2010 KEY WELL SAMPLING REPORT
FORMER YORK NAVAL ORDNANCE PLANT

SAIC Project 4501020172/8000/100

Prepared for:

Harley-Davidson Motor Company Operations, Inc.
York, PA

December 2010

Science Applications International Corporation
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Respectfully submitted,

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LIST OF ACRONYMS

°C	-	degrees Celsius
µg/L	-	micrograms per liter
µmhos/cm	-	micromhos per centimeter
cis-1,2-DCE	-	cis-1,2-dichloroethene
1,1-DCA	-	1,1-dichloroethane
1,1-DCE	-	1,1-dichloroethene
EDDs	-	electronic data deliverables
EPBA	-	Eastern Property Boundary Area
EPA	-	United States Environmental Protection Agency
fbg	-	feet below grade
fYNOP	-	former York Naval Ordnance Plant
Harley-Davidson	-	Harley-Davidson Motor Company Operations, Inc.
MCL	-	maximum contaminant level
mg/L	-	milligrams per liter
MSCs	-	medium-specific concentrations
MS/MSD	-	matrix spike/matrix spike duplicate
MTBE	-	methyl tertiary-butyl ether
NETT	-	North End of the Test Track
NPBA	-	Northeast Property Boundary Area
NTUs	-	nephelometric turbidity units
O&M	-	operations and maintenance
PADEP	-	Pennsylvania Department of Environmental Protection
PCE	-	tetrachloroethene
QAPP	-	Quality Assurance Project Plan
QA/QC	-	quality assurance/quality control
QC	-	quality control
RI	-	remedial investigation
RLs	-	reporting limits
RPD	-	relative percent difference
SAIC	-	Science Applications International Corporation
SPBA	-	Southern Property Boundary Area
TCA	-	1,1,1-trichloroethane
TCE	-	trichloroethene
TCL	-	target compound list
UST	-	underground storage tank
VOC	-	volatile organic compound
WPL	-	West Parking Lot
WWPL	-	West of the West Parking Lot

1.0 INTRODUCTION

Science Applications International Corporation (SAIC) has prepared this report to summarize the results of the 2010 key well sampling event, including collection (pumping) and off-site wells, for the former York Naval Ordnance Plant (fYNOP). The fYNOP facility is located at the Harley-Davidson Motor Company Operations, Inc. (Harley-Davidson) York facility in Springettsbury Township, York, Pennsylvania, as shown on Figure 1. This report provides the most recent sampling results (June-July 2010) and a limited analysis of historic results and observed trends. A more complete analysis considering the entire historical record in the data base, along with the recent sampling results, will be completed during the future Groundwater Extraction and Treatment System Annual Operation Report and the Supplemental Site-Wide Groundwater Remedial Investigation (RI) Report.

A key well sampling program was initiated in February 1992 in which a subset of wells was selected as key wells to be sampled for the following purposes:

- To establish a data base of groundwater quality.
- To monitor changes in groundwater chemistry across the site.

Each year, available information is reviewed and, as determined necessary, the key well sampling plan is amended to meet the goals of the program. The number of locations sampled during the 2010 key well event was based on reviewing data for the 112 locations that were sampled during the 2009 event. Table 1 provides a list of the 80 locations that were sampled in 2010 including information such as the general location of the monitoring location, portion of the aquifer monitored, rationale for inclusion, and year when the location was added. Figure 2 identifies the location of each well at the site, as well as its classification as a groundwater extraction well (green circle with a cross and two quadrants filled in), designated key well/monitoring location (red circle with a red dot inside), or other groundwater monitoring well/location (black circle with a cross and all quadrants empty), as well as the groundwater treatment system features.

In addition to the collection of samples from the designated "key well" locations, 13 samples were collected from the collection wells as a requirement of the operations and maintenance (O&M) contract. The results from these samples are being included with this report; however, analysis of these data is beyond the scope of the Key Well Report. Analysis of the groundwater collection system sampling results will be completed and provided in the 2010 Groundwater Extraction and Treatment System Annual Operation Report and the Supplemental Site-Wide Groundwater Remedial Investigation (RI) Report.

2.0 GROUNDWATER ELEVATION DATA

The depth to groundwater was measured at all available groundwater monitoring locations on June 14, 2010, which included 158 monitoring locations consisting of on-site monitoring wells, groundwater collection wells, piezometers, and off-site locations during this event. Using the depth-to-groundwater measurements and previously established elevation reference points at the monitoring locations, groundwater elevations were calculated. The depth-to-groundwater data and the calculated groundwater surface elevation data for the 2010 key well event are provided on Table 2. During the groundwater measurement event, surface water stage measurements (included on Table 2) were made at two surface water stage monitoring locations established on the Codorus Creek, designated as Codorus 1 and Codorus 2, and corresponding surface water elevations were calculated.

The calculated groundwater elevations from June 14, 2010 (Table 2) were used to develop Figure 3, which presents the interpreted groundwater table surface elevation contours. Only groundwater elevations from "shallow" wells were used in preparing the interpreted groundwater table elevation contours. All of the calculated groundwater elevations are included on Figure 3, but the locations and elevations that were not used to prepare the interpreted groundwater table contours have been slightly shaded. The surface water monitoring locations and elevations are illustrated on Figure 3 for comparison purposes.

The configuration of the groundwater table at the site is generally consistent with previous monitoring, which has indicated a horizontal gradient toward the west-southwest. The groundwater table gradient determined from the June 2010 data is relatively steep beneath the eastern portion of the site, which is underlain by sandstone bedrock. The groundwater table gradient is relatively flat beneath the western portion of the site, which is underlain by limestone bedrock.

Figure 3 displays general areas of groundwater depression as depicted by closed contours around active collection (pumping) wells at the site. At the down-gradient side of the closed contours, a groundwater divide is created by active pumping of collection wells and lowering of the

groundwater table. Groundwater on the inside of the contours (i.e., toward the collection well) will flow toward the collection well, while water on the outside of the contours will not be directed toward the collection well and will continue to flow in the direction of the natural gradient. The most noteworthy example of a closed contour is the 340 contour line representing the groundwater level beneath the majority of the West Parking Lot (WPL). This condition is created by groundwater extraction that is occurring at the four WPL collection wells (CW-9, CW-13, CW-15A, and CW-17).

The differences in groundwater elevations between multilevel piezometers or well pairs (26 locations) within 9 areas across the site have been evaluated, and the results of this evaluation are provided on Table 3. In general, upward vertical gradients are present at the following locations:

- Beneath the Northeast Property Boundary Area (NPBA) (well pairs MW-16 and MW-20). At times in the past, MW-16 has displayed the presence of artesian conditions (i.e., flowing at the surface) in the deep piezometer.

- Along the approximate spring line, near the sandstone contact (well pair MW-86).

- West of the WPL area (mild upward gradient at well pairs MW-98 and MW-100 along the Codorus Levee).

- In the off-site wells east of the Eastern Property Boundary (well pairs MW-108 and MW-109).

- At one location (well pair MW-65) at the landfill area.

- At one location (well pair MW-102) along the north end of the former test track.

Downward vertical gradients are evident from the data collected for the piezometers located in the following areas:

- The southern WPL and the southeast corner of the south property boundary area (SPBA).

- Data from one location in the north test track area (MW-103, also near the sandstone contact) indicates a downward gradient. The magnitude of this downward gradient is approximately double the upward gradient noted for nearby well pair MW-86.

Overall, groundwater elevation data for the site are consistent with a general flow direction from northeast to southwest. Groundwater flow beneath the majority of the site is ultimately being directed toward the WPL as a result of four active groundwater extraction wells.

3.0 KEY WELL SAMPLING PROCESS

The key well sampling event was conducted between June 15 and July 9, 2010, subsequent to the site-wide groundwater level measurements. SAIC utilized the following sample collection methodology:

1. Prior to the initiation of well purging activities, the depth to water was measured to the nearest 0.01 foot with an electronic water-indicating probe.

2. Prior to sample collection, the wells were purged using a well yield match purge technique as described in the Field Sampling Plan for Supplemental Remedial Investigations (SAIC, 2006) and summarized here. The purge rate was set at or below the well yield to minimize the drawdown of the water level in the well. During purging, water quality field parameters were measured and recorded every five minutes. Once the field parameters were observed to be stable for three consecutive readings, the sample was collected directly from the pump discharge tubing. If the well was a low-yield well, an attempt was made to purge at least one open interval (screen plus borehole volume) without exposing the entire filter pack or water-bearing zones to reach stabilized field parameters and then collect a sample. If the well cavitated before the desired volume was purged, the well was allowed to recharge, and the sample was collected as soon as sufficient volume was present in the well. All purge water was containerized and processed through the on-site groundwater treatment system via the Softail lift station.

   The following water quality field parameter criteria were used to determine stable conditions and acceptability for sample collection:

   - Temperature (±0.5 degrees Celsius [°C])
   - pH (±0.1 standard units)
   - Conductivity (±25 micromhos/centimeter [µmhos/cm])
   - Dissolved oxygen (±0.2 milligrams/liter [mg/L])

- Turbidity (less than 50 nephelometric turbidity units [NTUs])

Decontamination of the pump between sampling locations was performed using a water and Alconox® solution wash with a deionized water rinse to prevent cross-contamination between wells and samples. Clean disposable gloves were used when handling the pump, sampling equipment, and during sample collection.

3. Groundwater samples were collected as soon as practical after purging was completed. The groundwater samples were collected from each monitoring well through new disposable polyethylene tubing used during purging or a disposable polyethylene bailer (if the well cavitated). Samples for dissolved metals were field-filtered using a single-use, disposable, in-line 0.45-micron filter.

4. Identification labels were immediately affixed to the sample containers. The containers were immediately placed in coolers and chilled to approximately 4 degrees Celsius (°C) for transport to TestAmerica laboratory (Pittsburgh, PA) under chain-of-custody protocol.

5. During the purging process, SAIC collected field water quality parameters every five minutes to determine when stable conditions had been achieved. SAIC documented the temperature, pH, conductivity, dissolved oxygen, and turbidity during the purge of each well sampled using a Horiba U-22 water quality instrument.

Groundwater samples were analyzed for specific parameters based on historic sampling results and site-specific knowledge of the individual investigation areas. Target compound list (TCL) volatile organic compounds (VOCs) analysis by United States Environmental Protection Agency (EPA) Method 8260B was completed on 93 groundwater samples. Total and dissolved metals were analyzed using EPA Method ICP MS SW846 6020 for arsenic (5 wells), beryllium (3 wells), chromium (8 wells), lead (13 wells), nickel (3 wells), and antimony (3 wells). Additionally, groundwater from two wells was analyzed for mercury using Method ICP MS SW846 6020/SW846 7470A. Hexavalent chromium was

analyzed at eight wells using Method SW846 7196A. Two wells were analyzed for total cyanide (Method MCAWW 335.4) and free cyanide (Method SM18 4500-CN-1). Groundwater from nine wells was analyzed for 1,4-dioxane using Method SW846 8270C SIM to achieve a lower detection limit at locations where either 1,4-dioxane or significant concentrations of 1,1,1-trichloroethane (TCA) have been detected previously.

As part of the 2010 key well sampling event, a suite of typical cations including calcium, magnesium, manganese, sodium, potassium, and iron was analyzed in 91 of the 93 samples (excluding S-6 and S-7). The same 91 sampling locations that were analyzed for the suite of cations were also analyzed for total dissolved solids concentrations. The results of these analyses are being included with this report (in Table 5). However, the analysis of these data is beyond the scope of the Key Well Report and will be completed and provided in the Supplemental Site-Wide Groundwater RI Report.

All of the samples were submitted to TestAmerica's Pittsburgh location for analysis. The individual analyses completed at each monitoring location are provided on Table 4.

4.0 KEY WELL SAMPLING RESULTS

A summary of the analytical results from the June 2010 key well sampling is presented on Table 5. Graduated symbol posting maps for the total VOCs, trichloroethene (TCE), tetrachloroethene (PCE), dissolved chromium (Cr+3 and Cr+6), and hexavalent chromium are presented as Figures 4 through 8. Analytical data received from TestAmerica are handled in accordance with SAIC's Quality Assurance Project Plan (QAPP, July 2009). Ten percent of the laboratory data packages were evaluated for completeness, technical holding times, blanks, duplicates, laboratory control samples, matrix spike samples, surrogates, and calibration to standards. Electronic data deliverables (EDDs) from the laboratory are entered into the fYNOP data base, which is stored in the ARC IMS system and checked for completeness against the chain-of-custody record. Verified electronic analytical data with qualifiers are entered into the fYNOP data base. Electronic analytical data are stored on an SAIC server, as well as at the laboratory. Laboratory records are retained at TestAmerica for a period of five years after the report is issued.

4.1 NPBA Groundwater Chemistry

On-site monitoring wells (MW-10, MW-16S, MW-16D, MW-18S, and MW-18D), off-site locations (RW-2, RW-4 Folk, S-6 Tate, and S-7 Herman), and collection wells (CW-1 through CW-7, CW-1A, and CW-7A) were sampled at the NPBA in the 2010 key well sampling event. The most prevalent VOC found in groundwater beneath the NPBA was TCE, with varying amounts of cis-1,2-dichloroethene (cis-1,2-DCE) and some PCE also present. This is consistent with historical data trends for this area. The results of laboratory analyses for these monitoring wells are summarized on Table 5. Historical concentrations of TCE in five NPBA key wells (plus off-site well RW-2) are shown on Figure 9. TCE concentrations in the off-site sampling locations were all undetected or below the Pennsylvania Department of Environmental Protection (PADEP) Act 2 medium-specific concentration (MSC) for residential used aquifers (5 μg/L). Historical TCE data for the NPBA generally exhibit a decreasing concentration trend.

Highlights of any significant changes to historical TCE and PCE concentrations in NPBA groundwater are as follows:

- MW-18S/D – This well cluster (MW-18D and MW-18S) was installed in 1988, and the initial samples collected in April 1988 had a detection of 50 μg/L of TCE in MW-18D and was non-detect for TCE in MW-18S. These two wells were not sampled again until the Supplemental Site-Wide RI sampling rounds in 2008. VOC concentrations in these two wells had increased significantly since the initial sampling in 1988. However, the 2010 sampling results for wells MW-18S/D show TCE levels back to historical levels (21 and 24 μg/L, respectively).

- MW-16S – There was an observed spike in PCE in the groundwater sample at monitoring well MW-16S (with continued non-detects in the deep well, MW-16D). These wells (MW-16S &-16D) were installed in 1988, and the initial samples collected had a detection of approximately 300 μg/L of PCE (MW-16S), with none detected in the deep piezometer (MW-16D). These two wells were not sampled again until the Supplemental Site-Wide RI sampling rounds in 2008. Two rounds of supplemental RI sampling results in 2008, showed PCE in the shallow well samples increasing from 310 to 620 μg/L. The June 2010 PCE detection at MW-16S has increased dramatically to 2,200 μg/L.

  .

Total lead was detected at a concentration of 9 μg/L at the RW-4 Folk off-site sampling location, which is above the PADEP Act 2 MSC for residential used aquifers (5 μg/L). Lead was detected during the 2008 Supplemental RI round 1 sampling at 28.9 μg/L; at 23 μg/L during round 2; and at 6.1 μg/L during the 2009 sampling. The presence of lead at this sampling location is likely due to contact with residential piping, as the sample was collected from a spigot connected to the well.

4.2 Trichloroethane (TCA) Tank Area Groundwater Chemistry

Four monitoring wells (MW-34S, MW-34D, MW-35S, and MW-55) were sampled at the TCA Tank Area during the 2010 key well sampling event. The TCA Tank Area is the site of a historic TCA spill which occurred prior to the initial sampling performed in 1989. The TCA release resulted in elevated concentrations of TCA (up to 100,000 µg/L at MW-32D in 1990) in the groundwater of this area. Groundwater extraction and treatment initiated at CW-8 in 1991 resulted in a rapid decrease in TCA concentrations in wells near the release, with adjacent monitoring wells exhibiting slow declines.

As groundwater extraction has progressed in the TCA Tank Area, the dominant VOC present in the area has generally shifted from TCA to TCE. In 2010, TCE concentrations ranged from 26 µg/L (at MW-34S) to 740 µg/L (at MW-55). Historical concentrations, along with the most recent TCE results from four TCA Tank Area wells, are displayed graphically on Figure 10. The TCE concentrations in the area wells have generally remained steady.

The one exception to TCE being the dominant VOC in this area is at MW-55. Concentrations of 1,1-dichloroethene (1,1-DCE) represent approximately 73 percent of the total concentration of VOCs in groundwater from MW-55. In addition to 1,1-DCE, this location also contains 1,1-dichloroethane (1,1-DCA) and PCE at levels above the PADEP Act 2 MSC for a residential used aquifer.

Groundwater from well MW-55 was analyzed for 1,4-dioxane by Method SW846 8270C SIM to achieve a lower detection limit. A concentration of 7.2 µg/L was detected, which exceeds the PADEP Act 2 MSC for a residential used aquifer (5.6 µg/L).

Total lead was analyzed at location MW-55 near the TCA area in 2010 and was detected at a concentration above the MSC for a residential used aquifer (5 µg/L). However, dissolved lead was not detected above the laboratory reporting limit (RL) of 3 µg/L in the MW-55 sample.

Additionally, well MW-55 was analyzed for total and dissolved hexavalent chromium, with both parameters being reported as non-detect.

4.3 WPL Groundwater Chemistry

Twenty WPL key monitoring wells (MW-7, MW-8, MW-37S, MW-47, MW-50S, MW-50D, MW-51S, MW-51D, MW-74S, MW-74D, MW-75S, MW-93S, MW-93D, MW-95, MW-96S, MW96D, MW-106, MW-107, CW-12, and CW-20) and four collection wells (CW-9, CW-13, CW-15A, and CW-17) were sampled during this key well sampling event. The results of laboratory analyses are summarized on Table 5.

The dominant VOCs detected in the WPL monitoring wells are TCE (exceeded the PADEP Act 2 MSC for residential used aquifers in all WPL wells sampled except MW-93S) and PCE (exceeded the same standard in all WPL wells sampled except for MW-51D, MW-74S, MW-93S, and MW-95). Historically, PCE is more prevalent in the southwest corner of the WPL while TCE is more prevalent throughout all other areas in the WPL. Concentrations of the most prevalent VOC in this area (TCE) are graphed for the WPL key wells on Figures 11A, 11B, and 12. Additionally, concentrations of PCE in the southern WPL area monitoring wells are graphed on Figure 13.

Most of the WPL monitoring wells exhibit a relatively flat or gradually decreasing TCE concentration trend. The exceptions to this trend are MW-50D and MW-51D, where the TCE concentration peaked during the 2004 sampling, and then have declined; MW-96S and MW-96D, where the TCE concentrations have appeared to increase during the last two years; and at MW-75S, where concentrations had decreased to their lowest levels before beginning a gradually increasing concentration trend since 2004.

