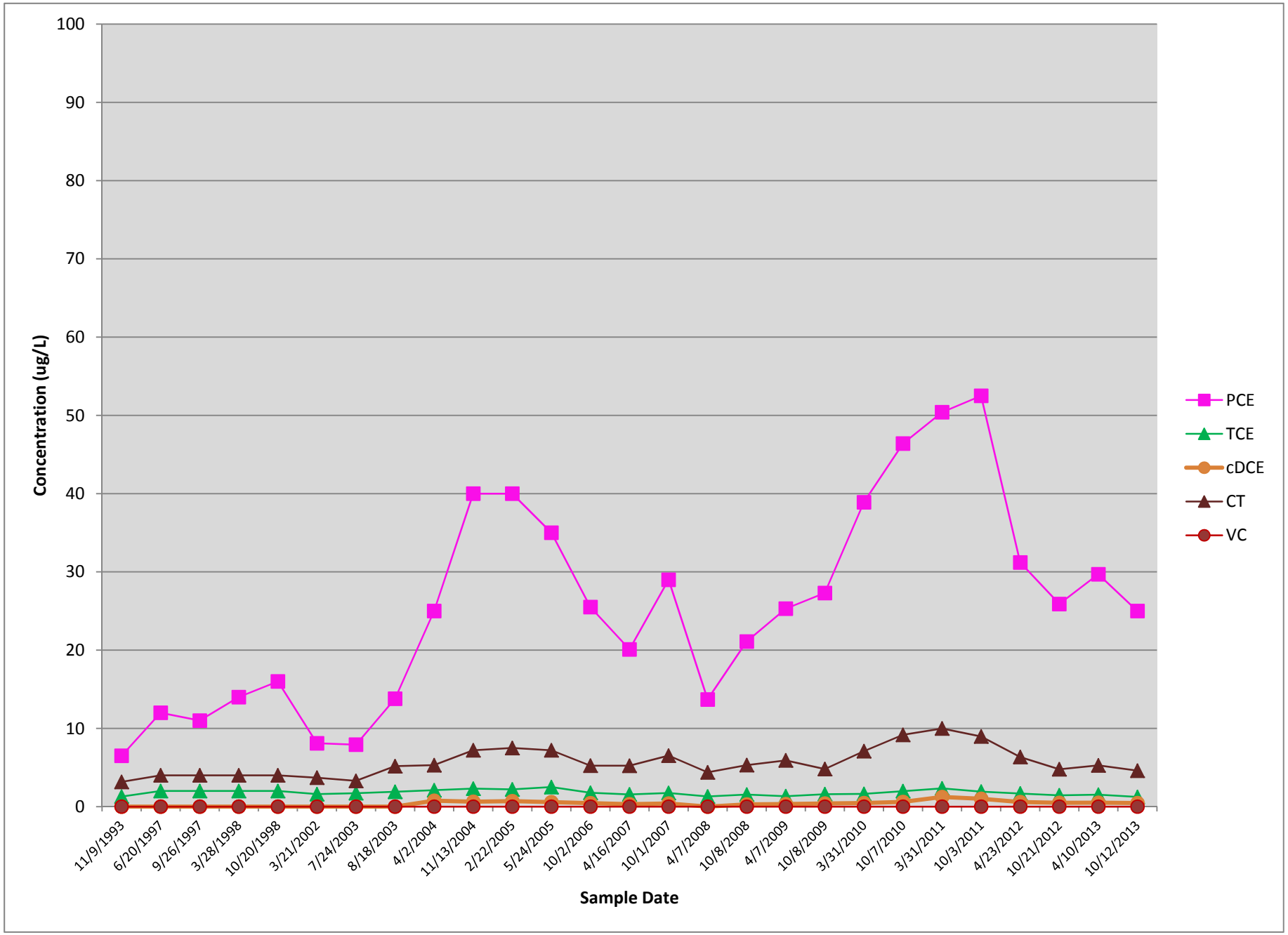
4/13/2007
10/3/2007
4/8/2008
10/10/2008
4/6/2009
10/7/2010
10/7/2011
10/19/2012
10/11/2013
Sample Date
PCE
TCE
cDCE
VC

MW-26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60
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40
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10
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Concentration (ug/L)
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4/2/2004
11/13/2004
2/22/2005
5/24/2005
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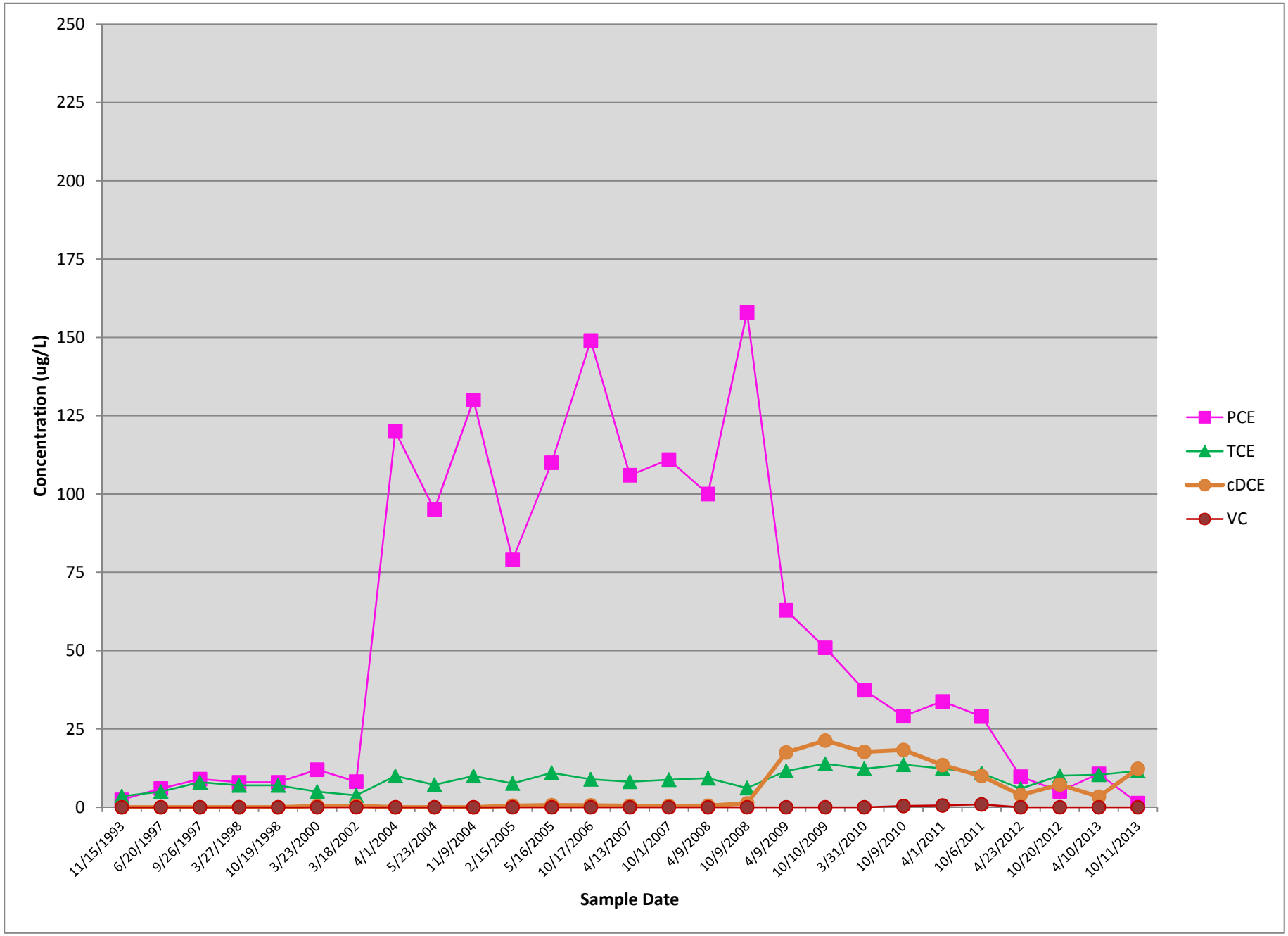
10/8/2009
3/31/2010
10/7/2010
3/31/2011
10/3/2011
4/23/2012
10/21/2012
4/10/2013
10/12/2013
Sample Date
PCE
TCE
cDCE
CT
VC

MW-39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175
150
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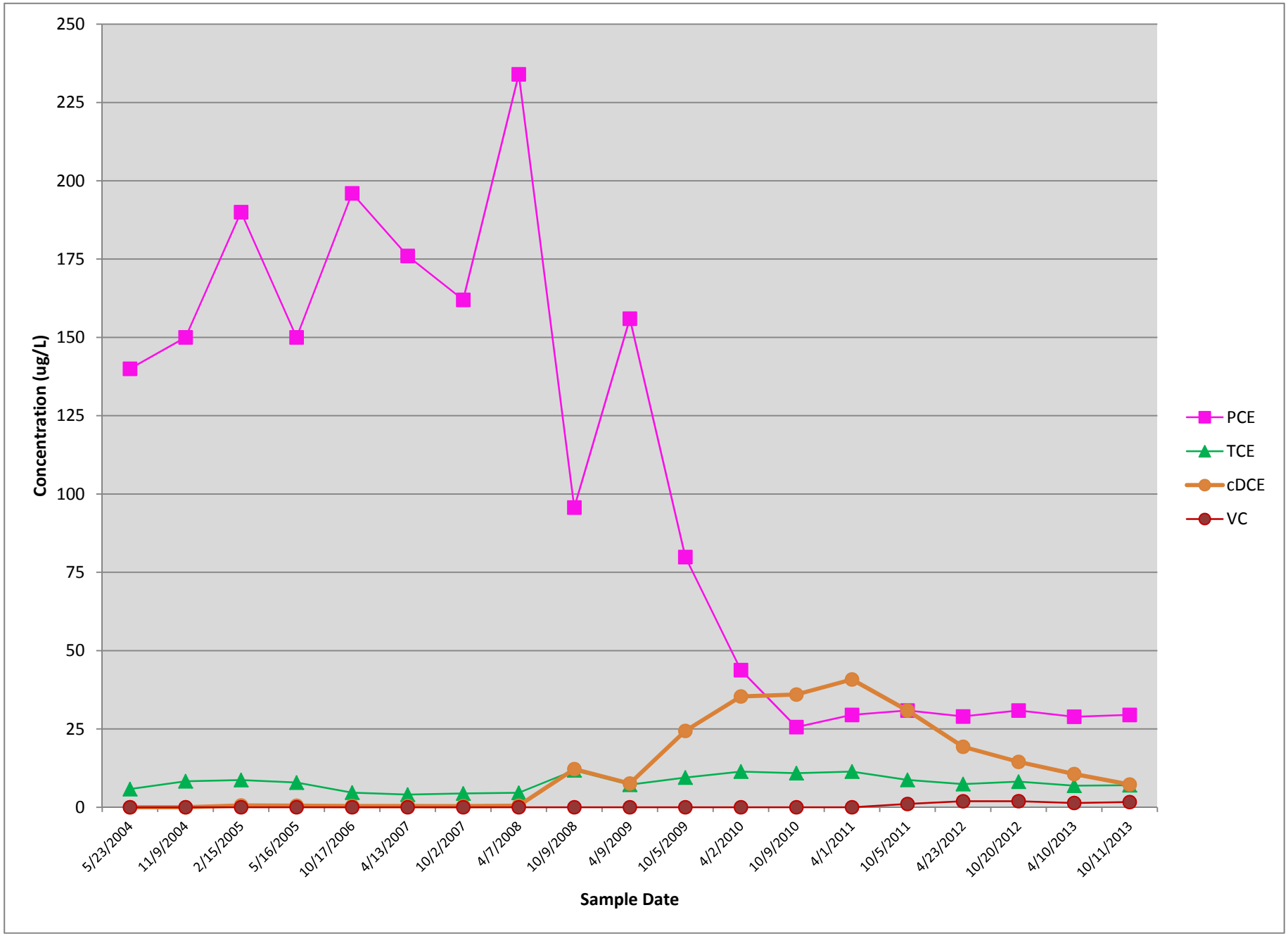
100
75
50
25
0
Concentration (ug/L)
11/15/1993
6/20/1997
9/26/1997
3/27/1998
10/19/1998
3/23/2000
3/18/2002
4/1/2004
5/23/2004
11/9/2004
2/15/2005
5/16/2005
10/17/2006
4/13/2007
10/1/2007
4/9/2008
10/9/2008
4/9/2009
10/10/2009
3/31/2010
10/9/2010
4/1/2011
10/6/2011
4/23/2012
10/20/2012
4/10/2013
10/11/2013
Sample Date
PCE
TCE
cDCE
VC

MW-39A


250
225
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175
150
125
100
75
50
25
0
Concentration (ug/L)
5/23/2004
11/9/2004
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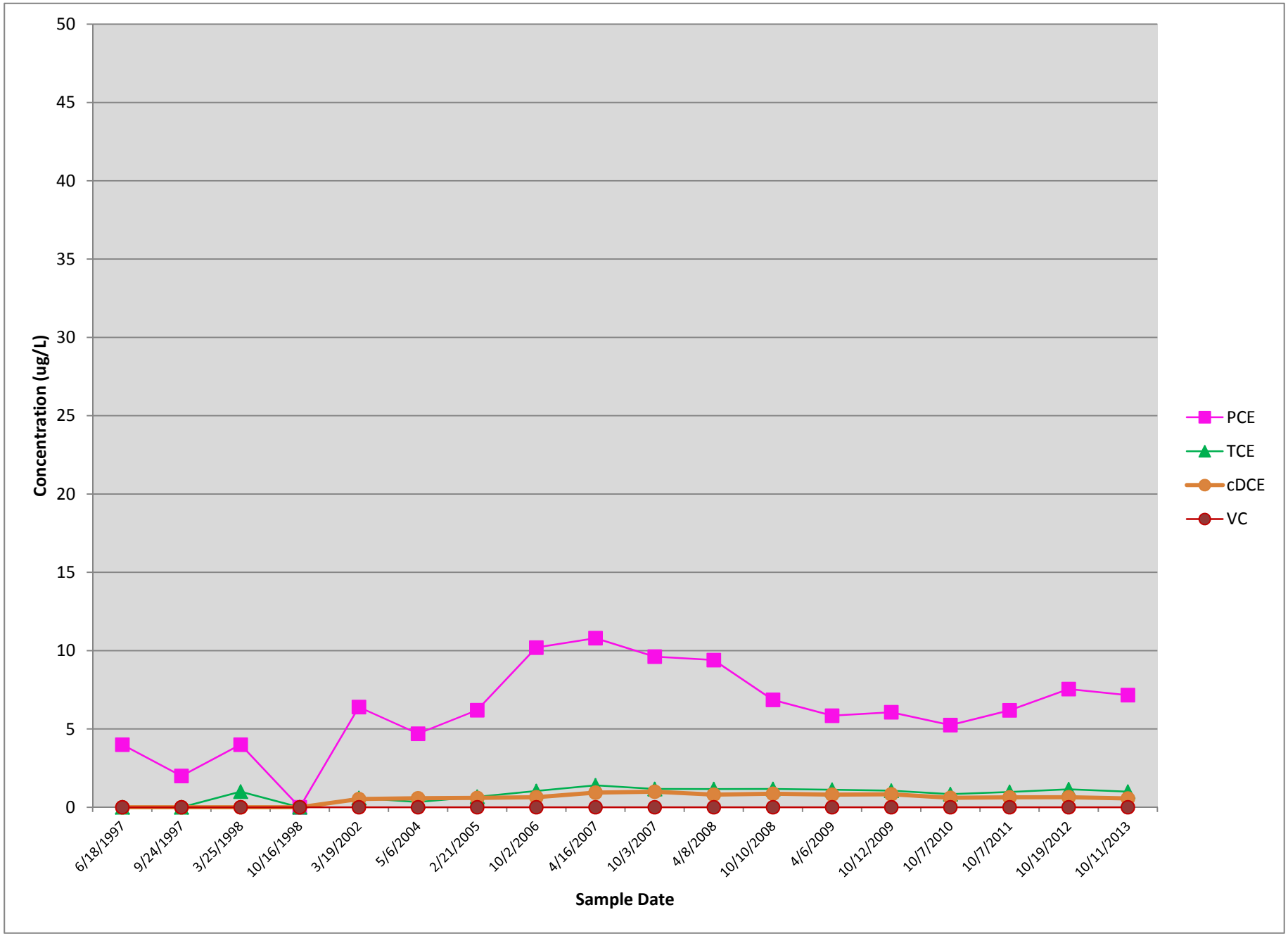
5/16/2005
10/17/2006
4/13/2007
10/2/2007
4/7/2008
10/9/2008
4/9/2009
10/5/2009
4/2/2010
10/9/2010
4/1/2011
10/5/2011
4/23/2012
10/20/2012
4/10/2013
10/11/2013
Sample Date
PCE
TCE
cDCE
VC

MW-52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25
20
15
10
5
0
Concentration (ug/L)
6/18/1997
9/24/1997
3/25/1998
10/16/1998
3/19/2002
5/6/2004
2/21/2005
10/2/2006
4/16/2007
10/3/2007
4/8/2008
10/10/2008
4/6/2009
10/12/2009
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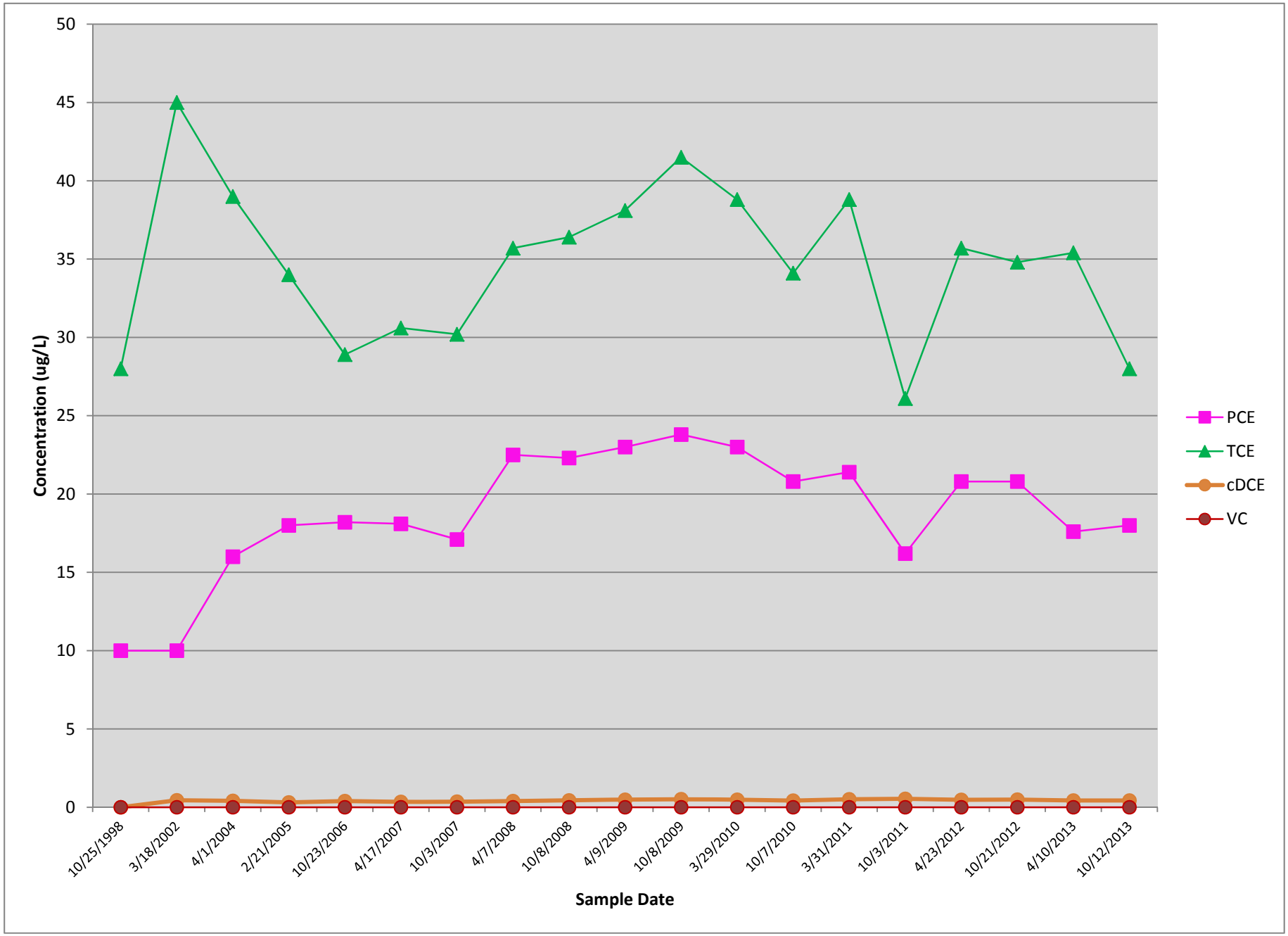
10/7/2011
10/19/2012
10/11/2013
Sample Date
PCE
TCE
cDCE
VC

MW-64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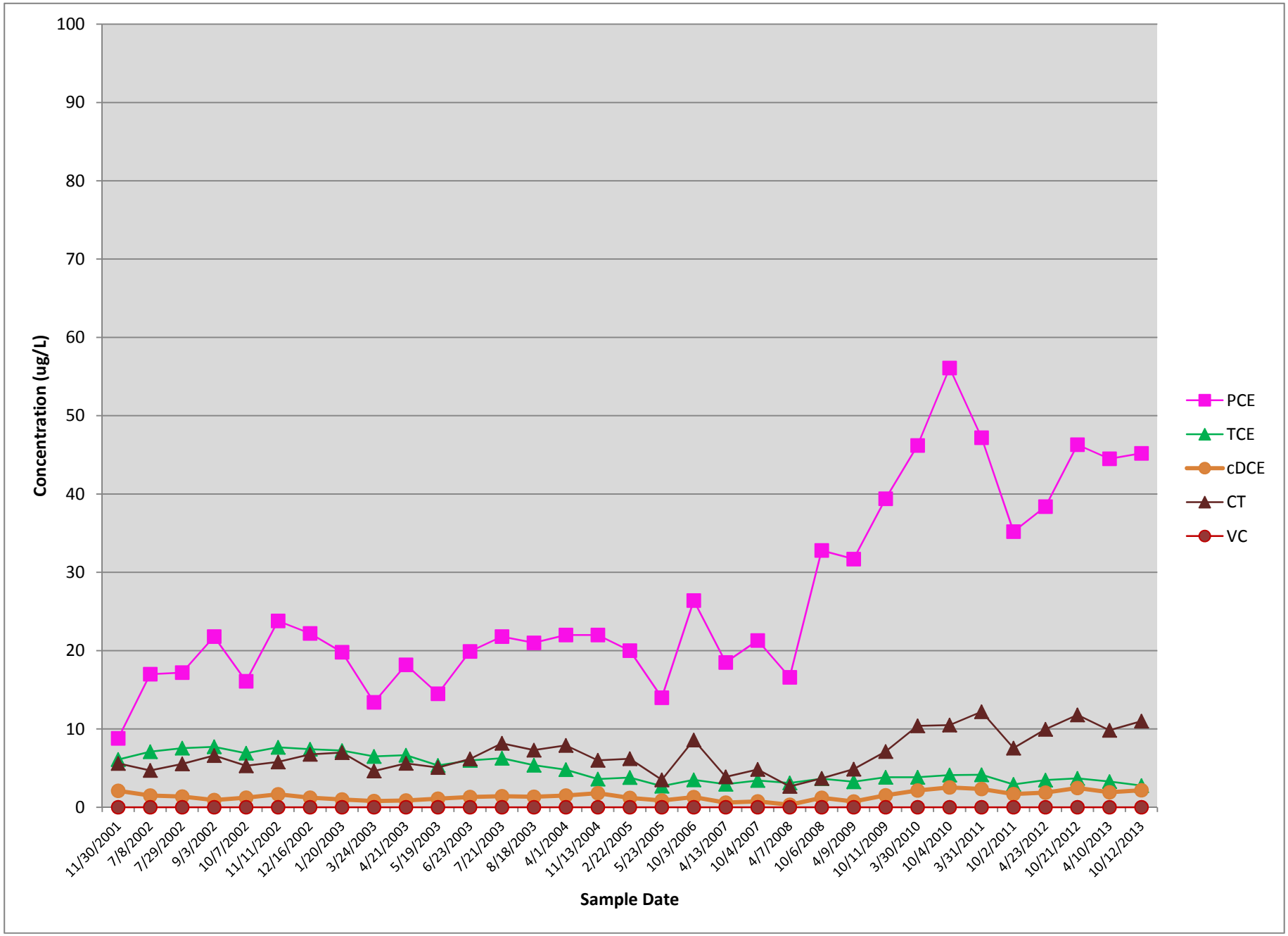
35
30
25
20
15
10
5
0
Concentration (ug/L)
10/25/1998
3/18/2002
4/1/2004
2/21/2005
10/23/2006
4/17/2007
10/3/2007
4/7/2008
10/8/2008
4/9/2009
10/8/2009
3/29/2010
10/7/2010
3/31/2011
10/3/2011
4/23/2012
10/21/2012
4/10/2013
10/12/2013
Sample Date
PCE
TCE
cDCE
VC

MW-88


100
90
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70
60
50
40
30
20
10
0
Concentration (ug/L)
11/30/2001
7/8/2002
7/29/2002
9/3/2002
10/7/2002
11/11/2002
12/16/2002
1/20/2003
3/24/2003
4/21/2003
5/19/2003
6/23/2003
7/21/2003
8/18/2003
4/1/2004
11/13/2004
2/22/2005
5/23/2005
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4/13/2007
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4/7/2008
10/6/2008
4/9/2009
10/11/2009
3/30/2010
10/4/2010
3/31/2011
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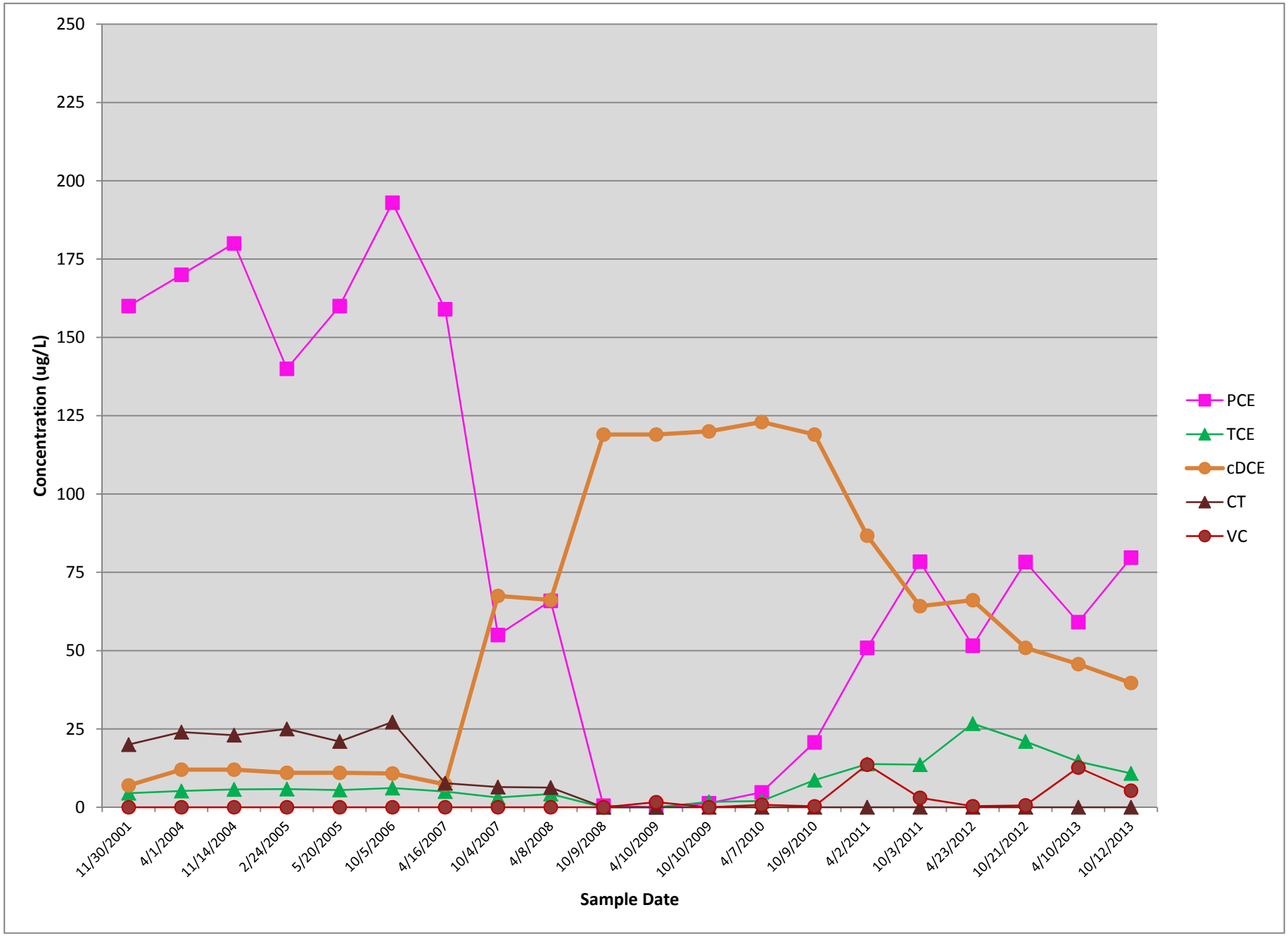
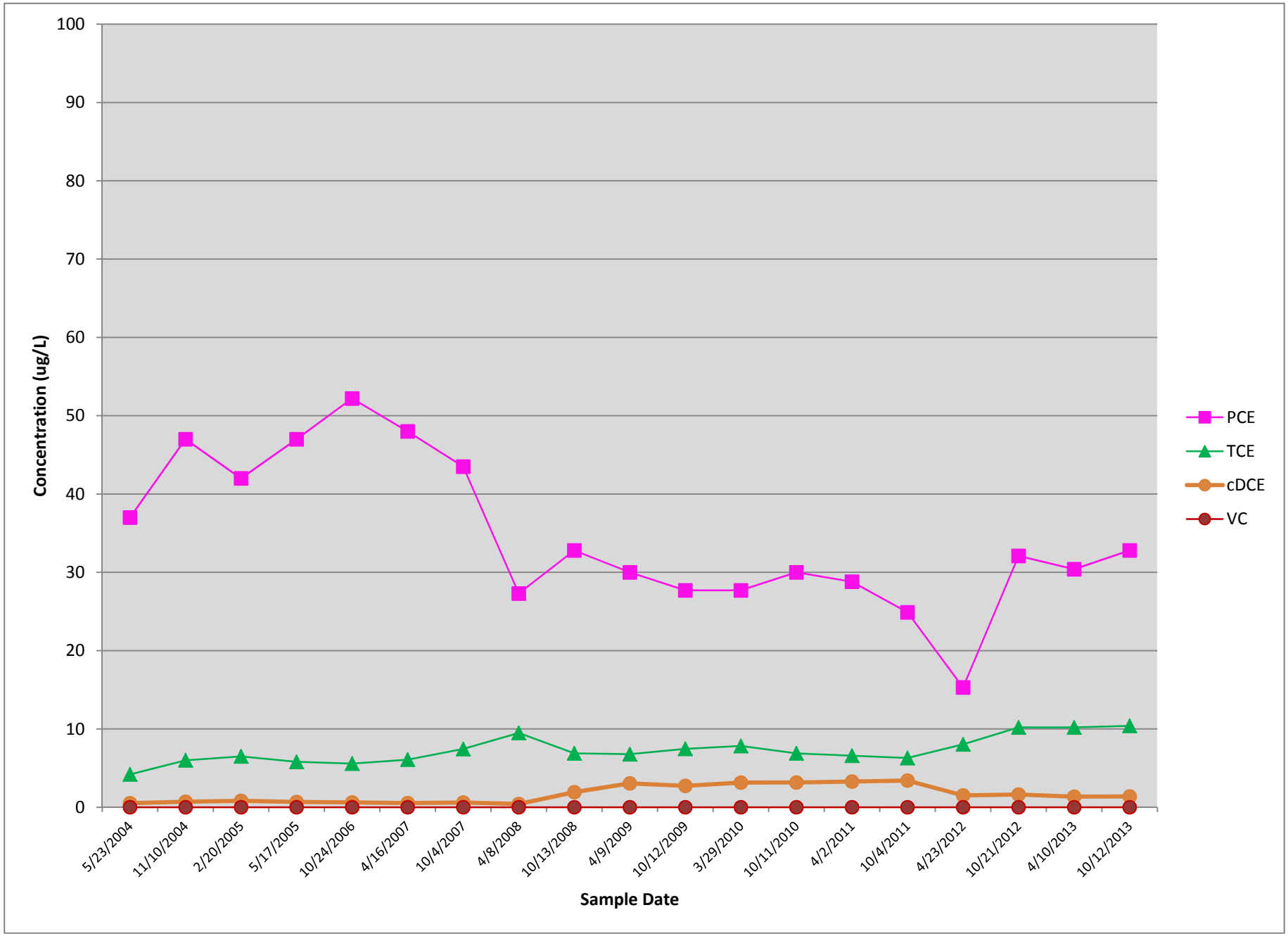
4/23/2012
10/21/2012
4/10/2013
10/12/2013
Sample Date
PCE
TCE
cDCE
CT
VC

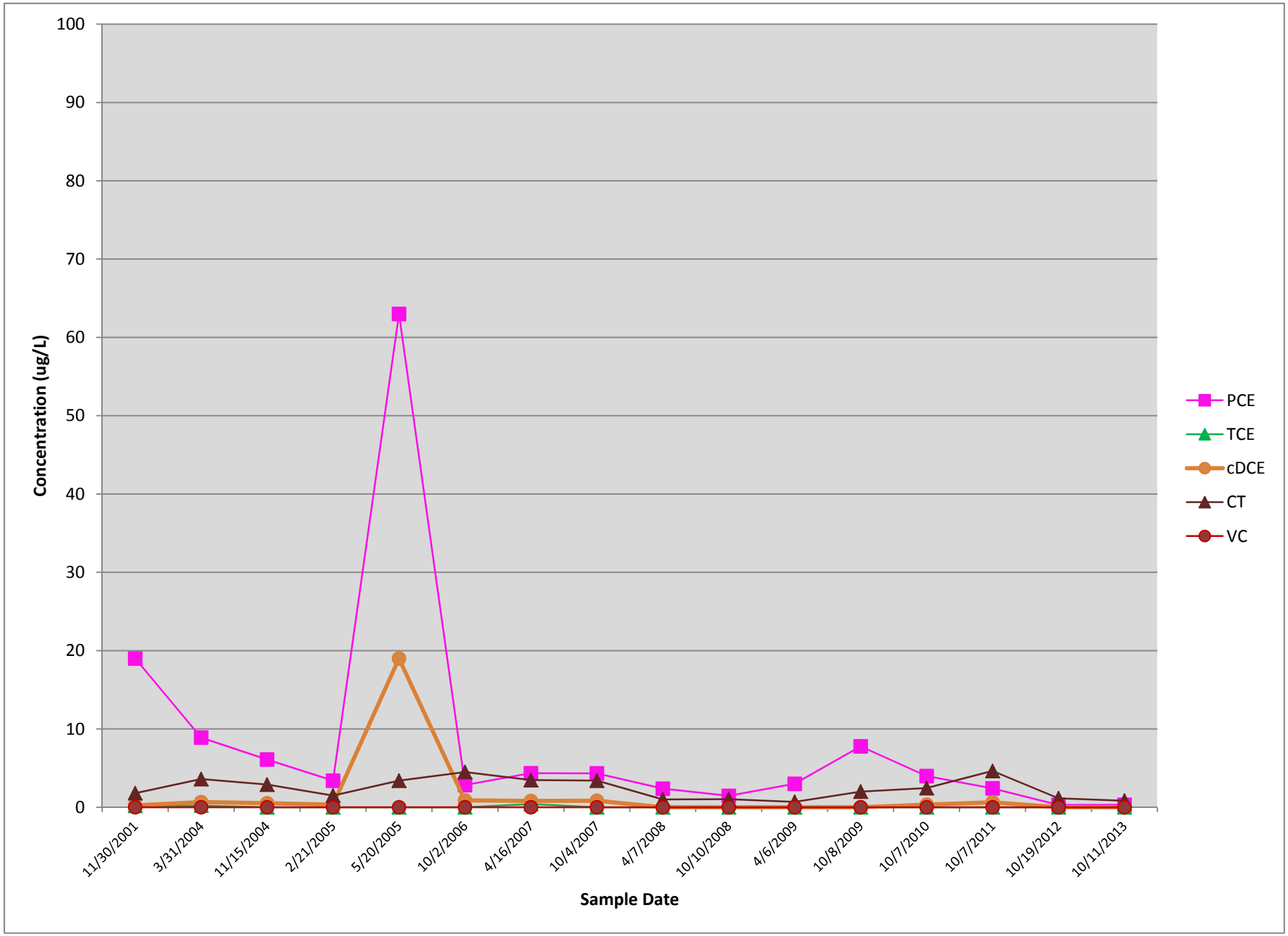
MW-92


250
225
200
175
150
125
100
75
50
25
0
Concentration (ug/L)
11/30/2001
4/1/2004
11/14/2004
2/24/2005
5/20/2005
10/5/2006
4/16/2007
10/4/2007
4/8/2008
10/9/2008
4/10/2009
10/10/2009
4/7/2010
10/9/2010
4/2/2011
10/3/2011
4/23/2012
10/21/2012
4/10/2013
10/12/2013
Sample Date
PCE
TCE
cDCE
CT
VC

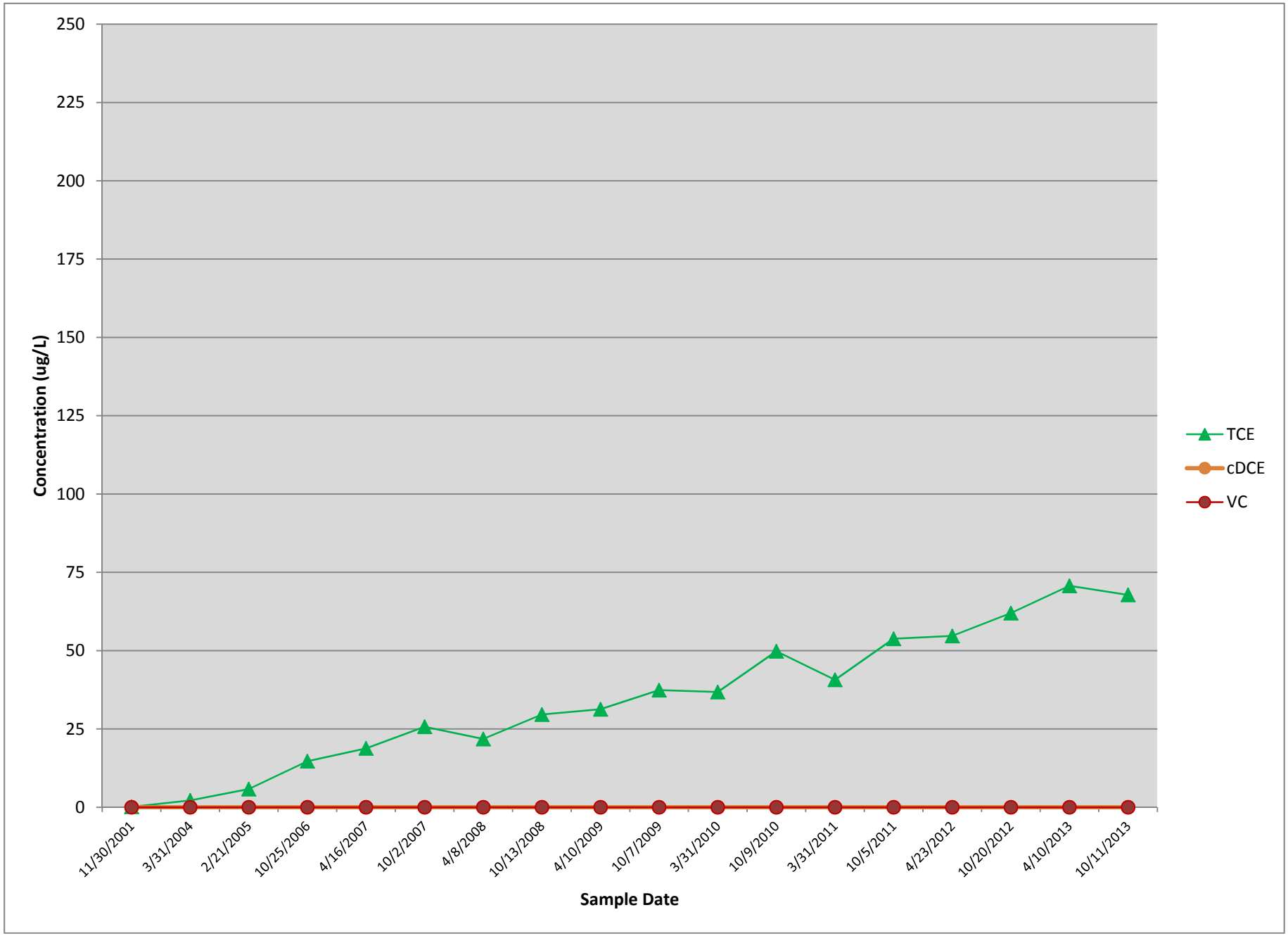
MW-94A


100
90
80
70
60
50
40
30
20
10
0
Concentration (ug/L)
5/23/2004
11/10/2004
2/20/2005
5/17/2005
10/24/2006
4/16/2007
10/4/2007
4/8/2008
10/13/2008
4/9/2009
10/12/2009
3/29/2010
10/11/2010
4/2/2011
10/4/2011
4/23/2012
10/21/2012
4/10/2013
10/12/2013
Sample Date
PCE
TCE
cDCE
VC

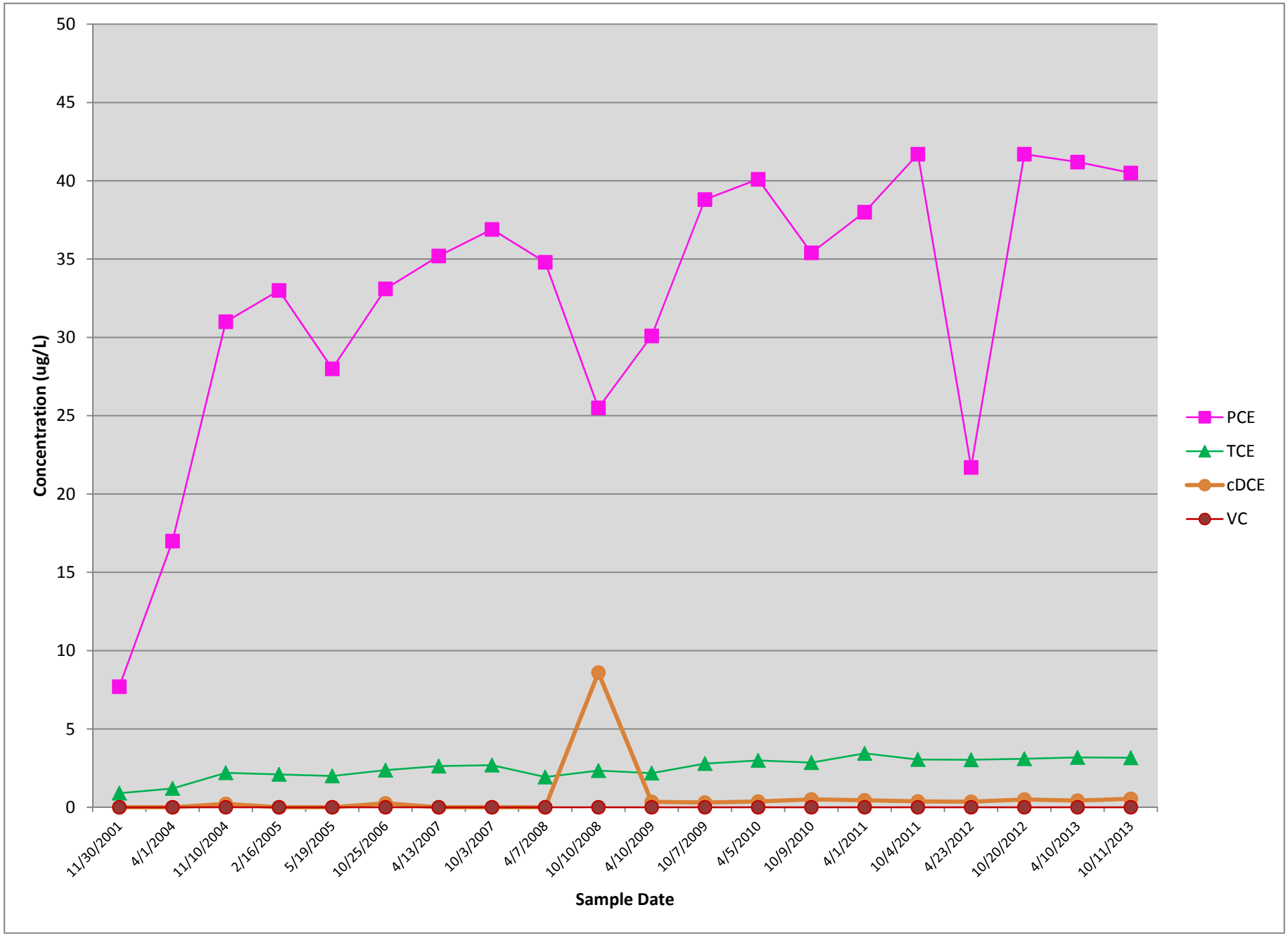
MW-96


100
90
80
70
60
50
40
30
20
10
0
Concentration (ug/L)
11/30/2001
3/31/2004
11/15/2004
2/21/2005
5/20/2005
10/2/2006
4/16/2007
10/4/2007
4/7/2008
10/10/2008
4/6/2009
10/8/2009
10/7/2010
10/7/2011
10/19/2012
10/11/2013
Sample Date
PCE
TCE
cDCE
CT
VC

MW-97


250
225
200
175
150
125
100
75
50
25
0
Concentration (ug/L)
11/30/2001
3/31/2004
2/21/2005
10/25/2006
4/16/2007
10/2/2007
4/8/2008
10/13/2008
4/10/2009
10/7/2009
3/31/2010
10/9/2010
3/31/2011
10/5/2011
4/23/2012
10/20/2012
4/10/2013
10/11/2013
Sample Date
TCE
cDCE
VC

MW-98


50
45
40
35
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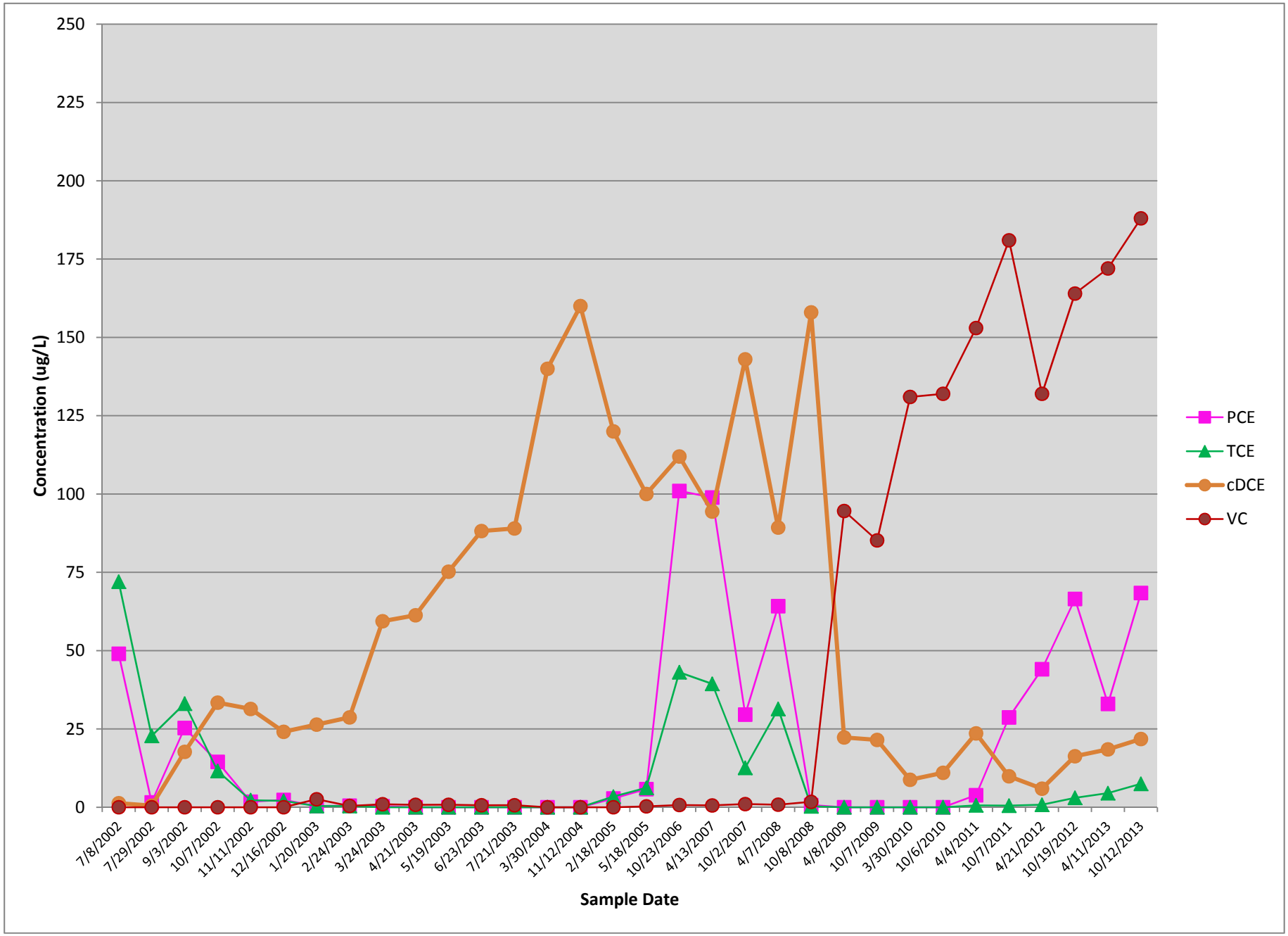
25
20
15
10
5
0
Concentration (ug/L)
11/30/2001
4/1/2004
11/10/2004
2/16/2005
5/19/2005
10/25/2006
4/13/2007
10/3/2007
4/7/2008
10/10/2008
4/10/2009
10/7/2009
4/5/2010
10/9/2010
4/1/2011
10/4/2011
4/23/2012
10/20/2012
4/10/2013
10/11/2013
Sample Date
PCE
TCE
cDCE
VC

MW-100B


250
225
200
175
150
125
100
75
50
25
0
Concentration (ug/L)
7/8/2002
7/29/2002
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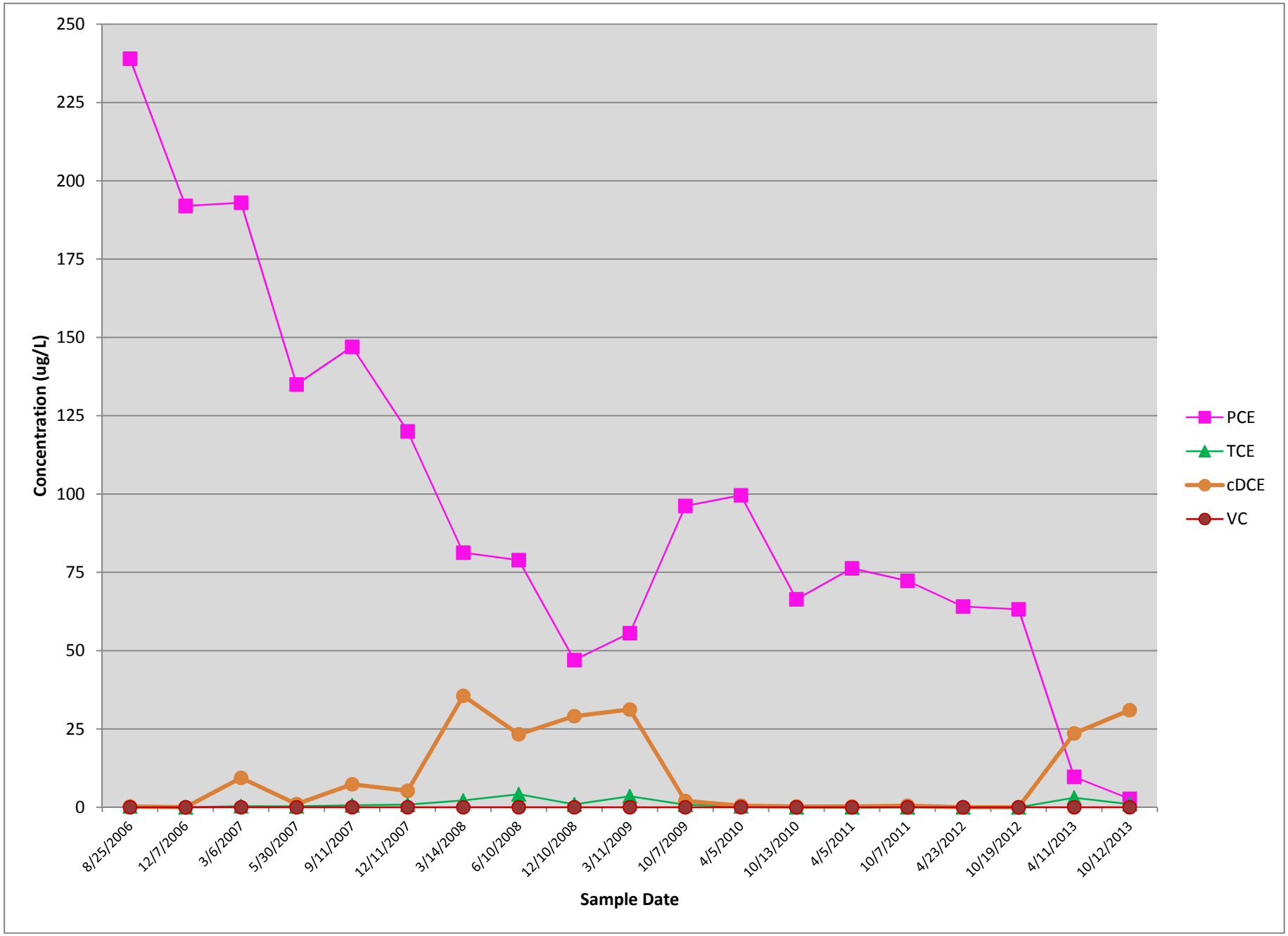
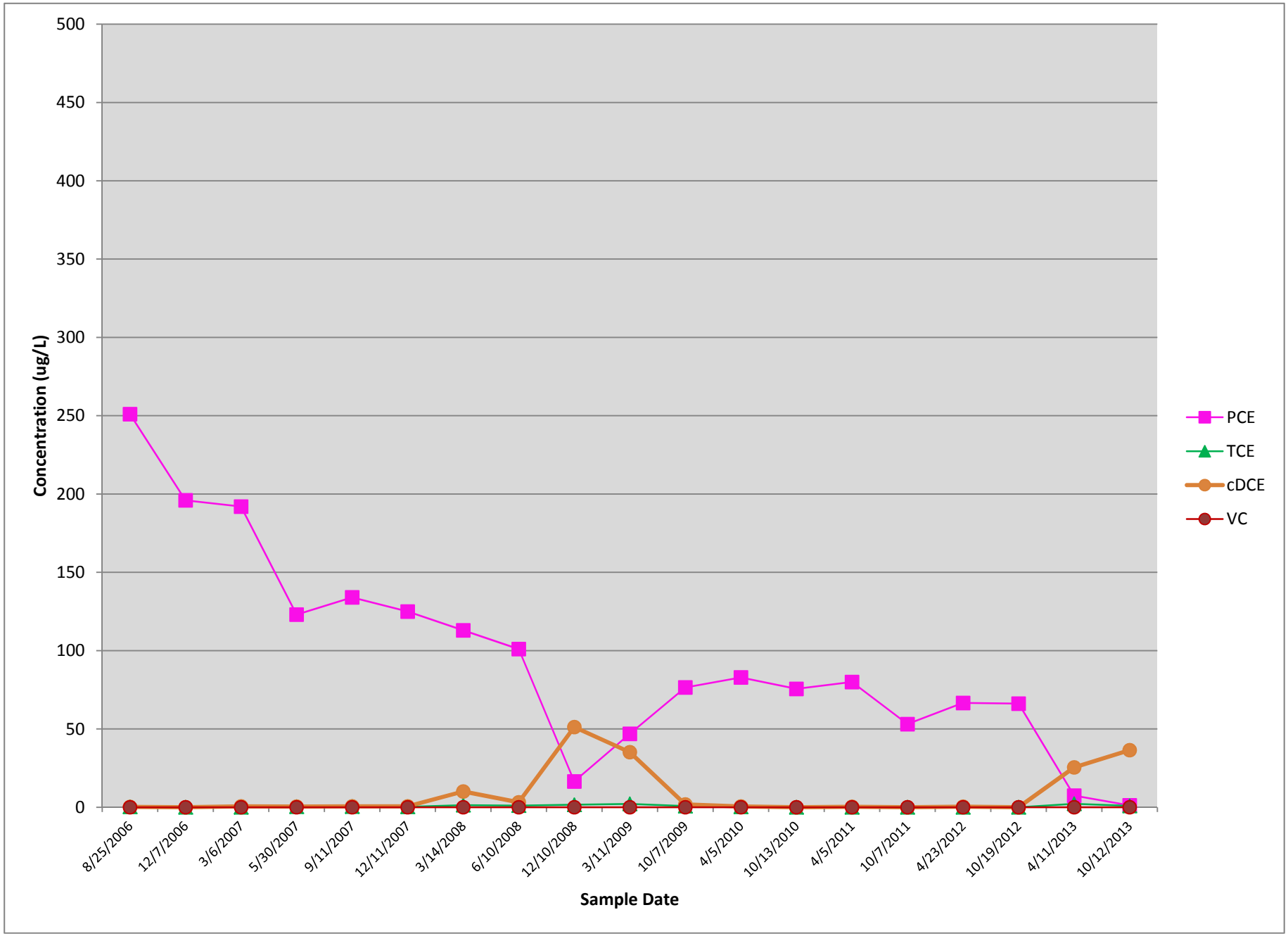
10/7/2002
11/11/2002
12/16/2002
1/20/2003
2/24/2003
3/24/2003
4/21/2003
5/19/2003
6/23/2003
7/21/2003
3/30/2004
11/12/2004
2/18/2005
5/18/2005
10/23/2006
4/13/2007
10/2/2007
4/7/2008
10/8/2008
4/8/2009
10/7/2009
3/30/2010
10/6/2010
4/4/2011
10/7/2011
4/21/2012
10/19/2012
4/11/2013
10/12/2013
Sample Date
PCE
TCE
cDCE
VC

MW-101 BOTTOM



MW-101 TOP


500
450
400
350
300
250
200
150
100
50
0
Concentration (ug/L)
8/25/2006
12/7/2006
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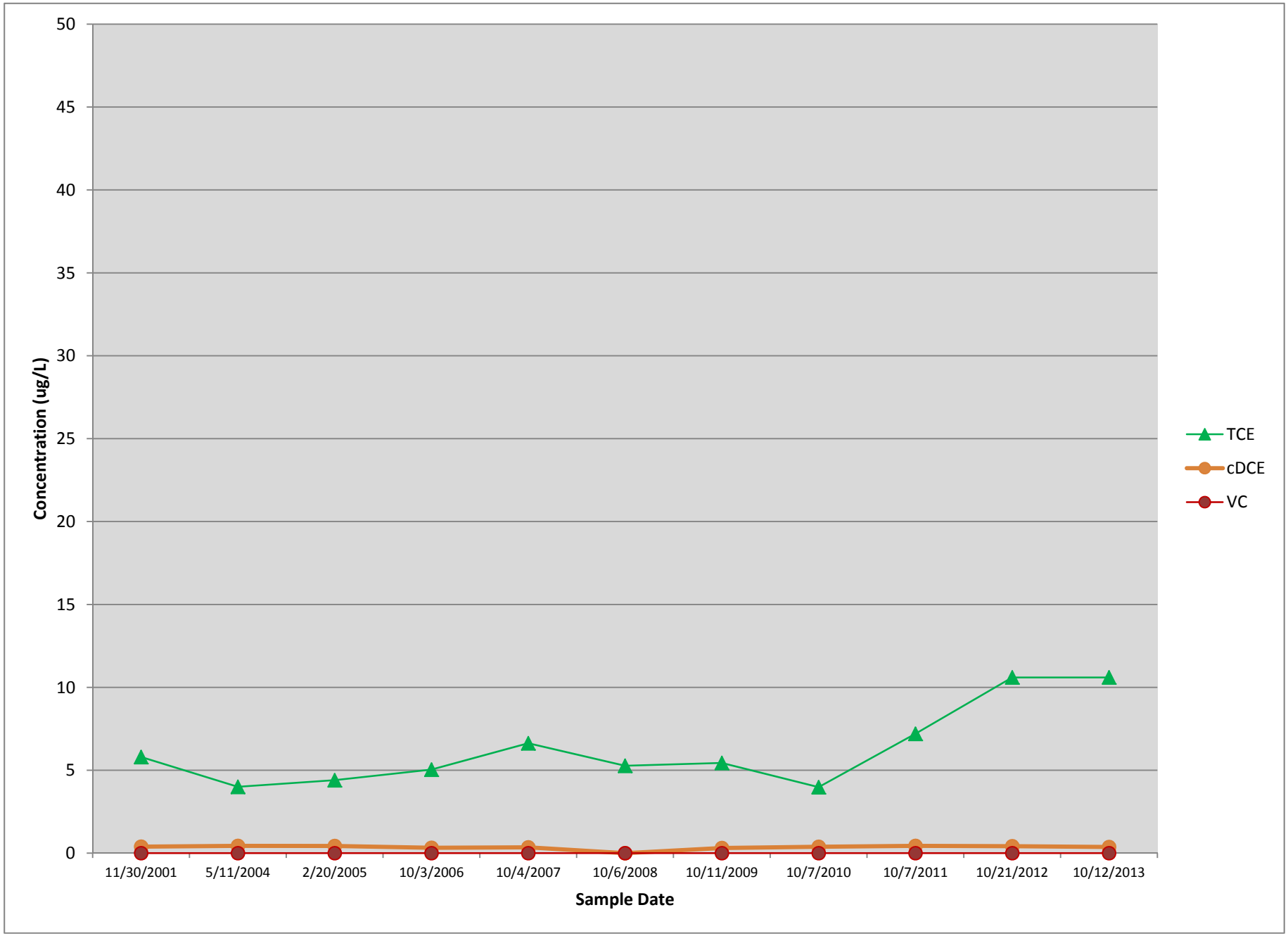
5/30/2007
9/11/2007
12/11/2007
3/14/2008
6/10/2008
12/10/2008
3/11/2009
10/7/2009
4/5/2010
10/13/2010
4/5/2011
10/7/2011
4/23/2012
10/19/2012
4/11/2013
10/12/2013
Sample Date
PCE
TCE
cDCE
VC

MW-103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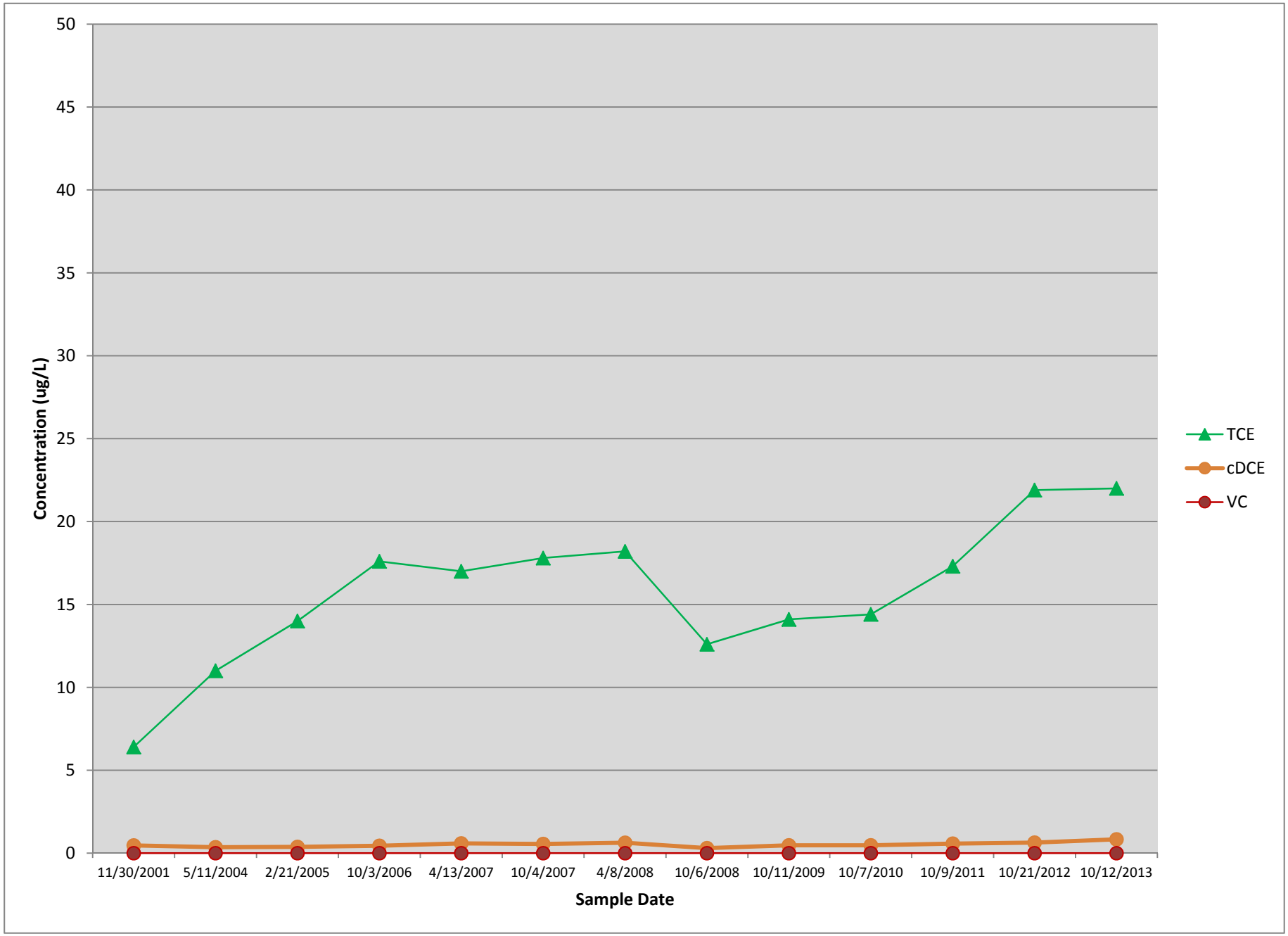
45
40
35
30
25
20
15
10
5
0
Concentration (ug/L)
11/30/2001
5/11/2004
2/20/2005
10/3/2006
10/4/2007
10/6/2008
10/11/2009
10/7/2010
10/7/2011
10/21/2012
10/12/2013
Sample Date
TCE
cDCE
VC

MW-104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45
40
35
30
25
20
15
10
5
0
Concentration (ug/L)
11/30/2001
5/11/2004
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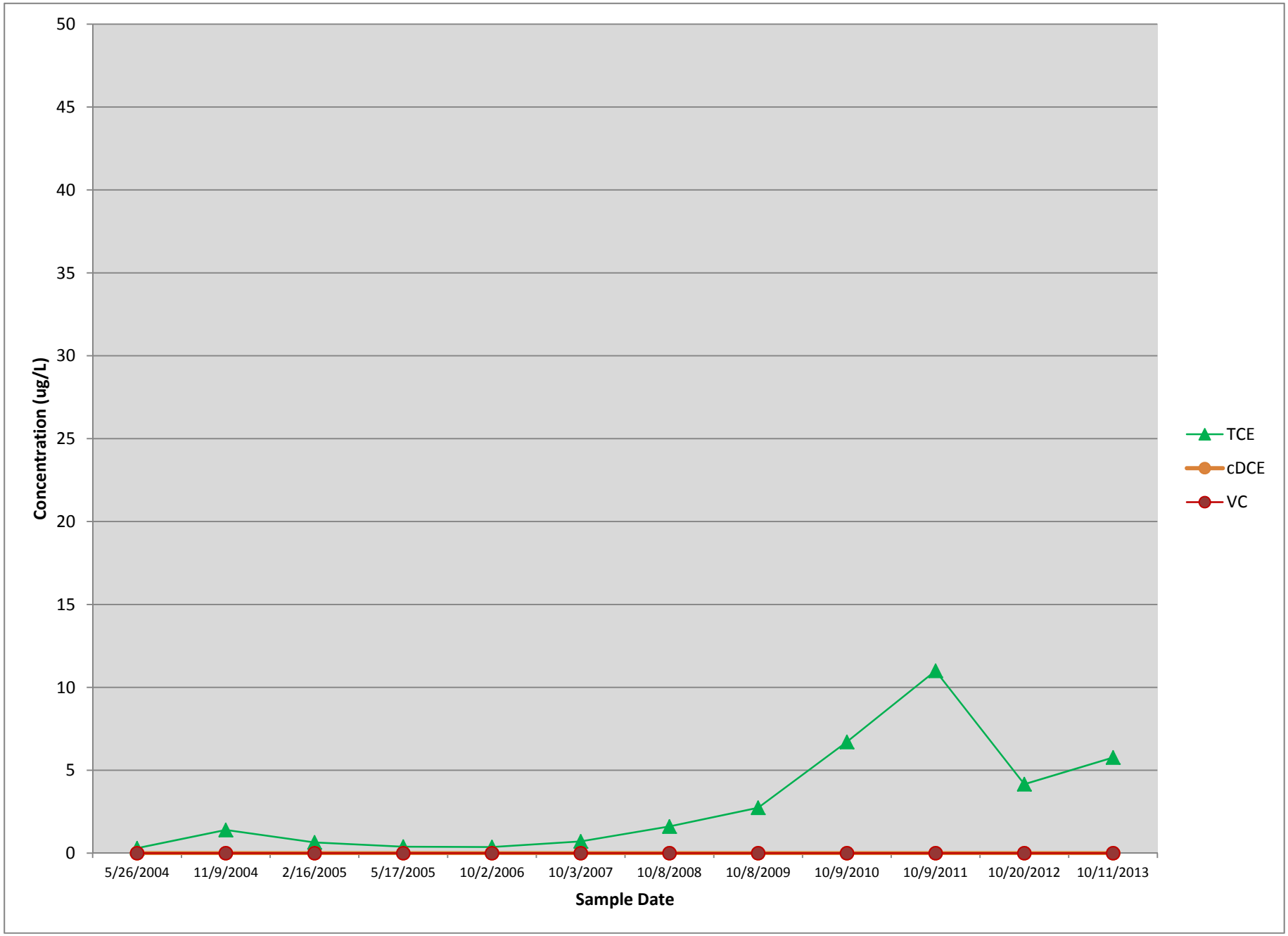
10/3/2006
4/13/2007
10/4/2007
4/8/2008
10/6/2008
10/11/2009
10/7/2010
10/9/2011
10/21/2012
10/12/2013
Sample Date
TCE
cDCE
VC

MW-142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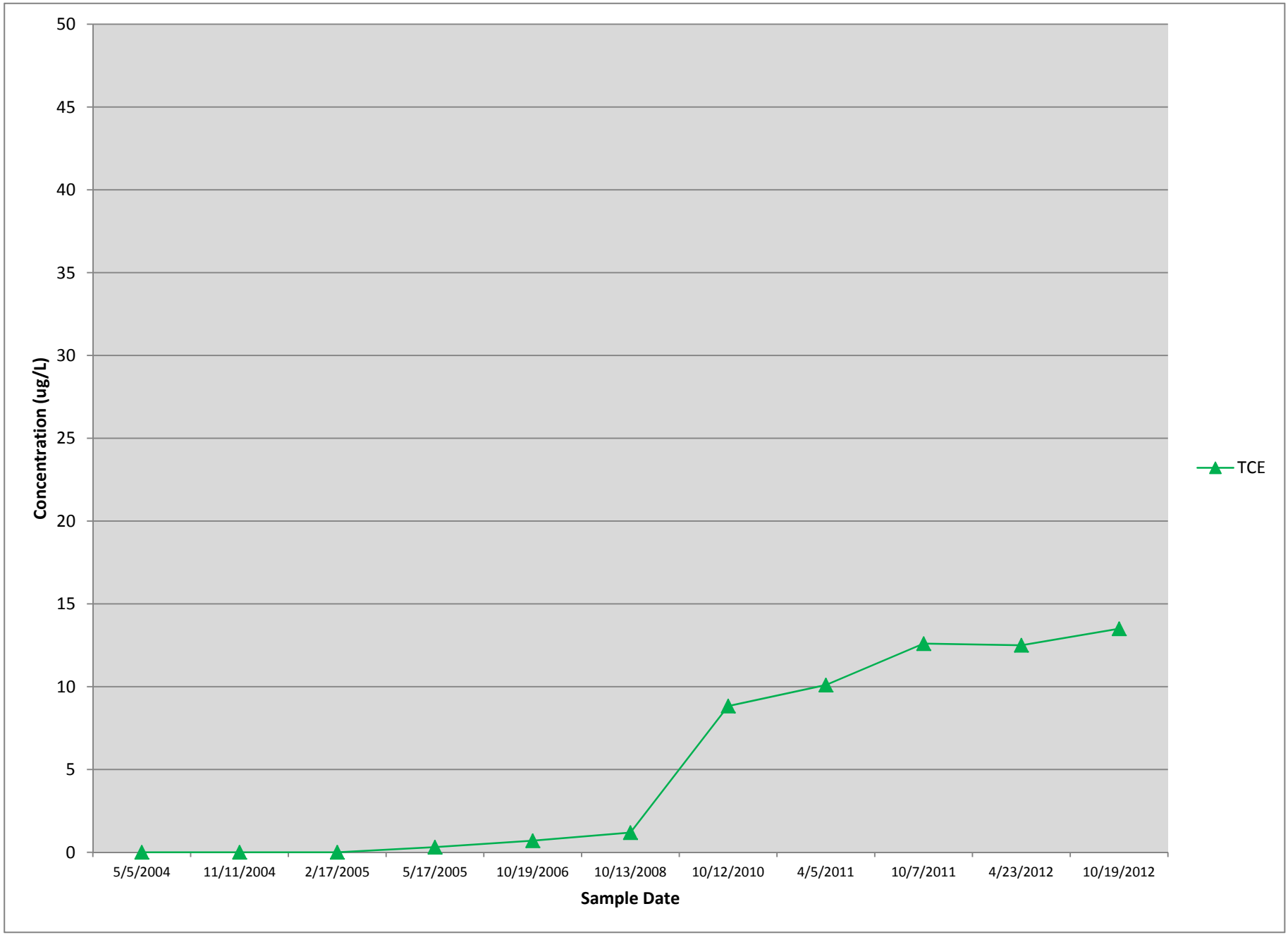
45
40
35
30
25
20
15
10
5
0
Concentration (ug/L)
5/26/2004
11/9/2004
2/16/2005
5/17/2005
10/2/2006
10/3/2007
10/8/2008
10/8/2009
10/9/2010
10/9/2011
10/20/2012
10/11/2013
Sample Date
TCE
cDCE
VC

MW-143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45
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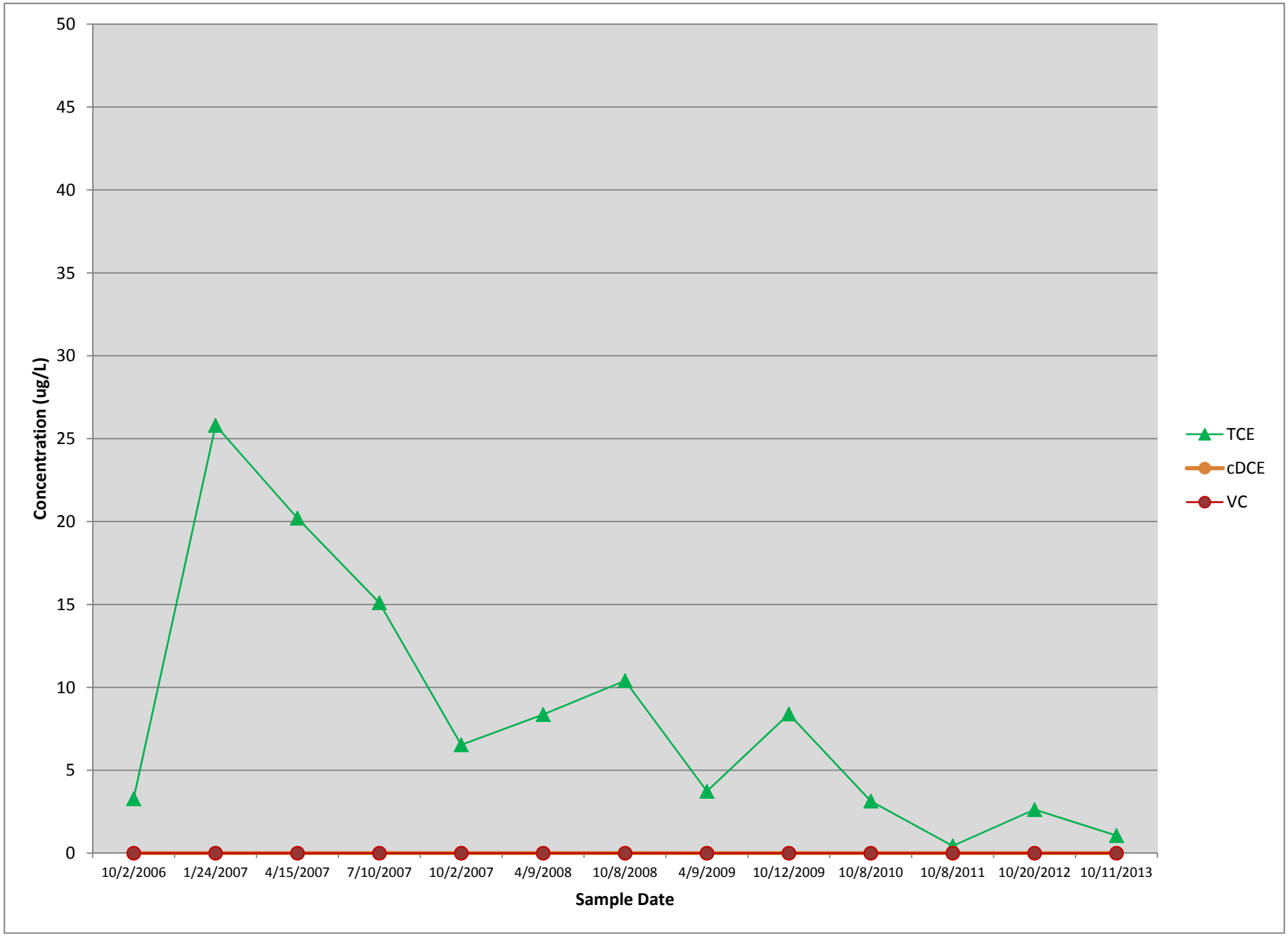
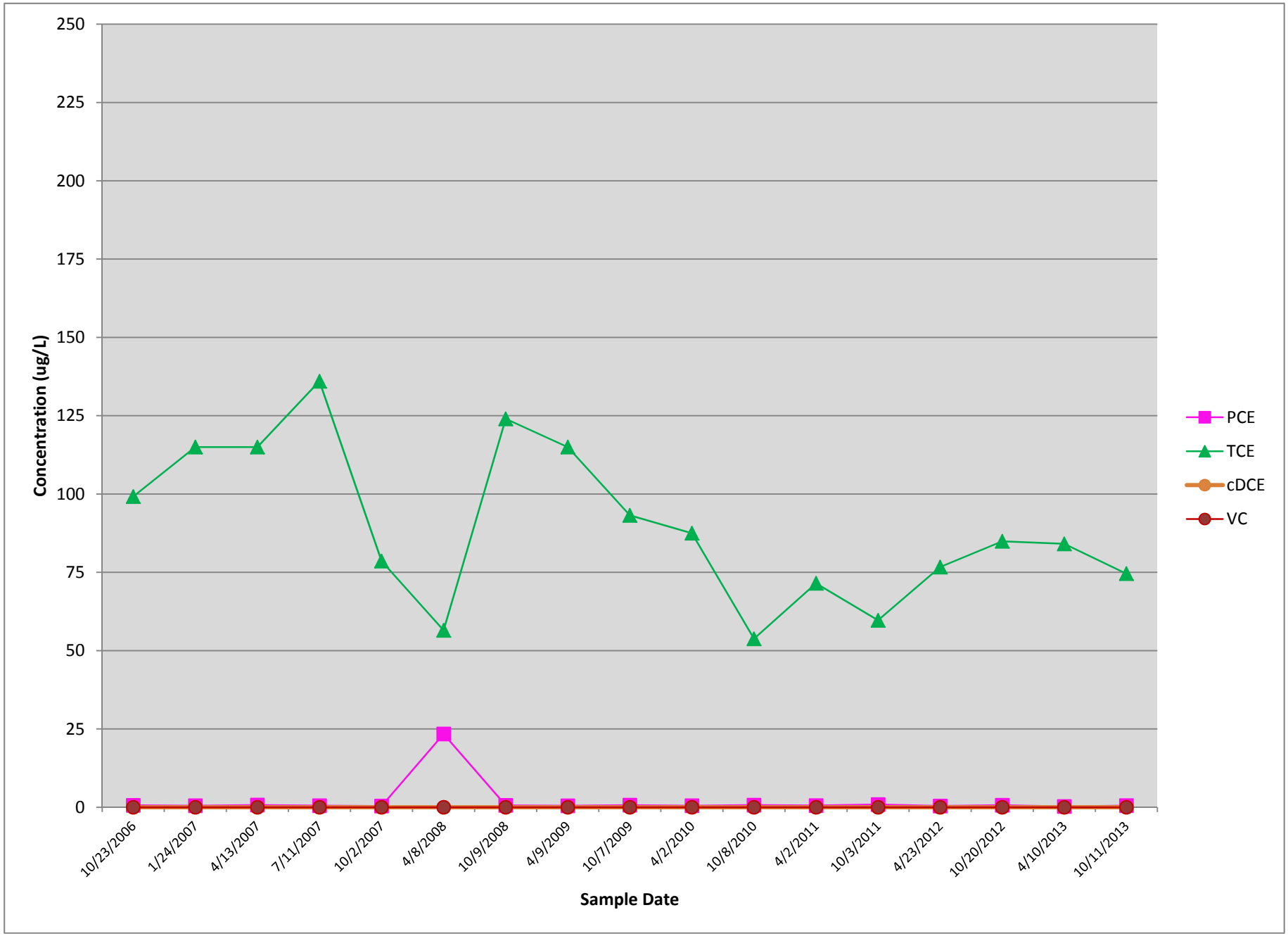
35
30
25
20
15
10
5
0
Concentration (ug/L)
5/5/2004
11/11/2004
2/17/2005
5/17/2005
10/19/2006
10/13/2008
10/12/2010
4/5/2011
10/7/2011
4/23/2012
10/19/2012
Sample Date
TCE

MW-198


50
45
40
35
30
25
20
15
10
5
0
Concentration (ug/L)
10/2/2006
1/24/2007
4/15/2007
7/10/2007
10/2/2007
4/9/2008
10/8/2008
4/9/2009
10/12/2009
10/8/2010
10/8/2011
10/20/2012
10/11/2013
Sample Date
TCE
cDCE
VC

MW-199B


250
225
200
175
150
125
100
75
50
25
0
Concentration (ug/L)
10/23/2006
1/24/2007
4/13/2007
7/11/2007
10/2/2007
4/8/2008
10/9/2008
4/9/2009
10/7/2009
4/2/2010
10/8/2010
4/2/2011
10/3/2011
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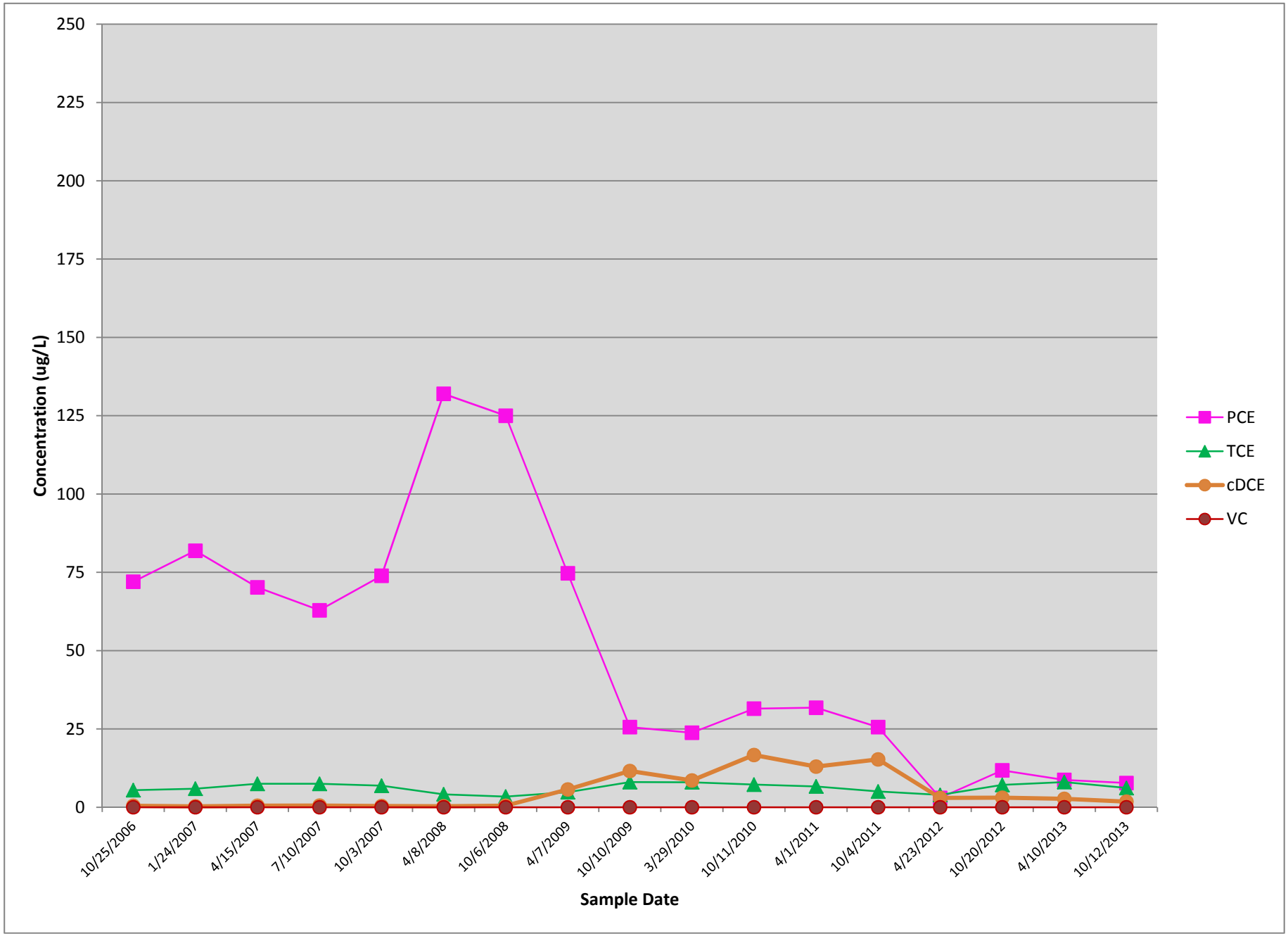
10/20/2012
4/10/2013
10/11/2013
Sample Date
PCE
TCE
cDCE
VC