The following noteworthy observations for the WPL sampling locations were identified with the June/July 2010 sampling event chemistry data:

- Concentrations of TCE and PCE detected at MW-75S represent the highest detections at the site. During the initial sampling events at this location (September 1999 – June 2002), maximum TCE and PCE concentrations at MW-75S were 15,100 and 39,000 µg/L (refer to Figures 12 and 13). The 2010 concentrations of TCE and PCE at MW-75S were nearly half of the historical maximums at 7,200 and 22,000 µg/L, respectively.

- The three highest site-wide detections (above laboratory RLs) for dissolved chromium were reported in northern WPL wells (MW-7, MW-47, and MW-51S) as illustrated on Figure 7. Dissolved chromium was detected at four other wells across the site. Concentrations of dissolved chromium ranged from not detect (MW-94) to 4,040 µg/L (MW-47). Two wells (MW-51S and MW-47) within the WPL had dissolved chromium detections (199 µg/L and 4,040 µg/L, respectively) that were above the MSC for used residential aquifers (100 µg/L).

- The only detections of dissolved hexavalent chromium at the site were reported for the same northern WPL wells (MW-7, MW-47, and MW-51S) as illustrated on Figure 8. The hexavalent chromium concentrations ranged between 64 µg/L (MW-7) and 4,500 µg/L (MW-47).

4.4 SPBA Groundwater Chemistry

Six on-site monitoring wells (MW-40S, MW-40D, MW-43S, MW-43D, MW-64S, and MW-64D) and four off-site wells (MW-108S, MW-109S, MW-110, and RW-5) were sampled during the 2010 key well sampling event in the area of the SPBA. The dominant VOC detected in groundwater beneath this area is TCE. This is consistent with historical sampling data collected from this area. The analytical results are provided on Table 5.

Concentrations of the most prevalent VOC in this area (TCE) are graphed and included as Figure 14. The highest on-site concentrations of TCE in this area continue to be observed at MW-64D (located in the southeast corner of the property). A review of concentration trends

since 1990 indicates that TCE concentrations are decreasing at locations MW-43D, MW-64S, and MW-64D where concentration of TCE historically have been the highest. Sampling data for wells MW-40D, MW-40S, and MW-43S indicate consistently low (or non-detectable) levels of TCE.

Off-site monitoring well RW-5 did not contain VOCs at levels above laboratory RLs. RW-5 had previously been a water supply well for an off-site facility, and historically, from August 1987 to July 1999, the well was sampled on a quarterly basis. During that time, TCE concentrations had increased to a maximum concentration of 57 μg/L in June 1995. The facility served by this well (it was used exclusively for washing cars) was connected to public water in January 1999, and quarterly sampling of this well was discontinued. Annual sampling of RW-5 was resumed in June 2006. The five samples collected since sampling resumed at this location have not indicated the presence of VOCs above laboratory RLs.

Off-site monitoring wells MW-108S and MW-109S did not contain detectable levels of TCE. MW-110 was installed in November 2007 and has been sampled four times with relatively consistent, fluctuating TCE results (from 66 to 99 μg/L). During the 2010 key well sampling event, groundwater from well MW-109S was noted to contain detected concentrations of benzene, ethylbenzene, and methyl tertiary-butyl ether (MTBE), which are constituents of gasoline. These detections are most likely associated with the documented release from a nearby convenience store that dispenses gasoline located on the corner of Route 30 and North Sherman Street and not related to Harley-Davidson.

Three wells near the SPBA (MW-40S, MW-43S, and MW-108S) were sampled for lead during 2010. The total lead result for the sample from MW-108S was 164 μg/L, which exceeds the Act 2 MSC for residential used aquifers. The dissolved lead result for the sample from MW-108S is less than 3 μg/L, which is below the regulatory standard. The metals and VOC sampling results presented for the SPBA are consistent with those from previous sampling events.

4.5 Eastern Property Boundary Area/Landfill Groundwater Chemistry

Three key monitoring wells (MW-2, MW-17, and MW-92) were sampled to monitor groundwater quality near Harley-Davidson's Eastern Property Boundary Area (EPBA). PCE is the dominant VOC detected in groundwater from wells MW-2 and MW-92. TCE is the dominant VOC detected in groundwater sampled from MW-17 (monitors downgradient of the landfill). The analytical results are provided on Table 5. Historical concentrations of TCE and PCE are graphed and included as Figures 15 and 16, respectively. Data trends observed for the annual key well sampling locations at the EPBA generally indicate decreasing concentration trends.

Groundwater from well MW-2 is also sampled and analyzed for total and available cyanide, due to a historical release and cleanup of cyanide waste in this vicinity of the property (approximately 75 feet east of MW-2). Groundwater from MW-2 contained detectable concentrations of total and available cyanide (which is free cyanide, plus cyanide complexes that easily dissociate). The reported concentrations of cyanide in the MW-2 sample were 660 μg/L (total cyanide) and 45 μg/L (free cyanide). The MW-2 total cyanide is above the MSC standard for residential used aquifers (200 μg/L). Free cyanide is below the regulatory threshold value. The historical trend of total cyanide has been decreasing, since a high of approximately 3,900 μg/L, detected in 2001. Free cyanide has shown a similar decreasing trend.

4.6 West of the West Parking Lot Groundwater Chemistry Data

Ten monitoring wells were sampled west of the WPL (WWPL) (MW-98D, MW-98I, MW-98S, MW-99D, MW-99S, MW-100D, MW-100I, MW-100S, MW-101D, and MW-101S). All of these wells were installed off-site in 2008 along the eastern side of the Codorus Creek Levee.

PCE and TCE are the dominant VOCs detected in groundwater in the WWPL wells. All wells were above PADEP MSCs and the maximum contaminant level (MCL) for TCE except

MW-98D. Five of the ten wells exceeded the PADEP Act 2 MSC for PCE. Wells with samples not exceeding the regulatory limit for PCE are MW-98S, MW-98I, MW-98D, MW-101D (equaled the value of 5 μg/L), and MW-101S. Detected PCE concentrations ranged from 2.6 μg/L (MW-98S) to 130 μg/L (MW-100D). Detected TCE concentrations ranged from 11 μg/L (MW-98S) to 210 μg/L (MW-100D). The only other noteworthy VOC detection for the WWPL wells was the cis-1,2-DCE concentration (83 μg/L) detected at MW-100D. The reported concentration exceeds the MSC for used residential aquifers (70 μg/L).

4.7 North End of the Test Track (NETT) Groundwater Chemistry Data

Five monitoring wells were sampled in the NETT (MW-102D, MW-102S, MW-103D, MW-103S, and MW-104) and two spring samples (sample identifications: Spring at Bldg 14 S1 and Spring at Bldg 14 S2) from the area of former Building 14 along the eastern side of the NETT. The wells were installed in 2007 and 2008 during the Supplemental Site-Wide RI.

PCE and TCE were detected above the PADEP Act 2 MSCs in all of the monitoring wells sampled in the NETT. PCE values ranged from 5.2 μg/L (MW-104) to 27 μg/L (MW-103S). TCE values ranged from 38 μg/L (MW-102S) to 210 μg/L (MW-103S). The only other VOC detected in the NETT that exceeded the PADEP MSCs was 1,1-DCE (34 μg/L in MW-102S).

The TCE concentration in sample S2 (37 μg/L) was above the PADEP Act 2 MSC. The S1 and S2 samples were both analyzed for total and dissolved antimony and lead. All of the total and dissolved antimony results were below the PADEP Act 2 MSC. Total and dissolved lead concentrations in sample S2 (4,540 and 8.3 μg/L, respectively) exceeded the PADEP Act 2 MSC. All of the other detections were below the regulatory standards.

4.8 Additional Site-Wide Groundwater Chemistry Data

Eighteen additional monitoring wells not summarized above were sampled as part of the 2010 key well sampling round to monitor groundwater quality at or near the Harley-Davidson facility.

One well (MW-82) is located along the property line in the north-central portion of the facility while three wells (Cole D, Cole F, and MW-4 Cole) are located on a neighboring property south of the Harley-Davidson facility. The remaining 14 wells (MW-77, MW-80, MW-81S, MW-81D, MW-87, MW-88, MW-94, MW-111, MW-112, MW-113, MW-114, MW-115, MW-116, and MW-117) monitor groundwater beneath the central portion of the facility. Noteworthy items from the sampling of these wells are summarized below:

- Well MW-82 monitors deep groundwater quality along the north-central property line just north of the contractors' parking area. TCE was not detected above laboratory RLs from 2004 to 2007; however, since this time, TCE has been detected at three times at concentrations above the Act 2 value of 5 μg/L. During the 2010 sampling event, TCE was detected at 26 μg/L. All of the other detections were below the regulatory standards.

- Groundwater from two of the three wells on the former Cole Steel property (excluding MW-4 Cole) contained TCE and PCE at concentrations above regulatory standards. The TCE concentrations in these off-site wells ranged from 0.96J (MW-4 Cole) to 33 μg/L (Cole F). PCE concentrations detected in these same wells ranged from 0.74J (MW-4 Cole) to 36 μg/L (Cole D). All of the other detections were below the regulatory standards.

- Monitoring wells MW-80, MW-87, and MW-113 monitor groundwater quality in the overburden (MW-80), the shallow bedrock (MW-87), and deep bedrock (MW-113) near the southeast corner of Building 2. Concentrations of cis-1,2-DCE and TCE make up the majority of the VOC detections at this location. Concentrations of these parameters have remained relatively stable at MW-80 over the past three years. TCE concentrations have ranged from 170 to 180 μg/L while concentrations of cis-1,2-DCE have ranged between 97 and 99 μg/L. Since sampling of MW-87 began in 1999, TCE concentrations have generally decreased from 2,300 to 1,300 μg/L. During this same time period, concentrations of cis-1,2-DCE have fluctuated in the 740 to 1,100 μg/L range. In groundwater sampled from MW-113 in 2010, TCE was detected at a concentration of

1,700 μg/L, and cis-1,2-DCE was detected at 870 μg/L. Groundwater from all three wells was analyzed for 1,4-dioxane (used as a stabilizer in TCA) with detected concentrations at two locations (MW-87 and MW-113) reported at elevated levels (41 and 45 μg/L, respectively). These values are above the PADEP MSC for residential used aquifers (24 μg/L).

- Monitoring well MW-115 monitors groundwater quality in the deep bedrock (MW-115) at a location downgradient of the former Building 2 drum storage area. Monitoring well MW-115 was sampled for VOCs, lead, and arsenic. Vinyl chloride, 1,1-DCE, and cis-1,2-DCE were all detected above the MSCs for residential used aquifers.

- Monitoring wells MW-81S, MW-81D, and MW-114 monitor the shallow and deep groundwater quality near Building 92. Cis-1,2-DCE, TCE, and PCE were detected at elevated concentrations in the groundwater sampled from these wells. The sum of these three compounds in the shallow aquifer was 2,567 and 1,074 μg/L (in MW-81S and MW-81D, respectively), and the sum of these three dominant VOCs detected in the deep aquifer was 6,250 μg/L (MW-114). TCE has consistently been the dominant VOC detected at these locations.

- Well MW-88 monitors deep groundwater quality along the southern end of Building 2. TCE, PCE, and cis-1,2-DCE are the VOCs detected above regulatory values at this location in 2010. During sampling between 2000 and 2007, TCE concentrations had shown a generally decreasing trend (ranging from 230 to 42 μg/L). The sampling since 2008 has exhibited a generally increasing TCE concentration trend (from 44 to 290 μg/L). The cis-1,2-DCE concentrations range from 5.2 to most recently 100 μg/L (2010).

- Well MW-77 monitors the area of the former underground storage tank (UST) in the T-4 area located west of Building 45. Gasoline and diesel USTs were located in this area. Fuel-related VOCs were detected, with benzene and MTBE detected above their

respective PADEP Act 2 MSCs at concentrations of 2,000 μg/L and 700 μg/L, respectively.

- Well MW-94 monitors the overburden in the Building 2 East Corridor Former Cutting Oil Tank Area. The well was installed in 2008 during the Supplemental Site-Wide RI. During the 2010 key well sampling event, cis-1,2-DCE (150 μg/L) and TCE (82 μg/L) were detected at concentrations above their PADEP Act 2 MSCs. The sample from MW-94 was also analyzed for total and dissolved arsenic and lead. Both metals were detected in the total phase at concentrations above their regulatory limits. However, the dissolved concentrations for both arsenic and lead were below the respective regulatory limits.

- Monitoring wells MW-111 and MW-112 were installed to the east and southwest of the Softail Building (Building 3) in 2008 during the Supplemental Site-Wide RI. TCE was detected in both MW-111 and MW-112 at concentrations above the PADEP MSC. The reported TCE concentrations were 30 μg/L and 6.3 μg/L, respectively. All of the other detections were below regulatory standards.

- Monitoring wells MW-116 and MW-117 were installed in 2008 and 2009, on the west and east side of Building 41, respectively. Cis-1,2-DCE (470 μg/L), 1,1-DCE (16J), 1,4-Dioxane (8.7 μg/L), PCE (63 μg/L), TCE (160 μg/L), and vinyl chloride (22J μg/L) were detected above their respective MSCs for residential used aquifers in MW-116. TCE and PCE were detected above the MSC for residential used aquifers in MW-117 at concentrations of 32 and 5.6 μg/L, respectively.

4.9 Quality Assurance/Quality Control (QA/QC)

As part of the QA/QC process, EDDs from the laboratory are entered into the fYNOP data base, which is stored in the ARC IMS system and checked for completeness against the chain-of-custody record. Ten percent of the laboratory data packages are randomly selected for further

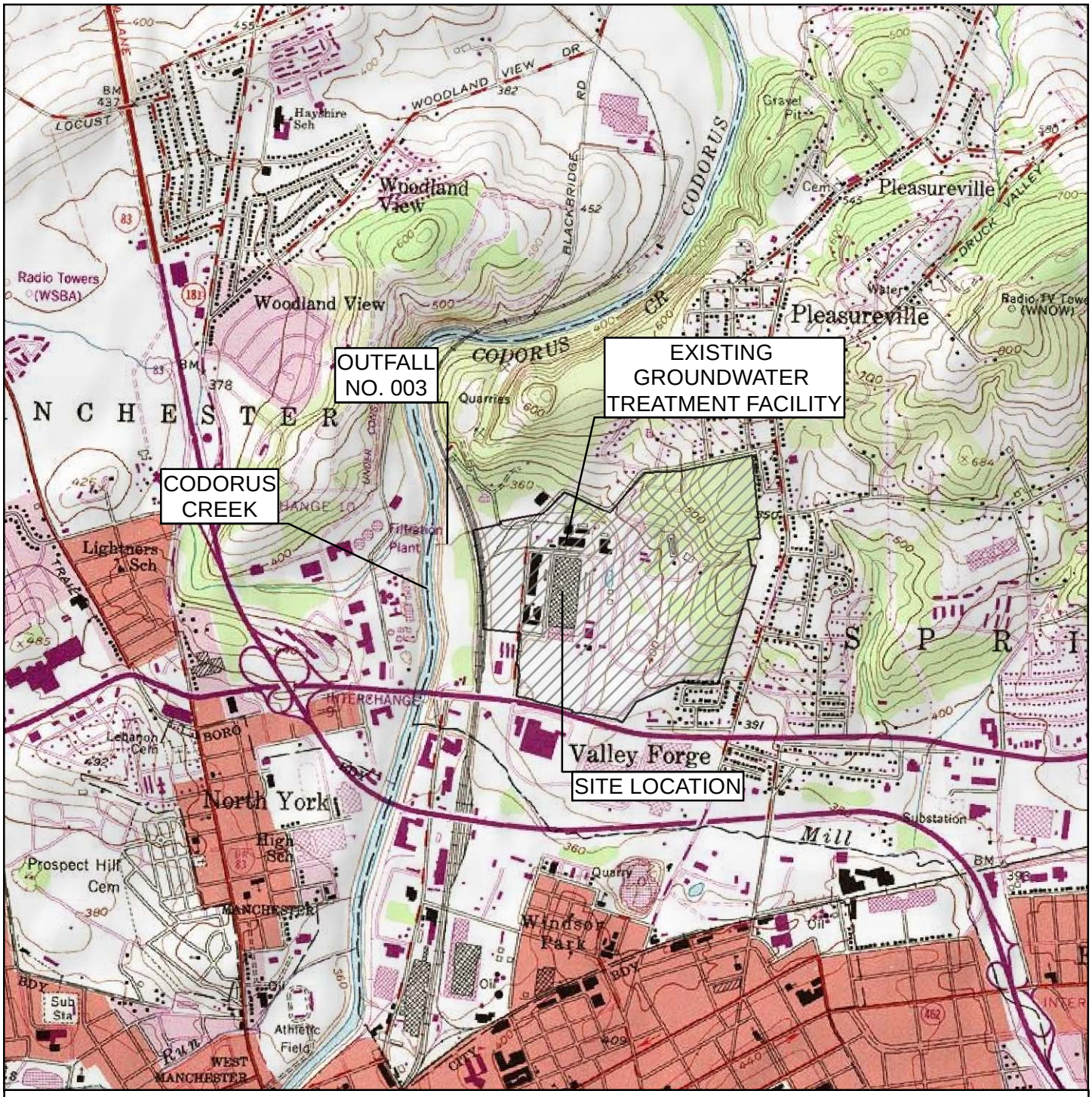
validation review at SAIC to determine if laboratory qualifiers are properly applied. The data validation includes evaluation for completeness, technical holding times, blanks, duplicates, laboratory control samples, matrix spike samples, surrogates, and calibration to standards. Verified electronic analytical data with qualifiers are then entered into the fYNOP data base and stored on the SAIC server. Laboratory records are also retained at TestAmerica for a period of five years after the report is issued.

For quality control (QC) purposes, daily trip blanks for VOCs, duplicate samples, and matrix spike/matrix spike duplicate (MS/MSD) samples were collected and submitted for analysis. Two of the 18 trip blank samples contained detectable concentrations of carbon disulfide above laboratory RLs (Trip Blanks 13 and 16). Trip blank 13 and its associated laboratory sample delivery group (from July 1, 2010) was included in the randomly selected 10 percent of the sampling event data packages. Detected concentrations of carbon disulfide in the July 1 samples were below the action limit. As a result, the July 1 carbon disulfide values were qualified as not detected (U) at the RL by SAIC. No other detections above laboratory RLs were noted for the trip blank samples; therefore, no additional qualifiers were assigned.

Sampling precision is evaluated using duplicate samples and calculating a relative percent difference (RPD) between each field duplicate sample and its original laboratory sample. As detailed on Table 3-2 in the site-specific QAPP (SAIC, July 2009), an acceptable RPD value for both metals and VOCs in water samples is less than 30 percent. A review of the metals RPD values for the sample from MW-106 reveals the average for all metals ranged from 0.7 to 2.0 percent; therefore, they are acceptable. The RPD values for CW-3 ranged from 0.7 to 6.7 percent so they are also acceptable.

The RPD values for total VOCs (collected at MW-106 and CW-3) ranged from 0 percent to 19.5 percent. When these values are compared to the QAPP-acceptable RPD of less than 30 percent, no values are above the guidance value. All VOC data should be considered usable, and no additional qualifiers are necessary.

FIGURES



NOTE: Map based on USGS 7.5 minute series York quadrangle.

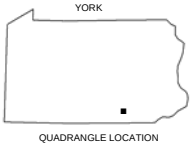
0 1,000 2,000 4,000 '

1 inch = 2,000 feet

N

W E

S



QUADRANGLE LOCATION

FORMER YORK NAVAL ORDNANCE PLANT

1425 EDEN ROAD, YORK, PA 17402

SITE LOCATION MAP

drawn AGM	checked	approved	figure no. 1
date 10/20/08	date	date	
job no. 01-1633-00-9806-309		file no. Fig1site-loc.mxd	

initials	date	revision

SAIC From Science to Solutions

NPBA CONTROL BUILDING

NPBA GROUNDWATER CONVEYANCE PIPE TO TREATMENT PLANT

NPBA GROUNDWATER COLLECTION PIPE TO CONTROL BUILDING

TREATMENT SYSTEM DISCHARGE LINE

WPL COLLECTION PIPES TO TREATMENT PLANT

LIFT STATION

SOFTAIL DEWATERING SYSTEM

CODORUS CREEK

Norfolk Southern

Maple Crest Blvd

Fading Way

Eden Rd

PARADISE RD

Ant View DR

City View RD

Ridgewood

Mt. Herman

Hamilton St.

N. SHERMAN ST

Topper St.

Canford St.

Canterbury Ln

EDEN RD

U.S. RT 30

ARSENAL ROAD

Sand Bank

North Property Boundary Area

South Property Boundary Area

Metal Chip Bin Area

North End Test Track

Bunker and Shell Ranges

East Landfill Area

Underground Storage Tank T-4

Building 2 Drum Storage Area

TCA Tank Area

West Parking Lot

Cyanide Spill Area

Lift Station Deep Foundation

Spring at Bldg 14 S2

Spring at Bldg 14 S1

S-6-Tate Spring

S-7-Herman Spring

RW-6

RW-5

RW-1

RW-2

RW-3

Folk (RW-4)

CW-1

CW-1A

CW-2

CW-3

CW-4

CW-5

CW-6

CW-7

CW-7A

CW-8

CW-9

CW-13

CW-14

CW-15

CW-15A

CW-16

CW-17

CW-18

CW-20

WPL-SS-7

WPL-SS-8

MW-1

MW-2

MW-3

MW-5

MW-6

MW-7

MW-8

MW-9

MW-10

MW-11

MW-12

MW-15

MW-16D

MW-16S

MW-17

MW-18D

MW-18S

MW-19

MW-20D

MW-20M

MW-20S

MW-22

MW-26

MW-27

MW-28

MW-29

MW-30

MW-32D

MW-32S

MW-33

MW-34D

MW-34S

MW-35D

MW-35S

MW-36D

MW-37D

MW-37S

MW-38D

MW-39D

MW-40D

MW-42M

MW-43D

MW-43S

MW-45

MW-46

MW-47

MW-49D

MW-49S

MW-50D

MW-50S

MW-51D

MW-51S

MW-54

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MW-64D

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MW-93D

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MW-95

MW-96D

MW-97

MW-98D

MW-98I

MW-98S

MW-99D

MW-99S

MW-100D

MW-100I

MW-100S

MW-101D

MW-101S

MW-102D

MW-103D

MW-103S

MW-104

MW-105

MW-106

MW-107

MW-108D

MW-108S

MW-109D

MW-109S

MW-110

MW-111

MW-112

MW-113

MW-114

MW-115

MW-116

MW-117

Legend

- Monitoring Well and Designation
- Extraction Well and Designation
- Key Well and Designation
- Spring
- Treatment System Features
- NPBA Area
- TCA Area
- WPL Area
- Codorus Creek
- Buildings
- Harley Davidson Property Boundary
- Roads and Curb Boundary
- Railroad

N

NOTE:
1. Base data (Buildings, Building Boundaries, Roads and Curbs) from NuTec Survey conducted in 2006.

0 225 450 900

SCALE IN FEET

Harley-Davidson Motor Company Operations, Inc.

1425 Eden Rd York, Pa 17402

GROUNDWATER TREATMENT SYSTEM LOCATION

drawn AGM	checked	approved	figure no. 2
date 10/7/2010	date	date	
job no. 4501020172/8000/100		file no. Site_Map_20090825.mxd	

initials	date	revision

SAIC From Science to Solutions

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Harley-Davidson Motor Co. Operations Inc.
Groundwater Withdrawal: June 14, 2010

Well ID	Daily Flow (Gallons)	Average Daily Pumping Rate (GPM)
CW-1	436	0.3
CW-1A	185	0.1
CW-2	663	0.5
CW-3	5,153	3.6
CW-4	2,610	1.8
CW-5	774	0.5
CW-6	0	0.0
CW-7	2,719	1.9
CW-7A	1,395	1.0
CW-8	144,200	100.1
CW-9	106,524	74.0
CW-13	107,446	74.6
CW-15A	4,920	3.4
CW-17	82,260	57.1
Lift Station	0	0.0

Legend

- Extraction Well and Designation
- Monitoring Well and Designation
- Key Well and Designation
- Stream Gauge and Designation
- Estimated Capture Zone
- Groundwater Contour (Feet)
- Inferred Groundwater Contour (Feet)
- Groundwater Contour Sink (Feet)
- Bedrock Contact
- Groundwater Interceptor Trenches
- Harley Davidson Property Boundary
- Buildings
- Cordorus Creek
- Roads and Curb Boundary

N

NOTE:
1. *Base data (Buildings, Building Boundaries, Roads and Curbs, and Contour Lines, from NuTec Survey conducted in 2006)*
2. *Gauging data that was used was from the 6/14/2010 gauging event.*
3. *The shallow groundwater elevation was used when contouring at well pairs (in black). Gray water levels are from deep wells and are presented for comparison only.*

0 300 600 1,200
SCALE IN FEET

FORMER YORK NAVAL ORDNANCE PLANT
1425 EDEN ROAD, YORK, PA 17402

GROUNDWATER SURFACE CONTOUR MAP JUNE 2010

drawn AGM	checked	approved	figure no. 3
date 8/25/2010	date	date	
job no. 4501020172/8000/100		file no. Fig_3_GWC.mxd	

initials	date	revision

SAIC From Science to Solutions

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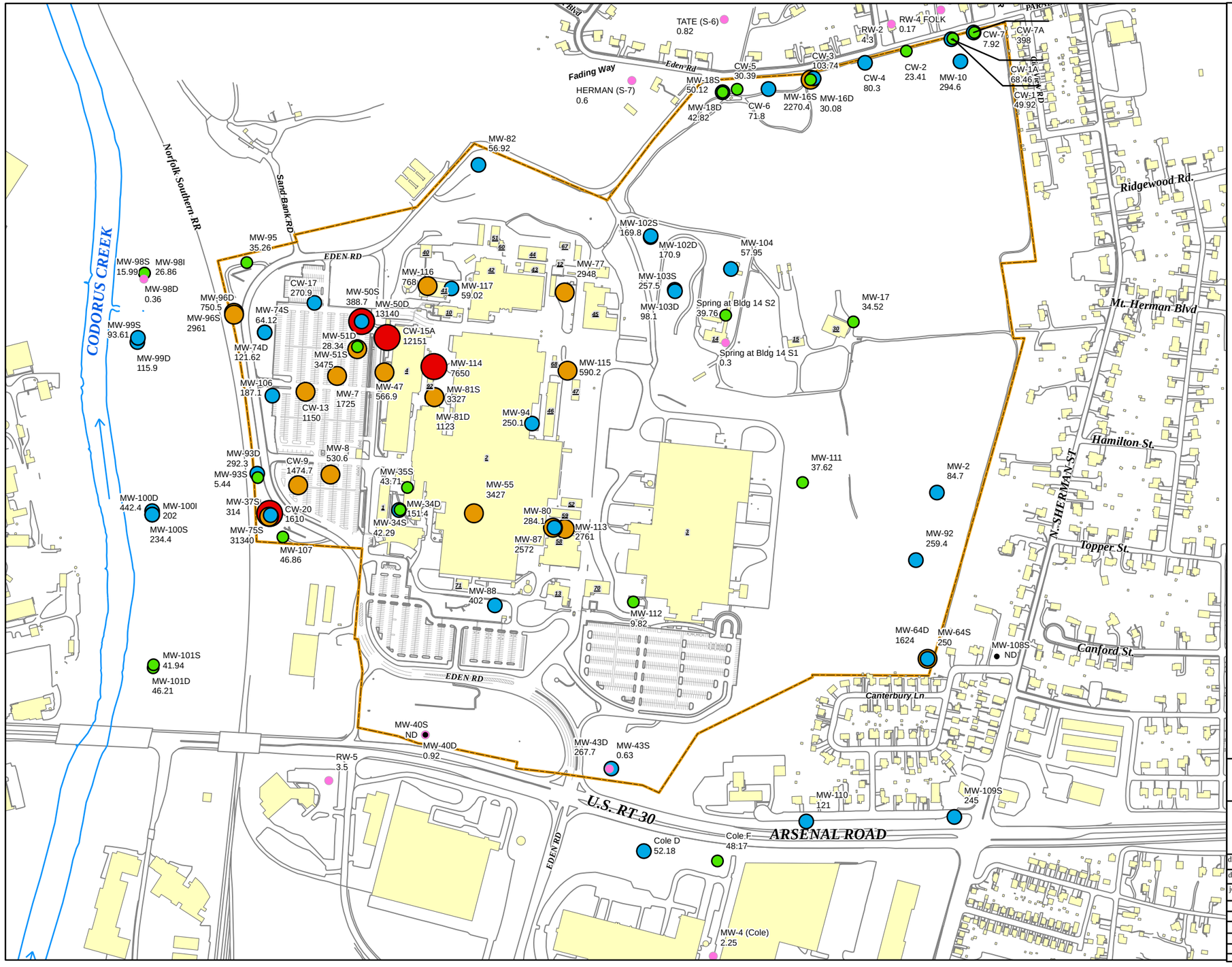

N
W E
S

Total VOCs in µg/l

- ND
- < 5.0
- 5.01 - 50.0
- 50.1 - 500.0
- 500.01 - 5000.
- >5000.01

Cordorus Creek
Buildings
Harley Davidson Property Boundary
Roads and Curb Boundary (2006)
Parking (2006)

NOTE:
1. ND = Not detected above laboratory reporting limit.

500 250 0 500 Feet

1 inch = 500 feet

FORMER YORK NAVAL ORDNANCE PLANT

1425 EDEN ROAD, YORK, PA 17402

Key Well Chemistry Map
Total VOCs - June/July 2010

drawn AGM	checked	approved	figure no. 4
date 10/7/2010	date	date	
job no. 4501020172/8000/100		file no. TTVOC_20101008.mxd	

initials	date	revision

SAIC From Science to Solutions

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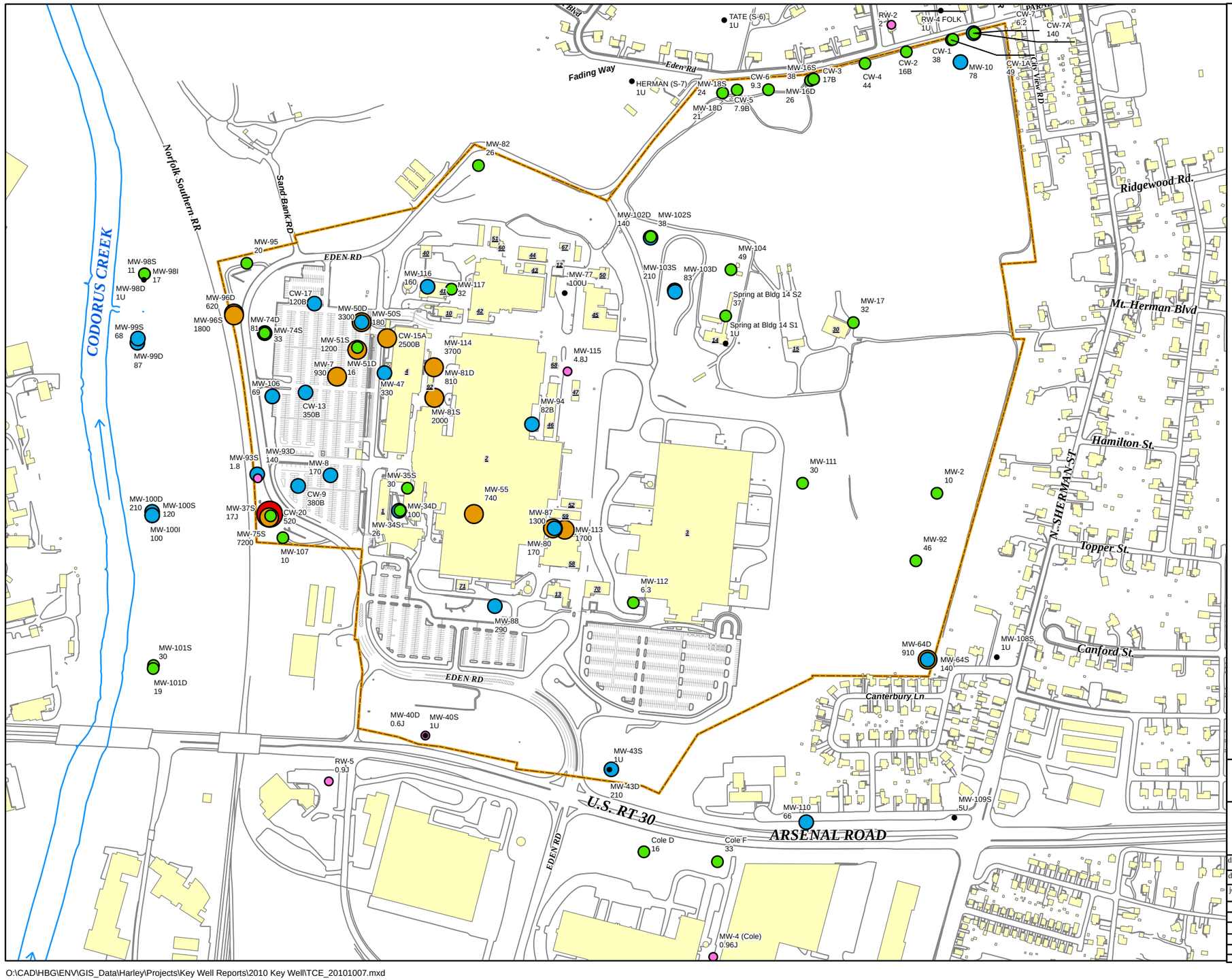

N
W E
S

Trichloroethene (TCE) in µg/l

- ND
- < 5.0
- 5.1 - 50.0
- 50.1 - 500.0
- 500.1 - 5000.0
- >5000.1

Cordorus Creek
Buildings
Harley Davidson Property Boundary
Roads and Curb Boundary (2006)
Parking (2006)

NOTE:
1. *ND = Not detected above laboratory reporting limit.*
2. *U = Not detected above laboratory reporting limit.*
3. *J = Estimated result. Result is less than reporting limit but greater than the detection limit.*

500 250 0 500 Feet

1 inch = 500 feet

FORMER YORK NAVAL ORDNANCE PLANT

1425 EDEN ROAD, YORK, PA 17402

Key Well Chemistry Map
TCE - June/July 2010

drawn AGM	checked	approved	figure no. 5
date 10/7/2010	date	date	
job no. 4501020172/8000/100		file no. TCE_20101007.mxd	

initials	date	revision

SAIC From Science to Solutions

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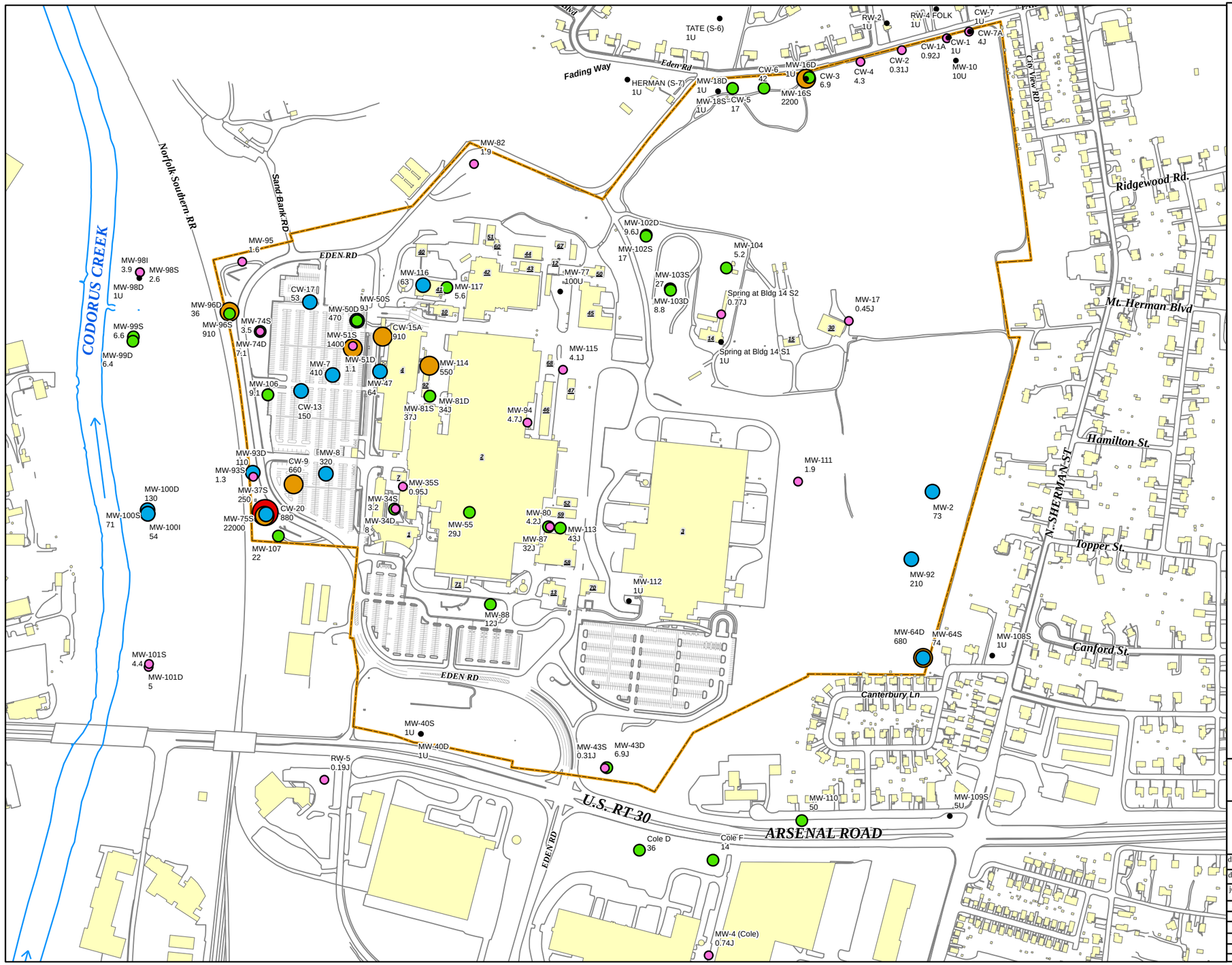