MW-200


250
225
200
175
150
125
100
75
50
25
0
Concentration (ug/L)
10/25/2006
1/24/2007
4/15/2007
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10/3/2007
4/8/2008
10/6/2008
4/7/2009
10/10/2009
3/29/2010
10/11/2010
4/1/2011
10/4/2011
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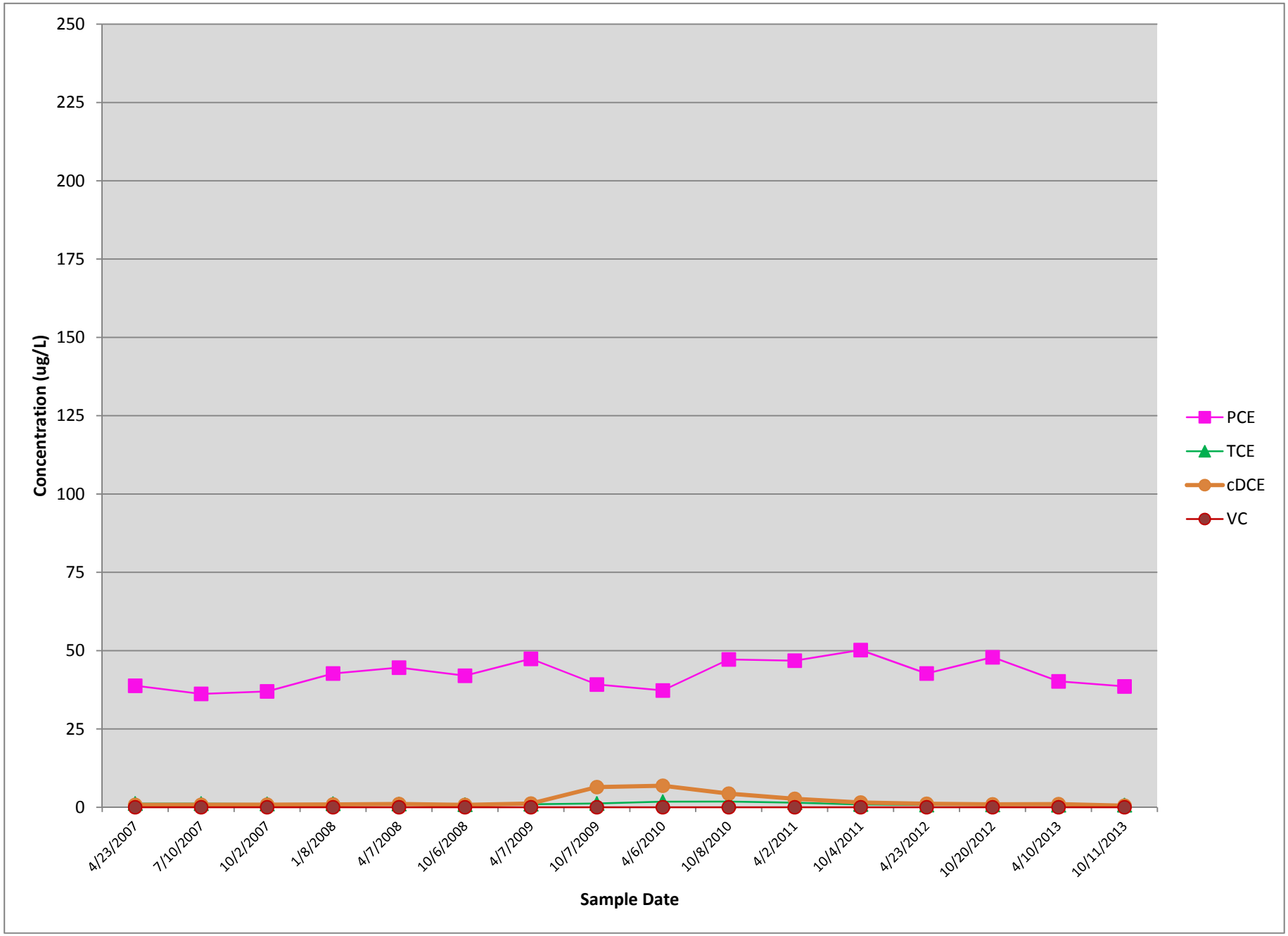
10/20/2012
4/10/2013
10/12/2013
Sample Date
PCE
TCE
cDCE
VC

MW-204A


250
225
200
175
150
125
100
75
50
25
0
Concentration (ug/L)
4/23/2007
7/10/2007
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1/8/2008
4/7/2008
10/6/2008
4/7/2009
10/7/2009
4/6/2010
10/8/2010
4/2/2011
10/4/2011
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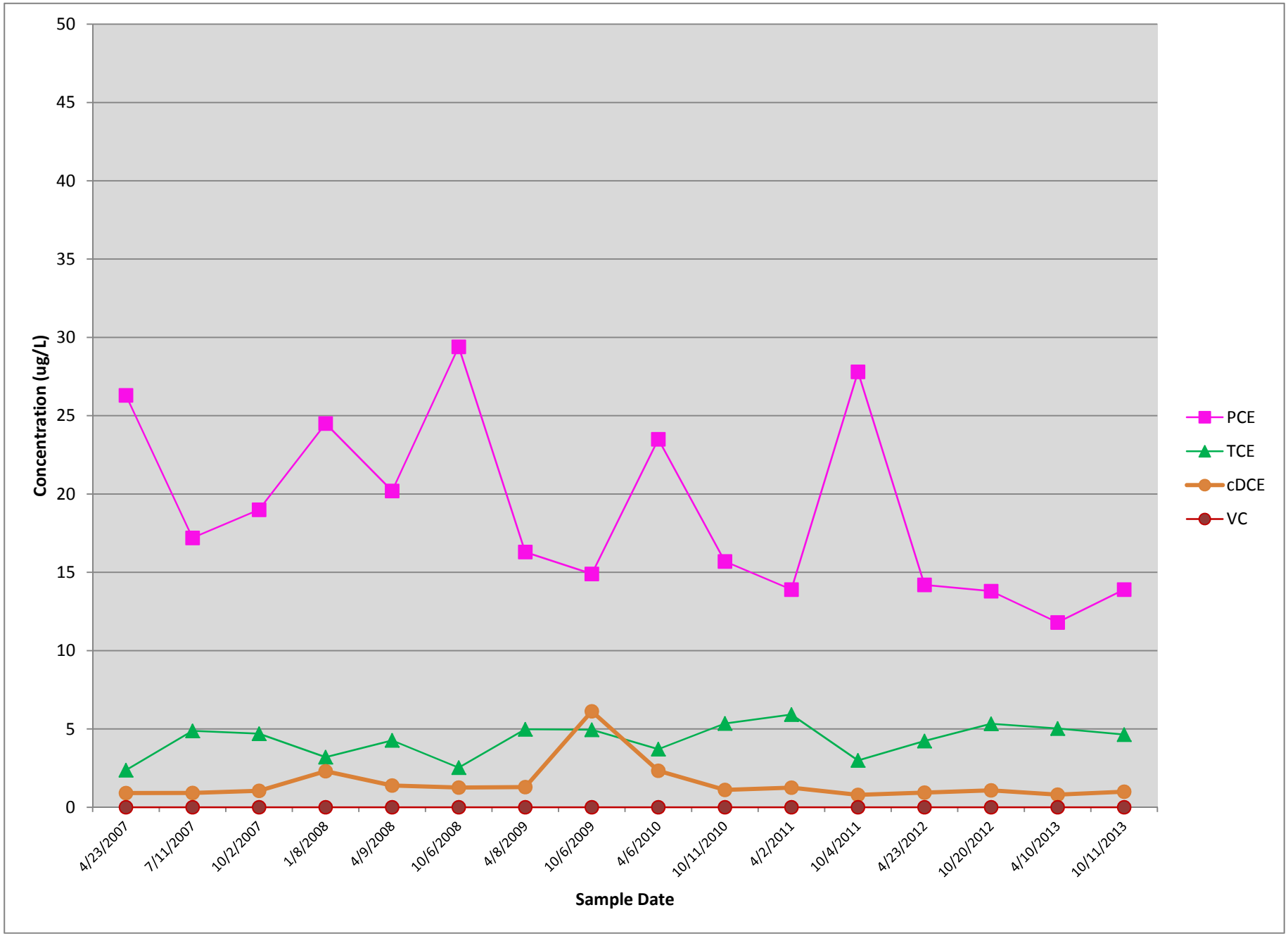
10/20/2012
4/10/2013
10/11/2013
Sample Date
PCE
TCE
cDCE
VC

MW-204B


50
45
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35
30
25
20
15
10
5
0
Concentration (ug/L)
4/23/2007
7/11/2007
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1/8/2008
4/9/2008
10/6/2008
4/8/2009
10/6/2009
4/6/2010
10/11/2010
4/2/2011
10/4/2011
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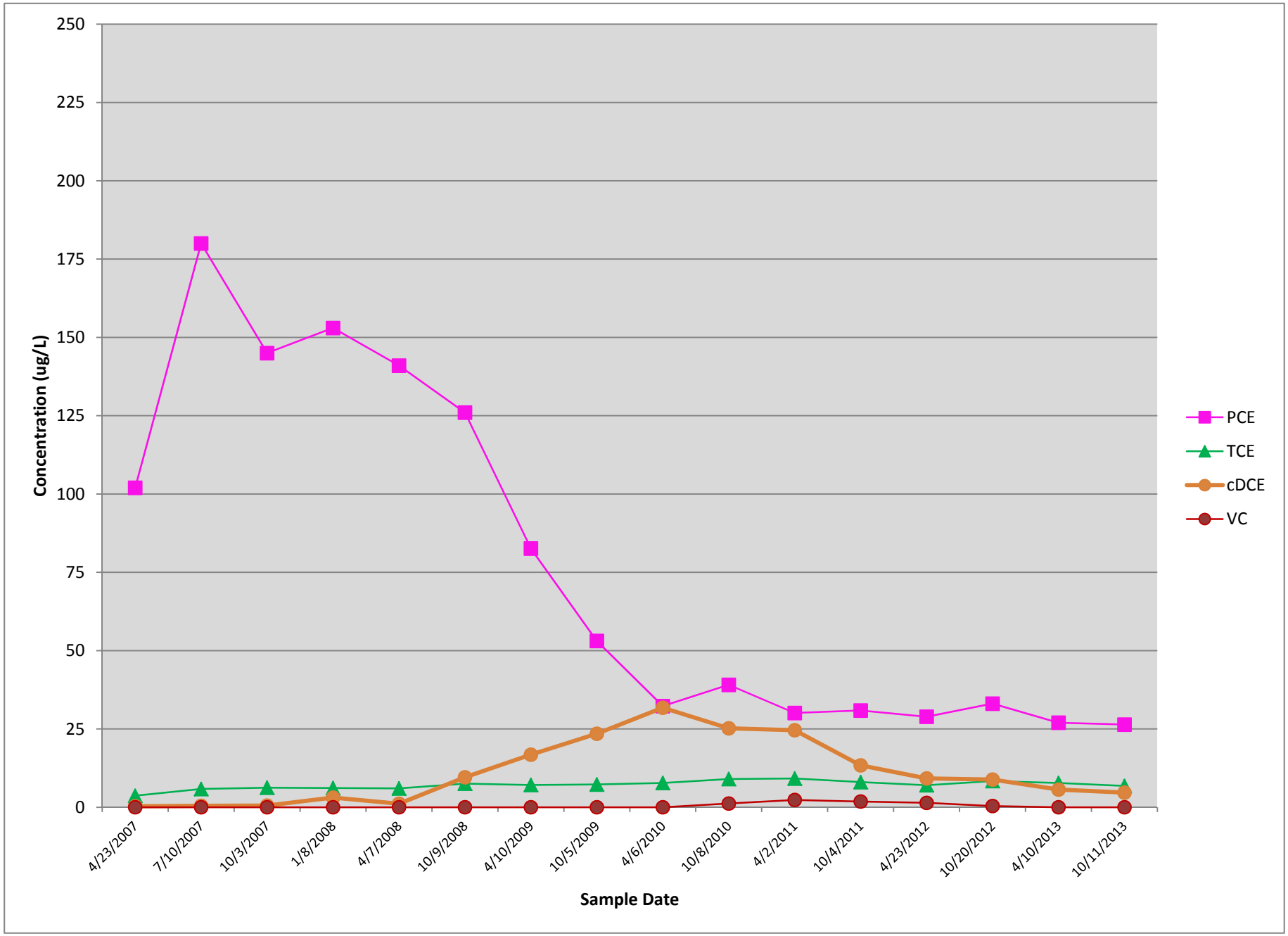
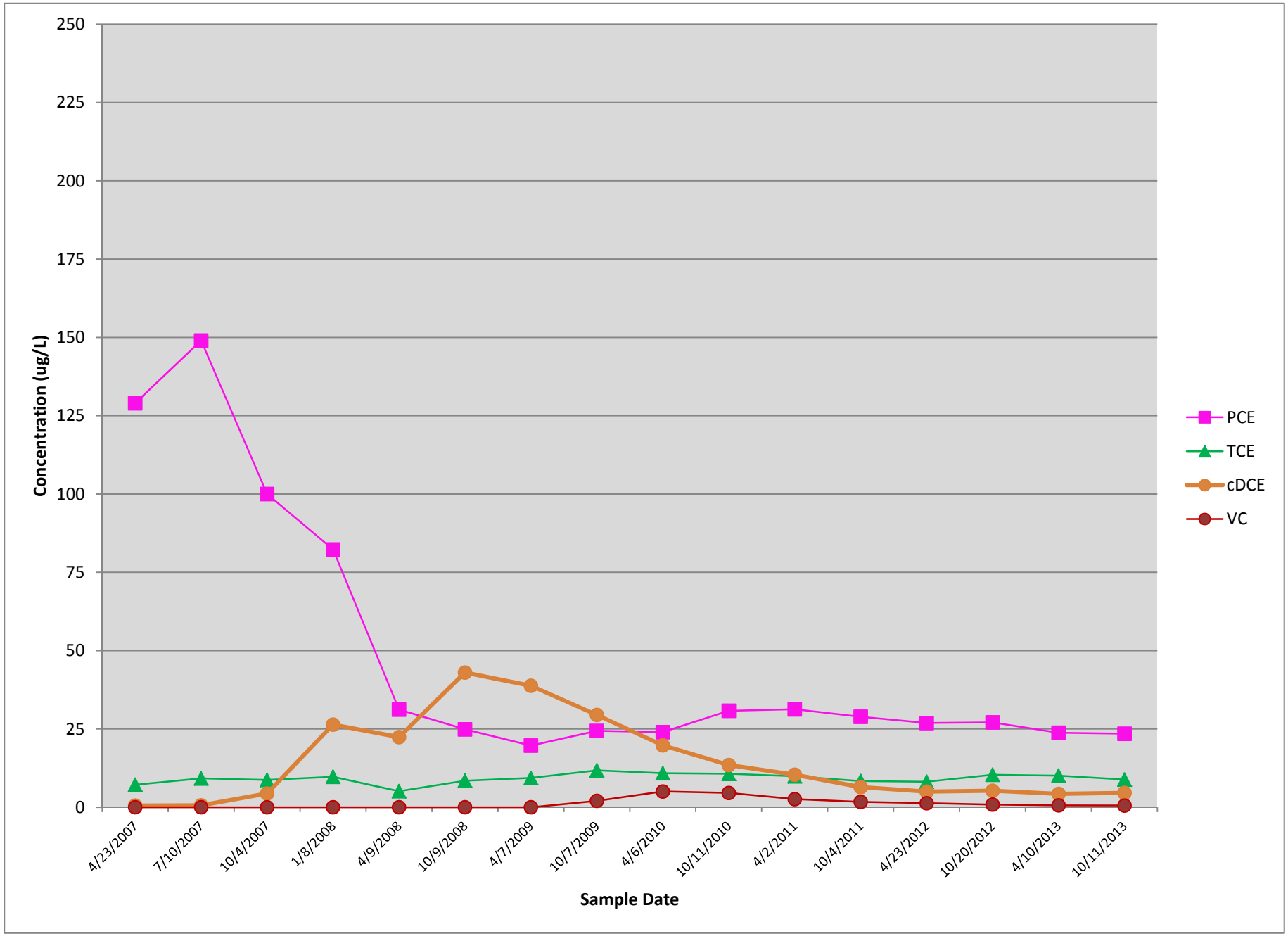
10/20/2012
4/10/2013
10/11/2013
Sample Date
PCE
TCE
cDCE
VC

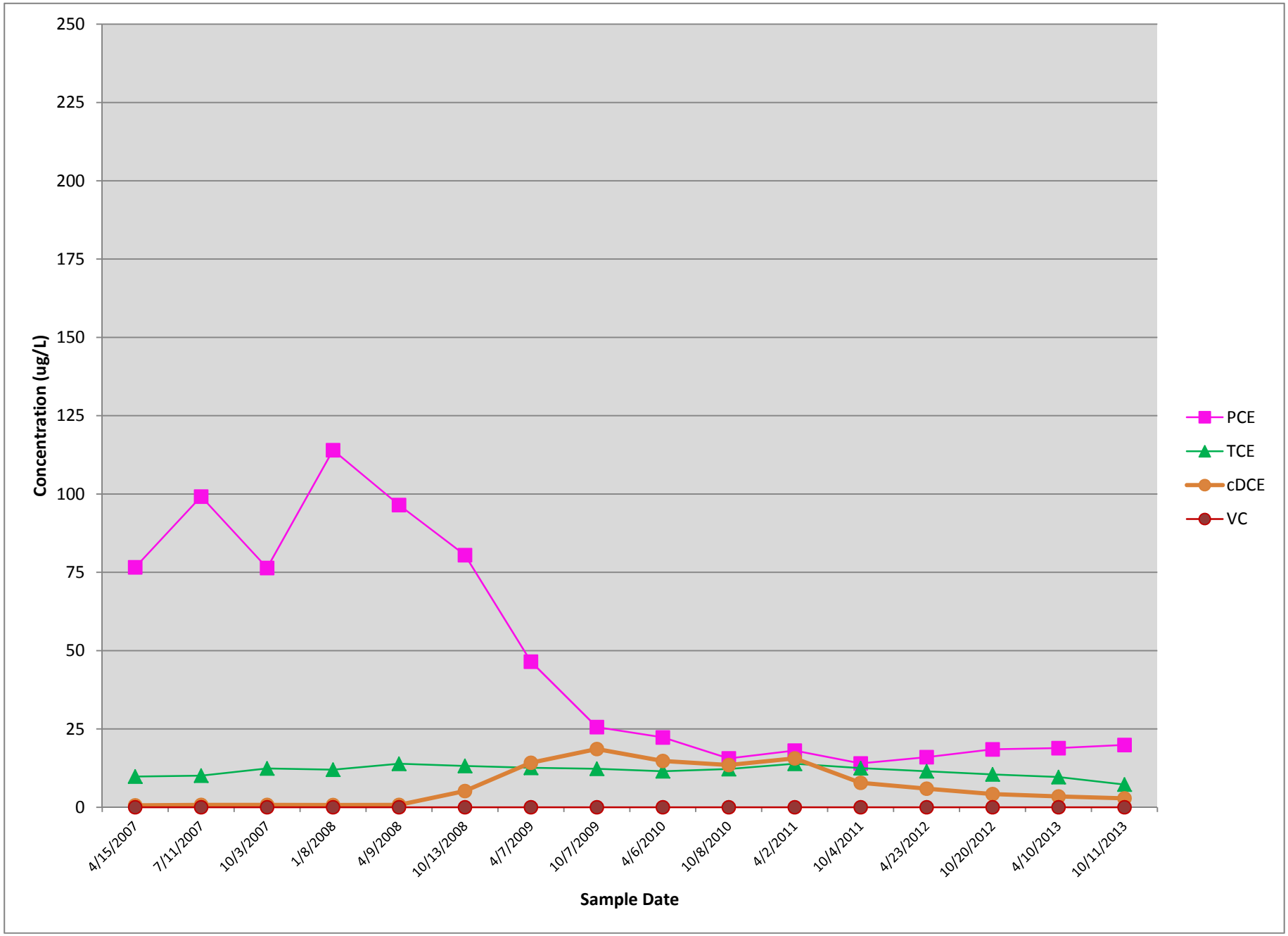
MW-205A


250
225
200
175
150
125
100
75
50
25
0
Concentration (ug/L)
4/23/2007
7/10/2007
10/3/2007
1/8/2008
4/7/2008
10/9/2008
4/10/2009
10/5/2009
4/6/2010
10/8/2010
4/2/2011
10/4/2011
4/23/2012
10/20/2012
4/10/2013
10/11/2013
Sample Date
PCE
TCE
cDCE
VC

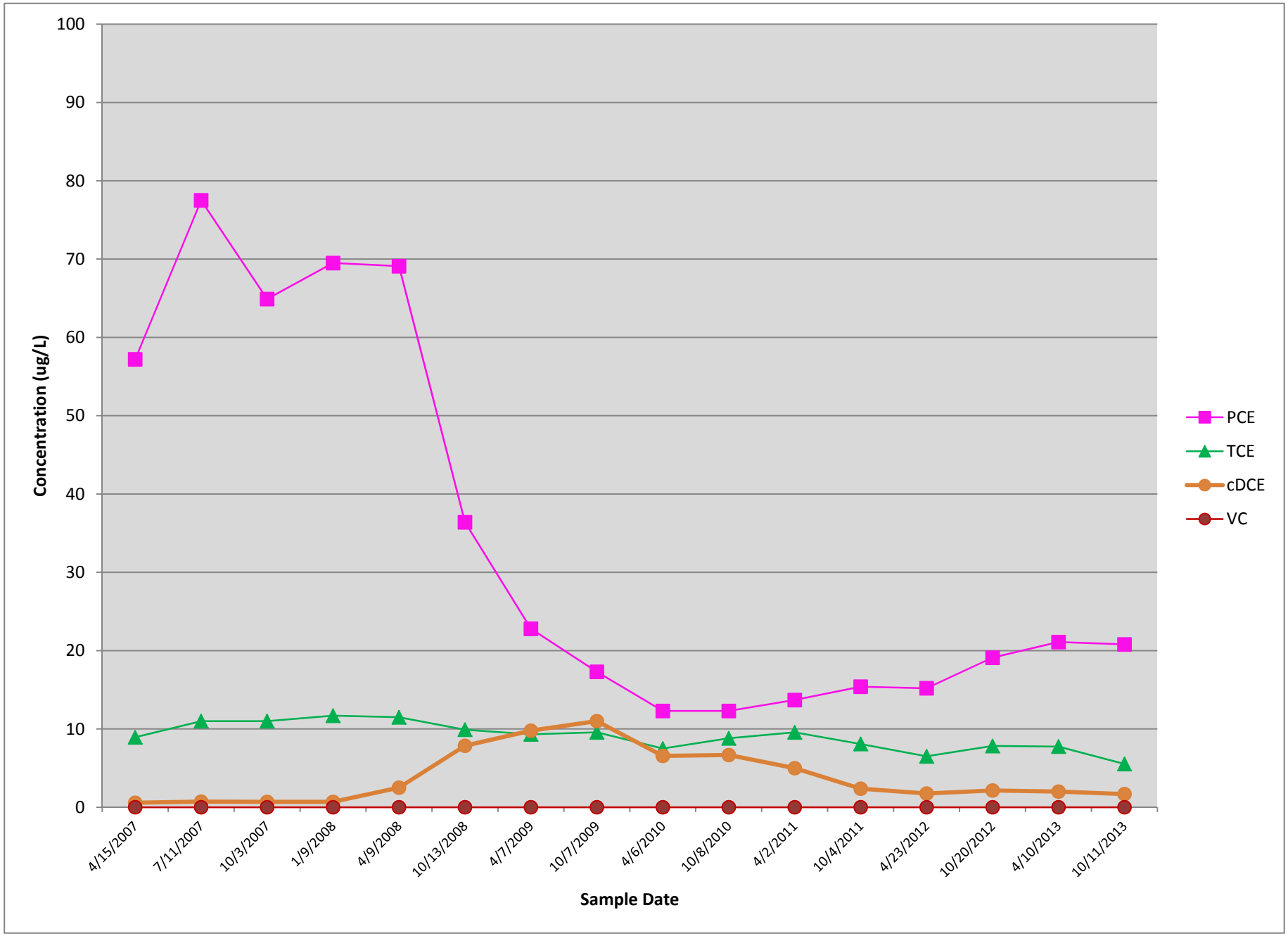
MW-205B


250
225
200
175
150
125
100
75
50
25
0
Concentration (ug/L)
4/23/2007
7/10/2007
10/4/2007
1/8/2008
4/9/2008
10/9/2008
4/7/2009
10/7/2009
4/6/2010
10/11/2010
4/2/2011
10/4/2011
4/23/2012
10/20/2012
4/10/2013
10/11/2013
Sample Date
PCE
TCE
cDCE
VC

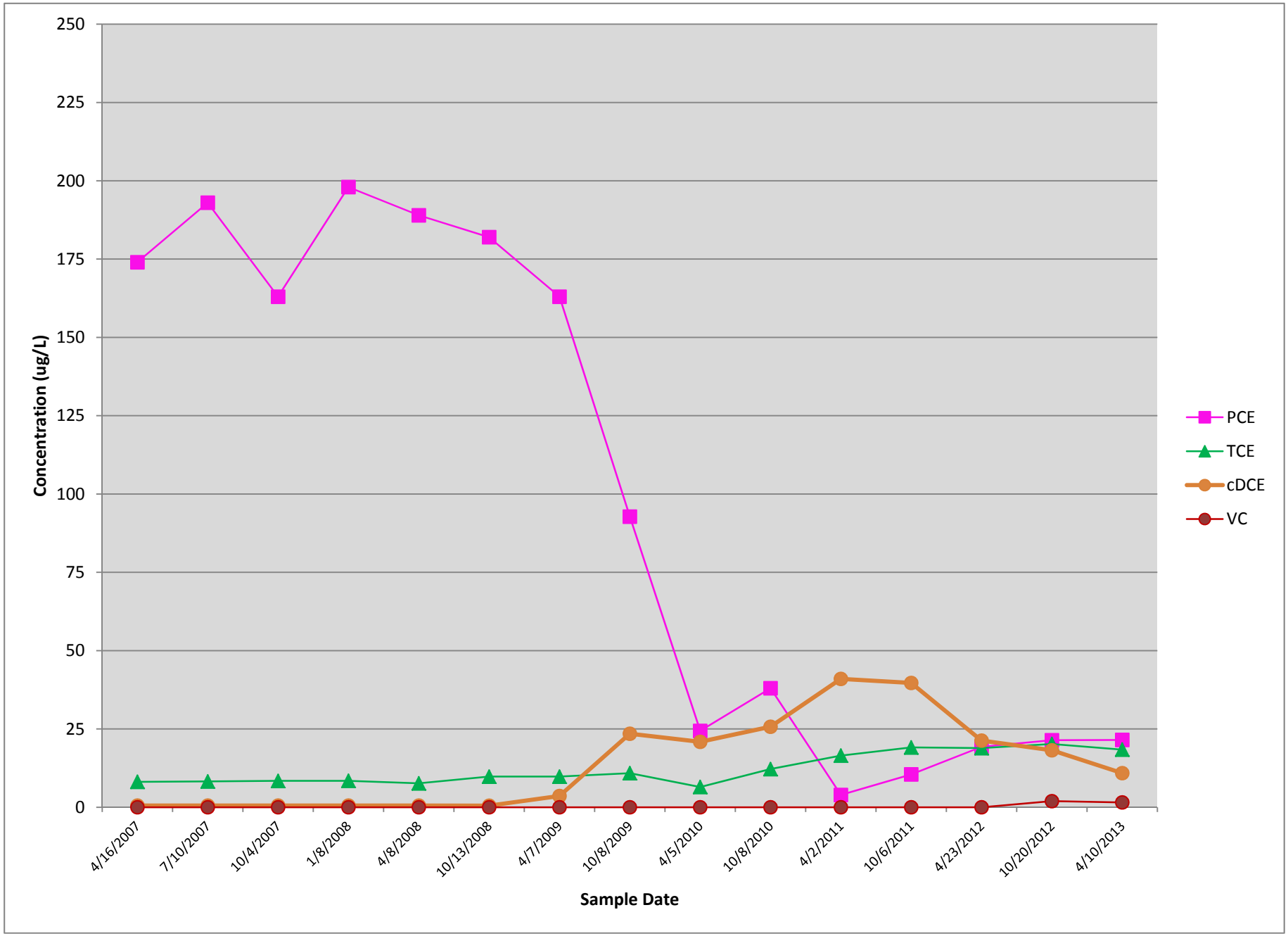
MW-206A


250
225
200
175
150
125
100
75
50
25
0
Concentration (ug/L)
4/15/2007
7/11/2007
10/3/2007
1/8/2008
4/9/2008
10/13/2008
4/7/2009
10/7/2009
4/6/2010
10/8/2010
4/2/2011
10/4/2011
4/23/2012
10/20/2012
4/10/2013
10/11/2013
Sample Date
PCE
TCE
cDCE
VC

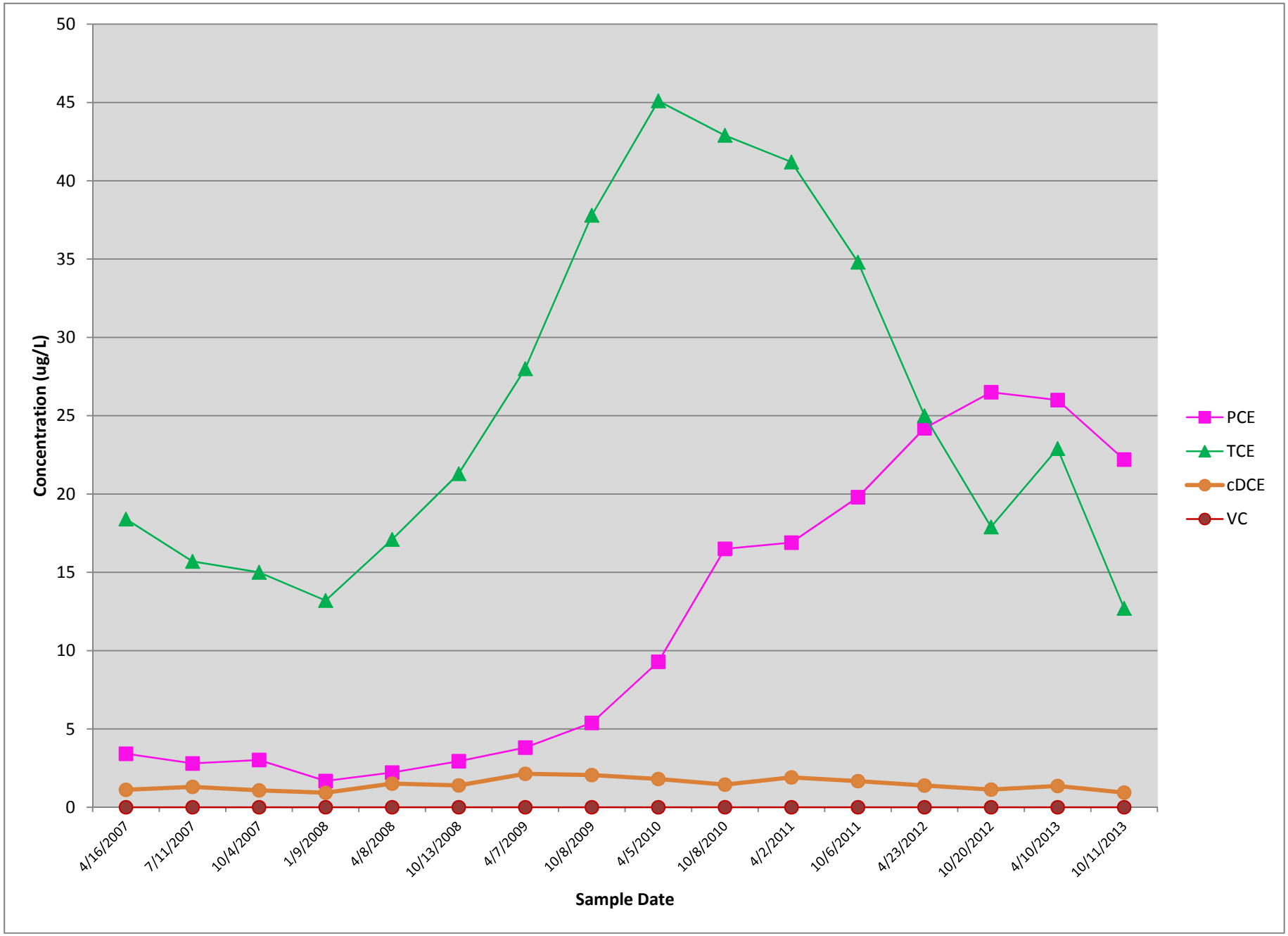
MW-206B


100
90
80
70
60
50
40
30
20
10
0
Concentration (ug/L)
4/15/2007
7/11/2007
10/3/2007
1/9/2008
4/9/2008
10/13/2008
4/7/2009
10/7/2009
4/6/2010
10/8/2010
4/2/2011
10/4/2011
4/23/2012
10/20/2012
4/10/2013
10/11/2013
Sample Date
PCE
TCE
cDCE
VC

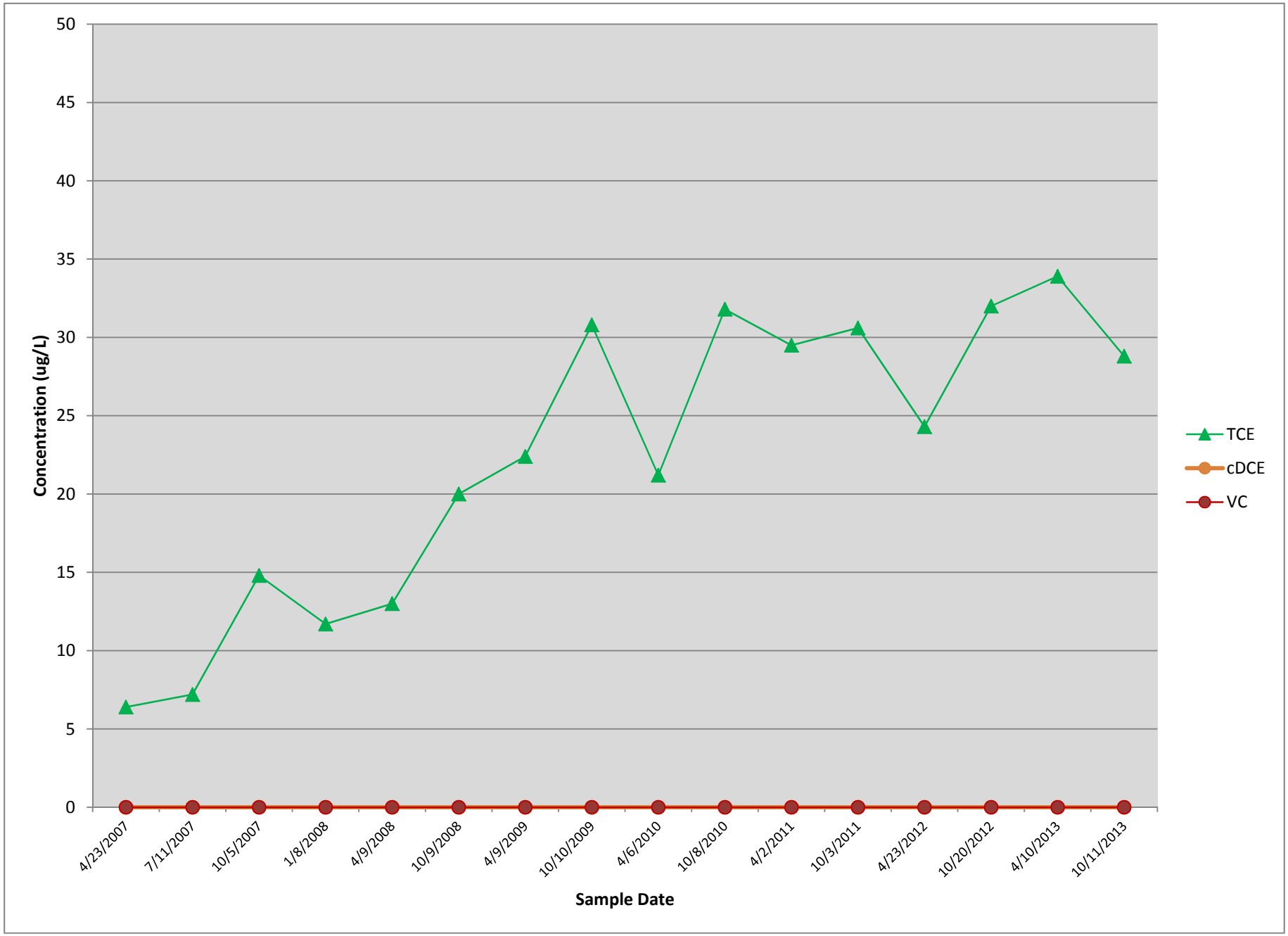
MW-208A


250
225
200
175
150
125
100
75
50
25
0
Concentration (ug/L)
4/16/2007
7/10/2007
10/4/2007
1/8/2008
4/8/2008
10/13/2008
4/7/2009
10/8/2009
4/5/2010
10/8/2010
4/2/2011
10/6/2011
4/23/2012
10/20/2012
4/10/2013
Sample Date
PCE
TCE
cDCE
VC

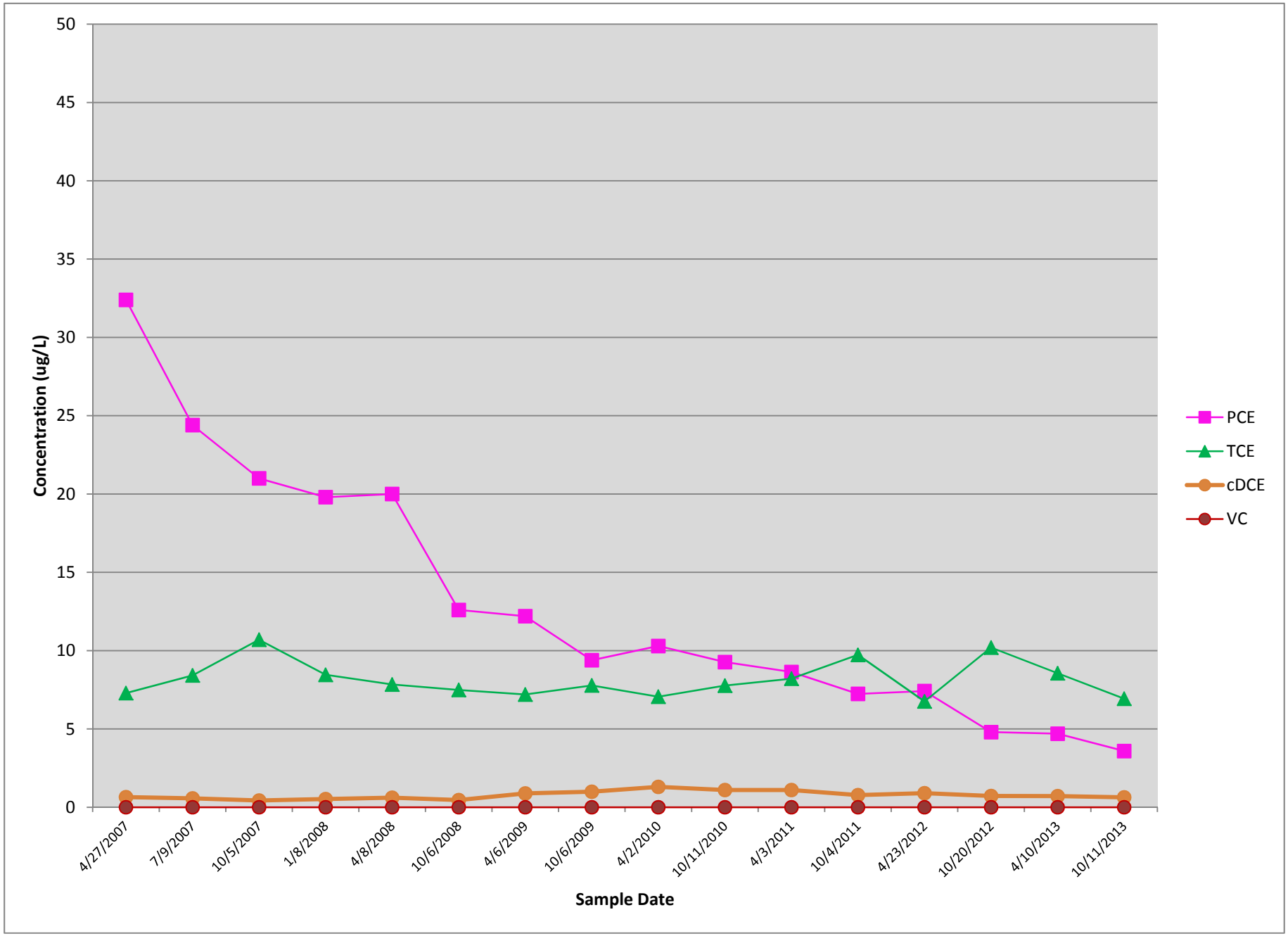
MW-208B


50
45
40
35
30
25
20
15
10
5
0
Concentration (ug/L)
4/16/2007
7/11/2007
10/4/2007
1/9/2008
4/8/2008
10/13/2008
4/7/2009
10/8/2009
4/5/2010
10/8/2010
4/2/2011
10/6/2011
4/23/2012
10/20/2012
4/10/2013
10/11/2013
Sample Date
PCE
TCE
cDCE
VC

MW-209B


50
45
40
35
30
25
20
15
10
5
0
Concentration (ug/L)
4/23/2007
7/11/2007
10/5/2007
1/8/2008
4/9/2008
10/9/2008
4/9/2009
10/10/2009
4/6/2010
10/8/2010
4/2/2011
10/3/2011
4/23/2012
10/20/2012
4/10/2013
10/11/2013
Sample Date
TCE
cDCE
VC

MW-210B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35
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25
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15
10
5
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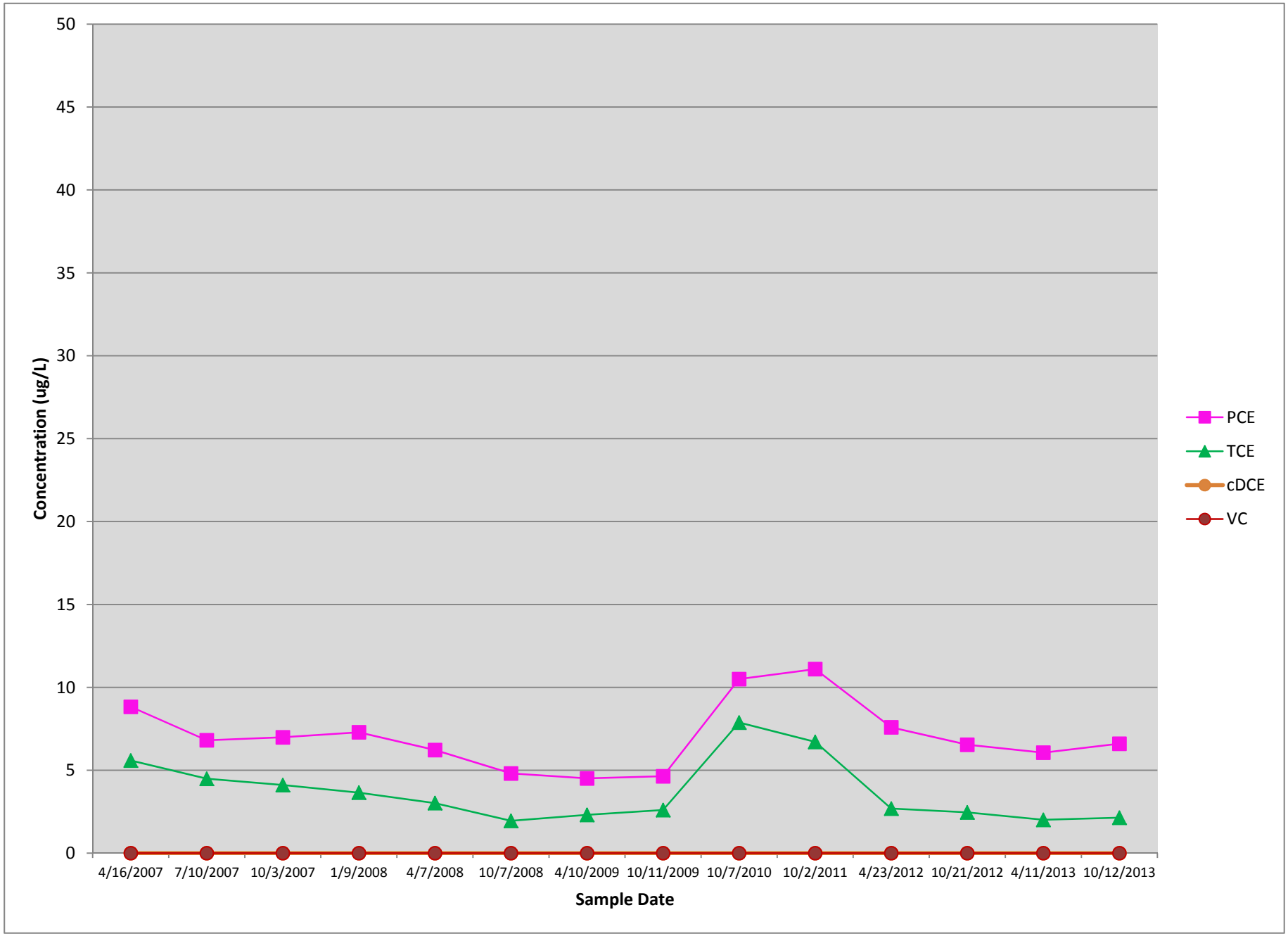
Concentration (ug/L)
4/27/2007
7/9/2007
10/5/2007
1/8/2008
4/8/2008
10/6/2008
4/6/2009
10/6/2009
4/2/2010
10/11/2010
4/3/2011
10/4/2011
4/23/2012
10/20/2012
4/10/2013
10/11/2013
Sample Date
PCE
TCE
cDCE
VC

MW-214A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15
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4/16/2007
7/10/2007
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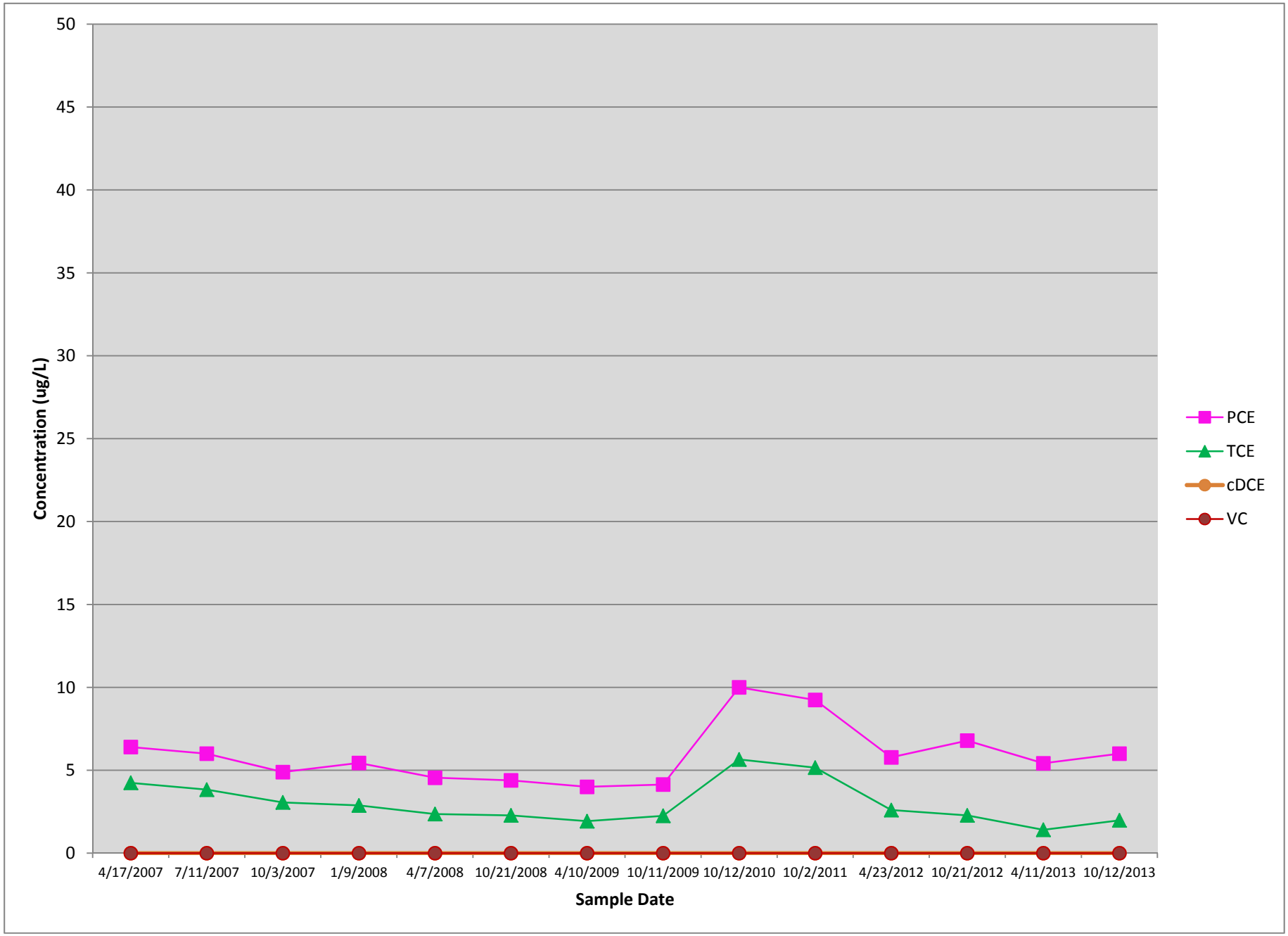
1/9/2008
4/7/2008
10/7/2008
4/10/2009
10/11/2009
10/7/2010
10/2/2011
4/23/2012
10/21/2012
4/11/2013
10/12/2013
Sample Date
PCE
TCE
cDCE
VC

MW-214B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25
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10
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Concentration (ug/L)
4/17/2007
7/11/2007
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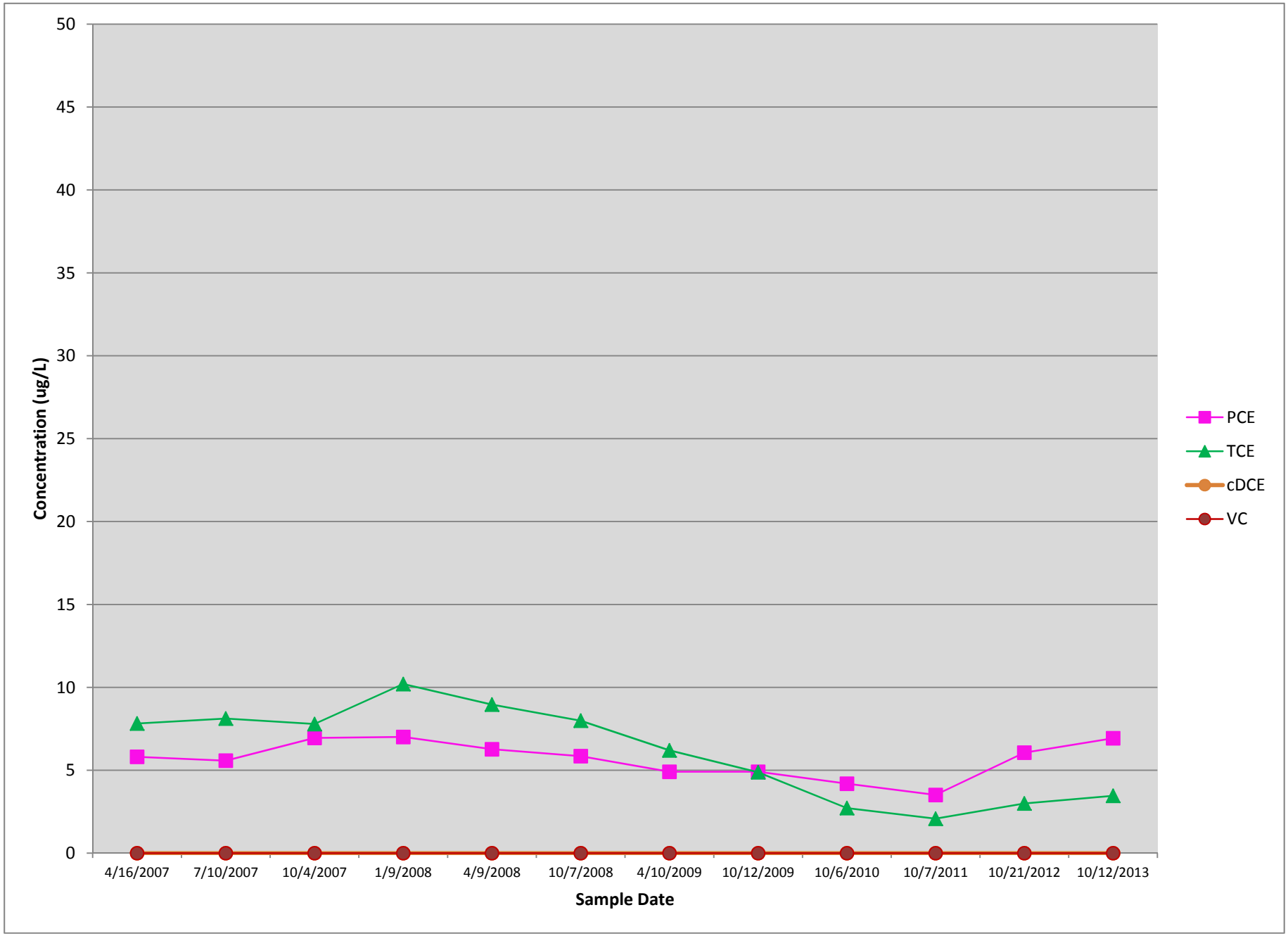
1/9/2008
4/7/2008
10/21/2008
4/10/2009
10/11/2009
10/12/2010
10/2/2011
4/23/2012
10/21/2012
4/11/2013
10/12/2013
Sample Date
PCE
TCE
cDCE
VC

MW-215A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30
25
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15
10
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Concentration (ug/L)
4/16/2007
7/10/2007
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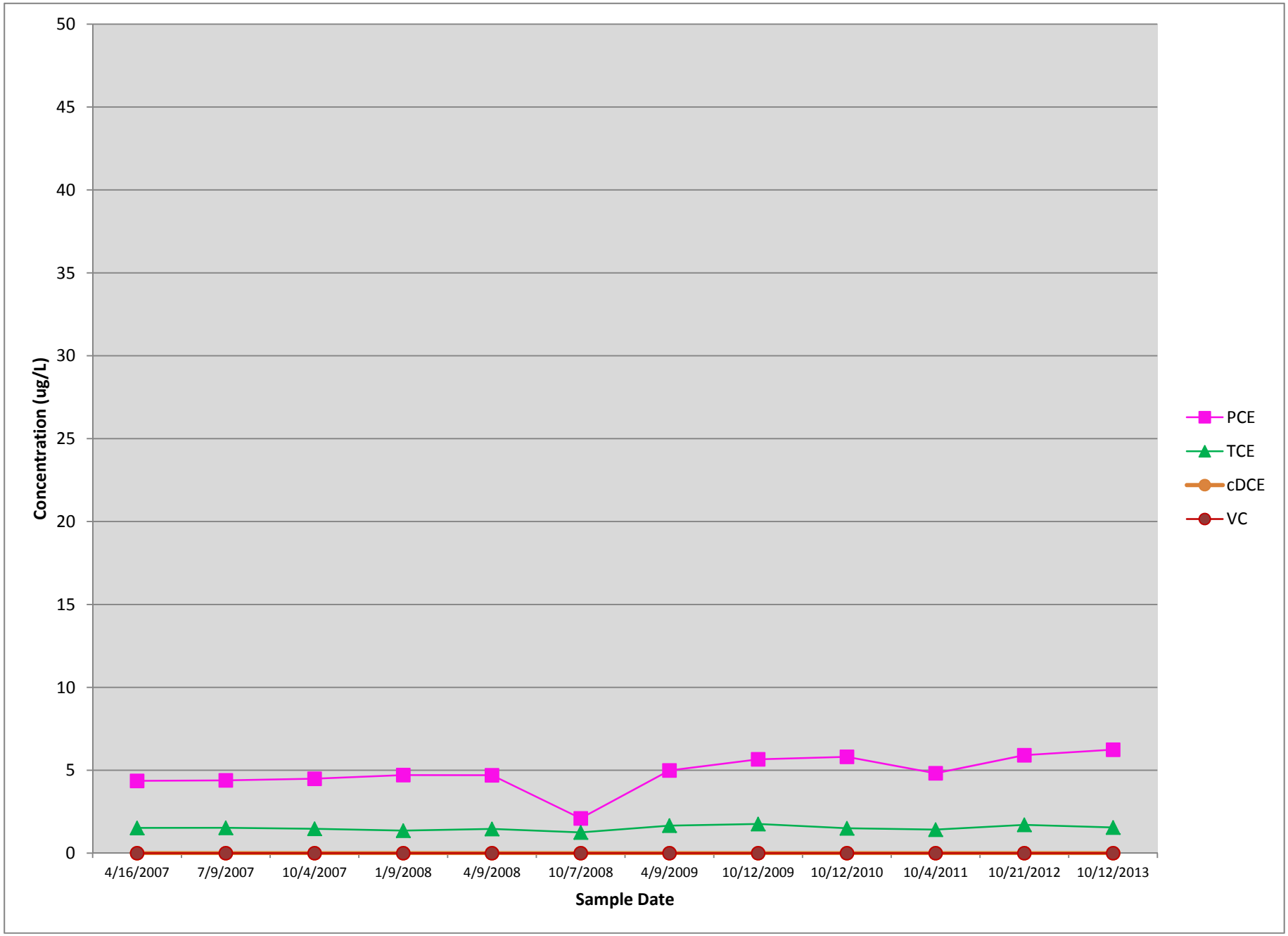
1/9/2008
4/9/2008
10/7/2008
4/10/2009
10/12/2009
10/6/2010
10/7/2011
10/21/2012
10/12/2013
Sample Date
PCE
TCE
cDCE
VC

MW-215B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25
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15
10
5
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Concentration (ug/L)
4/16/2007
7/9/2007
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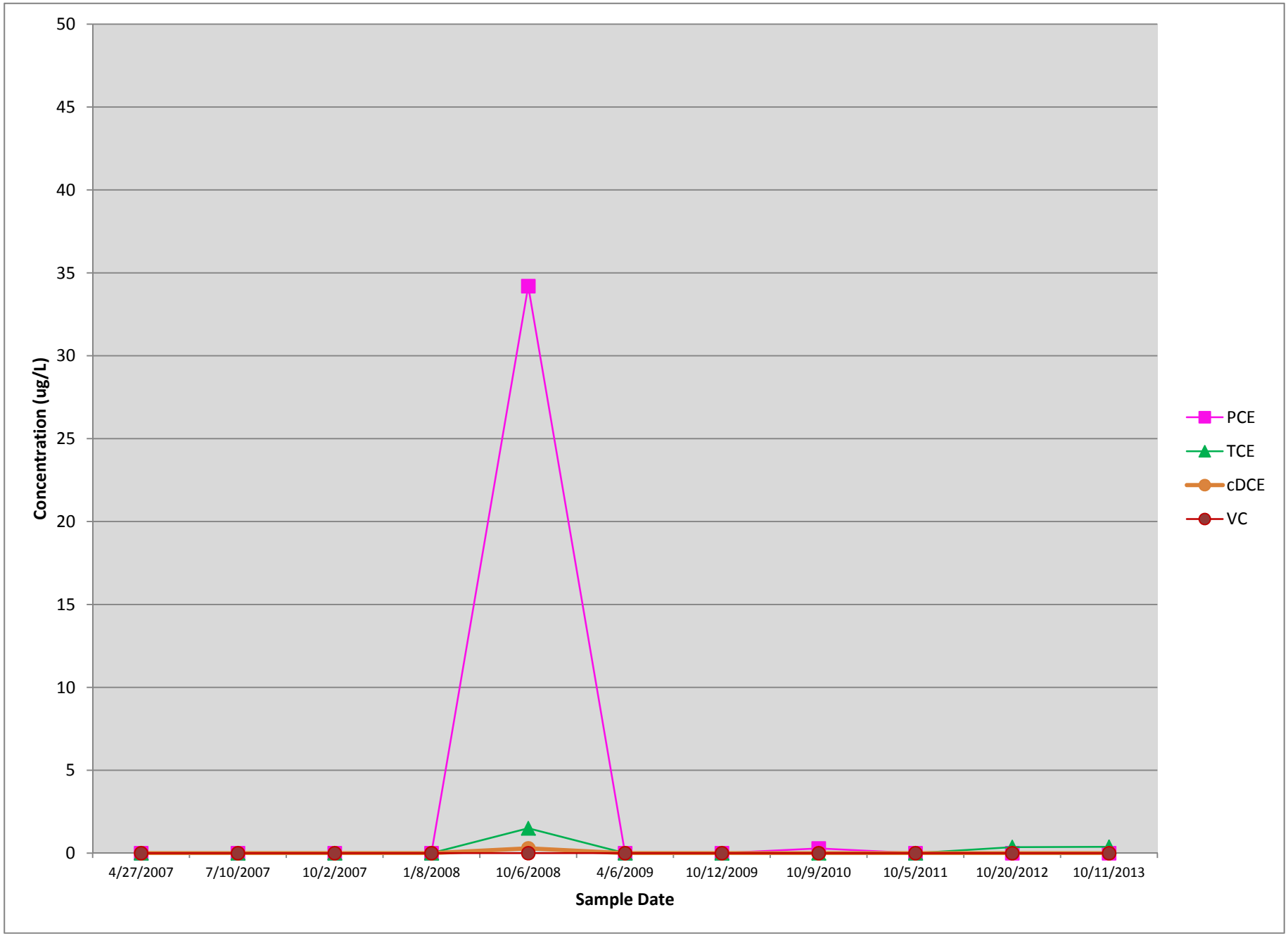
1/9/2008
4/9/2008
10/7/2008
4/9/2009
10/12/2009
10/12/2010
10/4/2011
10/21/2012
10/12/2013
Sample Date
PCE
TCE
cDCE
VC

MW-216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30
25
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15
10
5
0
Concentration (ug/L)
4/27/2007
7/10/2007
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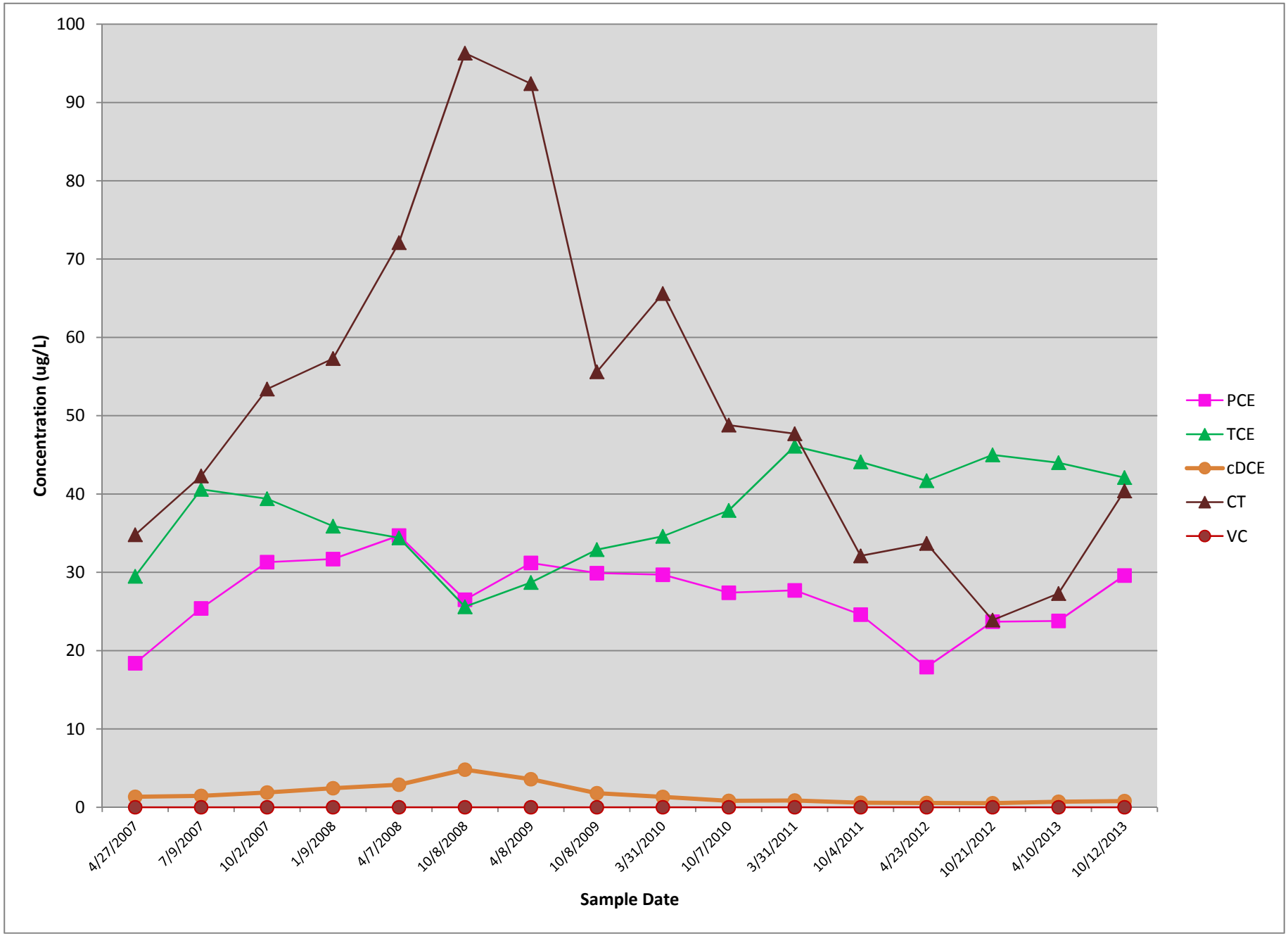
1/8/2008
10/6/2008
4/6/2009
10/12/2009
10/9/2010
10/5/2011
10/20/2012
10/11/2013
Sample Date
PCE
TCE
cDCE
VC

MW-217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20
10
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4/27/2007
7/9/2007
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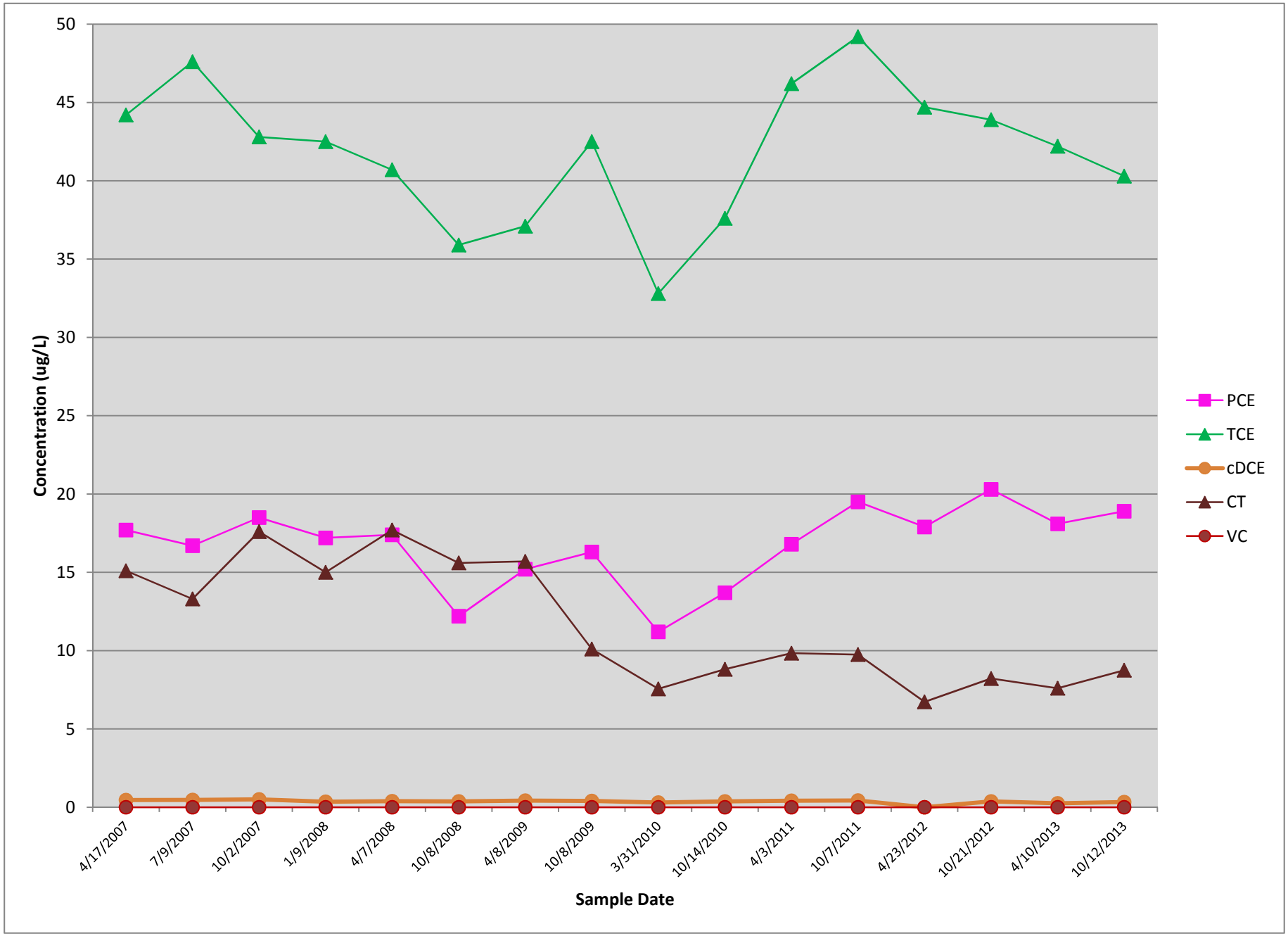
1/9/2008
4/7/2008
10/8/2008
4/8/2009
10/8/2009
3/31/2010
10/7/2010
3/31/2011
10/4/2011
4/23/2012
10/21/2012
4/10/2013
10/12/2013
Sample Date
PCE
TCE
cDCE
CT
VC

MW-218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45
40
35
30
25
20
15
10
5
0
Concentration (ug/L)
4/17/2007
7/9/2007
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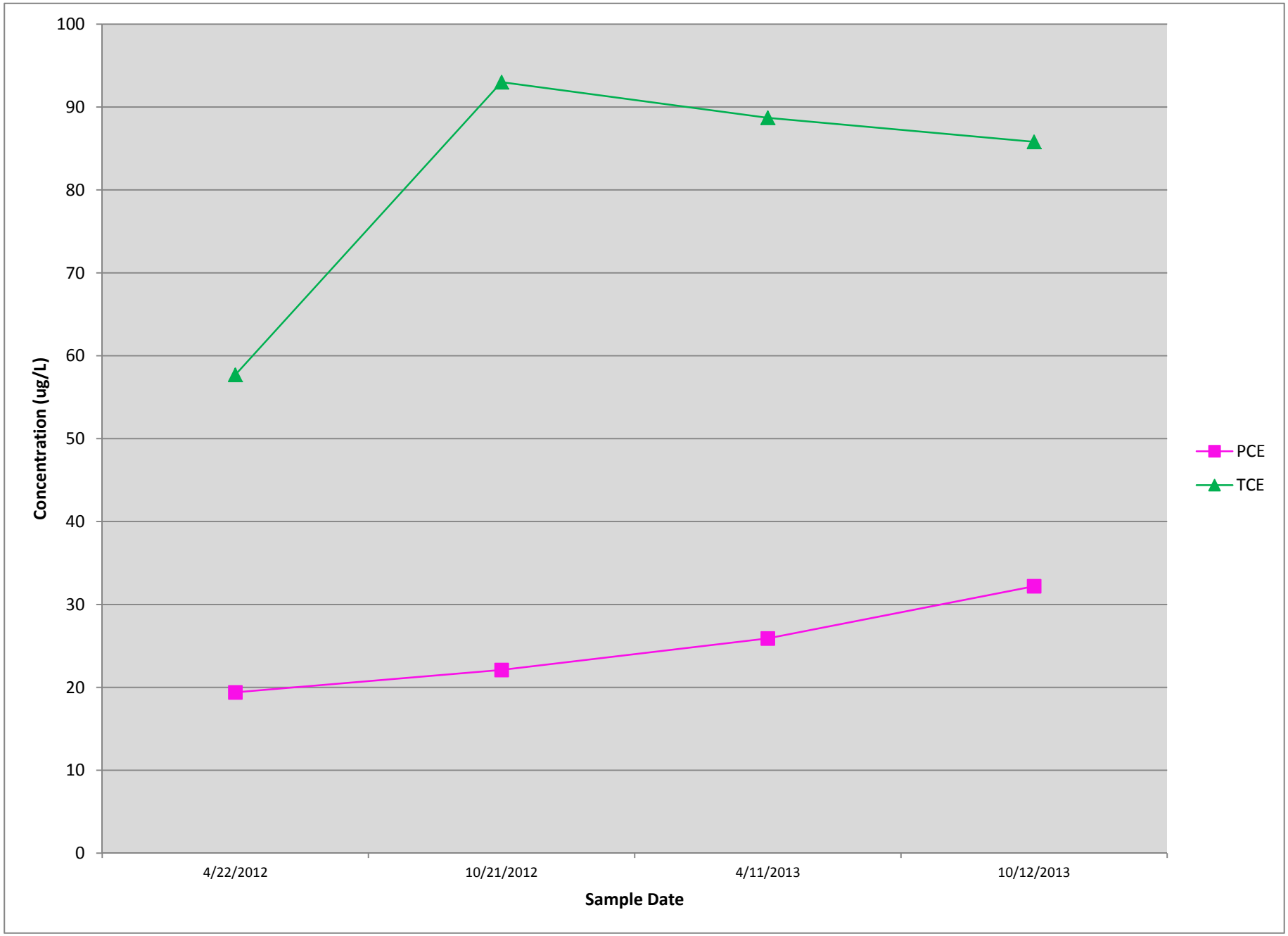
1/9/2008
4/7/2008
10/8/2008
4/8/2009
10/8/2009
3/31/2010
10/14/2010
4/3/2011
10/7/2011
4/23/2012
10/21/2012
4/10/2013
10/12/2013
Sample Date
PCE
TCE
cDCE
CT
VC

MW-258


100
90
80
70
60
50
40
30
20
10
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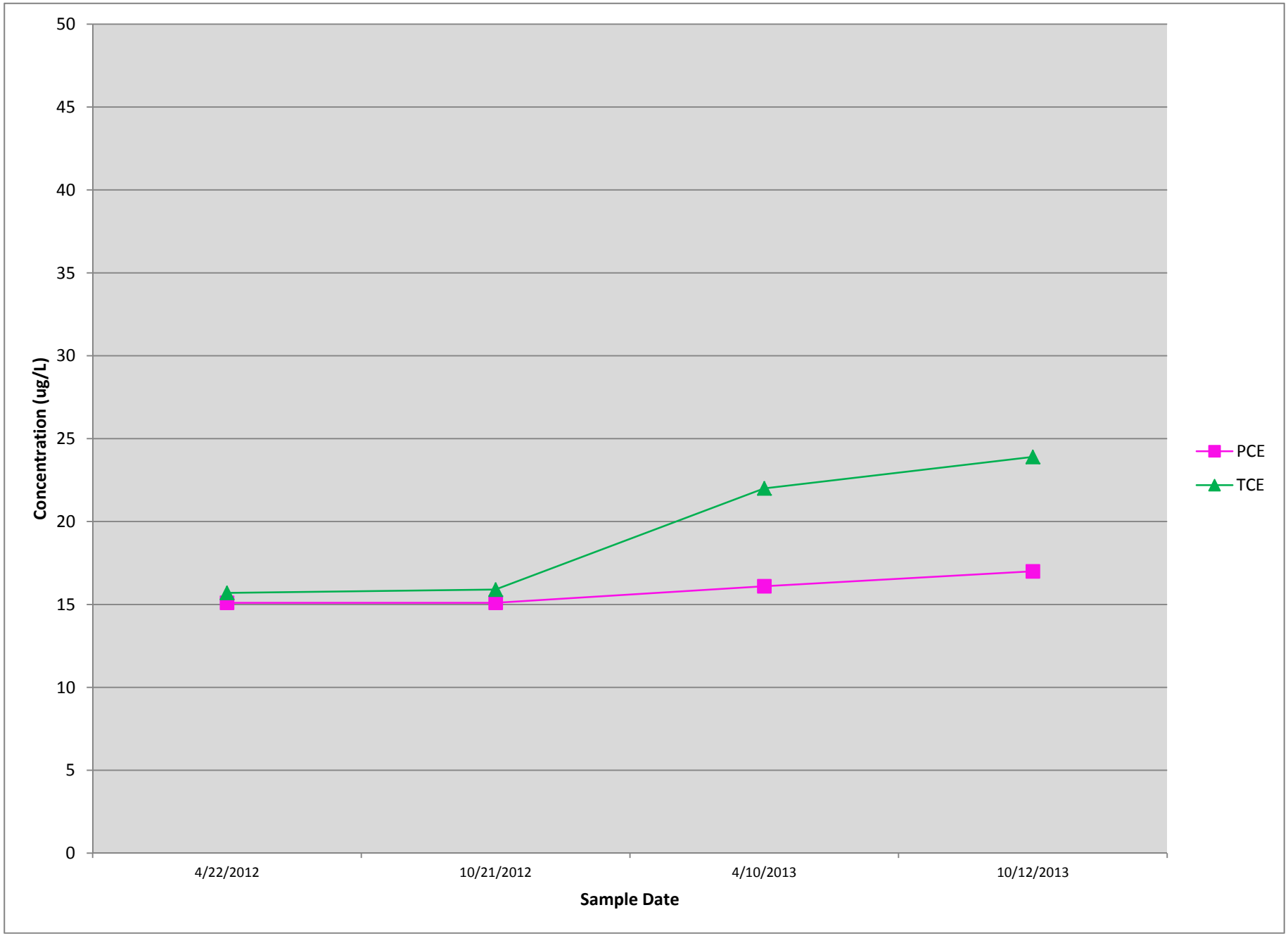
Concentration (ug/L)
4/22/2012
10/21/2012
4/11/2013
10/12/2013
Sample Date
PCE
TCE

MW-259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45
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35
30
25
20
15
10
5
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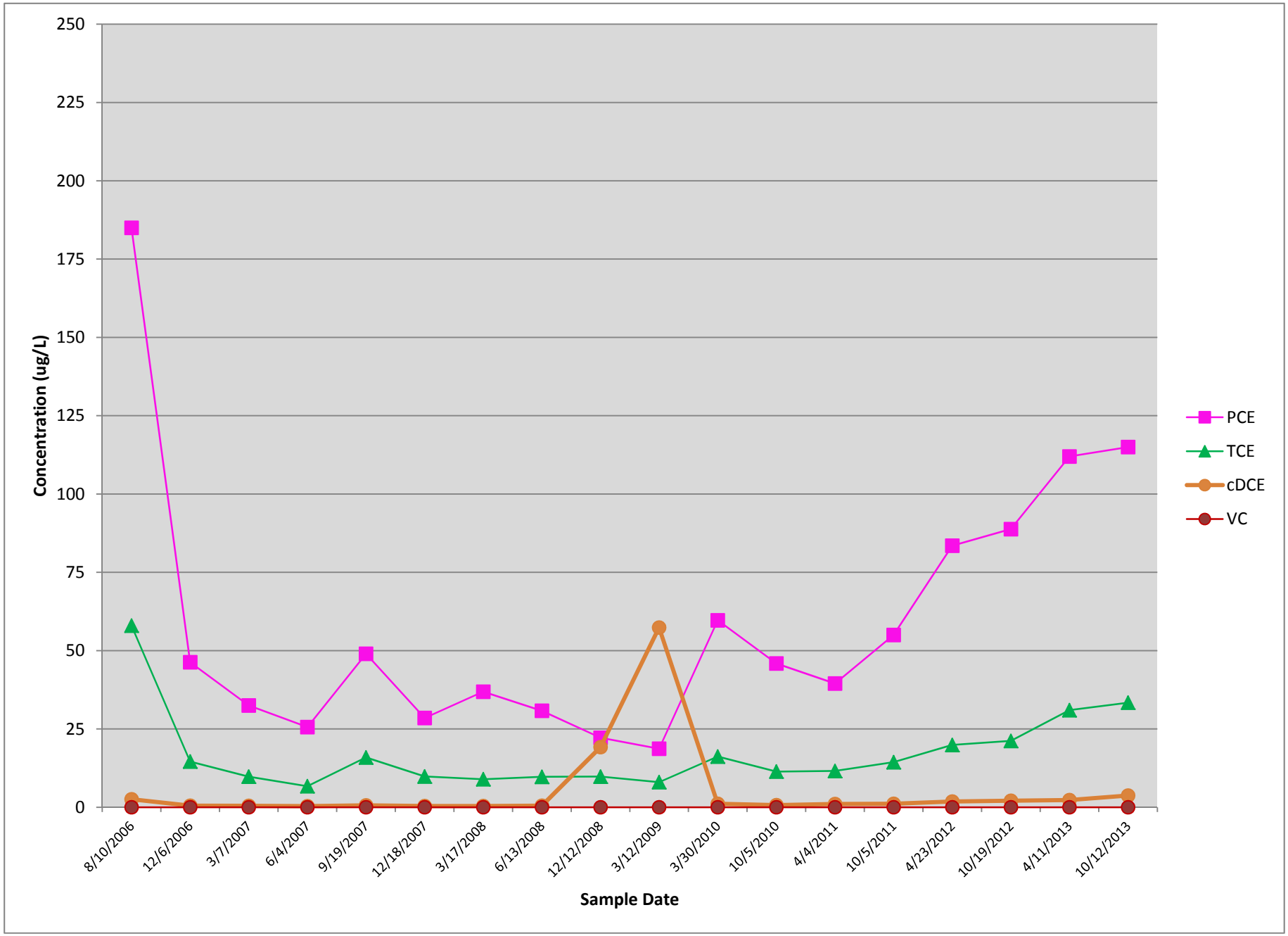
Concentration (ug/L)
4/22/2012
10/21/2012
4/10/2013
10/12/2013
Sample Date
PCE
TCE

PMW21-03


250
225
200
175
150
125
100
75
50
25
0
Concentration (ug/L)
8/10/2006
12/6/2006
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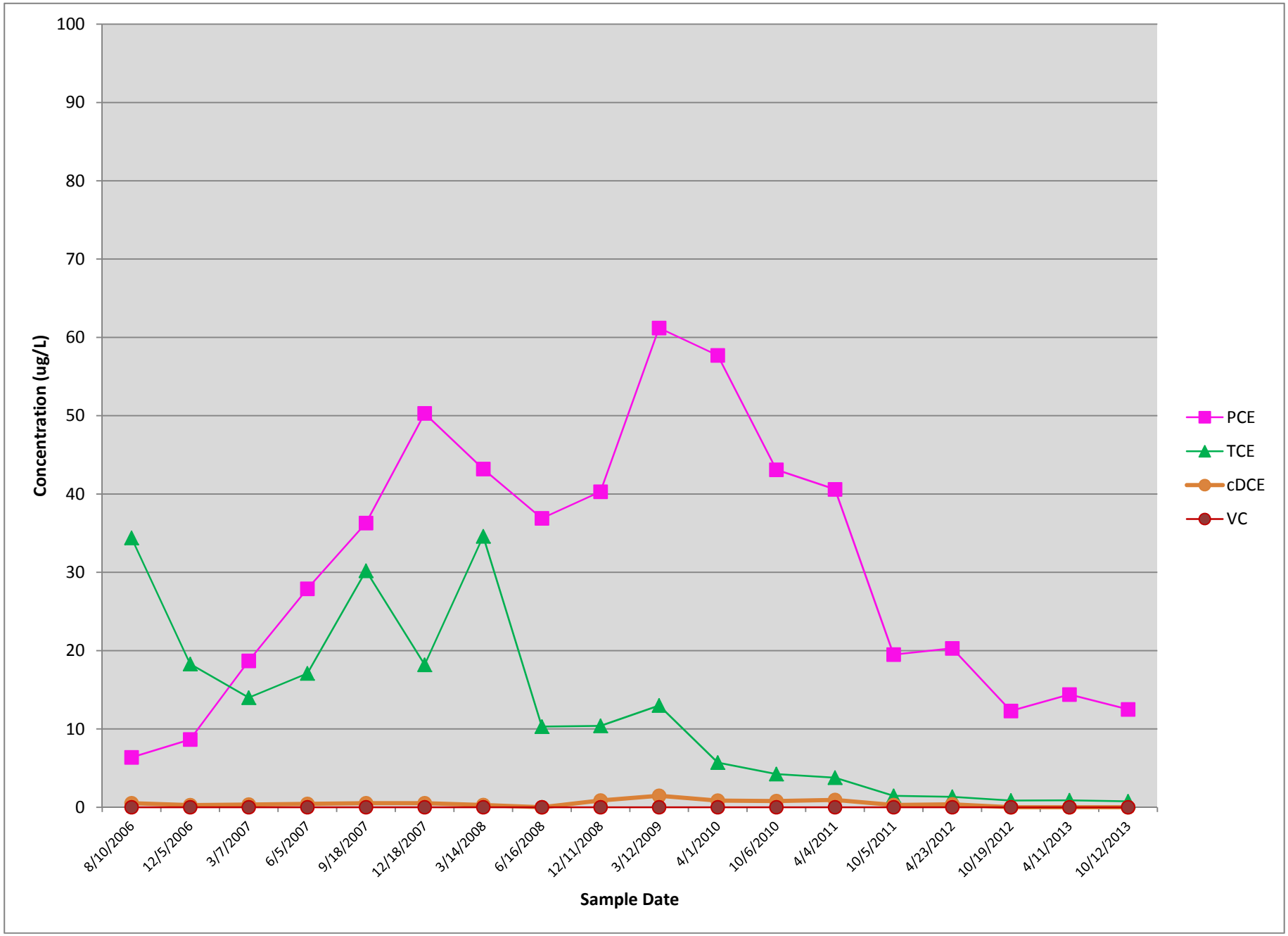
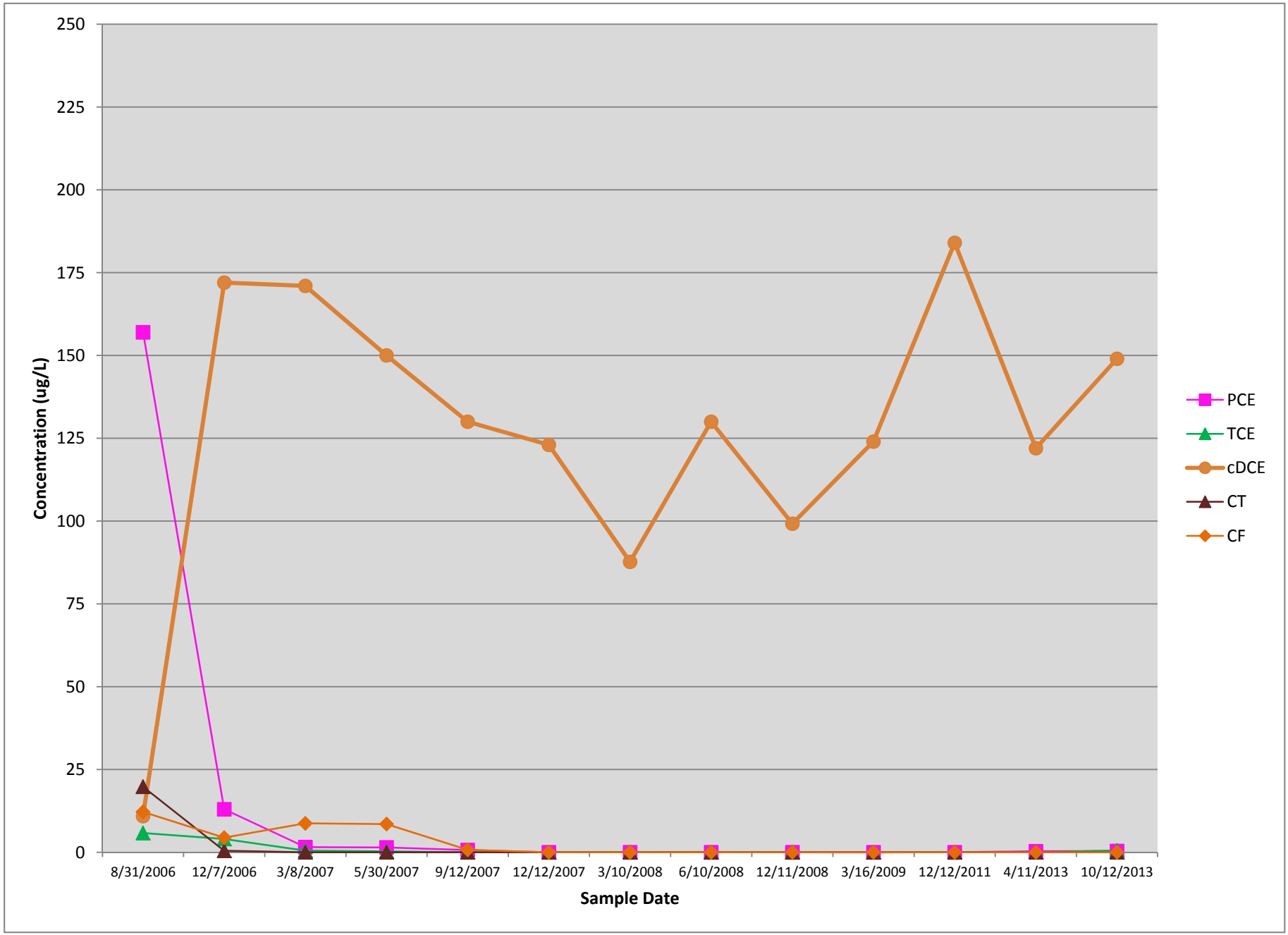
6/4/2007
9/19/2007
12/18/2007
3/17/2008
6/13/2008
12/12/2008
3/12/2009
3/30/2010
10/5/2010
4/4/2011
10/5/2011
4/23/2012
10/19/2012
4/11/2013
10/12/2013
Sample Date
PCE
TCE
cDCE
VC