N
W E
S

Tetrachloroethene (PCE) in µg/l

- ND
- < 5.0
- 5.1 - 50.0
- 50.1 - 500.0
- 500.1 - 5000.0
- >5000.1

- Cordorus Creek
- Buildings
- Harley Davidson Property Boundary
- Roads and Curb Boundary (2006)
- Parking (2006)

NOTE:
1. *ND = Not detected above laboratory reporting limit.*
2. *U = Not detected above laboratory reporting limit.*
3. *J = Estimated result. Result is less than reporting limit but greater than the detection limit.*

500 250 0 500 Feet

1 inch = 500 feet

FORMER YORK NAVAL ORDNANCE PLANT

1425 EDEN ROAD, YORK, PA 17402

Key Well Chemistry Map
PCE - June/July 2010

drawn AGM	checked	approved	figure no. 6
date 10/7/2010	date	date	
job no. 4501020172/8000/100		file no. PCE_20101007.mxd	

initials	date	revision

SAIC From Science to Solutions

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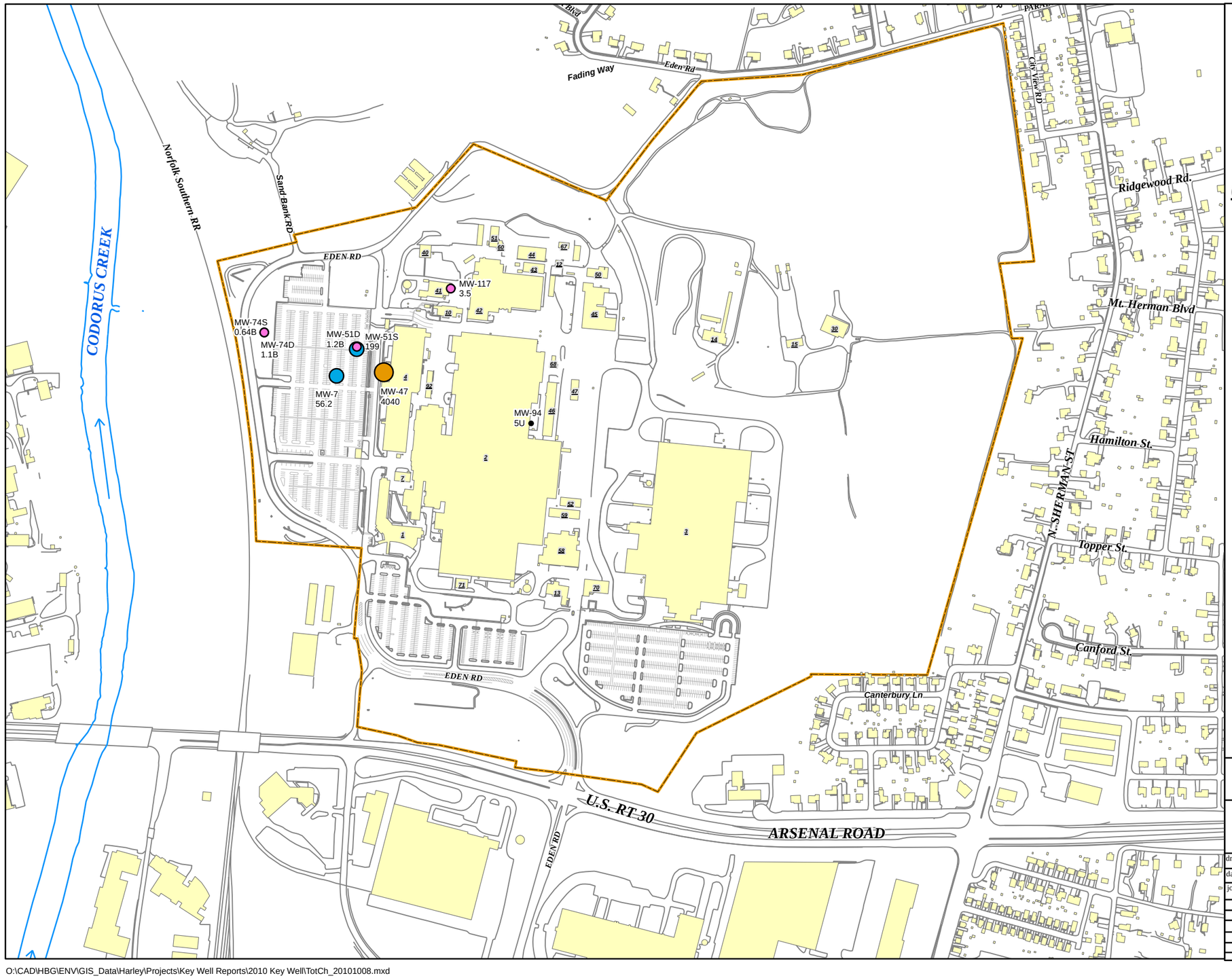

N
W E
S

Total Chromium (Cr+3 and Cr+6, dissolved) in µg/l

- ND
- 0.180000 - 5.000000
- 5.000001 - 50.000000
- 50.000001 - 500.000000
- 500.000001 - 5000.000000
- 5000.000001 - 999999999.000000

- Cordorus Creek
- Buildings
- Harley Davidson Property Boundary
- Roads and Curb Boundary (2006)
- Parking (2006)

NOTE:
1. *ND = Not detected above laboratory reporting limit.*
2. *U = Not detected above laboratory reporting limit.*
3. *J = Estimated result. Result is less than reporting limit but greater than the detection limit.*

500 250 0 500 Feet

1 inch = 500 feet

FORMER YORK NAVAL ORDNANCE PLANT

1425 EDEN ROAD, YORK, PA 17402

Key Well Chemistry Map
Total Chromium (Cr^{+3} and Cr^{+6}, Dissolved Phase) June/July 2010

drawn AGM	checked	approved	figure no.
date 10/7/2010	date	date	7
job no. 4501020172/8000/100		file no. TotCh_20101008.mxd	

initials	date	revision

SAIC From Science to Solutions

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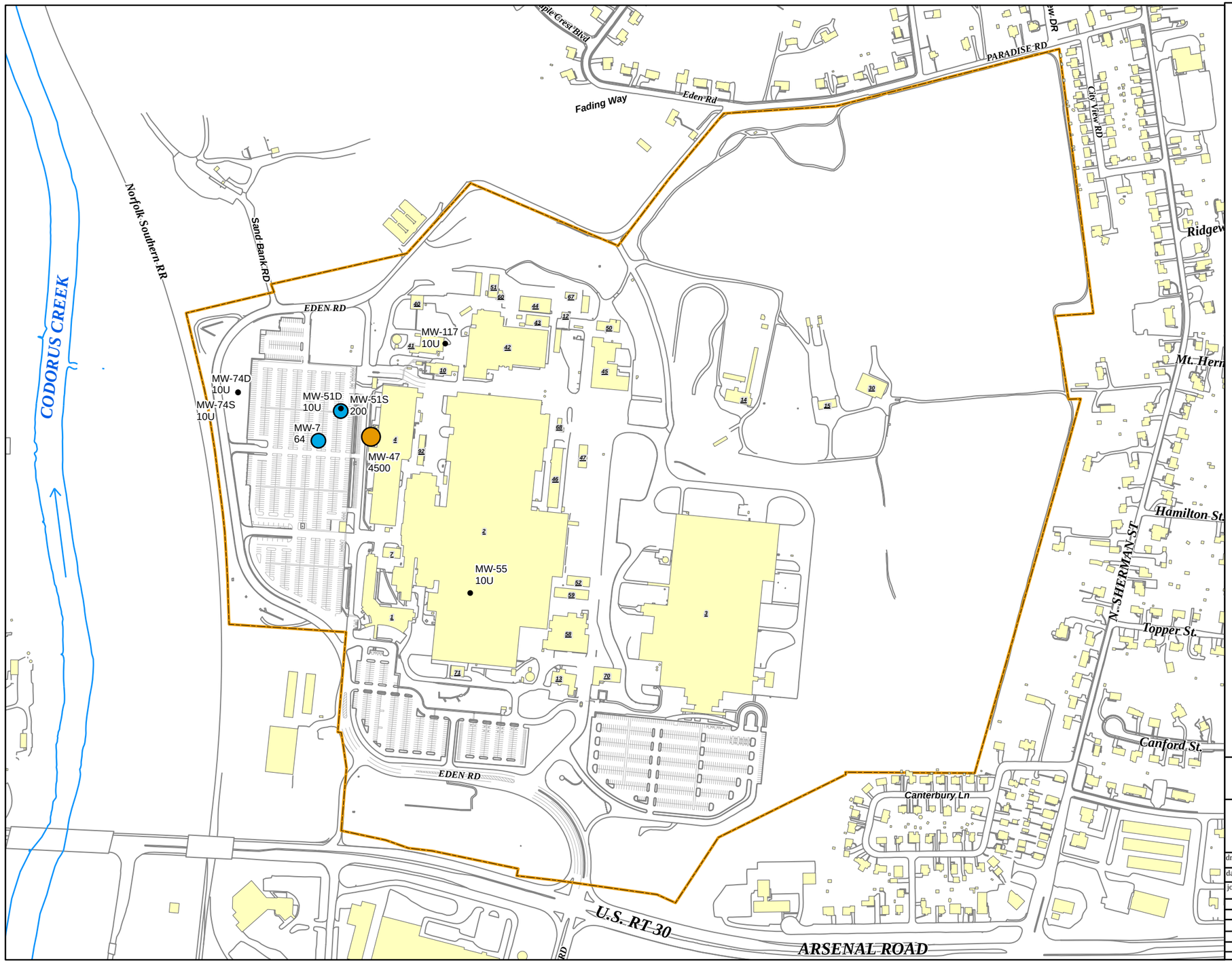

N
W E
S

Dissolved Hexavalent Chromium (Cr+6) in µg/l

- ND
- < 5.0
- 5.1 - 50.0
- 50.1 - 500.0
- 500.1 - 5000.0
- >5000.1

- Cordorus Creek
- Buildings
- Harley Davidson Property Boundary
- Roads and Curb Boundary (2006)
- Parking (2006)

NOTE:
1. *ND = Not detected above laboratory reporting limit.*
2. *U = Not detected above laboratory reporting limit.*
3. *B = Estimated result. Result is less than reporting limit but greater than the detection limit.*

450 225 0 450 Feet

1 inch = 450 feet

FORMER YORK NAVAL ORDNANCE PLANT

1425 EDEN ROAD, YORK, PA 17402

Key Well Chemistry Map
Dissolved Hexavalent Chromium (Cr+6) in µg/l June/July 2010

drawn AGM	checked	approved	figure no.
date 9/3/09	date	date	8
job no. 166345.00.08232.62.6062.00.518		file no. Hex_20101007.mxd	

initials	date	revision

SAIC From Science to Solutions

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Figure 9
TCE in NPBA Key Monitoring Wells
Former York Naval Ordnance Plant
1425 Eden Road, York PA 17402

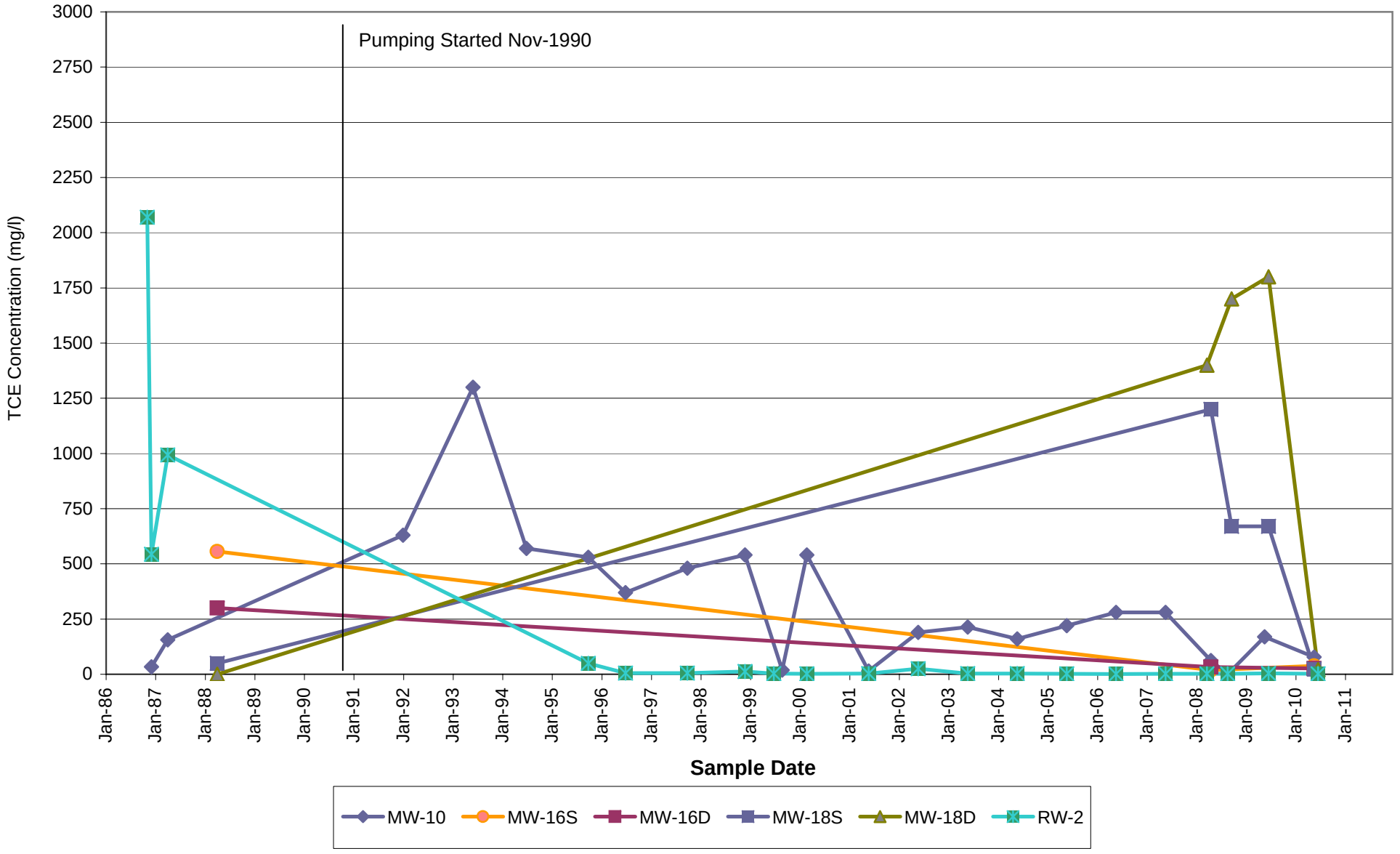


Figure 10
TCE in TCA Area Monitoring Wells
Former York Naval Ordnance Plant
1425 Eden Road, York PA 17402

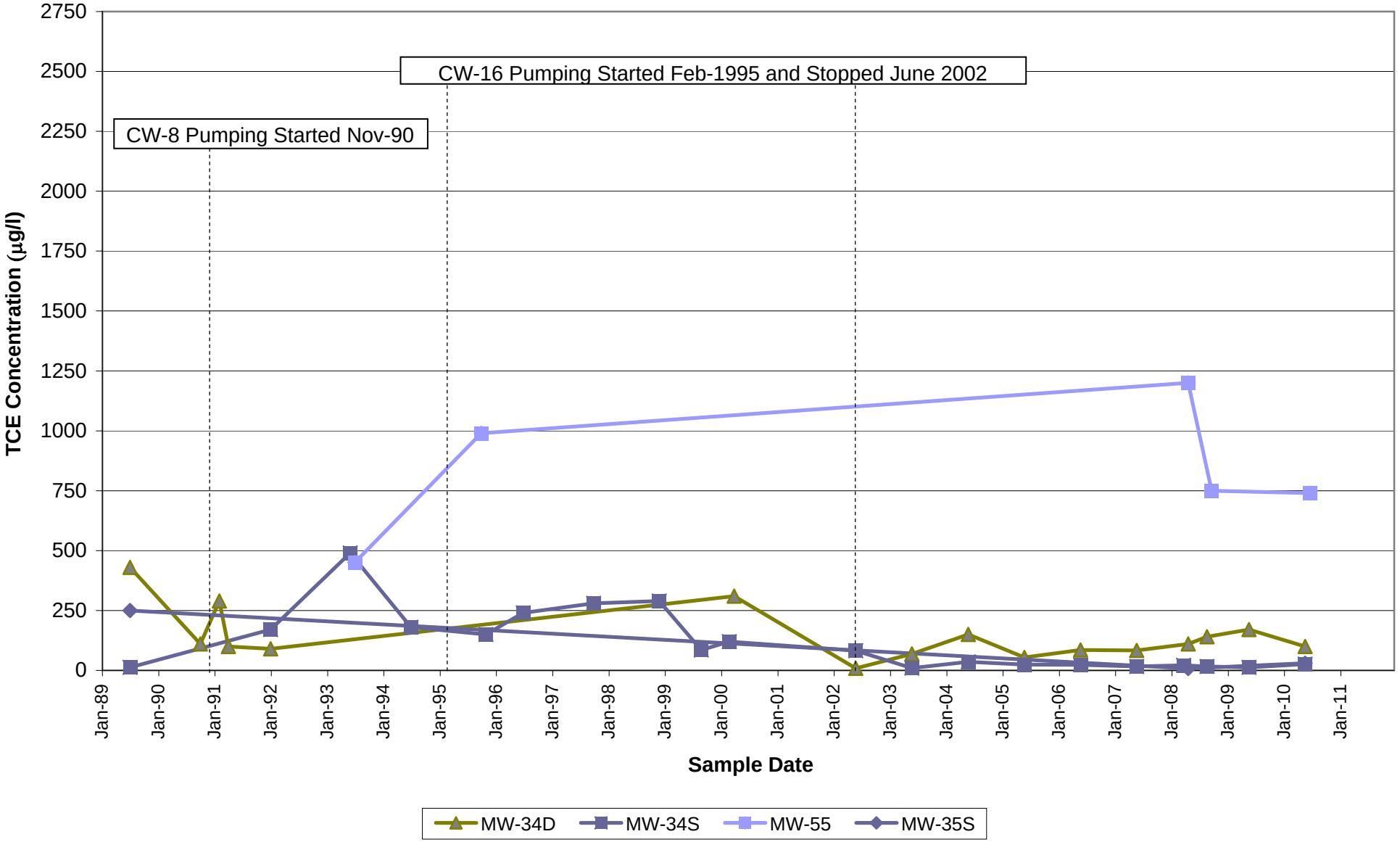


Figure 11A
TCE in Northern WPL Monitoring Wells
Former York Naval Ordnance Plant
1425 Eden Road, York PA 17402

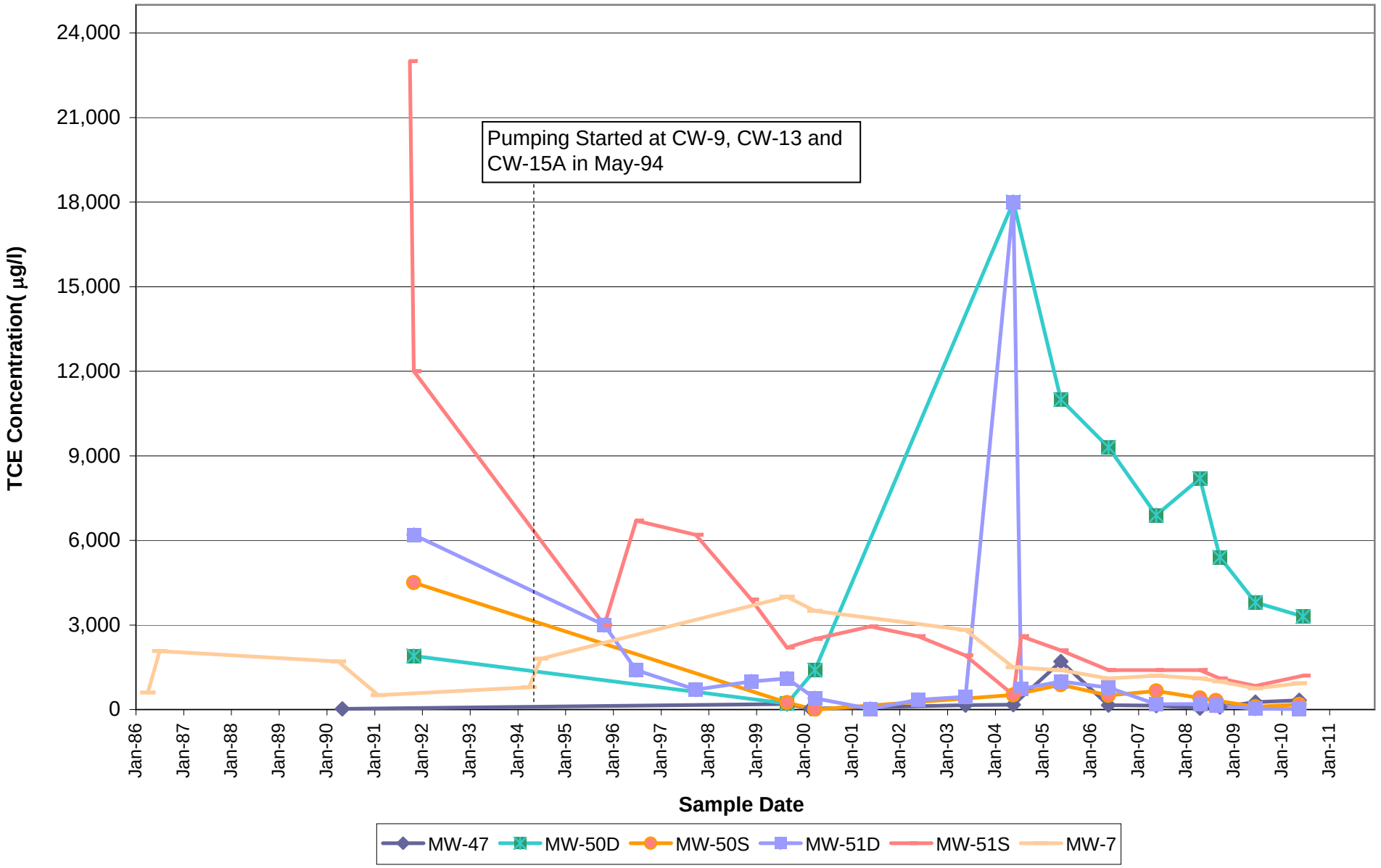


Figure 11B
TCE in Northern WPL Monitoring Wells
Former York Naval Ordnance Plant
1425 Eden Road, York PA 17402

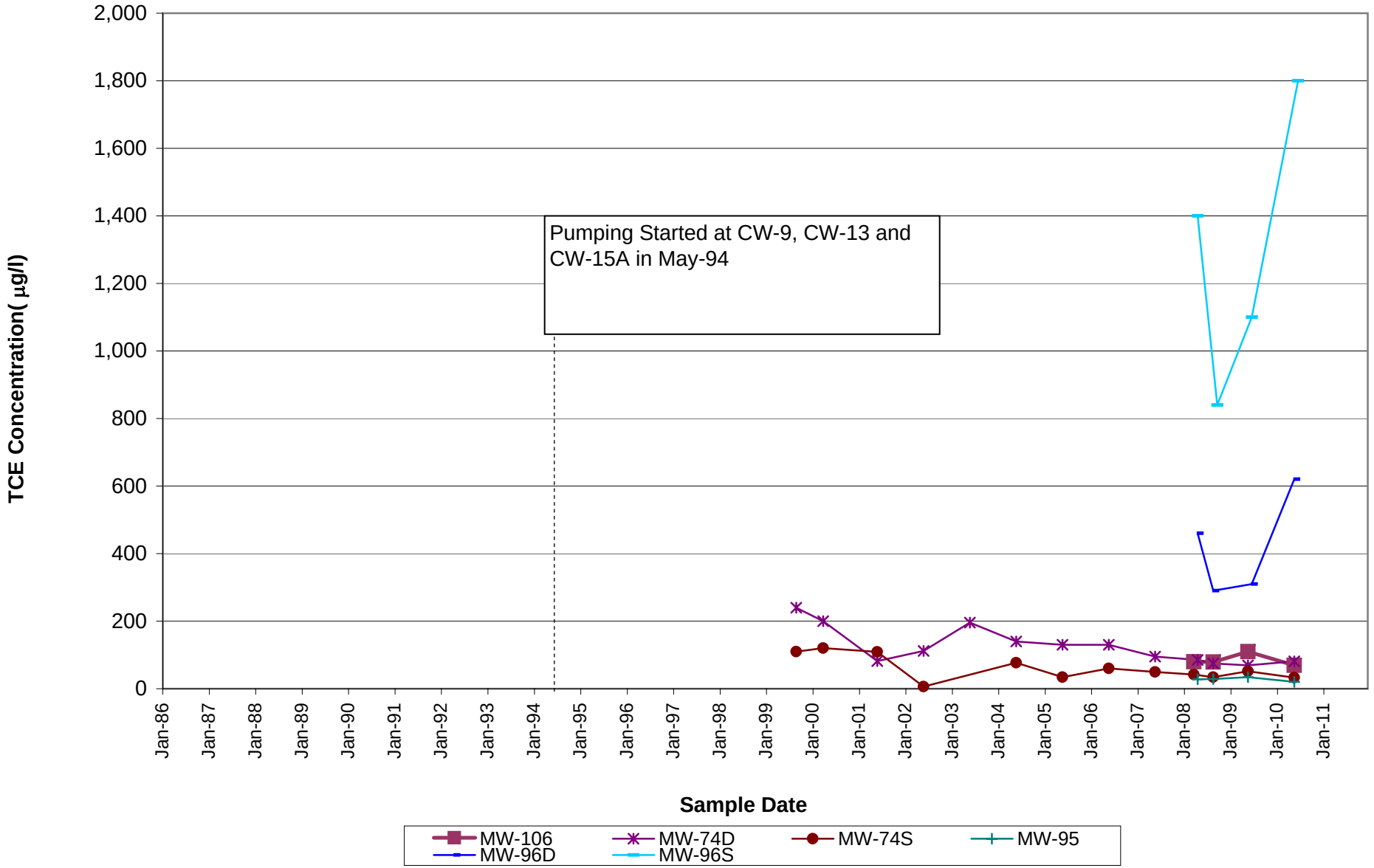


Figure 12
TCE in Southern WPL Monitoring Wells
Former York Naval Ordnance Plant
1425 Eden Road, York PA 17402

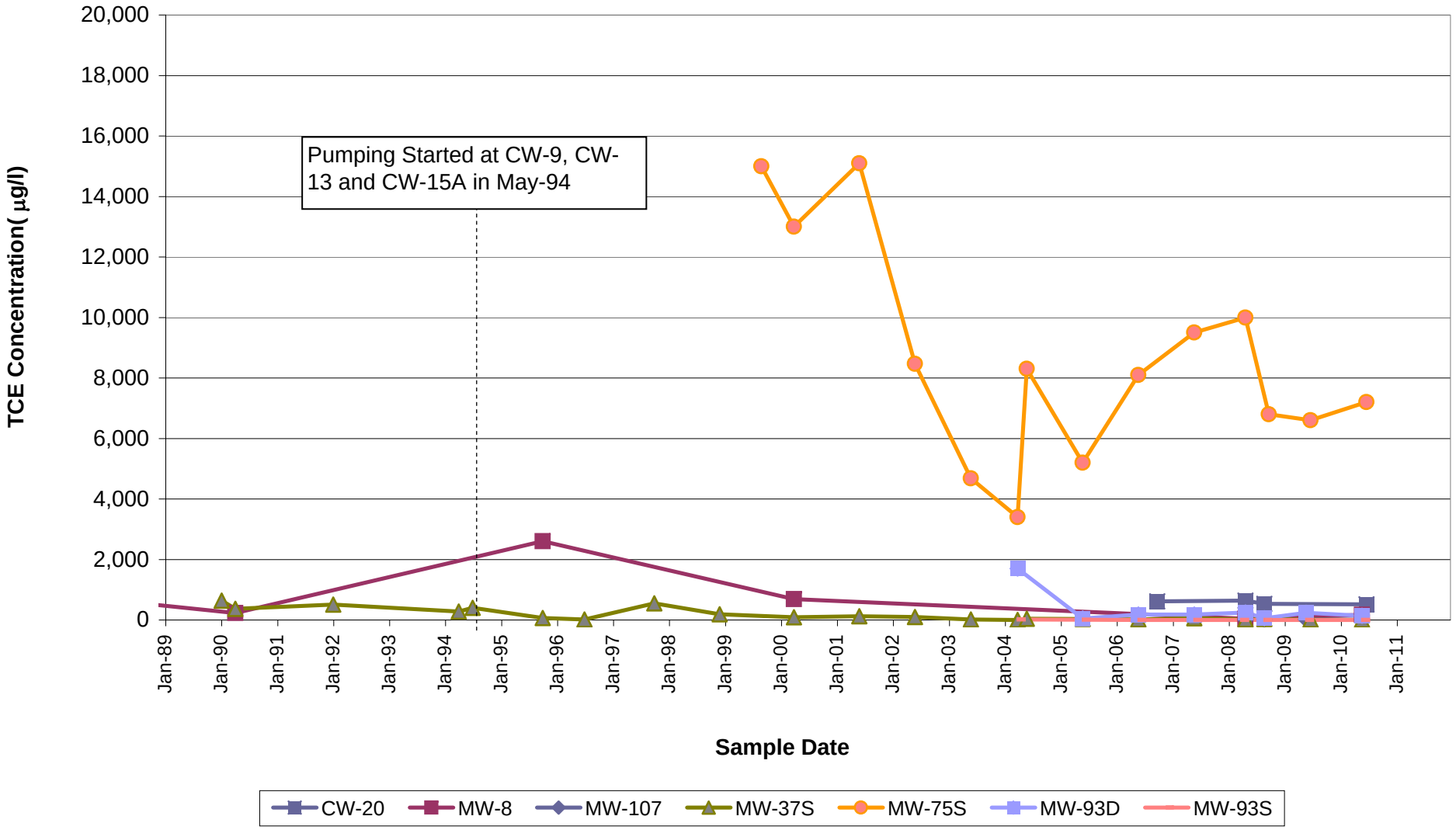


Figure 13
PCE in Southern WPL Monitoring Wells
Former York Naval Ordnance Plant
1425 Eden Road, York PA 17402

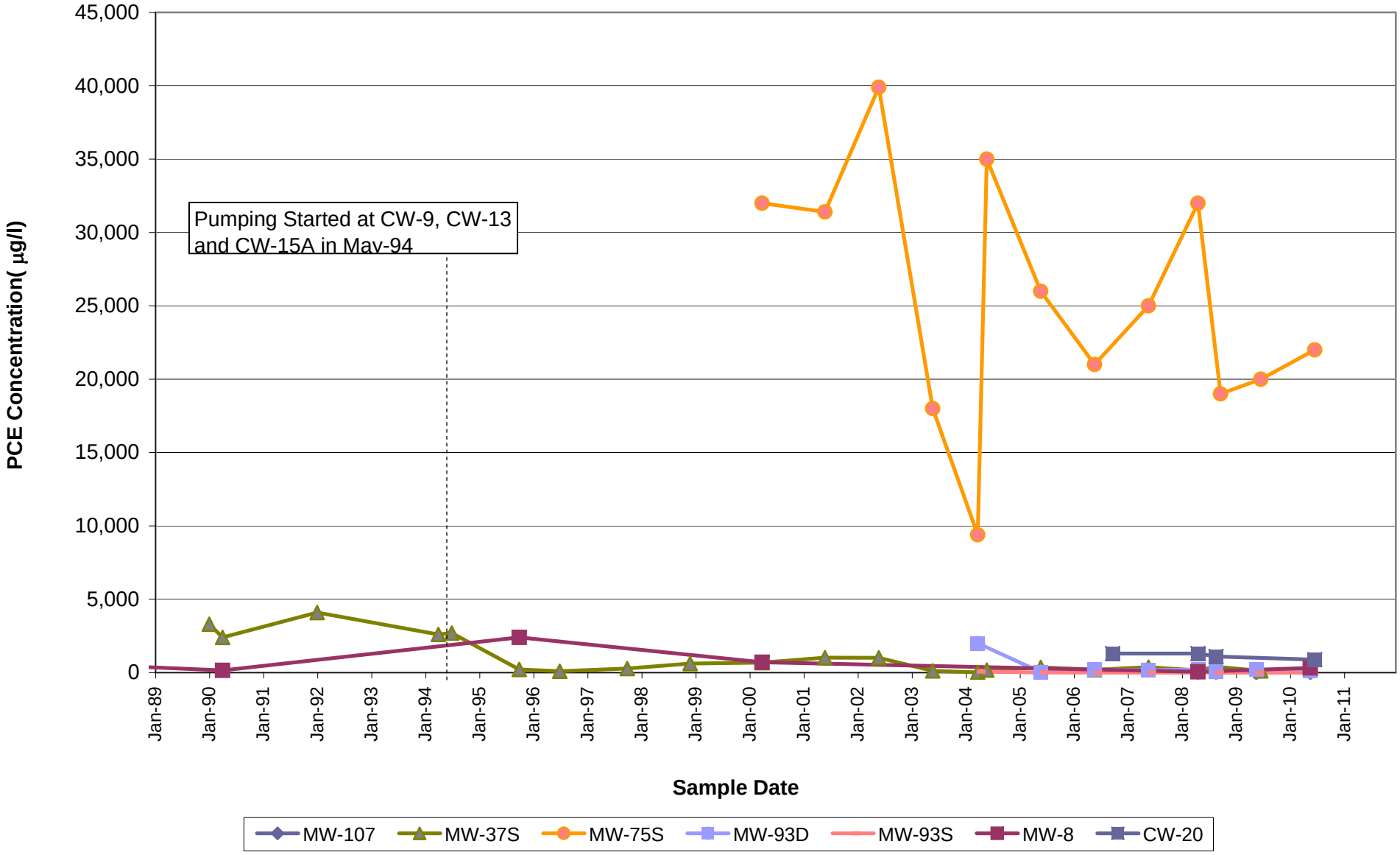


Figure 14
TCE in SPBA Monitoring Wells
Former York Naval Ordnance Plant
1425 Eden Road, York PA 17402