PMW21-05


100
90
80
70
60
50
40
30
20
10
0
Concentration (ug/L)
8/10/2006
12/5/2006
3/7/2007
6/5/2007
9/18/2007
12/18/2007
3/14/2008
6/16/2008
12/11/2008
3/12/2009
4/1/2010
10/6/2010
4/4/2011
10/5/2011
4/23/2012
10/19/2012
4/11/2013
10/12/2013
Sample Date
PCE
TCE
cDCE
VC

PMW92-02


250
225
200
175
150
125
100
75
50
25
0
Concentration (ug/L)
8/31/2006
12/7/2006
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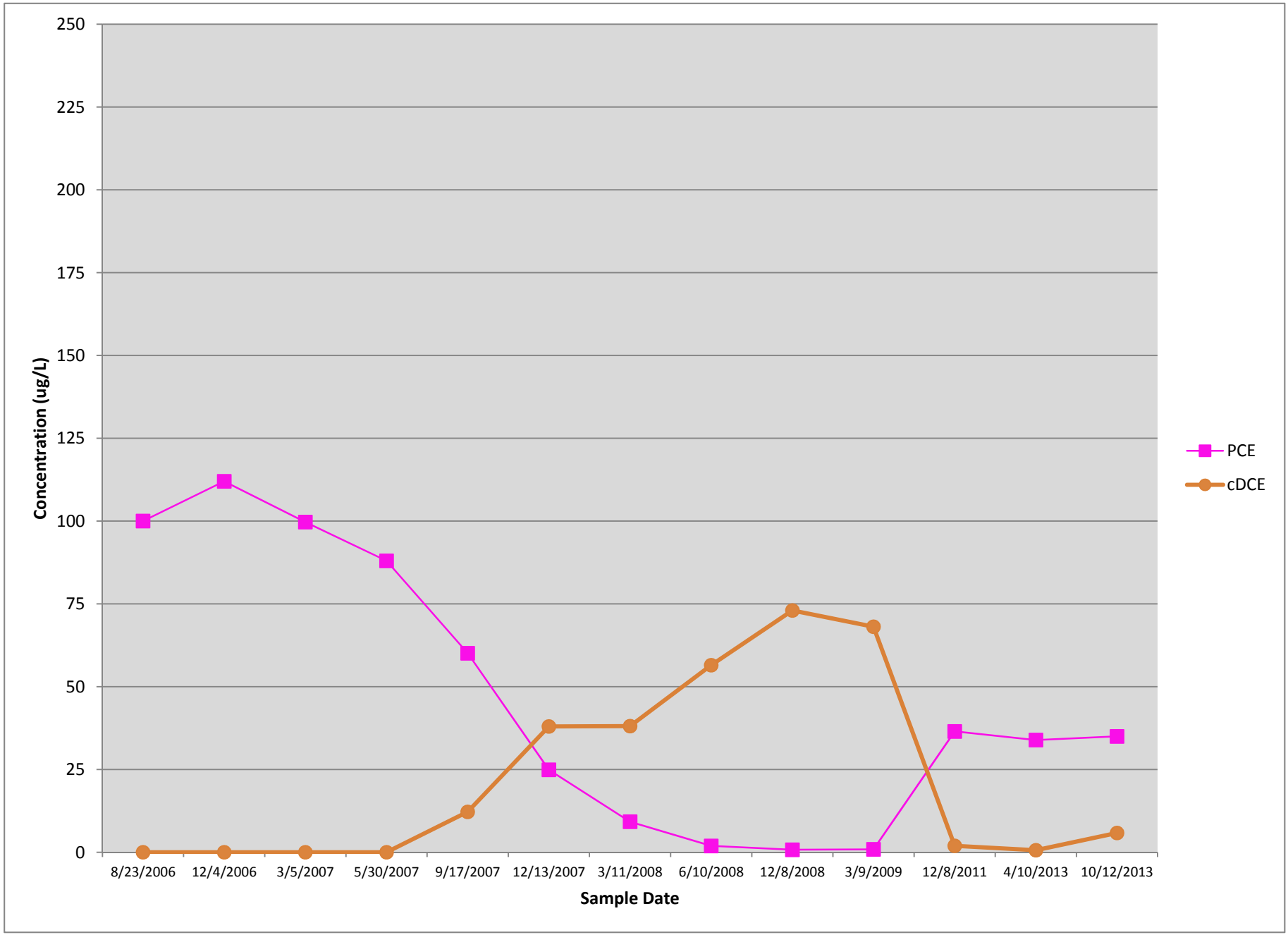
9/12/2007
12/12/2007
3/10/2008
6/10/2008
12/11/2008
3/16/2009
12/12/2011
4/11/2013
10/12/2013
Sample Date
PCE
TCE
cDCE
CT
CF

PMW101-03A


250
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200
175
150
125
100
75
50
25
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Concentration (ug/L)
8/23/2006
12/4/2006
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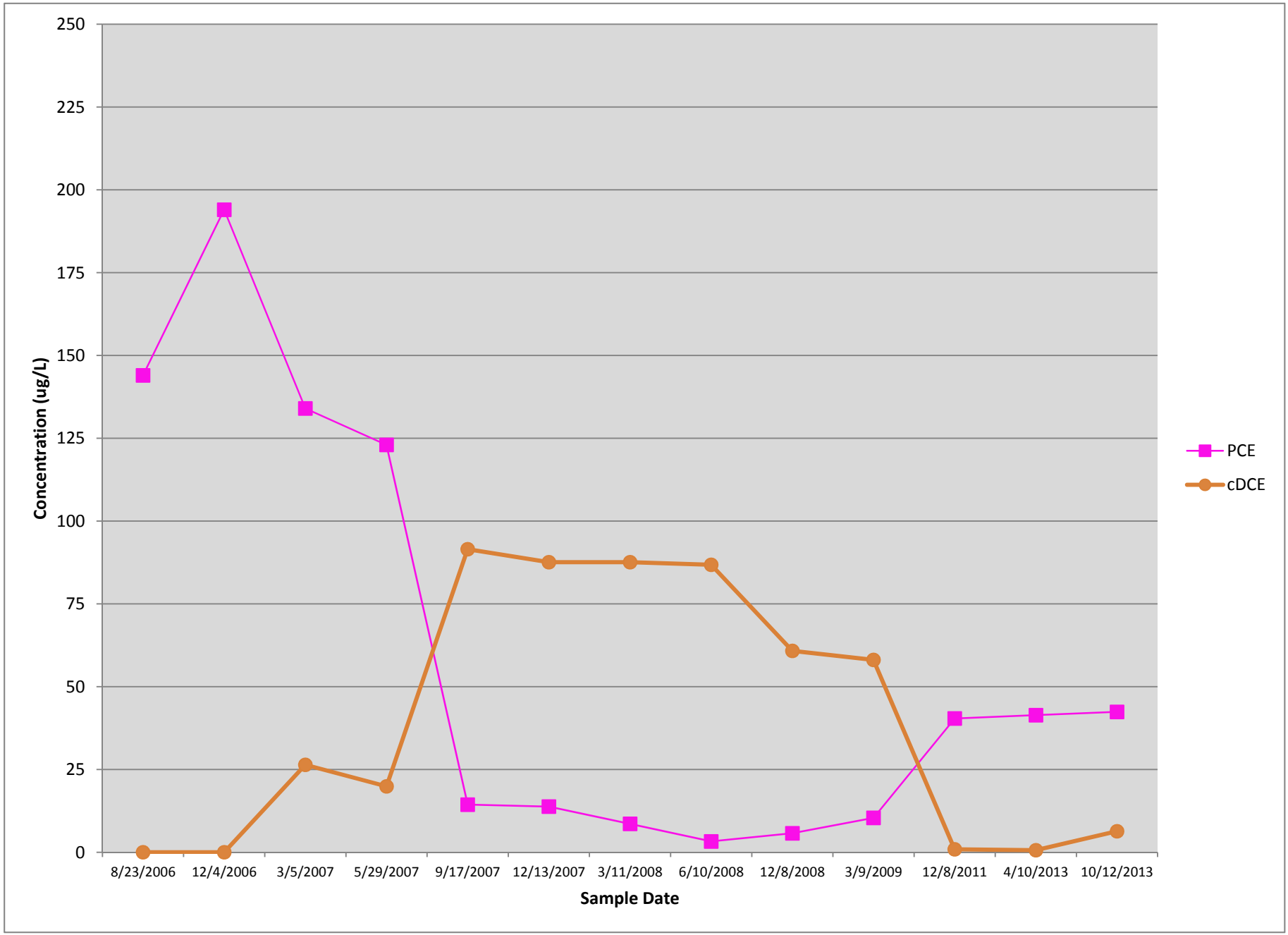
9/17/2007
12/13/2007
3/11/2008
6/10/2008
12/8/2008
3/9/2009
12/8/2011
4/10/2013
10/12/2013
Sample Date
PCE
cDCE

PMW101-03B


250
225
200
175
150
125
100
75
50
25
0
Concentration (ug/L)
8/23/2006
12/4/2006
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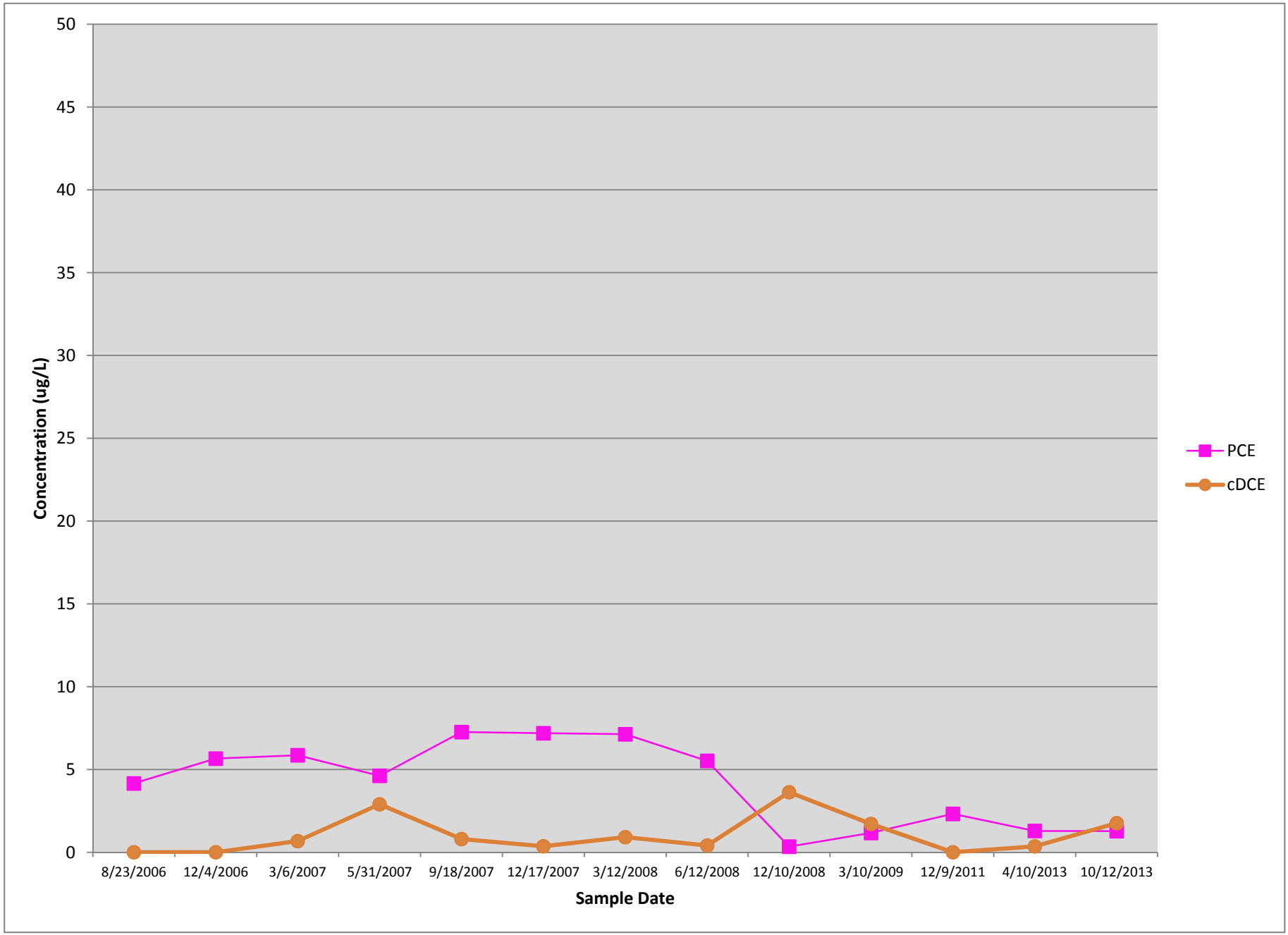
9/17/2007
12/13/2007
3/11/2008
6/10/2008
12/8/2008
3/9/2009
12/8/2011
4/10/2013
10/12/2013
Sample Date
PCE
cDCE

PMW101-06A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45
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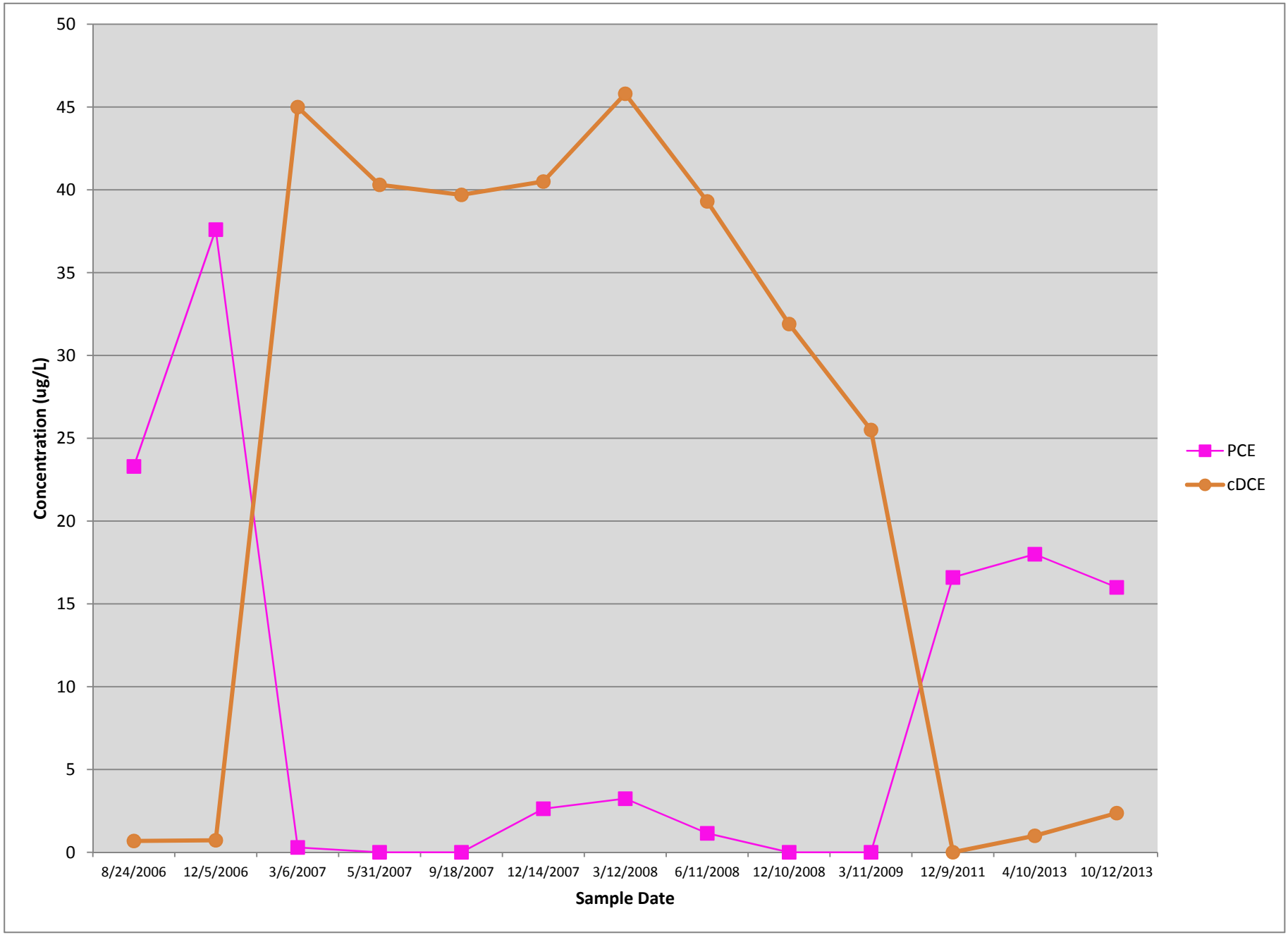
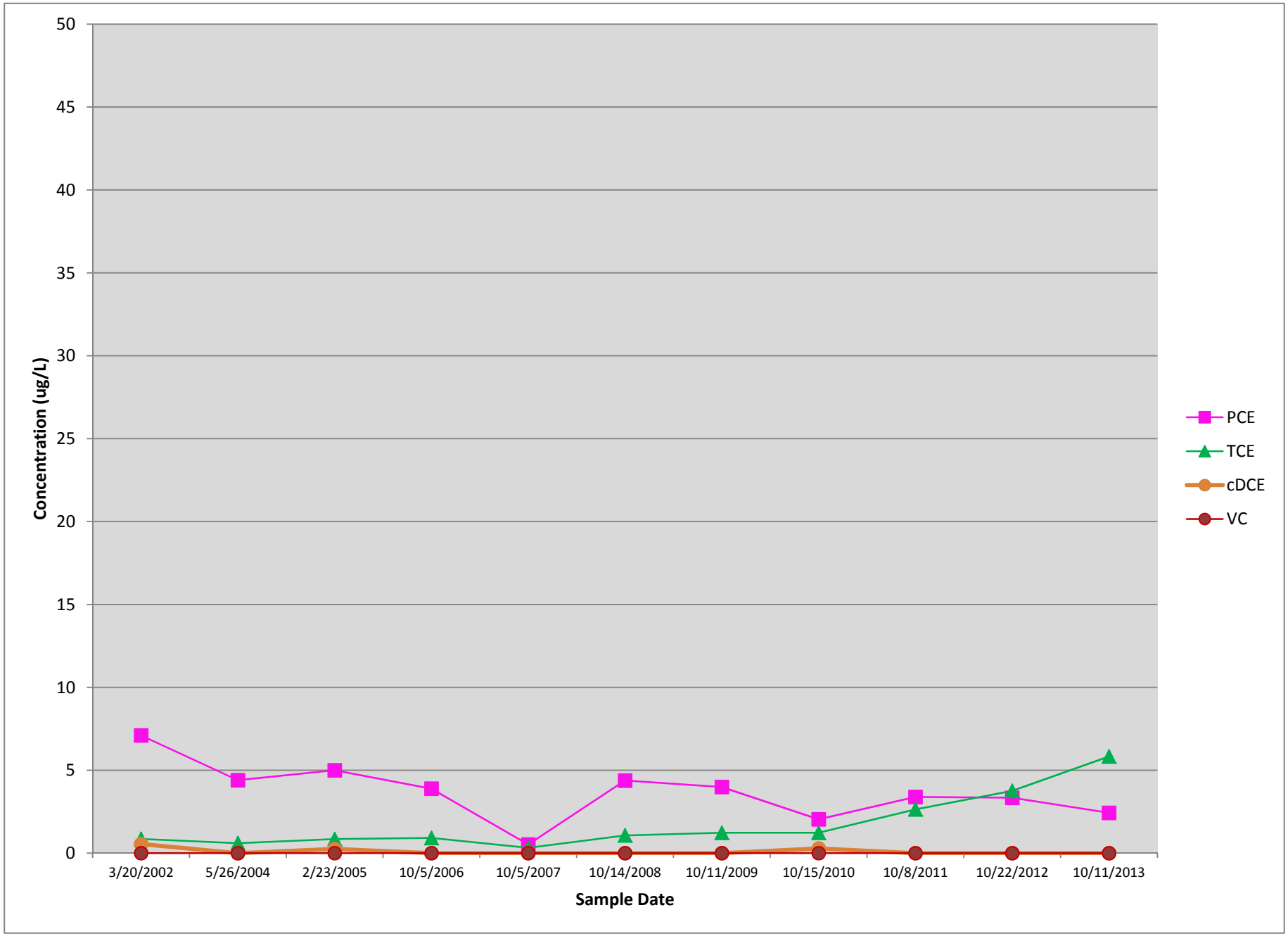
35
30
25
20
15
10
5
0
Concentration (ug/L)
8/23/2006
12/4/2006
3/6/2007
5/31/2007
9/18/2007
12/17/2007
3/12/2008
6/12/2008
12/10/2008
3/10/2009
12/9/2011
4/10/2013
10/12/2013
Sample Date
PCE
cDCE

PMW101-06B


50
45
40
35
30
25
20
15
10
5
0
Concentration (ug/L)
8/24/2006
12/5/2006
3/6/2007
5/31/2007
9/18/2007
12/14/2007
3/12/2008
6/11/2008
12/10/2008
3/11/2009
12/9/2011
4/10/2013
10/12/2013
Sample Date
PCE
cDCE

PZ-03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Concentration (ug/L)
3/20/2002
5/26/2004
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10/5/2006
10/5/2007
10/14/2008
10/11/2009
10/15/2010
10/8/2011
10/22/2012
10/11/2013
Sample Date
PCE
TCE
cDCE
VC

APPENDIX K

HISTORICAL CVOC RESULTS – DUNN FIELD

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-03

	Sample Name	MW-03	MW-03	MW-03	MW-03	MW-03	MW-03
	Sample Date	11/12/1993	6/21/1997	9/27/1997	3/27/1998	10/15/1998	10/28/2004
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	ND	33	<10	<10	1 J	78.4 J
1,1,2-Trichloroethane	µg/L	ND	<10	<10	<10	<10	1.3 J
1,1-Dichloroethene	µg/L	38.5	15	17	25	10	34.5 J
Carbon tetrachloride	µg/L	ND	2 J	<10	<10	<10	0.53 J
Chloroform	µg/L	3.25	17	2 J	9 J	2 J	3.53 J
cis-1,2-Dichloroethene	µg/L	--	--	--	--	--	45 J
Tetrachloroethene	µg/L	192	33	40	38	29	12.3 J
Total 1,2-Dichloroethene	µg/L	--	12	<10	<10	<10	--
trans-1,2-Dichloroethene	µg/L	ND	--	--	--	--	10.4 J
Trichloroethene	µg/L	55.5	33	17	18	16	83.4 J
Vinyl chloride	µg/L	ND	<10	<10	<10	<10	<1 UJ

Notes:
-- not analyzed
µg/L micrograms per liter
ND Not Detected, RL unavailable
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit
UJ Undetected, reporting limit is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-03

	Sample Name	MW-03	MW-03	MW-03	MW-03	MW-03	MW-03
	Sample Date	11/21/2005	5/14/2007	11/7/2007	4/16/2008	8/19/2008	10/21/2008
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	96.2	67	<1	<0.5	0.425	2.46
1,1,2-Trichloroethane	µg/L	1.66	1.5	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	9.47	1.3	2.89	1.54	10.4	17.3
Carbon tetrachloride	µg/L	1.56 J	0.82	<1	<1	<1	<1
Chloroform	µg/L	12.4	12	3.07	0.147 J	0.229	0.212 J
cis-1,2-Dichloroethene	µg/L	82.7	59	<1	<1	0.348	<1
Tetrachloroethene	µg/L	8.19	1.8	2.63	2.71	5.71	9.5
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	19.4	12	<1	<1	<1	<1
Trichloroethene	µg/L	138	87	2.18	2.04	5.8	10.1
Vinyl chloride	µg/L	<1 UJ	ND	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
ND Not Detected, RL unavailable
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit
UJ Undetected, reporting limit is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-03

	Sample Name	MW-03	MW-03	MW-03	MW-03	MW-03	MW-03	MW-03
	Sample Date	4/17/2009	10/13/2009	7/19/2011	4/19/2012	10/17/2012	4/13/2013	10/10/2013
Analyte	Unit							
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	10.7	13.4	<1	<1	0.524 J	<1	2.52
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.14 J	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	0.47 J	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	9.13	10.1	1.2	0.871 J	1.06	0.311 J	5.32
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	9.26	10.4	1.44	1	1.28	0.364 J	3.95
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
ND Not Detected, RL unavailable
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit
UJ Undetected, reporting limit is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-04

	Sample Name	MW4	MW042	MW043	MW044	MW045	MW04-76
	Sample Date	11/15/1993	6/20/1997	9/25/1997	3/28/1998	10/15/1998	11/21/2005
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	ND	<10	<10	<10	<10	0.23 J
1,1,2-Trichloroethane	µg/L	ND	<10	<10	<10	<10	<1
1,1-Dichloroethene	µg/L	ND	<10	<10	<10	<10	<1
Carbon tetrachloride	µg/L	ND	<10	<10	<10	<10	<1
Chloroform	µg/L	ND	1 J	<10	<10	1 J	0.43 J
cis-1,2-Dichloroethene	µg/L	--	--	--	--	--	<1
Tetrachloroethene	µg/L	32.6	74	78	72	120	33.4
Total 1,2-Dichloroethene	µg/L	--	<10	<10	<10	<10	--
trans-1,2-Dichloroethene	µg/L	ND	--	--	--	--	<1
Trichloroethene	µg/L	ND	2 J	3 J	3 J	4 J	2.23
Vinyl chloride	µg/L	ND	<10	<10	<10	<10	<1 UJ

Notes:
-- not analyzed
µg/L micrograms per liter
ND Not Detected, RL unavailable
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit
UJ Undetected, reporting limit is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-04

	Sample Name	MW4-78	MW-4-IS-6	MW-04-IS-7	MW-04	MW-04	MW-04
	Sample Date	11/9/2007	4/21/2009	10/14/2009	4/28/2011	4/19/2012	4/13/2013
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	<1	<0.5	<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	0.16	0.328	0.294 J	0.278 B	0.162 J	0.371
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	23.4	<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	1.11	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
ND Not Detected, RL unavailable
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit
UJ Undetected, reporting limit is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
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MW-06

	Sample Name	MW6	MW062	MW063	MW064	MW065	MW06RD67
	Sample Date	11/18/1993	6/21/1997	9/27/1997	3/30/1998	10/15/1998	10/27/2004
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	219	110	220	130	220	613
1,1,2-Trichloroethane	µg/L	9.1	7 J	9 J	5 J	8 J	20.9 J
1,1-Dichloroethene	µg/L	ND	<20	<20	<10	<20	<1
Carbon tetrachloride	µg/L	43.7	45	37	15	23	31.2 J
Chloroform	µg/L	14.3	16 J	14 J	6 J	10 J	15.4 J
cis-1,2-Dichloroethene	µg/L	--	--	--	--	--	436
Tetrachloroethene	µg/L	3.06	4 J	3 J	1 J	2 J	1.9 J
Total 1,2-Dichloroethene	µg/L	--	410	380	150	270	--
trans-1,2-Dichloroethene	µg/L	20.8	--	--	--	--	25.4 J
Trichloroethene	µg/L	198	260	240	94	160	236
Vinyl chloride	µg/L	ND	<20	<20	<10	<20	1.59 J

Notes:
-- not analyzed
µg/L micrograms per liter
ND Not Detected, RL unavailable
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
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MW-06

	Sample Name	MW06-67	MW-06-SARA-GW01	MW6-69	MW-6-IS-4	MW-06-TSVE-GW	MW-6-IS-5
	Sample Date	11/21/2005	5/16/2007	11/7/2007	4/15/2008	8/19/2008	10/17/2008
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	237	41	18.4	8.89	8.1	5.57
1,1,2-Trichloroethane	µg/L	10.1	3.9	2.32	1.02	0.972	0.674 J
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	26.5	16	13.8	3.78	1.35	0.793 J
Chloroform	µg/L	10.2	6.2	8.55	84.7	29.4	21.2
cis-1,2-Dichloroethene	µg/L	295	200	150	36.2	23.1	15
Tetrachloroethene	µg/L	1.84	1.4	1.14	1.07	0.365	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	16.8	11	6.33	1.45	0.926	0.458 J
Trichloroethene	µg/L	171	120	78.1	32.5	14.2	8.6
Vinyl chloride	µg/L	1.35 J	0.68	0.484	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
ND Not Detected, RL unavailable
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-06

	Sample Name	MW-6-IS-6	MW-06-IS-7	MW-006-ODLA-1	MW-06	MW-06	MW-06
	Sample Date	4/22/2009	10/13/2009	3/26/2010	4/26/2011	7/19/2011	4/19/2012
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	3.23	3.96	2.67	0.807	0.614	0.497 J
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	0.463 J	<1	<1	<1	<1	<1
Chloroform	µg/L	6.17	5.48	5.4	8.73	4.88	2.9
cis-1,2-Dichloroethene	µg/L	4.91	3.78	1.62	0.637 J	0.41 J	0.311 J
Tetrachloroethene	µg/L	0.254 J	<1	<1	0.304 J	<1	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	2.53	2.44	2.29	3.34	1.75	1.06
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
ND Not Detected, RL unavailable
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-06

	Sample Name	MW-06	MW-06	MW-06
	Sample Date	10/17/2012	4/12/2013	10/10/2013
Analyte	Unit			
1,1,2,2-Tetrachloroethane	µg/L	0.486 J	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1
Chloroform	µg/L	2.72	2.21	2.38
cis-1,2-Dichloroethene	µg/L	0.569 J	<1	0.572 J
Tetrachloroethene	µg/L	<1	<1	<1
Total 1,2-Dichloroethene	µg/L	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1
Trichloroethene	µg/L	0.938 J	0.707 J	0.848 J
Vinyl chloride	µg/L	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
ND Not Detected, RL unavailable
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-07

	Sample Name	MW-07	MW-07	MW-07	MW-07	MW-07	MW-07
	Sample Date	11/15/1993	2/12/1996	6/21/1997	9/27/1997	4/2/1998	10/14/1998
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	ND	ND	<10	<10	<10	<10
1,1,2-Trichloroethane	µg/L	ND	ND	<10	<10	<10	<10
1,1-Dichloroethene	µg/L	36.5	54	26	50	47	25
Carbon tetrachloride	µg/L	ND	ND	<10	<10	<10	<10
Chloroform	µg/L	12.8	8 J	8 J	9 J	2 J	7 J
cis-1,2-Dichloroethene	µg/L	--	--	--	--	--	--
Tetrachloroethene	µg/L	35	51	32	82	78	47
Total 1,2-Dichloroethene	µg/L	--	ND	<10	<10	<10	<10
trans-1,2-Dichloroethene	µg/L	ND	--	--	--	--	--
Trichloroethene	µg/L	13.7	26	16	32	31	21
Vinyl chloride	µg/L	ND	ND	<10	<10	<10	<10

Notes:
-- not analyzed
µg/L micrograms per liter
ND Not Detected, RL unavailable
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-07

	Sample Name	MW-07	MW-07	MW-07	MW-07	MW-07	MW-07
	Sample Date	7/28/2003	10/28/2003	4/28/2004	10/20/2004	6/14/2005	11/18/2005
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1.2	<1.4	<1	<1
1,1,2-Trichloroethane	µg/L	<1	<1	<1.2	<1.4	<1	<1
1,1-Dichloroethene	µg/L	4.06	40.9	32	17	15.3	18.1
Carbon tetrachloride	µg/L	2.99	1.23	0.29 J	<1.4	<1	<1
Chloroform	µg/L	911	139	8	0.44 J	<1	1.07 B
cis-1,2-Dichloroethene	µg/L	2.98	<1	<1.2	<1.4	<1	<1
Tetrachloroethene	µg/L	32.3	42.6	50	18	20.6	26.3
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	0.8 J	<1	<1.2 J	<1.4	<1	<1
Trichloroethene	µg/L	46.3	27.6	32	14	14.9	15.4
Vinyl chloride	µg/L	<1	<1	<1.2	<1.4	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
ND Not Detected, RL unavailable
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
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< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-07

	Sample Name	MW-07	MW-07	MW-07	MW-07	MW-07	MW-07
	Sample Date	4/12/2006	10/18/2006	4/9/2007	5/14/2007	10/8/2007	4/14/2008
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	<1	<0.5	<0.5	ND	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	ND	<1	<1
1,1-Dichloroethene	µg/L	27.4	18.5	22.8	20	12.8	24.8
Carbon tetrachloride	µg/L	<1	0.273 J	0.641 J	ND	0.48 J	<1
Chloroform	µg/L	0.501 B	4.49	20	0.55	13.8	0.273 J
cis-1,2-Dichloroethene	µg/L	<1	<1	0.326 J	0.26	<1	<1
Tetrachloroethene	µg/L	50.7	34.5	39.4	47	24.3	56.2
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	ND	<1	<1
Trichloroethene	µg/L	26.5	19.6	24.7	25	16	29.4
Vinyl chloride	µg/L	<1	<1	<1	ND	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
ND Not Detected, RL unavailable
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-07

	Sample Name	MW-07	MW-07	MW-07	MW-07	MW-07	MW-07
	Sample Date	8/19/2008	10/17/2008	4/15/2009	10/13/2009	4/19/2012	4/13/2013
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	<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	26.8	32.7	35.6	24	16.2	20
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.288	0.299 J	0.357	0.263 J	0.192 J	0.276 J
cis-1,2-Dichloroethene	µg/L	0.282	0.367 J	0.472 J	0.441 J	0.29 J	0.535 J
Tetrachloroethene	µg/L	61.2	63.9	70.6	62.8	35.1	55.9
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	30.9	38.9	40.9	40.4	30.3	52.3
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
ND Not Detected, RL unavailable
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-08

	Sample Name	MW-08	MW-08	MW-08	MW-08	MW-08	MW-08
	Sample Date	11/17/1993	2/13/1996	6/21/1997	9/26/1997	3/30/1998	10/13/1998
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	ND	ND	<10	<10	2 J	<10
1,1,2-Trichloroethane	µg/L	ND	ND	<10	<10	<10	<10
1,1-Dichloroethene	µg/L	34.4	26	12	20	19	22
Carbon tetrachloride	µg/L	ND	ND	<10	<10	<10	<10
Chloroform	µg/L	ND	ND	<10	<10	<10	<10
cis-1,2-Dichloroethene	µg/L	--	--	--	--	--	--
Tetrachloroethene	µg/L	35.2	26	16	27	24	33
Total 1,2-Dichloroethene	µg/L	--	ND	<10	<10	<10	<10
trans-1,2-Dichloroethene	µg/L	ND	--	--	--	--	--
Trichloroethene	µg/L	15.3	14	9 J	13	12	16
Vinyl chloride	µg/L	ND	ND	<10	<10	<10	<10

Notes:
-- not analyzed
µg/L micrograms per liter
ND Not Detected, RL unavailable
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit
UJ Undetected, reporting limit is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-08

	Sample Name	MW-08	MW-08	MW-08	MW-08	MW-08	MW-08
	Sample Date	7/28/2003	10/28/2003	4/28/2004	10/20/2004	11/21/2005	11/7/2007
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<1	0.26 J	<1
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	1.58	1.43	1.3	1.1	3.85	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	<1	<1	<1	0.158
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	1.6	<1	0.37 J	1.4	5.28	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	1.51	<1	0.85 J	1.3	5.68	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1 UJ	<1

Notes:
-- not analyzed
µg/L micrograms per liter
ND Not Detected, RL unavailable
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit
UJ Undetected, reporting limit is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-08

	Sample Name	MW-08	MW-08
	Sample Date	4/18/2012	4/12/2013
Analyte	Unit		
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1
1,1-Dichloroethene	µg/L	2.99	5.64
Carbon tetrachloride	µg/L	<1	<1
Chloroform	µg/L	<0.3	0.197 J
cis-1,2-Dichloroethene	µg/L	<1	0.345 J
Tetrachloroethene	µg/L	5.25	9.91
Total 1,2-Dichloroethene	µg/L	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1
Trichloroethene	µg/L	7	14.5
Vinyl chloride	µg/L	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
ND Not Detected, RL unavailable
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit
UJ Undetected, reporting limit is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-13

	Sample Name	MW13	MW132	MW133	MW134	MW135	MW13-79.5FT
	Sample Date	11/15/1993	6/20/1997	9/26/1997	3/26/1998	10/15/1998	1/8/2001
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	ND	<10	<10	<10	<10	<1
1,1,2-Trichloroethane	µg/L	ND	<10	<10	<10	<10	<1
1,1-Dichloroethene	µg/L	ND	<10	<10	<10	<10	<1
Carbon tetrachloride	µg/L	ND	<10	<10	<10	<10	<1
Chloroform	µg/L	ND	<10	<10	<10	<10	<1
cis-1,2-Dichloroethene	µg/L	--	--	--	--	--	<1
Tetrachloroethene	µg/L	2.01	7 J	8 J	2 J	3 J	<1
Total 1,2-Dichloroethene	µg/L	--	<10	<10	<10	<10	--
trans-1,2-Dichloroethene	µg/L	ND	--	--	--	--	<1
Trichloroethene	µg/L	ND	<10	<10	<10	<10	<1 UJ
Vinyl chloride	µg/L	ND	<10	<10	<10	<10	<1

Notes:
-- not analyzed
µg/L micrograms per liter
ND Not Detected, RL unavailable
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit
UJ Undetected, reporting limit is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-13

	Sample Name	MW13-ZVI-TS1	MW13-ZVI-TS2	MW13-ZVI-TS3	MW13-ZVI-TS4	MW13-ZVI-TS5	MW13RD77
	Sample Date	10/22/2003	11/17/2003	12/17/2003	2/2/2004	4/5/2004	10/28/2004
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	0.517	<0.5	<0.5	<0.5	<0.5	2.64 J
1,1,2-Trichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<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	0.391 J	0.402 J	0.352 J	0.409 J	0.397 J	0.345 J
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	9.06	6.33	6.97	4.69	4.53	3.5
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	1.23	0.325 J	0.308 J	0.262 J	0.638 J	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
ND Not Detected, RL unavailable
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit
UJ Undetected, reporting limit is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-13

	Sample Name	MW13-77	MW13-75	MW-13-IS-6	MW-13-IS-7	MW-13	MW-13
	Sample Date	11/21/2005	11/7/2007	4/21/2009	10/14/2009	4/28/2011	4/12/2013
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	0.66 J	<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	0.27 J	0.127	0.142 J	0.187 J	0.522 B	0.199 J
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	2.15	0.571	<1	<1	<1	0.287 J
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	0.91 J	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1 UJ	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
ND Not Detected, RL unavailable
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit
UJ Undetected, reporting limit is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-15

	Sample Name	MW15	MW152	MW153	MW154	MW155	MW-15-Y1Q1
	Sample Date	11/18/1993	6/20/1997	9/26/1997	3/28/1998	10/15/1998	2/3/1999
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	2.71	<20	<25	<10	<10	<1
1,1,2-Trichloroethane	µg/L	<1	<20	<25	<10	<10	<1
1,1-Dichloroethene	µg/L	<1	<20	<25	<10	<10	<1
Carbon tetrachloride	µg/L	38.9	31	46	3 J	5 J	27.9
Chloroform	µg/L	59.2	300	380	13	31	308
cis-1,2-Dichloroethene	µg/L	--	--	--	--	--	5.96
Tetrachloroethene	µg/L	4.29	7 J	12 J	<10	<10	4.75
Total 1,2-Dichloroethene	µg/L	--	8 J	12 J	<10	1 J	--
trans-1,2-Dichloroethene	µg/L	2.09	--	--	--	--	2.13
Trichloroethene	µg/L	46.4	99	140	6 J	13	115
Vinyl chloride	µg/L	ND	<20	<25	<10	<10	<1

Notes:
-- not analyzed
µg/L micrograms per liter
ND Not Detected, RL unavailable
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-15

	Sample Name	MW-15-Y1Q2	MW-15-Y1Q3	MW-15-Y1Q4	MW-15-Y2Q1	MW15NA	MW-15
	Sample Date	5/25/1999	8/27/1999	11/3/1999	2/15/2000	3/24/2000	5/17/2000
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	28.2	165	291	522	600	343
1,1,2-Trichloroethane	µg/L	2.66	4.18	5.72	10.2	11	4.69
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	79.6	39.2	35.2	29	27	16.3
Chloroform	µg/L	1610	1270	1020	1060	1400	704
cis-1,2-Dichloroethene	µg/L	22.6	12.4	10.8	14.3	14	6.96
Tetrachloroethene	µg/L	18.8	10	8.46	6.91	12	3.96
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	8.26	4.29	4.08	4.54	5	2.29
Trichloroethene	µg/L	518	331	299	299	360	154
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
ND Not Detected, RL unavailable
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-15

	Sample Name	MW-15-Y2Q3	MW-15-Y2Q4	MW15RD74	MW15-77	MW-15-SARA-	MW15-75
	Sample Date	8/22/2000	11/7/2000	10/27/2004	11/21/2005	5/15/2007	11/7/2007
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	389	147	273 J	273	78	2.47
1,1,2-Trichloroethane	µg/L	5.7	2.6	10.5	6.09	3.7	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	24.7	12.8	58.2	13.4	31	25
Chloroform	µg/L	848	224	1530	489	810	186
cis-1,2-Dichloroethene	µg/L	12	4.75	46.3	15	27	10.6
Tetrachloroethene	µg/L	7.18	2.84	14.4	2.98	14	6.32
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	4.17	1.73	10.1	3.1	5.8	3.67
Trichloroethene	µg/L	234	65.9	403	133	330	145
Vinyl chloride	µg/L	<1	<1	<1	2.81 J	<1	0.313

Notes:
-- not analyzed
µg/L micrograms per liter
ND Not Detected, RL unavailable
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-15

	Sample Name	MW-15-IS-4	MW-15-TSVE-GW	MW-15-IS-5	MW-15-IS-6	MW-15-IS-7	MW-015-ODLA-1
	Sample Date	4/15/2008	8/19/2008	10/16/2008	4/20/2009	10/13/2009	3/26/2010
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	2.15	0.988	4.61	0.963	24.5 J	11.8
1,1,2-Trichloroethane	µg/L	<1	<1	0.593 J	<1	0.905 J	0.283 J
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	16	6.35	2.51	0.513 J	2.97	1.81
Chloroform	µg/L	106	33.4	29.9	0.524	31.1 J	14.7
cis-1,2-Dichloroethene	µg/L	5.99	3.07	2.54	<1	1.69	0.796 J
Tetrachloroethene	µg/L	7.19	2.99	1.16	0.612 J	1.13	0.85 J
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	2.02	0.731	<1	<1	0.332 J	<1
Trichloroethene	µg/L	104	44.2	22.9	0.289 J	27	13.8
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
ND Not Detected, RL unavailable
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-15

	Sample Name	MW-15	MW-15	MW-15	MW-15	MW-15
	Sample Date	4/26/2011	4/19/2012	10/17/2012	4/12/2013	10/10/2013
Analyte	Unit					
1,1,2,2-Tetrachloroethane	µg/L	0.239 J	<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	0.288 J	<1	<1	<1	<1
Chloroform	µg/L	3.21	1.34	2.29	1.25	1.25
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	0.442 J	0.62 J	0.539 J	0.598 J	0.478 J
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Trichloroethene	µg/L	2.02	0.724 J	1.07	0.549 J	0.537 J
Vinyl chloride	µg/L	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
ND Not Detected, RL unavailable
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-28

	Sample Name	MW-28	MW-28	MW-28	MW-28	MW-28	MW-28
	Sample Date	11/19/1993	2/7/1996	4/19/2012	10/16/2012	4/13/2013	10/10/2013
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	ND	ND	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	ND	ND	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	ND	ND	<1	<1	<1	<1
Carbon tetrachloride	µg/L	ND	ND	<1	<1	<1	<1
Chloroform	µg/L	ND	ND	<0.3	0.154 J	0.332	0.476
cis-1,2-Dichloroethene	µg/L	--	--	<1	<1	<1	<1
Tetrachloroethene	µg/L	ND	ND	<1	<1	<1	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	ND	ND	<1	<1	<1	<1
Trichloroethene	µg/L	ND	ND	<1	<1	<1	<1
Vinyl chloride	µg/L	ND	ND	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
ND Not Detected, RL unavailable
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
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MW-31

	Sample Name	MW31	MW312	MW313ADD	MW314	MW315	MW-31-Y1Q1
	Sample Date	11/19/1993	6/20/1997	9/24/1997	3/24/1998	10/15/1998	2/3/1999
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	96	<10	10 J	97	33	3.22
1,1,2-Trichloroethane	µg/L	6.48	<10	<20	4 J	<25	<1
1,1-Dichloroethene	µg/L	52.4	29	47	26	14 J	7.86
Carbon tetrachloride	µg/L	4.81	1 J	8 J	3 J	<25	1.51
Chloroform	µg/L	21.1	10	49	21 J	16 J	7.22
cis-1,2-Dichloroethene	µg/L	--	--	--	--	--	58.9
Tetrachloroethene	µg/L	95.4	67	110	66	42	4.25
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	164	--	--	--	--	22.2
Trichloroethene	µg/L	1110	78	220	400	380	140
Vinyl chloride	µg/L	ND	<10	<20	<25	<25	<1

Notes:
-- not analyzed
µg/L micrograms per liter
ND Not Detected, RL unavailable
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit
UJ Undetected, reporting limit is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-31

	Sample Name	MW-31-Y1Q2	MW-31-Y1Q3	MW-31-Y1Q4	MW-31-Y2Q1	MW31NA	MW-31
	Sample Date	5/25/1999	8/27/1999	11/3/1999	2/15/2000	3/23/2000	5/17/2000
Analyte	Unit						
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	33.3	7.9	5.98	9.89	8	22.3
Carbon tetrachloride	µg/L	<1	0.59 J	<1	<1	<1	<1
Chloroform	µg/L	<1	1.66	0.92 J	1.19	0.5 J	1.29
cis-1,2-Dichloroethene	µg/L	4.78	4.34	5.09	6.89	0.6 J	15.5
Tetrachloroethene	µg/L	7.55	1.31	0.9 J	0.64 J	1 J	1.16
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	2.14	4.66	2.52	3.37	0.3 J	7.78
Trichloroethene	µg/L	23.9	33.7	18	25.6	4	49.5
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
ND Not Detected, RL unavailable
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit
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HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-31

	Sample Name	MW-31-Y2Q3	MW-31-Y2Q4	MW-31_010214	MW-31-Y3S2-B	MW-31-2_020410	MW-31-2_021002
	Sample Date	8/23/2000	11/7/2000	2/14/2001	10/3/2001	4/10/2002	10/2/2002
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	14.8	<1	<1	<1
1,1,2-Trichloroethane	µg/L	<1	<1	1.2	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	31.5	7.98	31.2	39.5	55.4
Carbon tetrachloride	µg/L	0.4 J	<1	2.76	1.25	<1	0.88 J
Chloroform	µg/L	<1	<1	25.1	1.61	<1	1.08
cis-1,2-Dichloroethene	µg/L	12.3	4.24	148	5.53	6.78	17
Tetrachloroethene	µg/L	2.08	0.92 J	5.02	4.19	1.24	1.32
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	4.53	49.3	4.83	5.34	11.3
Trichloroethene	µg/L	68.1	18.5	241	38.1	33.1	87.5
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
ND Not Detected, RL unavailable
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit
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HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-31

Analyte	Sample Name / Sample Date	Unit	MW-31-2 4/8/2003	MW-31-2_031028 10/28/2003	MW31 (77.5-79.5) 4/29/2004	MW-31 8/12/2004	MW31 (77.5-79.5) 10/20/2004	MW-31 6/17/2005
1,1,2,2-Tetrachloroethane		µg/L	<1	<1	<1	<1.7	<1	<1
1,1,2-Trichloroethane		µg/L	<1	<1	<1	<1.7	<1	<1
1,1-Dichloroethene		µg/L	5.37	8.38	40	26 B	17	24.9
Carbon tetrachloride		µg/L	<1	<1	0.24 J	<1.7	<1 J	<1
Chloroform		µg/L	<1	<1	0.32 J	<1.7	<1	<1
cis-1,2-Dichloroethene		µg/L	2.06	<1	0.56 J	<1.7	0.58 J	0.814 J
Tetrachloroethene		µg/L	0.92	<1	2.2	0.59 J	0.42 J	0.547 J
Total 1,2-Dichloroethene		µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene		µg/L	1.53	<1	0.47 J	<1.7	0.31 J	0.595 J
Trichloroethene		µg/L	13.5	2.32	16	5.5	4.7	8.48
Vinyl chloride		µg/L	<1	<1	<1	<1.7 J	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
ND Not Detected, RL unavailable
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit
UJ Undetected, reporting limit is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-31

Analyte	Sample Name / Sample Date	Unit	MW-31 11/18/2005	MW-31 4/12/2006	MW-31T 10/18/2006	MW-31-77.1-IS-2 4/9/2007	MW-31-77.1-IS-3 10/5/2007	MW-31-77.1-IS-4 4/11/2008
1,1,2,2-Tetrachloroethane		µg/L	<1	<1	<0.5	<0.5	0.262 J	<0.5
1,1,2-Trichloroethane		µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene		µg/L	27.8	29.6	30.6	12.5	7.73	7.17
Carbon tetrachloride		µg/L	<1	<1	<1	0.451 J	0.48 J	0.368 J
Chloroform		µg/L	<1	<1	0.131 J	0.458	0.398	0.802
cis-1,2-Dichloroethene		µg/L	<1	1.56	<1	7.32	8.45	2.87
Tetrachloroethene		µg/L	0.755 J	1.35	7.58	1.45	0.887 J	0.916 J
Total 1,2-Dichloroethene		µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene		µg/L	<1	1.4	<1	5.44	5.23	1.51
Trichloroethene		µg/L	8.86	4.99	3.85	30.2	5.87	3.21
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
ND Not Detected, RL unavailable
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit
UJ Undetected, reporting limit is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
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MW-31

	Sample Name	MW-31-76.95-IS-5	MW-31-76.95-IS-6	MW-31-IS-7	MW-031-ODLA-1	MW-31	MW-31
	Sample Date	10/17/2008	4/14/2009	10/14/2009	3/26/2010	4/26/2011	4/19/2012
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	<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	7.36	35	28.8	30.9	1.17	2.55
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.219 J	0.186 J	0.161 J	0.16 J	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	0.26 J	0.273 J	<1	<1	<1
Tetrachloroethene	µg/L	3.17	43.5	41.2	22.7	2.47	4.75
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	4.34	33.4	29	20.4	2.15	4.87
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
ND Not Detected, RL unavailable
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit
UJ Undetected, reporting limit is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
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MW-31

	Sample Name	MW-31	MW-31	MW-31
	Sample Date	10/16/2012	4/13/2013	10/10/2013
Analyte	Unit			
1,1,2,2-Tetrachloroethane	µg/L	0.526	<0.5 UJ	1.61
1,1,2-Trichloroethane	µg/L	<1	<1	<1
1,1-Dichloroethene	µg/L	0.902 J	2.36	1.91
Carbon tetrachloride	µg/L	<1	<1	<1
Chloroform	µg/L	<0.3	0.145 J	0.175 J
cis-1,2-Dichloroethene	µg/L	<1	<1	<1
Tetrachloroethene	µg/L	2.71	3.46	5.32
Total 1,2-Dichloroethene	µg/L	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1
Trichloroethene	µg/L	3.66	4.76	7.15
Vinyl chloride	µg/L	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
ND Not Detected, RL unavailable
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit
UJ Undetected, reporting limit is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
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MW-32

	Sample Name	MW32	MW322	MW323	MW324	MW-32-Y1Q1	MW-32-Y1Q2
	Sample Date	11/18/1993	6/21/1997	9/29/1997	3/27/1998	2/3/1999	5/25/1999
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	162	91	110	140	5.67	4.42
1,1,2-Trichloroethane	µg/L	7.69	5 J	5 J	6 J	1.54	<1
1,1-Dichloroethene	µg/L	ND	<10	<10	<10	<1	<1
Carbon tetrachloride	µg/L	33	25	16	20	25.2	14.2
Chloroform	µg/L	11.3	8 J	6 J	7 J	7.89	32.2
cis-1,2-Dichloroethene	µg/L	--	--	--	--	30.5	16.7
Tetrachloroethene	µg/L	2	2 J	1 J	1 J	1.16	1.28
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	10.4	--	--	--	3.82	1.76
Trichloroethene	µg/L	137	93	76	100	31.9	28.1
Vinyl chloride	µg/L	ND	<10	<10	<10	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
ND Not Detected, RL unavailable
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit
UJ Undetected, reporting limit is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-32

	Sample Name	MW-32-Y1Q3	MW-32-Y1Q4	MW-32-Y2Q1	MW-32	MW-32-Y2Q3	MW-32-Y2Q4
	Sample Date	8/26/1999	11/3/1999	2/15/2000	5/16/2000	8/24/2000	11/9/2000
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	0.92 J	<1	<1	<1	2.12	21.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	0.61 J
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	17.3	25.2	25.5	37	47.2	61.3
Chloroform	µg/L	76.9	73	77.2	117	171	372 J
cis-1,2-Dichloroethene	µg/L	4.64	4.59	5.07	6.61	5.66	8.55
Tetrachloroethene	µg/L	2.22	2.63	2.34	3.94	5.9	6.39 J
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	0.99 J	1.01	1.12	2	2.68	4.53
Trichloroethene	µg/L	34.6	36.8	41.8	58.2	89.2	94.8
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
ND Not Detected, RL unavailable
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit
UJ Undetected, reporting limit is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-32

	Sample Name	MW-32_010220	MW-32-Y3S2	MW-32-1_020410	MW-32-1_021001	MW-32-1	MW-32-1_031028
	Sample Date	2/20/2001	10/3/2001	4/10/2002	10/1/2002	4/8/2003	10/28/2003
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	68.2	216	24	14	11	7.82
1,1,2-Trichloroethane	µg/L	<1	<1	0.59 J	<1	0.52	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	19.7	42.7	12.1	12.3	1.18	<1
Chloroform	µg/L	434	828	102	91.5	50.2	50.9
cis-1,2-Dichloroethene	µg/L	9.44	12.6 J	4.21	3.49	9.16	7.97
Tetrachloroethene	µg/L	3.74	<1	0.82 J	1.41	<1	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	2.42	5.82 J	1.26	0.72 J	<1	<1
Trichloroethene	µg/L	71.9	238	37.9	34.8	13.5	13.4
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
ND Not Detected, RL unavailable
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit
UJ Undetected, reporting limit is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-32

Analyte	Sample Name	MW32 (64.5-66.5)	MW-32	MW32 65.9-66.9	MW32RD66	MW-32	MW-32
	Sample Date	4/29/2004	8/13/2004	10/20/2004	10/28/2004	6/14/2005	11/16/2005
	Unit						
1,1,2,2-Tetrachloroethane	µg/L	8.1	21	3.6	17.1 J	3.72	32.7
1,1,2-Trichloroethane	µg/L	<1	<2.5	<1	0.379 J	<1	1.06
1,1-Dichloroethene	µg/L	<1	<2.5	<1	<1	<1	<1
Carbon tetrachloride	µg/L	8.2	7.6	2.3 J	9.56 J	2.83	12.3
Chloroform	µg/L	37	68	17	64.7 J	11.5	131
cis-1,2-Dichloroethene	µg/L	2	2.8	1.7	3.3 J	1.65	4.99
Tetrachloroethene	µg/L	0.37 J	0.97 J	<1	0.936 J	<1	1.55
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	0.36 J	<2.5	0.23 J	0.490 J	<1	<1
Trichloroethene	µg/L	14	24	7.3	22 J	4.1	55
Vinyl chloride	µg/L	<1	<2.5	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
ND Not Detected, RL unavailable
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit
UJ Undetected, reporting limit is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-32

Analyte	Sample Name / Sample Date	Unit	MW-32 4/12/2006	MW-32B 10/19/2006	MW-32-65.6-IS-2 4/9/2007	MW-32-65.6-IS-3 10/8/2007	MW-32-65.6-IS-4 4/11/2008	MW-32-66.84-IS-5 10/17/2008
1,1,2,2-Tetrachloroethane		µg/L	46	21.7	1.59	<0.5	<0.5	<0.5
1,1,2-Trichloroethane		µg/L	1.28	0.594 J	<1	<1	<1	<1
1,1-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Carbon tetrachloride		µg/L	17.4	12.3	3.95	<1	<1	<1
Chloroform		µg/L	154	86	8.63	<0.3	4.07	0.2 J
cis-1,2-Dichloroethene		µg/L	7.62	3.53	1.14	<1	0.263 J	2.09
Tetrachloroethene		µg/L	2.58	1.63	0.82 J	<1	<1	<1
Total 1,2-Dichloroethene		µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene		µg/L	1.25	0.613 J	<1	<1	<1	<1
Trichloroethene		µg/L	70	38	6.47	<1	2.47	3.65
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
ND Not Detected, RL unavailable
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit
UJ Undetected, reporting limit is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-32

Analyte	Unit	MW-32-66.84-IS-6 4/15/2009	MW-32-IS-7 10/14/2009	MW-032-ODLA-1 3/26/2010	MW-32 4/26/2011
1,1,2,2-Tetrachloroethane	µg/L	<0.5	16.2	9.16	3.39
1,1,2-Trichloroethane	µg/L	<1	0.873 J	0.434 J	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	20.2	6.71	1.21
Chloroform	µg/L	0.593	176	60	10.9
cis-1,2-Dichloroethene	µg/L	3.03	10.3	6.27	3.6
Tetrachloroethene	µg/L	<1	5.41	2.43	0.45 J
Total 1,2-Dichloroethene	µg/L	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	1.97	0.926 J	<1
Trichloroethene	µg/L	4.41	113	38.3	6.92
Vinyl chloride	µg/L	0.495 J	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
ND Not Detected, RL unavailable
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit
UJ Undetected, reporting limit is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-33

	Sample Name	MW33	MW332	MW333	MW334	MW335	MW-33-Y1Q1
	Sample Date	11/19/1993	6/18/1997	9/25/1997	3/25/1998	10/16/1998	2/2/1999
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	2.28	<10	<10	<10	<10	<1
1,1,2-Trichloroethane	µg/L	ND	<10	<10	<10	<10	<1
1,1-Dichloroethene	µg/L	ND	<10	<10	<10	<10	<1
Carbon tetrachloride	µg/L	ND	<10	<10	<10	<10	<1
Chloroform	µg/L	ND	<10	<10	<10	<10	<1
cis-1,2-Dichloroethene	µg/L	--	--	--	--	--	<1
Tetrachloroethene	µg/L	ND	<10	<10	<10	<10	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	ND	--	--	--	--	<1
Trichloroethene	µg/L	ND	<10	<10	<10	<10	<1
Vinyl chloride	µg/L	ND	<10	<10	<10	<10	<1

Notes:
-- not analyzed
µg/L micrograms per liter
ND Not Detected, RL unavailable
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-33

	Sample Name	MW-33-Y1Q2	MW-33-Y1Q3	MW-33-Y1Q4	MW-33-Y2Q1	MW-33	MW-33-Y2Q3
	Sample Date	5/25/1999	8/26/1999	11/2/1999	2/15/2000	5/16/2000	8/22/2000
Analyte	Unit						
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:
-- not analyzed
µg/L micrograms per liter
ND Not Detected, RL unavailable
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-33

	Sample Name	MW-33-Y2Q4	MW-33-Y3S2	MW-33-1_020410	MW-33-1_021002	MW-33-1	MW-33-1_031028
	Sample Date	11/8/2000	10/3/2001	4/10/2002	10/2/2002	4/8/2003	10/28/2003
Analyte	Unit						
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:
-- not analyzed
µg/L micrograms per liter
ND Not Detected, RL unavailable
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-33

	Sample Name	MW33 (59.5-61.5)	MW33 59.33-61.33	MW-33	MW-33	MW-33	MW-33
	Sample Date	4/29/2004	10/20/2004	6/14/2005	11/16/2005	4/12/2006	10/20/2006
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<1	<1	<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 J	<1	<1	0.562 J	0.278 J
Chloroform	µg/L	<1	<1	<1	<1	<1	<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:
-- not analyzed
µg/L micrograms per liter
ND Not Detected, RL unavailable
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-33

Analyte	Sample Name / Sample Date	Unit	MW-33-58-IS-2 4/9/2007	MW-33-58-IS-3 10/8/2007	MW-33-58-IS-4 4/14/2008	MW-33-59.15-IS-5 10/17/2008	MW-33-59.15-IS-6 4/15/2009	MW-33-IS-7 10/14/2009
1,1,2,2-Tetrachloroethane		µg/L	<0.5	<0.5	<0.5 J	<0.5	<0.5	<0.5
1,1,2-Trichloroethane		µg/L	<1	<1	<1 J	<1	<1	<1
1,1-Dichloroethene		µg/L	<1	<1	<1 J	<1	<1	<1
Carbon tetrachloride		µg/L	0.457 J	1.5	<1 J	<1	0.474 J	<1
Chloroform		µg/L	<0.3	<0.3	<0.3 J	<0.3	0.184 J	<0.3
cis-1,2-Dichloroethene		µg/L	<1	<1	<1 J	<1	<1	<1
Tetrachloroethene		µg/L	<1	<1	<1 J	<1	<1	<1
Total 1,2-Dichloroethene		µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene		µg/L	<1	<1	<1 J	<1	<1	<1
Trichloroethene		µg/L	<1	<1	<1 J	<1	<1	<1
Vinyl chloride		µg/L	<1	<1	<1 J	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
ND Not Detected, RL unavailable
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-33

	Sample Name	MW-33	MW-33
	Sample Date	4/28/2011	4/13/2013
Analyte	Unit		
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	<1	<1
Chloroform	µg/L	0.517 B	0.318
cis-1,2-Dichloroethene	µg/L	<1	<1
Tetrachloroethene	µg/L	0.254 J	<1
Total 1,2-Dichloroethene	µg/L	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1
Trichloroethene	µg/L	<1	<1
Vinyl chloride	µg/L	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
ND Not Detected, RL unavailable
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-44

	Sample Name	MW442	MW443	MW444	MW445	MW-44-Y1Q1	MW-44-Y1Q2
	Sample Date	6/20/1997	9/25/1997	3/27/1998	10/17/1998	2/2/1999	5/25/1999
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	<10	<10	<10	<10	<1	<1
1,1,2-Trichloroethane	µg/L	<10	<10	<10	<10	<1	<1
1,1-Dichloroethene	µg/L	<10	<10	<10	<10	<1	<1
Carbon tetrachloride	µg/L	6 J	6 J	4 J	<10	<1	<1
Chloroform	µg/L	6 J	<10	4 J	<10	<1	<1
cis-1,2-Dichloroethene	µg/L	--	--	--	--	<1	<1
Tetrachloroethene	µg/L	<10	<10	<10	<10	<1	<1
Total 1,2-Dichloroethene	µg/L	2 J	2 J	1 J	<10	--	--
trans-1,2-Dichloroethene	µg/L	--	--	--	--	<1	<1
Trichloroethene	µg/L	4 J	5 J	3 J	<10	<1	<1
Vinyl chloride	µg/L	<10	<10	<10	<10	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-44

	Sample Name	MW-44-Y1Q3	MW-44-Y1Q4	MW-44-Y2Q1	MW-44	MW-44-Y2Q3	MW-44-Y2Q4
	Sample Date	8/26/1999	11/2/1999	2/15/2000	5/16/2000	8/24/2000	11/8/2000
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	<10	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	µg/L	<10	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<10	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<10	<1	<1	2.3	5.3	2.1
Chloroform	µg/L	<10	<1	<1	1.88	3.62	1.23
cis-1,2-Dichloroethene	µg/L	<10	<1	<1	0.65 J	1.35	0.622 J
Tetrachloroethene	µg/L	<10	<1	<1	<1	<1	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<10	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<10	<1	<1	1.36	4.92	0.79 J
Vinyl chloride	µg/L	<10	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-44

Analyte	Sample Name / Sample Date	Unit	MW-44-Y3S2-C 10/3/2001	MW-44-3_020410 4/10/2002	MW-44-3_021001 10/1/2002	MW-44-1 4/8/2003	MW-44-1_031028 10/28/2003	MW44 (69-71) 4/29/2004
1,1,2,2-Tetrachloroethane		µg/L	1.29	<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	6.47	4.36	4.39	3.65	1.96	1.3
Chloroform		µg/L	5.04	2.81	2.8	2.19	1.15	0.91 J
cis-1,2-Dichloroethene		µg/L	<1	1.1	1.01	0.84	<1	0.35 J
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 J
Trichloroethene		µg/L	2.77	2.05	1.67	1.64	0.82 J	0.75 J
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-44

	Sample Name	MW-44	MW44 69-71	MW-44	MW-44	MW-44	MW-44
	Sample Date	8/14/2004	10/21/2004	6/16/2005	11/17/2005	4/13/2006	10/19/2006
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<1	<1	<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	0.8 J	0.71 J	<1	1.01	<1	1.2
Chloroform	µg/L	0.4 J	0.64 J	<1	<1	<1	0.467
cis-1,2-Dichloroethene	µg/L	<1	0.27 J	<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	0.28 J	0.55 J	<1	<1	<1	0.366 J
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-44

Analyte	Sample Name / Sample Date	Unit	MW-44-69-IS-2 4/9/2007	MW-44-69-IS-3 10/5/2007	MW-44-69-IS-4 4/11/2008	MW-44-69.75-IS-5 10/20/2008	MW-44-69.75-IS-6 4/14/2009	MW-44-IS-7 10/15/2009
1,1,2,2-Tetrachloroethane		µg/L	<0.5	<0.5	<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	1.24	1.2	0.823 J	0.708 J	0.5 J	0.822 J
Chloroform		µg/L	0.694	0.63	0.567	0.366	0.266 J	0.213 J
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	0.688 J	0.467 J	0.599 J	0.665 J	0.252 J	<1
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE Flags:
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< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-44

Analyte	Sample Name / Sample Date	Unit	MW-044-ODLA-1 3/26/2010	MW-44 4/26/2011	MW-44 4/20/2012	MW-44 4/14/2013	MW-44 5/9/2013
1,1,2,2-Tetrachloroethane		µg/L	<0.5	<0.5	<0.5	1.21	1.33
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	0.827 J	0.678 J
Chloroform		µg/L	<0.3	0.17 J	2.84	13.6	12.3
cis-1,2-Dichloroethene		µg/L	<1	<1	<1	0.547 J	0.633 J
Tetrachloroethene		µg/L	<1	<1	<1	0.398 J	0.329 J
Total 1,2-Dichloroethene		µg/L	--	--	--	--	--
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1
Trichloroethene		µg/L	0.426 J	0.579 J	2.03	6.98	6.55
Vinyl chloride		µg/L	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE Flags:
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HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-54

	Sample Name	MW-54	MW-54	MW-54	MW-54	MW-54	MW-54
	Sample Date	6/20/1997	9/25/1997	3/28/1998	10/16/1998	2/3/1999	5/25/1999
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	<10	<10	<10	<10	<1	<1
1,1,2-Trichloroethane	µg/L	<10	<10	<10	<10	<1	<1
1,1-Dichloroethene	µg/L	<10	<10	<10	<10	<1	<1
Carbon tetrachloride	µg/L	<10	1 J	2 J	<10	<1	3.53
Chloroform	µg/L	<10	<10	1 J	<10	<1	<1
cis-1,2-Dichloroethene	µg/L	--	--	--	--	3.6	3.9
Tetrachloroethene	µg/L	<10	2 J	2 J	<10	<1	<1
Total 1,2-Dichloroethene	µg/L	4 J	10	12	4 J	--	--
trans-1,2-Dichloroethene	µg/L	--	--	--	--	<1	<1
Trichloroethene	µg/L	58	150	180	79	60.6	61
Vinyl chloride	µg/L	<10	<10	<10	<10	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
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< Not detected at sample reporting limit
UJ Undetected, reporting limit is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-54

	Sample Name	MW-54	MW-54	MW-54	MW-54	MW-54	MW-54
	Sample Date	8/26/1999	11/3/1999	2/15/2000	3/23/2000	5/17/2000	8/22/2000
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	<10	40.1	23.6	19	<1	4.9
1,1,2-Trichloroethane	µg/L	<10	1.15	0.9 J	1	<1	0.56 J
1,1-Dichloroethene	µg/L	<10	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	12.8	5.02	14.7	19	4.46	7.97
Chloroform	µg/L	5.04	2.54	12.4	18	5.54	13.8
cis-1,2-Dichloroethene	µg/L	10.3	24.1	22.5	30	7.08	14.9
Tetrachloroethene	µg/L	<10	0.68 J	0.94 J	5	<1	0.74 J
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<10	1.4	2.01	4	<1	1.39
Trichloroethene	µg/L	50	30.6	43.3	50	11.6	28.1
Vinyl chloride	µg/L	<10	<1	<1	0.1 J	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

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HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-54

	Sample Name	MW-54	MW-54	MW-54	MW-54	MW-54	MW-54
	Sample Date	11/7/2000	10/3/2001	4/10/2002	10/1/2002	4/8/2003	11/18/2003
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	22.7	8.67	9.06	60.1	44.1	301
1,1,2-Trichloroethane	µg/L	1.24	<1	1.19	<10	<10	7.86
1,1-Dichloroethene	µg/L	<1	<1	<1	<10	<10	<1
Carbon tetrachloride	µg/L	8.65	7.7	2.96	5.58 J	7.48	3.35
Chloroform	µg/L	19.8	6.87	8.84	11.6	1.82	3.68
cis-1,2-Dichloroethene	µg/L	34.6	31.4	43.7	85.9	44.3	85.3
Tetrachloroethene	µg/L	0.91 J	1.89	2.06	<10	4.02	7.37
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	2.58	5.28	9.95	16.2	8.76	4.16
Trichloroethene	µg/L	29.2	259	723	920	72.4	216
Vinyl chloride	µg/L	<1	<1	<1	<10	<10	<1

Notes:
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µg/L micrograms per liter
RL reporting limit

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HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-54

	Sample Name	MW-54	MW-54	MW-54	MW-54	MW-54	MW-54
	Sample Date	2/4/2004	4/7/2004	4/29/2004	8/14/2004	10/21/2004	1/27/2005
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	2180	1350	2000	2300	4700	3000
1,1,2-Trichloroethane	µg/L	9.85	6.63	<67	<100	<140	6 J
1,1-Dichloroethene	µg/L	<1	<1	<67	<100	<140	<10
Carbon tetrachloride	µg/L	5.79	3.94	<67	<100	<140	<10
Chloroform	µg/L	5.4	3.93	<67	<100	<140	<10
cis-1,2-Dichloroethene	µg/L	83.4	61.2	64 J	65 J	70 J	23
Tetrachloroethene	µg/L	14.2	8.36	<67	<100	<140	<10
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	20.4	13	54 J	<100	<140	2.9 J
Trichloroethene	µg/L	2230	1530 J	2000	2200	2700	300
Vinyl chloride	µg/L	0.441 J	<1	<67	<100	<140	<10

Notes:
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µg/L micrograms per liter
RL reporting limit

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HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-54

	Sample Name	MW-54	MW-54	MW-54	MW-54	MW-54	MW-54
	Sample Date	3/23/2005	6/17/2005	11/18/2005	4/13/2006	4/26/2006	10/19/2006
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	2100	1220	853	605	572	572
1,1,2-Trichloroethane	µg/L	6.1 J	3.68	3.44	3.91	4.54	2.54
1,1-Dichloroethene	µg/L	<8.3	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<8.3	0.902 J	1.3	0.944 J	1.08	1.9
Chloroform	µg/L	3 J	1.52 B	1.46 B	1.14 B	1.68 J	1.45
cis-1,2-Dichloroethene	µg/L	41	35.8	25.4	19.1	26.3	19.6
Tetrachloroethene	µg/L	5.8 J	2.77	4.42	2.98	1.63	2.78
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	6.5 J	5.94	4.18	4.38	5.65	3.88
Trichloroethene	µg/L	1300	729	478 J	671	493	604
Vinyl chloride	µg/L	<8.3	<1	<1	<1	<1 UJ	<1

Notes:
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RL reporting limit

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HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-54

	Sample Name	MW-54	MW-54	MW-54	MW-54	MW-54	MW-54
	Sample Date	4/9/2007	10/8/2007	4/11/2008	10/20/2008	6/8/2009	10/16/2009
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	160	80	171	53.9	842	384
1,1,2-Trichloroethane	µg/L	0.968 J	<5	0.885 J	0.621 J	4.15	1.49 J
1,1-Dichloroethene	µg/L	<2.5	<5	<1	<1	<2	<2.5
Carbon tetrachloride	µg/L	2.34 J	5.74	6.76	4.37	0.745 J	<2.5
Chloroform	µg/L	2	3.17	3.85	9.78	3.15	1.25
cis-1,2-Dichloroethene	µg/L	18.9	19.2	17.4	15.7	25.9	10.7
Tetrachloroethene	µg/L	3.58	5.06	3.88	2.46	5.01	2.52
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	4.2	4.48 J	4.42	3.13	4.1	1.39 J
Trichloroethene	µg/L	405	474	348	350	744	381
Vinyl chloride	µg/L	<2.5	<5	<1	<1	<2	<2.5

Notes:
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HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-54

	Sample Name	MW-54	MW-54	MW-54	MW-54	MW-54	MW-54
	Sample Date	3/24/2010	6/22/2010	9/22/2010	1/26/2011	4/25/2011	9/26/2011
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	168	83.2	44.9 J	28.5	2.45	1.64
1,1,2-Trichloroethane	µg/L	0.599 J	0.312 J	<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	0.663	0.366	0.286 J	0.422	0.304	0.692
cis-1,2-Dichloroethene	µg/L	4.7	2.5	2.65	1.11	<1	<1
Tetrachloroethene	µg/L	1.77	1.12	1.28	1.31	0.616 J	0.537 J
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	0.657 J	0.308 J	<1	<1	<1	<1
Trichloroethene	µg/L	170	93.6	60	55.6	8.73	4.4
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
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µg/L micrograms per liter
RL reporting limit

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HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-54

	Sample Name	MW-54	MW-54	MW-54	MW-54
	Sample Date	4/18/2012	10/17/2012	5/9/2013	10/10/2013
Analyte	Unit				
1,1,2,2-Tetrachloroethane	µg/L	2.87	2.54	1.85	1.47
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	0.521	0.354	0.23 J	0.246 J
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Tetrachloroethene	µg/L	0.48 J	0.377 J	0.295 J	0.436 J
Total 1,2-Dichloroethene	µg/L	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Trichloroethene	µg/L	8.74	7.74	6.51	5.02
Vinyl chloride	µg/L	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
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HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-57

Analyte	Sample Name / Sample Date	Unit	MW-57 3/15/1999	MW-57-Y2Q1 2/16/2000	MW-57 5/17/2000	MW-57-Y2Q3 8/22/2000	MW-57-Y2Q4 11/7/2000	MW-57-Y3S2-B 10/3/2001
1,1,2,2-Tetrachloroethane		µg/L	<10	<1	<1	<1	<1	<1
1,1,2-Trichloroethane		µg/L	<10	<1	<1	<1	<1	<1
1,1-Dichloroethene		µg/L	<10	<1	<1	<1	<1	<1
Carbon tetrachloride		µg/L	14	39.9	50.6	45.7	48.3	37.5
Chloroform		µg/L	6 J	13.2	10.3	11.3	8.93	28
cis-1,2-Dichloroethene		µg/L	--	<1	<1	0.53 J	0.411 J	0.97 J
Tetrachloroethene		µg/L	2 J	5.38	5.1	5.86	5.07	5.24
Total 1,2-Dichloroethene		µg/L	<10	--	--	--	--	--
trans-1,2-Dichloroethene		µg/L	--	1.55	1.51	1.83	1.5	1.73
Trichloroethene		µg/L	22	50.8	46.5	49.2	30.9	77.4
Vinyl chloride		µg/L	<10	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
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< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-57

Analyte	Sample Name / Sample Date	Unit	MW-57-2_020410 4/10/2002	MW-57-2_021001 10/1/2002	MW-57-2 4/8/2003	MW-57-2_031028 10/28/2003	MW57 (67-69) 4/29/2004	MW57 66.8-68.8 10/21/2004
1,1,2,2-Tetrachloroethane		µg/L	<1	<1	<1	<1	<3.3	<1
1,1,2-Trichloroethane		µg/L	<1	<1	<1	<1	<3.3	<1
1,1-Dichloroethene		µg/L	<1	<1	<1	<1	<3.3	<1
Carbon tetrachloride		µg/L	42.8	43	42.4	33.3	33	19
Chloroform		µg/L	15.1	29.7	15.6	18.2	5.7	6.1
cis-1,2-Dichloroethene		µg/L	0.55 J	1.13	0.68	<1	<3.3	0.27 J
Tetrachloroethene		µg/L	6.08	8.14	7.86	5.32	5	2.7
Total 1,2-Dichloroethene		µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene		µg/L	1.88	2.27	1.37	1.45	0.46 J	0.58 J
Trichloroethene		µg/L	66.4	54.1	73.3	71.6	48	29
Vinyl chloride		µg/L	<1	<1	<1	<1	<3.3	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE Flags:
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HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-57

	Sample Name	MW57RD67	MW-57	MW-57	MW-57	MW-57	MW-57-66.6-IS-2
	Sample Date	10/28/2004	6/14/2005	11/18/2005	4/12/2006	10/20/2006	4/10/2007
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<1	<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	23.7	20.6	17.1	23	31	29.6
Chloroform	µg/L	9.29	4.94 B	4.75 B	3.25 B	5.67	6.6
cis-1,2-Dichloroethene	µg/L	0.340 J	<1	<1	<1	0.294 J	0.325 J
Tetrachloroethene	µg/L	2.96	2.6	2.3	2.81	4.02	5.06
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	0.799 J	<1	<1	0.419 J	0.659 J	0.684 J
Trichloroethene	µg/L	35.9	19	17.6	18	28.7	34.6
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE Flags:
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HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-57

	Sample Name	MW-57-SARA-GW01	MW-57-66.6-IS-3	MW-57-66.6-IS-4	MW-57-TSVE-GW	MW-57-68.32-IS-5	MW-57-68.32-IS-6
	Sample Date	5/2007 9:35:00	10/5/2007	4/14/2008	8/19/2008	10/17/2008	4/15/2009
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	<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	0.538 J
Carbon tetrachloride	µg/L	28	22.9	11.1	6.04	4.23	1.82
Chloroform	µg/L	5.8	6.29	3.32	12.6	15.9	73
cis-1,2-Dichloroethene	µg/L	0.33	0.371 J	<1	<1	<1	1.44
Tetrachloroethene	µg/L	4.3	4.48	3.03	2.18	1.82	1.17
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	0.58	0.719 J	<1	0.386	0.358 J	0.567 J
Trichloroethene	µg/L	29	31.2	19.4	29.2	30.4	28.7
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
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RL reporting limit

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< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-57

	Sample Name	MW-57-IS-7	MW-057-ODLA-1	MW-57	MW-57	MW-57	MW-57	MW-57
	Sample Date	10/13/2009	3/26/2010	4/26/2011	4/19/2012	10/17/2012	4/12/2013	10/10/2013
Analyte	Unit							
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<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	0.9 J	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	67.4	50.7 J	20.3	8.11	9.57	6.97	2.52
cis-1,2-Dichloroethene	µg/L	1.48	1.03	0.409 J	<1	<1	<1	<1
Tetrachloroethene	µg/L	0.841 J	0.27 J	<1	<1	<1	<1	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	0.31 J	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	20.3	7.57	1.84	0.961 J	1.1	0.916 J	0.77 J
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-58

	Sample Name	MW-58	MW-58-Y2Q1	MW-58	MW-58-Y2Q3	MW-58-Y2Q4	MW-58_010219
	Sample Date	3/15/1999	2/16/2000	5/17/2000	8/22/2000	11/7/2000	2/19/2001
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	<10	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	µg/L	<10	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<10	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<10	<1	<1	0.26 J	<1	0.43 J
Chloroform	µg/L	<10	3.68	5.88	2.42	1.91	2.05
cis-1,2-Dichloroethene	µg/L	--	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<10	<1	<1	0.41 J	<1	0.4 J
Total 1,2-Dichloroethene	µg/L	<10	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	--	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<10	4.36	4.22	1.44	2.72	2.47
Vinyl chloride	µg/L	<10	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-58

	Sample Name	MW-58-Y3S2	MW-58-1_020410	MW-58-1_021001	MW-58-1	MW-58-1_031028	MW58 (64.5-66.5)
	Sample Date	10/3/2001	4/10/2002	10/1/2002	4/8/2003	10/28/2003	4/28/2004
Analyte	Unit						
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	1.85	2.75	3.36	1.47	<1	1.1
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	0.57	<1	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	1.78	2.46	1.82	1.06	<1	0.41 J
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-58

	Sample Name	MW58-66	MW58-66.5	MW-58-IS-7	MW-58	MW-58
	Sample Date	11/21/2005	11/8/2007	10/15/2009	4/28/2011	4/12/2013
Analyte	Unit					
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<0.5	0.213 J	<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	0.81 J	0.946 J	0.277 J
Chloroform	µg/L	1.99	8.89	0.149 J	<0.3	0.343
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	0.309 J	<1	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Trichloroethene	µg/L	0.67 J	0.321	<1	0.26 J	1.7
Vinyl chloride	µg/L	<1J	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-67

	Sample Name	MW-67	MW-67	MW-67	MW-67	MW-67	MW-67
	Sample Date	2/16/2000	10/3/2001	4/10/2002	10/1/2002	4/8/2003	10/28/2003
Analyte	Unit						
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
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	1.26	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-67

	Sample Name	MW-67	MW-67	MW-67	MW-67	MW-67	MW-67
	Sample Date	4/29/2004	10/21/2004	6/17/2005	12/8/2005	4/12/2006	10/19/2006
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<1	<1	<0.5 J
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1 J
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	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1 J	<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:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-67

	Sample Name	MW-67	MW-67	MW-67	MW-67	MW-67	MW-67	MW-67
	Sample Date	4/10/2007	10/5/2007	4/11/2008	10/20/2008	4/14/2009	10/15/2009	4/14/2013
Analyte	Unit							
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	0.251 J	<0.5	<0.5	<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	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	0.292 J	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-68

	Sample Name	MW-68	MW-68	MW-68	MW-68	MW-68	MW-68
	Sample Date	5/18/2000	8/23/2000	11/8/2000	2/14/2001	10/3/2001	4/10/2002
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	<1	6.55	<1	<1	4.15	1.01
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	9.01	<1
Carbon tetrachloride	µg/L	0.89 J	<1	<1	<1	<1	<1
Chloroform	µg/L	6.44	<1	<1	<1	3.5	<1
cis-1,2-Dichloroethene	µg/L	13.7	31	1.9	4.38	3.12	<1
Tetrachloroethene	µg/L	2.07	8.35	0.4 J	0.92 J	4.3	<1
trans-1,2-Dichloroethene	µg/L	13.1	9.36	1.4	4.14	0.78 J	<1
Trichloroethene	µg/L	44.5	48.9	3.21	9.67	6.56	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
ND Not Detected, RL unavailable
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-68

	Sample Name	MW-68	MW-68	MW-68	MW-68	MW-68	MW-68
	Sample Date	10/1/2002	4/8/2003	10/28/2003	4/29/2004	10/21/2004	6/15/2005
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	0.85 J	81	1.52 B
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<2.5	<33	<1
1,1-Dichloroethene	µg/L	9.01	<1	<1	1.5	<33	<1
Carbon tetrachloride	µg/L	<1	<1	<1	0.21 J	<33 J	<1
Chloroform	µg/L	7.88	<1	<1	0.78 J	<33	<1
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<2.5	<33	<1
Tetrachloroethene	µg/L	4.3	<1	<1	2.1	<33	<1 J
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<2.5	<33	<1
Trichloroethene	µg/L	3.85	<1	<1	1.4	20 J	0.512 J
Vinyl chloride	µg/L	<1	<1	<1	<2.5	<33	<1

Notes:
µg/L micrograms per liter
ND Not Detected, RL unavailable
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-68

	Sample Name	MW-68	MW-68	MW-68	MW-68	MW-68	MW-68
	Sample Date	11/17/2005	4/12/2006	10/19/2006	4/11/2007	5/17/2007	10/8/2007
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	5.67	1.45	5.5	1.51
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	ND	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	ND	<1
Carbon tetrachloride	µg/L	<1	<1	0.951 J	<1	ND	<1
Chloroform	µg/L	<1	0.564 B	1.57	0.263 J	0.43	0.775
cis-1,2-Dichloroethene	µg/L	<1	<1	1.06	0.473 J	4.2	2.36
Tetrachloroethene	µg/L	<1	0.696 J	1.63	0.506 J	0.69	0.738 J
trans-1,2-Dichloroethene	µg/L	<1	<1	0.544 J	0.261 J	1.3	0.585 J
Trichloroethene	µg/L	<1	0.608 J	5.76	2.58	14	4.73
Vinyl chloride	µg/L	<1	<1	<1	<1	ND	<1

Notes:
µg/L micrograms per liter
ND Not Detected, RL unavailable
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-68

	Sample Name	MW-68	MW-68	MW-68	MW-68	MW-68	MW-68	MW-68
	Sample Date	4/14/2008	8/20/2008	10/17/2008	4/14/2009	10/14/2009	4/19/2012	4/13/2013
Analyte	Unit							
1,1,2,2-Tetrachloroethane	µg/L	0.24 B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	0.727 J	1.82	1.16	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<0.3	<0.3	<0.3	0.147 J	0.159 J	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	0.482 J	1.75	1.55	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	0.36 J	<1	0.573 J	1.41	1.16	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
ND Not Detected, RL unavailable
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-69