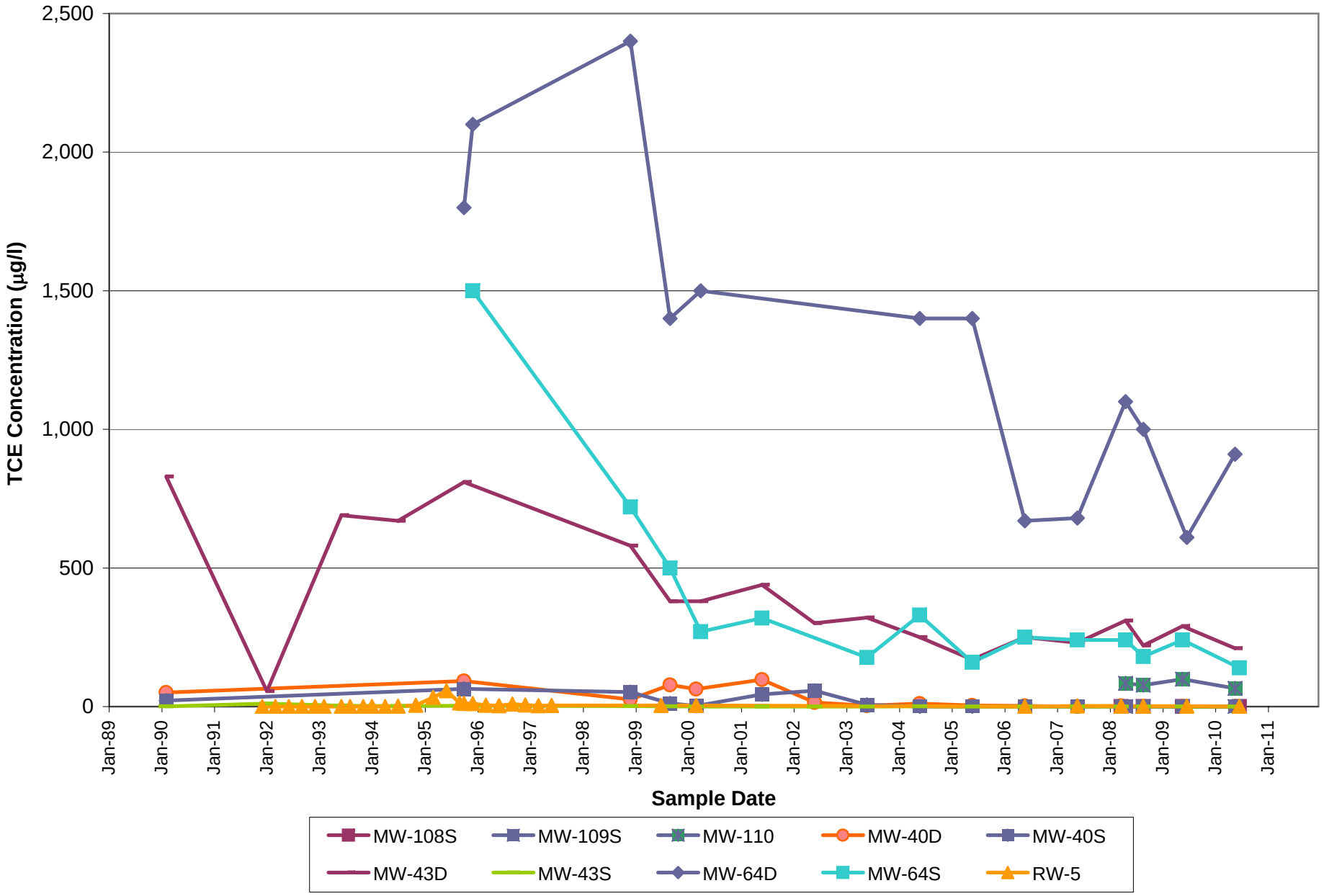


Figure 15
TCE in Eastern Area Monitoring Wells
Former York Naval Ordnance Plant
1425 Eden Road, York PA 17402

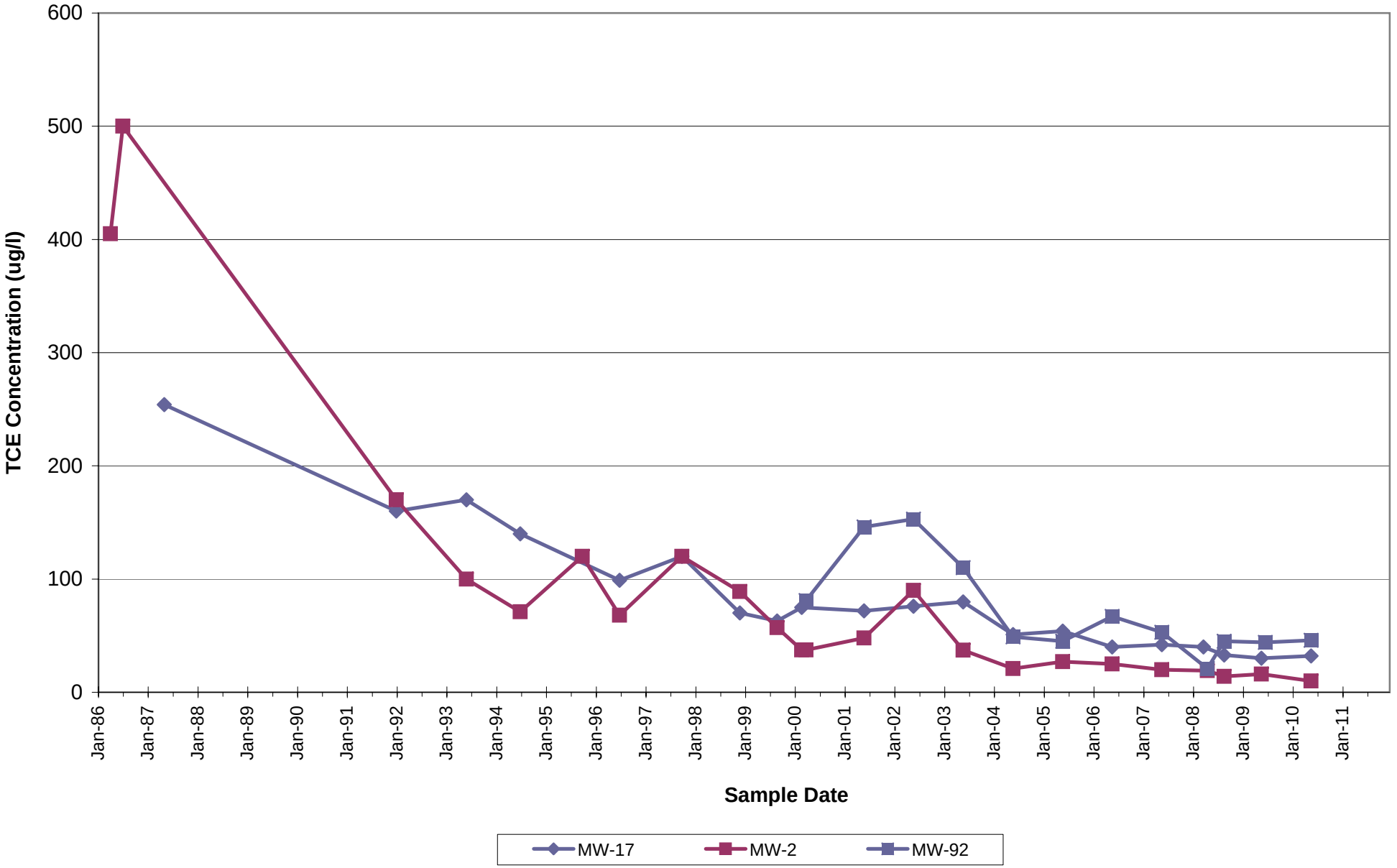
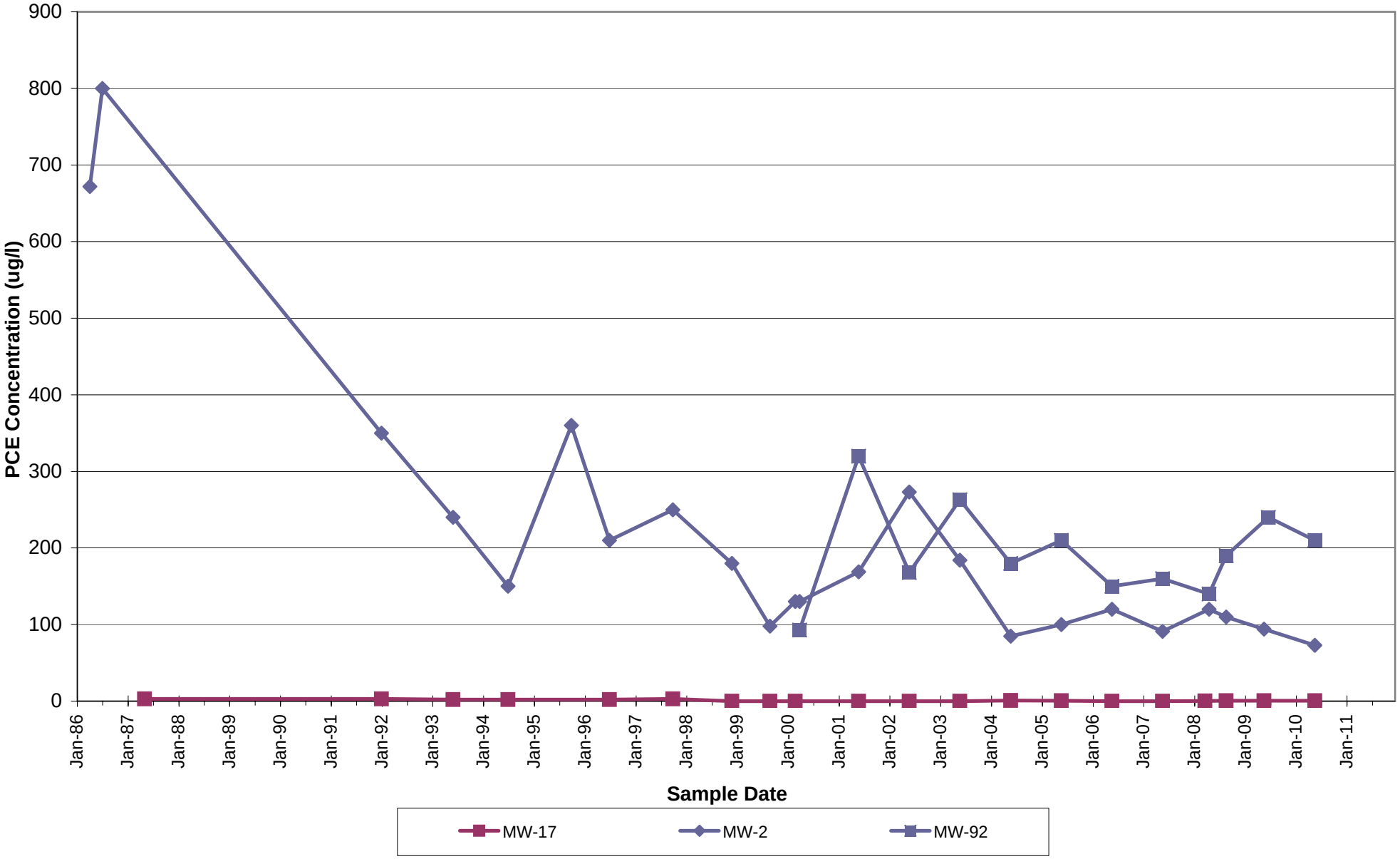


Figure 16
PCE in Eastern Area Monitoring Wells
Former York Naval Ordnance Plant
1425 Eden Road, York PA 17402



TABLES

TABLE 1
SUMMARY OF MONITORING POINTS SAMPLED IN 2010
Former York Naval Ordnance Plant

Well ID	Area*	Aquifer	Rationale	Notes
Cole D	Off-site/SPBA	Unknown	Off-site trend for VOC	Key well added in 2010
Cole F	Off-site/SPBA	Unknown	Off-site trend for VOC	Key well added in 2010
Cole MW-4	Off-site/SPBA	Unknown	Off-site trend for VOC	Key well added in 2010
CW-20	WPL	Deep Bedrock	SW Corner issue/Boundary	Key well added in 2010
RW-2	Off-site/NPBA	Unknown	Off-site residential trend for VOC	Key well
RW-4 Folk	Off-site/NPBA	Unknown	Off-site residential trend for VOC	Key well added in 2009
RW-5	Off-site	Unknown	Off-site residential trend for VOC	Key well added in 2006
S-6	Off-site/NPBA	Spring	Off-site trend for VOC	Added in 2009
S-7	Off-site/NPBA	Spring	Off-site trend for VOC	Added in 2009
MW-2	CN	Deep Bedrock	Monitor CN area	Key well
MW-7	WPL	Shallow Bedrock	Monitor GW downgradient of potential Cr source	Key well added in 2003
MW-8	WPL	Shallow Bedrock	VOC trend for CW-9	Key well added in 2010
MW-10	NPBA	Deep Bedrock	VOC trend for NPBA	Key well
MW-16D	NPBA	Deep Bedrock	VOC trend for NPBA	Key well added in 2010
MW-16S	NPBA	Shallow Bedrock	VOC trend for NPBA	Key well added in 2009
MW-17	Bunkers/ELF	Shallow Bedrock	Monitor GW downgradient of landfill	Key well
MW-18D	NPBA	Deep Bedrock	VOC trend for NPBA	Key well added in 2009
MW-18S	NPBA	Shallow Bedrock	VOC trend for NPBA	Key well added in 2009
MW-34D	TCA	Deep Bedrock	VOC trend for CW-8	Key well
MW-34S	TCA	Deep Bedrock	VOC trend for CW-8	Key well
MW-35S	TCA	Shallow Bedrock	VOC trend for CW-8	Key well added in 2010
MW-37S	WPL	Shallow Bedrock	Monitor GW downgradient of WPL	Key well
MW-40D	SPBA	Deep Bedrock	Monitor GW along SPBA	Key well
MW-40S	SPBA	Shallow Bedrock	Monitor GW along SPBA	Key well
MW-43D	SPBA	Deep Bedrock	Monitor GW along SPBA	Key well
MW-43S	SPBA	Overburden	Monitor GW along SPBA	Key well
MW-47	WPL	Overburden	Monitor GW downgradient of potential Cr source	Key well added in 2003
MW-50D	WPL	Deep Bedrock	VOC trend for CW-15A	Key well added in 2004
MW-50S	WPL	Deep Bedrock	VOC trend for CW-15A	Key well added in 2004
MW-51D	WPL	Deep Bedrock	VOC trend for CW-15A	Key well
MW-51S	WPL	Shallow Bedrock	VOC trend for CW-15A	Key well
MW-55	TCA	Shallow Bedrock	Lead trend for CW-16/CW-8	Key well added in 2009
MW-64D	SPBA	Shallow Bedrock	VOC trend for SPBA	Key well
MW-64S	SPBA	Overburden	VOC trend for SPBA	Key well
MW-74D	WPL	Deep Bedrock	Downgradient WPL	Key well added in 2001
MW-74S	WPL	Deep Bedrock	Downgradient WPL	Key well added in 2001
MW-75S	WPL	Deep Bedrock	SW Corner issue/Boundary	Key well added in 2001
MW-77	UST-T4	Overburden	VOC trend for UST-T4 area	Key well added in 2009
MW-80	SB2	Overburden	Near potential VOC source	Key well added in 2010
MW-81D	Paint Shop	Deep Bedrock	Potential source area	Key well added in 2001
MW-81S	Paint Shop	Shallow Bedrock	Potential source area	Key well added in 2001
MW-82	NP	Deep Bedrock	North Corner/Boundary	Key well added in 2001
MW-87	SB2	Overburden	Near potential VOC source	Key well added in 2001
MW-88	SB2	Deep Bedrock	SE corner of Bldg 2	Key well added in 2001
MW-92	EPBA/CN	Deep Bedrock	Monitor CN area	Key well added in 2001
MW-93S	WPL	Shallow Bedrock	SW Corner issue/Boundary	Key well added in 2005
MW-93D	WPL	Deep Bedrock	SW Corner issue/Boundary	Key well added in 2005
MW-94	B2 FCOTA	Overburden	New Supplemental RI well - build database for trend	Key well added in 2009
MW-95	WPL	Shallow Bedrock	New Supplemental RI well - build database for trend	Key well added in 2009
MW-96D	WPL	Shallow Bedrock	New Supplemental RI well - build database for trend	Key well added in 2009
MW-96S	WPL	Shallow Bedrock	New Supplemental RI well - build database for trend	Key well added in 2009
MW-98D	WWPL	Deep Bedrock	New Supplemental RI well - build database for trend	Key well added in 2009
MW-98I	WWPL	Shallow Bedrock	New Supplemental RI well - build database for trend	Key well added in 2009
MW-98S	WWPL	Shallow Bedrock	New Supplemental RI well - build database for trend	Key well added in 2009
MW-99D	WWPL	Deep Bedrock	New Supplemental RI well - build database for trend	Key well added in 2009
MW-99S	WWPL	Shallow Bedrock	New Supplemental RI well - build database for trend	Key well added in 2009
MW-100D	WWPL	Deep Bedrock	New Supplemental RI well - build database for trend	Key well added in 2009
MW-100I	WWPL	Shallow Bedrock	New Supplemental RI well - build database for trend	Key well added in 2009
MW-100S	WWPL	Shallow Bedrock	New Supplemental RI well - build database for trend	Key well added in 2009
MW-101D	WWPL	Deep Bedrock	New Supplemental RI well - build database for trend	Key well added in 2009
MW-101S	WWPL	Shallow Bedrock	New Supplemental RI well - build database for trend	Key well added in 2009
MW-102D	NETT	Shallow Bedrock	New Supplemental RI well - build database for trend	Key well added in 2009
MW-102S	NETT	Overburden	New Supplemental RI well - build database for trend	Key well added in 2009
MW-103D	NETT	Deep Bedrock	New Supplemental RI well - build database for trend	Key well added in 2009
MW-103S	NETT	Overburden	New Supplemental RI well - build database for trend	Key well added in 2009
MW-104	NETT	Overburden	New Supplemental RI well - build database for trend	Key well added in 2009
MW-106	WPL	Overburden	New Supplemental RI well - build database for trend	Key well added in 2009
MW-107	WPL	Overburden	New Supplemental RI well - build database for trend	Key well added in 2009
MW-108S	Off-site	Overburden	New Supplemental RI well - build database for trend	Key well added in 2009
MW-109S	Off-site	Overburden	New Supplemental RI well - build database for trend	Key well added in 2009
MW-110	Off-site	Shallow Bedrock	New Supplemental RI well - build database for trend	Key well added in 2009
MW-111	Softail	Deep Bedrock	New Supplemental RI well - build database for trend	Key well added in 2009
MW-112	Softail	Deep Bedrock	New Supplemental RI well - build database for trend	Key well added in 2009
MW-113	SB2	Deep Bedrock	New Supplemental RI well - build database for trend	Key well added in 2009
MW-114	Paint Shop	Deep Bedrock	New Supplemental RI well - build database for trend	Key well added in 2009
MW-115	Bldg 2 DS	Deep Bedrock	New Supplemental RI well - build database for trend	Key well added in 2009
MW-116	Bldg 41	Overburden	New well - build database for trend	Key well added in 2009
MW-117	Bldg 41	Overburden	New well - build database for trend	Key well added in 2009
Spring at Bldg 14 S-1	Bunkers	Spring	Select metals trend bunker	Added in 2009
Spring at Bldg 14 S-2	Bunkers	Spring	Lead trend for Firing Range	Added in 2009

*** Area Legend**

B2S = Bldg. 2, South
Bldg 2 DS = Bldg. 2, Drum Storage
B2 FCOTA = Bldg 2 Former Cutting Oil Tank Area
CN = Cyanide Spill area
ELF = Eastern Landfill
EPBA = Eastern Property Boundary Area
MCB = Metal Chip Bin Area
NETT = North End of the Test Track
NP = North Plant
NPBA = North Property Boundary Area
SB2 = South Bldg. 2
SP = South Plant/Perimeter
SPBA = South Property Boundary Area
UST = UST - T4 Area
WPL = West Parking Lot
WWPL = West of the West Parking Lot