	Sample Name	MW-69-Y2Q1	MW-69	MW-69-Y2Q3	MW-69-Y2Q4	MW69-94.2FT	MW-69-Y3S2-B
	Sample Date	2/16/2000	5/18/2000	8/24/2000	11/9/2000	1/8/2001	10/3/2001
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	4.36	<1	0.6 J	<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	0.73 J	<1	<1	0.3 J	<1
Chloroform	µg/L	<1	3.56	<1	2.12	1	<1
cis-1,2-Dichloroethene	µg/L	4.11	31.2	2.26	23.1	11	<1
Tetrachloroethene	µg/L	1.76	4.87	0.68 J	6.39 J	4	<1
trans-1,2-Dichloroethene	µg/L	2.26	19.1	0.86 J	12.3	5	<1
Trichloroethene	µg/L	99.2	642	50.4	464	350	1.01
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit
R Unusable

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-69

	Sample Name	MW-69-2_020410	MW-69-2_021002	MW-69-2	MW-69-2_031028	MW69 (91-93)	MW69 91.4-93.4
	Sample Date	4/10/2002	10/2/2002	4/8/2003	10/28/2003	4/29/2004	10/21/2004
Analyte	Unit						
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 J
Chloroform	µg/L	1.52	<1	<1	<1	<1	0.17 J
cis-1,2-Dichloroethene	µg/L	7.92	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	1.84	0.98 J	1.94	<1	0.55 J	1.5
trans-1,2-Dichloroethene	µg/L	4.14	<1	<1	<1	<1	<1 R
Trichloroethene	µg/L	128	8.12	2.18	<1	0.47 J	3.7
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit
R Unusable

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-69

Analyte	Sample Name / Sample Date	Unit	MW-69 6/15/2005	MW-69 11/16/2005	MW-69 4/12/2006	MW-69T 10/20/2006	MW-69-88.2-IS-2 4/11/2007	MW-69-88.2-IS-3 10/8/2007
1,1,2,2-Tetrachloroethane		µg/L	<1	<1	5.51	<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	<1	0.261 J	0.144 J	0.136 J
cis-1,2-Dichloroethene		µg/L	<1	<1	<1	0.348 J	<1	<1
Tetrachloroethene		µg/L	0.951 J	<1	4.72	2.03	0.898 J	1.03
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	2.47	<1	3.85	9.84	0.879 J	<1
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit
R Unusable

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-69

	Sample Name	MW-69-88.2-IS-4	MW-69-89.64-IS-5	MW-69-89.64-IS-6	MW-69-IS-7	MW-069-ODLA-1	MW-69
	Sample Date	4/14/2008	10/17/2008	4/15/2009	10/14/2009	3/26/2010	4/26/2011
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	<0.5	0.229 J	<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	<0.3	0.147 J	0.206 J	<0.3	0.161 J	0.203 J
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	0.658 J	0.67 J	0.308 J	0.271 J	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	0.88 J	1.74	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit
R Unusable

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-69

	Sample Name	MW-69	MW-69
	Sample Date	4/20/2012	4/13/2013
Analyte	Unit		
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	<1	<1
Chloroform	µg/L	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1
Tetrachloroethene	µg/L	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1
Trichloroethene	µg/L	<1	<1
Vinyl chloride	µg/L	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit
R Unusable

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-70

	Sample Name	MW-70	MW-70	MW-70	MW-70	MW-70	MW-70
	Sample Date	2/15/2000	3/24/2000	5/18/2000	8/24/2000	11/10/2000	1/8/2001
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	4830	310	342	930	3370	390
1,1,2-Trichloroethane	µg/L	39.4	4	3.93	15.2	16	2
1,1-Dichloroethene	µg/L	0.61 J	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	3.48	0.4 J	0.64 J	2.46	1.81	0.4 J
Chloroform	µg/L	18.2	2	5.18	8.46	9.37	1 J
cis-1,2-Dichloroethene	µg/L	522	46	54.8	211	292	9
Tetrachloroethene	µg/L	89.7	13	5.35	35.8	32.5 J	2
trans-1,2-Dichloroethene	µg/L	149	14	12	50.4	57.3	5
Trichloroethene	µg/L	11700	1100	720	4240	4040	590
Vinyl chloride	µg/L	1.88	0.2 J	<1	0.62 J	1.69	8

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-70

	Sample Name	MW-70	MW-70	MW-70	MW-70	MW-70	MW-70
	Sample Date	10/3/2001	4/10/2002	10/2/2002	4/8/2003	10/28/2003	4/29/2004
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	766	2540	7980	3060	8270	8500
1,1,2-Trichloroethane	µg/L	<1	7.35	<50	<50	6.92	<250
1,1-Dichloroethene	µg/L	<1	0.98 J	<50	<50	<1	<250
Carbon tetrachloride	µg/L	<1	<1	<50	<50	0.64 J	<250
Chloroform	µg/L	<1	3.99	<50	<50	2.5	<250
cis-1,2-Dichloroethene	µg/L	92.8 J	69.2	72.4	31.6	50	120 J
Tetrachloroethene	µg/L	<1	3.27	<50	<50	3.85	<250
trans-1,2-Dichloroethene	µg/L	<1	27.3	<50	<50	3.91	<250
Trichloroethene	µg/L	2340	2940	1980	824	2530	3700
Vinyl chloride	µg/L	<1	17	<50	<50	10.3	<250

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
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< Not detected at sample reporting limit
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HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-70

	Sample Name	MW-70	MW-70	MW-70	MW-70	MW-70	MW-70
	Sample Date	8/14/2004	10/21/2004	10/22/2004	6/14/2005	11/19/2005	4/12/2006
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	3500	4200	5800	6410	2990	7670
1,1,2-Trichloroethane	µg/L	<120	<170	<140	8.88	6.65 J	6.15
1,1-Dichloroethene	µg/L	<120	<170	<140	<5	1.07	3.36
Carbon tetrachloride	µg/L	<120	<170 J	<140	<5	<10	<1
Chloroform	µg/L	<120	<170	<140	<5	2.12 B	1.52 B
cis-1,2-Dichloroethene	µg/L	<120	<170	41 J	67.8	70.5	48.1
Tetrachloroethene	µg/L	<120	<170	<140	6.3 J	4.84	16.5
trans-1,2-Dichloroethene	µg/L	<120	<170	<140	6.31	15.8	16.6
Trichloroethene	µg/L	970	1100	2100	361	2420	2130
Vinyl chloride	µg/L	<120	<170	<140	18.1	29.5	94.2

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
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B Possibly bias high or false positive based on blank data
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UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-70

	Sample Name	MW-70	MW-70	MW-70	MW-70	MW-70	MW-70
	Sample Date	10/20/2006	4/11/2007	10/8/2007	4/14/2008	10/17/2008	4/15/2009
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	9200	627	455	270	0.883	1.98
1,1,2-Trichloroethane	µg/L	25.7	2.17	14.7	1.11 J	<1	<1
1,1-Dichloroethene	µg/L	1.89	1.75	2.48	1.71 J	<1	<1
Carbon tetrachloride	µg/L	0.575 J	<1	<2	<2.5	<1	<1
Chloroform	µg/L	3.79	1.08	0.461 J	<0.75	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	122	58.5	8.01	14.2	<1	<1
Tetrachloroethene	µg/L	29.5	8.16	4.44	1.53 J	0.876 J	0.58 J
trans-1,2-Dichloroethene	µg/L	19.7	5.48	11.5	4.74	<1	<1
Trichloroethene	µg/L	3390	750	308	86	1.96	4.95
Vinyl chloride	µg/L	64.2	94.3	42.3	13.5	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
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< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-70

	Sample Name	MW-70	MW-70	MW-70	MW-70	MW-70	MW-70
	Sample Date	7/30/2009	10/15/2009	3/25/2010	6/22/2010	9/22/2010	1/26/2011
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	0.594	0.971	<0.5	1.03	1.07 J	1.05
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	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	0.582 J	0.71 J	1.04	1.3	1.25	1.21
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	2.66	1.93	0.581 J	4.11	3.78	3.09
Vinyl chloride	µg/L	<1	<1 UJ	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
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HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-70

	Sample Name	MW-70	MW-70	MW-70	MW-70
	Sample Date	4/25/2011	9/27/2011	4/19/2012	4/13/2013
Analyte	Unit				
1,1,2,2-Tetrachloroethane	µg/L	0.415 J	0.669	0.505	<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	0.174 J	<0.3	<0.3	0.166 J
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Tetrachloroethene	µg/L	0.716 J	1.03	0.768 J	0.642 J
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Trichloroethene	µg/L	2	1.64	1.34	0.988 J
Vinyl chloride	µg/L	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
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UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-71

	Sample Name	MW-71-Y2Q1	MW71NA	MW-71	MW-71-Y2Q3	MW-71-Y2Q4	MW-71-Y3S2-B
	Sample Date	2/15/2000	3/24/2000	5/18/2000	8/23/2000	11/9/2000	10/3/2001
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	97.7	180	181	168	78.4	268
1,1,2-Trichloroethane	µg/L	3.21	5 J	4.54	4.04	2.99	5.17 J
1,1-Dichloroethene	µg/L	<1	<10	<1	<1	<1	<1
Carbon tetrachloride	µg/L	53.9	47	34	32.9	26.5	22.6
Chloroform	µg/L	996	1600	1080	989	605 J	857
cis-1,2-Dichloroethene	µg/L	11.5	14	9.98	8.94	6.49	9.09 J
Tetrachloroethene	µg/L	10	15	7.35	7.02	4.09 J	<1
trans-1,2-Dichloroethene	µg/L	4.7	5 J	3.72	2.94	2.29	2.91 J
Trichloroethene	µg/L	330	390	239	247	95.6	186
Vinyl chloride	µg/L	<1	<10	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
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UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-71

	Sample Name	MW-71-2_020410	MW-71-2_021002	MW-71-2	MW-71-2_031028	MW71 (74.4-76.4)	MW71 73.86-75.86
	Sample Date	4/10/2002	10/2/2002	4/8/2003	10/28/2003	4/29/2004	10/21/2004
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	68.1	9.49	7.62	27	3.8	6
1,1,2-Trichloroethane	µg/L	6	<1	0.66	<1	<2	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<2	<1
Carbon tetrachloride	µg/L	20.3	11.2	17.6	6.87	8.2	5.6 J
Chloroform	µg/L	828	8.89	35.4	88.8	56	28
cis-1,2-Dichloroethene	µg/L	9.64	1.12	1.59	1.59	0.98 J	0.7 J
Tetrachloroethene	µg/L	1.96	<1	1.31	<1	0.54 J	0.4 J
trans-1,2-Dichloroethene	µg/L	3.36	<1	0.52	<1	<2	<1
Trichloroethene	µg/L	70.9	27	44.5	17.4	6.9	12
Vinyl chloride	µg/L	<1	<1	<1	<1	<2	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-71

	Sample Name	MW71RD73	MW-71	MW-71	MW-71	MW-71
	Sample Date	10/28/2004	6/14/2005	11/16/2005	4/12/2006	10/20/2006
Analyte	Unit					
1,1,2,2-Tetrachloroethane	µg/L	4.27	25.8	27.6	26.3	22.9
1,1,2-Trichloroethane	µg/L	<1	0.634 J	0.924 J	0.766 J	1.16
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	9.9	12.8	14	16.3	37.8
Chloroform	µg/L	17.5	103	94.2	73.5	303
cis-1,2-Dichloroethene	µg/L	0.59 J	1.86	10.6	10.6	11.7
Tetrachloroethene	µg/L	0.61 J	1.58	2.1	2.65	7.34
trans-1,2-Dichloroethene	µg/L	<1	0.532 J	<1	0.977 J	3.07
Trichloroethene	µg/L	6.95	34.9	47.9	54	158 J
Vinyl chloride	µg/L	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-71

	Sample Name	MW-71-72.3-IS-2	MW-71-72.3-IS-3	MW-71-72.3-IS-4	MW-71-74.28-IS-5	MW-71-74.28-IS-6
	Sample Date	4/11/2007	10/8/2007	4/14/2008	10/17/2008	4/15/2009
Analyte	Unit					
1,1,2,2-Tetrachloroethane	µg/L	4.66	2.21	1.72	5.32	4.42
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	16.5	12.6	7.66	5.94	0.683 J
Chloroform	µg/L	59.2	32.6	17.3	27.2	8.79
cis-1,2-Dichloroethene	µg/L	1.89	1.65	0.523 J	0.717 J	0.262 J
Tetrachloroethene	µg/L	3.03	1.52	0.715 J	0.856 J	0.265 J
trans-1,2-Dichloroethene	µg/L	0.59 J	0.36 J	<1	<1	<1
Trichloroethene	µg/L	36.2	21	9.37	12.7	3.93
Vinyl chloride	µg/L	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
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B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-71

	Sample Name	MW-71-IS-7	MW-071-ODLA-1	MW-71	MW-71	MW-71
	Sample Date	10/14/2009	3/26/2010	4/26/2011	4/19/2012	4/13/2013
Analyte	Unit					
1,1,2,2-Tetrachloroethane	µg/L	7.97	8.26	0.892	0.953	0.58
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	0.301 J	<1	<1	0.53 J	0.452 J
Chloroform	µg/L	3.79	1.47	29.3	10.6	8.06
cis-1,2-Dichloroethene	µg/L	<1	<1	0.531 J	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	0.264 J	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Trichloroethene	µg/L	2.23	0.612 J	4.48	3.02	2.39
Vinyl chloride	µg/L	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-76

	Sample Name	MW-76	MW-76	MW-76	MW-76	MW-76	MW-76
	Sample Date	1/8/2001	2/14/2001	10/3/2001	4/10/2002	10/1/2002	4/8/2003
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	2300	694	332	15.5	54.7	8.92
1,1,2-Trichloroethane	µg/L	2	<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	1.22	<1	1.44
cis-1,2-Dichloroethene	µg/L	58	17.8	4.67 J	13.5	2.94	5.98
Tetrachloroethene	µg/L	5	3.98	<1	1.81	1.8	7.43
trans-1,2-Dichloroethene	µg/L	19	6.84	7.57 J	7.71	1.17	4.74
Trichloroethene	µg/L	840	276	72.2	90.7	37.2	78.9
Vinyl chloride	µg/L	0.3 J	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-76

	Sample Name	MW-76	MW-76	MW-76	MW-76	MW-76	MW-76
	Sample Date	10/28/2003	4/29/2004	8/16/2004	10/21/2004	6/15/2005	11/17/2005
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	8.08	3.6	2.9	4.3	4.98 B	<1
1,1,2-Trichloroethane	µg/L	<1	<1	<2	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<2	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<2	<1 J	<1	<1
Chloroform	µg/L	<1	0.23 J	0.47 J	0.18 J	<1	<1
cis-1,2-Dichloroethene	µg/L	4.16	0.95 J	6.9	0.69 J	<1	<1
Tetrachloroethene	µg/L	2.29	1.4	1.8 J	0.27 J	0.854 J	1.14
trans-1,2-Dichloroethene	µg/L	1.93	0.44 J	3.5	0.24 J	<1	<1
Trichloroethene	µg/L	33.8	4	34	8.9	3.88	5.16 B
Vinyl chloride	µg/L	<1	<1	<2	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
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B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-76

	Sample Name	MW-76	MW-76	MW-76	MW-76	MW-76	MW-76
	Sample Date	4/12/2006	10/20/2006	4/10/2007	10/8/2007	4/14/2008	10/17/2008
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	18.3	2.58	3.82	18.4	77	9.41
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	0.303 J	<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	0.208 J	0.359	0.978	0.915	0.167 J
cis-1,2-Dichloroethene	µg/L	<1	0.263 J	3.08	11.8	13.2	0.406 J
Tetrachloroethene	µg/L	2.36	1.84	2.74	4.82	4.44	1.35
trans-1,2-Dichloroethene	µg/L	<1	<1	1.41	5.79	3.59	<1
Trichloroethene	µg/L	7.71	4.9	26.4	132	336 J	15
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
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UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-76

Analyte	Sample Name / Sample Date	Unit	MW-76 4/14/2009	MW-76 7/30/2009	MW-76 10/15/2009	MW-76 3/25/2010	MW-76 6/22/2010	MW-76 9/22/2010
1,1,2,2-Tetrachloroethane		µg/L	0.864	1.11	1.38	0.525	0.378 J	1.07
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 UJ	<1
Chloroform		µg/L	0.152 J	0.146 J	<0.3	0.134 J	<0.3	0.139 J
cis-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene		µg/L	0.444 J	0.444 J	0.35 J	<1	0.361 J	0.376 J
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	2.74	3.26	2.27	1.35	1.41	2.51
Vinyl chloride		µg/L	<1	<1	<1 UJ	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
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HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-76

	Sample Name	MW-76	MW-76	MW-76	MW-76	MW-76
	Sample Date	1/26/2011	4/25/2011	9/27/2011	4/19/2012	4/13/2013
Analyte	Unit					
1,1,2,2-Tetrachloroethane	µg/L	0.853	0.294 J	0.276 J	0.398 J	0.284 J
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	0.138 J	<0.3	0.15 J	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	0.322 J	<1	0.3 J	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Trichloroethene	µg/L	1.79	0.833 J	0.717 J	0.923 J	0.624 J
Vinyl chloride	µg/L	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

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HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-77

	Sample Name	MW-77	MW-77	MW-77	MW-77	MW-77	MW-77
	Sample Date	1/8/2001	10/3/2001	4/10/2002	10/1/2002	4/8/2003	11/18/2003
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	2900	1820	4330	18200	30000	12800
1,1,2-Trichloroethane	µg/L	8	<1	9.46	<50	<50	8.53
1,1-Dichloroethene	µg/L	<10	<1	<1	<50	<50	<1
Carbon tetrachloride	µg/L	0.6 J	<1	<1	<50	<50	0.86 J
Chloroform	µg/L	4 J	<1	5.39	<50	<50	4.96
cis-1,2-Dichloroethene	µg/L	130	76.4 J	176	237	230	189
Tetrachloroethene	µg/L	6	<1	7.18	<50	<50	14.8
trans-1,2-Dichloroethene	µg/L	33	20.1 J	42.2	42.9 J	42.2	37.8
Trichloroethene	µg/L	2500	1620	3170	5040	5320	4550
Vinyl chloride	µg/L	0.4 J	<1	<1	<50	<50	<1

Notes:
µg/L micrograms per liter
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HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-77

	Sample Name	MW-77	MW-77	MW-77	MW-77	MW-77	MW-77
	Sample Date	4/29/2004	8/15/2004	10/21/2004	6/15/2005	11/16/2005	4/12/2006
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	15000	11000	4700	2290 J	14000	21700
1,1,2-Trichloroethane	µg/L	<620	<330	<250	<20	18.7	15.7
1,1-Dichloroethene	µg/L	<620	<330	<250	<20	<1	<1
Carbon tetrachloride	µg/L	<620	<330	<250 J	<20	0.961 J	1.12
Chloroform	µg/L	<620	<330	<250	<20	2.58 B	4.32 B
cis-1,2-Dichloroethene	µg/L	170 J	94 J	64 J	100	107	154
Tetrachloroethene	µg/L	<620	<330	<250	16.8 J	21.1	48
trans-1,2-Dichloroethene	µg/L	<620	<330	<250	24.1	15.5	38.5
Trichloroethene	µg/L	5400	3200	1700	2100	5300	5520
Vinyl chloride	µg/L	<620	<330	<250	<20	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

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HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-77

	Sample Name	MW-77	MW-77	MW-77	MW-77	MW-77	MW-77
	Sample Date	4/26/2006	10/20/2006	4/10/2007	10/8/2007	4/14/2008	10/17/2008
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	16700	14300	8800	1980	566	2010
1,1,2-Trichloroethane	µg/L	14.6	17.4	<50	2.59	<20	2.3
1,1-Dichloroethene	µg/L	<1 U	<1	<50	<1	<20	<1
Carbon tetrachloride	µg/L	1.05	0.922 J	<50	<1	<20	<1
Chloroform	µg/L	5.05 J	4.77	<15	0.822	<6	0.573
cis-1,2-Dichloroethene	µg/L	154	151	67.5	22.1	7.13 J	13.2
Tetrachloroethene	µg/L	22.2	46.9	21 J	17	<20	4.62
trans-1,2-Dichloroethene	µg/L	36.3	19.1	<50	2.16	<20	0.709 J
Trichloroethene	µg/L	5170	6500	3330	1290	309	796
Vinyl chloride	µg/L	<1 UJ	<1	<50	<1	<20	<1

Notes:
µg/L micrograms per liter
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HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-77

	Sample Name	MW-77	MW-77	MW-77	MW-77	MW-77	MW-77
	Sample Date	4/15/2009	7/30/2009	10/15/2009	3/25/2010	6/22/2010	9/22/2010
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	28.3	27.2	47.5	5.34	19.6	20.4
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 UJ	<1
Chloroform	µg/L	0.13 J	0.153 J	0.175 J	0.179 J	0.181 J	0.238 J
cis-1,2-Dichloroethene	µg/L	0.447 J	0.52 J	0.94 J	<1	0.558 J	0.592 J
Tetrachloroethene	µg/L	1.49	0.619 J	0.685 J	0.4 J	0.585 J	0.405 J
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	21.9	23.6	36.7	5.68	22.8	23.6
Vinyl chloride	µg/L	<1	<1	<1 UJ	<1	<1	<1

Notes:
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HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-77

	Sample Name	MW-77	MW-77	MW-77	MW-77	MW-77	MW-77	MW-77
	Sample Date	1/26/2011	4/25/2011	9/27/2011	4/19/2012	10/17/2012	5/9/2013	10/10/2013
Analyte	Unit							
1,1,2,2-Tetrachloroethane	µg/L	25	22	16.9	6.01	6.48	7.45	5.76
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	0.234 J	0.325	0.425	0.509	0.62	0.426	0.41
cis-1,2-Dichloroethene	µg/L	0.516 J	0.746 J	0.442 J	<1	0.264 J	0.381 J	<1
Tetrachloroethene	µg/L	0.452 J	0.353 J	0.369 J	0.478 J	0.411 J	0.447 J	0.371 J
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	23.7	31.1	21.2	8.48	13	15.5	15.6
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

Notes:
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HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-78

	Sample Name	MW-78	MW-78-Y3S2-C	MW-78-3_020410	MW-78-3_021001	MW-78-1	MW-78-1_031028
	Sample Date	2/14/2001	10/3/2001	4/10/2002	10/1/2002	4/8/2003	10/28/2003
Analyte	Unit						
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
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:
µg/L micrograms per liter
RL reporting limit

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HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-78

	Sample Name	MW78 (62-64)	MW78 61.8-63.8	MW78-58	MW78-59	MW-78-IS-6	MW-78-ODLA-1
	Sample Date	4/29/2004	10/21/2004	11/17/2005	11/8/2007	4/21/2009	3/29/2010
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	5.2	0.74 J	<1	<1	<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 J	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	<1	<1	<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
trans-1,2-Dichloroethene	µg/L	0.7 J	<1	<1	<1	<1	<1
Trichloroethene	µg/L	0.36 J	0.59 J	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1 UJ	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

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HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-78

	Sample Name	MW-78	MW-78
	Sample Date	4/28/2011	4/12/2013
Analyte	Unit		
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	<1	<1
Chloroform	µg/L	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1
Tetrachloroethene	µg/L	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1
Trichloroethene	µg/L	<1	<1
Vinyl chloride	µg/L	<1	<1

Notes:
µg/L micrograms per liter
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HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-79

	Sample Name	MW-79	MW-79	MW-79	MW-79	MW-79	MW-79
	Sample Date	2/15/2001	2/19/2001	10/3/2001	4/10/2002	10/1/2002	4/8/2003
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	<1	3.34	<1	<1	<10	<1
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<10	<1
1,1-Dichloroethene	µg/L	48	30.1	37.6	18.8	23.8	35.8
Carbon tetrachloride	µg/L	0.1 J	<1	<1	<1	<10	<1
Chloroform	µg/L	1.7	<1	<1	<1	<10	<1
cis-1,2-Dichloroethene	µg/L	6.1	2.52	0.88 J	0.68 J	8.67 J	0.86
Tetrachloroethene	µg/L	34	14	6.85	6.96	3.26 J	5.64
trans-1,2-Dichloroethene	µg/L	2.2	<1	0.96 J	1.09	9	1.31
Trichloroethene	µg/L	26	9.6	8.8	9	68.4	15.2
Vinyl chloride	µg/L	<1	<1	<1	<1	<10	<1

Notes:
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HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-79

	Sample Name	MW-79	MW-79	MW-79	MW-79	MW-79	MW-79
	Sample Date	10/28/2003	4/29/2004	8/13/2004	10/22/2004	1/26/2005	3/22/2005
Analyte	Unit						
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	23.9	9.4	7.6 B	7.8	9.1	10
Carbon tetrachloride	µg/L	<1	<1	0.77 J	0.42 J	0.22 J	0.3 J
Chloroform	µg/L	<1	0.21 J	<1	0.29 J	<1	0.28 B
cis-1,2-Dichloroethene	µg/L	2.07	1.7	1.9	3	1	2.4
Tetrachloroethene	µg/L	2.1	2.1	1.7	1.8	1.2	1.2
trans-1,2-Dichloroethene	µg/L	1.61	2 J	1.6	3	1.1	2.3
Trichloroethene	µg/L	12.4	8.3	14	9.5	7.5	16
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
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HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-79

	Sample Name	MW-79	MW-79	MW-79	MW-79	MW-79	MW-79
	Sample Date	6/16/2005	11/18/2005	4/13/2006	10/18/2006	4/10/2007	10/8/2007
Analyte	Unit						
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	13.1	16.6	11.4	10.6	11.2	13.7
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	1.59	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	1.17	1.01	<1	0.47 J	1.06	1.14
trans-1,2-Dichloroethene	µg/L	1.28	<1	<1	<1	<1	<1
Trichloroethene	µg/L	9.99	3.69	1.94	1.63	1.9	3.27
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
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Defense Depot Memphis, Tennessee

MW-79

	Sample Name	MW-79	MW-79	MW-79	MW-79	MW-79	MW-79
	Sample Date	4/11/2008	10/20/2008	6/8/2009	10/16/2009	3/25/2010	6/22/2010
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	30.4	<0.5	<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	10	4.17	1.17	3.99	17.9	26.4
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1 UJ
Chloroform	µg/L	<0.3	0.127 J	<0.3	<0.3	0.152 J	0.228 J
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	0.438 J
Tetrachloroethene	µg/L	0.917 J	0.914 J	0.536 J	1.38	26.6	50.8
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	7.5	0.948 J	0.501 J	1.25	16.9	39
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
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HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-79

	Sample Name	MW-79	MW-79	MW-79	MW-79	MW-79	MW-79
	Sample Date	9/23/2010	1/25/2011	4/25/2011	9/27/2011	4/18/2012	10/17/2012
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	<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	35.7	28.7	25.3	25.3	10.1	2.71
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.17 J	0.211 J	0.155 J	1.31	0.233 J	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	25	18.1	12.2	15.4	12.1	4.06
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	20.2	17.3	14.7	19.7	10.3	3.12
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
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UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-79

	Sample Name	MW-79	MW-79
	Sample Date	4/13/2013	10/10/2013
Analyte	Unit		
1,1,2,2-Tetrachloroethane	µg/L	<0.5 UJ	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1
1,1-Dichloroethene	µg/L	4.71	1.93
Carbon tetrachloride	µg/L	<1	<1
Chloroform	µg/L	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1
Tetrachloroethene	µg/L	6.35	3.6
trans-1,2-Dichloroethene	µg/L	<1	<1
Trichloroethene	µg/L	6.07	2.67
Vinyl chloride	µg/L	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-80

	Sample Name	MW-80	MW-80	MW-80	MW-80	MW-80	MW-80
	Sample Date	2/15/2001	2/19/2001	10/3/2001	4/10/2002	10/1/2002	4/8/2003
Analyte	Unit						
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	1.07	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1
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:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-80

	Sample Name	MW-80	MW-80	MW-80	MW-80	MW-80	MW-80
	Sample Date	10/28/2003	4/29/2004	8/17/2004	10/22/2004	11/17/2005	11/8/2007
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	<1	<1 J	<1	<1	<1	<1
1,1,2-Trichloroethane	µg/L	<1	<1 J	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1 J	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1 J	<1	<1	<1	<1
Chloroform	µg/L	<1	<1 J	<1	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	<1	<1 J	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1 J	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1 J	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1 J	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1 J	<1	<1	<1 UJ	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-80

	Sample Name	MW-80	MW-80
	Sample Date	4/20/2012	4/11/2013
Analyte	Unit		
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	<1	<1
Chloroform	µg/L	<0.3	0.329
cis-1,2-Dichloroethene	µg/L	<1	<1
Tetrachloroethene	µg/L	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1
Trichloroethene	µg/L	<1	<1
Vinyl chloride	µg/L	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-87

	Sample Name	MW87-80.3FT	MW87RD74	MW87-77	MW87-68	MW-87-IS-6	MW-87-IS-7
	Sample Date	1/8/2001	10/27/2004	11/21/2005	11/9/2007	4/23/2009	10/13/2009
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	140	10.2 J	86.6	180	0.939	7.09
1,1,2-Trichloroethane	µg/L	6	0.799 J	3.59	6.67	<1	<1
1,1-Dichloroethene	µg/L	0.2 J	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	32	18.7 J	8.18	7.16	<1	<1
Chloroform	µg/L	6	6.03 J	3.88	6.25	0.148 J	0.471
cis-1,2-Dichloroethene	µg/L	210	49.5 J	65.4	91.2	<1	0.391 J
Tetrachloroethene	µg/L	2	1.45 J	0.95 J	0.676	<1	<1
trans-1,2-Dichloroethene	µg/L	17	5.40 J	3.49	4.6	<1	<1
Trichloroethene	µg/L	150	105 J	64.2	91.4	<1	0.778 J
Vinyl chloride	µg/L	0.9 J	<1	<1 UJ	0.272	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-87

Analyte	Sample Name / Sample Date	Unit	MW-087-ODLA-1 3/26/2010	MW-87 4/26/2011	MW-87 7/19/2011	MW-87 4/19/2012	MW-87 10/17/2012	MW-87 4/12/2013	MW-87 10/10/2013
1,1,2,2-Tetrachloroethane		µg/L	12	1.49	1.54	0.207 J	<0.5	<0.5	<0.5
1,1,2-Trichloroethane		µg/L	0.653 J	<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	1.04	3.04	3.05	0.53	0.377	0.254 J	3.46
cis-1,2-Dichloroethene		µg/L	1.38	0.398 J	0.547 J	<1	<1	0.32 J	<1
Tetrachloroethene		µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	2	0.985 J	0.897 J	<1	<1	<1	0.677 J
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-91

	Sample Name	MW91RD68	MW91-68	MW91-69	MW-91-IS-6	MW-91-IS-7	MW-91
	Sample Date	10/27/2004	11/21/2005	11/7/2007	4/22/2009	10/14/2009	4/28/2011
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	<1	0.26 J	<1	0.92	0.678	<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	9.35 J	4.8 J	3.29	0.449 J	0.479 J	0.391 J
Chloroform	µg/L	13.4 J	4.72	25.6	0.538	1.83	2.86
cis-1,2-Dichloroethene	µg/L	1.19 J	0.46 J	<1	<1	<1	<1
Tetrachloroethene	µg/L	1.18 J	0.72 J	0.594	0.677 J	0.494 J	0.305 J
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	12.7 J	6.01	13.8	<1	0.567 J	1.41
Vinyl chloride	µg/L	<1	<1 UJ	<1	<1 UJ	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
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< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-91

	Sample Name	MW-91	MW-91
	Sample Date	4/19/2012	4/12/2013
Analyte	Unit		
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	<1	<1
Chloroform	µg/L	0.633	0.926
cis-1,2-Dichloroethene	µg/L	<1	<1
Tetrachloroethene	µg/L	<1	0.251 J
trans-1,2-Dichloroethene	µg/L	<1	<1
Trichloroethene	µg/L	<1	0.332 J
Vinyl chloride	µg/L	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-126

	Sample Name	MW-126	MW-126	MW-126	MW-126	MW-126	MW-126
	Sample Date	10/1/2002	4/8/2003	10/28/2003	4/29/2004	10/22/2004	11/17/2005
Analyte	Unit						
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	0.12 J
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1
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 UJ

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-126

	Sample Name	MW-126	MW-126	MW-126
	Sample Date	11/7/2007	4/18/2012	4/12/2013
Analyte	Unit			
1,1,2,2-Tetrachloroethane	µg/L	<1	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1
Chloroform	µg/L	<1	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-129

	Sample Name	MW-129	MW-129	MW-129	MW-129	MW-129	MW-129
	Sample Date	7/28/2003	10/28/2003	4/29/2004	10/22/2004	11/22/2005	11/8/2007
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<2.5	0.19 J	<1
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<2.5	<1	<1
1,1-Dichloroethene	µg/L	41	42	27	32	36	32.7
Carbon tetrachloride	µg/L	<1	<1	<1	<2.5	<1	<1
Chloroform	µg/L	<1	<1	<1	<2.5	<1	<1
cis-1,2-Dichloroethene	µg/L	<1	<1	0.27 J	<2.5	0.33 J	0.36
Tetrachloroethene	µg/L	8.85	26.1	9.6	9.2	25.4	30.2
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<2.5	<1	<1
Trichloroethene	µg/L	9.71	13.4	12	14	19.3	19.1
Vinyl chloride	µg/L	<1	<1	<1	<2.5	<1 UJ	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-129

	Sample Name	MW-129	MW-129
	Sample Date	4/19/2012	4/13/2013
Analyte	Unit		
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5 UJ
1,1,2-Trichloroethane	µg/L	<1	<1
1,1-Dichloroethene	µg/L	13.7	16.8
Carbon tetrachloride	µg/L	<1	<1
Chloroform	µg/L	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1
Tetrachloroethene	µg/L	15	18
trans-1,2-Dichloroethene	µg/L	<1	<1
Trichloroethene	µg/L	13.4	14.5
Vinyl chloride	µg/L	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-130

	Sample Name	MW-130	MW-130	MW-130	MW-130	MW-130	MW-130
	Sample Date	7/28/2003	10/28/2003	4/29/2004	10/22/2004	6/15/2005	11/17/2005
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<5	<3.3	<1	<1
1,1,2-Trichloroethane	µg/L	<1	<1	<5	<3.3	<1	<1
1,1-Dichloroethene	µg/L	41.1	42.2	57	35	22.6	28.3
Carbon tetrachloride	µg/L	<1	<1	<5	<3.3	<1	<1
Chloroform	µg/L	<1	<1	<5	<3.3	<1	<1
cis-1,2-Dichloroethene	µg/L	0.54 J	0.67 J	<5	0.63 J	<1	<1
Tetrachloroethene	µg/L	71.6	80.3	88	63	48.8	57.4
trans-1,2-Dichloroethene	µg/L	<1	<1	<5 J	<3.3	<1	<1
Trichloroethene	µg/L	54	64	76	50	37.9	43.5
Vinyl chloride	µg/L	<1	<1	<5	<3.3	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-130

	Sample Name	MW-130	MW-130	MW-130	MW-130	MW-130	MW-130
	Sample Date	4/12/2006	10/20/2006	4/10/2007	10/5/2007	4/11/2008	10/20/2008
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	<1	<0.5	<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	52.8	61.6	70	74	73.4	80.2
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	0.256 J	0.315	0.291 J	0.27 J	0.296 J
cis-1,2-Dichloroethene	µg/L	<1	0.766 J	0.818 J	0.82 J	0.789 J	0.799 J
Tetrachloroethene	µg/L	114	112	154	147	196	140
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	57.7	60.5	71.2	67.4	71	71.8
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-130

	Sample Name	MW-130	MW-130	MW-130	MW-130
	Sample Date	4/15/2009	10/15/2009	4/19/2012	4/13/2013
Analyte	Unit				
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	60.3	29 J	25.7	38.6
Carbon tetrachloride	µg/L	<1	<1	<1	<1
Chloroform	µg/L	0.237 J	0.206 J	0.227 J	0.274 J
cis-1,2-Dichloroethene	µg/L	0.925 J	0.856 J	0.766 J	1.04
Tetrachloroethene	µg/L	127	68.5 J	72.5	98.5
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Trichloroethene	µg/L	75.1	61.7 J	62.6	79.5
Vinyl chloride	µg/L	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-134

	Sample Name	MW-134	MW-134	MW-134	MW-134	MW-134	MW-134
	Sample Date	10/23/2003	11/18/2003	12/18/2003	2/3/2004	4/6/2004	10/28/2004
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	5.45	859	46.5	44.4	16.4	160
1,1,2-Trichloroethane	µg/L	<0.5	1.53	<0.5	4.02	0.354 J	11.30 J
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	0.329 J	13	1.62	1.52	0.261 J	5.39 J
Tetrachloroethene	µg/L	0.458 J	<0.5	<0.5	0.394 J	0.756	1.51 J
trans-1,2-Dichloroethene	µg/L	0.413 J	3.24	0.647 J	0.644 J	<1	1.95 J
Trichloroethene	µg/L	4.14	104	32.1	17.7	7.64	169 J
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-134

	Sample Name	MW-134	MW-134	MW-134	MW-134	MW-134	MW-134
	Sample Date	11/20/2005	5/17/2007	11/8/2007	4/16/2008	8/19/2008	10/20/2008
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	98	240	4.47	0.717	<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	0.29	<1	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	0.84 J	7.1	<1	<1	<1	<1
Tetrachloroethene	µg/L	1.83	3.1	0.42	0.488 J	0.535	0.801 J
trans-1,2-Dichloroethene	µg/L	0.41 J	1.8	<1	<1	<1	<1
Trichloroethene	µg/L	113	150	1.03	1.08	<1	<1
Vinyl chloride	µg/L	<1 UJ	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-134

	Sample Name	MW-134	MW-134	MW-134	MW-134	MW-134	MW-134
	Sample Date	4/17/2009	10/15/2009	7/19/2011	4/20/2012	10/17/2012	4/13/2013
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5 UJ
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1 UJ
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1 UJ
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1 UJ
Chloroform	µg/L	<0.3	0.128 J	0.668	0.17 J	<0.3	0.213 J
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1 UJ
Tetrachloroethene	µg/L	0.328 J	0.501 J	0.603 J	0.531 J	0.889 J	0.73 J
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1 UJ
Trichloroethene	µg/L	2.13	0.262 J	<1	<1	<1	<1 UJ
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1 UJ

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-134

	Sample Name	MW-134	MW-134
	Sample Date	5/9/2013	10/10/2013
Analyte	Unit		
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	<1	<1
Chloroform	µg/L	0.14 J	0.129 J
cis-1,2-Dichloroethene	µg/L	<1	<1
Tetrachloroethene	µg/L	0.685 J	0.883 J
trans-1,2-Dichloroethene	µg/L	<1	<1
Trichloroethene	µg/L	<1	<1
Vinyl chloride	µg/L	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-144

	Sample Name	MW-144	MW-144	MW144RD75	MW-144	MW-144	MW-144
	Sample Date	6/9/2004	8/12/2004	10/27/2004	1/27/2005	3/23/2005	6/15/2005
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	13000	7700	6230 J	4600	7700	5810 J
1,1,2-Trichloroethane	µg/L	--	<250	7.05 J	10 J	14 J	9.64 J
1,1-Dichloroethene	µg/L	<420	<250	<1	<12	<25	<10
Carbon tetrachloride	µg/L	<420	<250	1.47 J	<12	<25	<10
Chloroform	µg/L	<420	<250	2.76 J	3.2 J	4.3 J	<10
cis-1,2-Dichloroethene	µg/L	<420	68 J	74.1 J	69	72	70.2
Tetrachloroethene	µg/L	<420	<250	7.69 J	10 J	13 J	8.78 J
Total 1,2-Dichloroethene	µg/L	<830	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<420	<250	17.5 J	15	14 J	14.1
Trichloroethene	µg/L	3200	2800	2060	2100	4500	2610
Vinyl chloride	µg/L	<420	<250 J	<1	<12	<25	<10

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-144

Analyte	Sample Name / Sample Date	Unit	MW-144 11/14/2005	MW-144 4/12/2006	MW144-75_060427 4/27/2006	MW-144 10/19/2006	MW-144-74.9-IS-2 4/10/2007	MW-144-74.9-IS-3 10/8/2007
1,1,2,2-Tetrachloroethane		µg/L	4970	5040	4080	2520	1350	841
1,1,2-Trichloroethane		µg/L	14.1 J	9.04	8.94	60.4	20.4	8.75
1,1-Dichloroethene		µg/L	<20	<1	<1	<10	<10	<1
Carbon tetrachloride		µg/L	<20	1.03	0.9 J	<10	<10	1.59
Chloroform		µg/L	<20	2.72 B	3.13	1.45 J	<3	1.7
cis-1,2-Dichloroethene		µg/L	54.3	83.9	88.9	98.2	33.5	26.3
Tetrachloroethene		µg/L	10.2	19.9 J	16.9	11.4	4.11 J	3.49
Total 1,2-Dichloroethene		µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene		µg/L	<20	7.28 J	7.04	19.2	3.39 J	2.24
Trichloroethene		µg/L	2280	2650	2790	1890	694	464
Vinyl chloride		µg/L	<20	<1	<1 UJ	<10	<10	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-144

	Sample Name	MW-144-74.9-IS-4	MW-144-75.68-IS-6	MW-144-IS-7	MW-144-ODLA-1	MW-144	MW-144
	Sample Date	4/11/2008	4/15/2009	10/14/2009	3/26/2010	4/26/2011	4/19/2012
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	79.4	403	301	150	24.1	16.6
1,1,2-Trichloroethane	µg/L	0.461 J	1.06	0.661 J	0.321 J	<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	1.77	1.19	0.501	0.316	0.28 J	0.519
cis-1,2-Dichloroethene	µg/L	2.31	12.9	6.81	3.26	1.01	1.05
Tetrachloroethene	µg/L	<1	1.56	1.4	0.918 J	0.851 J	0.829 J
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	2.61	0.676 J	0.445 J	<1	<1
Trichloroethene	µg/L	37.6	179	173	109	43.2	49.6
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-144

	Sample Name	MW-144	MW-144	MW-144	MW-144
	Sample Date	10/17/2012	4/13/2013	5/9/2013	10/10/2013
Analyte	Unit				
1,1,2,2-Tetrachloroethane	µg/L	14.7	11 J	5.41	17.5
1,1,2-Trichloroethane	µg/L	<1	<1 UJ	<1	<1
1,1-Dichloroethene	µg/L	<1	<1 UJ	<1	<1
Carbon tetrachloride	µg/L	<1	<1 UJ	<1	<1
Chloroform	µg/L	0.377	0.305 J	0.222 J	0.549
cis-1,2-Dichloroethene	µg/L	0.942 J	0.822 J	0.327 J	1.08
Tetrachloroethene	µg/L	0.798 J	0.867 J	0.476 J	0.788 J
Total 1,2-Dichloroethene	µg/L	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1 UJ	<1	<1
Trichloroethene	µg/L	38.5	32.4 J	14	41.7
Vinyl chloride	µg/L	<1	<1 UJ	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-145

	Sample Name	MW-145	MW-145	MW-145	MW-145	MW-145	MW-145
	Sample Date	6/8/2004	8/16/2004	1/27/2005	3/23/2005	6/17/2005	11/17/2005
Analyte	Unit						
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-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	<2	--	--	--	--	--
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:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-145

Analyte	Sample Name / Sample Date	Unit	MW-145 4/13/2006	MW-145T 10/19/2006	MW-145-86.6-IS-2 4/9/2007	MW-145-86.6-IS-3 10/8/2007	MW-145-86.6-IS-4 4/14/2008	MW-145 10/20/2008
1,1,2,2-Tetrachloroethane		µg/L	<1	<0.5	<0.5	<0.5	<0.5 J	<0.5
1,1,2-Trichloroethane		µg/L	<1	<1	<1	<1	<1 J	<1
1,1-Dichloroethene		µg/L	<1	<1	<1	<1	<1 J	<1
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1 J	<1
Chloroform		µg/L	<1	<0.3	<0.3	<0.3	<0.3 J	<0.3
cis-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1 J	<1
Tetrachloroethene		µg/L	<1	<1	<1	<1	<1 J	<1
Total 1,2-Dichloroethene		µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1 J	<1
Trichloroethene		µg/L	<1	<1	<1	<1	<1 J	<1
Vinyl chloride		µg/L	<1	<1	<1	<1	<1 J	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-145

Analyte	Sample Name / Sample Date	Unit	MW-145 4/14/2009	MW-145-IS-7 10/15/2009	MW-145-ODLA-1 3/26/2010	MW-145 4/26/2011	MW-145 4/19/2012	MW-145 4/13/2013
1,1,2,2-Tetrachloroethane		µg/L	<0.5	<0.5	0.274 J	<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	0.682 J	0.886 J	0.493 J
Chloroform		µg/L	<0.3	<0.3	<0.3	0.585	0.927	0.844
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	0.425 J	0.639 J	0.713 J
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-147

	Sample Name	MW-147	MW-147	MW147RD74	MW-147	MW-147	MW-147
	Sample Date	6/10/2004	8/17/2004	10/26/2004	1/27/2005	3/22/2005	6/17/2005
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	97	56	61.8 J	140	180	251 J
1,1,2-Trichloroethane	µg/L	--	<5.6	0.742 J	1.8	2.2	2.62
1,1-Dichloroethene	µg/L	<5.7	2.2 B	1.23	1.2	2.7	2.07
Carbon tetrachloride	µg/L	1.8 J	4.3 J	1.5	0.36 J	0.45 J	0.729 J
Chloroform	µg/L	7.5	12	13.4	3.4	3	5.94 B
cis-1,2-Dichloroethene	µg/L	70	57	60.6	48	39	65.1
Tetrachloroethene	µg/L	7.5	5.3 J	5.94	3.4	3.4	4.44
Total 1,2-Dichloroethene	µg/L	94	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	24	20	23.3	12	15	15.9
Trichloroethene	µg/L	160	120	130	77	73	124
Vinyl chloride	µg/L	<5.7	<5.6	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-147

Analyte	Sample Name / Sample Date	Unit	MW-147 11/18/2005	MW-147 4/12/2006	MW-147 10/18/2006	MW-147-73.7-IS-2 4/10/2007	MW-147-73.7-IS-3 10/5/2007	MW-147-73.7-IS-4 4/11/2008
1,1,2,2-Tetrachloroethane		µg/L	185	311	87.9	634	198	22
1,1,2-Trichloroethane		µg/L	3.9	4.36	1.39	9.28	4.47	<1
1,1-Dichloroethene		µg/L	3.32	1.76	0.657 J	1.49	5.65	<1
Carbon tetrachloride		µg/L	1.27	0.565 J	0.364 J	0.83 J	2.3	<1
Chloroform		µg/L	5.1 B	5.53 B	2.66	7.24	4.6	0.509
cis-1,2-Dichloroethene		µg/L	95	74.8	41.2	155	120 J	6.15
Tetrachloroethene		µg/L	4.83	3.61	3.92	12.2	8.97	7.92
Total 1,2-Dichloroethene		µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene		µg/L	20.5	14.4	10.3	39.6	28.9	1
Trichloroethene		µg/L	121	106	81.3	278	169	53.9
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-147

Analyte	Unit	MW-147-77-IS-5 10/17/2008	MW-147-78.81-IS-6 4/14/2009	MW-147-IS-7 10/14/2009	MW-147-ODLA-1 3/26/2010	MW-147-ODLS-2 9/23/2010	MW-147 4/26/2011
1,1,2,2-Tetrachloroethane	µg/L	0.373 J	<0.5	<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	0.147 J	<0.3	<0.3	<0.3	<0.3	0.199 J
cis-1,2-Dichloroethene	µg/L	0.401 J	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	2.95	<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	3.1	<1	0.313 J	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-147

	Sample Name	MW-147	MW-147
	Sample Date	4/19/2012	4/13/2013
Analyte	Unit		
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5 UJ
1,1,2-Trichloroethane	µg/L	<1	<1
1,1-Dichloroethene	µg/L	<1	<1
Carbon tetrachloride	µg/L	<1	<1
Chloroform	µg/L	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1
Tetrachloroethene	µg/L	<1	<1
Total 1,2-Dichloroethene	µg/L	--	
trans-1,2-Dichloroethene	µg/L	<1	<1
Trichloroethene	µg/L	<1	<1
Vinyl chloride	µg/L	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-148

	Sample Name	MW-148	MW-148	MW-148	MW-148	MW-148	MW-148
	Sample Date	6/10/2004	8/17/2004	10/26/2004	1/27/2005	3/22/2005	6/17/2005
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	3.1	0.72 J	5.55	0.63 J	0.37 J	15.4
1,1,2-Trichloroethane	µg/L	--	<1	0.42 J	<1	<1	1.03
1,1-Dichloroethene	µg/L	<2.5	<1	<1	<1	<1	0.426 J
Carbon tetrachloride	µg/L	0.45 J	0.73 J	0.58 J	0.19 J	<1	0.583 J
Chloroform	µg/L	1.5 J	0.6 J	2.25	0.88 J	0.58 B	3.07 B
cis-1,2-Dichloroethene	µg/L	29	13	52.3	12	4.8	95.2
Tetrachloroethene	µg/L	6.4	3.7	7.83	4.5	3.3	6.44
Total 1,2-Dichloroethene	µg/L	40	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	11	4.9	21.3	3.8	1.9	26.8
Trichloroethene	µg/L	77	31	136	27	13	160
Vinyl chloride	µg/L	<2.5	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-148

	Sample Name	MW-148	MW-148	MW-148	MW-148	MW-148	MW-148
	Sample Date	11/18/2005	4/12/2006	10/18/2006	4/10/2007	10/5/2007	4/11/2008
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	2.87	2.47	3.72	1.75	3.43	6.92
1,1,2-Trichloroethane	µg/L	<1	<1	0.316 J	<1	<1	0.252 J
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	0.267 J	<1	<1	<1
Chloroform	µg/L	1.3 B	0.861 B	1.74	0.473	1.09	1.16
cis-1,2-Dichloroethene	µg/L	23.2	10.4	34.3	5.04	4.58	7.33
Tetrachloroethene	µg/L	3.93	2.88	7.53	4.18	3.78	3.59
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	6.4	3.18	10.7	1.82	6.68	2.74
Trichloroethene	µg/L	42	21.1	74.1	7.7	22.7	62.9
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-148

	Sample Name	MW-148	MW-148	MW-148	MW-148	MW-148	MW-148
	Sample Date	10/17/2008	6/8/2009	10/15/2009	3/24/2010	6/22/2010	9/22/2010
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	9.66	0.263 J	0.63	<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	0.665	0.137 J	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	6.63	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	2.42	0.36 J	<1	<1	<1	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	1.73	<1	<1	<1	<1	<1
Trichloroethene	µg/L	107	1.78	0.613 J	0.932 J	<1	<1
Vinyl chloride	µg/L	<1	<1	<1 UJ	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

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HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-148

	Sample Name	MW-148	MW-148	MW-148	MW-148	MW-148
	Sample Date	1/26/2011	3/28/2011	9/27/2011	4/19/2012	4/13/2013
Analyte	Unit					
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5 UJ
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	0.186 J	0.185 J	0.164 J	<0.3	0.125 J
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	0.254 J	<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:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE Flags:
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B Possibly bias high or false positive based on blank data
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HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-149

	Sample Name	MW-149	MW-149	MW-149	MW-149	MW-149	MW-149
	Sample Date	6/11/2004	8/18/2004	1/27/2005	4/12/2005	6/17/2005	11/19/2005
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	42	27 J	37	27	50.4	38.3
1,1,2-Trichloroethane	µg/L	--	<5	0.87 J	0.64 J	1.66	1.62
1,1-Dichloroethene	µg/L	<6.7	<5	<1	<1	<1	<1
Carbon tetrachloride	µg/L	17	12	14	16	15.7	22
Chloroform	µg/L	200	110	140	79	64	159
cis-1,2-Dichloroethene	µg/L	4.9 J	3.8 J	4	3.1	20.4	4.36
Tetrachloroethene	µg/L	2.7 J	1.6 J	1.8	1.6	1.01	2.13
Total 1,2-Dichloroethene	µg/L	6 J	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<6.7	<5	0.81 J	0.63 J	2.37	2.21
Trichloroethene	µg/L	68	38	45	35	68.1	75.4
Vinyl chloride	µg/L	<6.7	<5	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE Flags:
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HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-149

	Sample Name	MW-149	MW-149	MW-149	MW-149	MW-149	MW-149
	Sample Date	4/13/2006	10/19/2006	4/9/2007	10/5/2007	4/11/2008	10/20/2008
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	30.3	23.1	37.2	9.78	4.1	1.71
1,1,2-Trichloroethane	µg/L	1.23	0.686 J	1.29	0.346 J	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	12.6	12.9	19.8	8.05	6.7	8.17
Chloroform	µg/L	50	95.5	155	54	29.6	25.6
cis-1,2-Dichloroethene	µg/L	3.42	7.81	9.02	3.1	2.43	1.63
Tetrachloroethene	µg/L	1.3	1.44	3.81	1.84	1	0.717 J
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	1.48	1.13	1.59	0.536 J	0.675 J	0.378 J
Trichloroethene	µg/L	57.1	45.4	80.9	30.1	19.1	19.8
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
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µg/L micrograms per liter
RL reporting limit

DQE Flags:
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HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-149

	Sample Name	MW-149	MW-149	MW-149	MW-149	MW-149	MW-149
	Sample Date	6/8/2009	10/16/2009	3/24/2010	6/23/2010	9/23/2010	1/26/2011
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	8.51	9.93	5.47	15	29.8	24.8
1,1,2-Trichloroethane	µg/L	0.355 J	0.387 J	<1	0.69 J	1.3	1.07
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	4.46	6.36	1.78	2.02	6.98	7.91
Chloroform	µg/L	31.7	70	12.9	41.6	92.3	94.3
cis-1,2-Dichloroethene	µg/L	2.24	4.64	4.52	7.22	17.7	13.2
Tetrachloroethene	µg/L	0.776 J	1.16	0.718 J	0.651 J	1.92	2.16
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	0.382 J	0.662 J	0.679 J	0.595 J	1.54	1.33
Trichloroethene	µg/L	24.9	38.6	54.7	35	87.9	66.6
Vinyl chloride	µg/L	<1	<1	<1	<1	<1 J	<1

Notes:
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µg/L micrograms per liter
RL reporting limit

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HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-149

	Sample Name	MW-149	MW-149	MW-149	MW-149	MW-149	MW-149
	Sample Date	3/28/2011	9/27/2011	4/20/2012	10/17/2012	41377	10/10/2013
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	15	12.1	4.89	4.56	2.33	1.39
1,1,2-Trichloroethane	µg/L	0.764 J	0.42 J	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	4.35	2.26	1.07	0.517 J	0.397 J	0.502 J
Chloroform	µg/L	75.2	34.5	13.4	7.37	7.47	5.56
cis-1,2-Dichloroethene	µg/L	6.21	3.14	1.74	1.6	1.6	1.1
Tetrachloroethene	µg/L	1.55	0.838 J	0.522 J	0.296 J	0.312 J	0.437 J
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	0.722 J	0.27 J	<1	<1	<1	<1
Trichloroethene	µg/L	38.9	18.4	7.47	4.3	3.58	2.88
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
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µg/L micrograms per liter
RL reporting limit

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HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-150

	Sample Name	MW-150	MW-150	MW-150	MW-150	MW-150	MW-150
	Sample Date	6/24/2004	8/18/2004	10/25/2004	1/27/2005	3/23/2005	6/17/2005
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	7600	8000 J	10900 J	6700	6600	4790
1,1,2-Trichloroethane	µg/L	--	<250	5.73 J	6.9 J	5.1 J	9.2 J
1,1-Dichloroethene	µg/L	<200	<250	<1	<20	<20	<10
Carbon tetrachloride	µg/L	<200	<250	1.54 J	<20	<20	<10
Chloroform	µg/L	<200	<250	3.35 J	<20	3.3 J	<10
cis-1,2-Dichloroethene	µg/L	76 J	74 J	81.9 J	84	48	57
Tetrachloroethene	µg/L	<200	<250	13.6 J	<20	6.4 J	6.77 J
Total 1,2-Dichloroethene	µg/L	76 J	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<200	<250	21.1 J	22	9.1 J	8.83 J
Trichloroethene	µg/L	3000	3000	2330 J	690	2000	983
Vinyl chloride	µg/L	<200	<250	<1	<20	<20	<10

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

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UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-150

	Sample Name	MW-150	MW-150	MW-150	MW-150	MW-150	MW-150
	Sample Date	11/19/2005	4/12/2006	4/26/2006	10/19/2006	4/9/2007	10/8/2007
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	3080	2940	2590	8480	4620	3960
1,1,2-Trichloroethane	µg/L	16.3	5.7	6	5.31 J	27	87.2
1,1-Dichloroethene	µg/L	<10	<1	<1	0.619 J	0.687 J	<25
Carbon tetrachloride	µg/L	<10	0.413 J	0.31 J	<10	<25	<25
Chloroform	µg/L	1.36 B	2.09 B	2 J	2.22	1.92	<7.5
cis-1,2-Dichloroethene	µg/L	64.3	74.2	54	77.1	56.2	81.3
Tetrachloroethene	µg/L	2.47	4.09	4.02	7.13 J	6.54 J	18.9 J
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	5.78	8.66	10.3	9.79 J	24.3	11.6 J
Trichloroethene	µg/L	639	747	1120	2910	3060	2470
Vinyl chloride	µg/L	<10	<1	0.37 J	<10	0.83 J	<25

Notes:
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RL reporting limit

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HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-150

	Sample Name	MW-150	MW-150	MW-150	MW-150	MW-150	MW-150
	Sample Date	4/11/2008	10/20/2008	6/8/2009	10/16/2009	3/24/2010	6/22/2010
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	1960	1750	618	406	34.7	4.98
1,1,2-Trichloroethane	µg/L	9.85 J	12.4	3.21 J	0.716 J	<1	<1
1,1-Dichloroethene	µg/L	<20	0.992 J	<5	<2.5	<1	<1
Carbon tetrachloride	µg/L	<20	<1	<5	<2.5	<1	<1
Chloroform	µg/L	1.43 J	5	<1.5	0.913	0.246 J	0.222 J
cis-1,2-Dichloroethene	µg/L	37.3	22.4	6.26	1.27 J	0.453 J	<1
Tetrachloroethene	µg/L	8.1 J	5.22	3.36 J	1.1 J	0.711 J	0.888 J
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<20	1.28	<5	<2.5	<1	<1
Trichloroethene	µg/L	80.6 J	636	311	49.4	16.1	2.44
Vinyl chloride	µg/L	<20	<1	<5	<2.5	0.416 J	<1

Notes:
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RL reporting limit

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HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-150

	Sample Name	MW-150	MW-150	MW-150	MW-150	MW-150	MW-150
	Sample Date	9/22/2010	1/26/2011	3/28/2011	9/26/2011	4/19/2012	10/17/2012
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	0.917	11.4	9.89	15.5	3.4	2.64
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	0.16 J	0.178 J	0.16 J	0.878	1.55	0.746
cis-1,2-Dichloroethene	µg/L	<1	<1	0.304 J	0.757 J	0.263 J	<1
Tetrachloroethene	µg/L	0.976 J	0.678 J	0.836 J	<1	<1	<1
Total 1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	0.515 J	13.5	15.6	28.1	13.9	6.94
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
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µg/L micrograms per liter
RL reporting limit

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HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-150

	Sample Name	MW-150	MW-150	MW-150
	Sample Date	4/13/2013	5/9/2013	10/10/2013
Analyte	Unit			
1,1,2,2-Tetrachloroethane	µg/L	16.9 J	16.4	13.8
1,1,2-Trichloroethane	µg/L	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1
Chloroform	µg/L	0.698	0.695	0.574
cis-1,2-Dichloroethene	µg/L	0.803 J	1.01	0.743 J
Tetrachloroethene	µg/L	<1	<1	0.275 J
Total 1,2-Dichloroethene	µg/L	--	--	--
trans-1,2-Dichloroethene	µg/L	<1	<1	<1
Trichloroethene	µg/L	48.2	47.7	33.6
Vinyl chloride	µg/L	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE Flags:
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< Not detected at sample reporting limit
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HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-151

	Sample Name	MW-151	MW-151	MW-151	MW-151	MW-151	MW-151
	Sample Date	8/16/2004	10/26/2004	1/25/2005	3/22/2005	6/17/2005	11/17/2005
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	0.23 J	0.28 J	<1	<1
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	25.5
Carbon tetrachloride	µg/L	2.7	3.44	4.7	5.3	0.939 J	<1
Chloroform	µg/L	3.3	6.72	10	11	2.69 B	0.15 J
cis-1,2-Dichloroethene	µg/L	0.22 J	0.446 J	0.92 J	0.96 J	<1	<1
Tetrachloroethene	µg/L	<1	<1	0.4 J	0.48 J	<1	1.69
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	0.25 J	<1	<1
Trichloroethene	µg/L	2.2	3.67	6.3	7.2	1.31	7.31
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1 UJ

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
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UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-151

	Sample Name	MW-151	MW-151	MW-151	MW-151	MW-151	MW-151
	Sample Date	11/19/2005	4/13/2006	10/18/2006	4/9/2007	10/5/2007	4/14/2008
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	1.42	0.68	0.408 J	0.468 J
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	4.78	4.47	6.19	5.53	3.9	4.77
Chloroform	µg/L	8.04	11.4	16.9	12.5	12.4	15.5
cis-1,2-Dichloroethene	µg/L	1	1.22	1.45	1.24	1.29	1.42
Tetrachloroethene	µg/L	0.415 J	<1	0.621 J	0.588 J	0.859 J	0.639
trans-1,2-Dichloroethene	µg/L	<1	<1	0.282 J	0.274 J	0.304 J	0.613 J
Trichloroethene	µg/L	4.67 B	8.75	10.5	11.1	16.8	20.1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

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B Possibly bias high or false positive based on blank data
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HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-151

	Sample Name	MW-151	MW-151	MW-151	MW-151	MW-151	MW-151
	Sample Date	10/20/2008	6/8/2009	10/16/2009	3/23/2010	6/23/2010	9/23/2010
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	0.315 J
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	0.564 J	0.774 J	1.43	0.967 J	0.765 J	0.735 J
Chloroform	µg/L	1.34	1.81	2.92	2.93	2.67	2.36
cis-1,2-Dichloroethene	µg/L	<1	<1	0.416 J	0.369 J	0.309 J	0.309 J
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	2.62	5.1	8.06	9.9	8.21	7.24
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-151

	Sample Name	MW-151	MW-151	MW-151	MW-151	MW-151	MW-151	MW-151
	Sample Date	1/25/2011	3/28/2011	9/27/2011	4/19/2012	10/17/2012	41377	10/10/2013
Analyte	Unit							
1,1,2,2-Tetrachloroethane	µg/L	0.846	1.92	2.45	4.26	3.61	2.74 J	2.48
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	0.766 J	1.29	1.18	2.67	1.42	0.892 J	0.709 J
Chloroform	µg/L	4.65	12.3	16.3	37.4	23.9	14.5	10.6
cis-1,2-Dichloroethene	µg/L	0.61 J	1.24	0.998 J	1.93	1.17	0.87 J	0.801 J
Tetrachloroethene	µg/L	<1	0.286 J	0.3 J	0.793 J	0.507 J	0.398 J	0.347 J
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	0.262 J	<1	<1	<1
Trichloroethene	µg/L	7.69	10.8	10.5	19.1	11.4	8.14	5.67
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-152

	Sample Name	MW-152	MW-152	MW-152	MW-152	MW-152	MW-152
	Sample Date	8/15/2004	10/10/2004	10/11/2004	10/13/2004	10/14/2004	1/26/2005
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	11	<5	15	1500	12	9.3 J
1,1,2-Trichloroethane	µg/L	<3.3	<5	<5	<100	<5	<1
1,1-Dichloroethene	µg/L	<3.3	<5	<5	<100	<5	<1
Carbon tetrachloride	µg/L	2.1 J	<5	<5	<100	<5	0.39 J
Chloroform	µg/L	0.97 J	<5	<5	<100	<5	1.5
cis-1,2-Dichloroethene	µg/L	9.2	6.9	7.7	35 J	9	14
Tetrachloroethene	µg/L	5.4	4 J	3.1 J	<100	5.9	7.8
trans-1,2-Dichloroethene	µg/L	4.1	3.4 J	4.6 J	<100	4.1 J	6.6
Trichloroethene	µg/L	76	70	78	950	92	110
Vinyl chloride	µg/L	<3.3	<5	<5	<100	<5	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-152

	Sample Name	MW-152	MW-152	MW-152	MW-152	MW-152	MW-152
	Sample Date	3/22/2005	6/16/2005	11/18/2005	4/13/2006	10/18/2006	4/10/2007
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	6.5	5.32	4.95	8.16	4.87	8.67
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	0.24 J	<1	1	<1	<1	<1
Chloroform	µg/L	0.98 B	<1	2.19 B	1.76 B	1.2	1.84
cis-1,2-Dichloroethene	µg/L	10	4.22	29	18.7	12.7	21.8
Tetrachloroethene	µg/L	5.8	1.74	5.27	11.3	13.4	9.65
trans-1,2-Dichloroethene	µg/L	5.1	1.87	4.43	9.62	5.96	9.23
Trichloroethene	µg/L	59	19.3	71	161	125	185
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-152

Analyte	Sample Name / Sample Date	Unit	MW-152 10/8/2007	MW-152 4/11/2008	MW-152 10/20/2008	MW-152 6/8/2009	MW-152 10/16/2009	MW-152 3/25/2010
1,1,2,2-Tetrachloroethane		µg/L	4.85	3.05	11.7	3.33	9.85	77.8
1,1,2-Trichloroethane		µg/L	<1	<1	<1	<2	0.336 J	0.492 J
1,1-Dichloroethene		µg/L	<1	<1	0.758 J	<2	<1	<1
Carbon tetrachloride		µg/L	<1	<1	0.459 J	<2	<1	<1
Chloroform		µg/L	1.03	0.601	2.59	2.03	0.962	0.711
cis-1,2-Dichloroethene		µg/L	7.71	5.65	40.2	39.9	18.3	4.2
Tetrachloroethene		µg/L	7.69	8.53	15.7	7.4	2.89	0.681 J
trans-1,2-Dichloroethene		µg/L	5.18	2.42	13.4	13.1	1.39	<1
Trichloroethene		µg/L	95	72.7	260	241	183	40.8
Vinyl chloride		µg/L	<1	<1	<1	<2	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-152

	Sample Name	MW-152	MW-152	MW-152	MW-152	MW-152	MW-152	MW-152
	Sample Date	6/22/2010	9/23/2010	1/25/2011	3/28/2011	9/27/2011	4/18/2012	5/9/2013
Analyte	Unit							
1,1,2,2-Tetrachloroethane	µg/L	63.9	5.35	2.01	1.1	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	0.311 J	<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	0.446	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	1.14	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	14.5	1.55	1.07	0.727 J	0.478 J	0.277 J	0.53 J
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-153

Analyte	Sample Name / Sample Date	Unit	MW-153 8/19/2004	MW-153 6/16/2005	MW-153 11/18/2005	MW-153 4/13/2006	MW-153T 10/18/2006	MW-153-87.1-IS-2 4/10/2007
1,1,2,2-Tetrachloroethane		µg/L	<1 J	<1	<1	<1	<0.5	<0.5
1,1,2-Trichloroethane		µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene		µg/L	9.1	3.73	4.56	5.4	4.87	5.91
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	<1	<1	<1	<1	<0.3	<0.3
cis-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	0.368 J	0.334 J
Tetrachloroethene		µg/L	0.24 J	<1	<1	<1	<1	0.332 J
trans-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene		µg/L	<1	<1	<1	<1	<1	0.251 B
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-153

	Sample Name	MW-153-87.1-IS-3	MW-153-87.1-IS-4	MW-153-86.75-IS-5	MW-153-86.75-IS-6	MW-153-IS-7	MW-153	MW-153
	Sample Date	10/8/2007	4/14/2008	10/20/2008	4/14/2009	10/14/2009	4/28/2011	4/12/2013
Analyte	Unit							
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	5.61	6.37	5.31	5.16	2.99	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	0.302 J	0.341 J	<1	<1	<1	0.351 J	<1
Tetrachloroethene	µg/L	0.714 J	0.445 J	0.272 J	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	0.272 J	0.469 J	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-154

	Sample Name	MW-154	MW-154	MW-154	MW-154	MW-154	MW-154
	Sample Date	8/17/2004	6/17/2005	11/17/2005	4/12/2006	10/19/2006	4/10/2007
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<1	<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	<1	<1	<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
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:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-154

	Sample Name	MW-154	MW-154	MW-154	MW-154	MW-154	MW-154
	Sample Date	10/5/2007	4/14/2008	10/20/2008	4/14/2009	10/15/2009	4/14/2013
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	<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	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	0.437 J	<1	<1	<1	<1	<1
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:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-155

	Sample Name	MW-155	MW-155	MW-155	MW-155	MW-155	MW-155
	Sample Date	8/16/2004	10/13/2004	11/8/2004	1/26/2005	3/23/2005	6/17/2005
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	2100	2000	800	470 J	660	2220
1,1,2-Trichloroethane	µg/L	<77	<100	<50	0.59 J	1.7 J	4.54
1,1-Dichloroethene	µg/L	<77	<100	<50	<1	<2.2	<1
Carbon tetrachloride	µg/L	<77	<100	<50	<1	<2.2	<1
Chloroform	µg/L	<77	<100	<50	<1	0.68 B	1.5 B
cis-1,2-Dichloroethene	µg/L	48 J	55 J	46 J	1.8	27	67.5
Tetrachloroethene	µg/L	<77	<100	7.4 J	<1	0.6 J	3.04
trans-1,2-Dichloroethene	µg/L	<77	<100	6.4 J	0.29 J	4.5	15.1
Trichloroethene	µg/L	1000	1000	820	32	530	1750
Vinyl chloride	µg/L	<77	<100	<50	<1	<2.2	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-155

	Sample Name	MW-155	MW-155	MW-155	MW-155	MW-155	MW-155
	Sample Date	11/19/2005	4/13/2006	10/18/2006	4/10/2007	10/8/2007	4/11/2008
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	3530	581	4090	3180	3400	3770
1,1,2-Trichloroethane	µg/L	9.95 J	7.5	77.4	147	80.3	53.8
1,1-Dichloroethene	µg/L	<10	<1	0.559 J	0.966 J	2.84	<25
Carbon tetrachloride	µg/L	<10	<1	<1	<1	<1	<25
Chloroform	µg/L	1.64 B	1.51 B	2.1	1.69 J	1.65	<7.5
cis-1,2-Dichloroethene	µg/L	53.9	35.1	72.2	86 J	64.1	73.8
Tetrachloroethene	µg/L	8.11	5.93	13.8	12.4 J	4.3	8.34 J
trans-1,2-Dichloroethene	µg/L	9.91	8.66	20.4	35.3	23.6	9.93 J
Trichloroethene	µg/L	1560	865	1810	1650	794	1600
Vinyl chloride	µg/L	<10	<1	<1	1.15	0.971 J	<25

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-155

	Sample Name	MW-155	MW-155	MW-155	MW-155	MW-155	MW-155
	Sample Date	10/20/2008	6/8/2009	10/15/2009	3/24/2010	6/23/2010	9/22/2010
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	2040	1610	263	16.7	24	4.58
1,1,2-Trichloroethane	µg/L	7.58	5.28 J	<2	<1	0.498 J	<1
1,1-Dichloroethene	µg/L	1.04	<10	<2	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<10	<2	<1	<1	<1
Chloroform	µg/L	1.17	<3	0.256 J	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	46.8	16	1.59 J	0.303 J	<1	<1
Tetrachloroethene	µg/L	10.4	7.03 J	1.48 J	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	3.58	<10	<2	<1	<1	<1
Trichloroethene	µg/L	1210	643	94.2	3.17	1.57	0.408 J
Vinyl chloride	µg/L	<1	<10	<2	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-155

	Sample Name	MW-155	MW-155	MW-155	MW-155	MW-155
	Sample Date	1/25/2011	3/28/2011	9/26/2011	4/19/2012	4/13/2013
Analyte	Unit					
1,1,2,2-Tetrachloroethane	µg/L	3.75	2.61	1.68	0.983	0.552 J
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	<0.3	<0.3	<0.3	<0.3	0.16 J
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	0.373 J
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Trichloroethene	µg/L	1.07	0.585 J	0.709 J	1.15	1.16
Vinyl chloride	µg/L	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-157

	Sample Name	MW-157	MW-157	MW-157	MW-157	MW-157	MW-157
	Sample Date	8/18/2004	10/27/2004	1/27/2005	3/23/2005	6/15/2005	11/17/2005
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	5.7 J	6.74 J	3.8	3.6	3.18 B	2.22
1,1,2-Trichloroethane	µg/L	<6.7	0.351 J	0.33 J	0.26 J	<1	<1
1,1-Dichloroethene	µg/L	<6.7	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	9.4	10.5 J	9.9	5.2	4.75	4.56
Chloroform	µg/L	14	14 J	12	7.5	10.2	8.18
cis-1,2-Dichloroethene	µg/L	11	13.2 J	13	11	10.9	9.35
Tetrachloroethene	µg/L	1.9 J	1.51 J	2	1.6	1.32	1.49
trans-1,2-Dichloroethene	µg/L	1.9 J	2.7 J	2.4	1.9	2.58	1.3
Trichloroethene	µg/L	120	143 J	160	200	157	117
Vinyl chloride	µg/L	<6.7	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-157

	Sample Name	MW-157	MW-157	MW-157	MW-157	MW-157	MW-157
	Sample Date	4/12/2006	10/19/2006	4/10/2007	10/8/2007	4/14/2008	10/17/2008
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	2.28	2.64	25.2	27	10.1	7.19
1,1,2-Trichloroethane	µg/L	<1	<1	1.04	1.22	<2	0.39 J
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<2	<1
Carbon tetrachloride	µg/L	5.61	9.25	17.2	26	<2	12
Chloroform	µg/L	10.8	30.1	153	235	9	89.6
cis-1,2-Dichloroethene	µg/L	9.75	13.3	16.8	12.5	0.671 J	3.29
Tetrachloroethene	µg/L	1.59	2.19	4.1	7.43	<2	1.15
trans-1,2-Dichloroethene	µg/L	2.2	2.7	3	3.06	<2	0.589 J
Trichloroethene	µg/L	132	148 J	162	151	5.48	38.3
Vinyl chloride	µg/L	<1	<1	<1	<1	<2	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-157

	Sample Name	MW-157	MW-157	MW-157	MW-157	MW-157	MW-157
	Sample Date	4/14/2009	7/30/2009	10/15/2009	3/25/2010	6/22/2010	9/22/2010
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	9.47	5.06	3.88	5.71	8.15	3.55
1,1,2-Trichloroethane	µg/L	0.288 J	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	6.25	3.35	4.66	4.14	2.9	2.25
Chloroform	µg/L	17.1	9.88	8	7.72	6.41	5.85
cis-1,2-Dichloroethene	µg/L	14.8	12	11.6	9.3	7.73	5.44
Tetrachloroethene	µg/L	2.68	2.05	2.1	1.81	1.34	1.03
trans-1,2-Dichloroethene	µg/L	2.75	2.64	2.69	2.11	1.55	1.03
Trichloroethene	µg/L	286	205	202	175	141	88.3
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
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HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-157

	Sample Name	MW-157	MW-157	MW-157	MW-157	MW-157	MW-157	MW-157
	Sample Date	1/26/2011	3/28/2011	9/27/2011	4/19/2012	10/17/2012	4/13/2013	10/10/2013
Analyte	Unit							
1,1,2,2-Tetrachloroethane	µg/L	1.29	2.46	1.34	0.533	0.616	0.494 J	0.756 J
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	0.644 J	0.783 J	0.314 J	0.346 J	<1	<1	<1
Chloroform	µg/L	4.43	7.1	3.46	3.24	2.46	2.88 J	0.486
cis-1,2-Dichloroethene	µg/L	1.8	1.69	0.659 J	0.476 J	<1	0.351 J	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	13.3	9.04	4.18	3.26	2.03	2.49 J	0.837 J
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

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HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-158

	Sample Name	MW-158	MW-158	MW-158	MW-158	MW-158	MW-158
	Sample Date	10/9/2004	10/13/2004	11/8/2004	1/25/2005	3/21/2005	6/16/2005
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	15	21	53	24	11	4.39
1,1,2-Trichloroethane	µg/L	<1	<1	<2.5	<1.4	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<2.5	<1.4	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<2.5	<1.4	<1	<1
Chloroform	µg/L	0.47 B	0.29 J	0.63 J	0.38 J	0.41 B	<1
cis-1,2-Dichloroethene	µg/L	2.2	3	7.2	3.1	3.3	5.16
Tetrachloroethene	µg/L	1.2	1.8	3.5	2.3	3.3	3.67
trans-1,2-Dichloroethene	µg/L	1.1	1.3	3	1.3 J	1.6	2.52
Trichloroethene	µg/L	20	30	74	33	30	32
Vinyl chloride	µg/L	<1	<1	<2.5	<1.4	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

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HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-158

	Sample Name	MW-158	MW-158	MW-158	MW-158	MW-158	MW-158
	Sample Date	11/18/2005	4/13/2006	10/19/2006	4/10/2007	10/8/2007	4/11/2008
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	5.54	6.36	4.41	1.86	1.26	3.03
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	1.07 B	1 B	0.691	0.404	0.194 J	0.288 J
cis-1,2-Dichloroethene	µg/L	9.31	7.74	5.96	2.9	1.4	2.9
Tetrachloroethene	µg/L	6.05	9.28	8.49	8.13	3.87	4.98
trans-1,2-Dichloroethene	µg/L	3.38	3.62	3.13	1.56	0.697 J	1.25
Trichloroethene	µg/L	77.8	76.3	77.4	54	20.6	37.1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
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< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-158

	Sample Name	MW-158	MW-158	MW-158	MW-158	MW-158	MW-158
	Sample Date	10/20/2008	6/8/2009	10/16/2009	3/24/2010	6/22/2010	9/23/2010
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	27.4	5.84	8.22	4.59	0.802	1.82
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	0.682	0.758	0.294 J	<0.3 J	0.156 J	<0.3
cis-1,2-Dichloroethene	µg/L	7.79	11.6	1.45	1.04	<1	<1
Tetrachloroethene	µg/L	6.92	3.88	2.66	0.697 J	<1	<1
trans-1,2-Dichloroethene	µg/L	2.74	2.76	<1	0.35 J	<1	<1
Trichloroethene	µg/L	162	141	26.4	16.7	3.37	6.04
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

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B Possibly bias high or false positive based on blank data
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HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-158

	Sample Name	MW-158	MW-158	MW-158	MW-158	MW-158
	Sample Date	1/25/2011	3/28/2011	9/27/2011	4/18/2012	4/13/2013
Analyte	Unit					
1,1,2,2-Tetrachloroethane	µg/L	0.677	0.49 J	1.15	0.528	1.58 J
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	<0.3	<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
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Trichloroethene	µg/L	1.17	0.681 J	2	1.37	4.59
Vinyl chloride	µg/L	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-158A

	Sample Name	MW-158A	MW-158A	MW-158A	MW-158A	MW-158A	MW-158A
	Sample Date	10/10/2004	10/12/2004	11/8/2004	1/24/2005	3/21/2005	6/16/2005
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	560	270	83	77	96	736
1,1,2-Trichloroethane	µg/L	<20	<15	<7.7	<2	0.24 J	2.5
1,1-Dichloroethene	µg/L	<20	<15	<7.7	<2	<1	0.392 J
Carbon tetrachloride	µg/L	<20	<15	<7.7	<2	0.55 J	<1
Chloroform	µg/L	<20	<15	2.1 J	0.88 J	2.4	1.28 B
cis-1,2-Dichloroethene	µg/L	27	43	40	11	33	37.1
Tetrachloroethene	µg/L	<20	5.7 J	8.1	3.2	12	5.63
trans-1,2-Dichloroethene	µg/L	9 J	17	7.1 J	4.3	15	9.54
Trichloroethene	µg/L	340	360	530	58	200	470
Vinyl chloride	µg/L	<20	<15	<7.7	<2	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-158A

	Sample Name	MW-158A	MW-158A	MW-158A	MW-158A	MW-158A	MW-158A
	Sample Date	11/18/2005	4/13/2006	10/19/2006	4/10/2007	10/8/2007	4/11/2008
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	844	681	410	50.3	3.7	26.9
1,1,2-Trichloroethane	µg/L	4.5 J	6.08	14.9	3.49	2.65	7.88 J
1,1-Dichloroethene	µg/L	<10	<1	0.818 J	0.592 J	<1	<1
Carbon tetrachloride	µg/L	<10	<1	0.754 J	<2	1.54	<1
Chloroform	µg/L	3.47 B	2.62 B	3.64	1.44	1.36	1.01
cis-1,2-Dichloroethene	µg/L	45.5	49.7	60.7	95.3 J	14.6	8.05 J
Tetrachloroethene	µg/L	17.8	4.69	6.64	3.77 J	13.7	10.7
trans-1,2-Dichloroethene	µg/L	13.6	14	22.8	7.78	6.22	4.06
Trichloroethene	µg/L	492	689	678	514	42	97.3 J
Vinyl chloride	µg/L	<10	<1	<1	0.663 J	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

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HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-158A

	Sample Name	MW-158A	MW-158A	MW-158A	MW-158A	MW-158A	MW-158A
	Sample Date	10/20/2008	6/8/2009	10/16/2009	3/24/2010	6/22/2010	9/23/2010
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	29.4	255	156	27.8	27.2	5.03
1,1,2-Trichloroethane	µg/L	<1	5.1	2.52	<1	<1	<1
1,1-Dichloroethene	µg/L	1.65	<2	<1	<1	<1	<1
Carbon tetrachloride	µg/L	0.825 J	<2	<1	<1	<1	<1
Chloroform	µg/L	3.94	0.876	0.67	0.155 J	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	54.4 J	64.2	8.93	0.295 J	0.302 J	<1
Tetrachloroethene	µg/L	15	2.92	1.96	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	18	3.6	0.456 J	<1	<1	<1
Trichloroethene	µg/L	408	304	69.9	3.87	3.01	1.3
Vinyl chloride	µg/L	<1	2.82	1.15	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
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HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-158A

	Sample Name	MW-158A	MW-158A	MW-158A	MW-158A	MW-158A
	Sample Date	1/25/2011	3/28/2011	9/27/2011	4/18/2012	4/13/2013
Analyte	Unit					
1,1,2,2-Tetrachloroethane	µg/L	0.771	0.663	<0.5	<0.5	<0.5 UJ
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	<0.3	<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
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Trichloroethene	µg/L	0.426 J	0.37 J	0.302 J	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-159

	Sample Name	MW-159	MW-159	MW-159	MW-159	MW-159	MW-159
	Sample Date	10/11/2004	11/8/2004	1/26/2005	3/24/2005	6/17/2005	11/19/2005
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	3500	580	2000 J	2200	659	421
1,1,2-Trichloroethane	µg/L	<150	<33	6.3	7.8	3.27	2.25
1,1-Dichloroethene	µg/L	<150	<33	<6.2	<7.1	<1	<1
Carbon tetrachloride	µg/L	<150	<33	<6.2	<7.1	0.961 J	0.927 J
Chloroform	µg/L	<150	<33	2.9 J	4.2 J	1.27 B	1.6 B
cis-1,2-Dichloroethene	µg/L	100 J	98	62	80	39.4	46.7
Tetrachloroethene	µg/L	<150	<33	4 J	7.1	1.82	2.33
trans-1,2-Dichloroethene	µg/L	<150	58	12	15	9.78	5.76
Trichloroethene	µg/L	1700	790	830	1700	691	552
Vinyl chloride	µg/L	<150	<33	<6.2	<7.1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-159

Analyte	Sample Name / Sample Date	Unit	MW-159 12/8/2005	MW-159 4/13/2006	MW-159 10/18/2006	MW-159 4/9/2007	MW-159 10/8/2007	MW-159 4/11/2008
1,1,2,2-Tetrachloroethane		µg/L	1.25	847	357	272	501	312
1,1,2-Trichloroethane		µg/L	<1	2.5	19.6	37.4	66.4	99.8
1,1-Dichloroethene		µg/L	<1	<1	<1	1.16	1.98	<10
Carbon tetrachloride		µg/L	4.13	<1	0.493 J	<1	<1	<10
Chloroform		µg/L	12.1	1.22 B	1.02	1.03	1.72	<3
cis-1,2-Dichloroethene		µg/L	10.5	36.4	55.4	156	392	1220
Tetrachloroethene		µg/L	0.935 J	1.71	2.63	3.81	9.33	6.28 J
trans-1,2-Dichloroethene		µg/L	1.73	7.64	6.37	17.9	28	26.6
Trichloroethene		µg/L	120	594	935	1660	2700	1410
Vinyl chloride		µg/L	<1	<1	<1	0.514 J	1.14	7.79 J

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
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< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-159

Analyte	Sample Name / Sample Date	Unit	MW-159 10/20/2008	MW-159 6/8/2009	MW-159 10/16/2009	MW-159 3/24/2010	MW-159 6/23/2010	MW-159 9/22/2010
1,1,2,2-Tetrachloroethane		µg/L	271	366	483	133	69.9	75
1,1,2-Trichloroethane		µg/L	92.8	92.2	33.7	16.8	10.2	12.4
1,1-Dichloroethene		µg/L	7.33	<10	2.96 J	3.26 J	4.81	8.51
Carbon tetrachloride		µg/L	<1	<10	<5	<5	<2	<1
Chloroform		µg/L	1.66	<3	0.923 J	<1.5	<0.6	0.568
cis-1,2-Dichloroethene		µg/L	959	248	82.2	54	55.4	62
Tetrachloroethene		µg/L	5.48	6.24 J	4.11 J	2.5 J	1.29 J	1.49
trans-1,2-Dichloroethene		µg/L	46.2	17.5	8.94	7.07	5.57	6.69
Trichloroethene		µg/L	1320	1280	983	505	280	293
Vinyl chloride		µg/L	17.7	3.83 J	<5	4.42 J	4.99	40.3

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-159

	Sample Name	MW-159	MW-159	MW-159	MW-159	MW-159	MW-159	MW-159
	Sample Date	1/25/2011	3/28/2011	9/27/2011	4/20/2012	10/17/2012	5/9/2013	10/10/2013
Analyte	Unit							
1,1,2,2-Tetrachloroethane	µg/L	37.8	40.6	32.5	37.9	24.2	19.4	18.2
1,1,2-Trichloroethane	µg/L	6.14	7.05	6.44	6.14	4.82	4.15	3.87
1,1-Dichloroethene	µg/L	5.86	5	4.42	3.49	3.2	3.39	4.66
Carbon tetrachloride	µg/L	<2	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.285 J	0.301	0.289 J	0.34	0.242 J	0.296 J	0.197 J
cis-1,2-Dichloroethene	µg/L	45.6	50.7	49.9	42.8	35.3	28.4	47.3
Tetrachloroethene	µg/L	1.15 J	1.21	1.11	1.17	1.06	0.688 J	0.789 J
trans-1,2-Dichloroethene	µg/L	4.82	4.87	6.55	4.36	4.93	3.41	3.41
Trichloroethene	µg/L	200	232	193	275	247	181	129
Vinyl chloride	µg/L	25.7	22.5	16.7	17.3	14.6	17.3	15.4

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-160

	Sample Name	MW-160	MW-160	MW-160	MW-160	MW-160	MW-160
	Sample Date	10/13/2004	1/28/2005	3/22/2005	6/17/2005	11/18/2005	4/12/2006
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	30	53	29	35.4	13.4	23.1
1,1,2-Trichloroethane	µg/L	<10	0.23 J	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<10	<1	<1	<1	<1	0.538 J
Carbon tetrachloride	µg/L	<10	0.79 J	0.48 J	0.581 J	1.01	0.729 J
Chloroform	µg/L	<10	2.7	1.7	2.33 B	2.26 B	3.29 B
cis-1,2-Dichloroethene	µg/L	31	38	21	35.7	30.8	45
Tetrachloroethene	µg/L	12	21	15	14.7	14.7	13
trans-1,2-Dichloroethene	µg/L	17	18	10	16.3	12.2	18.1
Trichloroethene	µg/L	240	290	190	448	161	278
Vinyl chloride	µg/L	<10	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-160

	Sample Name	MW-160	MW-160	MW-160	MW-160	MW-160	MW-160
	Sample Date	10/18/2006	4/10/2007	10/8/2007	4/11/2008	6/18/2008	10/20/2008
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	9.08	24.9	175	3560	3090	2340
1,1,2-Trichloroethane	µg/L	<1	<1	0.555 J	2.97 J	2.69	3.84 J
1,1-Dichloroethene	µg/L	<1	0.708 J	1.05	<5	<1	<1
Carbon tetrachloride	µg/L	0.575 J	0.781 J	1.91	<5	1.14	0.388 J
Chloroform	µg/L	3.35	1.68	3.53	2.14	1.62	1.75 J
cis-1,2-Dichloroethene	µg/L	42.5	22.6	56.1	49.8	40.9	40.6 J
Tetrachloroethene	µg/L	19.8	14.5	18.8	10.6	9.43	9.87 J
trans-1,2-Dichloroethene	µg/L	17.8	8.63	15.6	9.32	7.36	5.81 J
Trichloroethene	µg/L	307	191	695	1130	1120	1050
Vinyl chloride	µg/L	<1	<1	<1	<5	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
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HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-160

	Sample Name	MW-160	MW-160	MW-160	MW-160	MW-160	MW-160
	Sample Date	6/8/2009	10/15/2009	3/24/2010	6/23/2010	9/23/2010	1/26/2011
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	118	125	5.63	4.79	0.764	0.254 J
1,1,2-Trichloroethane	µg/L	0.49 J	0.332 J	<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	0.811	0.56	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	1.23	0.375 J	<1	<1	<1	<1
Tetrachloroethene	µg/L	1.34	0.251 J	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	21.8	8.39	0.948 J	<1	0.323 J	<1
Vinyl chloride	µg/L	<1	<1 UJ	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
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B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit
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HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-160

	Sample Name	MW-160	MW-160	MW-160	MW-160
	Sample Date	3/28/2011	9/27/2011	4/20/2012	4/13/2013
Analyte	Unit				
1,1,2,2-Tetrachloroethane	µg/L	0.39 J	<0.5	<0.5	<0.5 UJ
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	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1
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:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
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HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-163

	Sample Name	MW-163	MW-163	MW-163	MW-163	MW-163	MW-163
	Sample Date	10/14/2004	6/15/2005	11/17/2005	4/13/2006	4/27/2006	10/19/2006
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	4800	3420 J	2080	1980	2420	538
1,1,2-Trichloroethane	µg/L	<100	7.43 J	4.95	4.77	6.6	17.3
1,1-Dichloroethene	µg/L	<100	<10	<1	<1	<1 U	<1
Carbon tetrachloride	µg/L	<100	<10	0.882 J	<1	0.83 J	<1
Chloroform	µg/L	<100	<10	0.88 B	1.28 B	2.14	0.446
cis-1,2-Dichloroethene	µg/L	41 J	39.6	24	39.7	61.6	98.6
Tetrachloroethene	µg/L	<100	5.09 J	4.3	8.68	12.6	4.35
trans-1,2-Dichloroethene	µg/L	<100	9.22 J	2.68	3.55	5.15	17.2
Trichloroethene	µg/L	1700	1740	1300	1860	2030	527
Vinyl chloride	µg/L	<100	<10	<1	<1	<1 UJ	3.63

Notes:
µg/L micrograms per liter
RL reporting limit

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HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-163

	Sample Name	MW-163	MW-163	MW-163	MW-163	MW-163	MW-163
	Sample Date	4/10/2007	10/8/2007	4/14/2008	10/17/2008	4/14/2009	7/30/2009
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	642	860	488	1710	233	131
1,1,2-Trichloroethane	µg/L	61.2	23.8	3.37 J	6.96	<2	0.369 J
1,1-Dichloroethene	µg/L	<5	<1	<5	<5	<2	<1
Carbon tetrachloride	µg/L	<5	0.683 J	<5	<5	<2	<1
Chloroform	µg/L	0.883 J	1.59	11.9	7.67	0.769	0.4
cis-1,2-Dichloroethene	µg/L	113	59	9.07	29.9	2.15	3.22
Tetrachloroethene	µg/L	3.5 J	4.93	<5	<5	0.802 J	1.23
trans-1,2-Dichloroethene	µg/L	14.8	10.9	1.84 J	3.81 J	<2	0.327 J
Trichloroethene	µg/L	485	699	80.3	615	85.7	87.1
Vinyl chloride	µg/L	3.91 J	2.15	<5	<5	<2	<1

Notes:
µg/L micrograms per liter
RL reporting limit

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HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-163

Analyte	Sample Name / Sample Date	Unit	MW-163 10/16/2009	MW-163 3/25/2010	MW-163 6/22/2010	MW-163 9/22/2010	MW-163 1/26/2011	MW-163 3/28/2011
1,1,2,2-Tetrachloroethane		µg/L	143	11.8	11.3	5.32	1.78	4.66
1,1,2-Trichloroethane		µg/L	0.261 J	<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	0.974	<0.3	0.142 J	0.181 J	0.165 J	0.19 J
cis-1,2-Dichloroethene		µg/L	2.45	0.303 J	0.272 J	<1	<1	0.359 J
Tetrachloroethene		µg/L	0.93 J	0.487 J	0.623 J	0.634 J	0.553 J	0.698 J
trans-1,2-Dichloroethene		µg/L	0.321 J	<1	<1	<1	<1	<1
Trichloroethene		µg/L	65.8	11.1	11.8	6.53	3.4	7.43
Vinyl chloride		µg/L	<1	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

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HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-163

	Sample Name	MW-163	MW-163	MW-163	MW-163	MW-163
	Sample Date	9/27/2011	4/19/2012	10/17/2012	5/9/2013	10/10/2013
Analyte	Unit					
1,1,2,2-Tetrachloroethane	µg/L	5.74	3.83	3.18	1.87	0.739
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	<0.3	0.187 J	0.215 J	0.277 J	0.178 J
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	0.884 J	0.914 J	0.832 J	0.527 J	0.856 J
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Trichloroethene	µg/L	10.7	9.02	9.26	7.86	2.82
Vinyl chloride	µg/L	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
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HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-164

	Sample Name	MW-164	MW-164	MW-164	MW-164	MW-164	MW-164
	Sample Date	10/15/2004	6/15/2005	11/14/2005	4/12/2006	10/19/2006	4/10/2007
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	<2.5	4.65 B	2.14	2.6	3.05	45
1,1,2-Trichloroethane	µg/L	<2.5	<1	<1	<1	<1	1.75
1,1-Dichloroethene	µg/L	<2.5	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	4	3.66	5.44	2.99	16.8	24.8
Chloroform	µg/L	9.1	8.82	8.44 B	9.56	52.6	247
cis-1,2-Dichloroethene	µg/L	6.3	7.86	8.05	6.87	8.79	18.1
Tetrachloroethene	µg/L	<2.5	<1	0.576	0.637 J	2.03	3.62
trans-1,2-Dichloroethene	µg/L	0.97 J	1.22	0.599 J	0.974 J	1.49	2.66
Trichloroethene	µg/L	60	53.3	75.5	62.9 J	92.6	136 J
Vinyl chloride	µg/L	<2.5	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
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HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-164

	Sample Name	MW-164	MW-164	MW-164	MW-164	MW-164	MW-164
	Sample Date	10/8/2007	4/14/2008	10/17/2008	4/14/2009	7/30/2009	10/15/2009
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	17.7	13.4	6.83	20.8	26.3	32
1,1,2-Trichloroethane	µg/L	0.719 J	0.517 J	0.403 J	1.07	1.27	1.41
1,1-Dichloroethene	µg/L	<1	<1 J	<1	<1	<1	<1
Carbon tetrachloride	µg/L	9.87	3.42 J	4.43	10.4	8.71	7.78
Chloroform	µg/L	126	37.1	32.2	76.1	79.5	79.3
cis-1,2-Dichloroethene	µg/L	4.38	2.71	2.91	17.4	20.2	18.6
Tetrachloroethene	µg/L	2.13	0.894	0.728 J	1.89	1.52	1.33
trans-1,2-Dichloroethene	µg/L	1.39	0.57 J	0.41 J	1.61	1.99	1.91
Trichloroethene	µg/L	61.1	24.9 J	27	93.3	98.2	89.1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1 UJ

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
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HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-164

	Sample Name	MW-164	MW-164	MW-164	MW-164	MW-164	MW-164
	Sample Date	3/25/2010	6/22/2010	9/22/2010	1/26/2011	3/28/2011	9/27/2011
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	21.3	21	11.9	5.48	4.08	2.64
1,1,2-Trichloroethane	µg/L	1.07	0.909 J	0.524 J	0.284 J	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	6.74	6.26	4.32	2.53	2.06	1.62
Chloroform	µg/L	56.5	52.7	29.5	15.6	13.9	9
cis-1,2-Dichloroethene	µg/L	15	13.2	8.57	4.74	3.8	2.25
Tetrachloroethene	µg/L	1.49	1.15	0.962 J	0.637 J	0.383 J	0.385 J
trans-1,2-Dichloroethene	µg/L	1.57	1.25	0.703 J	0.381 J	0.357 J	<1
Trichloroethene	µg/L	75.5	58.5	39.7	23.5	17.8	12.1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
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HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-164

	Sample Name	MW-164	MW-164	MW-164	MW-164
	Sample Date	4/19/2012	10/17/2012	4/13/2013	10/10/2013
Analyte	Unit				
1,1,2,2-Tetrachloroethane	µg/L	1.47	0.826	0.578	0.35 J
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1
Carbon tetrachloride	µg/L	0.957 J	1.03	0.9 J	0.454 J
Chloroform	µg/L	5.3	5.15	4.65	2.03
cis-1,2-Dichloroethene	µg/L	1.36	0.925 J	0.905 J	0.474 J
Tetrachloroethene	µg/L	0.284 J	<1	0.306 J	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Trichloroethene	µg/L	6.97	5.86	5.36	2.75
Vinyl chloride	µg/L	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-165

	Sample Name	MW-165	MW-165	MW-165	MW-165	MW-165	MW-165
	Sample Date	11/21/2004	1/25/2005	3/21/2005	6/16/2005	11/18/2005	4/13/2006
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	24	8.9	12	21.8	21.8	8
1,1,2-Trichloroethane	µg/L	<9.1	0.74 J	0.55 J	1.16	1.58	1.51
1,1-Dichloroethene	µg/L	<9.1	<2	<1	<1	<1	<1
Carbon tetrachloride	µg/L	11	8	7.8	1.67	2.68	<1
Chloroform	µg/L	140	64	58	77	65.4	<1
cis-1,2-Dichloroethene	µg/L	7.1 J	10	11	7.64	8.06	8.65
Tetrachloroethene	µg/L	2.3 J	1.8 J	2.1	<1	1.04	1.27
trans-1,2-Dichloroethene	µg/L	<9.1	1.3 J	2.2	2.49	1.64 J	2.07
Trichloroethene	µg/L	64	48	53	37.2	46.5	60.4
Vinyl chloride	µg/L	<9.1	<2	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-165

	Sample Name	MW-165	MW-165	MW-165	MW-165	MW-165	MW-165
	Sample Date	10/18/2006	4/10/2007	10/8/2007	4/11/2008	10/20/2008	6/8/2009
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	3.5	1.9	2.31	3.04	4.94	5.28
1,1,2-Trichloroethane	µg/L	0.655 J	0.3 J	0.3 J	0.343 J	0.491 J	0.652 J
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	3.85	3.9	8.5	9.32	4.59	2.93
Chloroform	µg/L	7.48	7.6	8.57	61.4	34.3	13.5
cis-1,2-Dichloroethene	µg/L	14.6	9.31	7.25	9.59	9.28	13.8
Tetrachloroethene	µg/L	1.23	1.36	1.42	1.64	1.3	1.93
trans-1,2-Dichloroethene	µg/L	2.84	2.44	2.03	1.99	1.62	2.2
Trichloroethene	µg/L	187	153	82.8 J	87.1	94.1	111
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-165

	Sample Name	MW-165	MW-165	MW-165	MW-165	MW-165	MW-165
	Sample Date	10/16/2009	3/24/2010	6/22/2010	9/23/2010	1/25/2011	3/28/2011
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	3.92	25.1	38.8	34.7	14.5	14.3
1,1,2-Trichloroethane	µg/L	1.62	2.26	1.96	1.93	1.46	1.52
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	1.04	2.74	1.19	0.927	0.618	0.245 J
cis-1,2-Dichloroethene	µg/L	18.7	7.7	3.6	1.15	0.456 J	0.459 J
Tetrachloroethene	µg/L	1.39	1.43	0.807 J	0.418 J	0.327 J	<1
trans-1,2-Dichloroethene	µg/L	3.26	1.74	0.699 J	0.324 J	<1	<1
Trichloroethene	µg/L	194	187	67.7	35.4	19.8	11
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-165

	Sample Name	MW-165	MW-165	MW-165	MW-165	MW-165
	Sample Date	9/27/2011	4/18/2012	10/16/2012	4/13/2013	10/10/2013
Analyte	Unit					
1,1,2,2-Tetrachloroethane	µg/L	10.6	5.28	1.79	0.388 J	<0.5
1,1,2-Trichloroethane	µg/L	1.18	<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	0.502	0.394	0.281 J	<0.3	0.225 J
cis-1,2-Dichloroethene	µg/L	0.546 J	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Trichloroethene	µg/L	8.33	7.48	3.9	2.38	1.47
Vinyl chloride	µg/L	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-165A

	Sample Name	MW-165A	MW-165A	MW-165A	MW-165A	MW-165A	MW-165A
	Sample Date	11/18/2004	1/24/2005	3/21/2005	6/16/2005	11/18/2005	4/13/2006
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	7.8	5.4	5.5	12	4.42	1.14
1,1,2-Trichloroethane	µg/L	<2	<2	0.37 J	<1	<1	<1
1,1-Dichloroethene	µg/L	<2	<2	<1	<1	<1	<1
Carbon tetrachloride	µg/L	6.4	6.9	9.8	4.63	6.69	1.93
Chloroform	µg/L	24	15	24	48.5	3.52 B	5.72 B
cis-1,2-Dichloroethene	µg/L	13	9.3	10	6.05	2.41	6.05
Tetrachloroethene	µg/L	1.3 J	1.1 J	1.4	<1	0.955 J	0.608 J
trans-1,2-Dichloroethene	µg/L	1.7 J	1.3 J	1.8	0.986 J	1.31	1.15
Trichloroethene	µg/L	69	53	64	46.7	88.7	69.8
Vinyl chloride	µg/L	<2	<2	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-165A

	Sample Name	MW-165A	MW-165A	MW-165A	MW-165A	MW-165A	MW-165A
	Sample Date	10/18/2006	4/10/2007	10/8/2007	4/11/2008	10/20/2008	6/8/2009
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	1.65	2	2.98	2.77	10.5	1.1
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	0.496 J	0.388 J
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	4.91	6.23	2.62	11.3	10.8	<1
Chloroform	µg/L	7.98	18	66.9	49.8	82.7	1.94
cis-1,2-Dichloroethene	µg/L	5.06	9.46	7.63	7.3	10.2	5.3
Tetrachloroethene	µg/L	1.35	1.57	2.49	2.44	2.32	0.906 J
trans-1,2-Dichloroethene	µg/L	2.22	1.96	1.57	1.4	1.38	0.964 J
Trichloroethene	µg/L	86.7	49.6	53.1	32.6	112	91.5
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-165A

	Sample Name	MW-165A	MW-165A	MW-165A	MW-165A	MW-165A	MW-165A
	Sample Date	10/16/2009	3/24/2010	6/22/2010	9/23/2010	1/25/2011	3/28/2011
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	12.5	45.7	104	44.7	35.6	79
1,1,2-Trichloroethane	µg/L	1.18	0.973 J	0.457 J	0.28 J	<1	0.461 J
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	1.21	1.39	0.918	<0.3	0.15 J	0.793
cis-1,2-Dichloroethene	µg/L	1.99	0.421 J	<1	<1	<1	0.414 J
Tetrachloroethene	µg/L	0.252 J	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	35.5	6.29	4.6	2.3	3.64	13.1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-165A

	Sample Name	MW-165A	MW-165A	MW-165A	MW-165A	MW-165A
	Sample Date	9/27/2011	4/18/2012	10/16/2012	4/13/2013	10/10/2013
Analyte	Unit					
1,1,2,2-Tetrachloroethane	µg/L	33.9	6	1.16	0.929	0.43 J
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	0.41	0.337	0.433	<0.3	0.612
cis-1,2-Dichloroethene	µg/L	0.251 J	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Trichloroethene	µg/L	6.67	2.54	0.493 J	0.473 J	0.519 J
Vinyl chloride	µg/L	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-166

	Sample Name	MW-166	MW-166	MW-166	MW-166	MW-166	MW-166
	Sample Date	11/18/2004	11/19/2004	1/27/2005	3/23/2005	6/17/2005	11/19/2005
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	4.2	4.2	3.7	3.5	1.2	1.48
1,1,2-Trichloroethane	µg/L	0.32	0.32 J	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	0.83	0.83 J	2.9	1.9	1.68	1.17
Chloroform	µg/L	30	30	24	11	9.01	7.54
cis-1,2-Dichloroethene	µg/L	4.3	4.3	3.4	2.6	1.51	3.43
Tetrachloroethene	µg/L	0.79	0.79 J	0.68 J	0.87 J	<1	0.561 J
trans-1,2-Dichloroethene	µg/L	0.49	0.49 J	0.41 J	0.63 J	<1	0.438 J
Trichloroethene	µg/L	12	12	10	11	6.27	6.92
Vinyl chloride	µg/L	--	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-166

	Sample Name	MW-166	MW-166	MW-166	MW-166	MW-166	MW-166
	Sample Date	4/13/2006	10/20/2006	4/9/2007	10/5/2007	4/11/2008	10/20/2008
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	13.4	9.59	5.47	28.5	8.39	0.519
1,1,2-Trichloroethane	µg/L	<1	0.422 J	<1	0.946 J	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	8.54	16.5	8	8.81	8.3	5.38
Chloroform	µg/L	79.3	68.5	33.1	140	52.2	14.1
cis-1,2-Dichloroethene	µg/L	5.21	5.41	2.69	5.44	2.49	1.2
Tetrachloroethene	µg/L	1.24	1.68	1.28	2.47	1.65	0.621 J
trans-1,2-Dichloroethene	µg/L	1.17	0.937 J	0.685 J	1.15	0.955 J	0.354 J
Trichloroethene	µg/L	38	43.7	25.6	63.9	25.7	15
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-166

	Sample Name	MW-166	MW-166	MW-166	MW-166	MW-166	MW-166
	Sample Date	6/8/2009	10/16/2009	3/23/2010	6/23/2010	9/23/2010	1/25/2011
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	17.9	15.3	10.1	8.91	11.4	9.34
1,1,2-Trichloroethane	µg/L	0.729 J	0.525 J	0.756 J	0.518 J	0.458 J	0.435 J
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	12.3	11.3	6.1	2.95	6.16	6.04
Chloroform	µg/L	95.8	80.9	65	34.7	22.8	17.9
cis-1,2-Dichloroethene	µg/L	5.57	4.42	5.03	6.6	15.4	13.4
Tetrachloroethene	µg/L	2.07	2.03	1.38	1.22	1.99	2.03
trans-1,2-Dichloroethene	µg/L	1.17	0.866 J	0.919 J	1.08	2.97	2.06
Trichloroethene	µg/L	63.3	48	37.8	59.6	223	154
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-166

	Sample Name	MW-166	MW-166	MW-166	MW-166	MW-166	MW-166
	Sample Date	3/28/2011	9/27/2011	4/18/2012	10/17/2012	4/14/2013	10/10/2013
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	9.82	14.3	6.08	2.56	2.65	2.32
1,1,2-Trichloroethane	µg/L	0.445 J	0.716 J	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	5.09	5.5	2.99	0.692 J	0.838 J	0.396 J
Chloroform	µg/L	21.8	67.5	32.5	10	7.67	6.4
cis-1,2-Dichloroethene	µg/L	13.5	6.33	2.63	1.29	1.58	1.52
Tetrachloroethene	µg/L	1.36	1.49	1.02	0.521 J	0.539 J	0.377 J
trans-1,2-Dichloroethene	µg/L	1.64	0.864 J	0.293 J	<1	<1	<1
Trichloroethene	µg/L	129	50.2	19.5	9.01	5.34	4.12
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
-- not analyzed
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-166A

	Sample Name	MW-166A	MW-166A	MW-166A	MW-166A	MW-166A	MW-166A
	Sample Date	11/19/2004	1/27/2005	3/23/2005	6/17/2005	11/19/2005	4/13/2006
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	1.4	3.9	3.9	3.08	1.89	13.6
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	6.1	8.3	6.91	3.5	9.75
Chloroform	µg/L	13 B	37	38	31.3	17.2	57
cis-1,2-Dichloroethene	µg/L	0.77 J	2.6	2.8	3.08	1.89	2.33
Tetrachloroethene	µg/L	0.24 J	0.8 J	0.9 J	0.732 J	0.516 J	1.06
trans-1,2-Dichloroethene	µg/L	<1	0.52 J	0.65 J	0.69 J	0.482 J	<1
Trichloroethene	µg/L	5.2	19	24	19.8	17.6	25.8
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-166A

	Sample Name	MW-166A	MW-166A	MW-166A	MW-166A	MW-166A	MW-166A
	Sample Date	10/20/2006	4/9/2007	10/5/2007	4/11/2008	10/20/2008	6/8/2009
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	5.15	5.38	12.6	3.76	0.149 J	1.92
1,1,2-Trichloroethane	µg/L	<1	<1	0.417 J	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	7.06	7.29	5.62	4.44	3.17	5
Chloroform	µg/L	27.7	30.1	65.5	34.4	14.5	16.4
cis-1,2-Dichloroethene	µg/L	2.14	2.42	3.54	2.57	1.82	1.85
Tetrachloroethene	µg/L	0.792 J	0.854 J	1.57	1.24	0.694 J	0.725 J
trans-1,2-Dichloroethene	µg/L	0.433 J	0.527 J	1.04	1.16	0.75 J	0.42 J
Trichloroethene	µg/L	24.3 J	25.7	81.5	69.9	62.7	22.1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-166A

	Sample Name	MW-166A	MW-166A	MW-166A	MW-166A	MW-166A	MW-166A
	Sample Date	10/16/2009	3/23/2010	6/23/2010	9/23/2010	1/25/2011	3/28/2011
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	10	6.98	4.23	12.6	6.27	5.33
1,1,2-Trichloroethane	µg/L	0.319 J	0.265 J	<1	0.503 J	0.344 J	0.355 J
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	2.26	1.88	0.996 J	2.99	2.4	1.67
Chloroform	µg/L	24.8	23	7.54	26.5	18.6	21.2
cis-1,2-Dichloroethene	µg/L	1.76	3.03	3.85	9.91	7.69	5.47
Tetrachloroethene	µg/L	0.367 J	0.402 J	0.647 J	0.748 J	0.973 J	0.715 J
trans-1,2-Dichloroethene	µg/L	0.266 J	<1	0.615 J	0.912 J	1.05	0.532 J
Trichloroethene	µg/L	19.1	18.4	53.5	57.5	85.9	38.2
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-166A

	Sample Name	MW-166A	MW-166A	MW-166A	MW-166A	MW-166A
	Sample Date	9/27/2011	4/18/2012	10/17/2012	4/14/2013	10/10/2013
Analyte	Unit					
1,1,2,2-Tetrachloroethane	µg/L	12.1	9.62	5.96	3.15	0.936
1,1,2-Trichloroethane	µg/L	0.497 J	0.4 J	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	3.24	1.88	0.464 J	0.276 J	0.506 J
Chloroform	µg/L	54.4	25.9	8.6	5.47	5.92
cis-1,2-Dichloroethene	µg/L	4.57	2.47	1.37	1.1	0.42 J
Tetrachloroethene	µg/L	0.952 J	0.617 J	<1	<1	0.435 J
trans-1,2-Dichloroethene	µg/L	0.408 J	<1	<1	<1	<1
Trichloroethene	µg/L	28.9	12.1	4.93	2.87	2.41
Vinyl chloride	µg/L	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-167

	Sample Name	MW-167	MW-167	MW-167	MW-167	MW-167	MW-167
	Sample Date	11/21/2004	1/25/2005	3/22/2005	6/16/2005	11/18/2005	4/13/2006
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	<1	<1	2.67	<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	2.1 B	0.47 J	0.82 B	<1	<1	<1
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1	0.961 J	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-167

	Sample Name	MW-167	MW-167	MW-167	MW-167	MW-167	MW-167
	Sample Date	10/18/2006	4/9/2007	10/5/2007	4/11/2008	10/20/2008	4/14/2009
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	<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	<0.3	<0.3	<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
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	0.34 J	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-167

	Sample Name	MW-167	MW-167
	Sample Date	10/15/2009	4/13/2013
Analyte	Unit		
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	<1	<1
Chloroform	µg/L	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1
Tetrachloroethene	µg/L	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1
Trichloroethene	µg/L	<1	<1
Vinyl chloride	µg/L	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-169

Analyte	Sample Name / Sample Date	Unit	MW-169 12/12/2004	MW-169 6/15/2005	MW-169 11/18/2005	MW-169 4/13/2006	MW-169T 10/19/2006	MW-169-81.8-IS-2 4/9/2007
1,1,2,2-Tetrachloroethane		µg/L	<1	<1	<1	<1	<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	0.8 B	<1	<1	<1	<0.3	<0.3
cis-1,2-Dichloroethene		µg/L	0.26 J	<1	<1	<1	0.282 J	<1
Tetrachloroethene		µg/L	<1	<1 J	<1	<1	<1	<1
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 J	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
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MW-169

	Sample Name	MW169-81-8-IS-3	MW-169-81.8-IS-4	MW-169-86.06-IS-5	MW-169-87.06-B1	MW-169-IS-7	MW-169	MW-169
	Sample Date	10/8/2007	4/11/2008	10/20/2008	6/8/2009	10/14/2009	4/28/2011	4/11/2013
Analyte	Unit							
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<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	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	0.4	0.547 J	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
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:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-170

Analyte	Sample Name / Sample Date	Unit	MW-170 12/12/2004	MW-170 6/16/2005	MW-170 11/18/2005	MW-170 4/13/2006	MW-170T 10/19/2006	MW-170-77.7-IS-2 4/9/2007
1,1,2,2-Tetrachloroethane		µg/L	<1	<1	<1	<1	<0.5	<0.5
1,1,2-Trichloroethane		µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene		µg/L	1.3	4.06	4.37	2.84	3.52	3.67
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	0.42 B	<1	<1	<1	<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
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 J	<1 J	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-170

Analyte	Sample Name / Sample Date	Unit	MW-170-77.7-IS-3 10/8/2007	MW-170-77.7-IS-4 4/11/2008	MW-170-70.91-IS-5 10/20/2008	MW-170-70.91-IS-6 4/14/2009	MW-170-IS-7 10/14/2009	MW-170 4/28/2011	MW-170 4/11/2013
1,1,2,2-Tetrachloroethane		µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane		µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene		µg/L	3.06	1.43	<1	<1	<1	<1	<1
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1	0.633 J
Tetrachloroethene		µg/L	0.485 J	<1	<1	<1	<1	<1	<1
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:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-171

Analyte	Sample Name / Sample Date	Unit	MW-171 12/13/2004	MW-171 6/16/2005	MW-171 11/18/2005	MW-171 4/13/2006	MW-171T 10/19/2006	MW-171-62.4-IS-2 4/9/2007
1,1,2,2-Tetrachloroethane		µg/L	<1	<1	<1	<1	<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	0.544 J	<1
Carbon tetrachloride		µg/L	<1	<1	<1	<1	<1	<1
Chloroform		µg/L	<1	<1	<1	<1	<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
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 J	<1 J	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
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MW-171

	Sample Name	MW171-IS-3	MW-171-62.4-IS-4	MW-171-63.75-IS-5	MW-171-63.75-IS-6	MW-171-IS-7	MW-171	MW-171
	Sample Date	10/8/2007	4/11/2008	10/20/2008	4/14/2009	10/14/2009	4/28/2011	4/12/2013
Analyte	Unit							
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<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	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
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:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-174

	Sample Name	MW174-75	MW174-75B	MW174-SARA-GW01	MW174-76-SB	MW-174-IS-4	MW-174-TSVE-G
	Sample Date	11/16/2005	11/19/2005	5/14/2007	11/9/2007	4/15/2008	8/18/2008
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	<1	<1	0.37	<1	0.7	1.4
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	3.06 J	2.93	5.9	2.93	<1	<1
Chloroform	µg/L	37.4	31.4	68	30.6	0.666	0.345
cis-1,2-Dichloroethene	µg/L	0.28 J	<1	0.63	<1	<1	<1
Tetrachloroethene	µg/L	0.99 J	1.05	1.9	0.55	0.297 J	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	0.28	<1	<1	<1
Trichloroethene	µg/L	16.9	14.2	33	11.8	<1	<1
Vinyl chloride	µg/L	<1	<1 UJ	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-174

	Sample Name	MW-174-IS-5	MW-174-IS-6	MW-174-IS-7	MW-174-ODLA-1	MW-174	MW-174
	Sample Date	10/16/2008	4/16/2009	10/13/2009	3/26/2010	4/26/2011	7/19/2011
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	0.629	2.08	0.315 J	<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	0.607 J	0.988 J	1.2	0.805 J	0.966 J
Chloroform	µg/L	0.154 J	1.47	1.54	0.337	0.243 J	0.282 J
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	0.347 J	0.591 J	0.651 J	0.413 J	0.51 J
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	0.658 J	0.485 J	<1	0.392 J	0.418 J
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-174

	Sample Name	MW-174	MW-174	MW-174	MW-174
	Sample Date	4/19/2012	10/17/2012	4/12/2013	10/10/2013
Analyte	Unit				
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	<1	<1	<1	<1
Carbon tetrachloride	µg/L	0.442 J	<1	<1	<1
Chloroform	µg/L	0.22 J	0.212 J	0.158 J	0.135 J
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Tetrachloroethene	µg/L	0.311 J	0.263 J	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Trichloroethene	µg/L	0.324 J	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-176

	Sample Name	MW176-81	MW176-85	MW-176-IS-6	MW-176-IS-7	MW-176-ODLA-1	MW-176
	Sample Date	11/18/2005	11/8/2007	4/23/2009	10/13/2009	3/26/2010	4/26/2011
Analyte	Unit						
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	0.415	<1	<1	<1	<1
Chloroform	µg/L	0.21 J	0.246	0.166 J	<0.3	0.147 J	0.208 J
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	0.44 J	0.287	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	0.73 J	3.07	0.579 J	<1	<1	<1
Vinyl chloride	µg/L	<1 UJ	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-176

	Sample Name	MW-176	MW-176
	Sample Date	4/18/2012	4/13/2013
Analyte	Unit		
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	<1	<1
Chloroform	µg/L	0.187 J	0.275 J
cis-1,2-Dichloroethene	µg/L	<1	<1
Tetrachloroethene	µg/L	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1
Trichloroethene	µg/L	<1	0.3 J
Vinyl chloride	µg/L	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-180

	Sample Name	MW180-77	MW180 SARA GW01	MW180-81	MW-180-IS-4	MW-180-TSVE-G	MW-180-IS-5
	Sample Date	11/20/2005	5/21/2007	11/8/2007	4/16/2008	8/20/2008	10/21/2008
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	44.2 J	21	<1	0.763	1.35	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	0.558	2.04
Carbon tetrachloride	µg/L	0.72 J	0.26	<1	<1	<1	<1
Chloroform	µg/L	2.04	1.6	<1	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	2.51	23	<1	<1	<1	<1
Tetrachloroethene	µg/L	5.02	2.8	<1	<1	0.766	1.88
trans-1,2-Dichloroethene	µg/L	1.7	9.6	<1	<1	<1	<1
Trichloroethene	µg/L	24.4	78	<1	<1	0.978	1.8
Vinyl chloride	µg/L	<1 UJ	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-180

	Sample Name	MW-180-IS-6	MW-180-IS-7	MW-180-ODLA-1	MW-180	MW-180	MW-180
	Sample Date	4/15/2009	10/13/2009	3/26/2010	4/26/2011	4/19/2012	5/9/2013
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	<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	0.766 J	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.136 J	0.154 J	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	0.948 J	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	0.893 J	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-182

	Sample Name	MW182-69	MW182-70	MW-182-IS-6	MW-182-IS-7	MW-182	MW-182
	Sample Date	11/19/2005	11/8/2007	4/20/2009	10/15/2009	4/28/2011	4/19/2012
Analyte	Unit						
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
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	0.77 J	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	<1 UJ	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-182

	Sample Name	MW-182	MW-182
	Sample Date	4/14/2013	10/11/2013
Analyte	Unit		
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	<1	<1
Chloroform	µg/L	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1
Tetrachloroethene	µg/L	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1
Trichloroethene	µg/L	<1	<1
Vinyl chloride	µg/L	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-184

	Sample Name	MW184-67	MW184-68	MW-184-IS-6	MW-184-IS-7	MW-184	MW-184
	Sample Date	11/18/2005	11/9/2007	4/23/2009	10/14/2009	4/28/2011	4/19/2012
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	1.74	<1	<0.5	5.06	2.36	0.716
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	8.08	4.19	4.52	13.4	2.23	1.31
Chloroform	µg/L	32.6	7.79	2.94	117	13.3	4.67
cis-1,2-Dichloroethene	µg/L	1.43	1.2	0.424 J	5.61	1.06	0.642 J
Tetrachloroethene	µg/L	0.69 J	<1	0.393 J	4.98	0.729 J	0.397 J
trans-1,2-Dichloroethene	µg/L	0.33 J	0.27	<1	1.63	<1	<1
Trichloroethene	µg/L	12.6	9.47	2.27	84	7.77	2.83
Vinyl chloride	µg/L	<1 UJ	<1	<1 UJ	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
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Defense Depot Memphis, Tennessee

MW-184

	Sample Name	MW-184	MW-184
	Sample Date	5/9/2013	10/10/2013
Analyte	Unit		
1,1,2,2-Tetrachloroethane	µg/L	0.353 J	0.344 J
1,1,2-Trichloroethane	µg/L	<1	<1
1,1-Dichloroethene	µg/L	<1	<1
Carbon tetrachloride	µg/L	0.923 J	0.879 J
Chloroform	µg/L	5.03	4.61
cis-1,2-Dichloroethene	µg/L	0.587 J	0.442 J
Tetrachloroethene	µg/L	0.261 J	0.366 J
trans-1,2-Dichloroethene	µg/L	<1	<1
Trichloroethene	µg/L	2.7	2.29
Vinyl chloride	µg/L	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-187

	Sample Name	MW187-84_060425	MW-187-SARA-GW01	MW187-81	MW-187-IS-4	MW-187-TSVE-G	MW-187-IS-5
	Sample Date	4/25/2006	5/16/2007	11/8/2007	4/16/2008	8/20/2008	10/16/2008
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	<1	<0.5	0.141	<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	0.8	<1	<1	<1	<1
Chloroform	µg/L	0.13 J	0.29	<1	<0.3	0.139	0.183 J
cis-1,2-Dichloroethene	µg/L	<1	0.4	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	0.36	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	0.26 J	3.7	<1	<1	<1	<1
Vinyl chloride	µg/L	<1 UJ	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-187

	Sample Name	MW-187-IS-6	MW-187-IS-7	MW-187-ODLA-1	MW-187	MW-187
	Sample Date	4/21/2009	10/15/2009	3/26/2010	4/28/2011	4/12/2013
Analyte	Unit					
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	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1
Chloroform	µg/L	<0.3	0.162 J	0.149 J	0.265 B	0.166 J
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	0.253 J	<1	0.312 J	0.267 J
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:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-190

Analyte	Sample Name / Sample Date	Unit	MW190-86_060426 4/26/2006	MW190-86 11/9/2007	MW-190-IS-6 4/23/2009	MW-190-IS-7 10/14/2009	MW-190-ODLA-1 3/26/2010	MW-190 4/26/2011
1,1,2,2-Tetrachloroethane		µg/L	4410	1040	276	28.1	23.5	10.4
1,1,2-Trichloroethane		µg/L	8.84	3.38	0.45 J	<1	<1	<1
1,1-Dichloroethene		µg/L	<1	<1	<1	<1	<1	<1
Carbon tetrachloride		µg/L	0.63 J	1.17	<1	<1	<1	<1
Chloroform		µg/L	2.73	1.32	0.562	0.135 J	0.186 J	0.247 J
cis-1,2-Dichloroethene		µg/L	80.5 J	33.3	3.4	0.547 J	0.747 J	0.405 J
Tetrachloroethene		µg/L	12.5	6.01	1.37	0.588 J	0.707 J	0.642 J
trans-1,2-Dichloroethene		µg/L	6.48	1.56	0.416 J	<1	<1	<1
Trichloroethene		µg/L	2720	705	109	27.6	31.9	19.4
Vinyl chloride		µg/L	<1 UJ	<1	<1 UJ	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-190

	Sample Name	MW-190	MW-190	MW-190	MW-190
	Sample Date	4/19/2012	10/17/2012	5/9/2013	10/10/2013
Analyte	Unit				
1,1,2,2-Tetrachloroethane	µg/L	12.1	10.6	8.93	9.08
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	0.291 J	0.186 J	0.274 J	0.498
cis-1,2-Dichloroethene	µg/L	0.459 J	0.373 J	0.429 J	0.401 J
Tetrachloroethene	µg/L	0.893 J	1.05	0.58 J	0.85 J
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Trichloroethene	µg/L	20.4	23.1	20.4	23.9
Vinyl chloride	µg/L	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-220

	Sample Name	MW-220	MW-220	MW-220	MW-220	MW-220	MW-220
	Sample Date	5/18/2007	11/9/2007	4/15/2008	8/20/2008	10/21/2008	4/23/2009
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	780	<1	<0.5	<0.5	0.267 J	<0.5
1,1,2-Trichloroethane	µg/L	9.3	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	18	7.93	4.54	37	44.3	45.9
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	2.5	<1	<0.3	0.201	0.217 J	0.238 J
cis-1,2-Dichloroethene	µg/L	420	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	16	7.67	8.14	16.4	13.7	19.8
trans-1,2-Dichloroethene	µg/L	76	<1	<1	<1	<1	<1
Trichloroethene	µg/L	530	6.73	4.61	14.6	15.2	20.2
Vinyl chloride	µg/L	0.63	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-220

	Sample Name	MW-220	MW-220	MW-220	MW-220	MW-220	MW-220
	Sample Date	10/13/2009	7/19/2011	4/19/2012	10/17/2012	4/13/2013	10/10/2013
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	<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	33.1	2.66	3.08	2.47	1.76	1.16
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.184 J	<0.3	<0.3	<0.3	0.138 J	0.126 J
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	19	1.95	4.61	3.78	3.37	2.92
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	18.7	4.94	6.56	6.65	4.97	4.24
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-221

	Sample Name	MW221 SARA GW01	MW221-85	MW-221-IS-4	MW-221-TSVE-G	MW-221-IS-5	MW-221-IS-6
	Sample Date	5/21/2007	11/9/2007	4/16/2008	8/20/2008	10/21/2008	4/16/2009
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	110	0.692	<0.5	0.147	0.329 J	<0.5
1,1,2-Trichloroethane	µg/L	1.9	<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	1.4	0.368	0.167 J	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	52	0.268	<1	<1	<1	<1
Tetrachloroethene	µg/L	6.9	1.09	0.893 J	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	10	<1	<1	<1	<1	<1
Trichloroethene	µg/L	140	2.33	<1	1.19	0.501 J	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-221

	Sample Name	MW-221-IS-7	MW-221-ODLA-1	MW-221	MW-221	MW-221	MW-221
	Sample Date	10/13/2009	3/26/2010	4/26/2011	7/19/2011	4/20/2012	10/17/2012
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	<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	<0.3	<0.3	<0.3	0.134 J	<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
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:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-221

	Sample Name	MW-221	MW-221
	Sample Date	4/13/2013	10/10/2013
Analyte	Unit		
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	<1	<1
Chloroform	µg/L	0.156 J	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1
Tetrachloroethene	µg/L	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1
Trichloroethene	µg/L	<1	<1
Vinyl chloride	µg/L	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-222

	Sample Name	MW-222-SARA-GW01	MW222-84	MW-222-IS-4	MW-222-TSVE-G	MW-222-IS-5	MW-222-IS-6
	Sample Date	5/16/2007	11/9/2007	4/15/2008	8/19/2008	10/20/2008	4/16/2009
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	340	1130	12.7	1.36	47.1	1.19
1,1,2-Trichloroethane	µg/L	<5	8.97	7.57	0.492	0.648 J	<1
1,1-Dichloroethene	µg/L	<5	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<5	<1	<1	<1	<1	<1
Chloroform	µg/L	<1.5	0.358	0.156 J	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	150	25.4	10.4	4.12	4.51	<1
Tetrachloroethene	µg/L	5.7	1.23	0.312 J	0.337	0.484 J	0.377 J
trans-1,2-Dichloroethene	µg/L	66	5.2	0.301 J	<1	0.376 J	<1
Trichloroethene	µg/L	1100	351	5.34	1.18	5.81	1.87
Vinyl chloride	µg/L	<5	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-222

	Sample Name	MW-222-IS-7	MW-222-ODLA-1	MW-222	MW-222	MW-222	MW-222
	Sample Date	10/14/2009	3/26/2010	4/26/2011	7/19/2011	4/20/2012	10/16/2012
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	<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	0.269 J	0.396	0.523	0.281 J	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	0.313 J	<1	<1	<1	0.291 J
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	1.04	2.54	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-222

	Sample Name	MW-222	MW-222
	Sample Date	4/13/2013	10/10/2013
Analyte	Unit		
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	<1	<1
Chloroform	µg/L	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1
Tetrachloroethene	µg/L	0.312 J	<1
trans-1,2-Dichloroethene	µg/L	<1	<1
Trichloroethene	µg/L	<1	1.44
Vinyl chloride	µg/L	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-223

	Sample Name	MW-223-SARA-GW01	MW223-84	MW-223-IS-4	MW-223-TSVE-G	MW-223-IS-5	MW-223-IS-6
	Sample Date	5/16/2007	11/9/2007	4/15/2008	8/18/2008	10/17/2008	4/17/2009
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	14	30.3	0.323 J	0.366	0.913	0.778
1,1,2-Trichloroethane	µg/L	3.1	2.81	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<2	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	0.39	0.283	<1	<1	<1	<1
Chloroform	µg/L	0.95	0.838	0.439	0.252	0.249 J	0.177 J
cis-1,2-Dichloroethene	µg/L	15	5.56	<1	<1	<1	<1
Tetrachloroethene	µg/L	3.7	0.944	0.343 J	0.262	0.457 J	0.813 J
trans-1,2-Dichloroethene	µg/L	3.7	1.21	<1	<1	<1	<1
Trichloroethene	µg/L	500	144	4.55	2.32	3.56	7.38
Vinyl chloride	µg/L	<2	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-223

	Sample Name	MW-223-IS-7	MW-223-ODLA-1	MW-223	MW-223	MW-223	MW-223
	Sample Date	10/14/2009	3/26/2010	40659	7/19/2011	4/20/2012	10/16/2012
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	0.227 J	<0.5	<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	0.551	0.75	2	1.19	0.391	0.207 J
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	0.319 J	0.447 J	<1	0.294 J	0.503 J	0.476 J
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	4.01	1.49	0.25 J	0.392 J	0.275 J	0.352 J
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-223

	Sample Name	MW-223	MW-223
	Sample Date	4/13/2013	10/10/2013
Analyte	Unit		
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	<1	<1
Chloroform	µg/L	0.206 J	0.217 J
cis-1,2-Dichloroethene	µg/L	<1	<1
Tetrachloroethene	µg/L	0.415 J	0.421 J
trans-1,2-Dichloroethene	µg/L	<1	<1
Trichloroethene	µg/L	0.328 J	<1
Vinyl chloride	µg/L	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-224

	Sample Name	MW-224-SARA-GW01	MW224-84.5	MW-224-IS-4	MW-224-TSVE-G	MW-224-IS-5	MW-224-IS-6
	Sample Date	5/16/2007	11/10/2007	4/16/2008	8/18/2008	10/20/2008	4/15/2009
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	140	<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	0.18	0.17	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	4.8	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	1.7	2.23	1.33	0.771	0.628 J	0.436 J
trans-1,2-Dichloroethene	µg/L	1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	92	13.4	<1	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-224

	Sample Name	MW-224-IS-7	MW-224-ODLA-1	MW-224	MW-224	MW-224	MW-224
	Sample Date	10/14/2009	3/26/2010	40659	7/19/2011	4/20/2012	10/16/2012
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	<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	<0.3	0.186 J	1.01	1.03	0.563	0.286 J
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	0.451 J	<1	<1	<1	<1	0.305 J
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:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-224

	Sample Name	MW-224	MW-224
	Sample Date	4/13/2013	10/10/2013
Analyte	Unit		
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	<1	<1
Chloroform	µg/L	0.245 J	0.142 J
cis-1,2-Dichloroethene	µg/L	<1	<1
Tetrachloroethene	µg/L	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1
Trichloroethene	µg/L	<1	<1
Vinyl chloride	µg/L	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-225

	Sample Name	MW-225-SARA-GW01	MW225-88-SB	MW-225-IS-4	MW-225-TSVE-G	MW-225-IS-5	MW-225-IS-6
	Sample Date	5/15/2007	11/9/2007	4/16/2008	8/20/2008	10/17/2008	4/20/2009
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	15	75.9	21.3	13.9	22.8	4.03
1,1,2-Trichloroethane	µg/L	0.62	2.34	0.544 J	<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	0.78	0.517	0.275 J	0.155	0.149 J	<0.3
cis-1,2-Dichloroethene	µg/L	8.6	11.2	1.71	0.889	0.321 J	<1
Tetrachloroethene	µg/L	2.3	1.19	0.616 J	0.644	0.652 J	0.727 J
trans-1,2-Dichloroethene	µg/L	2.2	1.21	<1	<1	<1	<1
Trichloroethene	µg/L	320	140	39.6	19.6	8.66	9.46
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-225

	Sample Name	MW-225-IS-7	MW-225-ODLA-1	MW-225	MW-225	MW-225	MW-225
	Sample Date	10/13/2009	3/26/2010	4/26/2011	7/19/2011	4/20/2012	10/16/2012
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	2.47	0.926	<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	0.198 J	0.212 J	0.667	0.803	0.221 J	0.214 J
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	0.566 J	0.679 J	0.252 J	0.494 J	0.538 J	0.464 J
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	11	8.58	2	1.75	0.653 J	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-225

	Sample Name	MW-225	MW-225
	Sample Date	5/9/2013	10/10/2013
Analyte	Unit		
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	<1	<1
Chloroform	µg/L	0.17 J	0.207 J
cis-1,2-Dichloroethene	µg/L	<1	<1
Tetrachloroethene	µg/L	0.308 J	0.6 J
trans-1,2-Dichloroethene	µg/L	<1	<1
Trichloroethene	µg/L	<1	<1
Vinyl chloride	µg/L	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-226

	Sample Name	MW-226-SARA-GW01	MW226-83	MW-226-IS-4	MW-226-TSVE-G	MW-226-IS-5	MW-226-IS-6
	Sample Date	5/15/2007	11/9/2007	4/15/2008	8/20/2008	10/20/2008	4/17/2009
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	220	9.56	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	1.4	1.09	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<2	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<2	<1	<1	<1	<1	<1
Chloroform	µg/L	0.72	0.156	0.155 J	0.157	0.155 J	0.133 J
cis-1,2-Dichloroethene	µg/L	19	2.57	<1	<1	<1	<1
Tetrachloroethene	µg/L	7.1	0.559	<1	0.417	0.533 J	0.794 J
trans-1,2-Dichloroethene	µg/L	4.5	0.486	<1	<1	<1	<1
Trichloroethene	µg/L	740	24.7	0.855 J	<1	<1	<1
Vinyl chloride	µg/L	<2	1.24	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-226

	Sample Name	MW-226-IS-7	MW-226-ODLA-1	MW-226	MW-226	MW-226	MW-226
	Sample Date	10/14/2009	3/26/2010	4/26/2011	7/19/2011	4/19/2012	10/16/2012
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	<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	0.184 J	<0.3	1.52	0.463	0.195 J	0.242 J
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	0.75 J	0.751 J	<1	<1	0.376 J	0.393 J
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:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-226

	Sample Name	MW-226	MW-226
	Sample Date	4/13/2013	10/10/2013
Analyte	Unit		
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	<1	<1
Chloroform	µg/L	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1
Tetrachloroethene	µg/L	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1
Trichloroethene	µg/L	<1	<1
Vinyl chloride	µg/L	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-227

	Sample Name	MW227-SARA-GW01	MW227-78	MW-227-IS-4	MW-227-TSVE-G	MW-227-IS-5	MW-227-IS-6
	Sample Date	5/14/2007	11/10/2007	4/16/2008	8/18/2008	10/17/2008	4/21/2009
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	120	118	28.1	5.14	10.7	15.1
1,1,2-Trichloroethane	µg/L	6.1	7.33	1.02	0.538	0.982 J	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	43	33.7	4.02	3.52	7.26	0.524 J
Chloroform	µg/L	1100	1080	110	30.9	134	7.5
cis-1,2-Dichloroethene	µg/L	40	58.5	6.33	2.89	6.4	0.328 J
Tetrachloroethene	µg/L	22	13.5	2.25	1.81	2.7	0.345 J
trans-1,2-Dichloroethene	µg/L	8.5	10.9	1	0.37	1.04	<1
Trichloroethene	µg/L	420	387	40.8	28.4	61.8	3.56
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-227

	Sample Name	MW-227-IS-7	MW-227-ODLA-1	MW-227	MW-227	MW-227	MW-227
	Sample Date	10/13/2009	3/26/2010	4/26/2011	7/19/2011	4/19/2012	10/17/2012
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	<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	0.682 J	0.614 J	0.567 J	0.348 J	<1
Chloroform	µg/L	0.322	<0.3	0.361	0.838	0.865	0.42
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	0.267 J	0.543 J	0.551 J	0.614 J	0.463 J	0.392 J
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	0.378 J	0.893 J	0.37 J
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-227

	Sample Name	MW-227	MW-227
	Sample Date	4/12/2013	10/10/2013
Analyte	Unit		
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	<1	<1
Chloroform	µg/L	0.223 J	0.356
cis-1,2-Dichloroethene	µg/L	<1	0.268 J
Tetrachloroethene	µg/L	0.405 J	0.318 J
trans-1,2-Dichloroethene	µg/L	<1	<1
Trichloroethene	µg/L	0.339 J	0.523 J
Vinyl chloride	µg/L	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-228

	Sample Name	MW228-SARA-GW01	MW228-78	MW-228-IS-4	MW-228-TSVE-G	MW-228-IS-5	MW-228-IS-6
	Sample Date	5/14/2007	11/10/2007	4/16/2008	8/18/2008	10/17/2008	4/16/2009
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	46	5.07	0.509	0.22	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	0.99	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	3.4	<1	<1	<1	<1	<1
Chloroform	µg/L	120	4.51	0.387	2.81	0.155 J	<0.3
cis-1,2-Dichloroethene	µg/L	1.6	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	1.8	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	0.38	<1	<1	<1	<1	<1
Trichloroethene	µg/L	42	0.974	<1	0.911	<1	<1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-228

	Sample Name	MW-228-IS-7	MW-228-ODLA-1	MW-228	MW-228	MW-228	MW-228
	Sample Date	10/14/2009	3/29/2010	4/28/2011	7/19/2011	4/19/2012	10/17/2012
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	<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	0.627 J	0.756 J	0.545 J	0.327 J	<1	<1
Chloroform	µg/L	<0.3	<0.3	0.299 B	0.265 J	0.186 J	0.199 J
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	0.399 J	0.445 J	0.614 J	0.451 J	0.264 J	0.46 J
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:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-228

	Sample Name	MW-228	MW-228
	Sample Date	4/12/2013	10/10/2013
Analyte	Unit		
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	<1	<1
Chloroform	µg/L	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1
Tetrachloroethene	µg/L	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1
Trichloroethene	µg/L	<1	<1
Vinyl chloride	µg/L	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-230

	Sample Name	MW-230	MW-230	MW-230	MW-230	MW-230	MW-230	MW-230
	Sample Date	10/18/2007	4/15/2008	10/22/2008	4/15/2009	10/14/2009	4/19/2012	5/9/2013
Analyte	Unit							
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	27.1	18.2	32.7	30.3	28.1	13.2	12.6
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.199 J	0.192 J	0.276 J	0.236 J	0.188 J	0.225 J	0.288 J
cis-1,2-Dichloroethene	µg/L	1.29	0.834 J	1.27	1.09	0.886 J	0.499 J	0.562 J
Tetrachloroethene	µg/L	87.2	76.1	100	89.9	88.4	35.9	33.7
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	83.3	74.6	98.4	98.2	83.5	54.3	60.1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-235

	Sample Name	MW-235-IS-4	MW-235-IS-5	MW-235-IS-6	MW-235-IS-7	MW-235	MW-235	MW-235
	Sample Date	4/15/2008	10/22/2008	4/17/2009	10/15/2009	4/28/2011	4/19/2012	4/14/2013
Analyte	Unit							
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<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	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1	<1
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:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-237

	Sample Name	MW-237-IS-4	MW-237-IS-5	MW-237-IS-6	MW-237-IS-7	MW-237	MW-237	MW-237
	Sample Date	4/11/2008	10/22/2008	4/16/2009	10/15/2009	4/28/2011	4/18/2012	4/14/2013
Analyte	Unit							
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	µg/L	2.2	2.02	2.17	1.77	1.62	3.03	1.93
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.181 J	0.162 J	0.129 J	<0.3	0.164 B	0.172 J	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	0.294 J	<1	0.353 J
Tetrachloroethene	µg/L	0.256 J	0.261 J	0.286 J	<1	<1	0.259 J	<1
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:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
B Possibly bias high or false positive based on blank data
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-241

	Sample Name	MW-241	MW-241	MW-241	MW-241	MW-241	MW-241
	Sample Date	7/28/2009	10/15/2009	3/24/2010	6/22/2010	9/22/2010	1/26/2011
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	16.8	0.744	<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	0.227 J	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	0.262 J	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	3.23	2.75	1.03	0.593 J	0.573 J	0.741 J
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-241

	Sample Name	MW-241	MW-241	MW-241	MW-241
	Sample Date	3/28/2011	9/27/2011	4/17/2012	4/14/2013
Analyte	Unit				
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	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1
Chloroform	µg/L	0.175 J	0.132 J	0.136 J	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Trichloroethene	µg/L	0.362 J	0.736 J	0.667 J	0.505 J
Vinyl chloride	µg/L	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-242

	Sample Name	MW-242	MW-242	MW-242	MW-242	MW-242	MW-242
	Sample Date	7/29/2009	10/16/2009	3/24/2010	6/22/2010	9/22/2010	1/26/2011
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	1040	229	63.3	29.8	15.7	2.83
1,1,2-Trichloroethane	µg/L	8	3.34	0.75 J	0.328 J	<1	<1
1,1-Dichloroethene	µg/L	<1	<2	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<2	<1	<1	<1	<1
Chloroform	µg/L	0.897	0.578 J	0.188 J	0.173 J	0.198 J	0.165 J
cis-1,2-Dichloroethene	µg/L	21.6	15.1	5.08	1.94	0.804 J	<1
Tetrachloroethene	µg/L	4.54	<2	0.373 J	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	3.99	1.75 J	1.01	0.429 J	<1	<1
Trichloroethene	µg/L	308	26.9	24.1	10.9	7.16	3.57
Vinyl chloride	µg/L	<1	<2	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-242

	Sample Name	MW-242	MW-242	MW-242	MW-242	MW-242	MW-242
	Sample Date	3/28/2011	9/26/2011	4/17/2012	10/17/2012	4/14/2013	10/10/2013
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	4.46	0.937	0.325 J	<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	<0.3	0.384	0.197 J	<0.3	0.183 J	0.164 J
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	2.09	1.32	0.779 J	0.498 J	0.402 J	0.5 J
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-243

	Sample Name	MW-243	MW-243	MW-243	MW-243	MW-243	MW-243
	Sample Date	7/28/2009	10/15/2009	3/24/2010	6/22/2010	9/22/2010	1/26/2011
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	90	89.5	26.1	15.6	12.2	4.53
1,1,2-Trichloroethane	µg/L	3.04	0.806 J	<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	0.315	0.233 J	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	11.4	10.3	3.34	0.796 J	<1	<1
Tetrachloroethene	µg/L	2.77	2.48	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	3.75	3.08	0.33 J	<1	<1	<1
Trichloroethene	µg/L	146	138	16	4.92	1.76	1.89
Vinyl chloride	µg/L	<1	<1 UJ	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-243

	Sample Name	MW-243	MW-243	MW-243	MW-243	MW-243	MW-243
	Sample Date	3/28/2011	9/27/2011	4/17/2012	10/16/2012	4/14/2013	10/10/2013
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	4.87	4.42	2.6	2.31	1.76	1.89
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	<0.3	<0.3	<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
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	2.63	1.56	1.95	1.55	1.13	0.949 J
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-244

	Sample Name	MW-244	MW-244	MW-244	MW-244	MW-244	MW-244
	Sample Date	7/30/2009	10/15/2009	3/24/2010	6/23/2010	9/22/2010	1/26/2011
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	1620	953	52.7	13.7	2.88	1.48
1,1,2-Trichloroethane	µg/L	14.5	7.89	0.894 J	<1	<1	<1
1,1-Dichloroethene	µg/L	6.73	<5	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<5	<1	<1	<1	<1
Chloroform	µg/L	1.55	1.26 J	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	53.3	17	1.06	0.549 J	<1	<1
Tetrachloroethene	µg/L	3.17	<5	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	5.4	1.79 J	<1	<1	<1	<1
Trichloroethene	µg/L	346	131	4.56	2.78	0.389 J	0.753 J
Vinyl chloride	µg/L	5.45	6.23	2.37	0.651 J	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-244

	Sample Name	MW-244	MW-244	MW-244	MW-244	MW-244	MW-244
	Sample Date	3/28/2011	9/27/2011	4/18/2012	10/17/2012	4/14/2013	10/10/2013
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	1.49	2.59	1.28	2.25	1.24	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	<0.3	<0.3	0.161 J	0.246 J	0.205 J	0.216 J
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	0.389 J	0.408 J	0.462 J
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	0.723 J	0.624 J	1.84	4.05	1.92	1.78
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-245

	Sample Name	MW-245	MW-245	MW-245	MW-245	MW-245	MW-245
	Sample Date	7/28/2009	10/16/2009	3/24/2010	6/22/2010	9/22/2010	1/25/2011
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	312	383	70.7	27.9	10.7	3.81
1,1,2-Trichloroethane	µg/L	8.03	3.83	0.823 J	<1	<1	<1
1,1-Dichloroethene	µg/L	2.03	1.85 J	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<2	<1	<1	<1	<1
Chloroform	µg/L	0.438	0.338 J	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	46.1	25.8	1.95	0.55 J	<1	<1
Tetrachloroethene	µg/L	6.38	4.55	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	14.1	5.99	0.41 J	<1	<1	<1
Trichloroethene	µg/L	473	359	21.5	5.46	2.31	1.59
Vinyl chloride	µg/L	0.503 J	<2	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-245

	Sample Name	MW-245	MW-245	MW-245	MW-245	MW-245	MW-245
	Sample Date	3/28/2011	9/27/2011	4/17/2012	10/16/2012	4/14/2013	10/10/2013
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	2.14	1.42	0.715	0.615	0.988	0.519
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	<0.3	<0.3	<0.3	<0.3	0.292 J	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	1.26	0.824 J	0.554 J	0.643 J	0.656 J	0.606 J
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-246

	Sample Name	MW-246	MW-246	MW-246	MW-246	MW-246	MW-246
	Sample Date	7/27/2009	10/16/2009	3/24/2010	6/22/2010	9/23/2010	1/25/2011
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	1140	2290	74.6	24.1	11.1	9.79
1,1,2-Trichloroethane	µg/L	29.4	57.7	3.28	2.91	0.936 J	1.27
1,1-Dichloroethene	µg/L	36.2	18.2	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<10	<1	<1	<1	<1
Chloroform	µg/L	0.829	<3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	375	401	5.72	1.25	0.359 J	1.52
Tetrachloroethene	µg/L	5.3	5.47 J	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	18.1	24.3	<1	<1	<1	<1
Trichloroethene	µg/L	1000	1800	14.7	3.75	1.17	1.75
Vinyl chloride	µg/L	19.1	10.3	<1	<1	<1 J	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-246

	Sample Name	MW-246	MW-246	MW-246	MW-246	MW-246	MW-246
	Sample Date	3/28/2011	9/27/2011	4/17/2012	10/16/2012	4/14/2013	10/10/2013
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	10.8	14.8	9.94	13.1	3.05	2.85
1,1,2-Trichloroethane	µg/L	0.689 J	0.294 J	<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	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	0.582 J	0.472	0.44 J	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	1.41	1.74	1.75	1.59	0.46 J	1.05
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-247

	Sample Name	MW-247	MW-247	MW-247	MW-247	MW-247	MW-247
	Sample Date	7/30/2009	10/16/2009	3/24/2010	6/23/2010	9/23/2010	1/25/2011
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	27.3	18.6	<0.5	11.4	20.4	44.8
1,1,2-Trichloroethane	µg/L	1.67	1.09	<1	<1	<1	0.272 J
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	5.85	3.04	0.378 J	<1	<1	<1
Chloroform	µg/L	193	120	0.248 J	3.45	0.229 J	2.39
cis-1,2-Dichloroethene	µg/L	14.3	15.7	<1	0.421 J	<1	0.826 J
Tetrachloroethene	µg/L	3.81	3.38	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	2.38	2.12	<1	<1	<1	<1
Trichloroethene	µg/L	134	123	0.431 J	2.95	2.21	12.1
Vinyl chloride	µg/L	<1	<1	<1	<1	<1 J	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-247

	Sample Name	MW-247	MW-247	MW-247	MW-247	MW-247	MW-247
	Sample Date	3/28/2011	9/27/2011	4/18/2012	10/17/2012	4/14/2013	10/10/2013
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	24.7	5.59	1.09	0.738	0.646	0.664
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	0.525	1.84	0.661	2.17	0.278 J	0.133 J
cis-1,2-Dichloroethene	µg/L	<1	0.847 J	<1	0.42 J	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	7.82	2.53	0.864 J	1.7	<1	0.304 J
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-248

	Sample Name	MW-248	MW-248	MW-248	MW-248	MW-248	MW-248
	Sample Date	7/27/2009	10/16/2009	3/26/2010	6/22/2010	9/23/2010	1/26/2011
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	<0.5	0.589	<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	<0.3	<0.3	<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
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 J	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-248

	Sample Name	MW-248	MW-248	MW-248	MW-248
	Sample Date	3/28/2011	9/27/2011	4/18/2012	4/13/2013
Analyte	Unit				
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	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1
Chloroform	µg/L	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1
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:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-249

	Sample Name	MW-249	MW-249	MW-249	MW-249	MW-249	MW-249
	Sample Date	7/29/2009	10/16/2009	3/24/2010	6/22/2010	9/23/2010	1/26/2011
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	5.03	<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	0.577 J	0.437 J	1.19
Chloroform	µg/L	<0.3	<0.3	0.427	0.452	0.399	2.23
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	0.263 J
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	0.703 J	0.693 J	0.519 J	1.88
Vinyl chloride	µg/L	<1	<1	<1	<1	<1 J	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-249

	Sample Name	MW-249	MW-249	MW-249	MW-249	MW-249	MW-249
	Sample Date	3/28/2011	9/27/2011	4/18/2012	10/17/2012	5/9/2013	10/10/2013
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	<0.5	0.6	2.27	1.62	1.2	1.51
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	1.46	3.47	3.55	2.52	1.67	2.03
Chloroform	µg/L	2.59	19.9	20.3	13	10.5	11
cis-1,2-Dichloroethene	µg/L	0.29 J	0.892 J	1.15	0.515 J	0.517 J	0.41 J
Tetrachloroethene	µg/L	<1	0.51 J	1.02	0.744 J	0.478 J	0.591 J
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	1.83	12.4	14.9	8.7	7.3	7.3
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-250

Analyte	Sample Name / Sample Date	Unit	MW-250 7/29/2009	MW-250 10/16/2009	MW-250 3/24/2010	MW-250 6/23/2010	MW-250 9/23/2010	MW-250 4/25/2011
1,1,2,2-Tetrachloroethane		µg/L	<0.5	<0.5	<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	<0.3	<0.3	<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
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 J	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-250

	Sample Name	MW-250	MW-250	MW-250
	Sample Date	9/27/2011	4/18/2012	4/13/2013
Analyte	Unit			
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5 UJ
1,1,2-Trichloroethane	µg/L	<1	<1	<1
1,1-Dichloroethene	µg/L	<1	<1	<1
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	<1	<1	<1
trans-1,2-Dichloroethene	µg/L	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1
Vinyl chloride	µg/L	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit
UJ Undetected, RL is inaccurate or imprecise

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-251

	Sample Name	MW-251	MW-251	MW-251	MW-251	MW-251	MW-251
	Sample Date	7/29/2009	10/16/2009	3/24/2010	6/23/2010	9/22/2010	4/25/2011
Analyte	Unit						
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	<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	3.33	3.8	3.15	2.9	3.77	3.56
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1	<1
Chloroform	µg/L	0.313	0.311	0.197 J	0.254 J	0.306	0.276 J
cis-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	0.572 J	0.697 J	0.644 J	0.621 J	0.699 J	0.716 J
trans-1,2-Dichloroethene	µg/L	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	0.707 J	0.396 J	0.34 J	0.256 J	0.366 J	0.335 J
Vinyl chloride	µg/L	<1	<1	<1	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

HISTORICAL CVOC RESULTS - DUNN FIELD LTM
ANNUAL LONG-TERM MONITORING REPORT - 2013
Defense Depot Memphis, Tennessee

MW-251

	Sample Name	MW-251	MW-251	MW-251
	Sample Date	9/26/2011	4/18/2012	4/14/2013
Analyte	Unit			
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	4.12	4.05	4
Carbon tetrachloride	µg/L	<1	<1	<1
Chloroform	µg/L	0.322	0.328	0.387
cis-1,2-Dichloroethene	µg/L	<1	<1	<1
Tetrachloroethene	µg/L	0.626 J	0.613 J	0.595 J
trans-1,2-Dichloroethene	µg/L	<1	<1	<1
Trichloroethene	µg/L	<1	0.253 J	<1
Vinyl chloride	µg/L	<1	<1	<1

Notes:
µg/L micrograms per liter
RL reporting limit

DQE Flags:
J Estimated results based on QC data or reported below RL
< Not detected at sample reporting limit

APPENDIX L

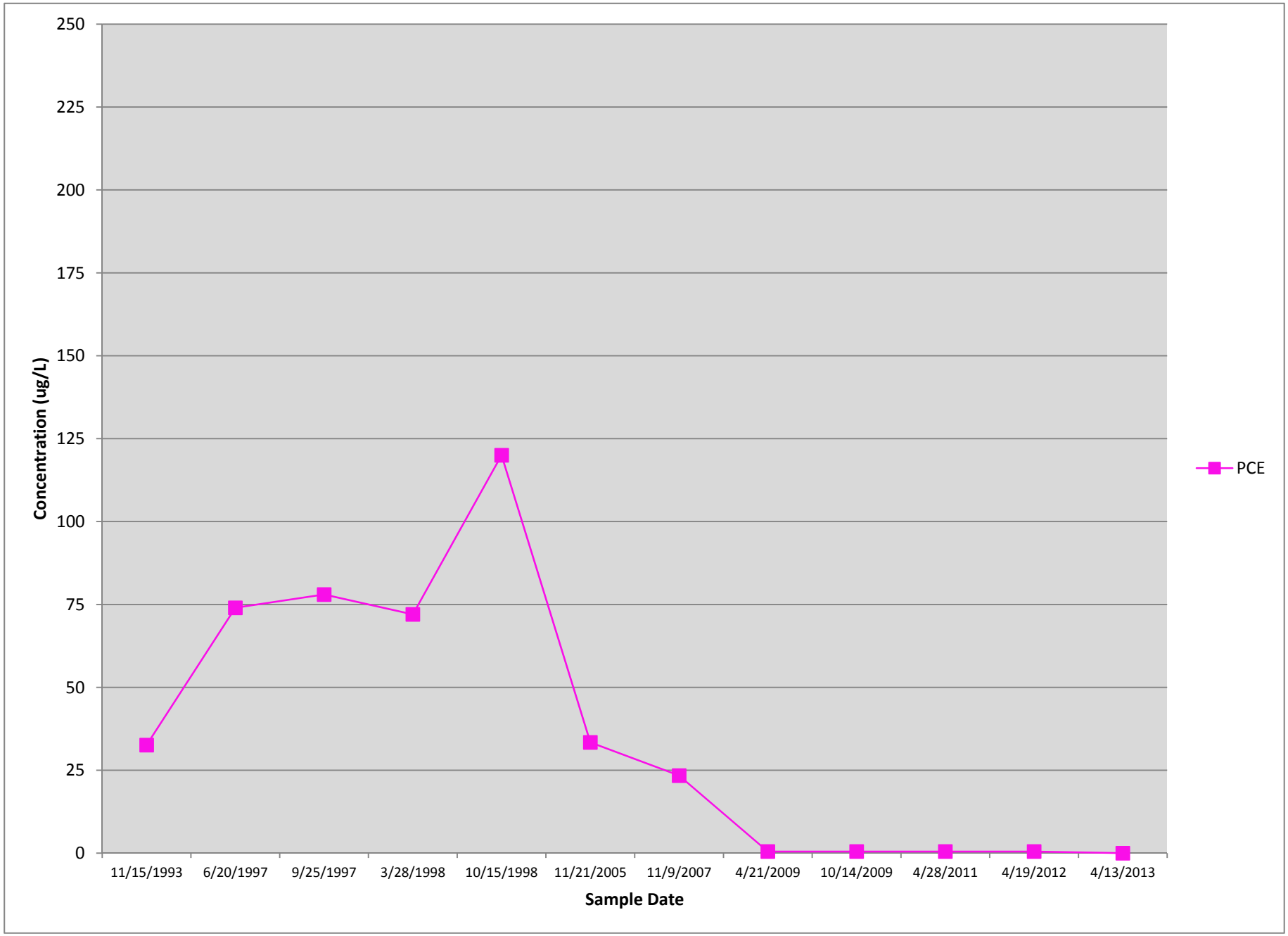
CVOC TIME-TREND PLOTS – DUNN FIELD

APPENDIX L-1

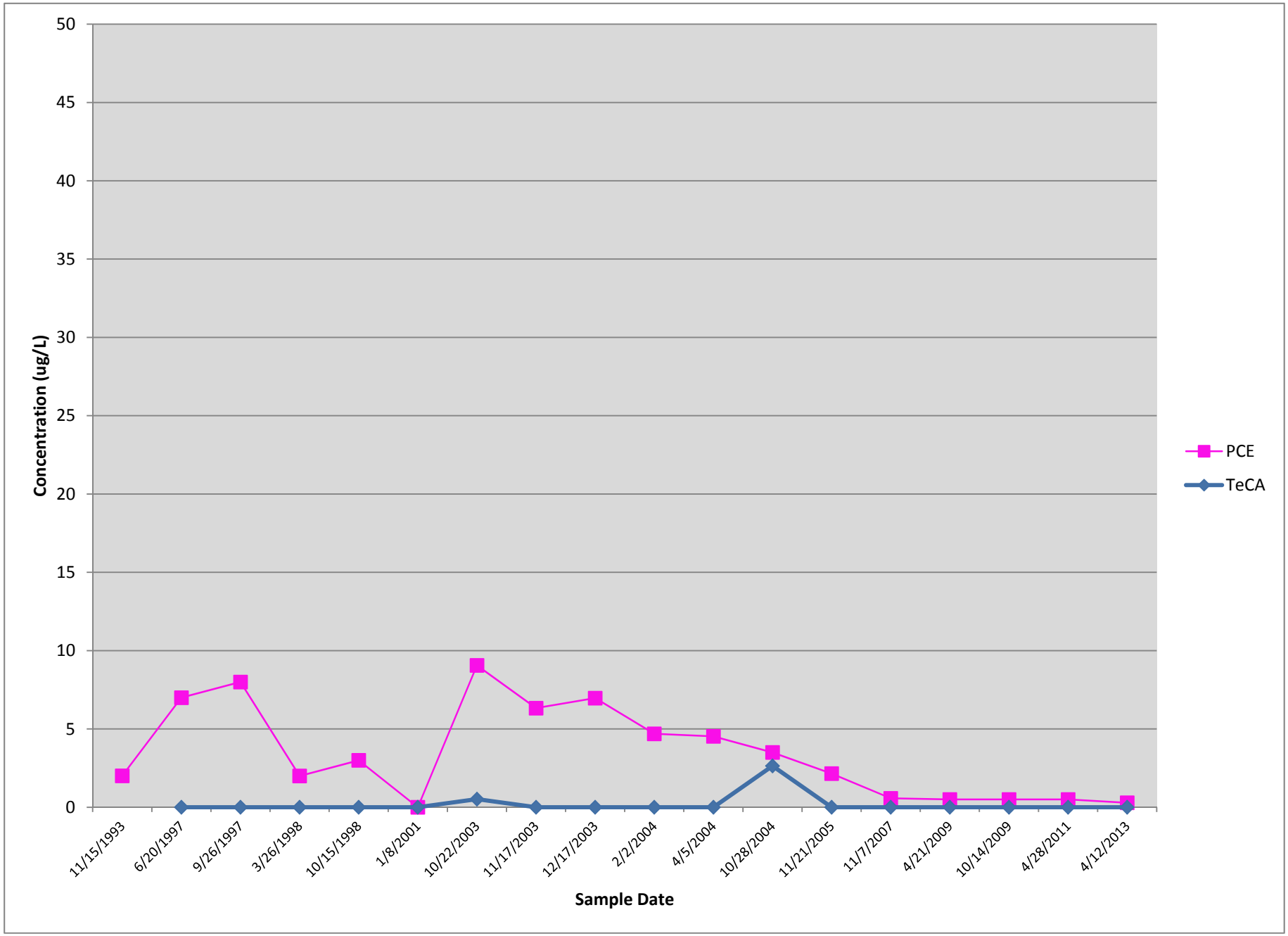
CVOC TIME-TREND PLOTS –
DUNN FIELD

BACKGROUND WELLS

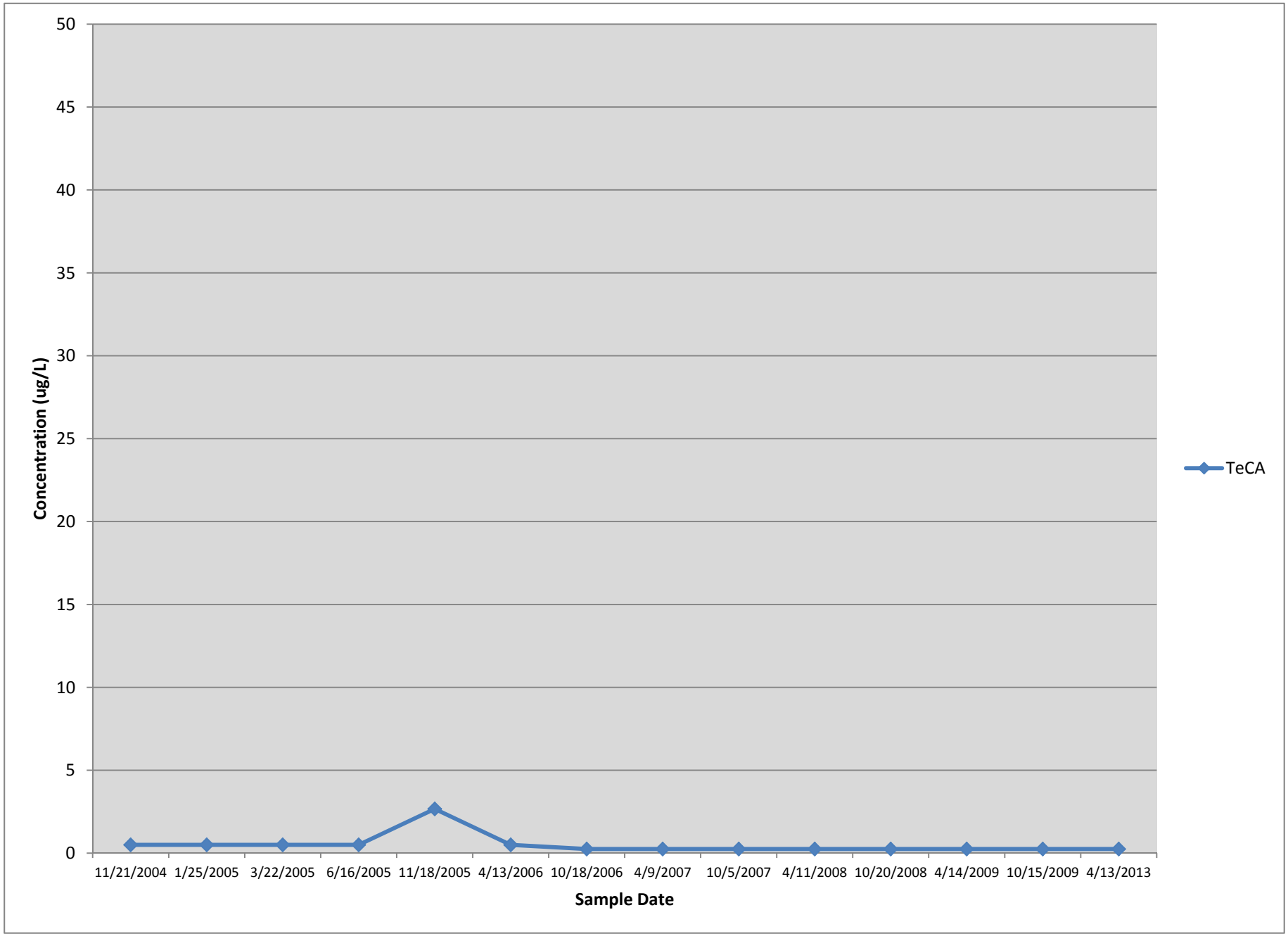
MW-04


250
225
200
175
150
125
100
75
50
25
0
Concentration (ug/L)
11/15/1993
6/20/1997
9/25/1997
3/28/1998
10/15/1998
11/21/2005
11/9/2007
4/21/2009
10/14/2009
4/28/2011
4/19/2012
4/13/2013
Sample Date
PCE

MW-13


50
45
40
35
30
25
20
15
10
5
0
Concentration (ug/L)
11/15/1993
6/20/1997
9/26/1997
3/26/1998
10/15/1998
1/8/2001
10/22/2003
11/17/2003
12/17/2003
2/2/2004
4/5/2004
10/28/2004
11/21/2005
11/7/2007
4/21/2009
10/14/2009
4/28/2011
4/12/2013
Sample Date
PCE
TeCA

MW-167

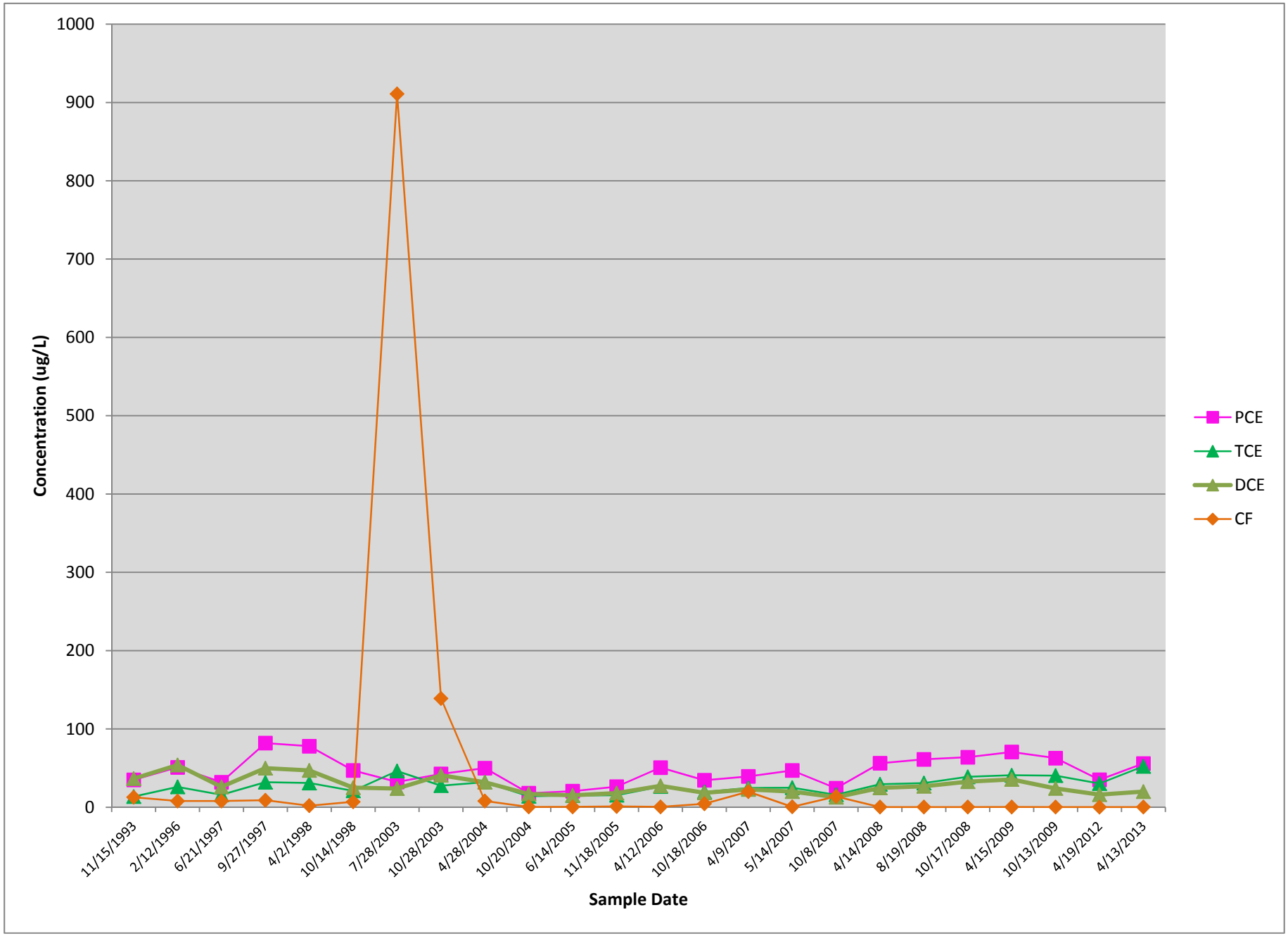

50
45
40
35
30
25
20
15
10
5
0
Concentration (ug/L)
11/21/2004
1/25/2005
3/22/2005
6/16/2005
11/18/2005
4/13/2006
10/18/2006
4/9/2007
10/5/2007
4/11/2008
10/20/2008
4/14/2009
10/15/2009
4/13/2013
Sample Date
TeCA

APPENDIX L-2

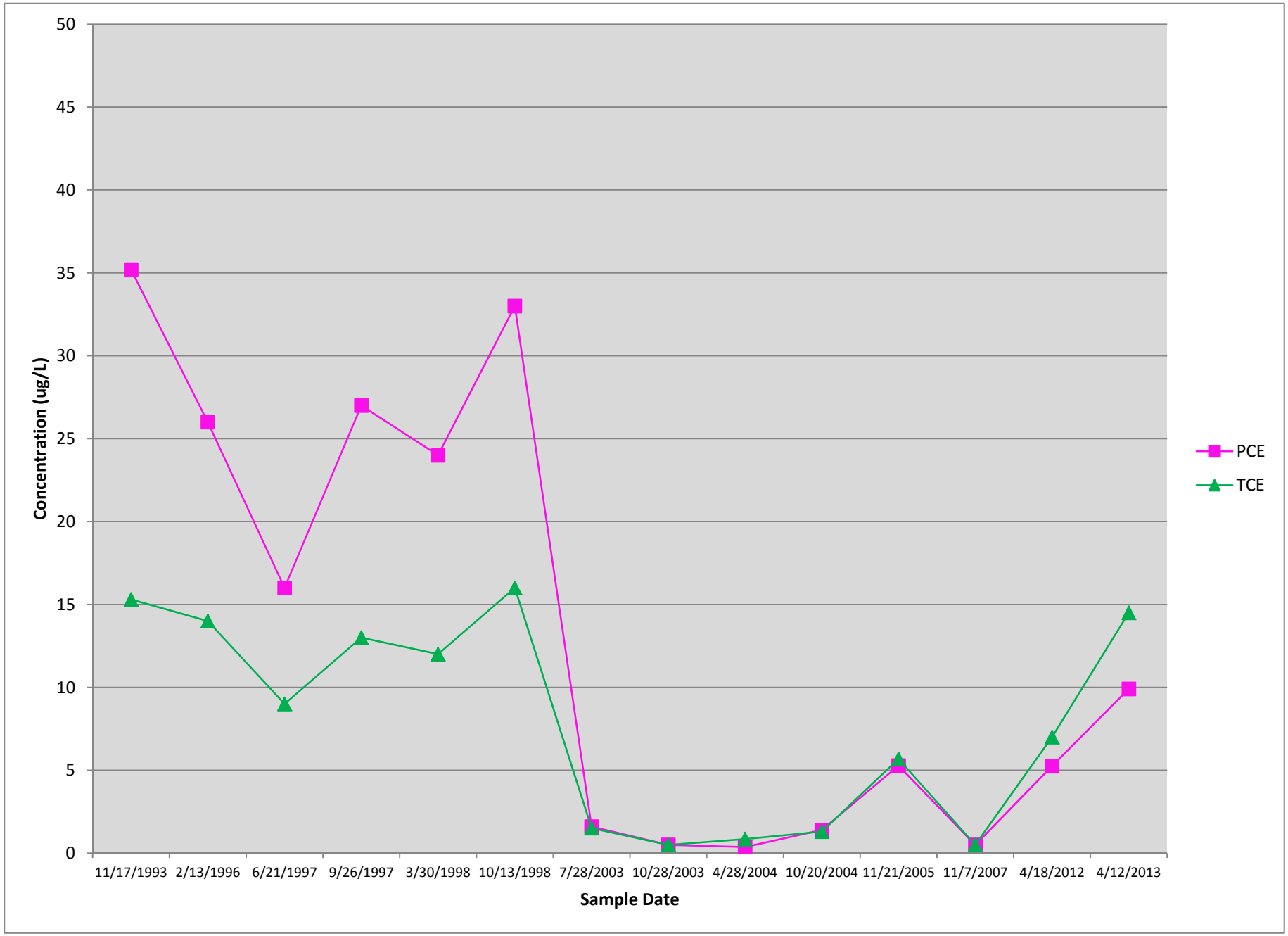
CVOC TIME-TREND PLOTS –
DUNN FIELD

BACKGROUND-NE WELLS

MW-07


1000
900
800
700
600
500
400
300
200
100
0
Concentration (ug/L)
11/15/1993
2/12/1996
6/21/1997
9/27/1997
4/2/1998
10/14/1998
7/28/2003
10/28/2003
4/28/2004
10/20/2004
6/14/2005
11/18/2005
4/12/2006
10/18/2006
4/9/2007
5/14/2007
10/8/2007
4/14/2008
8/19/2008
10/17/2008
4/15/2009
10/13/2009
4/19/2012
4/13/2013
Sample Date
PCE
TCE
DCE
CF