TABLE 2

SITE-WIDE GROUNDWATER LEVELS AND ELEVATION DATA

FORMER YORK NAVAL ORDNANCE PLANT

1425 Eden Road, York PA 17402

Monitoring Location	Date	Time	Reference Elevation (ft. AMSL)	Depth (ft.)	Water Level (ft. AMSL)
CODORUS 1	6/14/2010	12:00	379.69	39.95	339.74
CODORUS 2	6/14/2010	11:40	341.63	0.98	339.27
Cole B	6/14/2010	11:52	363.75	13.36	350.39
Cole D	6/14/2010	12:06	370.15	16.41	353.74
Cole E deep	6/14/2010	12:03	369.17	16.79	352.38
Cole E shallow	6/14/2010	12:04	369.54	17.24	352.3
Cole F	6/14/2010	12:00	370.39	18.37	352.02
Flush - Cole	6/14/2010	11:49	361.92	11.68	350.24
MW-4 (Cole)	6/14/2010	11:55	367.21	16.48	350.73
CW-1*	6/14/2010	10:26	570.07	45.97	524.1
CW-1A*	6/14/2010	13:07	568.28	57.8	510.48
CW-2*	6/14/2010	10:52	556.95	69.25	487.7
CW-3*	6/14/2010	11:05	518.66	50.05	468.61
CW-4*	6/14/2010	10:57	541.55	66.3	475.25
CW-5*	6/14/2010	11:22	470.34	30	440.34
CW-6*	6/14/2010	11:18	484.67	14.16	470.51
CW-7*	6/14/2010	10:19	573.78	83.39	490.39
CW-7A*	6/14/2010	10:20	573.91	59.05	514.86
CW-8*	6/14/2010	13:08	362.7	25.34	337.36
CW-13*	6/14/2010	9:03	358.85	35.91	322.94
CW-14	6/14/2010	9:51	358.92	25.43	333.49
CW-15	6/14/2010	13:35	361.48	18.85	342.63
CW-15A*	6/14/2010	13:26	361.4	30.54	330.86
CW-16	6/14/2010	12:52	364.6	22.23	342.37
CW-17*	6/14/2010	9:49	358.7	25.25	333.45
CW-18	6/14/2010	10:16	364.72	19.28	345.44
kinsley well	6/14/2010	11:13	465.83	69.08	396.75
MW-1	6/14/2010	11:32	380.73	35.99	344.74
MW-2	6/14/2010	9:44	508.88	65.46	443.42
MW-3	6/14/2010	11:13	541.1	64.23	476.87
MW-5	6/14/2010	8:50	369.71	23.58	346.13
MW-6	6/14/2010	9:53	359.62	19.97	339.65
MW-7	6/14/2010	8:46	359.48	26.86	332.62
MW-8	6/14/2010	9:29	358.09	20.01	338.08
MW-9	6/14/2010	10:49	558.78	45.9	512.88
MW-10	6/14/2010	10:24	567.8	44.43	523.37
MW-11	6/14/2010	10:47	563.08	28.18	534.9
MW-12	6/14/2010	11:00	535.93	36.72	499.21
MW-14	6/14/2010	10:04	519.54	32.46	487.08
MW-15	6/14/2010	9:50	524.09	61.65	462.44
MW-16D	6/14/2010	11:07	516.51	5.92	510.59
MW-16S	6/14/2010	11:06	516.6	31.35	485.25
MW-17	6/14/2010	9:12	456.86	12.68	444.18
MW-18D	6/14/2010	11:30	464.19	0	464.19
MW-18S	6/14/2010	11:30	464.12	0	464.12

Note:

A= Location was artesian.

D= Location was dry.

*= Active extraction well.

DDC= Gauged on different date due to inaccessibility.

OG= Water was over the gauge.

TABLE 2

SITE-WIDE GROUNDWATER LEVELS AND ELEVATION DATA

FORMER YORK NAVAL ORDNANCE PLANT

1425 Eden Road, York PA 17402

Monitoring Location	Date	Time	Reference Elevation (ft. AMSL)	Depth (ft.)	Water Level (ft. AMSL)
MW-19	6/14/2010	8:53	427.36	21.9	405.46
MW-20D	6/14/2010	10:17	573.85	35.9	537.95
MW-20M	6/14/2010	10:16	574.19	45.63	528.56
MW-20S	6/14/2010	10:15	574.05	47.8	526.25
MW-22	6/14/2010	9:25	447.57	59.05	388.52
MW-26	6/14/2010	9:48	376.46	21.55	354.91
MW-27	6/14/2010	9:28	361.29	17.25	344.04
MW-28	6/14/2010	13:00	362.91	20.57	342.34
MW-29	6/14/2010	11:52	364.77	13.14	351.63
MW-30	6/14/2010	8:32	362.26	14.64	347.62
MW-31D	6/14/2010	8:54	369.3	17.09	352.21
MW-31S	6/14/2010	8:53	369.28	16.89	352.39
MW-32D	6/14/2010		362.57	19.96	342.61
MW-32S	6/14/2010	13:04	362.44	20.26	342.18
MW-34D	6/14/2010	12:30	361	18.7	342.3
MW-34S	6/14/2010	12:29	361	18.64	342.36
MW-35D	6/14/2010	12:33	360.6	18.28	342.32
MW-36D	6/14/2010	8:46	370.96	24.99	345.97
MW-36S	6/14/2010	8:47	370.95	24.46	346.49
MW-37D	6/14/2010	10:36	359.11	20.9	338.21
MW-37S	6/14/2010	10:37	359.13	18.58	340.55
MW-38D	6/14/2010	9:13	358.62	20.92	337.7
MW-39D	6/14/2010	8:34	360.21	22.88	337.33
MW-39S	6/14/2010	8:33	360.14	22.26	337.88
MW-40D	6/14/2010	11:25	374.65	29.69	344.96
MW-40S	6/14/2010	11:24	374.69	29.57	345.12
MW-43D	6/14/2010	11:40	380.08	33.41	346.67
MW-43S	6/14/2010	11:41	379.76	33.04	346.72
MW-45	6/14/2010	13:19	359.91	17.59	342.32
MW-46	6/14/2010	13:17	359.19	16.95	342.24
MW-47	6/14/2010	13:22	360.57	20.86	339.71
MW-49D	6/14/2010	13:29	361.44	18.36	343.08
MW-49S	6/14/2010	13:29	361.45	18.75	342.7
MW-50D	6/14/2010	9:40	360.41	21.96	338.45
MW-50S	6/14/2010	9:41	360.4	21.6	338.8
MW-51D	6/14/2010	8:55	360.43	0.9	359.53
MW-51S	6/14/2010	8:51	360.19	24.94	335.25
MW-54	6/14/2010	12:55	365.26	22.89	342.37
MW-55	6/14/2010	12:57	365.22	22.83	342.39
MW-56	6/14/2010	10:02	371.83	18.55	353.28
MW-57	6/14/2010	10:26	364.54	19.35	345.19
MW-64D	6/14/2010	9:31	416.43	59.82	356.61
MW-64S	6/14/2010	9:30	416.34	34.39	381.95
MW-65D	6/14/2010	10:09	546.8	48.08	498.72
MW-65S	6/14/2010	10:08	546.82	49.12	497.7

Note:

A= Location was artesian.

D= Location was dry.

*= Active extraction well.

DDC= Gauged on different date due to inaccessibility.

OG= Water was over the gauge.

TABLE 2

SITE-WIDE GROUNDWATER LEVELS AND ELEVATION DATA

FORMER YORK NAVAL ORDNANCE PLANT

1425 Eden Road, York PA 17402

Monitoring Location	Date	Time	Reference Elevation (ft. AMSL)	Depth (ft.)	Water Level (ft. AMSL)
MW-66D	6/14/2010	9:59	506.92	39.53	467.39
MW-66S	6/14/2010	9:58	506.73	38.56	468.17
MW-67D	6/14/2010	9:18	446.26	1.48A	444.78A
MW-67S	6/14/2010	9:17	446.26	10.39	435.87
MW-68	6/14/2010	9:09	458.06	6.6	451.46
MW-69	6/14/2010	9:06	411.9	9.1	402.8
MW-70D	6/14/2010	13:17	413.26	19.41	393.85
MW-70S	6/14/2010	13:16	413.2	19.3	393.9
MW-74D	6/14/2010	10:31	359.79	21.58	338.21
MW-74S	6/14/2010	10:33	359.85	20.2	339.65
MW-75D	6/14/2010	8:31	359.85	20.44	339.41
MW-75S	6/14/2010	8:30	359.03	20.7	338.33
MW-77	6/14/2010	9:45	379.48	24.45	355.03
MW-78	6/14/2010	9:17	367.08	13.99	353.09
MW-79	6/14/2010	9:55	375.84	21.66	354.18
MW-80	6/14/2010	10:08	370.29	24.92	345.37
MW-81D	6/14/2010	9:35	359.89	16.86	343.03
MW-81S	6/14/2010	9:36	360.12	17.57	342.55
MW-82	6/14/2010	11:15	384.27	38.38	345.89
MW-83	6/14/2010	9:41	363.69	11	352.69
MW-84	6/14/2010	9:15	366.97	14.25	352.72
MW-85	6/14/2010	11:20	371.54	22.31	349.23
MW-86D	6/14/2010	9:02	406.56	8.67	397.89
MW-86S	6/14/2010	9:01	406.5	10.63	395.87
MW-87	6/14/2010	10:11	370.64	24.78	345.86
MW-88	6/14/2010	10:35	367.93	23.4	344.53
MW-91	6/14/2010	9:41	501.18	56.99	444.19
MW-92	6/14/2010	9:37	476.87	84.26	392.61
MW-93D	6/14/2010	10:40	360.14	19.75	340.39
MW-93S	6/14/2010	10:41	360.76	19.74	341.02
MW-94	6/14/2010	10:41	365.03	12.33	352.7
MW-95	6/14/2010	10:17	358.72	19.16	339.56
MW-96D	6/14/2010	10:09	361	22.4	338.6
MW-96S	6/14/2010	10:09	361.21	22.68	338.53
MW-97	6/14/2010	9:10	357.39	21.6	335.79
MW-98D	6/14/2010	11:11	361.41	20.44	340.97
MW-98I	6/14/2010	11:04	360.78	20.91	339.87
MW-98S	6/14/2010	11:03	360.77	20.69	340.08
MW-99D	6/14/2010	11:16	359.91	19.06	340.85
MW-99S	6/14/2010	11:14	360.37	19.55	340.82
MW-100D	6/14/2010	11:24	362.14	20.94	341.2
MW-100I	6/14/2010	11:25	361.81	20.71	341.1
MW-100S	6/14/2010	11:25	362.28	21.2	341.08
MW-101D	6/14/2010	11:31	356.22	16.01	340.21
MW-101S	6/14/2010	11:31	356.54	16.28	340.26

Note:

A= Location was artesian.
D= Location was dry.
*= Active extraction well.
DDC= Gauged on different date due to inaccessibility.
OG= Water was over the gauge.

TABLE 2

SITE-WIDE GROUNDWATER LEVELS AND ELEVATION DATA

FORMER YORK NAVAL ORDNANCE PLANT

1425 Eden Road, York PA 17402

Monitoring Location	Date	Time	Reference Elevation (ft. AMSL)	Depth (ft.)	Water Level (ft. AMSL)
MW-102D	6/14/2010	8:33	401.71	8.3	393.41
MW-102S	6/14/2010	8:40	401.95	33.71	368.24
MW-103D	6/14/2010	8:43	397.62	14.54	383.08
MW-103S	6/14/2010	8:48	397.96	12.49	385.47
MW-104	6/14/2010	8:56	428.72	28.38	400.34
MW-105	6/14/2010	10:07	362.05	23.29	338.76
MW-106	6/14/2010	9:06	360.15	25.84	334.31
MW-107	6/14/2010	10:20	363.56	22.78	340.78
MW-108D	6/14/2010	11:55	426.35	22.53	403.82
MW-108S	6/14/2010	11:57	425.46	27.6	397.86
MW-109D	6/14/2010	12:08	389.12	35	354.12
MW-109S	6/14/2010	12:10	388.39	35.29	353.1
MW-110	6/14/2010	12:04	378.36	25.34	353.02
MW-111	6/14/2010	12:58	433.63	21.19	412.44
MW-112	6/14/2010	10:54	393.52	47.95	345.57
MW-113	6/14/2010	10:06	371.02	24.86	346.16
MW-114	6/14/2010	9:31	360.71	17.42	343.29
MW-115	6/14/2010	9:52	373.3	20.28	353.02
MW-116	6/14/2010	8:36	364.59	18.8	345.79
MW-117	6/14/2010	9:03	365.19	12.42	352.77
SOFTAIL LIFT STATION	6/14/2010	10:47	392.6	21.59	371.01
WPL-SS-7	6/14/2010	9:22	357.78	23.51	334.27
WPL-SS-8	6/14/2010	9:57	364.4	24.92	339.48

Note:

A= Location was artesian.
D= Location was dry.
*= Active extraction well.
DDC= Gauged on different date due to inaccessibility.
OG= Water was over the gauge.

TABLE 3
HYDRAULIC GRADIENT DATA
Former York Naval Ordnance Plant
1425 Eden Road, York PA 17402

WELL ID	ELEV. TOC (FT. AMSL.)	SCREENED INTERVAL	MID-POINT SCREENED INTERVAL	MID-POINT ELEV (FT. AMSL.)	DIFFERENCE BETWEEN MID-POINTS	DEPTH TO WATER (FT.)	SWL ELEV (FT. AMSL.	DIFFERENCE BETWEEN SWL ELEV	VERTICAL GRADIENT (FT/FT)
Northeast Property Boundary Area									
MW-16S	516.60	98-110	104.00	412.60	-91.59	31.35	485.25	-25.34	0.277
MW-16D	516.51	190-201	195.50	321.01		5.92	510.59		
MW-18S	464.12	45-65	55.00	409.12	-79.93	0.00	464.12	-0.07	0.001
MW-18D	464.19	130-140	135.00	329.19		0.00	464.19		
MW-20S	574.05	28-61	44.50	529.55	-114.70	47.80	526.25	-11.70	0.102
MW-20D	573.85	153-165	159.00	414.85		35.90	537.95		
Northern - West Parking Lot									
MW-39S	360.14	3-30	16.50	343.64	-59.93	22.26	337.88	0.55	-0.009
MW-39D	360.21	53-100	76.50	283.71		22.88	337.33		
MW-49S	361.45	135-155	145.00	216.45	-23.01	18.75	342.70	-0.38	0.017
MW-49D	361.44	158-178	168.00	193.44		18.36	343.08		
MW-50S	360.40	104-120	112.00	248.40	-51.49	21.60	338.80	0.35	-0.007
MW-50D	360.41	157-170	163.50	196.91		21.96	338.45		
MW-51S	360.19	29-51	40.00	320.19	-63.76	24.94	335.25	-24.28	0.381
MW-51D	360.43	88-120	104.00	256.43		0.90	359.53		
MW-74S	359.85	183-193	188.00	171.85	-49.56	20.20	339.65	1.44	-0.029
MW-74D	359.79	225-250	237.50	122.29		21.58	338.21		
MW-96S	361.21	29-39	34.00	327.21	-48.71	22.68	338.53	-0.07	0.001
MW-96D	361.00	77.5-87.5	82.50	278.50		22.40	338.60		
Southern - West Parking Lot									
MW-37S	359.13	11-33	22.00	337.13	-111.02	18.58	340.55	2.34	-0.021
MW-37D	359.11	125-141	133.00	226.11		20.90	338.21		
MW-75S	359.03	168-173	170.50	188.53	-38.68	20.70	338.33	-1.08	0.028
MW-75D	359.85	205-215	210.00	149.85		20.44	339.41		
MW-93S	360.76	26.2-41.2	33.70	327.06	-106.62	19.74	341.02	0.63	-0.006
MW-93D	360.14	134.7-144.7	139.70	220.44		19.75	340.39		
Southeast Corner - Southern Property Boundary Area									
MW-64S	416.34	35-40	37.50	378.84	-34.91	34.39	381.95	25.34	-0.726
MW-64D	416.43	70-75	72.50	343.93		59.82	356.61		
Landfill Area - Eastern Property Boundary Area									
MW-65S	546.82	75-85	80.00	466.82	-17.32	49.12	497.70	-1.02	0.059
MW-65D	546.80	92.3-102.3	97.30	449.50		48.08	498.72		
MW-66S	506.73	50-60	55.00	451.73	-36.81	38.56	468.17	0.78	-0.021
MW-66D	506.92	84.5-99.5	92.00	414.92		39.53	467.39		
Approximate Spring Line - Near Sandstone Contact									
MW-43S	379.76	19-48	33.50	346.26	-51.68	33.04	346.72	0.05	-0.001
MW-43D	380.08	79-92	85.50	294.58		33.41	346.67		
MW-103S	397.96	67.5-87.5	77.5	320.46	-34.54	12.49	385.47	2.39	-0.069
MW-103D	397.62	96.7-106.7	111.7	285.92		14.54	383.08		
MW-86S	406.50	12-27	19.50	387.00	-55.44	10.63	395.87	-2.02	0.036
MW-86D	406.56	70-80	75.00	331.56		8.67	397.89		

TABLE 3
HYDRAULIC GRADIENT DATA
Former York Naval Ordnance Plant
1425 Eden Road, York PA 17402

WELL ID	ELEV. TOC (FT. AMSL.)	SCREENED INTERVAL	MID-POINT SCREENED INTERVAL	MID-POINT ELEV (FT. AMSL.)	DIFFERENCE BETWEEN MID-POINTS	DEPTH TO WATER (FT.)	SWL ELEV (FT. AMSL.	DIFFERENCE BETWEEN SWL ELEV	VERTICAL GRADIENT (FT/FT)
West of West Parking Lot - Codorus Creek Levee									
MW-98S	360.77	61-68	64.50	296.27	-37.99	20.69	340.08	0.21	-0.006
MW-98I	360.78	100-105	102.50	258.28	-47.87	20.91	339.87	-1.10	0.023
MW-98D	361.41	131-171	151.00	210.41		20.44	340.97		
MW-99S	360.37	64.3-74.3	69.30	291.07	-68.16	19.55	340.82	-0.03	0.000
MW-99D	359.91	132-142	137.00	222.91		19.06	340.85		
MW-100S	362.28	46-51	48.50	313.78	-15.47	21.20	341.08	-0.02	0.001
MW-100I	361.81	61-66	63.50	298.31	-45.17	20.71	341.10	-0.10	0.002
MW-100D	362.14	104-114	109.00	253.14		20.94	341.20		
MW-101S	356.54	20-40	30.00	326.54	-70.32	16.28	340.26	0.05	-0.001
MW-101D	356.22	85-115	100.00	256.22		16.01	340.21		
North End of the Test Track									
MW-70S	413.20	18-33	25.50	387.70	-47.44	19.30	393.90	0.05	-0.001
MW-70D	413.26	68-78	73.00	340.26		19.41	393.85		
MW-102S	401.95	45-65	55	346.95	-32.24	33.71	368.24	-25.17	0.781
MW-102D	401.71	75-99	87	314.71		8.3	393.41		
Off Site Wells - Eastern Property Boundary									
MW-108S	425.46	25.1-55.1	40.1	385.36	-69.81	27.60	397.86	-5.96	0.085
MW-108D	426.35	72-149	110.8	315.55		22.53	403.82		
MW-109S	388.39	45-65	55	333.39	-38.27	35.29	353.1	-1.02	0.027
MW-109D	389.12	88-100	94	295.12		35.00	354.12		

Notes:
A negative vertical gradient value indicates a downward vertical gradient.
A positive vertical gradient value indicates an upward vertical gradient.
Depth to water data collected on June 14, 2010.
Top of casing (TOC) elevations re-established in March 2007.