MW-08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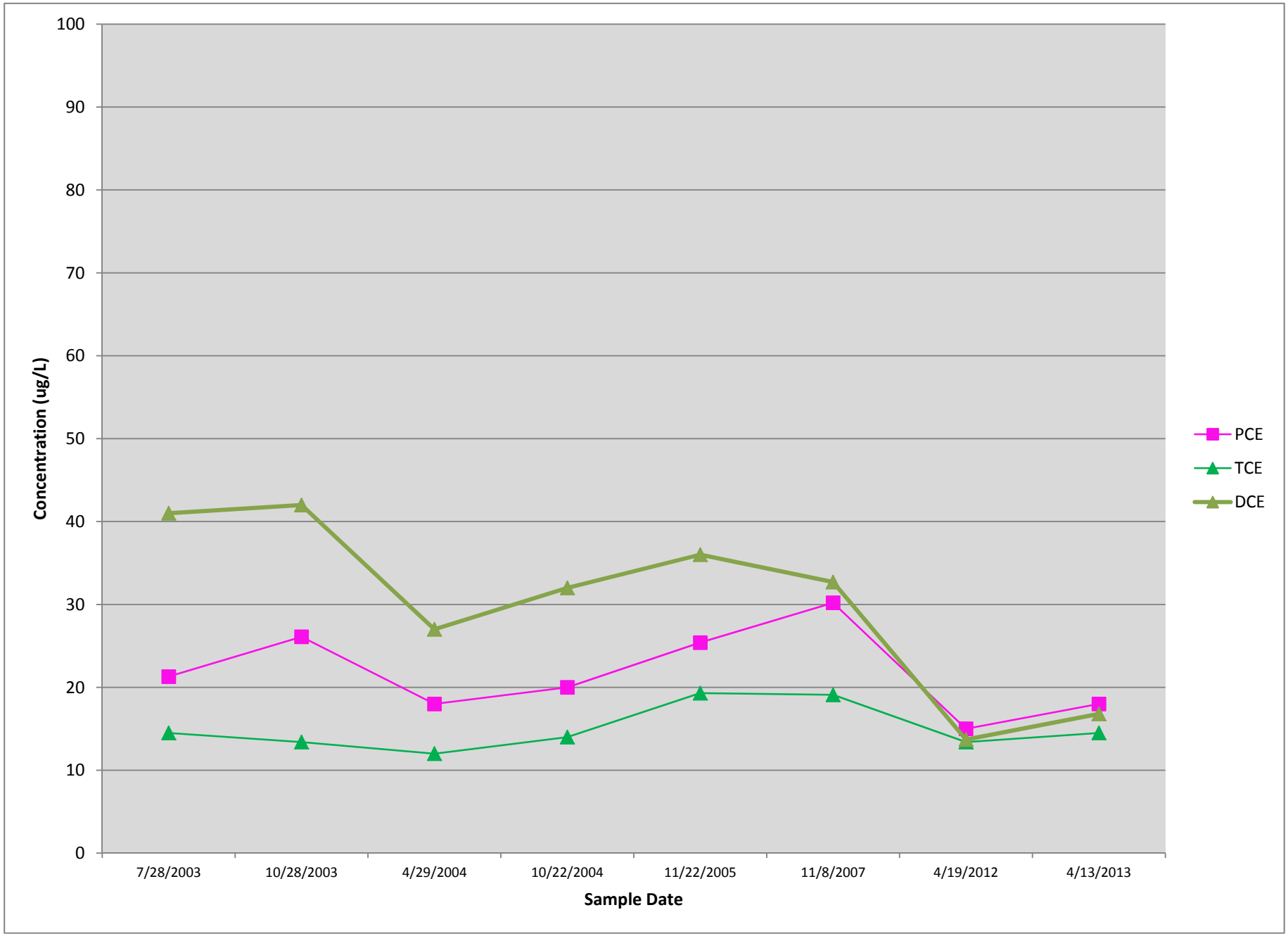
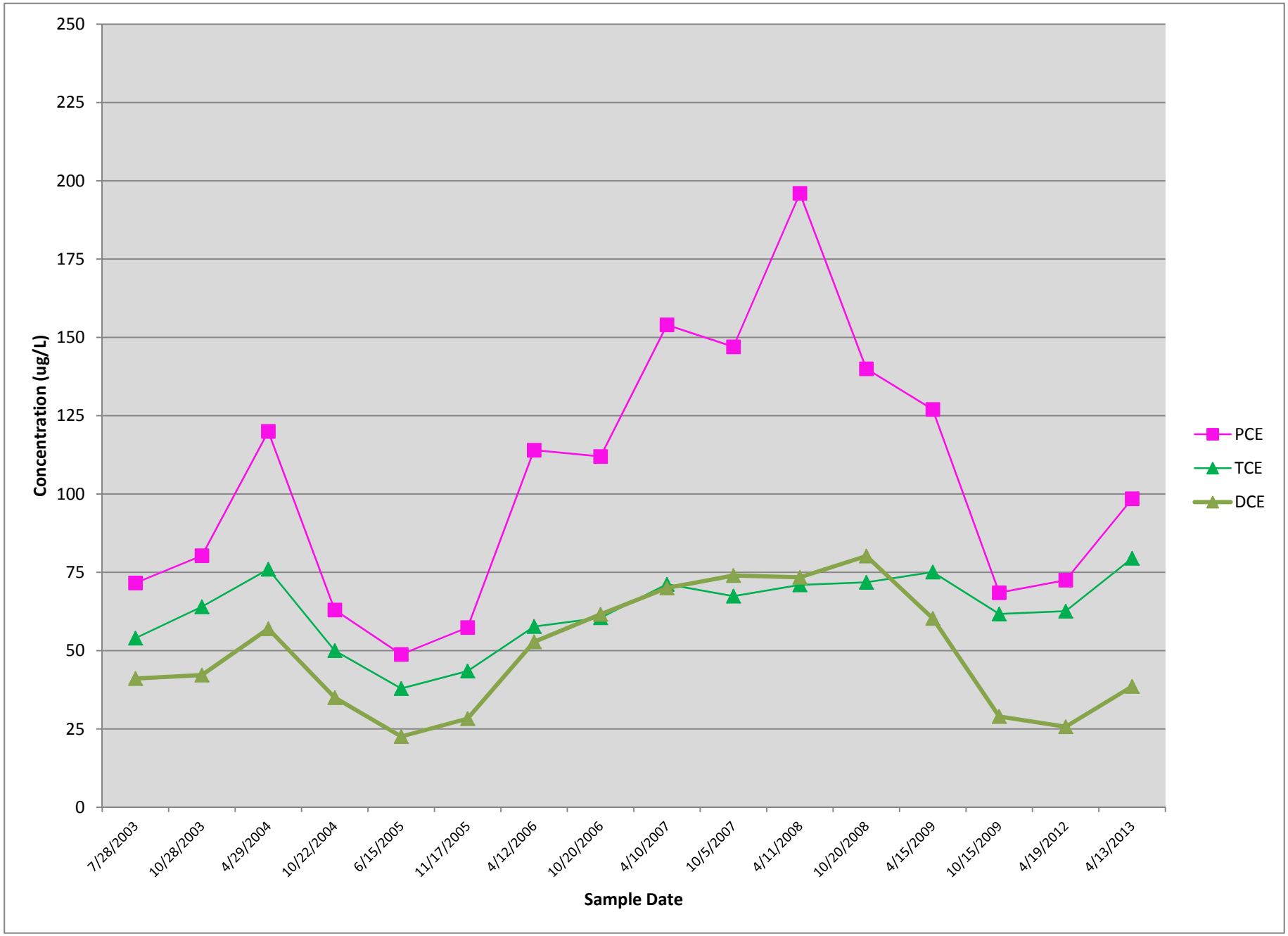
45
40
35
30
25
20
15
10
5
0
Concentration (ug/L)
11/17/1993
2/13/1996
6/21/1997
9/26/1997
3/30/1998
10/13/1998
7/28/2003
10/28/2003
4/28/2004
10/20/2004
11/21/2005
11/7/2007
4/18/2012
4/12/2013
Sample Date
PCE
TCE

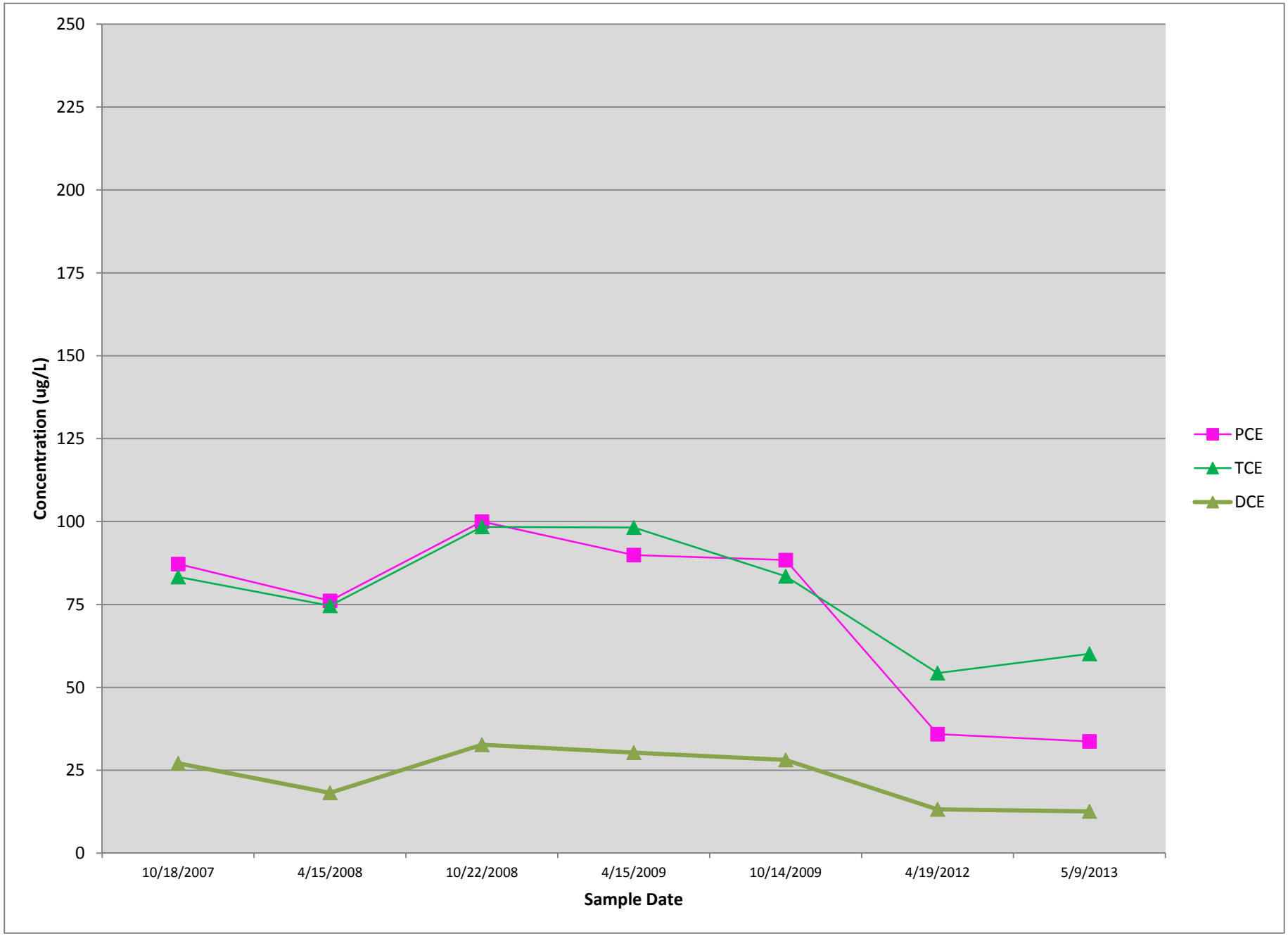
MW-129


100
90
80
70
60
50
40
30
20
10
0
Concentration (ug/L)
7/28/2003
10/28/2003
4/29/2004
10/22/2004
11/22/2005
11/8/2007
4/19/2012
4/13/2013
Sample Date
PCE
TCE
DCE

MW-130


250
225
200
175
150
125
100
75
50
25
0
Concentration (ug/L)
7/28/2003
10/28/2003
4/29/2004
10/22/2004
6/15/2005
11/17/2005
4/12/2006
10/20/2006
4/10/2007
10/5/2007
4/11/2008
10/20/2008
4/15/2009
10/15/2009
4/19/2012
4/13/2013
Sample Date
PCE
TCE
DCE

MW-230

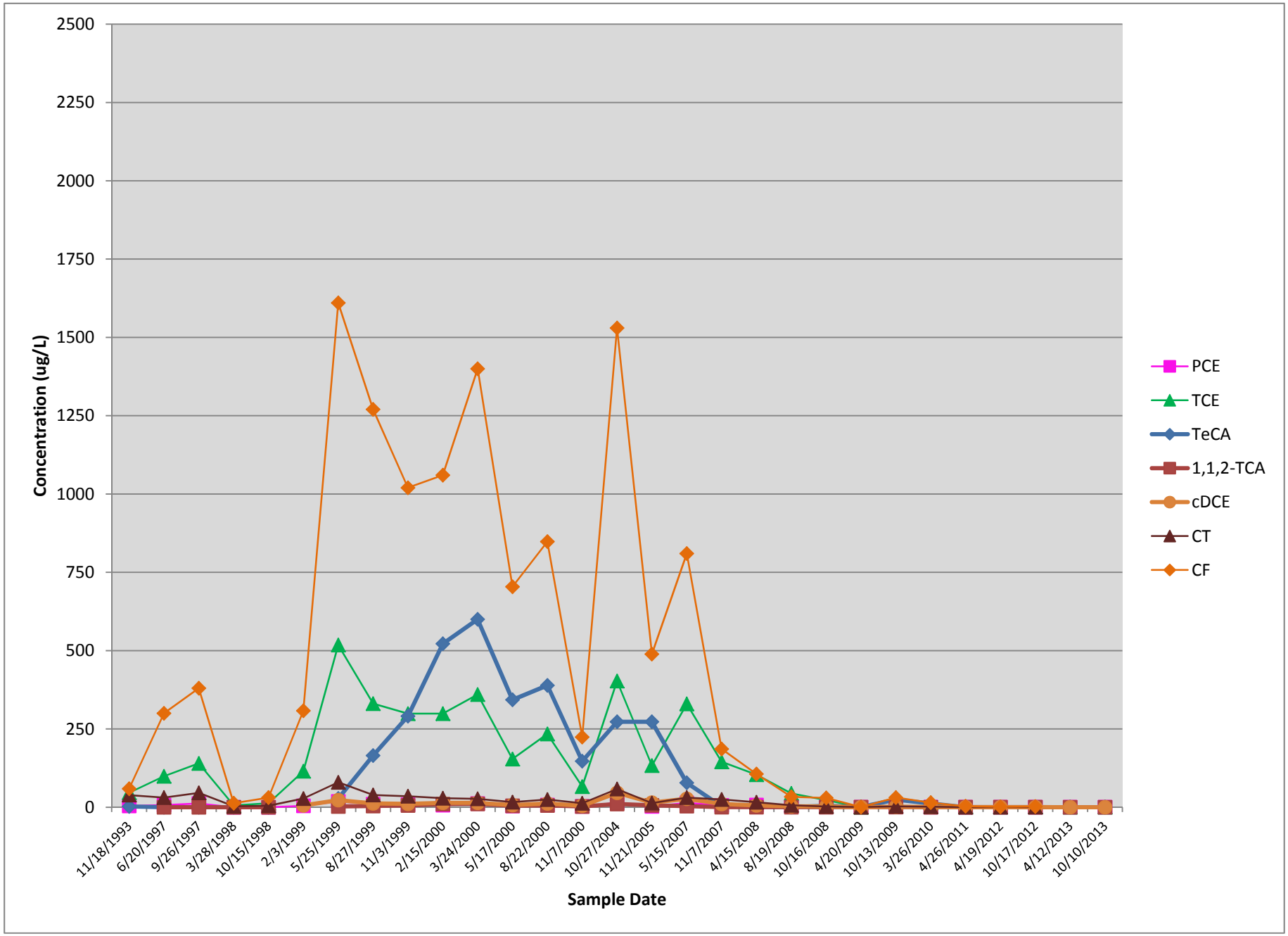

250
225
200
175
150
125
100
75
50
25
0
Concentration (ug/L)
10/18/2007
4/15/2008
10/22/2008
4/15/2009
10/14/2009
4/19/2012
5/9/2013
Sample Date
PCE
TCE
DCE

APPENDIX L-3

CVOC TIME-TREND PLOTS –
DUNN FIELD

PERFORMANCE WELLS

MW-15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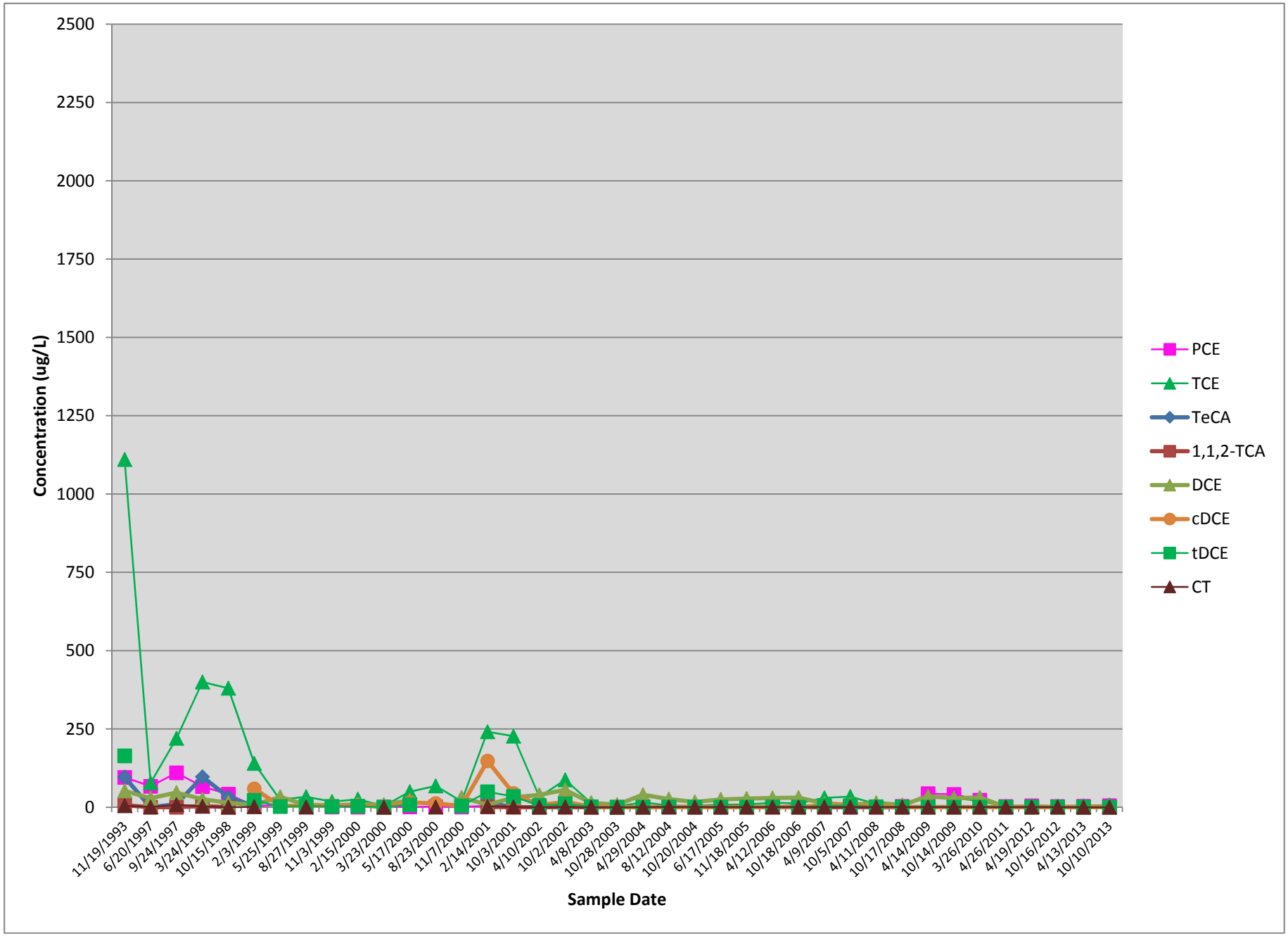
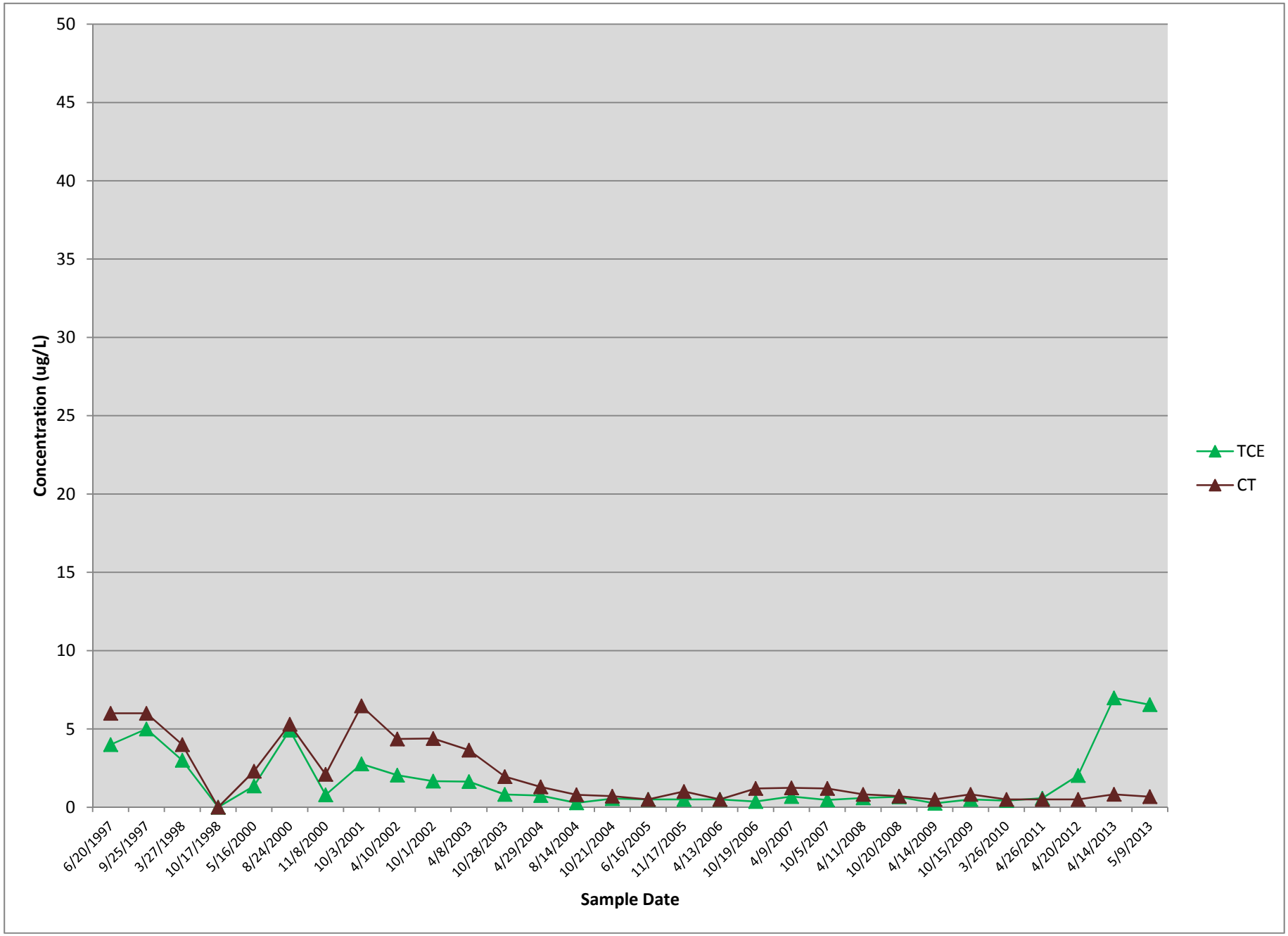
2250
2000
1750
1500
1250
1000
750
500
250
0
Concentration (ug/L)
11/18/1993
6/20/1997
9/26/1997
3/28/1998
10/15/1998
2/3/1999
5/25/1999
8/27/1999
11/3/1999
2/15/2000
3/24/2000
5/17/2000
8/22/2000
11/7/2000
10/27/2004
11/21/2005
5/15/2007
11/7/2007
4/15/2008
8/19/2008
10/16/2008
4/20/2009
10/13/2009
3/26/2010
4/26/2011
4/19/2012
10/17/2012
4/12/2013
10/10/2013
Sample Date
PCE
TCE
TeCA
1,1,2-TCA
cDCE
CT
CF

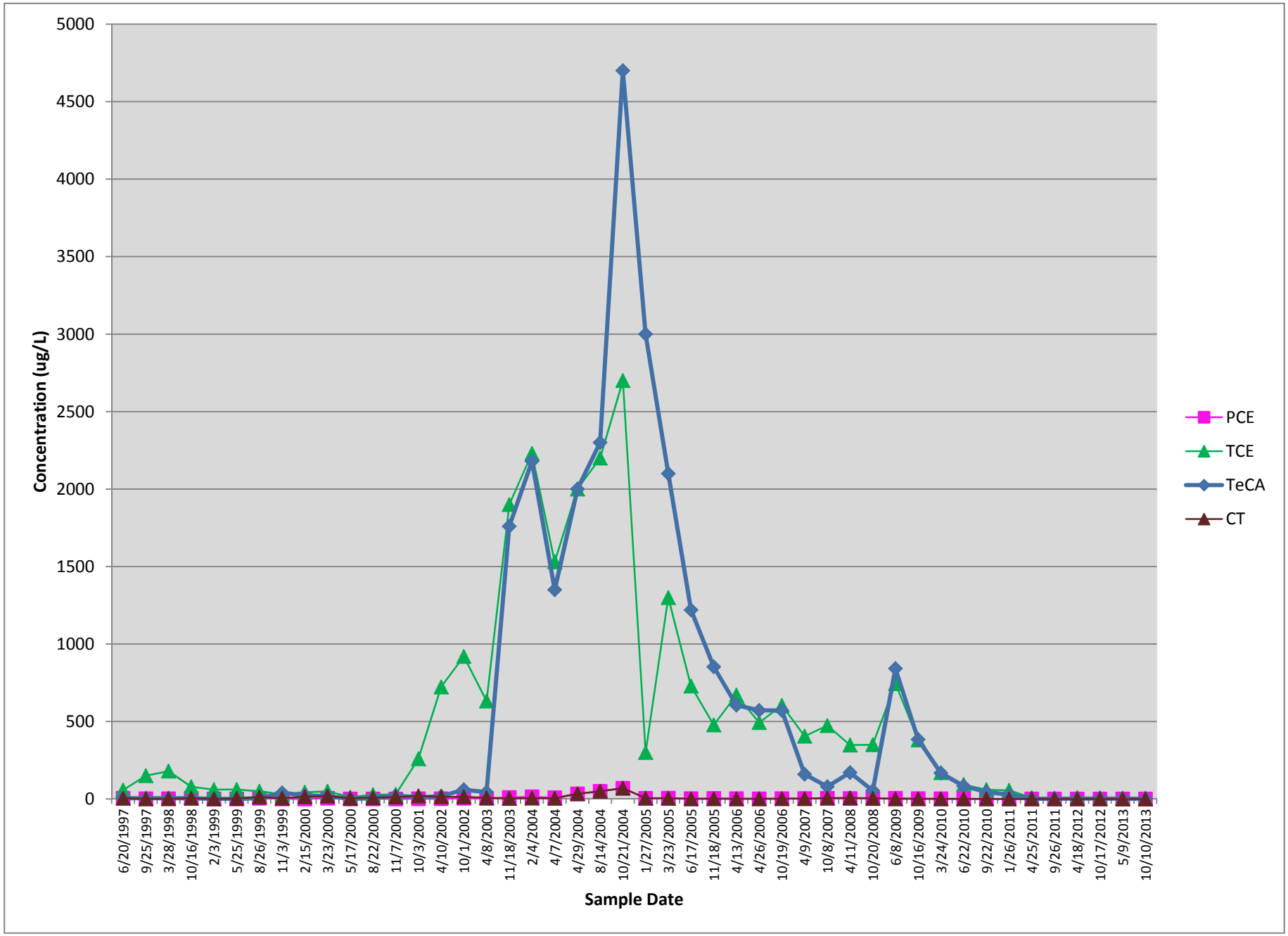
MW-31


2500
2250
2000
1750
1500
1250
1000
750
500
250
0
Concentration (ug/L)
11/19/1993
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
5/17/2000
8/23/2000
11/7/2000
2/14/2001
10/3/2001
4/10/2002
10/2/2002
4/8/2003
10/28/2003
4/29/2004
8/12/2004
10/20/2004
6/17/2005
11/18/2005
4/12/2006
10/18/2006
4/9/2007
10/5/2007
4/11/2008
10/17/2008
4/14/2009
10/14/2009
3/26/2010
4/26/2011
4/19/2012
10/16/2012
4/13/2013
10/10/2013
Sample Date
PCE
TCE
TeCA
1,1,2-TCA
DCE
cDCE
tDCE
CT

MW-44


50
45
40
35
30
25
20
15
10
5
0
Concentration (ug/L)
6/20/1997
9/25/1997
3/27/1998
10/17/1998
5/16/2000
8/24/2000
11/8/2000
10/3/2001
4/10/2002
10/1/2002
4/8/2003
10/28/2003
4/29/2004
8/14/2004
10/21/2004
6/16/2005
11/17/2005
4/13/2006
10/19/2006
4/9/2007
10/5/2007
4/11/2008
10/20/2008
4/14/2009
10/15/2009
3/26/2010
4/26/2011
4/20/2012
4/14/2013
5/9/2013
Sample Date
TCE
CT

MW-54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3500
3000
2500
2000
1500
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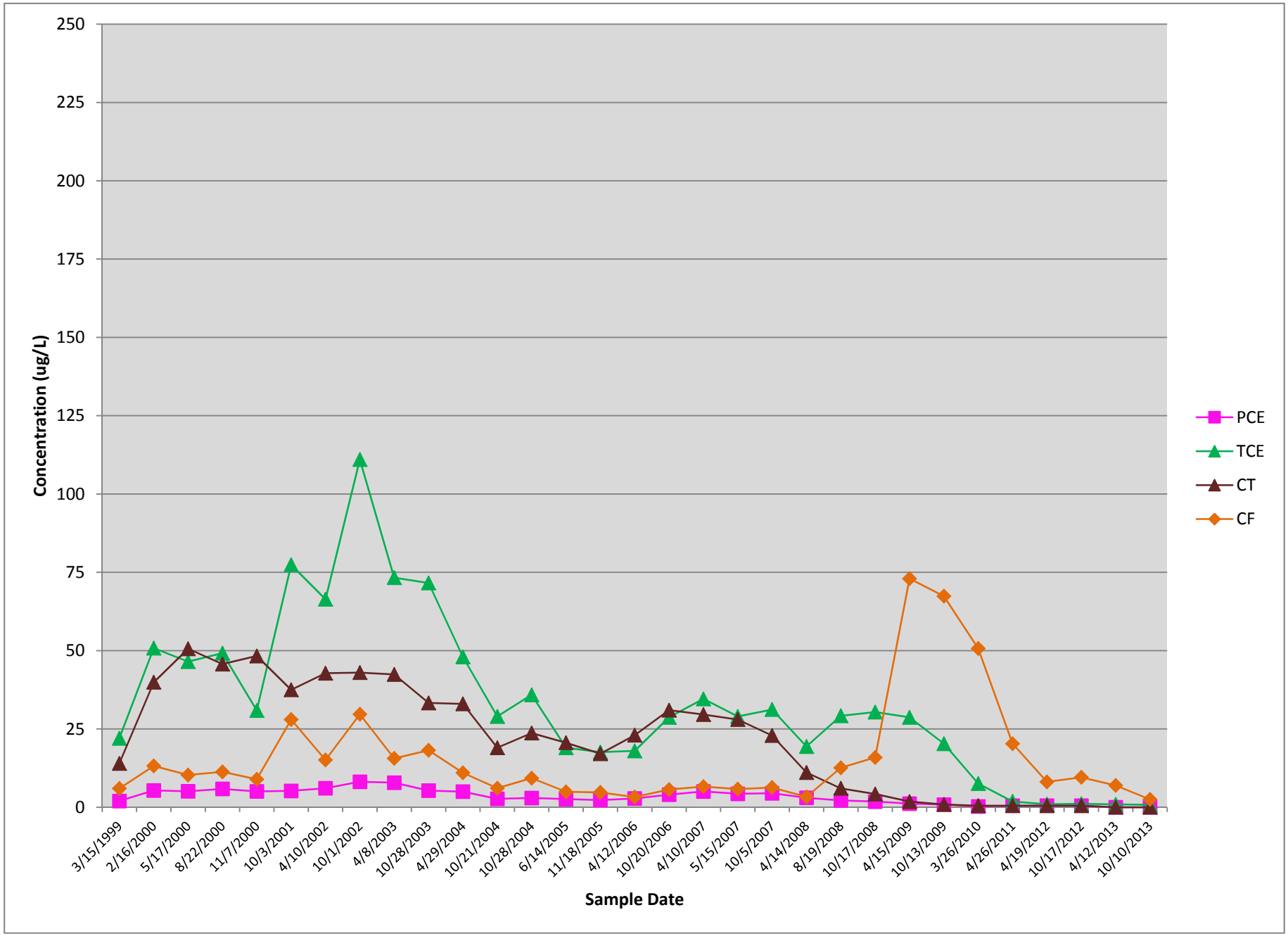
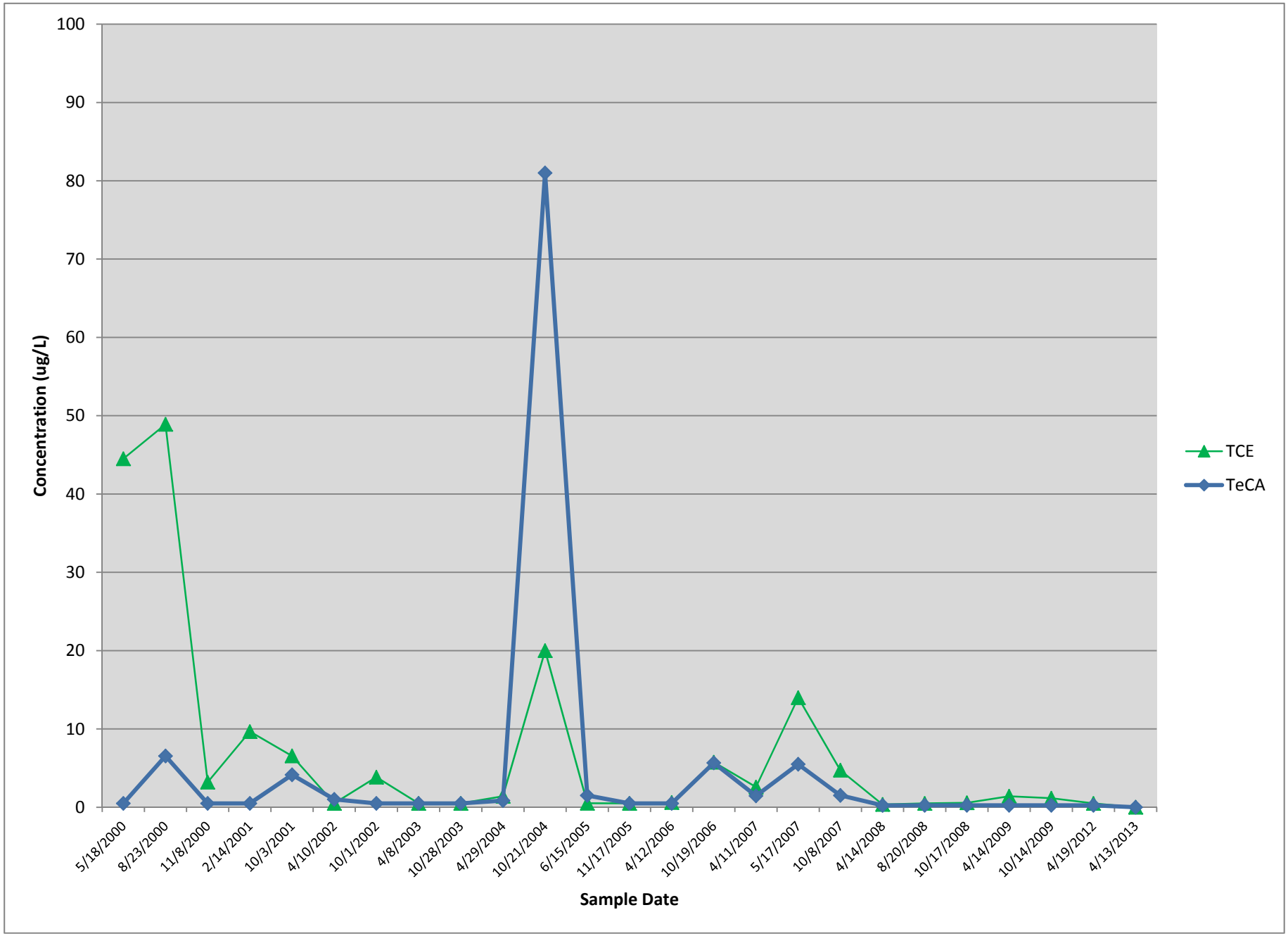
500
0
Concentration (ug/L)
6/20/1997
9/25/1997
3/28/1998
10/16/1998
2/3/1999
5/25/1999
8/26/1999
11/3/1999
2/15/2000
3/23/2000
5/17/2000
8/22/2000
11/7/2000
10/3/2001
4/10/2002
10/1/2002
4/8/2003
11/18/2003
2/4/2004
4/7/2004
4/29/2004
8/14/2004
10/21/2004
1/27/2005
3/23/2005
6/17/2005
11/18/2005
4/13/2006
4/26/2006
10/19/2006
4/9/2007
10/8/2007
4/11/2008
10/20/2008
6/8/2009
10/16/2009
3/24/2010
6/22/2010
9/22/2010
1/26/2011
4/25/2011
9/26/2011
4/18/2012
10/17/2012
5/9/2013
10/10/2013
Sample Date
PCE
TCE
TeCA
CT

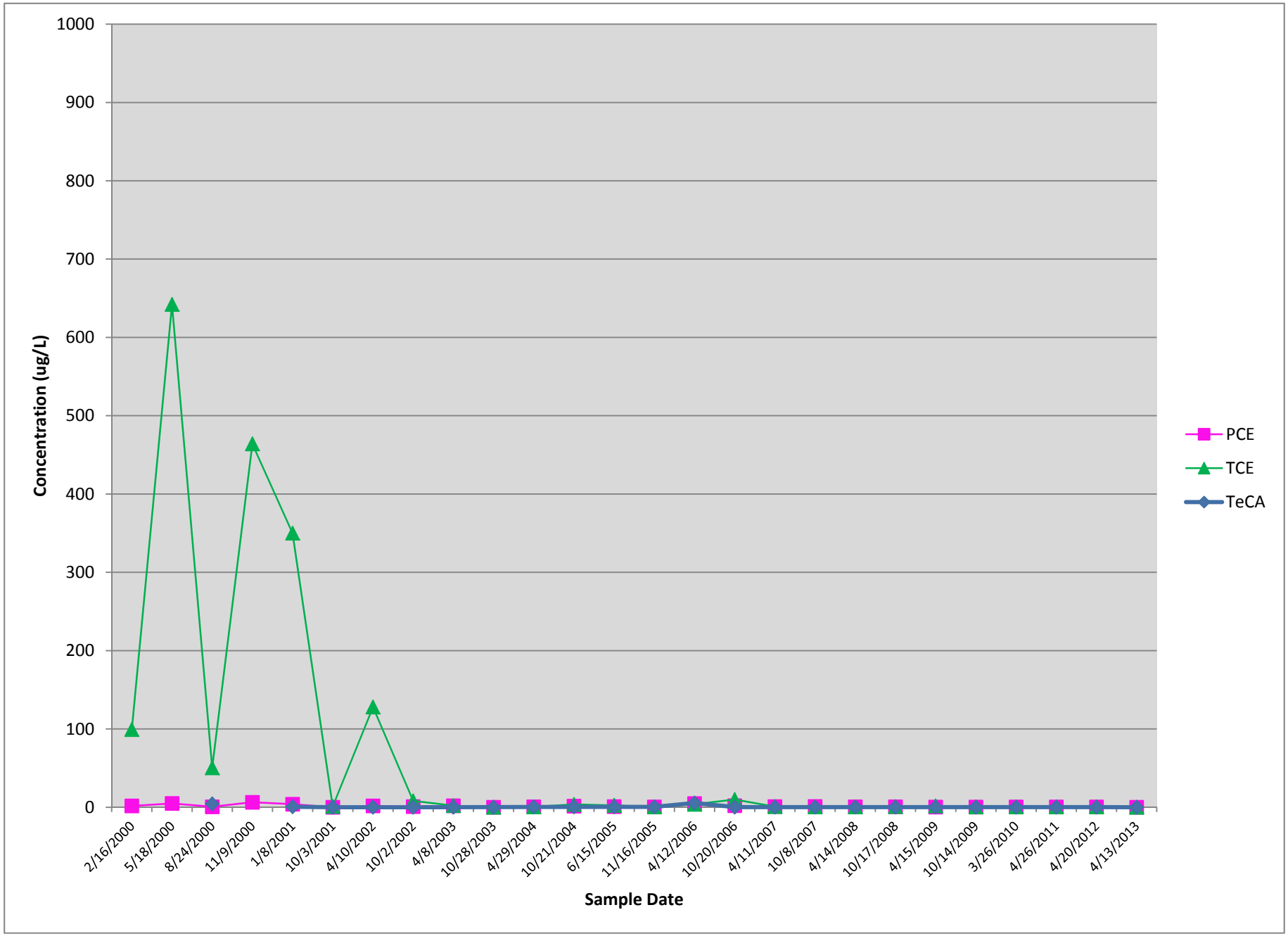
MW-57


250
225
200
175
150
125
100
75
50
25
0
Concentration (ug/L)
3/15/1999
2/16/2000
5/17/2000
8/22/2000
11/7/2000
10/3/2001
4/10/2002
10/1/2002
4/8/2003
10/28/2003
4/29/2004
10/21/2004
10/28/2004
6/14/2005
11/18/2005
4/12/2006
10/20/2006
4/10/2007
5/15/2007
10/5/2007
4/14/2008
8/19/2008
10/17/2008
4/15/2009
10/13/2009
3/26/2010
4/26/2011
4/19/2012
10/17/2012
4/12/2013
10/10/2013
Sample Date
PCE
TCE
CT
CF

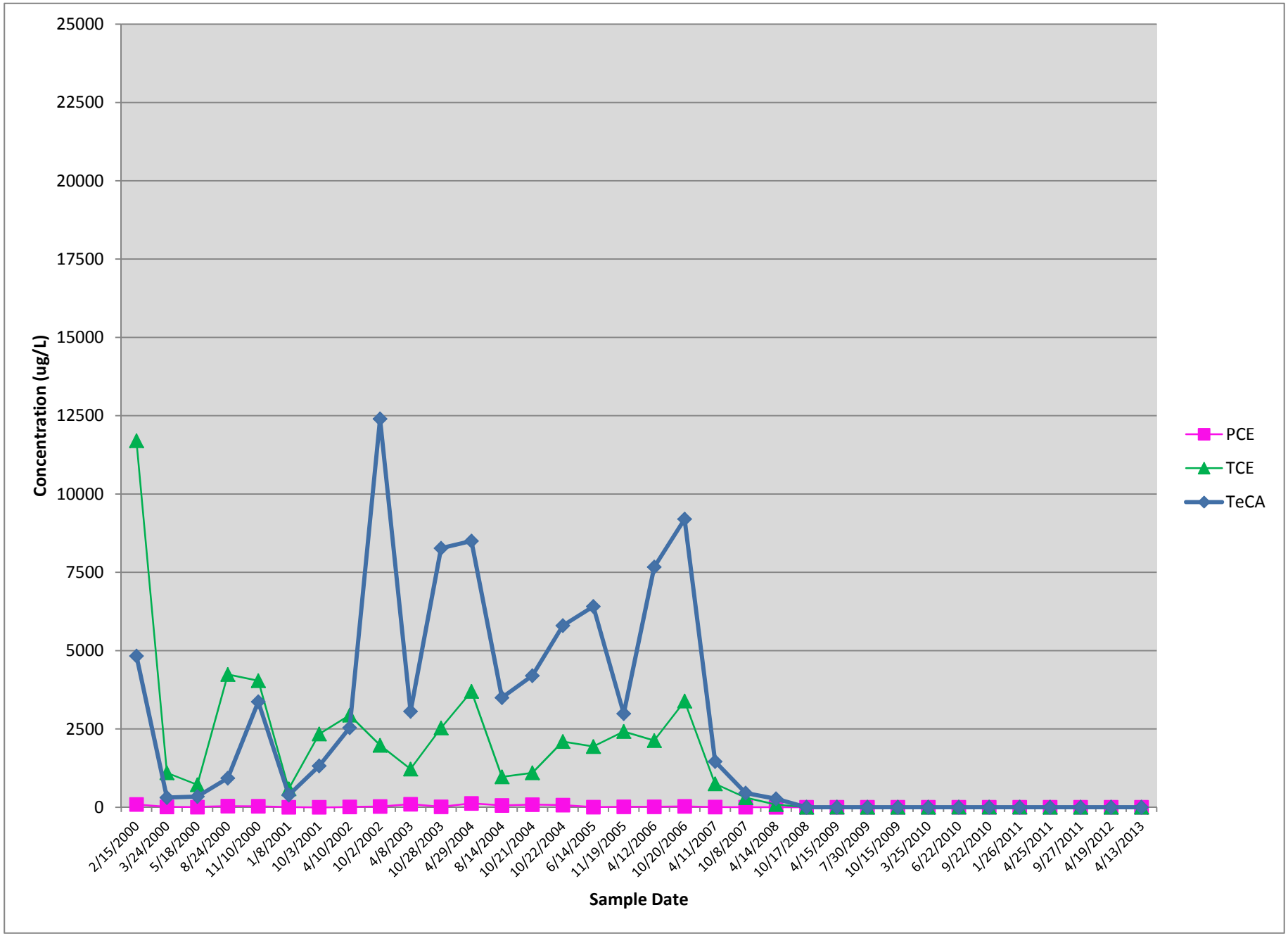
MW-68


100
90
80
70
60
50
40
30
20
10
0
Concentration (ug/L)
5/18/2000
8/23/2000
11/8/2000
2/14/2001
10/3/2001
4/10/2002
10/1/2002
4/8/2003
10/28/2003
4/29/2004
10/21/2004
6/15/2005
11/17/2005
4/12/2006
10/19/2006
4/11/2007
5/17/2007
10/8/2007
4/14/2008
8/20/2008
10/17/2008
4/14/2009
10/14/2009
4/19/2012
4/13/2013
Sample Date
TCE
TeCA

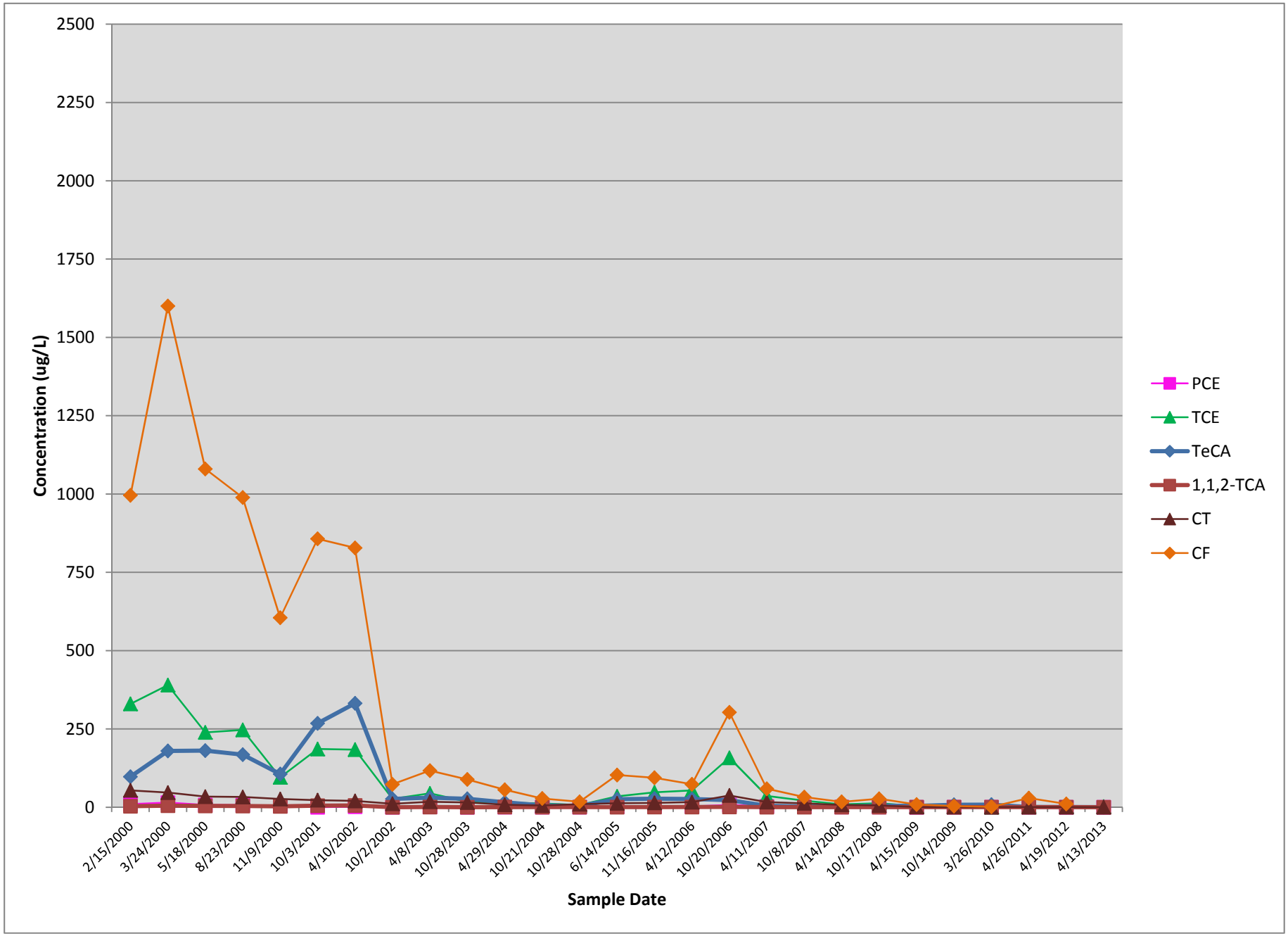
MW-69


1000
900
800
700
600
500
400
300
200
100
0
Concentration (ug/L)
2/16/2000
5/18/2000
8/24/2000
11/9/2000
1/8/2001
10/3/2001
4/10/2002
10/2/2002
4/8/2003
10/28/2003
4/29/2004
10/21/2004
6/15/2005
11/16/2005
4/12/2006
10/20/2006
4/11/2007
10/8/2007
4/14/2008
10/17/2008
4/15/2009
10/14/2009
3/26/2010
4/26/2011
4/20/2012
4/13/2013
Sample Date
PCE
TCE
TeCA

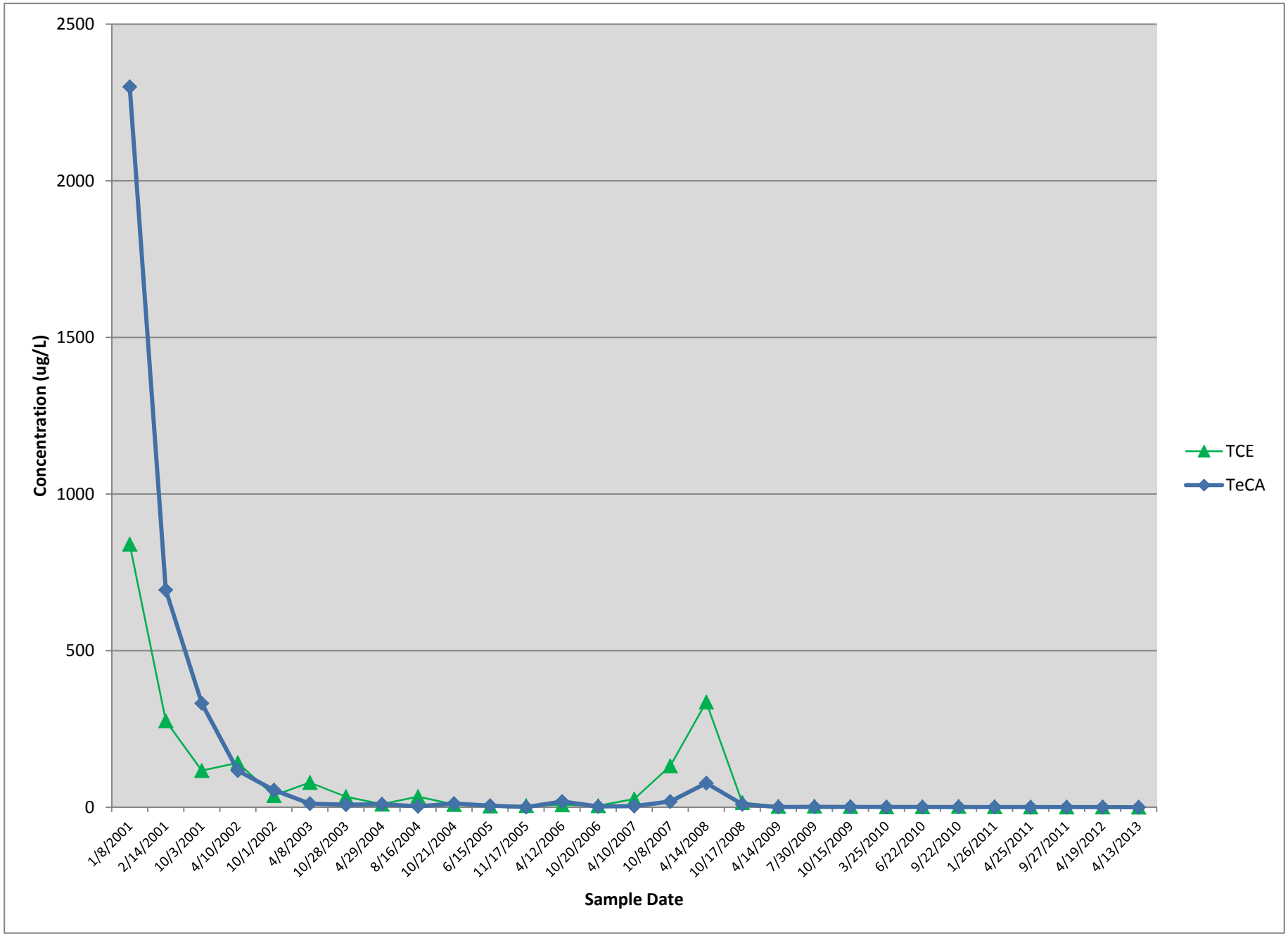
MW-70


25000
22500
20000
17500
15000
12500
10000
7500
5000
2500
0
Concentration (ug/L)
2/15/2000
3/24/2000
5/18/2000
8/24/2000
11/10/2000
1/8/2001
10/3/2001
4/10/2002
10/2/2002
4/8/2003
10/28/2003
4/29/2004
8/14/2004
10/21/2004
10/22/2004
6/14/2005
11/19/2005
4/12/2006
10/20/2006
4/11/2007
10/8/2007
4/14/2008
10/17/2008
4/15/2009
7/30/2009
10/15/2009
3/25/2010
6/22/2010
9/22/2010
1/26/2011
4/25/2011
9/27/2011
4/19/2012
4/13/2013
Sample Date
PCE
TCE
TeCA

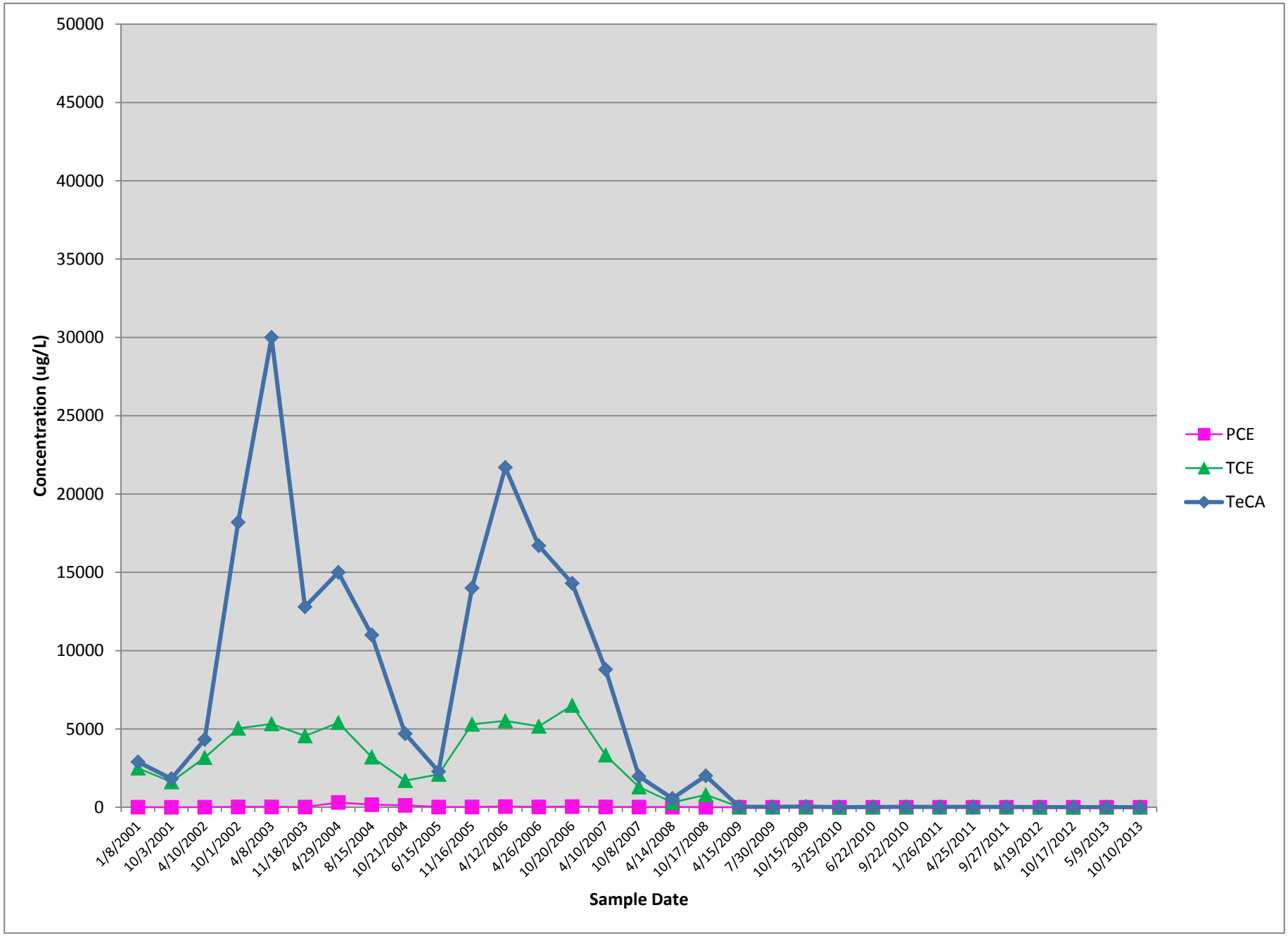
MW-71


2500
2250
2000
1750
1500
1250
1000
750
500
250
0
Concentration (ug/L)
2/15/2000
3/24/2000
5/18/2000
8/23/2000
11/9/2000
10/3/2001
4/10/2002
10/2/2002
4/8/2003
10/28/2003
4/29/2004
10/21/2004
10/28/2004
6/14/2005
11/16/2005
4/12/2006
10/20/2006
4/11/2007
10/8/2007
4/14/2008
10/17/2008
4/15/2009
10/14/2009
3/26/2010
4/26/2011
4/19/2012
4/13/2013
Sample Date
PCE
TCE
TeCA
1,1,2-TCA
CT
CF

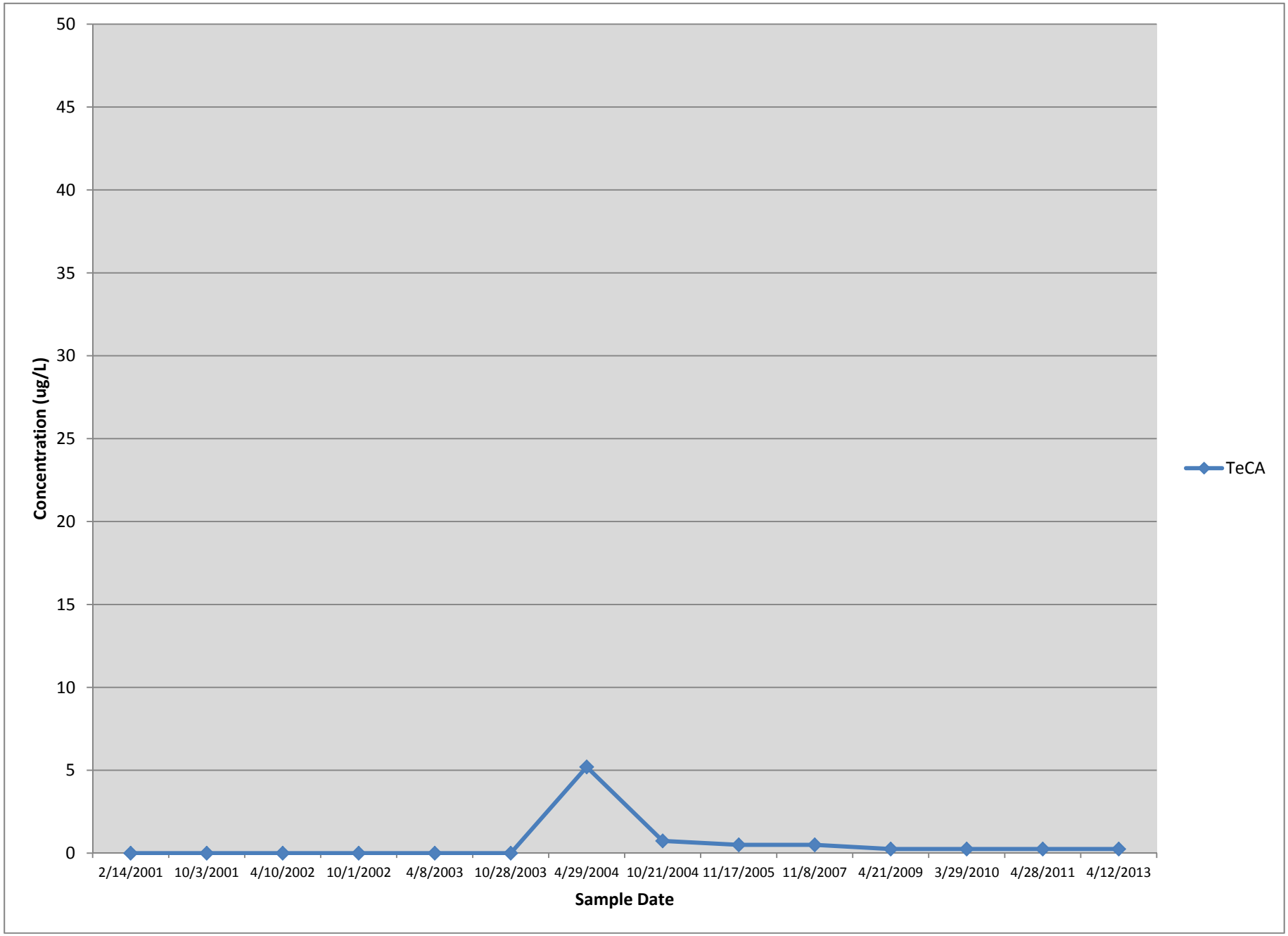
MW-76


2500
2000
1500
1000
500
0
Concentration (ug/L)
1/8/2001
2/14/2001
10/3/2001
4/10/2002
10/1/2002
4/8/2003
10/28/2003
4/29/2004
8/16/2004
10/21/2004
6/15/2005
11/17/2005
4/12/2006
10/20/2006
4/10/2007
10/8/2007
4/14/2008
10/17/2008
4/14/2009
7/30/2009
10/15/2009
3/25/2010
6/22/2010
9/22/2010
1/26/2011
4/25/2011
9/27/2011
4/19/2012
4/13/2013
Sample Date
TCE
TeCA

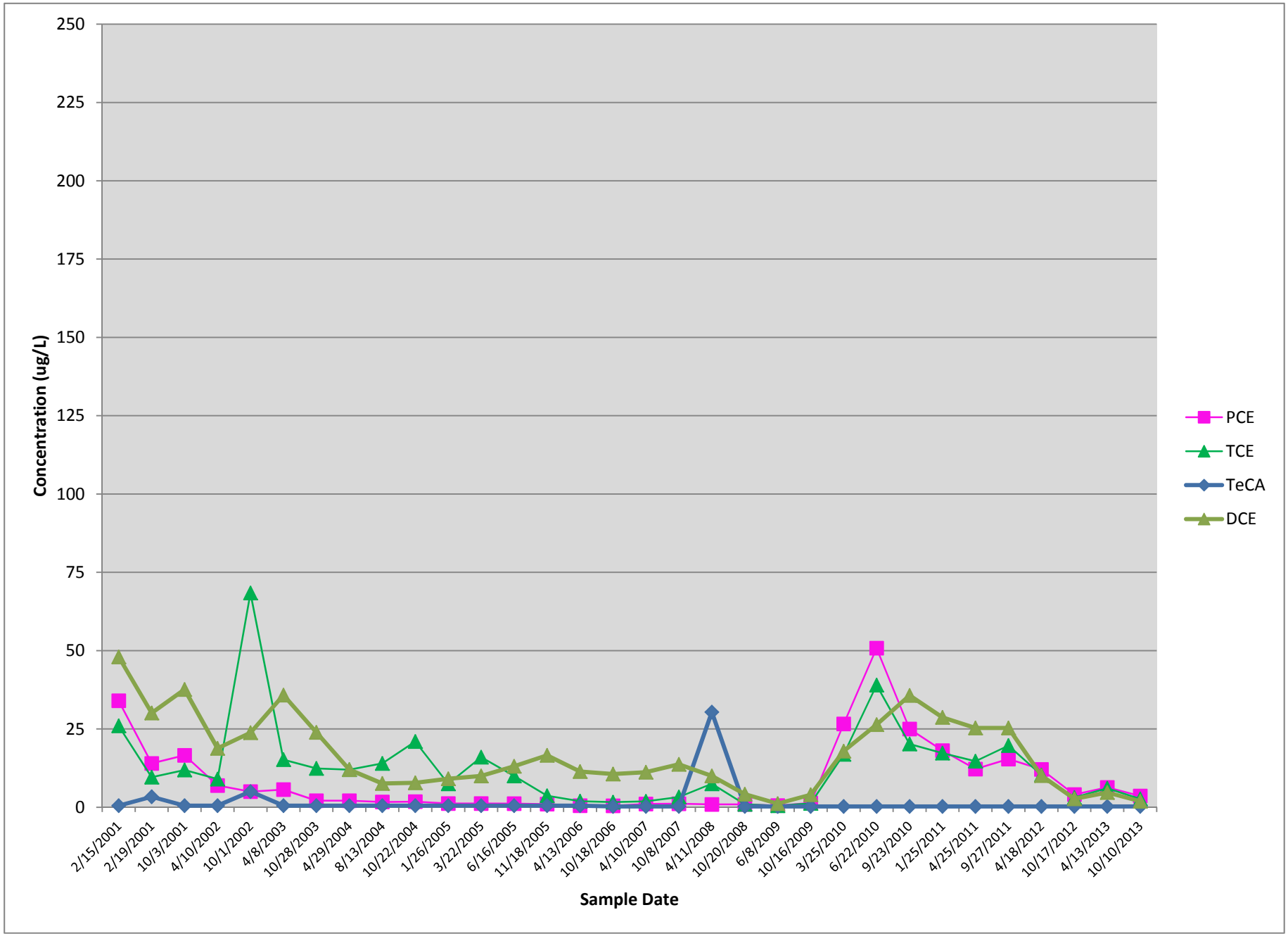
MW-77


50000
45000
40000
35000
30000
25000
20000
15000
10000
5000
0
Concentration (ug/L)
1/8/2001
10/3/2001
4/10/2002
10/1/2002
4/8/2003
11/18/2003
4/29/2004
8/15/2004
10/21/2004
6/15/2005
11/16/2005
4/12/2006
4/26/2006
10/20/2006
4/10/2007
10/8/2007
4/14/2008
10/17/2008
4/15/2009
7/30/2009
10/15/2009
3/25/2010
6/22/2010
9/22/2010
1/26/2011
4/25/2011
9/27/2011
4/19/2012
10/17/2012
5/9/2013
10/10/2013
Sample Date
PCE
TCE
TeCA

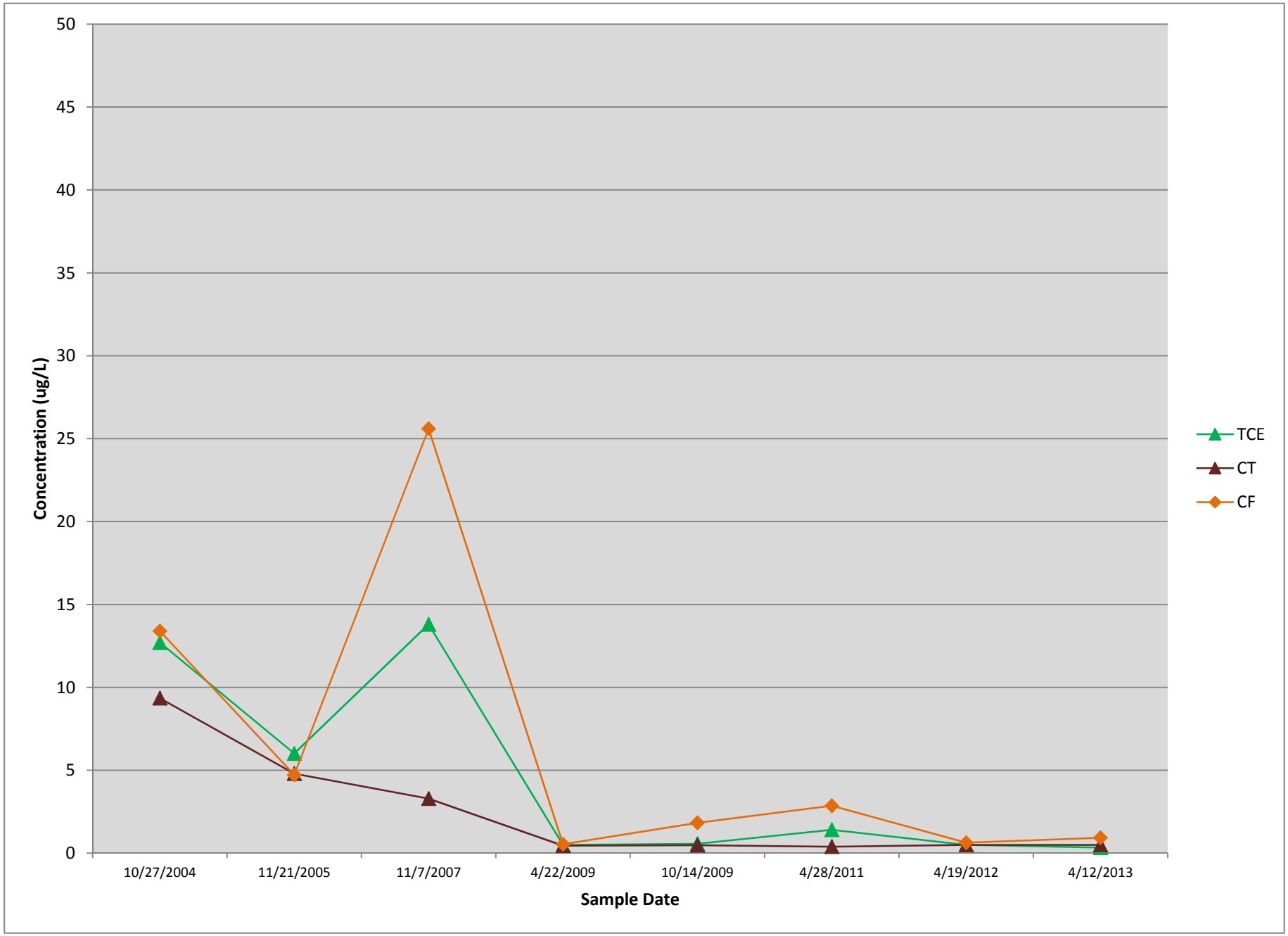
MW-78


50
45
40
35
30
25
20
15
10
5
0
Concentration (ug/L)
2/14/2001
10/3/2001
4/10/2002
10/1/2002
4/8/2003
10/28/2003
4/29/2004
10/21/2004
11/17/2005
11/8/2007
4/21/2009
3/29/2010
4/28/2011
4/12/2013
Sample Date
TeCA

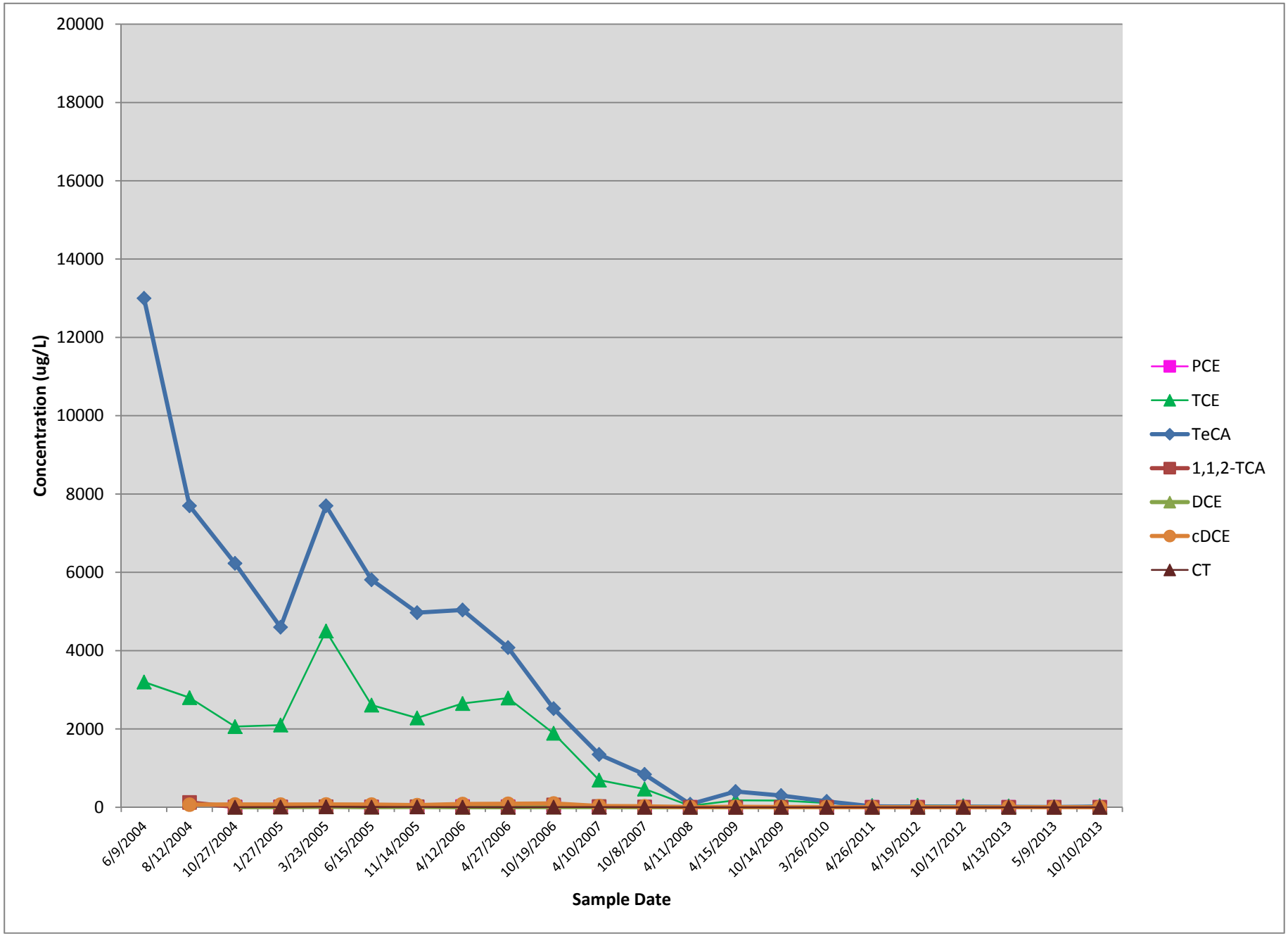
MW-79


250
225
200
175
150
125
100
75
50
25
0
Concentration (ug/L)
2/15/2001
2/19/2001
10/3/2001
4/10/2002
10/1/2002
4/8/2003
10/28/2003
4/29/2004
8/13/2004
10/22/2004
1/26/2005
3/22/2005
6/16/2005
11/18/2005
4/13/2006
10/18/2006
4/10/2007
10/8/2007
4/11/2008
10/20/2008
6/8/2009
10/16/2009
3/25/2010
6/22/2010
9/23/2010
1/25/2011
4/25/2011
9/27/2011
4/18/2012
10/17/2012
4/13/2013
10/10/2013
Sample Date
PCE
TCE
TeCA
DCE

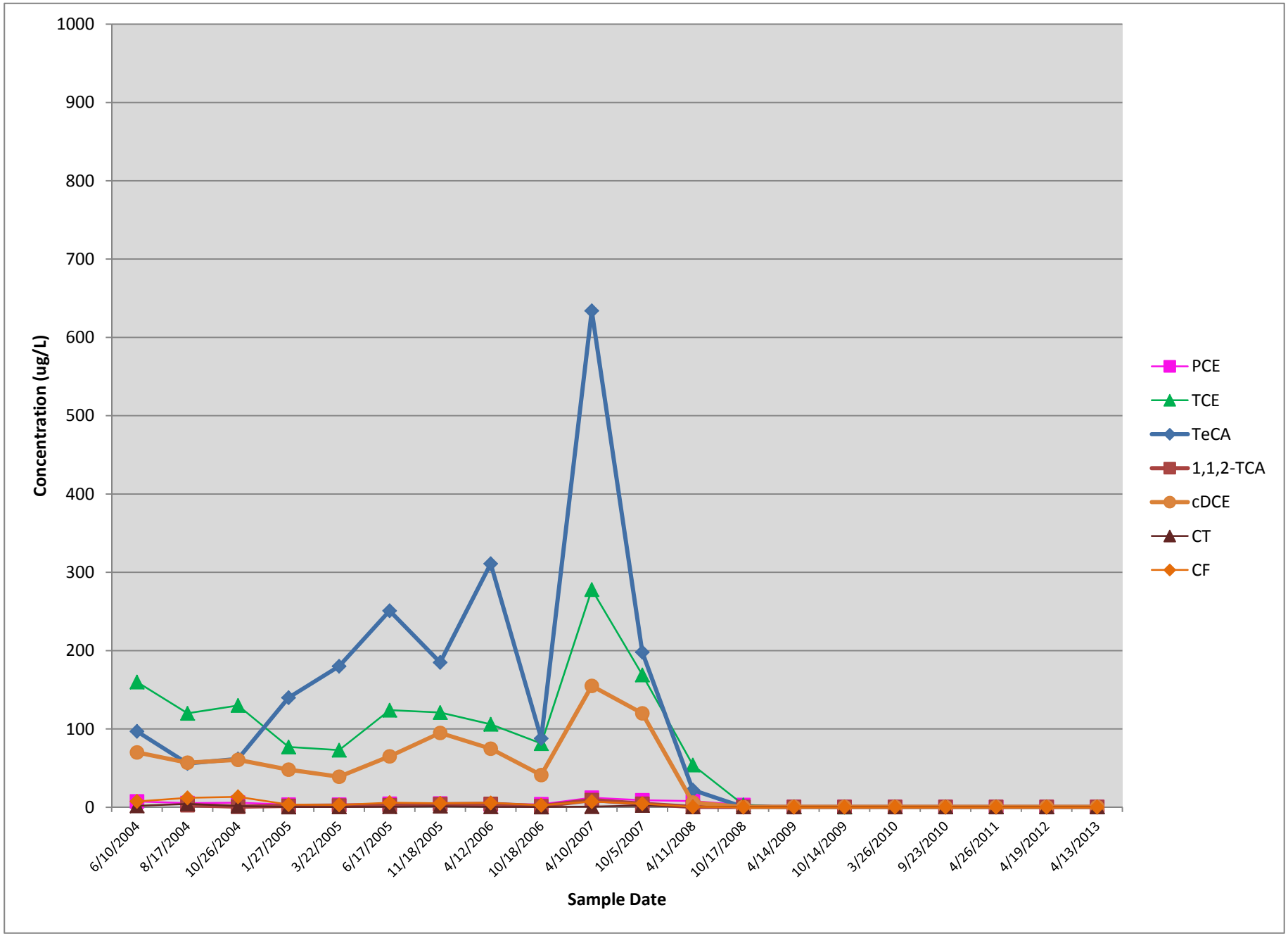
MW-91


50
45
40
35
30
25
20
15
10
5
0
Concentration (ug/L)
10/27/2004
11/21/2005
11/7/2007
4/22/2009
10/14/2009
4/28/2011
4/19/2012
4/12/2013
Sample Date
TCE
CT
CF

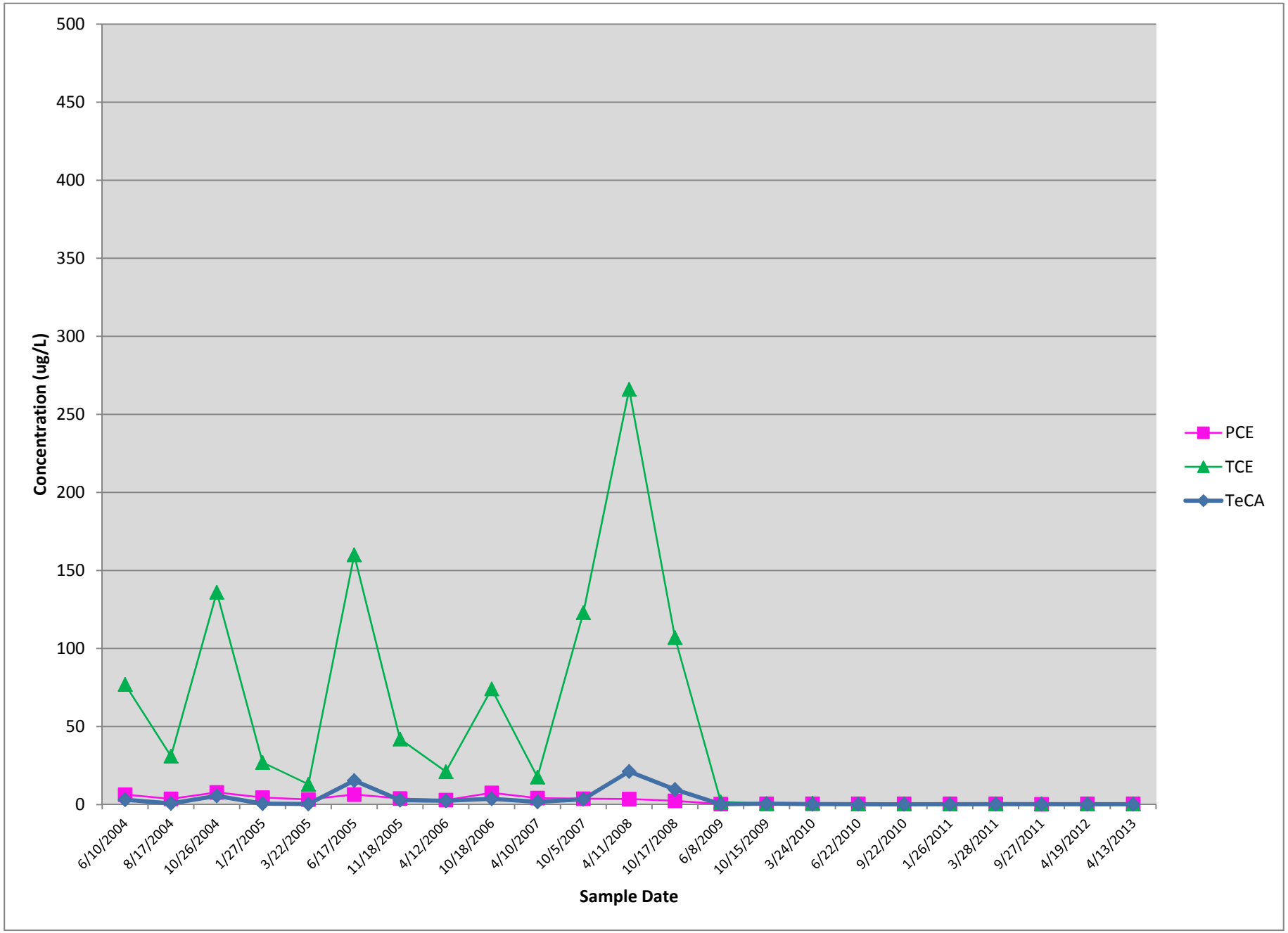
MW-144


20000
18000
16000
14000
12000
10000
8000
6000
4000
2000
0
Concentration (ug/L)
6/9/2004
8/12/2004
10/27/2004
1/27/2005
3/23/2005
6/15/2005
11/14/2005
4/12/2006
4/27/2006
10/19/2006
4/10/2007
10/8/2007
4/11/2008
4/15/2009
10/14/2009
3/26/2010
4/26/2011
4/19/2012
10/17/2012
4/13/2013
5/9/2013
10/10/2013
Sample Date
PCE
TCE
TeCA
1,1,2-TCA
DCE
cDCE
CT

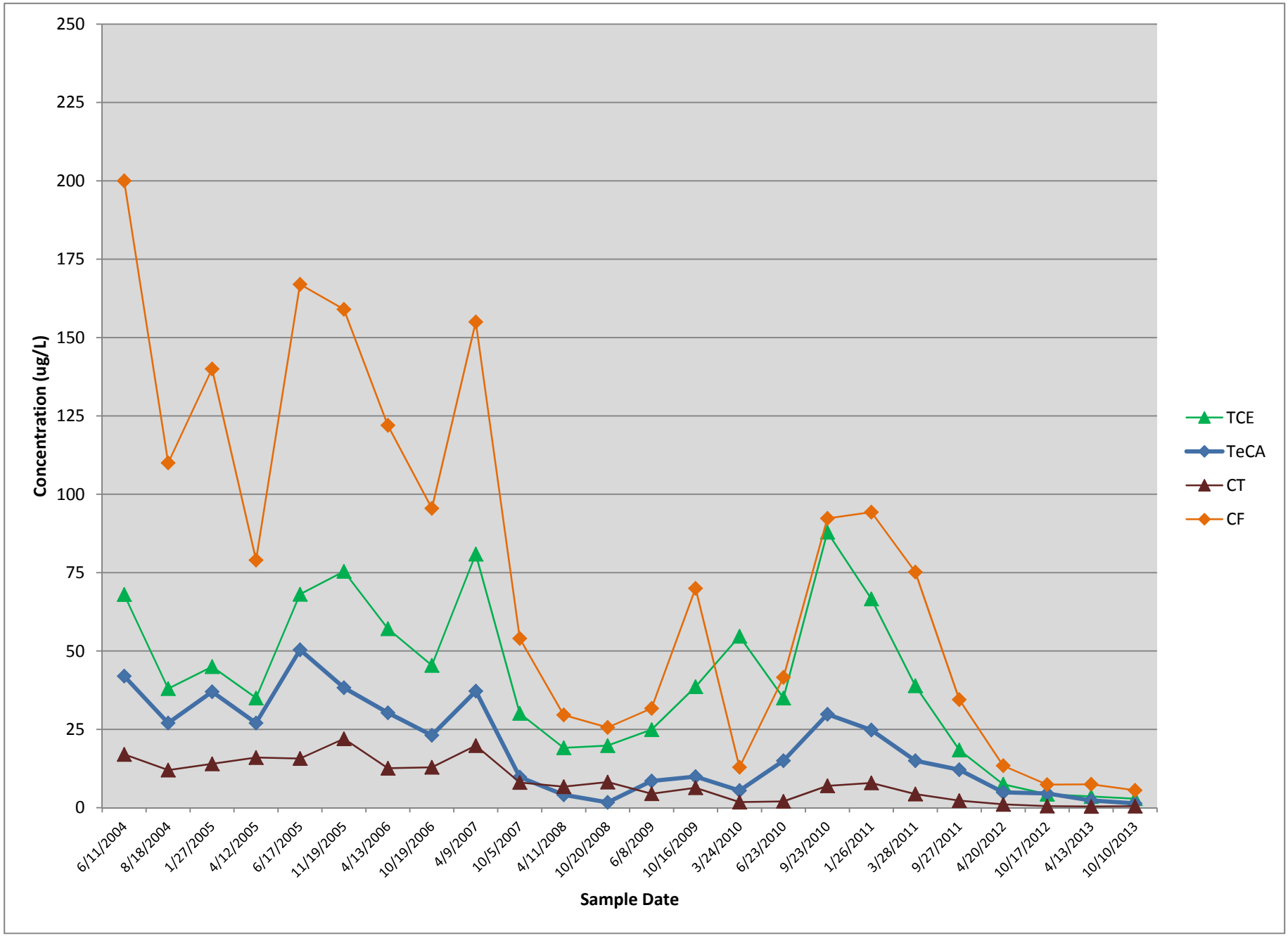
MW-147


1000
900
800
700
600
500
400
300
200
100
0
Concentration (ug/L)
6/10/2004
8/17/2004
10/26/2004
1/27/2005
3/22/2005
6/17/2005
11/18/2005
4/12/2006
10/18/2006
4/10/2007
10/5/2007
4/11/2008
10/17/2008
4/14/2009
10/14/2009
3/26/2010
9/23/2010
4/26/2011
4/19/2012
4/13/2013
Sample Date
PCE
TCE
TeCA
1,1,2-TCA
cDCE
CT
CF

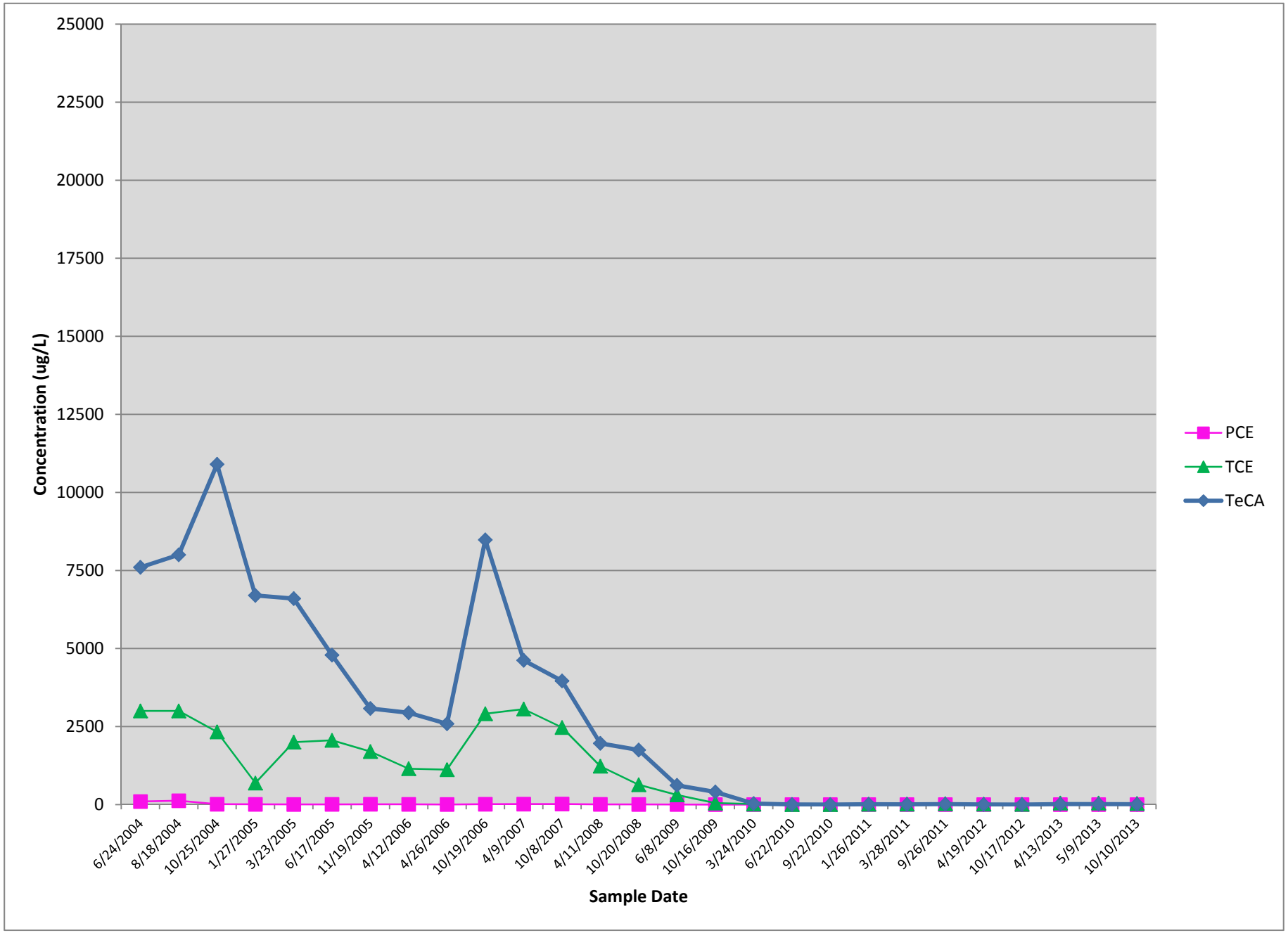
MW-148


500
450
400
350
300
250
200
150
100
50
0
Concentration (ug/L)
6/10/2004
8/17/2004
10/26/2004
1/27/2005
3/22/2005
6/17/2005
11/18/2005
4/12/2006
10/18/2006
4/10/2007
10/5/2007
4/11/2008
10/17/2008
6/8/2009
10/15/2009
3/24/2010
6/22/2010
9/22/2010
1/26/2011
3/28/2011
9/27/2011
4/19/2012
4/13/2013
Sample Date
PCE
TCE
TeCA

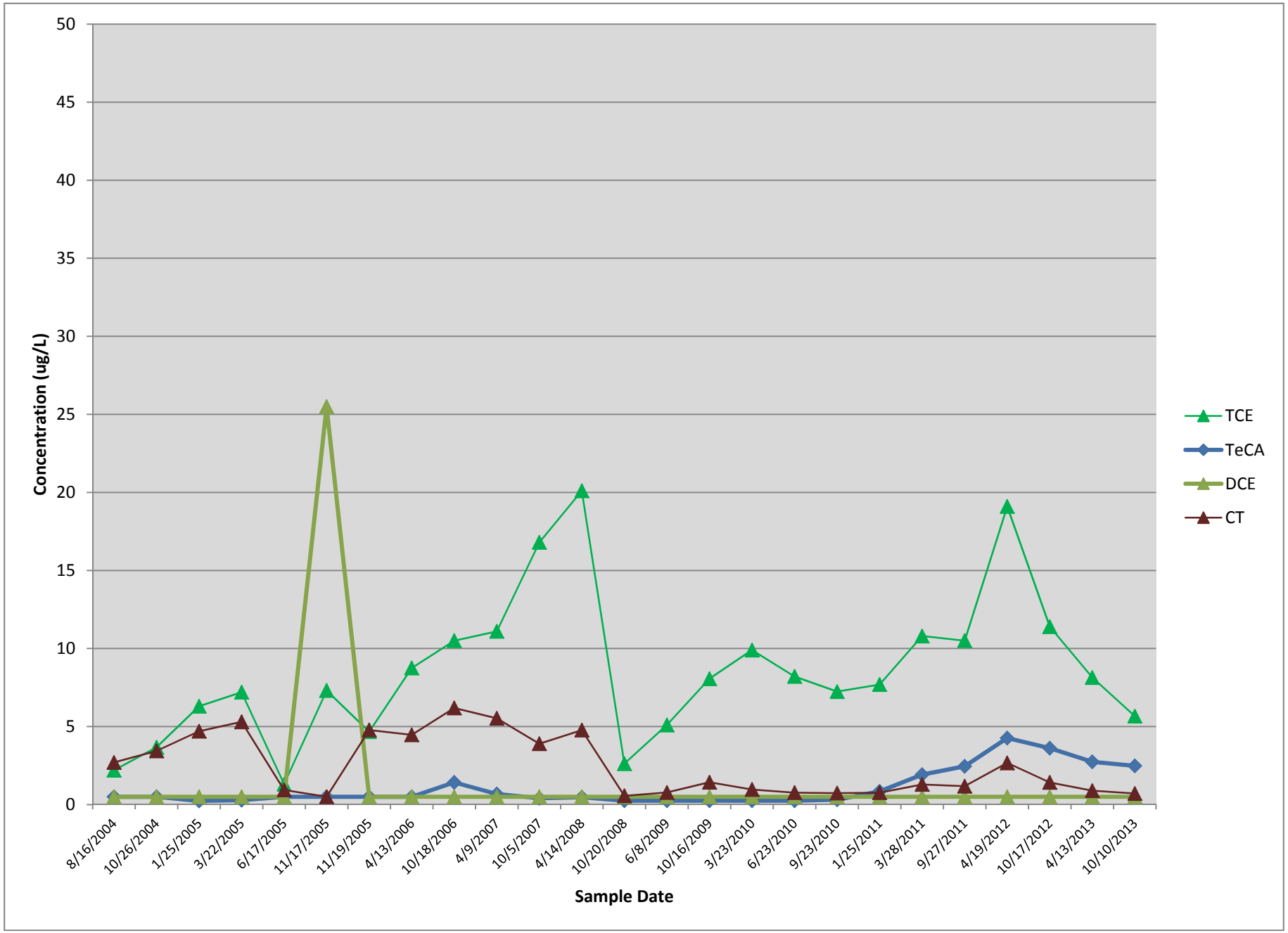
MW-149


250
225
200
175
150
125
100
75
50
25
0
Concentration (ug/L)
6/11/2004
8/18/2004
1/27/2005
4/12/2005
6/17/2005
11/19/2005
4/13/2006
10/19/2006
4/9/2007
10/5/2007
4/11/2008
10/20/2008
6/8/2009
10/16/2009
3/24/2010
6/23/2010
9/23/2010
1/26/2011
3/28/2011
9/27/2011
4/20/2012
10/17/2012
4/13/2013
10/10/2013
Sample Date
TCE
TeCA
CT
CF

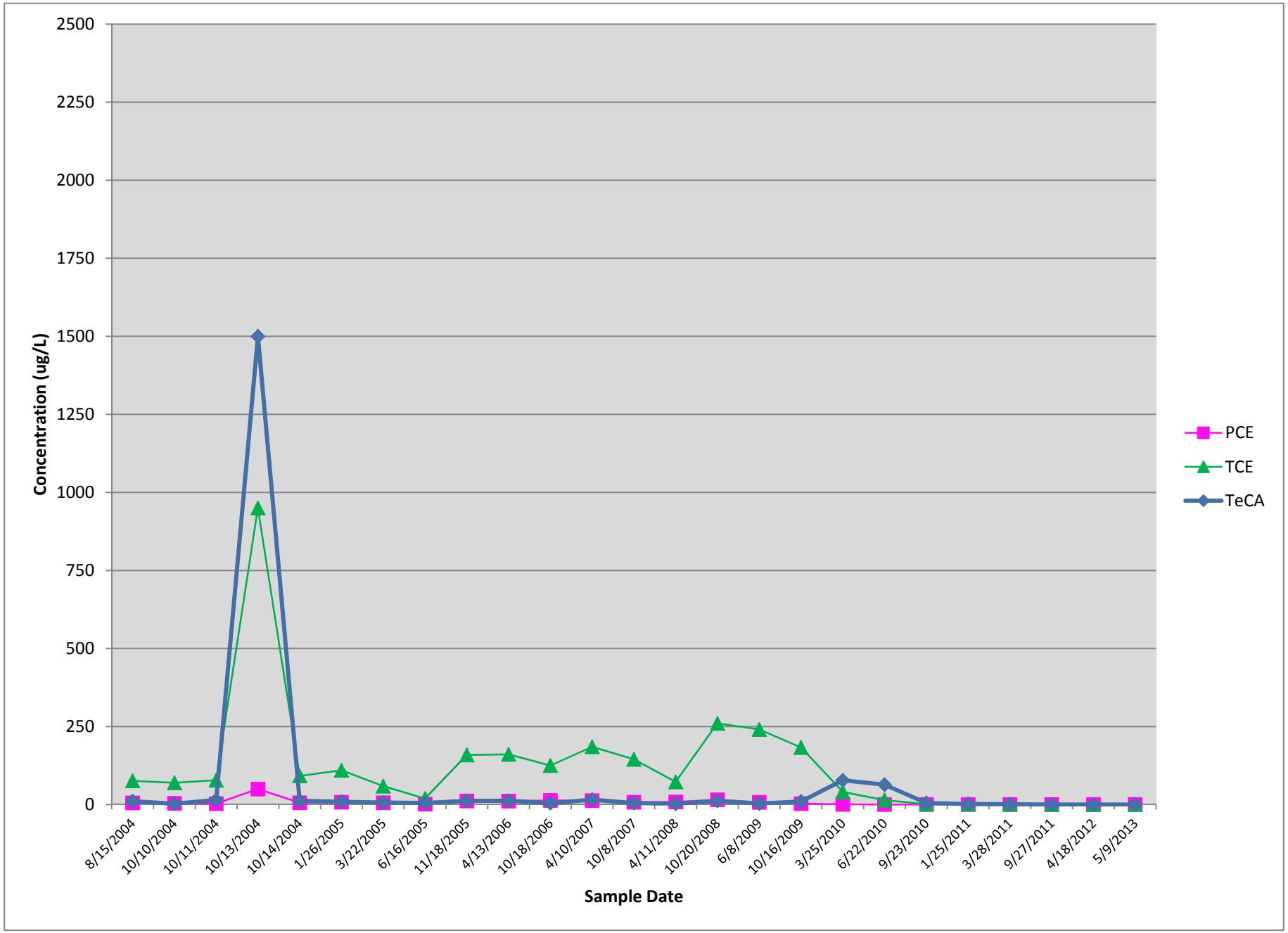
MW-150


25000
22500
20000
17500
15000
12500
10000
7500
5000
2500
0
Concentration (ug/L)
6/24/2004
8/18/2004
10/25/2004
1/27/2005
3/23/2005
6/17/2005
11/19/2005
4/12/2006
4/26/2006
10/19/2006
4/9/2007
10/8/2007
4/11/2008
10/20/2008
6/8/2009
10/16/2009
3/24/2010
6/22/2010
9/22/2010
1/26/2011
3/28/2011
9/26/2011
4/19/2012
10/17/2012
4/13/2013
5/9/2013
10/10/2013
Sample Date
PCE
TCE
TeCA

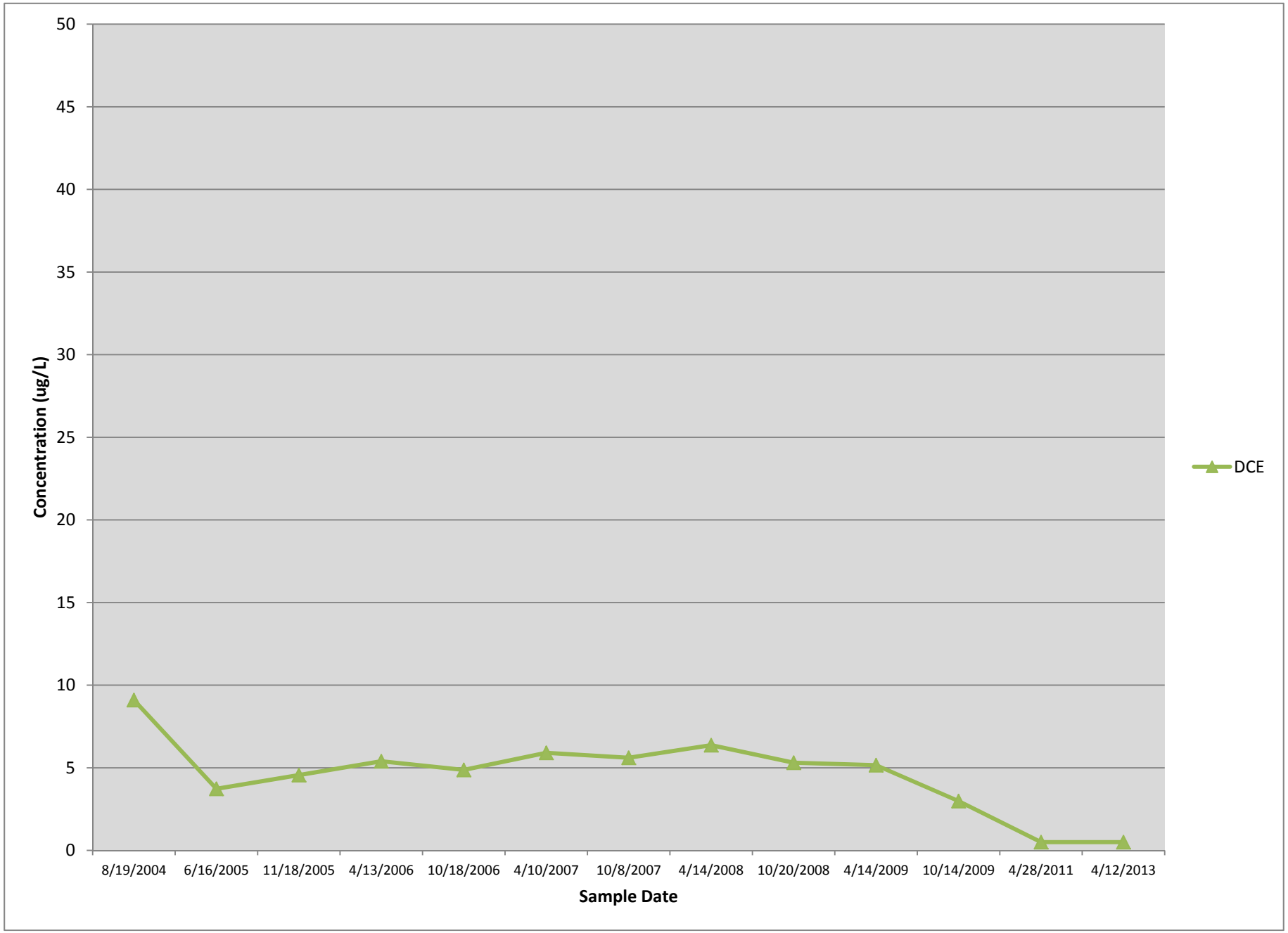
MW-151


50
45
40
35
30
25
20
15
10
5
0
Concentration (ug/L)
8/16/2004
10/26/2004
1/25/2005
3/22/2005
6/17/2005
11/17/2005
11/19/2005
4/13/2006
10/18/2006
4/9/2007
10/5/2007
4/14/2008
10/20/2008
6/8/2009
10/16/2009
3/23/2010
6/23/2010
9/23/2010
1/25/2011
3/28/2011
9/27/2011
4/19/2012
10/17/2012
4/13/2013
10/10/2013
Sample Date
TCE
TeCA
DCE
CT

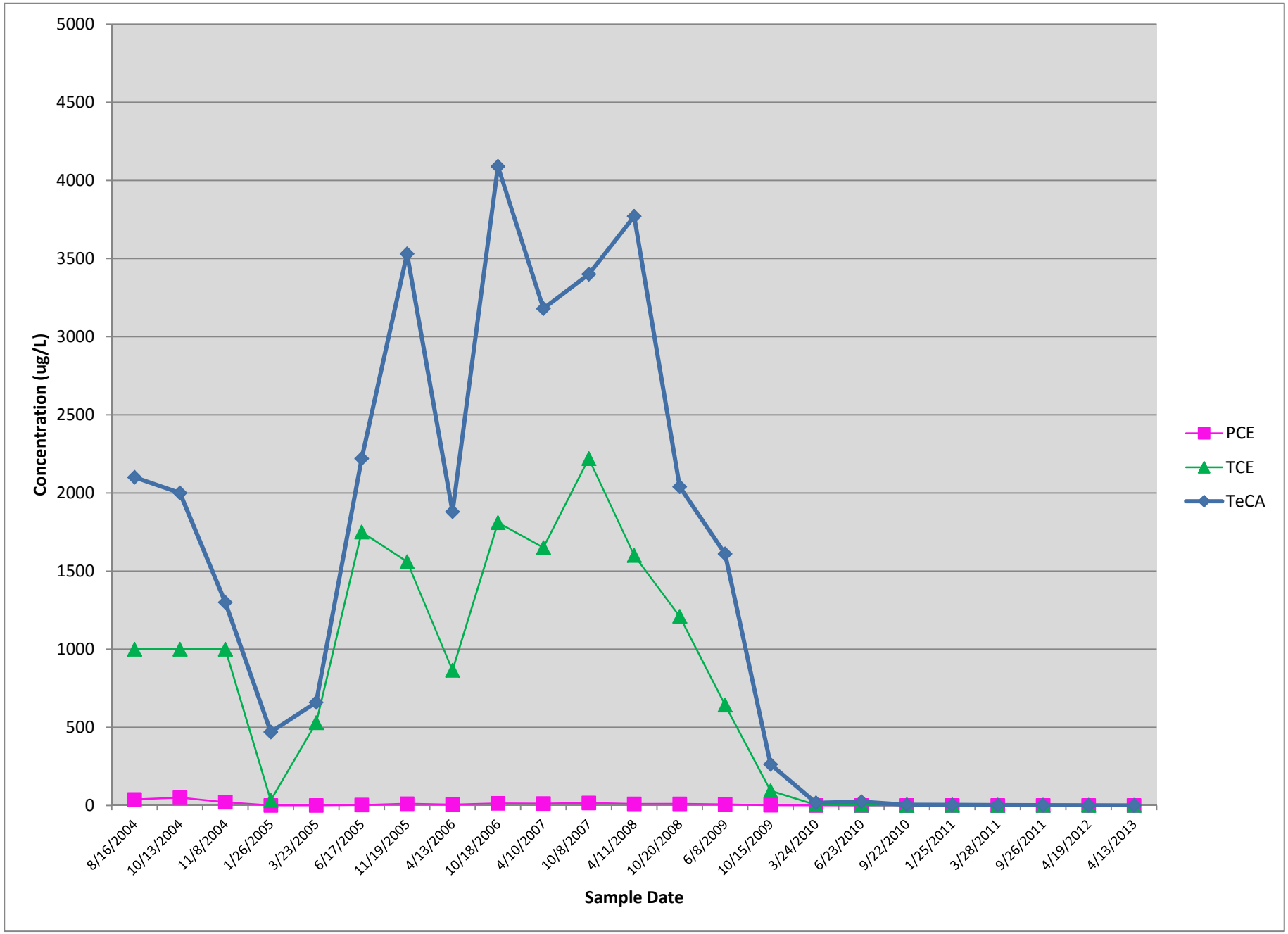
MW-152


2500
2250
2000
1750
1500
1250
1000
750
500
250
0
Concentration (ug/L)
8/15/2004
10/10/2004
10/11/2004
10/13/2004
10/14/2004
1/26/2005
3/22/2005
6/16/2005
11/18/2005
4/13/2006
10/18/2006
4/10/2007
10/8/2007
4/11/2008
10/20/2008
6/8/2009
10/16/2009
3/25/2010
6/22/2010
9/23/2010
1/25/2011
3/28/2011
9/27/2011
4/18/2012
5/9/2013
Sample Date
PCE
TCE
TeCA

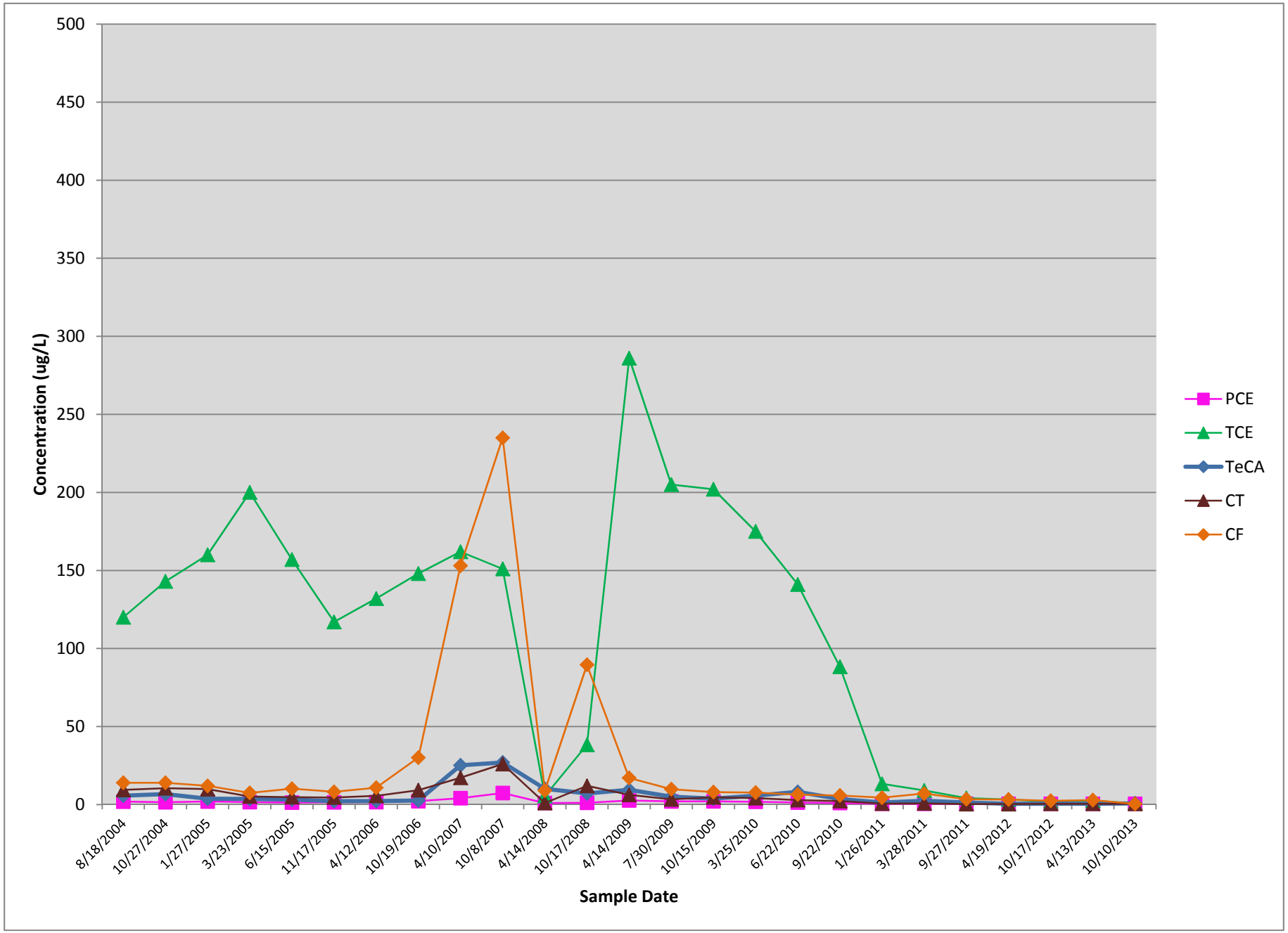
MW-153


50
45
40
35
30
25
20
15
10
5
0
Concentration (ug/L)
8/19/2004
6/16/2005
11/18/2005
4/13/2006
10/18/2006
4/10/2007
10/8/2007
4/14/2008
10/20/2008
4/14/2009
10/14/2009
4/28/2011
4/12/2013
Sample Date
DCE

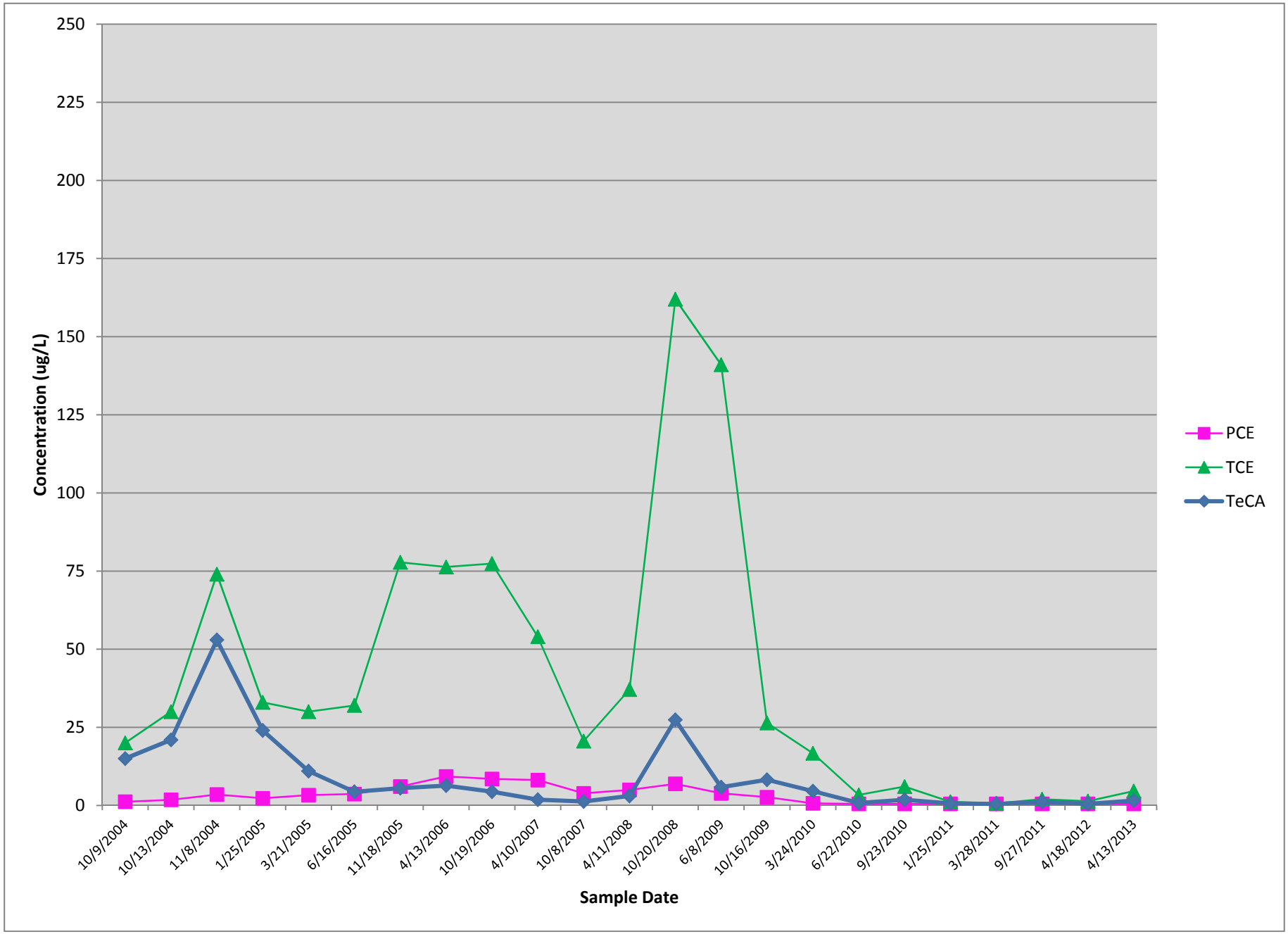
MW-155


5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
Concentration (ug/L)
8/16/2004
10/13/2004
11/8/2004
1/26/2005
3/23/2005
6/17/2005
11/19/2005
4/13/2006
10/18/2006
4/10/2007
10/8/2007
4/11/2008
10/20/2008
6/8/2009
10/15/2009
3/24/2010
6/23/2010
9/22/2010
1/25/2011
3/28/2011
9/26/2011
4/19/2012
4/13/2013
Sample Date
PCE
TCE
TeCA

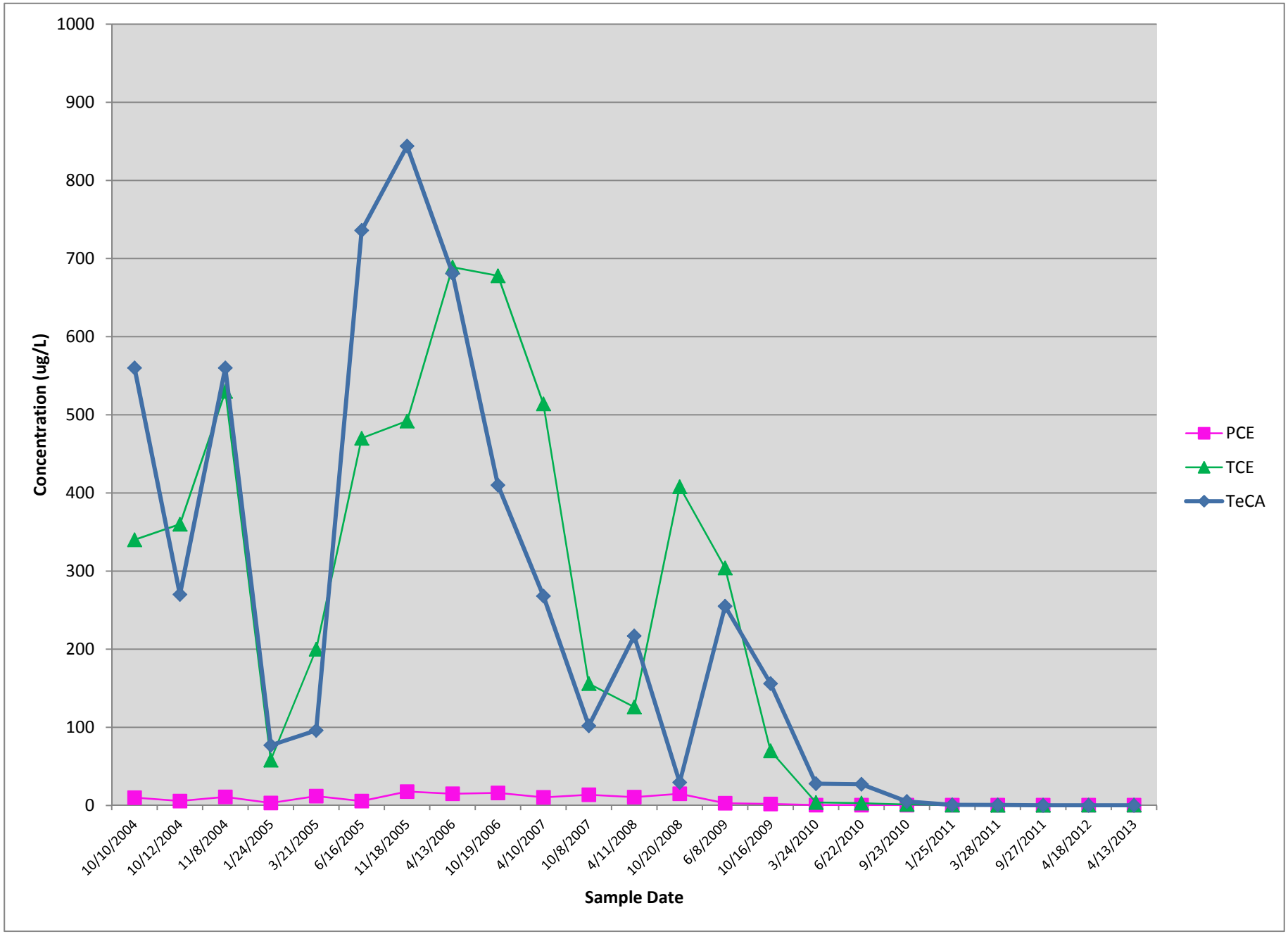
MW-157


500
450
400
350
300
250
200
150
100
50
0
Concentration (ug/L)
8/18/2004
10/27/2004
1/27/2005
3/23/2005
6/15/2005
11/17/2005
4/12/2006
10/19/2006
4/10/2007
10/8/2007
4/14/2008
10/17/2008
4/14/2009
7/30/2009
10/15/2009
3/25/2010
6/22/2010
9/22/2010
1/26/2011
3/28/2011
9/27/2011
4/19/2012
10/17/2012
4/13/2013
10/10/2013
Sample Date
PCE
TCE
TeCA
CT
CF

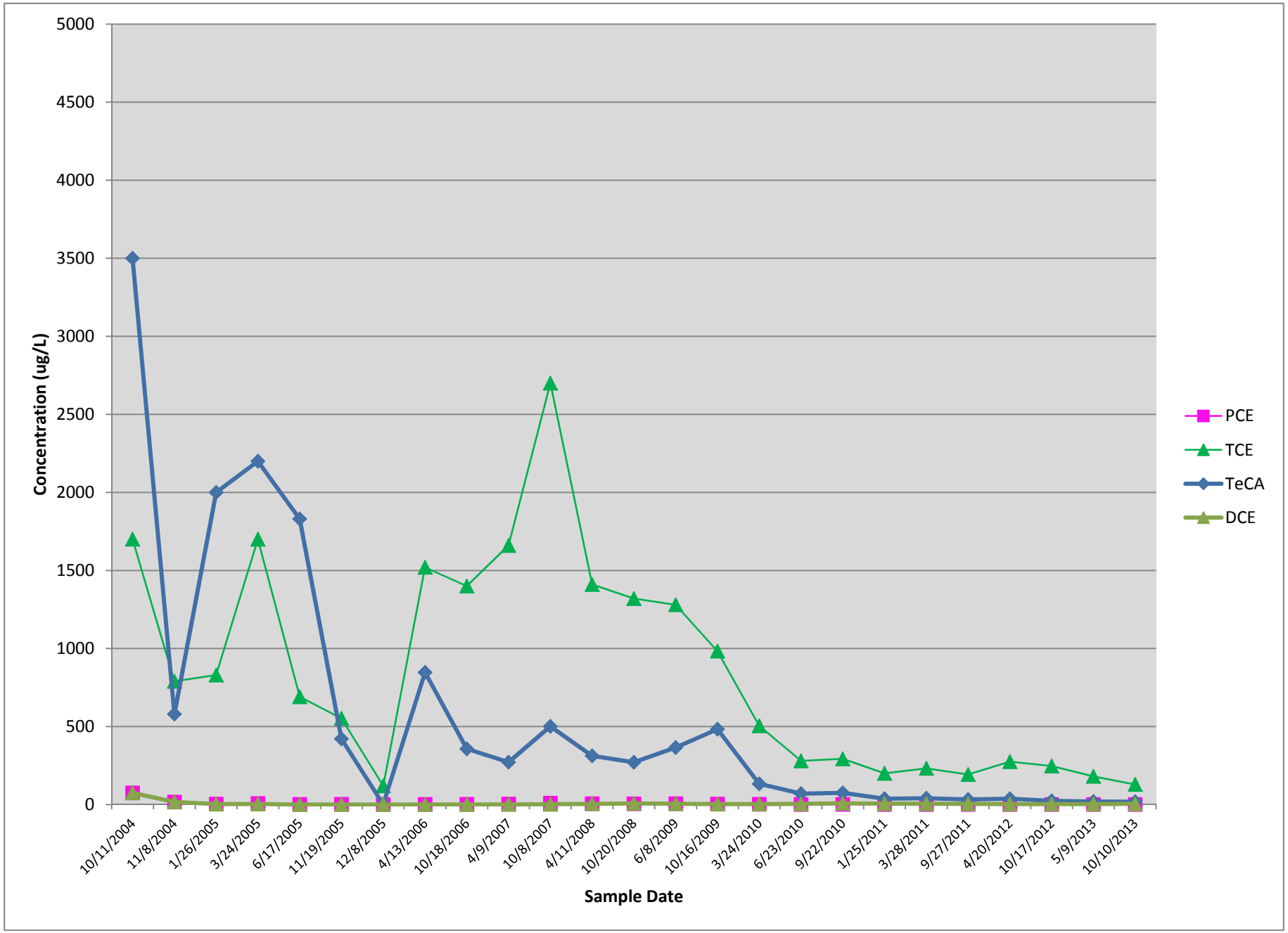
MW-158


250
225
200
175
150
125
100
75
50
25
0
Concentration (ug/L)
10/9/2004
10/13/2004
11/8/2004
1/25/2005
3/21/2005
6/16/2005
11/18/2005
4/13/2006
10/19/2006
4/10/2007
10/8/2007
4/11/2008
10/20/2008
6/8/2009
10/16/2009
3/24/2010
6/22/2010
9/23/2010
1/25/2011
3/28/2011
9/27/2011
4/18/2012
4/13/2013
Sample Date
PCE
TCE
TeCA

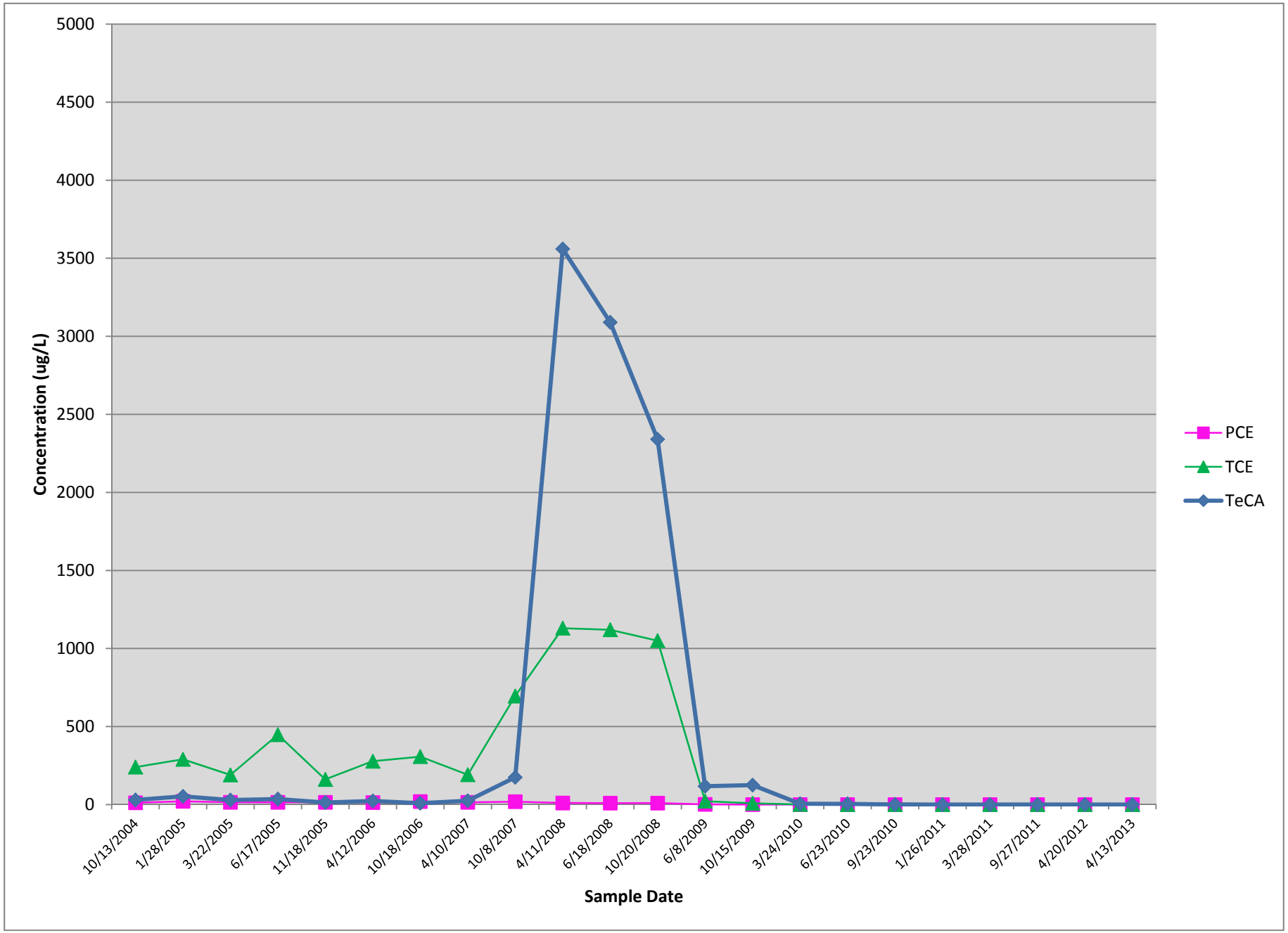
MW-158A


1000
900
800
700
600
500
400
300
200
100
0
Concentration (ug/L)
10/10/2004
10/12/2004
11/8/2004
1/24/2005
3/21/2005
6/16/2005
11/18/2005
4/13/2006
10/19/2006
4/10/2007
10/8/2007
4/11/2008
10/20/2008
6/8/2009
10/16/2009
3/24/2010
6/22/2010
9/23/2010
1/25/2011
3/28/2011
9/27/2011
4/18/2012
4/13/2013
Sample Date
PCE
TCE
TeCA

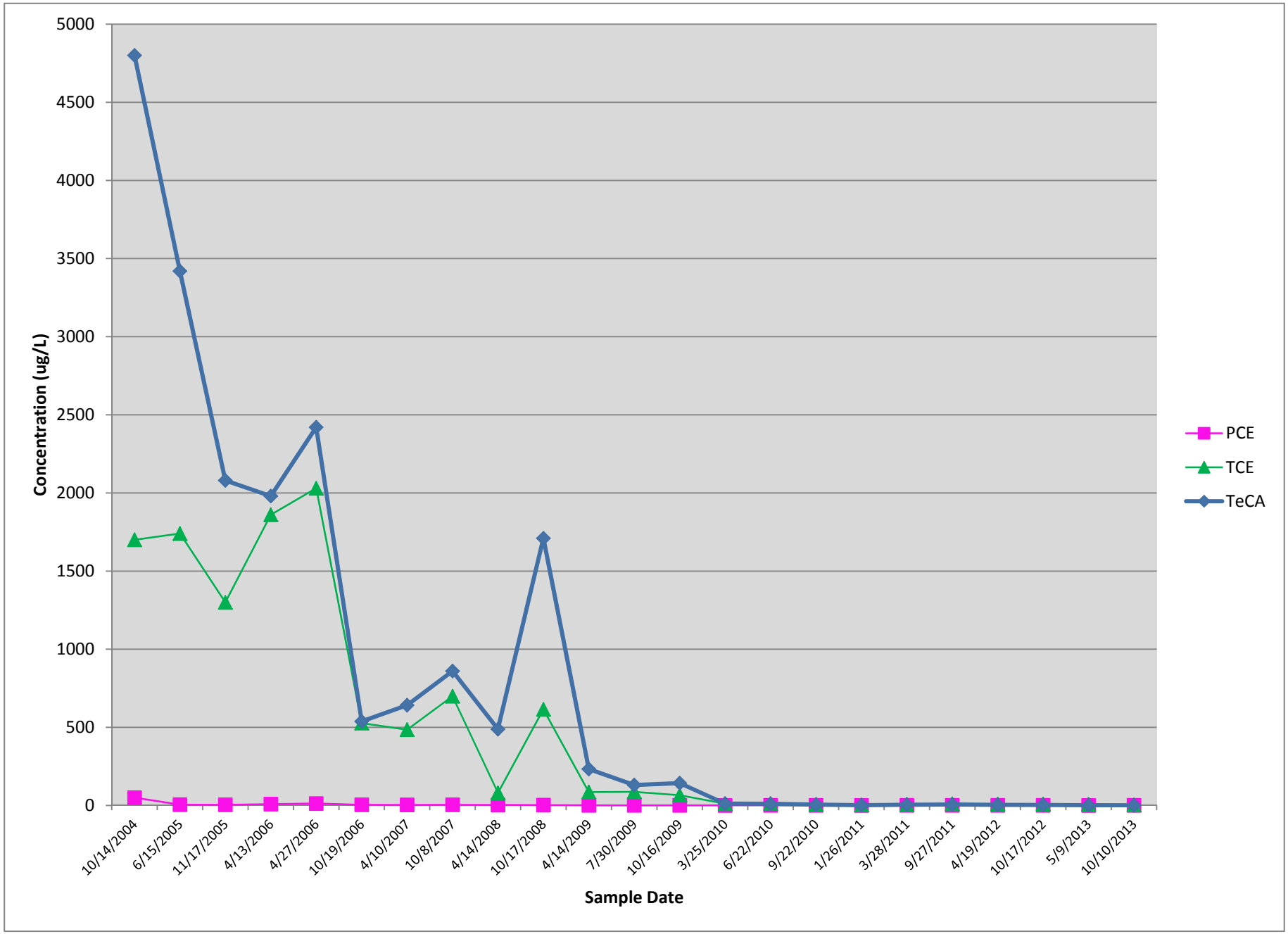
MW-159


5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
Concentration (ug/L)
10/11/2004
11/8/2004
1/26/2005
3/24/2005
6/17/2005
11/19/2005
12/8/2005
4/13/2006
10/18/2006
4/9/2007
10/8/2007
4/11/2008
10/20/2008
6/8/2009
10/16/2009
3/24/2010
6/23/2010
9/22/2010
1/25/2011
3/28/2011
9/27/2011
4/20/2012
10/17/2012
5/9/2013
10/10/2013
Sample Date
PCE
TCE
TeCA
DCE

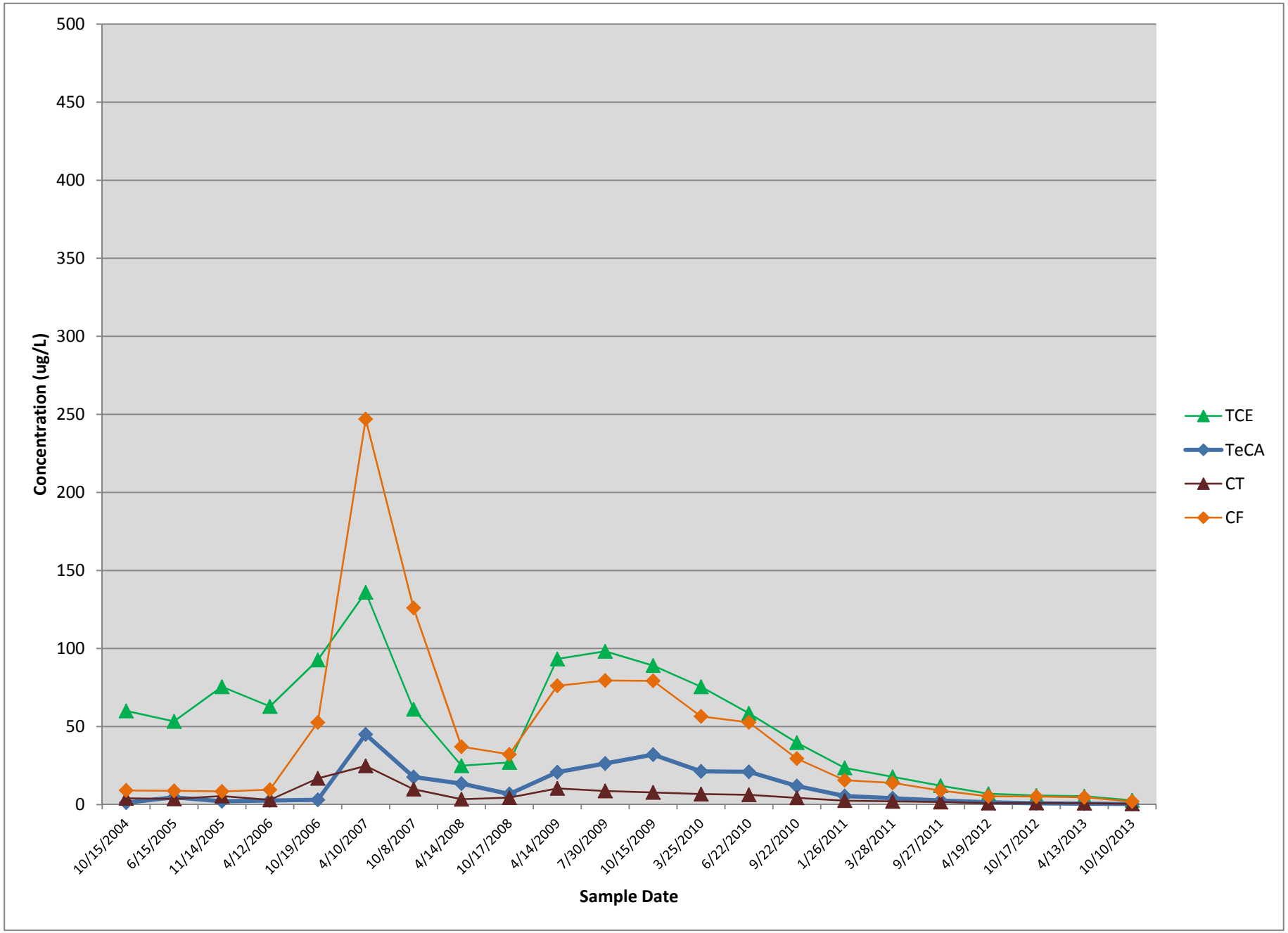
MW-160


5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
Concentration (ug/L)
10/13/2004
1/28/2005
3/22/2005
6/17/2005
11/18/2005
4/12/2006
10/18/2006
4/10/2007
10/8/2007
4/11/2008
6/18/2008
10/20/2008
6/8/2009
10/15/2009
3/24/2010
6/23/2010
9/23/2010
1/26/2011
3/28/2011
9/27/2011
4/20/2012
4/13/2013
Sample Date
PCE
TCE
TeCA

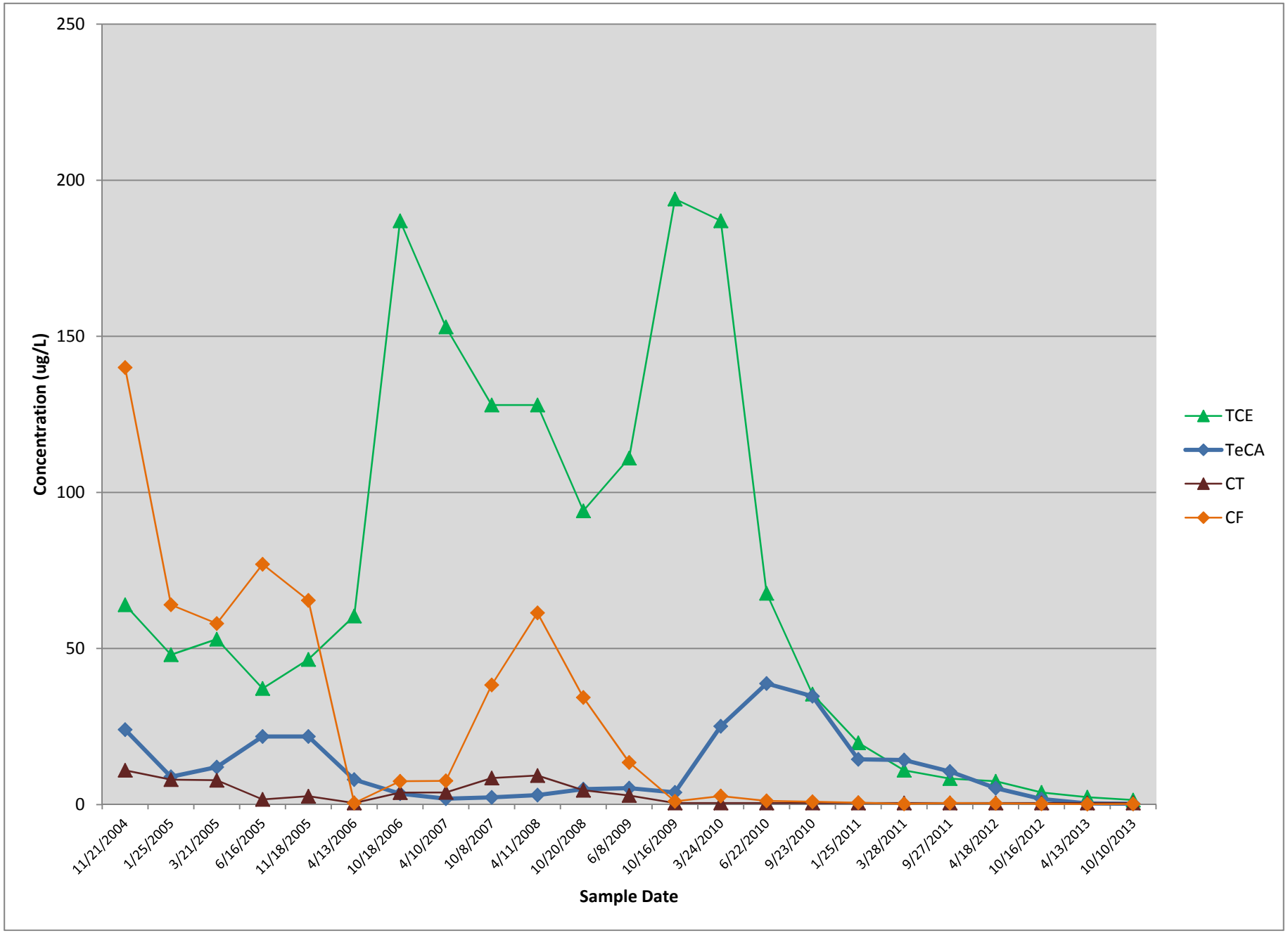
MW-163


5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
Concentration (ug/L)
10/14/2004
6/15/2005
11/17/2005
4/13/2006
4/27/2006
10/19/2006
4/10/2007
10/8/2007
4/14/2008
10/17/2008
4/14/2009
7/30/2009
10/16/2009
3/25/2010
6/22/2010
9/22/2010
1/26/2011
3/28/2011
9/27/2011
4/19/2012
10/17/2012
5/9/2013
10/10/2013
Sample Date
PCE
TCE
TeCA

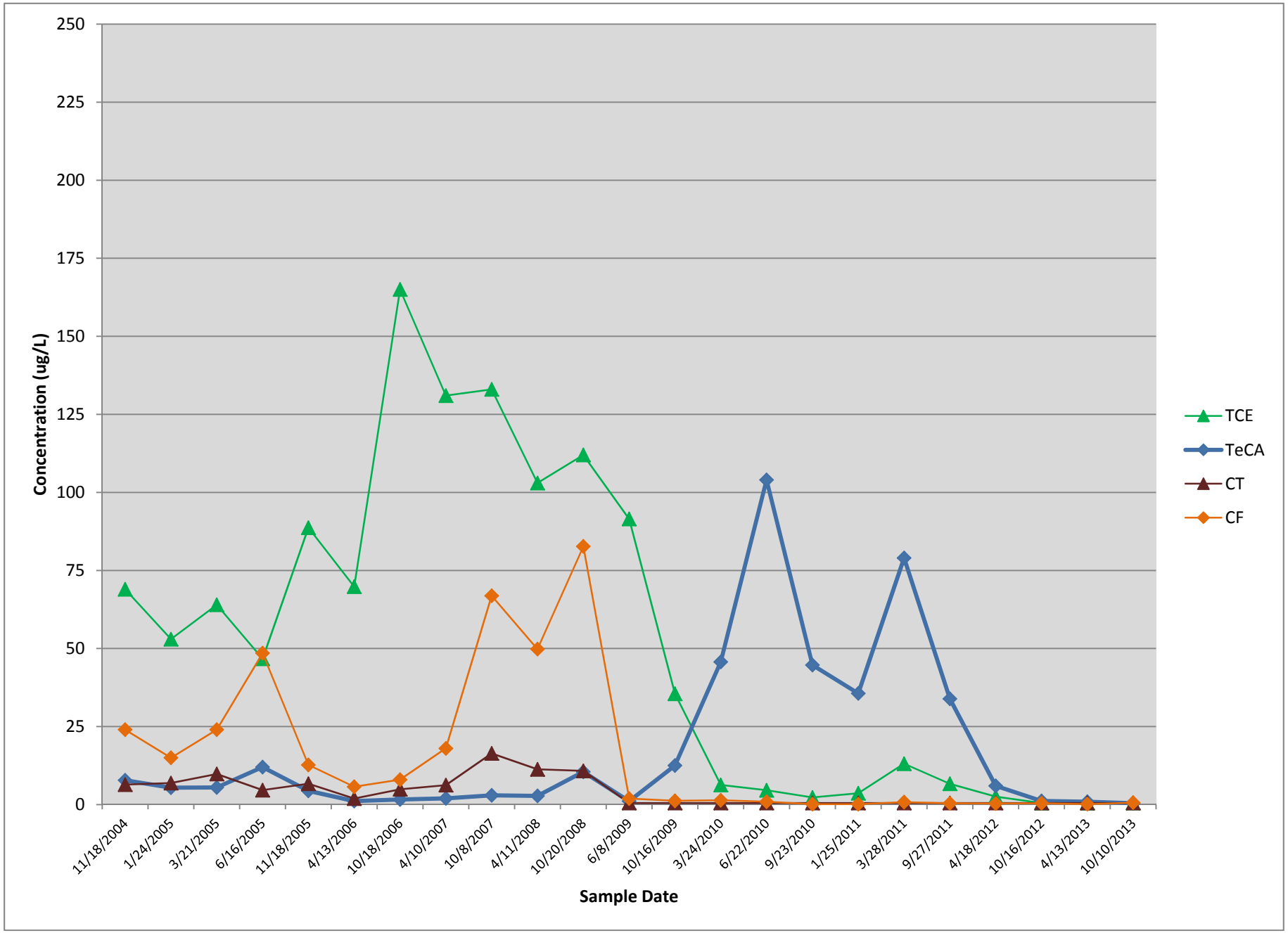
MW-164


500
450
400
350
300
250
200
150
100
50
0
Concentration (ug/L)
10/15/2004
6/15/2005
11/14/2005
4/12/2006
10/19/2006
4/10/2007
10/8/2007
4/14/2008
10/17/2008
4/14/2009
7/30/2009
10/15/2009
3/25/2010
6/22/2010
9/22/2010
1/26/2011
3/28/2011
9/27/2011
4/19/2012
10/17/2012
4/13/2013
10/10/2013
Sample Date
TCE
TeCA
CT
CF

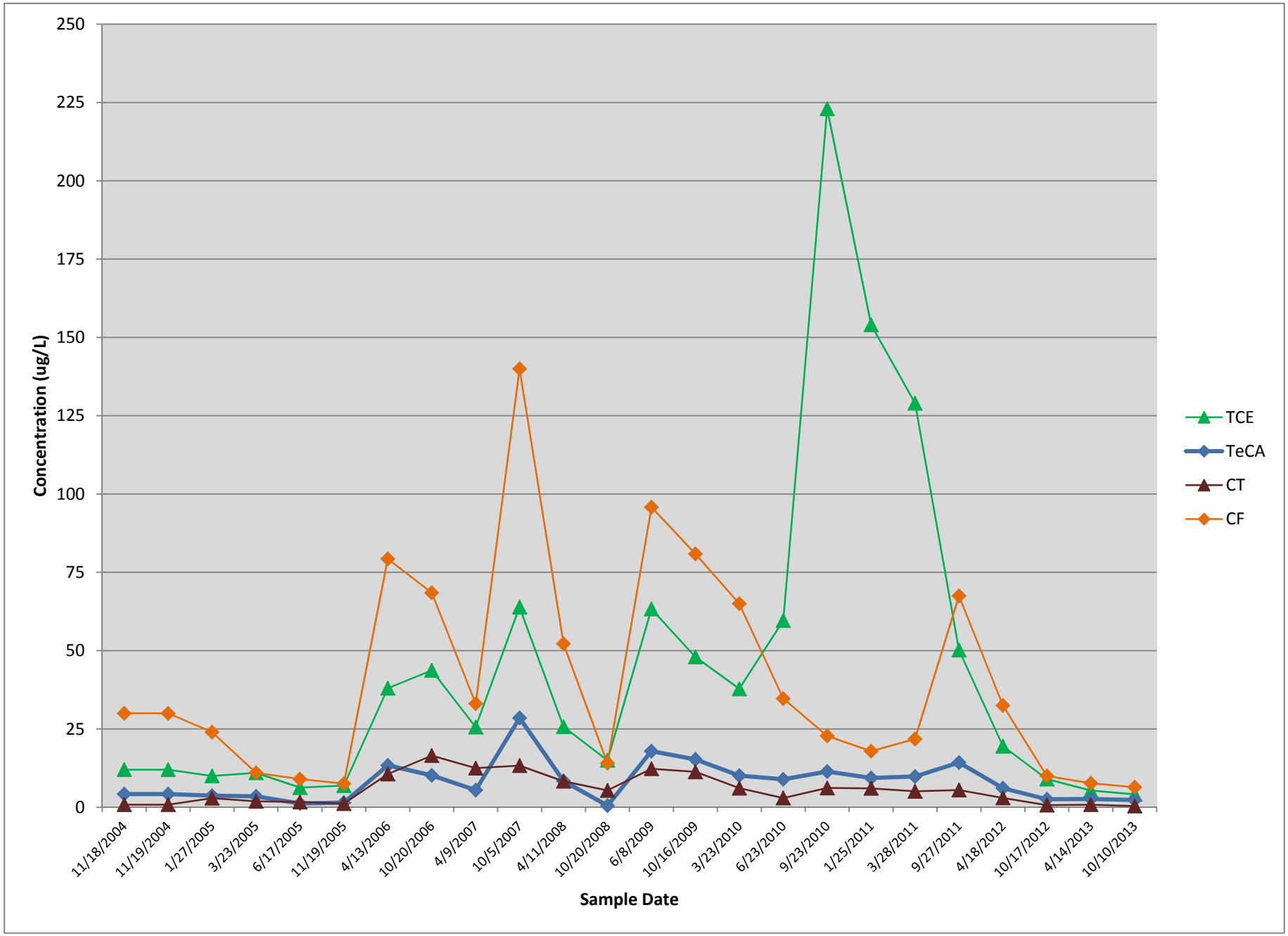
MW-165


250
200
150
100
50
0
Concentration (ug/L)
11/21/2004
1/25/2005
3/21/2005
6/16/2005
11/18/2005
4/13/2006
10/18/2006
4/10/2007
10/8/2007
4/11/2008
10/20/2008
6/8/2009
10/16/2009
3/24/2010
6/22/2010
9/23/2010
1/25/2011
3/28/2011
9/27/2011
4/18/2012
10/16/2012
4/13/2013
10/10/2013
Sample Date
TCE
TeCA
CT
CF

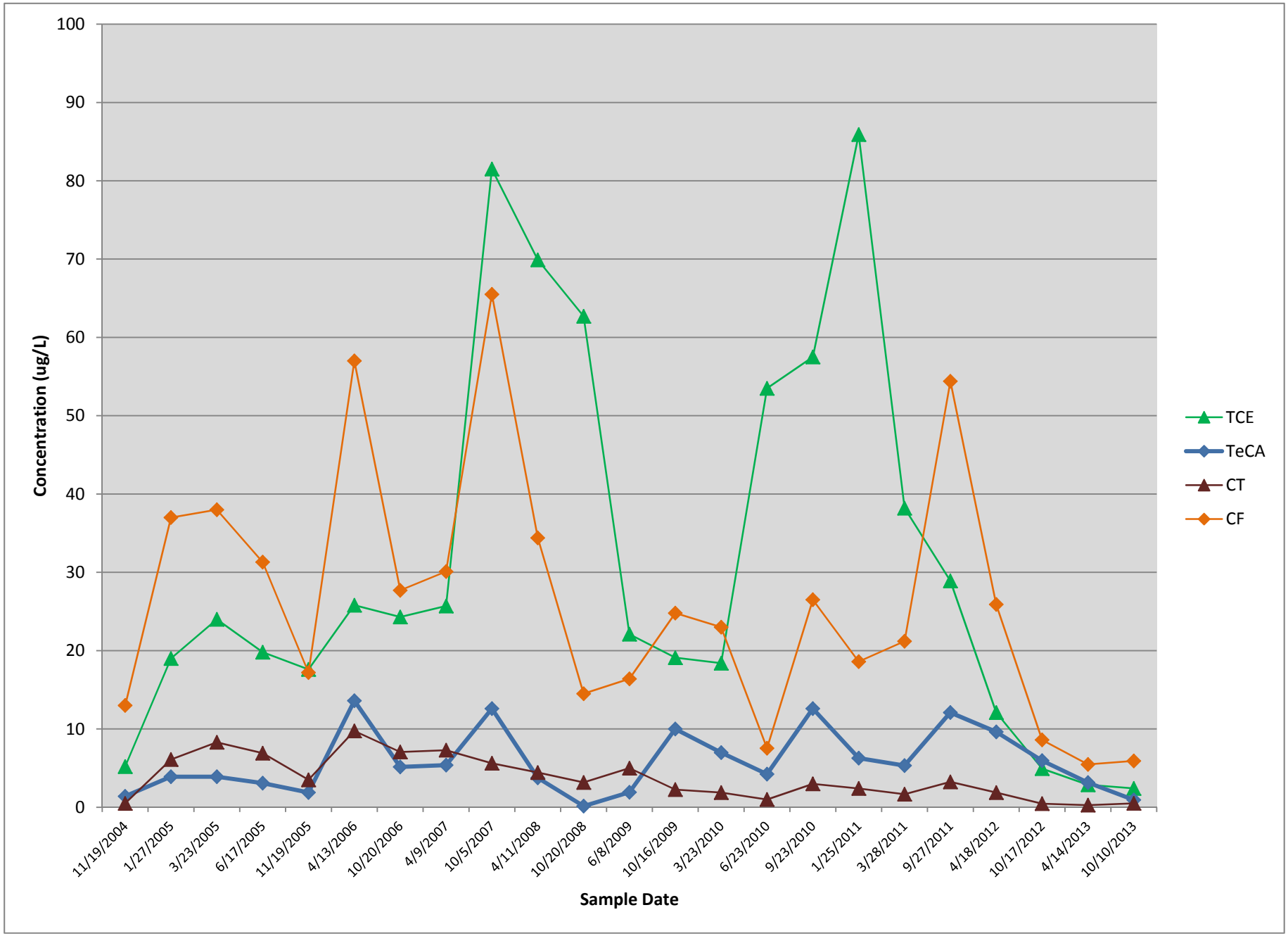
MW-165A


250
225
200
175
150
125
100
75
50
25
0
Concentration (ug/L)
11/18/2004
1/24/2005
3/21/2005
6/16/2005
11/18/2005
4/13/2006
10/18/2006
4/10/2007
10/8/2007
4/11/2008
10/20/2008
6/8/2009
10/16/2009
3/24/2010
6/22/2010
9/23/2010
1/25/2011
3/28/2011
9/27/2011
4/18/2012
10/16/2012
4/13/2013
10/10/2013
Sample Date
TCE
TeCA
CT
CF

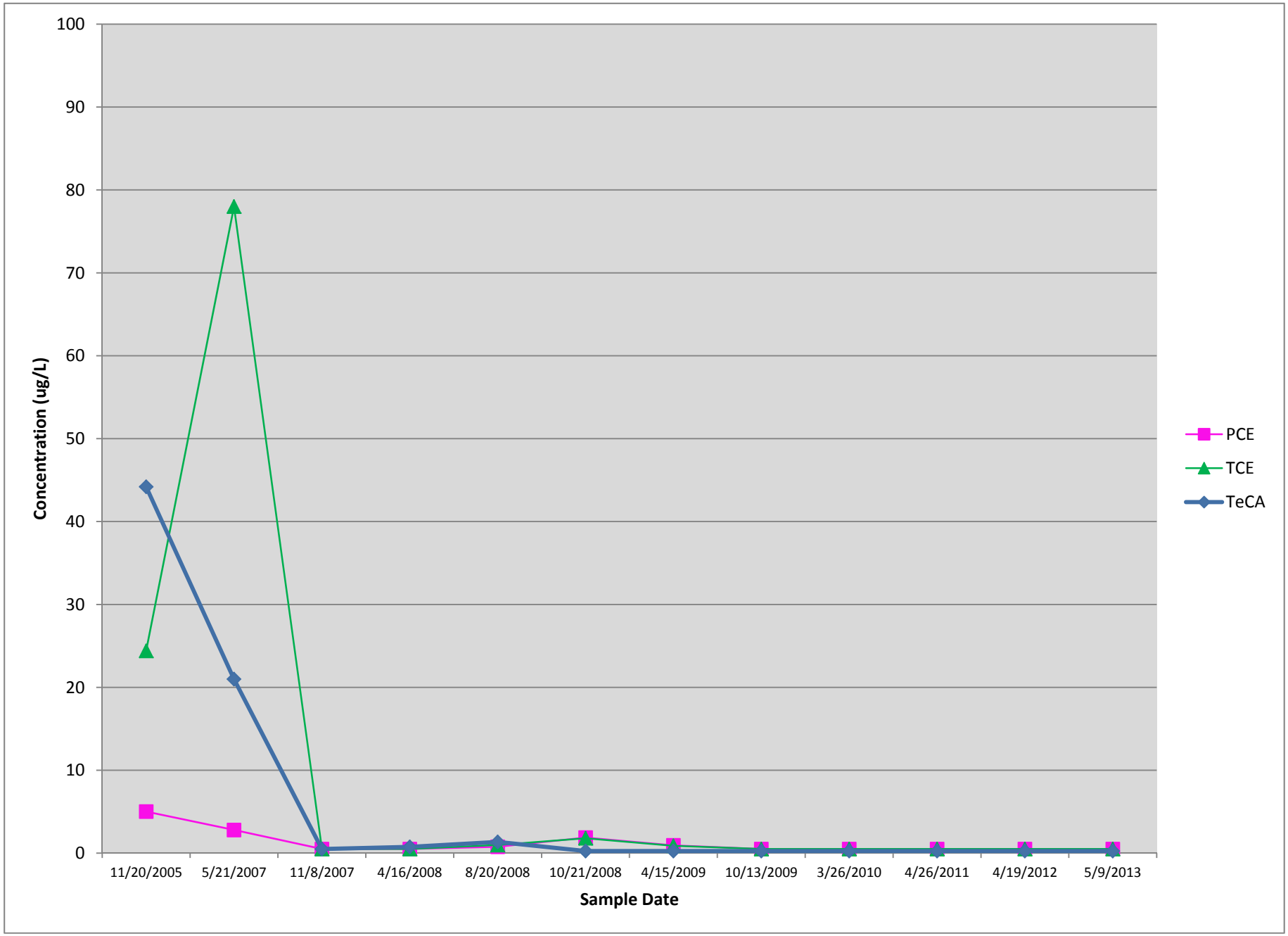
MW-166


250
225
200
175
150
125
100
75
50
25
0
Concentration (ug/L)
11/18/2004
11/19/2004
1/27/2005
3/23/2005
6/17/2005
11/19/2005
4/13/2006
10/20/2006
4/9/2007
10/5/2007
4/11/2008
10/20/2008
6/8/2009
10/16/2009
3/23/2010
6/23/2010
9/23/2010
1/25/2011
3/28/2011
9/27/2011
4/18/2012
10/17/2012
4/14/2013
10/10/2013
Sample Date
TCE
TeCA
CT
CF

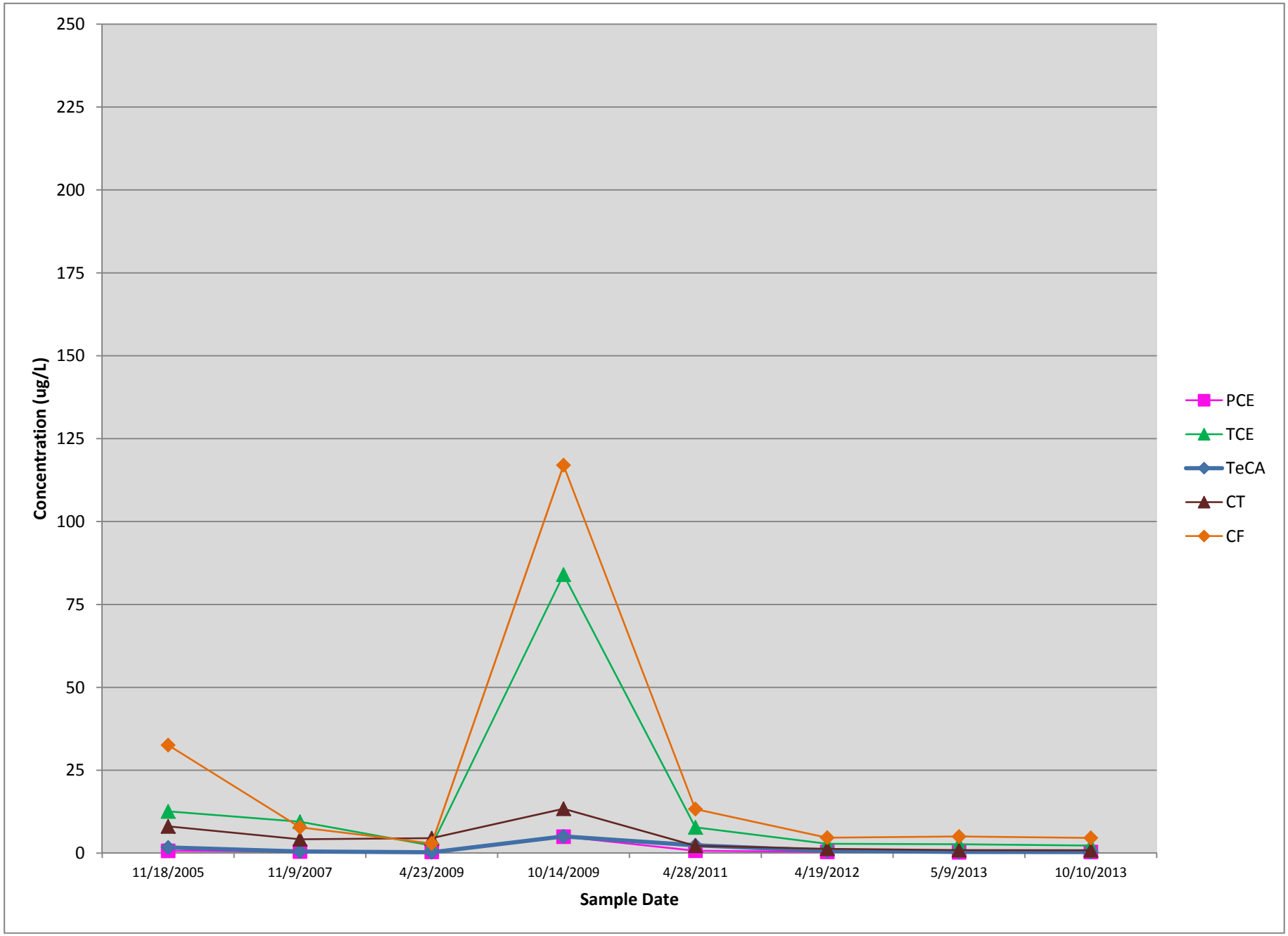
MW-166A


100
90
80
70
60
50
40
30
20
10
0
Concentration (ug/L)
11/19/2004
1/27/2005
3/23/2005
6/17/2005
11/19/2005
4/13/2006
10/20/2006
4/9/2007
10/5/2007
4/11/2008
10/20/2008
6/8/2009
10/16/2009
3/23/2010
6/23/2010
9/23/2010
1/25/2011
3/28/2011
9/27/2011
4/18/2012
10/17/2012
4/14/2013
10/10/2013
Sample Date
TCE
TeCA
CT
CF

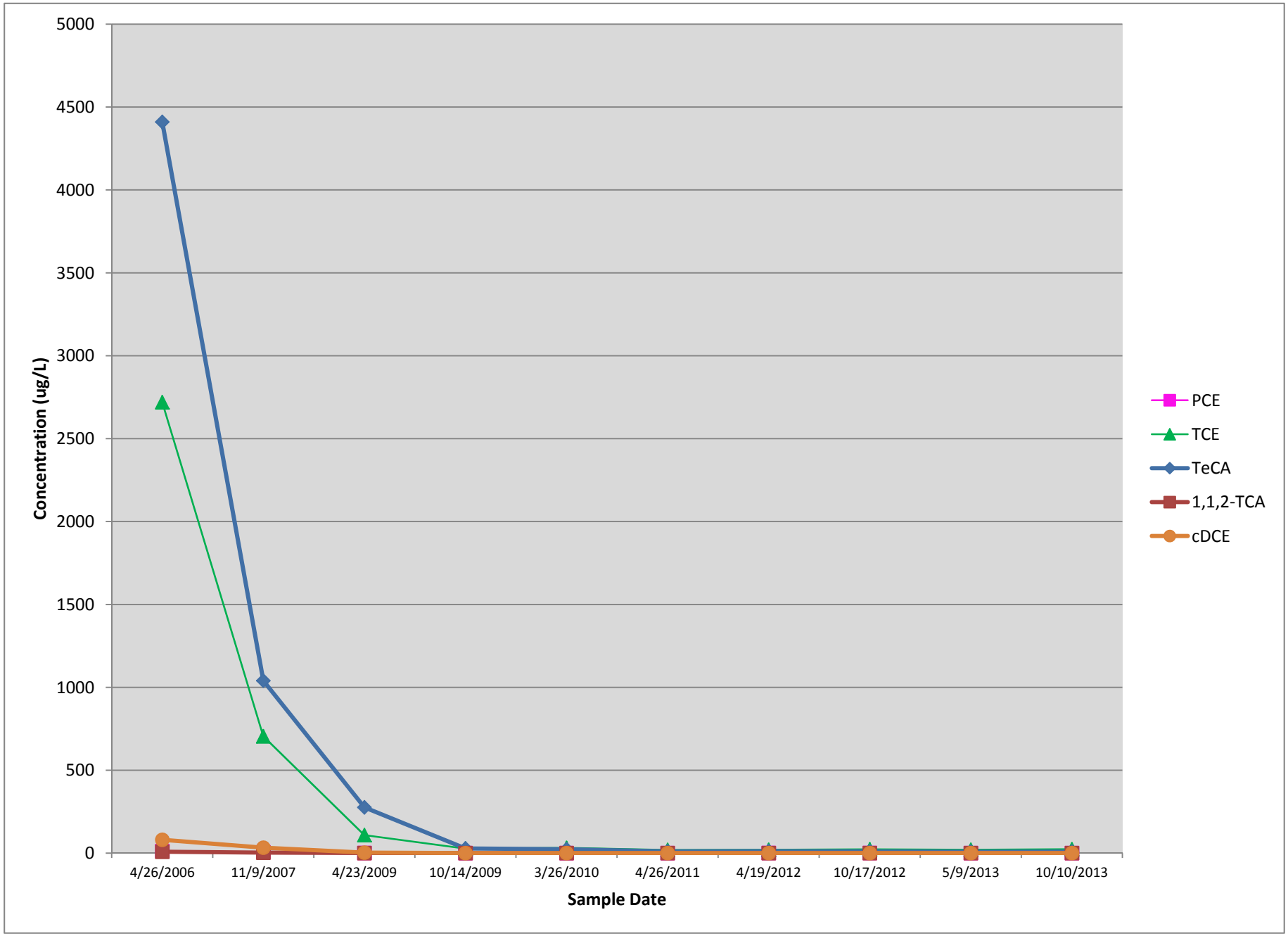
MW-180


100
90
80
70
60
50
40
30
20
10
0
Concentration (ug/L)
11/20/2005
5/21/2007
11/8/2007
4/16/2008
8/20/2008
10/21/2008
4/15/2009
10/13/2009
3/26/2010
4/26/2011
4/19/2012
5/9/2013
Sample Date
PCE
TCE
TeCA

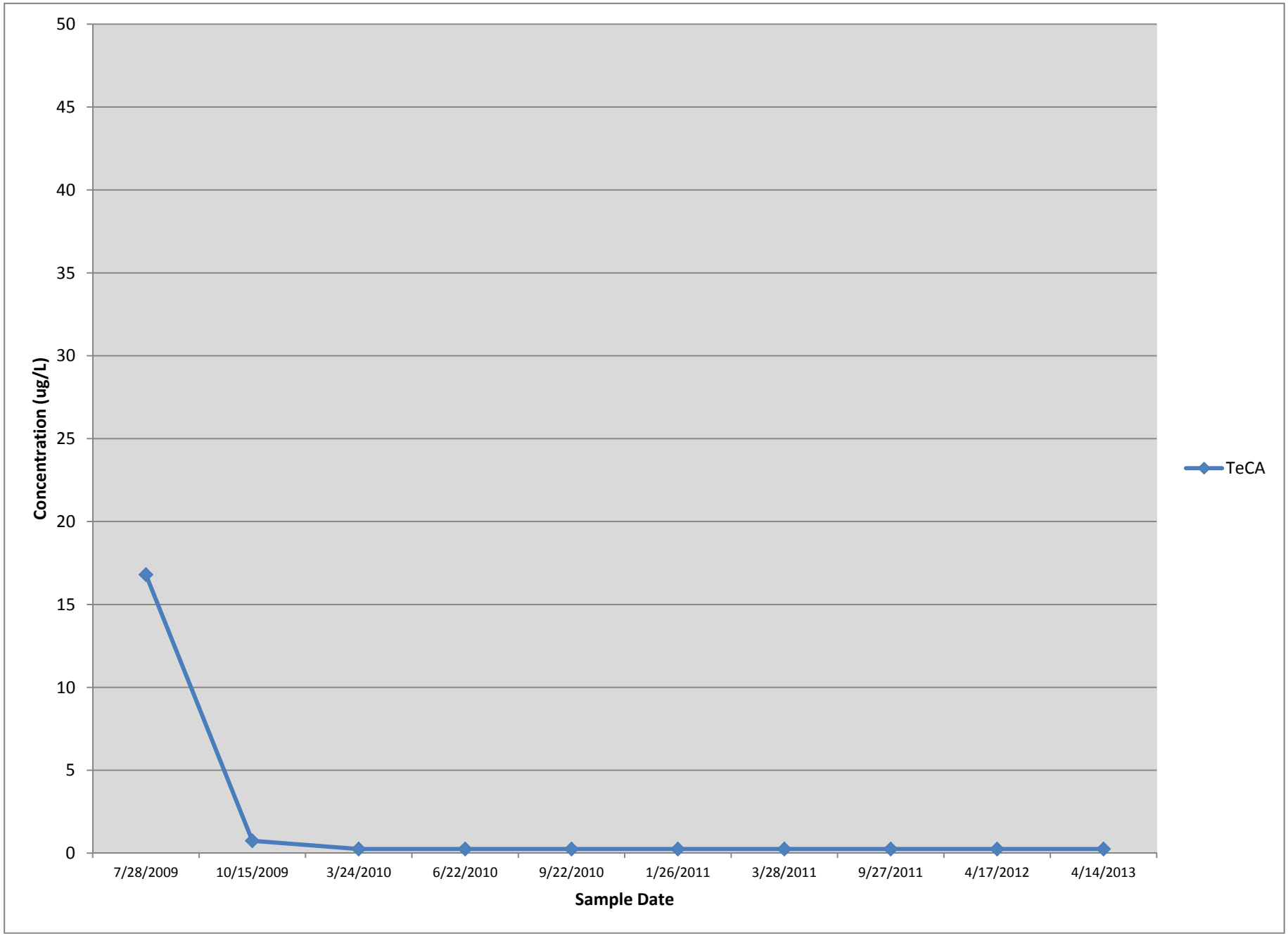
MW-184


250
225
200
175
150
125
100
75
50
25
0
Concentration (ug/L)
11/18/2005
11/9/2007
4/23/2009
10/14/2009
4/28/2011
4/19/2012
5/9/2013
10/10/2013
Sample Date
PCE
TCE
TeCA
CT
CF

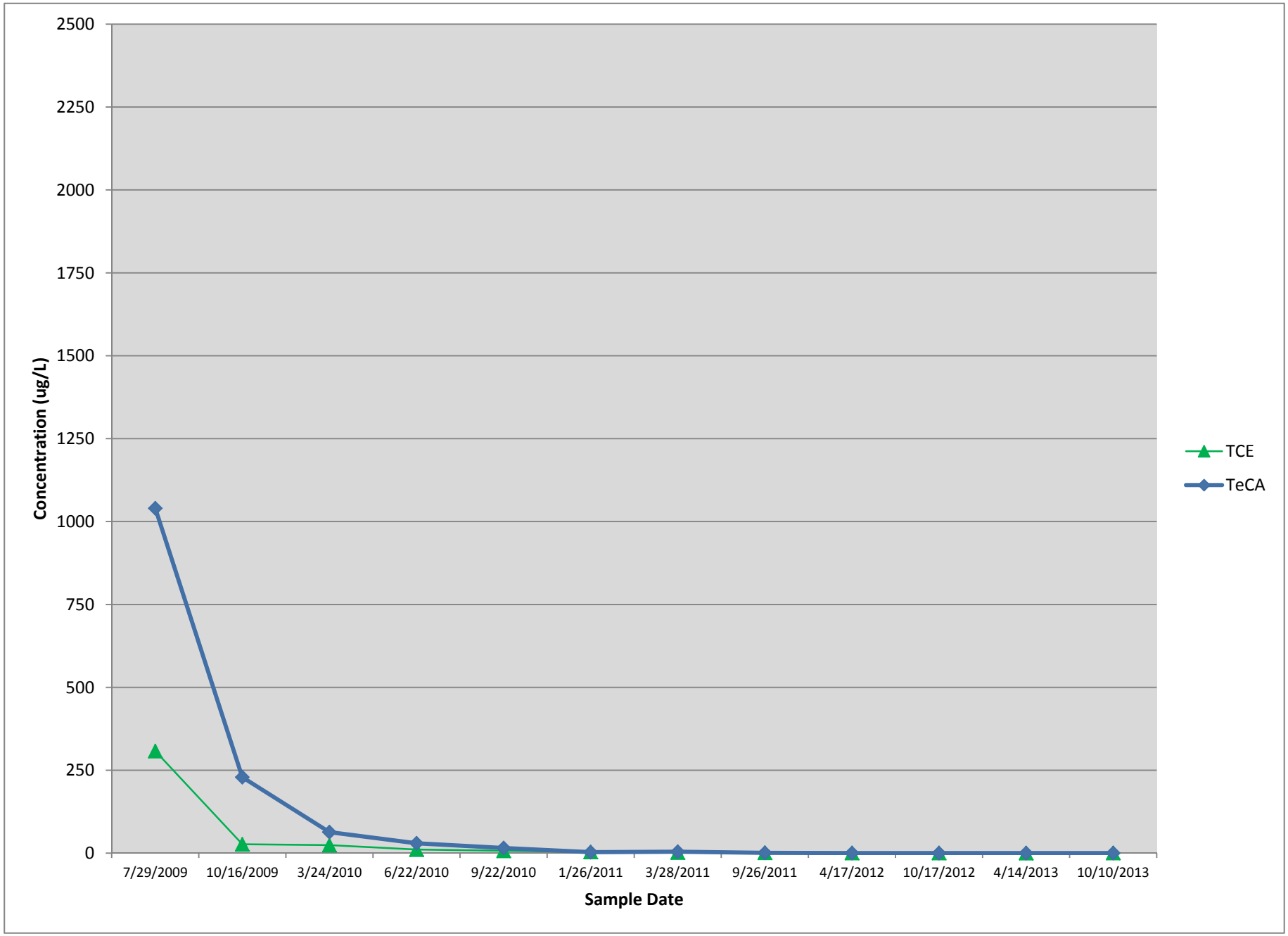
MW-190


5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
Concentration (ug/L)
4/26/2006
11/9/2007
4/23/2009
10/14/2009
3/26/2010
4/26/2011
4/19/2012
10/17/2012
5/9/2013
10/10/2013
Sample Date
PCE
TCE
TeCA
1,1,2-TCA
cDCE

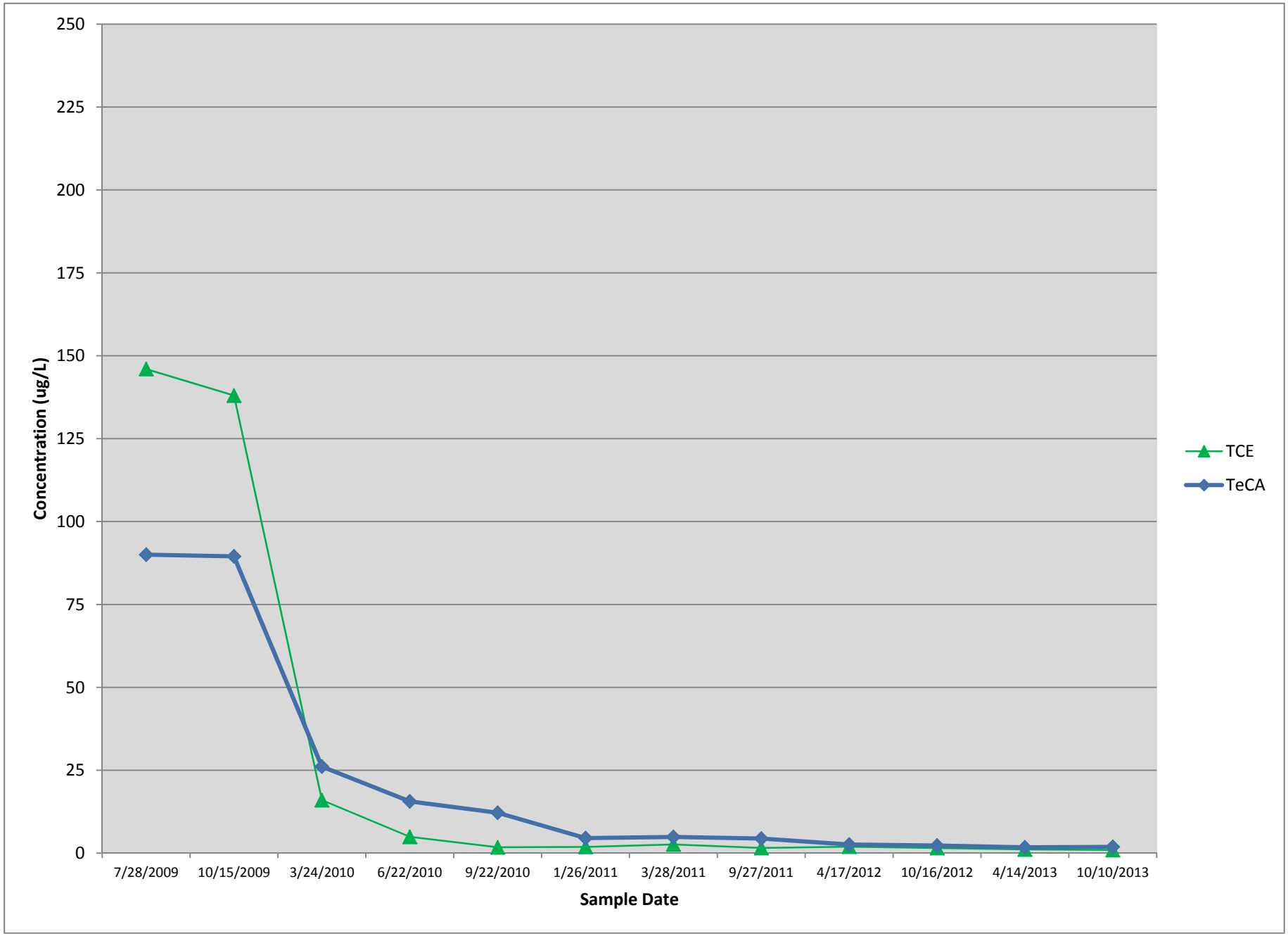
MW-241


50
45
40
35
30
25
20
15
10
5
0
Concentration (ug/L)
7/28/2009
10/15/2009
3/24/2010
6/22/2010
9/22/2010
1/26/2011
3/28/2011
9/27/2011
4/17/2012
4/14/2013
Sample Date
TeCA

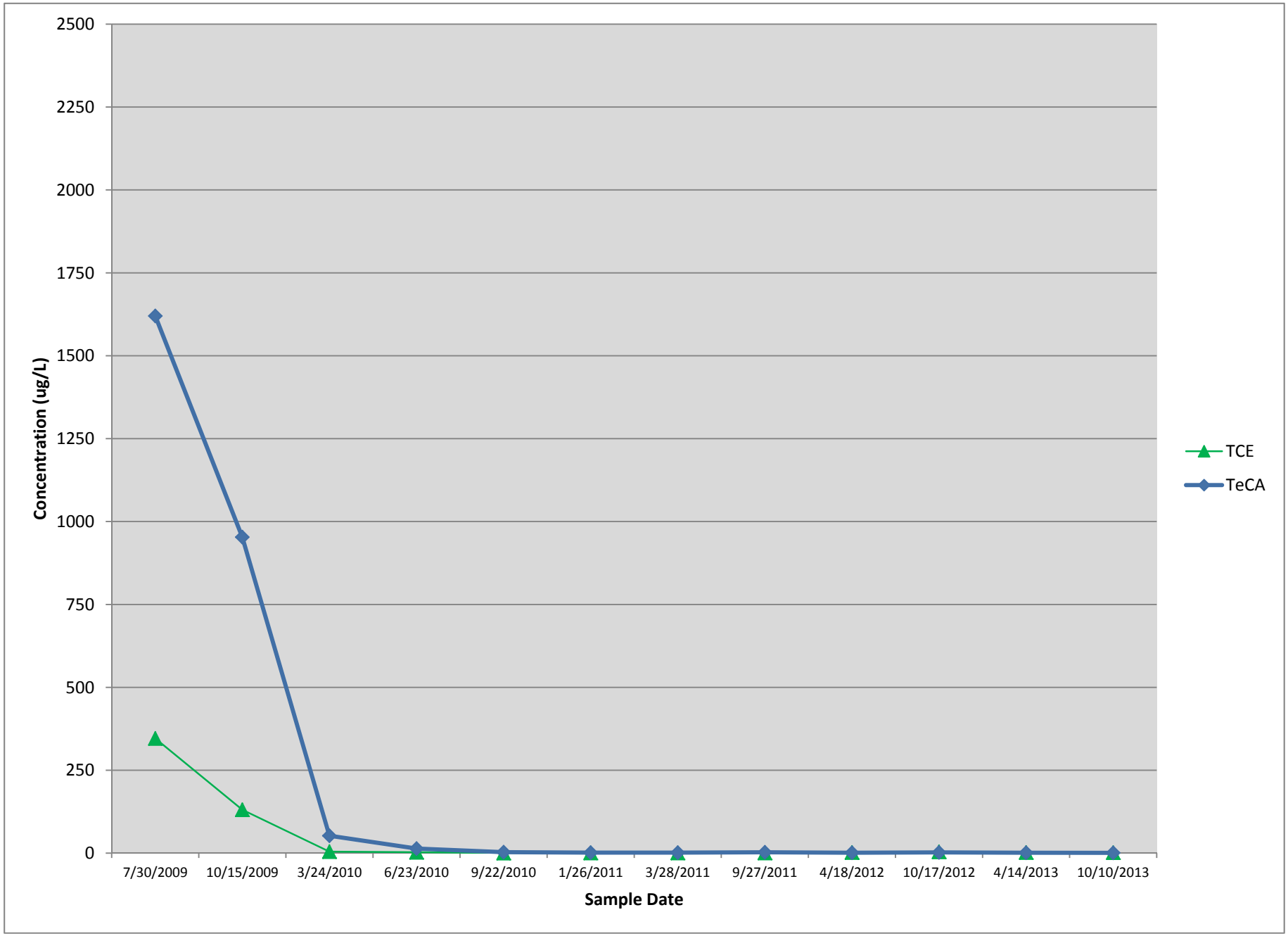
MW-242


2500
2250
2000
1750
1500
1250
1000
750
500
250
0
Concentration (ug/L)
7/29/2009
10/16/2009
3/24/2010
6/22/2010
9/22/2010
1/26/2011
3/28/2011
9/26/2011
4/17/2012
10/17/2012
4/14/2013
10/10/2013
Sample Date
TCE
TeCA

MW-243


250
225
200
175
150
125
100
75
50
25
0
Concentration (ug/L)
7/28/2009
10/15/2009
3/24/2010
6/22/2010
9/22/2010
1/26/2011
3/28/2011
9/27/2011
4/17/2012
10/16/2012
4/14/2013
10/10/2013
Sample Date
TCE
TeCA

MW-244


2500
2250
2000
1750
1500
1250
1000
750
500
250
0
Concentration (ug/L)
7/30/2009
10/15/2009
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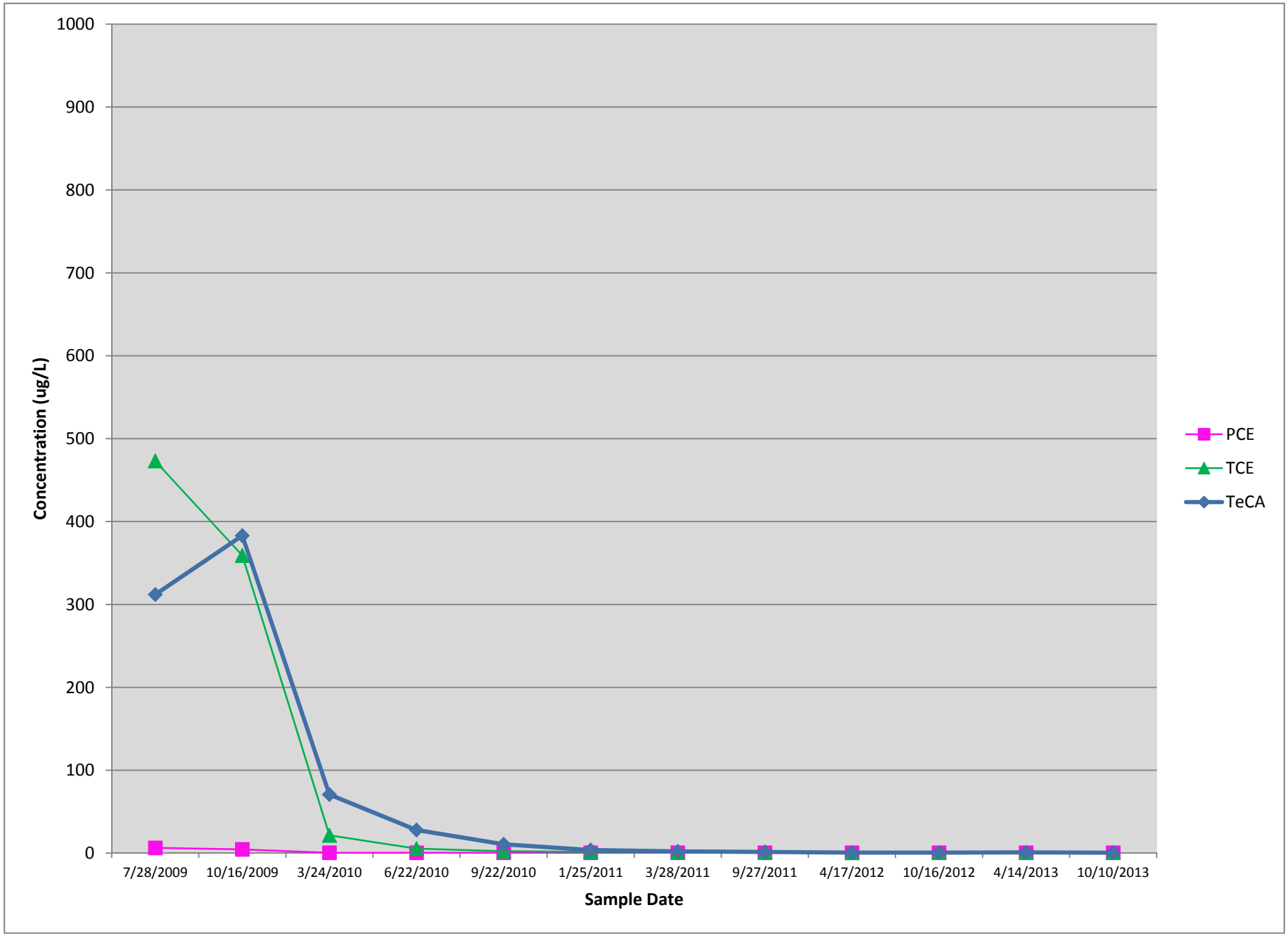
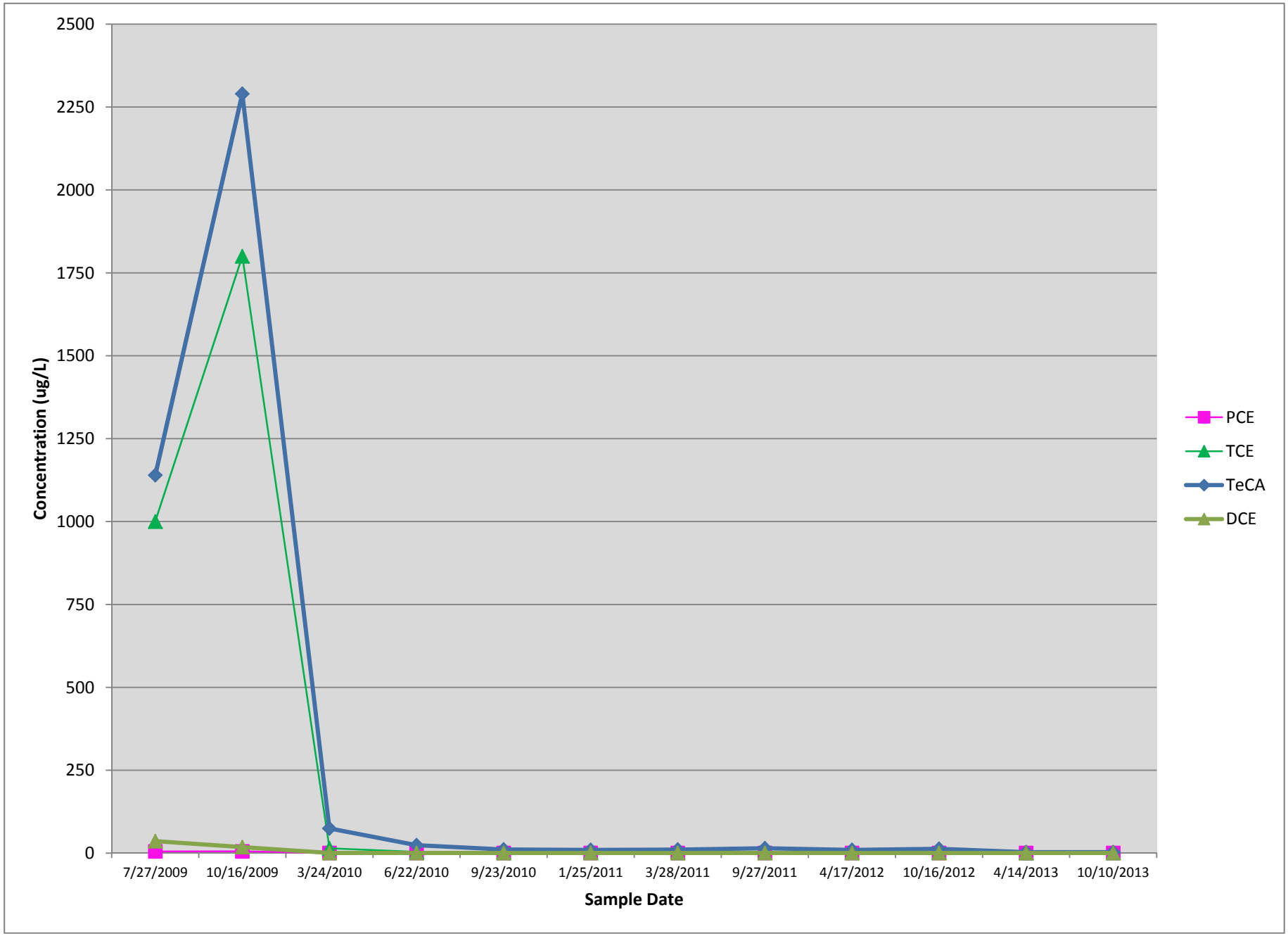
6/23/2010
9/22/2010
1/26/2011
3/28/2011
9/27/2011
4/18/2012
10/17/2012
4/14/2013
10/10/2013
Sample Date
TCE
TeCA

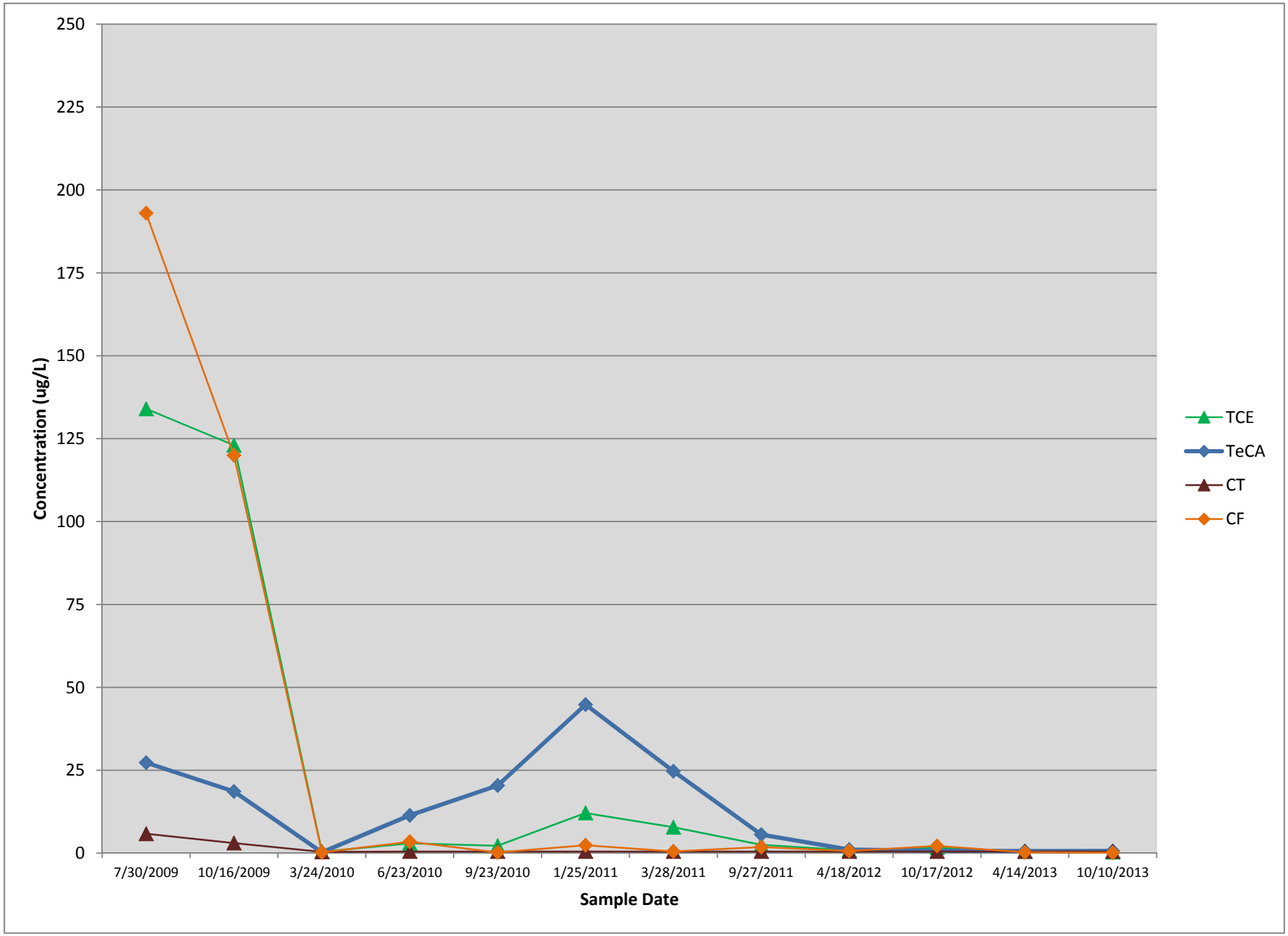
MW-245


1000
900
800
700
600
500
400
300
200
100
0
Concentration (ug/L)
7/28/2009
10/16/2009
3/24/2010
6/22/2010
9/22/2010
1/25/2011
3/28/2011
9/27/2011
4/17/2012
10/16/2012
4/14/2013
10/10/2013
Sample Date
PCE
TCE
TeCA

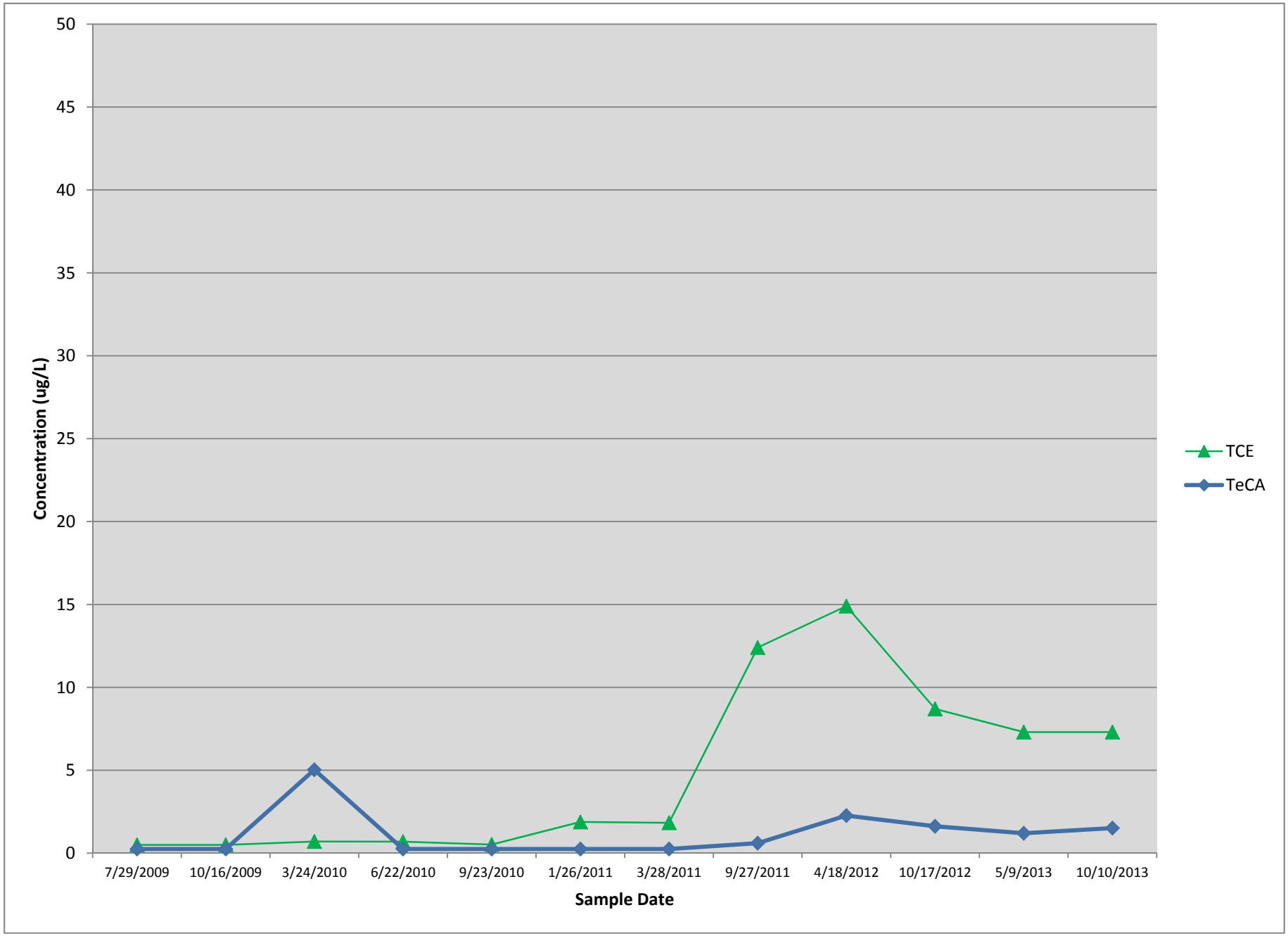
MW-246


2500
2250
2000
1750
1500
1250
1000
750
500
250
0
Concentration (ug/L)
7/27/2009
10/16/2009
3/24/2010
6/22/2010
9/23/2010
1/25/2011
3/28/2011
9/27/2011
4/17/2012
10/16/2012
4/14/2013
10/10/2013
Sample Date
PCE
TCE
TeCA
DCE

MW-247


250
225
200
175
150
125
100
75
50
25
0
Concentration (ug/L)
7/30/2009
10/16/2009
3/24/2010
6/23/2010
9/23/2010
1/25/2011
3/28/2011
9/27/2011
4/18/2012
10/17/2012
4/14/2013
10/10/2013
Sample Date
TCE
TeCA
CT
CF

MW-249

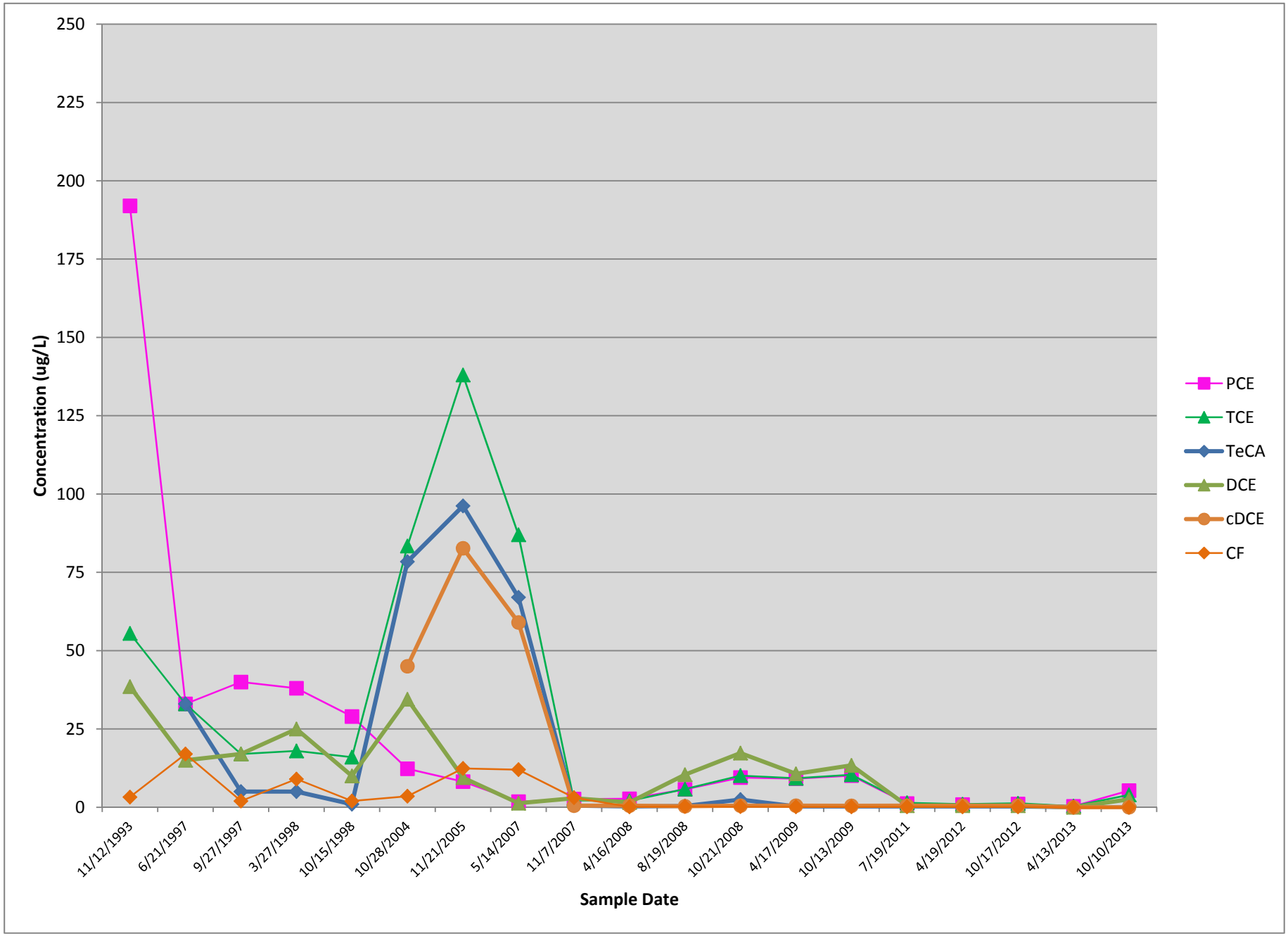

50
45
40
35
30
25
20
15
10
5
0
Concentration (ug/L)
7/29/2009
10/16/2009
3/24/2010
6/22/2010
9/23/2010
1/26/2011
3/28/2011
9/27/2011
4/18/2012
10/17/2012
5/9/2013
10/10/2013
Sample Date
TCE
TeCA

APPENDIX L-4

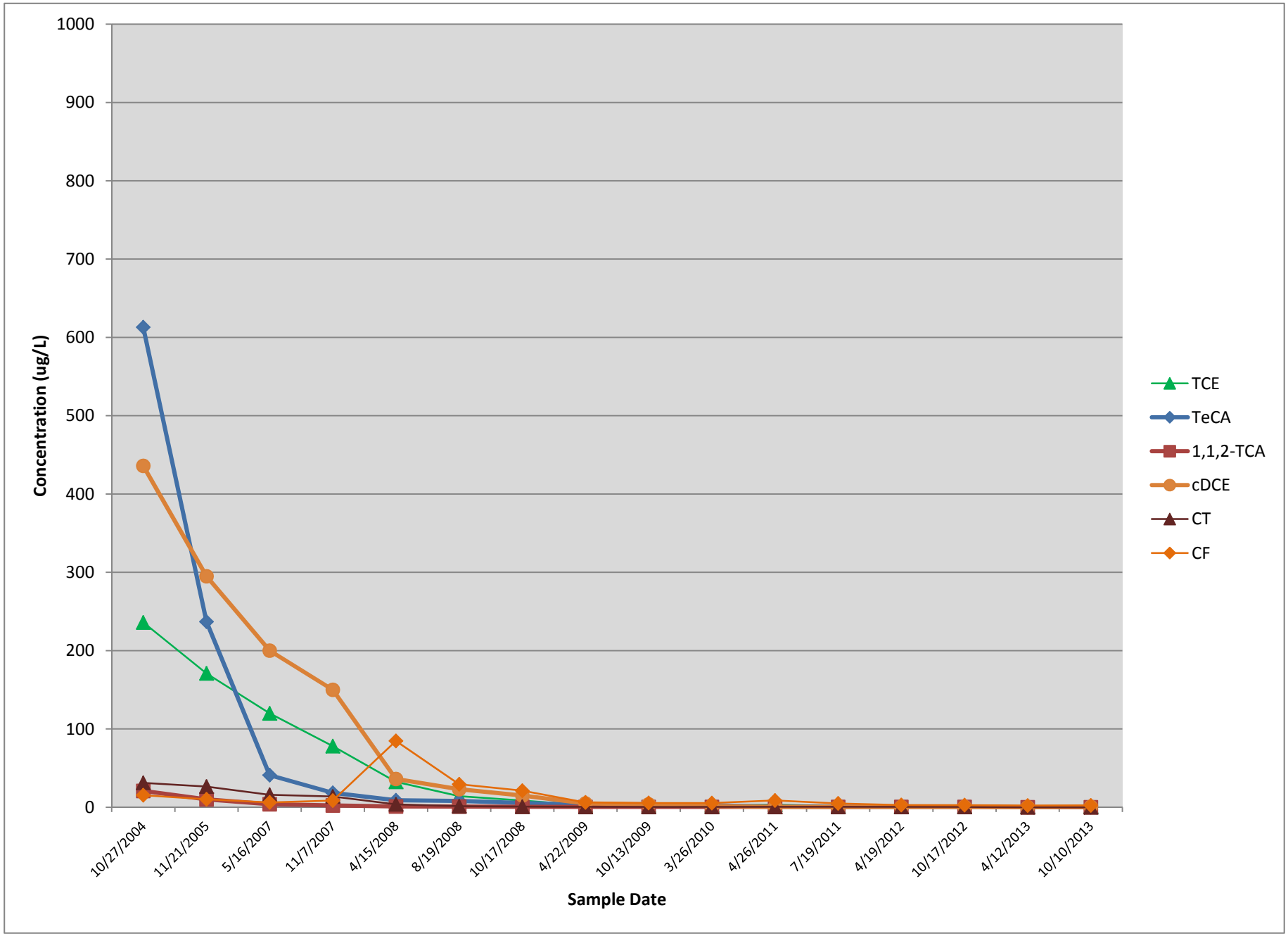
CVOC TIME-TREND PLOTS –
DUNN FIELD

PERFORMANCE-FSVE WELLS

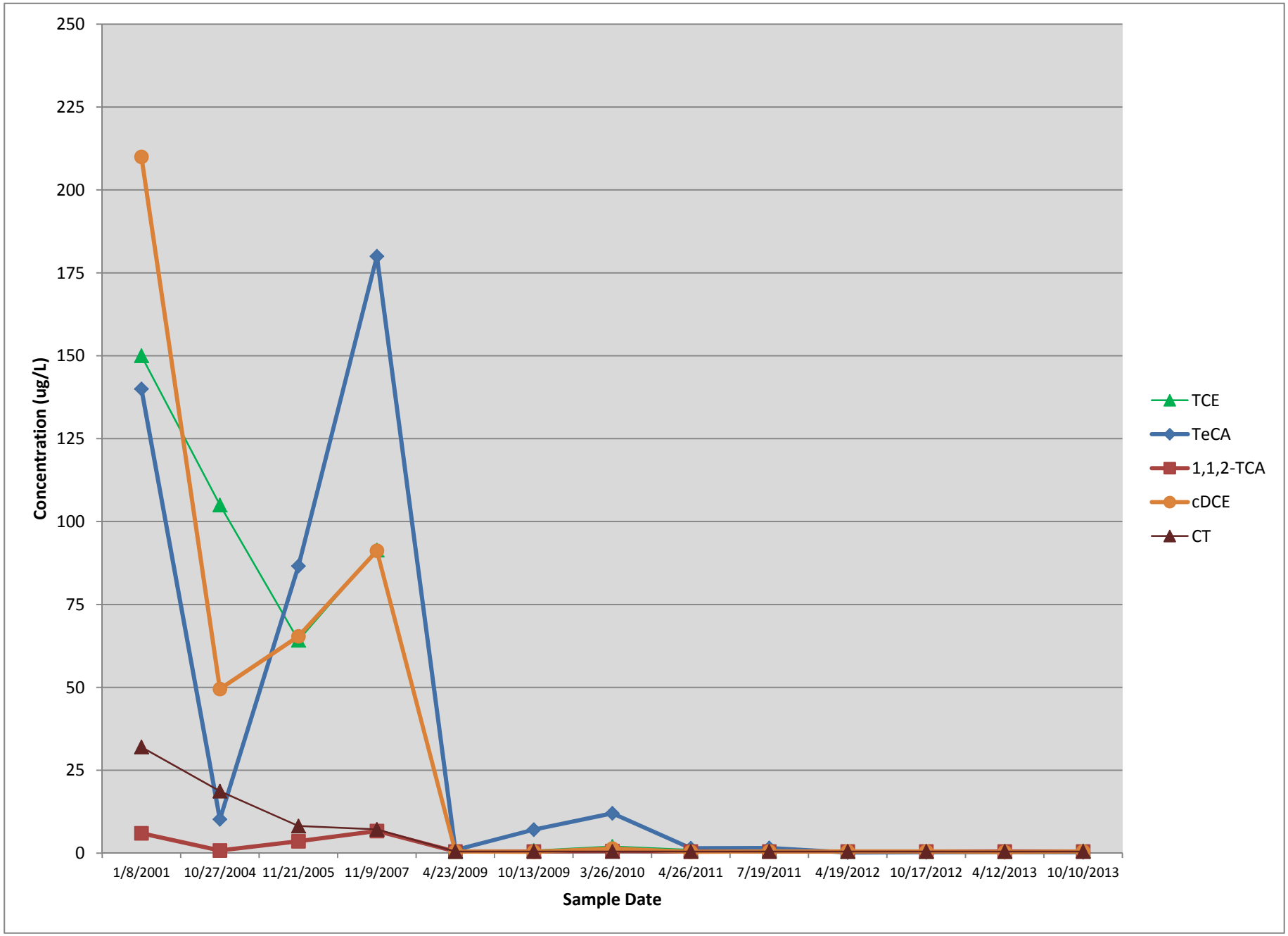
MW-03


250
225
200
175
150
125
100
75
50
25
0
Concentration (ug/L)
11/12/1993
6/21/1997
9/27/1997
3/27/1998
10/15/1998
10/28/2004
11/21/2005
5/14/2007
11/7/2007
4/16/2008
8/19/2008
10/21/2008
4/17/2009
10/13/2009
7/19/2011
4/19/2012
10/17/2012
4/13/2013
10/10/2013
Sample Date
PCE
TCE
TeCA
DCE
cDCE
CF

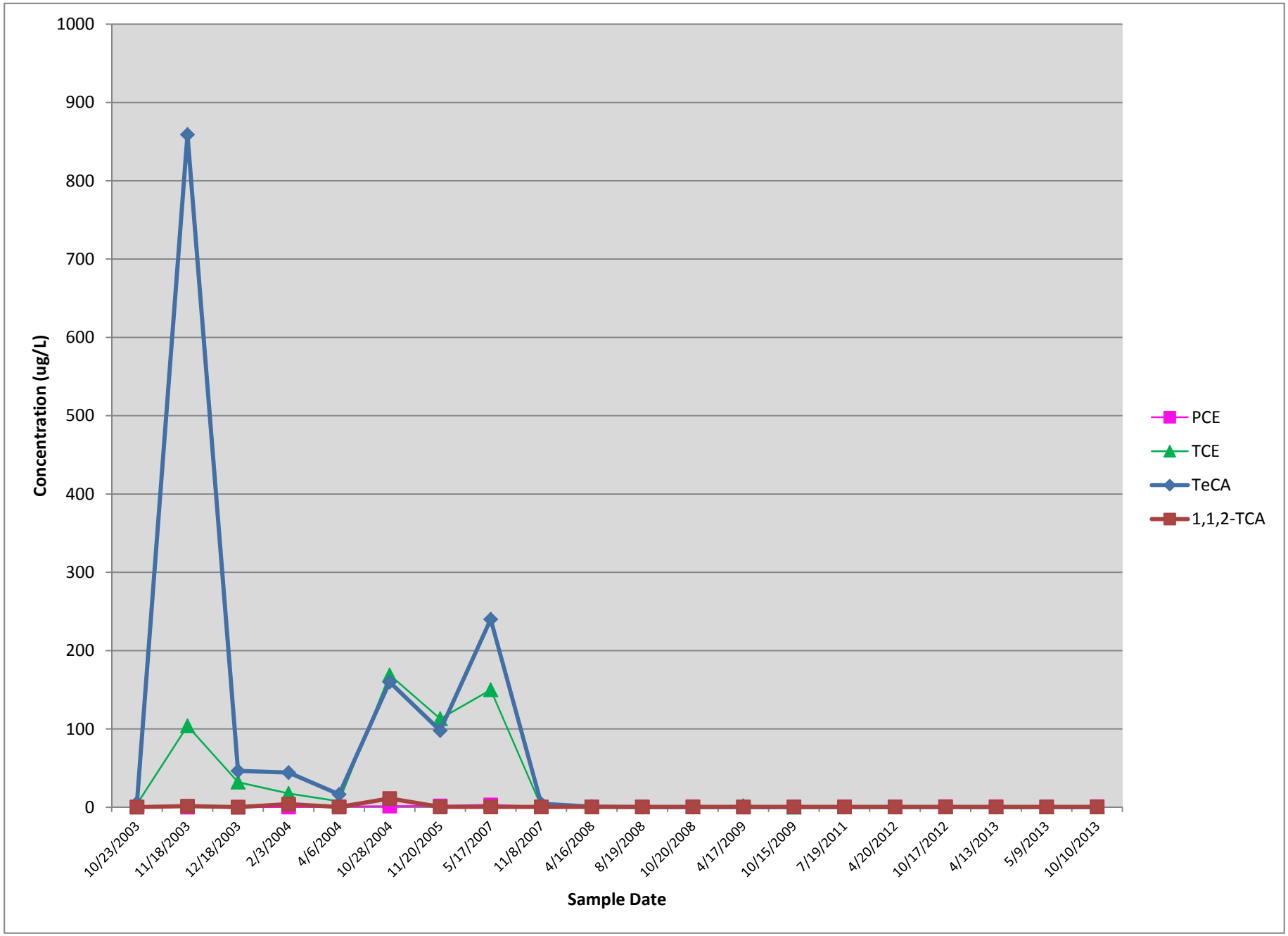
MW-06


1000
900
800
700
600
500
400
300
200
100
0
Concentration (ug/L)
10/27/2004
11/21/2005
5/16/2007
11/7/2007
4/15/2008
8/19/2008
10/17/2008
4/22/2009
10/13/2009
3/26/2010
4/26/2011
7/19/2011
4/19/2012
10/17/2012
4/12/2013
10/10/2013
Sample Date
TCE
TeCA
1,1,2-TCA
cDCE
CT
CF

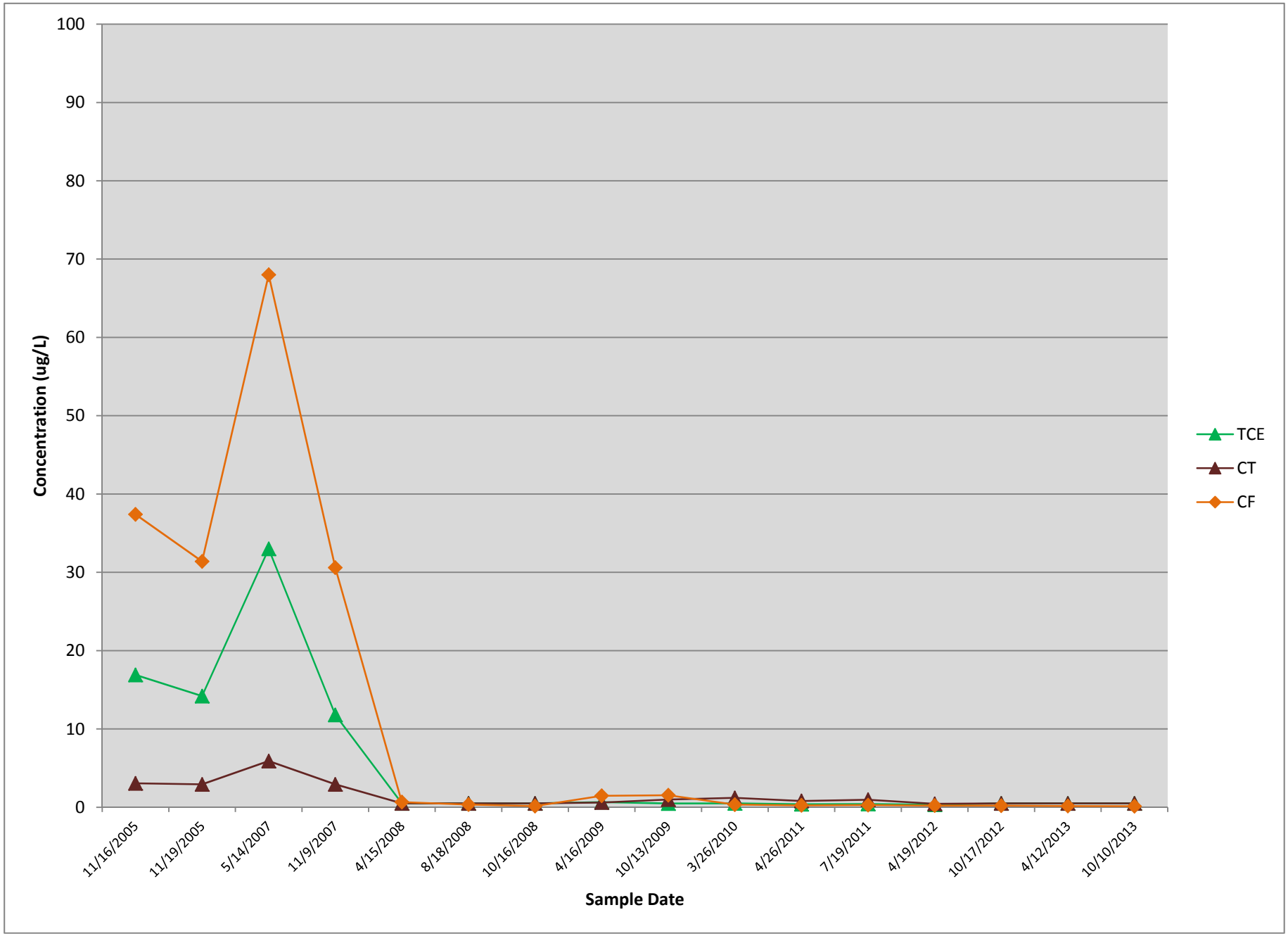
MW-87


250
225
200
175
150
125
100
75
50
25
0
Concentration (ug/L)
1/8/2001
10/27/2004
11/21/2005
11/9/2007
4/23/2009
10/13/2009
3/26/2010
4/26/2011
7/19/2011
4/19/2012
10/17/2012
4/12/2013
10/10/2013
Sample Date
TCE
TeCA
1,1,2-TCA
cDCE
CT

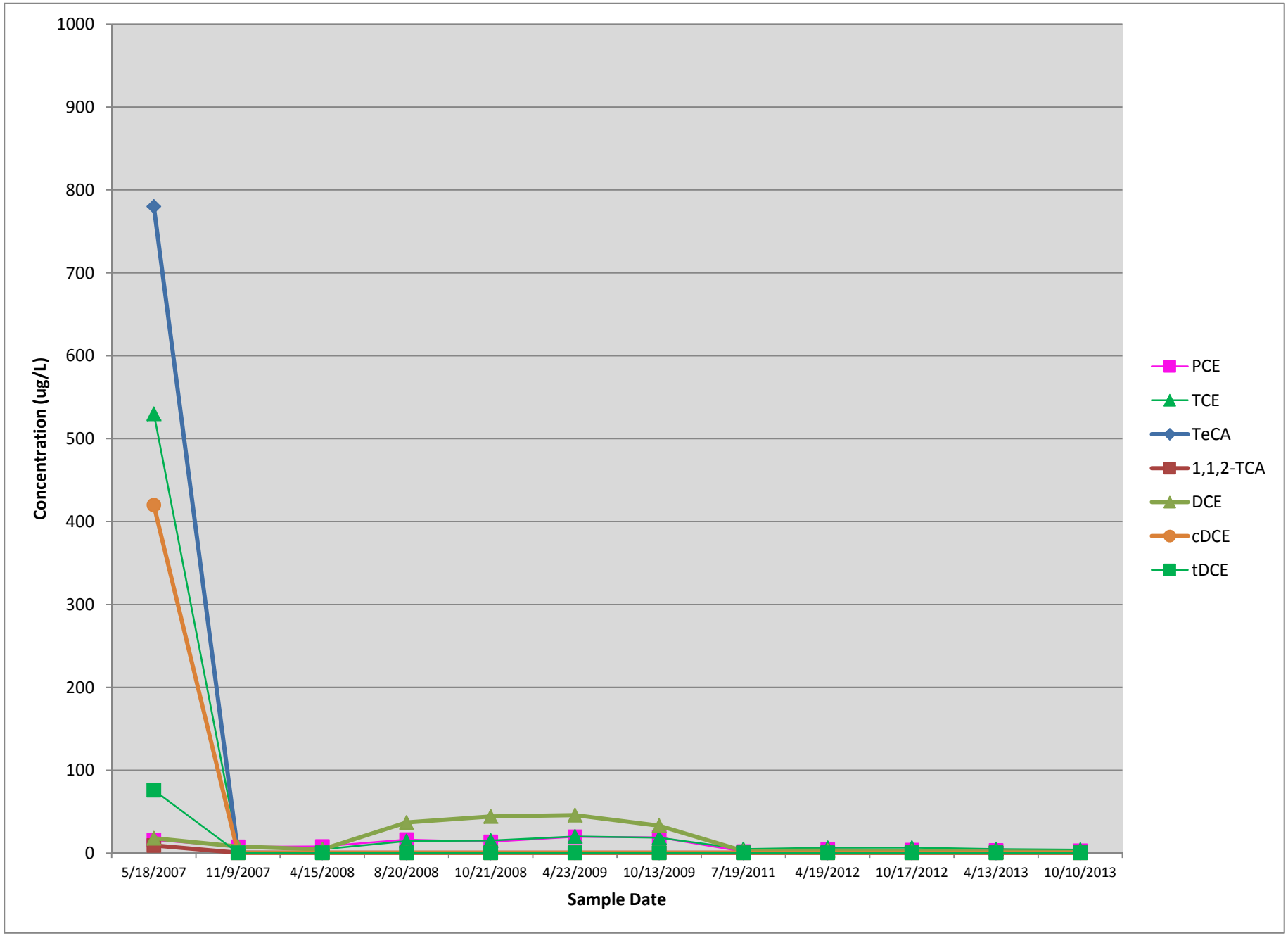
MW-134


1000
900
800
700
600
500
400
300
200
100
0
Concentration (ug/L)
10/23/2003
11/18/2003
12/18/2003
2/3/2004
4/6/2004
10/28/2004
11/20/2005
5/17/2007
11/8/2007
4/16/2008
8/19/2008
10/20/2008
4/17/2009
10/15/2009
7/19/2011
4/20/2012
10/17/2012
4/13/2013
5/9/2013
10/10/2013
Sample Date
PCE
TCE
TeCA
1,1,2-TCA

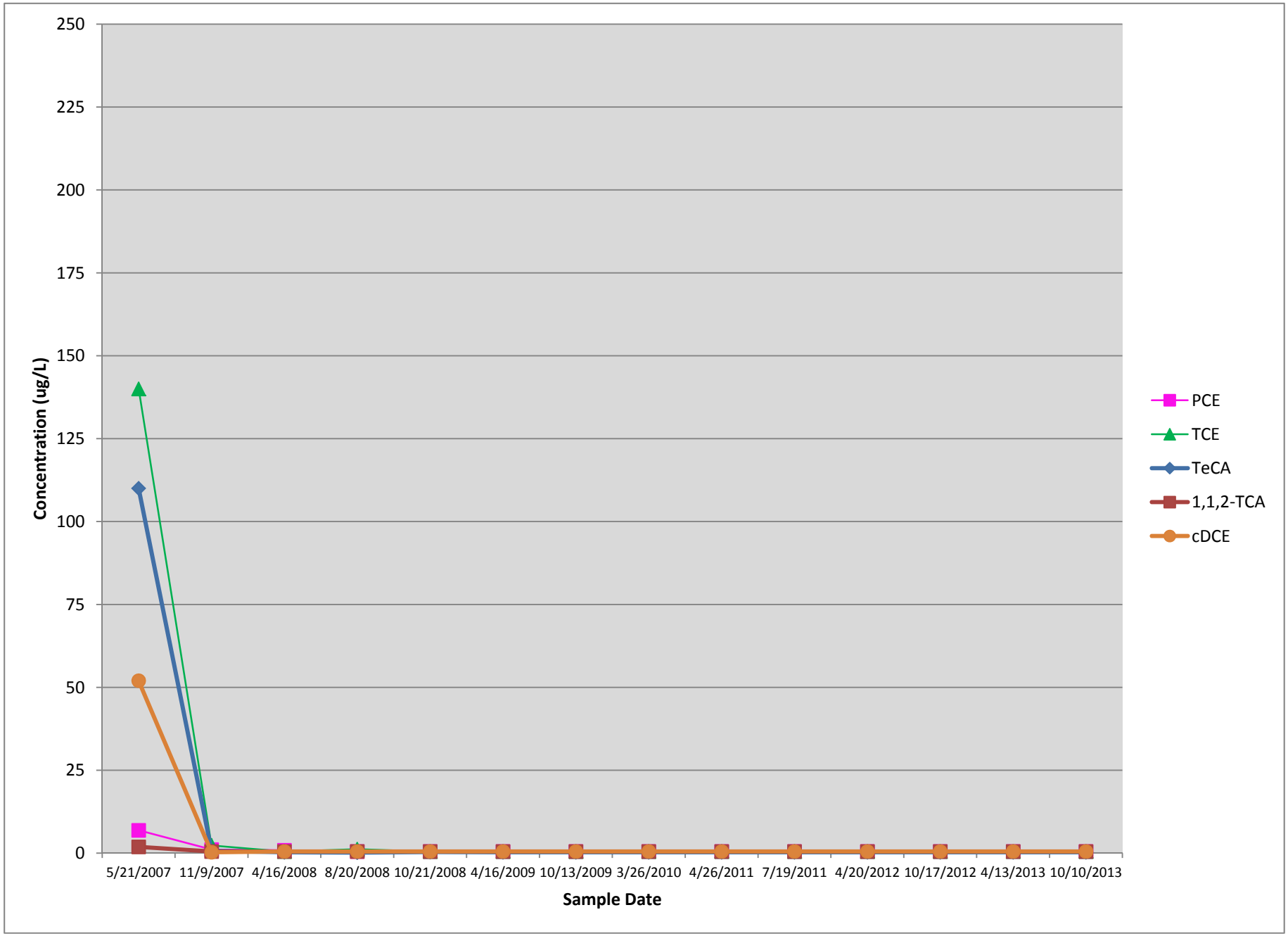
MW-174


100
90
80
70
60
50
40
30
20
10
0
Concentration (ug/L)
11/16/2005
11/19/2005
5/14/2007
11/9/2007
4/15/2008
8/18/2008
10/16/2008
4/16/2009
10/13/2009
3/26/2010
4/26/2011
7/19/2011
4/19/2012
10/17/2012
4/12/2013
10/10/2013
Sample Date
TCE
CT
CF

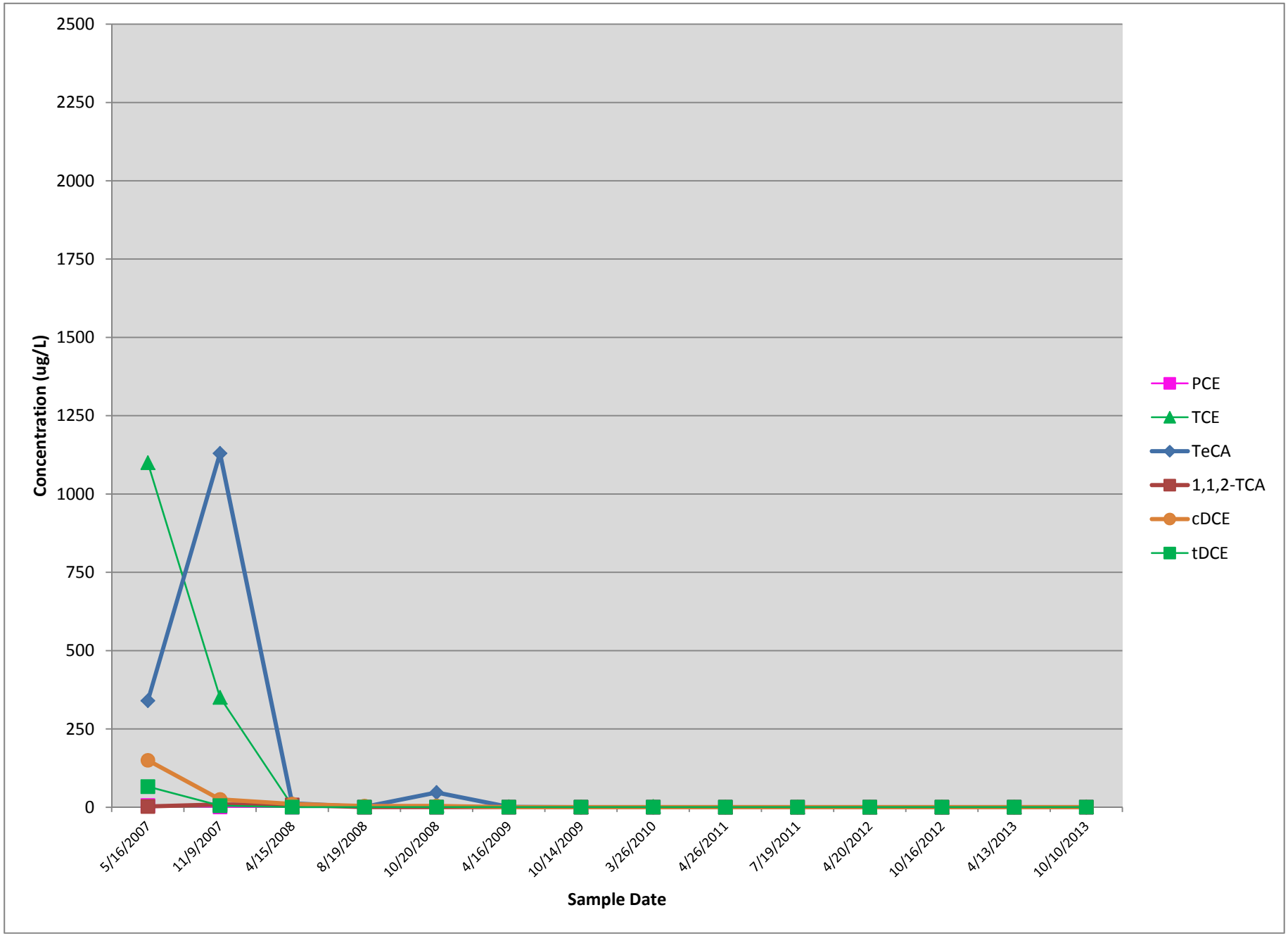
MW-220


1000
900
800
700
600
500
400
300
200
100
0
Concentration (ug/L)
5/18/2007
11/9/2007
4/15/2008
8/20/2008
10/21/2008
4/23/2009
10/13/2009
7/19/2011
4/19/2012
10/17/2012
4/13/2013
10/10/2013
Sample Date
PCE
TCE
TeCA
1,1,2-TCA
DCE
cDCE
tDCE

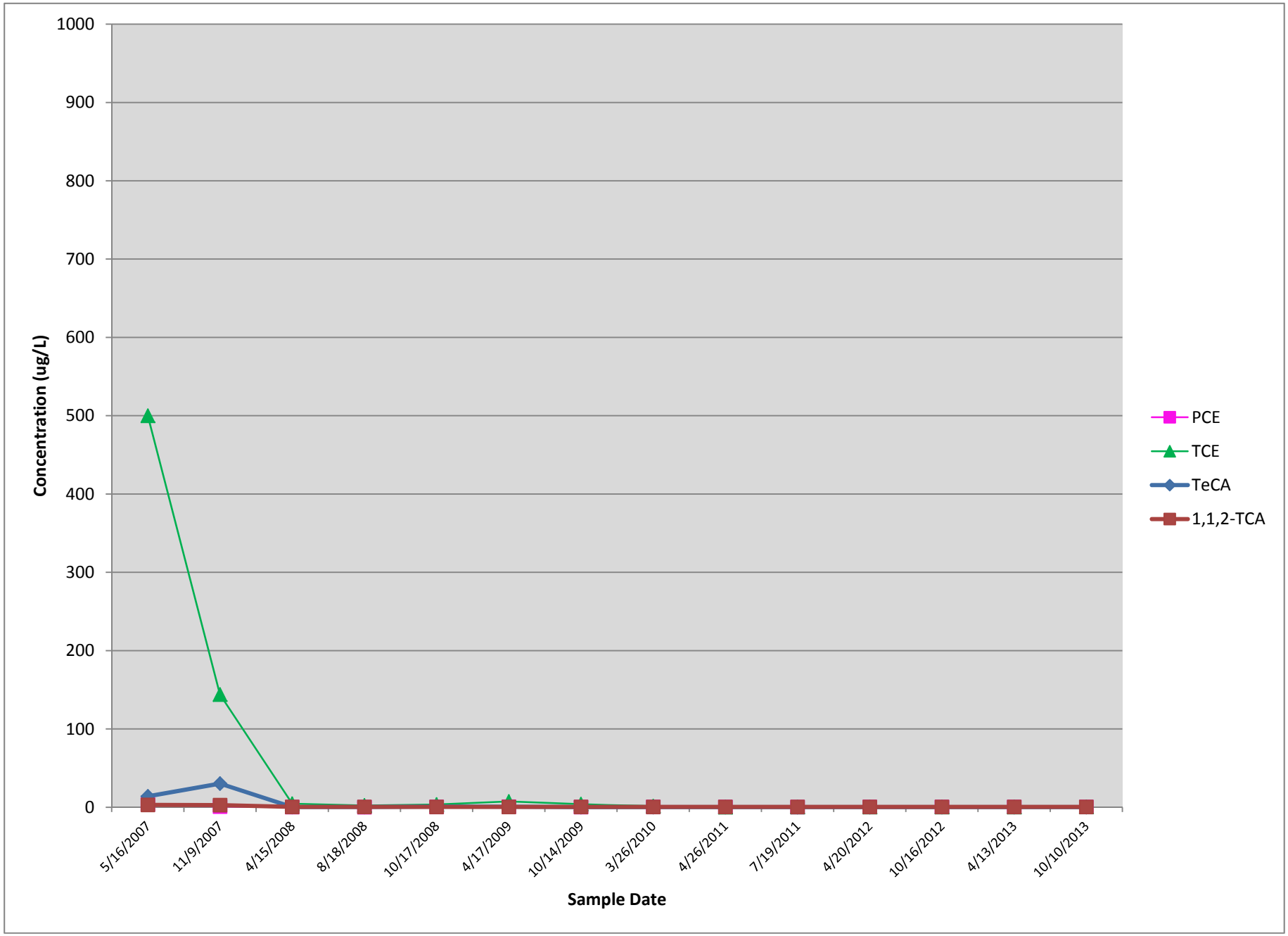
MW-221


250
225
200
175
150
125
100
75
50
25
0
Concentration (ug/L)
5/21/2007
11/9/2007
4/16/2008
8/20/2008
10/21/2008
4/16/2009
10/13/2009
3/26/2010
4/26/2011
7/19/2011
4/20/2012
10/17/2012
4/13/2013
10/10/2013
Sample Date
PCE
TCE
TeCA
1,1,2-TCA
cDCE

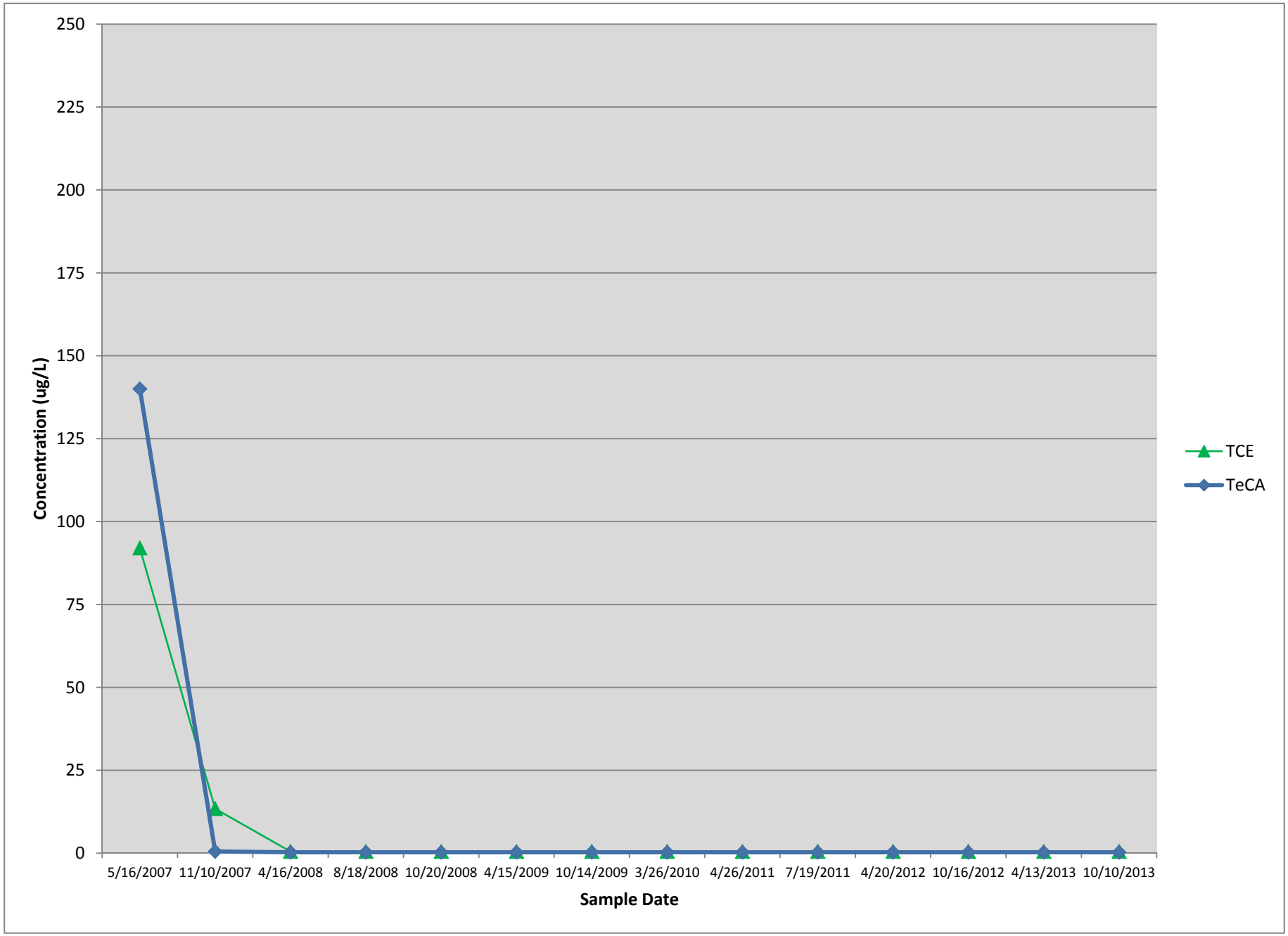
MW-222


2500
2250
2000
1750
1500
1250
1000
750
500
250
0
Concentration (ug/L)
5/16/2007
11/9/2007
4/15/2008
8/19/2008
10/20/2008
4/16/2009
10/14/2009
3/26/2010
4/26/2011
7/19/2011
4/20/2012
10/16/2012
4/13/2013
10/10/2013
Sample Date
PCE
TCE
TeCA
1,1,2-TCA
cDCE
tDCE

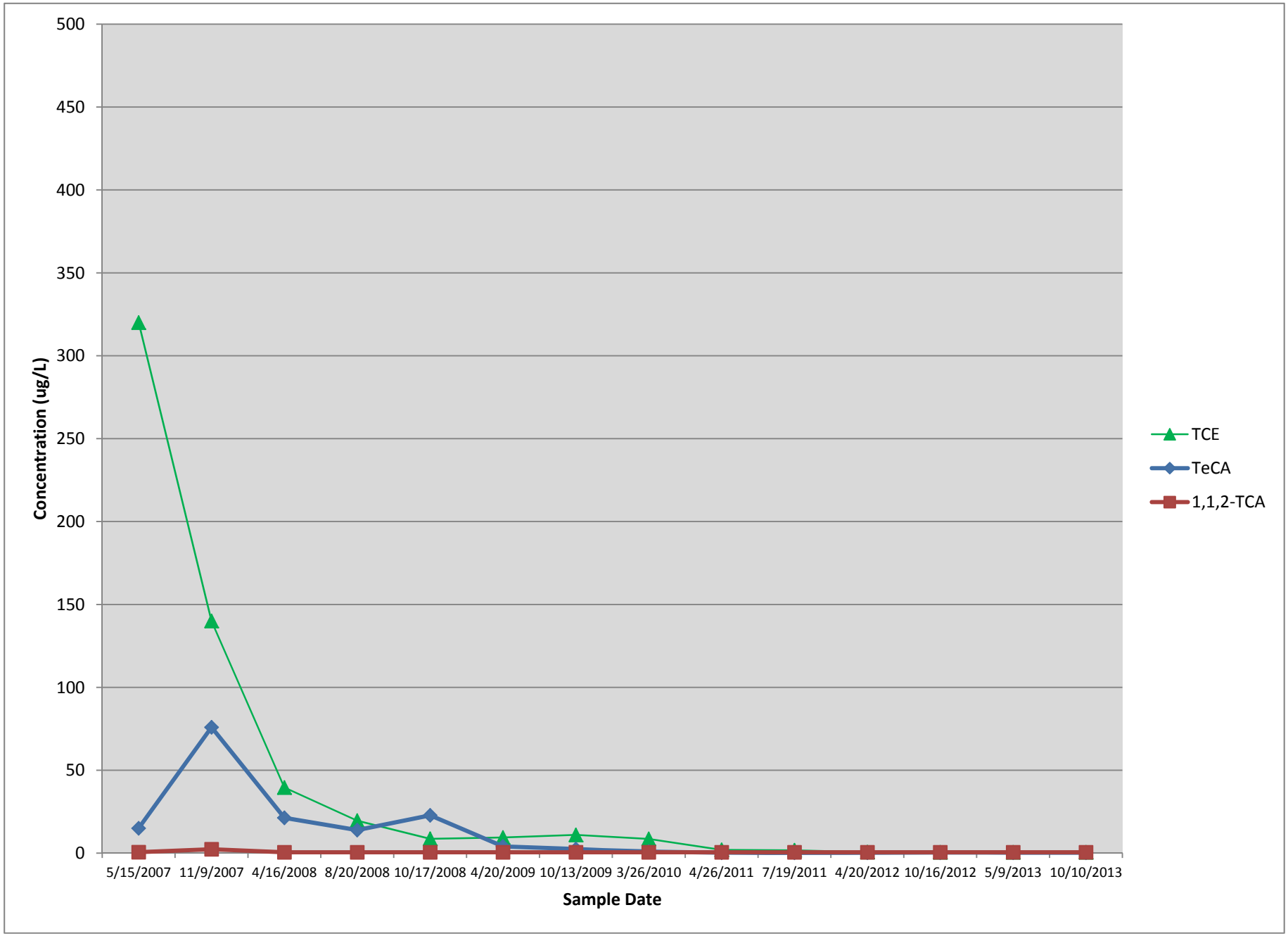
MW-223


1000
900
800
700
600
500
400
300
200
100
0
Concentration (ug/L)
5/16/2007
11/9/2007
4/15/2008
8/18/2008
10/17/2008
4/17/2009
10/14/2009
3/26/2010
4/26/2011
7/19/2011
4/20/2012
10/16/2012
4/13/2013
10/10/2013
Sample Date
PCE
TCE
TeCA
1,1,2-TCA

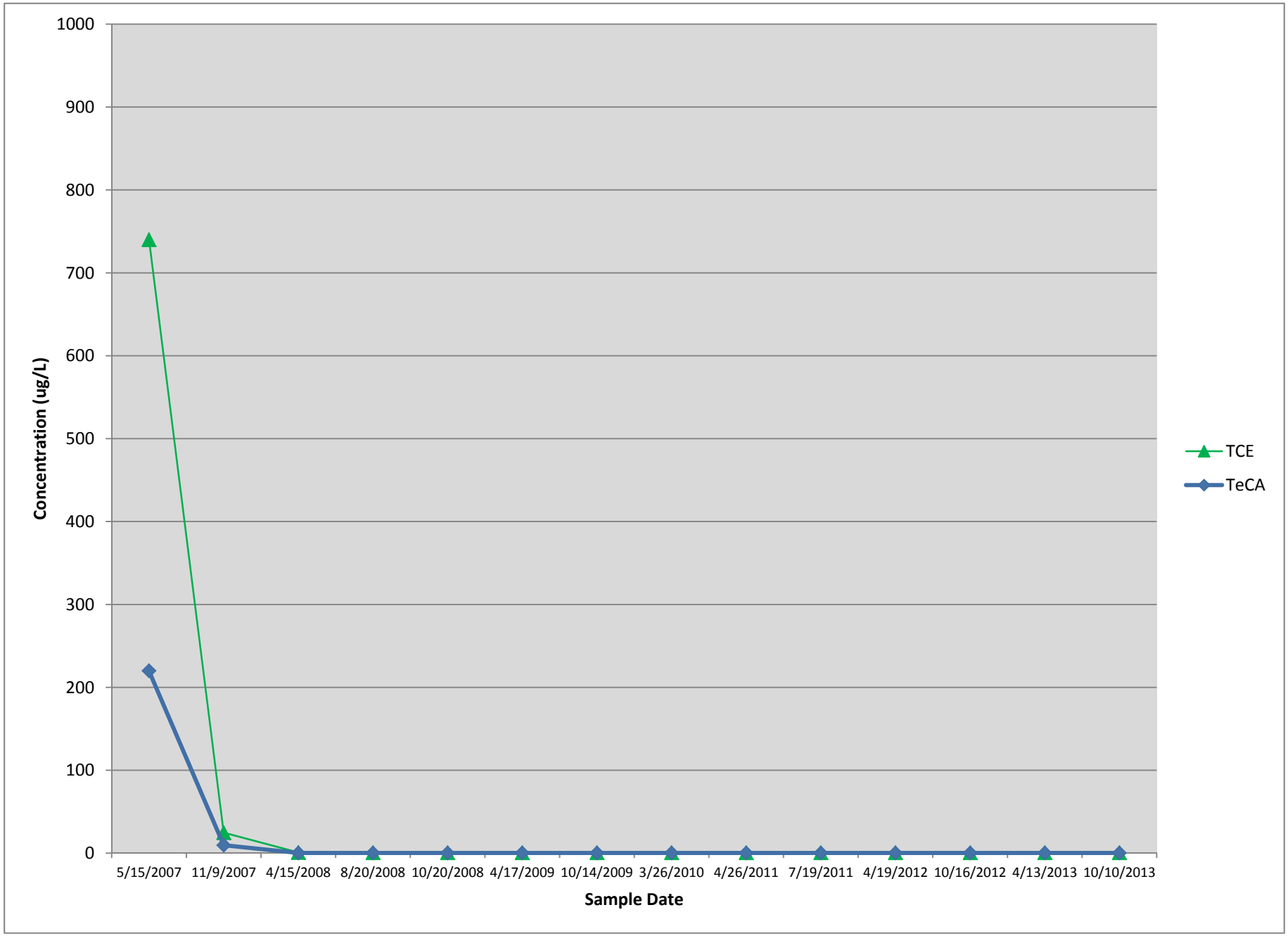
MW-224


250
225
200
175
150
125
100
75
50
25
0
Concentration (ug/L)
5/16/2007
11/10/2007
4/16/2008
8/18/2008
10/20/2008
4/15/2009
10/14/2009
3/26/2010
4/26/2011
7/19/2011
4/20/2012
10/16/2012
4/13/2013
10/10/2013
Sample Date
TCE
TeCA

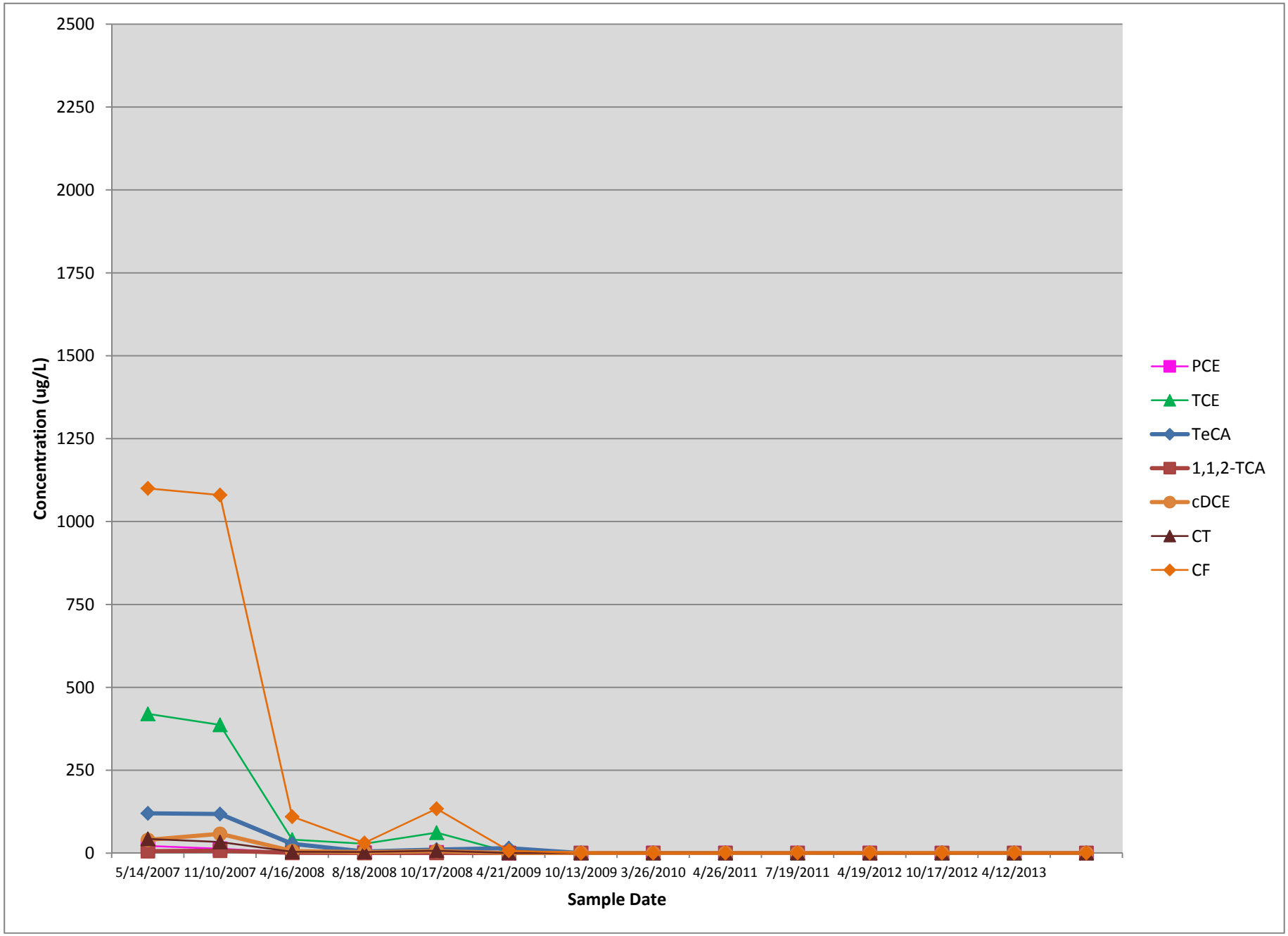
MW-225


500
450
400
350
300
250
200
150
100
50
0
Concentration (ug/L)
5/15/2007
11/9/2007
4/16/2008
8/20/2008
10/17/2008
4/20/2009
10/13/2009
3/26/2010
4/26/2011
7/19/2011
4/20/2012
10/16/2012
5/9/2013
10/10/2013
Sample Date
TCE
TeCA
1,1,2-TCA

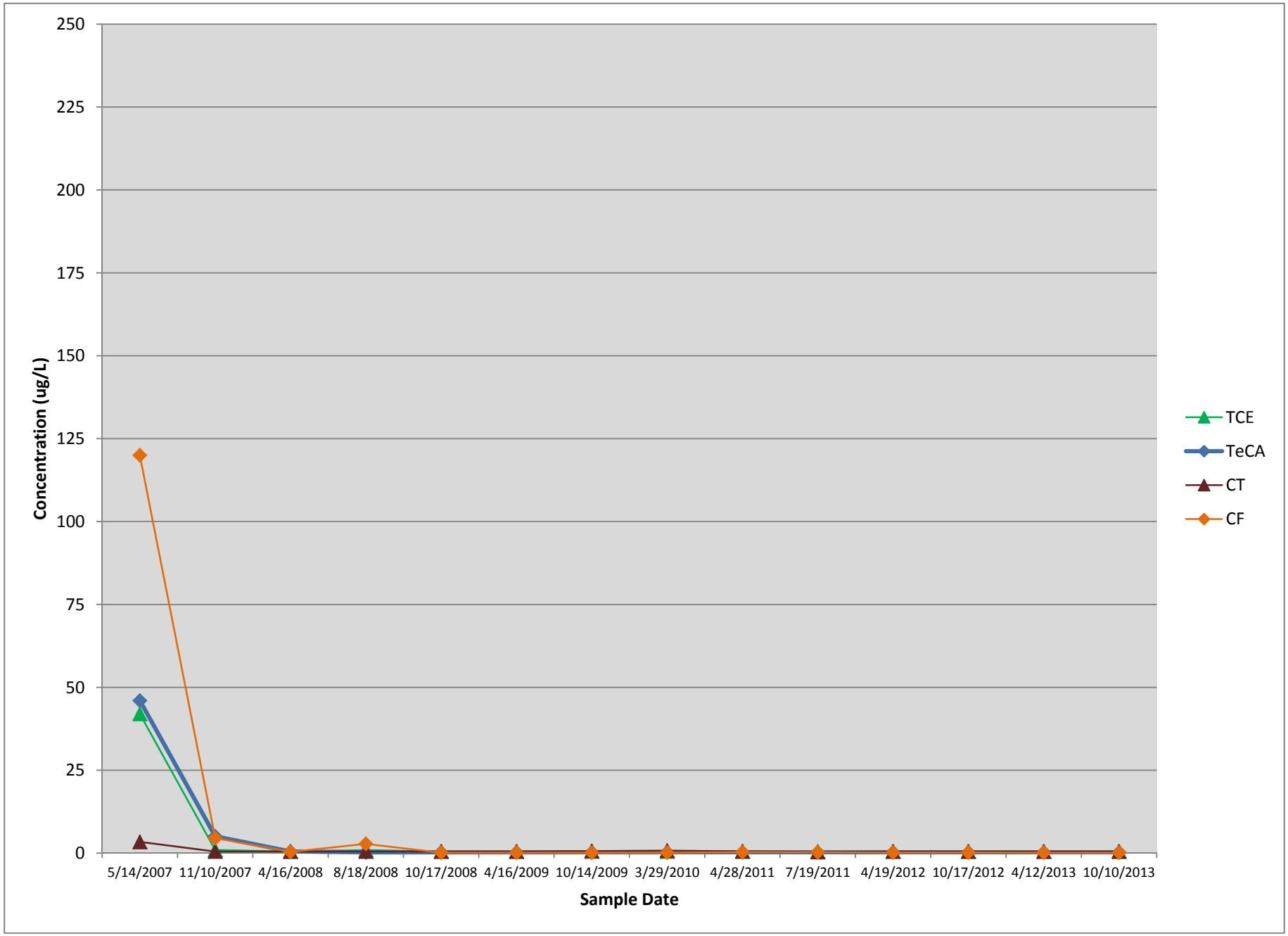
MW-226


1000
900
800
700
600
500
400
300
200
100
0
Concentration (ug/L)
5/15/2007
11/9/2007
4/15/2008
8/20/2008
10/20/2008
4/17/2009
10/14/2009
3/26/2010
4/26/2011
7/19/2011
4/19/2012
10/16/2012
4/13/2013
10/10/2013
Sample Date
TCE
TeCA

MW-227


2500
2250
2000
1750
1500
1250
1000
750
500
250
0
Concentration (ug/L)
5/14/2007
11/10/2007
4/16/2008
8/18/2008
10/17/2008
4/21/2009
10/13/2009
3/26/2010
4/26/2011
7/19/2011
4/19/2012
10/17/2012
4/12/2013
Sample Date
PCE
TCE
TeCA
1,1,2-TCA
cDCE
CT
CF

MW-228


250
225
200
175
150
125
100
75
50
25
0
Concentration (ug/L)
5/14/2007
11/10/2007
4/16/2008
8/18/2008
10/17/2008
4/16/2009
10/14/2009
3/29/2010
4/28/2011
7/19/2011
4/19/2012
10/17/2012
4/12/2013
10/10/2013
Sample Date
TCE
TeCA
CT
CF