Table 4
2010 Key Well List
Former York Naval Ordnance Plant

Monitoring Location	2010 Parameters													
	total VOCs (QAPP list)	Total Dissolved Solids (TDS)	Dissolved Metals (Ca, Mg, Na, K, Mn, Fe)	Total & Dissolved Hexavalent Chromium	Total & Free Cyanide	Total & Dissolved Chromium	Total and Dissolved Lead (Pb)	Total & dissolved Arsenic (As)	Total & Dissolved Nickel (Ni)	Total & Dissolved Beryllium (Be)	Total & Dissolved Mercury (Hg)	Total & Dissolved Antimony (Sb)	1,4-Dioxane by GC/MS SIM	MTBE &Benzene by GC/MS
Cole D	X	X	X											
Cole F	X	X	X											
MW-4 (Cole)	X	X	X											
CW-1	X	X	X											
CW-2	X	X	X											
CW-3	X	X	X											
CW-4	X	X	X											
CW-5	X	X	X											
CW-6	X	X	X											
CW-7	X	X	X											
CW-7A	X	X	X											
CW-9	X	X	X											
CW-13	X	X	X											
CW-15A	X	X	X										X	
CW-17	X	X	X											
CW-1A	X	X	X											
CW-20	X	X	X											
MW-2	X	X	X		X									
MW-7	X	X	X	X		X							X	
MW-8	X	X	X											
MW-10	X	X	X											
MW-16D	X	X	X											
MW-16S	X	X	X											
MW-17	X	X	X											
MW-18D	X	X	X											
MW-18S	X	X	X											
MW-34D	X	X	X											
MW-34S	X	X	X											
MW-35S	X	X	X											
MW-37S	X	X	X											
MW-40D	X	X	X											
MW-40S	X	X	X				X							
MW-43D	X	X	X											
MW-43S	X	X	X				X							
MW-47	X	X	X	X		X								
MW-50D	X	X	X											
MW-50S	X	X	X											
MW-51D	X	X	X	X		X								
MW-51S	X	X	X	X		X							X	
MW-55	X	X	X	X			X						X	
MW-64D	X	X	X											
MW-64S	X	X	X											
MW-74D	X	X	X	X		X								
MW-74S	X	X	X	X		X								
MW-75S	X	X	X											
MW-77	X	X	X											X
MW-80	X	X	X										X	
MW-81D	X	X	X											
MW-81S	X	X	X											

Table 4
2010 Key Well List
Former York Naval Ordnance Plant

Monitoring Location	2010 Parameters													
	total VOCs (QAPP list)	Total Dissolved Solids (TDS)	Dissolved Metals (Ca, Mg, Na, K, Mn, Fe)	Total & Dissolved Hexavalent Chromium	Total & Free Cyanide	Total & Dissolved Chromium	Total and Dissolved Lead (Pb)	Total & dissolved Arsenic (As)	Total & Dissolved Nickel (Ni)	Total & Dissolved Beryllium (Be)	Total & Dissolved Mercury (Hg)	Total & Dissolved Antimony (Sb)	1,4-Dioxane by GC/MS SIM	MTBE &Benzene by GC/MS
MW-82	X	X	X											
MW-87	X	X	X				X						X	
MW-88	X	X	X											
MW-92	X	X	X											
MW-93D	X	X	X											
MW-93S	X	X	X											
MW-94	X	X	X			X	X	X	X	X				
MW-95	X	X	X											
MW-96D	X	X	X											
MW-96S	X	X	X											
MW-98D	X	X	X											
MW-98I	X	X	X											
MW-98S	X	X	X											
MW-99D	X	X	X											
MW-99S	X	X	X											
MW-100D	X	X	X											
MW-100I	X	X	X											
MW-100S	X	X	X											
MW-101D	X	X	X											
MW-101S	X	X	X											
MW-102D	X	X	X											
MW-102S	X	X	X											
MW-103D	X	X	X											
MW-103S	X	X	X											
MW-104	X	X	X				X							
MW-106	X	X	X											
MW-107	X	X	X											
MW-108S	X	X	X				X	X	X	X				
MW-109S	X	X	X											
MW-110	X	X	X											
MW-111	X	X	X		X									
MW-112	X	X	X											
MW-113	X	X	X				X	X			X		X	
MW-114	X	X	X											
MW-115	X	X	X				X	X						
MW-116	X	X	X										X	
MW-117	X	X	X	X		X	X	X	X	X	X	X		
RW-2	X	X	X											
RW-4 FOLK	X	X	X				X							
RW-5	X	X	X											
S-6	X													
S-7	X													
Spring at Bldg 14 S1	X	X	X				X					X		
Spring at Bldg 14 S2	X	X	X				X					X		
Totals: 93	**93**	**91**	**91**	**8**	**2**	**8**	**13**	**5**	**3**	**3**	**2**	**3**	**9**	**1**

Table 5
Groundwater Quality Analyses Summary
June 2010 Key Well Sampling Event
Former York Naval Ordnance Plant - York, PA

Location/ID Sample Date Parameter	MSC Used Aquifer R (ug/L)	MSC Used Aquifer NR (ug/L)	Federal MCL (ug/L)	EPA RSL Tap Water (ug/L)	MW-2 6/25/2010	MW-4 (Cole) 7/8/2010	MW-7 6/29/2010	MW-8 6/18/2010	MW-10 6/24/2010	MW-16D 6/16/2010	MW-16S 6/28/2010	MW-17 6/18/2010	MW-18D 7/1/2010	MW-18S 6/29/2010	MW-34D 6/25/2010
1,4-Dioxane															
1,4-Dioxane	5.6	24		6.1			7.5								
Cyanide, Free															
Cyanide, Free	200	200	200	730	45										
Cyanide, Total															
Cyanide, Total	200	200		730	660										
METAL (Total)															
Antimony	6	6	6	15											
Arsenic	10	10	10	0.045											
Barium	2000	2000	2000	7300											
Beryllium	4	4	4	73											
Cadmium	5	5	5	18											
Chromium	100	100	100				54.8								
Copper	1000	1000	1300	1500											
Hexavalent Chromium	100	100		110			61								
Lead	5	5	15												
Mercury	2	2	2	0.57											
Nickel	100	100		730											
Selenium	50	50	50	180											
Silver	100	100		180											
Thallium	2	2	2	2.4											
Vanadium	260	720		260											
Zinc	2000	2000		11000											
METAL (Dissolved)															
Antimony	6	6	6	15											
Arsenic	10	10	10	0.045											
Barium	2000	2000	2000	7300											
Beryllium	4	4	4	73											
Cadmium	5	5	5	18											
Calcium					7680	35400	169000	129000	19200	36400 J	22800	16800	35000	35900	103000
Chromium	100	100	100				56.2								
Copper	1000	1000	1300	1500											
Hexavalent Chromium	100	100		110			64								
Iron				26000	205	100 U	100 U	100 U	15500	2750	100 U	100 U	3110	2120	100 U
Lead	5	5	15												
Magnesium					3330 B	15700	25000	33900	8640	10200	11600	5830	10600	11000	24800
Manganese	300	300		880	9.5 B	18.7	15.8	5.2 B	400	243	627	2.3 B	398	478	37.4
Mercury	2	2	2	0.57											
Nickel	100	100		730											
Potassium					4660 B	2120 B	83200	23400	1260 B	1430 B	3750 B	2180 B	1160 B	1200 B	29000
Selenium	50	50	50	180											
Silver	100	100		180											
Sodium					16100	59500	90400	65900	7490	6730	132000	5300	9300	7630	78600
Thallium	2	2	2	2.4											
Vanadium	260	720		260											
Zinc	2000	2000		11000											
TDS															
Total Dissolved Solids					124000	437000	965000	809000	135000	293000	494000	152000	184000	181000	699000

Blank results = analyte not analyzed. U = Not detected. J = Organics; estimated. Inorganics; blank contamination. B = Organics; blank contamination. Inorganics; estimated. E = Inorganics: matrix interference.

Table 5
Groundwater Quality Analyses Summary
June 2010 Key Well Sampling Event
Former York Naval Ordnance Plant - York, PA

Location/ID Sample Date Parameter	MSC Used Aquifer R (ug/L)	MSC Used Aquifer NR (ug/L)	Federal MCL (ug/L)	EPA RSL Tap Water (ug/L)	MW-2 6/25/2010	MW-4 (Cole) 7/8/2010	MW-7 6/29/2010	MW-8 6/18/2010	MW-10 6/24/2010	MW-16D 6/16/2010	MW-16S 6/28/2010	MW-17 6/18/2010	MW-18D 7/1/2010	MW-18S 6/29/2010	MW-34D 6/25/2010
TOTAL VOC															
					84.7	2.25	1725	530.6	294.6	30.08	2270.4	34.52	42.82	50.12	151.4
Volatile Organic Compound															
1,1,1,2-Tetrachloroethane	70	70		0.52	4 U	1 U	50 U	25 U	10 U	1 U	20 U	1 U	1 U	1 U	5 U
1,1,1-Trichloroethane	200	200	200	9100	4 U	1 U	50 U	25 U	10 U	1 U	20 U	1 U	1 U	1 U	1.6 J
1,1,2,2-Tetrachloroethane	0.3	0.3		0.067	4 U	1 U	50 U	25 U	10 U	1 U	20 U	1 U	1 U	1 U	5 U
1,1,2-Trichloroethane	5	5	5	0.24	4 U	1 U	50 U	25 U	10 U	1 U	20 U	1 U	1 U	1 U	5 U
1,1-Dichloroethane	27	110		2.4	4 U	1 U	19 J	25 U	10 U	1 U	20 U	1 U	1 U	1 U	5 U
1,1-Dichloroethene	7	7	7	340	4 U	1 U	52	25 U	10 U	1 U	20 U	1 U	1 U	1 U	2.9 J
1,2-Dibromoethane	0.05	0.05	0.05	0.0065	4 U	1 U	50 U	25 U	10 U	1 U	20 U	1 U	1 U	1 U	5 U
1,2-Dichloroethane	5	5	5	0.15	4 U	1 U	50 U	25 U	10 U	1 U	20 U	1 U	1 U	1 U	5 U
1,2-Dichloropropane	5	5	5	0.39	4 U	1 U	50 U	25 U	10 U	1 U	20 U	1 U	1 U	1 U	5 U
1,4-Dioxane	5.6	24		6.1	800 U	200 U	10000 U	5000 U	2000 U	200 U	4000 U	200 U	200 U	200 U	1000 U
2-Butanone	4000	4000		7100	40 U	10 U	500 U	250 U	100 U	10 U	200 U	10 U	10 U	10 U	50 U
2-Hexanone					40 U	10 U	500 U	250 U	100 U	10 U	200 U	10 U	10 U	10 U	50 U
4-Methyl-2-Pentanone	190	410		2000	40 U	10 U	500 U	250 U	100 U	10 U	200 U	10 U	10 U	10 U	50 U
Acetone	3700	10000		22000	40 U	10 U	500 U	250 U	100 U	10 U	200 U	10 U	10 U	10 U	50 U
Acrylonitrile	0.63	2.7		0.045	80 U	20 U	1000 U	500 U	200 U	20 U	400 U	20 U	20 U	20 U	100 U
Benzene	5	5	5	0.41	4 U	1 U	50 U	25 U	10 U	1 U	20 U	1 U	1 U	1 U	5 U
Bromochloromethane	90	90			4 U	1 U	50 U	25 U	10 U	1 U	20 U	1 U	1 U	1 U	5 U
Bromodichloromethane	100	100		0.12	4 U	1 U	50 U	25 U	10 U	1 U	20 U	1 U	1 U	1 U	5 U
Bromoform	80	80		8.5	4 U	1 U	50 U	25 U	10 U	1 U	20 U	1 U	1 U	1 U	5 U
Bromomethane	10	10		8.7	4 U	1 U	50 U	25 U	10 U	1 U	20 U	1 U	1 U	1 U	5 U
Carbon Disulfide	1900	4100		1000	1.7 J	0.55 J	50 U	5.6 J	4.5 J	0.28 J B	7.4 J	1 U	1 U	0.42 J	1.9 J
Carbon Tetrachloride	5	5	5	0.2	4 U	1 U	50 U	25 U	10 U	1 U	20 U	1 U	1 U	1 U	5 U
Chlorobenzene	100	100	100	91	4 U	1 U	50 U	25 U	10 U	1 U	20 U	1 U	1 U	1 U	5 U
Chlorodibromomethane	80	80		0.15	4 U	1 U	50 U	25 U	10 U	1 U	20 U	1 U	1 U	1 U	5 U
Chloroethane	230	900		21000	4 U	1 U	50 U	25 U	10 U	1 U	20 U	1 U	1 U	1 U	5 U
Chloroform	80	80		0.19	4 U	1 U	50 U	25 U	10 U	1 U	20 U	1.2	1 U	1 U	5 U
Chloromethane	30	30		190	4 U	1 U	50 U	25 U	10 U	1 U	20 U	1 U	1 U	1 U	5 U
cis-1,2-Dichloroethene	70	70	70	370	4 U	1 U	300	35	200	3.8	12 J	0.66 J	21	25	37
cis-1,3-Dichloropropene	6.6	26		0.43	4 U	1 U	50 U	25 U	10 U	1 U	20 U	1 U	1 U	1 U	5 U
Ethylbenzene	700	700	700	1.5	4 U	1 U	50 U	25 U	10 U	1 U	20 U	1 U	1 U	1 U	5 U
Methyl tert-butyl ether	20	20		12	4 U	1 U	50 U	25 U	10 U	1 U	20 U	0.21 J	1 U	1 U	5 U
Methylene chloride	5	5		4.8	4 U	1 U	14 J	25 U	2.3 J	1 U	13 J	1 U	1 U	1 U	5 U
Styrene	100	100	100	1600	4 U	1 U	50 U	25 U	10 U	1 U	20 U	1 U	1 U	1 U	5 U
Tetrachloroethene	5	5	5	0.11	73	0.74 J	410	320	10 U	1 U	2200	0.45 J	1 U	1 U	8
Toluene	1000	1000	1000	2300	4 U	1 U	50 U	25 U	10 U	1 U	20 U	1 U	1 U	1 U	5 U
trans-1,2-Dichloroethene	100	100	100	110	4 U	1 U	50 U	25 U	10 U	1 U	20 U	1 U	1 U	1 U	5 U
trans-1,3-Dichloropropene	6.6	26		0.43	4 U	1 U	50 U	25 U	10 U	1 U	20 U	1 U	1 U	1 U	5 U
Trichloroethene	5	5	5	1.7	10	0.96 J	930	170	78	26	38	32	21	24	100
Vinyl Chloride	2	2	2	0.016	4 U	1 U	50 U	25 U	9.8 J	1 U	20 U	1 U	0.82 J	0.7 J	5 U
Xylenes (Total)	10000	10000	10000	200	12 U	3 U	150 U	75 U	30 U	3 U	60 U	3 U	3 U	3 U	15 U

Blank results = analyte not analyzed. U = Not detected. J = Organics; estimated. Inorganics; blank contamination. B = Organics; blank contamination. Inorganics; estimated. E = Inorganics: matrix interference.

Table 5
Groundwater Quality Analyses Summary
June 2010 Key Well Sampling Event
Former York Naval Ordnance Plant - York, PA

Location/ID Sample Date Parameter	MSC Used Aquifer R (ug/L)	MSC Used Aquifer NR (ug/L)	Federal MCL (ug/L)	EPA RSL Tap Water (ug/L)	MW-34S 6/18/2010	MW-35S 6/21/2010	MW-37S 6/28/2010	MW-40D 6/16/2010	MW-40S 6/15/2010	MW-43D 6/29/2010	MW-43S 6/16/2010	MW-47 6/24/2010	MW-50D 7/2/2010	MW-50S 6/29/2010	MW-51D 6/30/2010	MW-51S 7/6/2010	MW-55 7/9/2010	MW-64D 6/28/2010
1,4-Dioxane																		
1,4-Dioxane	5.6	24		6.1												33	7.2	
Cyanide, Free																		
Cyanide, Free	200	200	200	730														
Cyanide, Total																		
Cyanide, Total	200	200		730														
METAL (Total)																		
Antimony	6	6	6	15														
Arsenic	10	10	10	0.045														
Barium	2000	2000	2000	7300														
Beryllium	4	4	4	73														
Cadmium	5	5	5	18														
Chromium	100	100	100									4830			2.8 B	193		
Copper	1000	1000	1300	1500														
Hexavalent Chromium	100	100		110								5600			10 U	200	10 U	
Lead	5	5	15						1.7 B		3 U						16.4	
Mercury	2	2	2	0.57														
Nickel	100	100		730														
Selenium	50	50	50	180														
Silver	100	100		180														
Thallium	2	2	2	2.4														
Vanadium	260	720		260														
Zinc	2000	2000		11000														
METAL (Dissolved)																		
Antimony	6	6	6	15														
Arsenic	10	10	10	0.045														
Barium	2000	2000	2000	7300														
Beryllium	4	4	4	73														
Cadmium	5	5	5	18														
Calcium					81500	236000	49600	78300 J	56800	41800	26400 J	115000	113000	108000	43600	116000	103000	66000
Chromium	100	100	100									4040			1.2 B	199		
Copper	1000	1000	1300	1500														
Hexavalent Chromium	100	100		110								4500			10 U	200	10 U	
Iron				26000	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	341	100 U	100 U	100 U	769 J	100 U
Lead	5	5	15						3 U		3 U						3 U	
Magnesium					22000	35200	12100	13700	14800	9650	5660	14000	36300	21600	3920 B	14900	18800	4470 B
Manganese	300	300		880	6.4 B	10.2 B	2.6 B	116	3.9 B	15 U	3.6 B	12.8 B	220	445	4.2 B	123	16.4	0.79 B
Mercury	2	2	2	0.57														
Nickel	100	100		730														
Potassium					31800	55300	37700	42900 E	6600	1010 B	2660 B	3710 B	27100 J	42100	18500	8950	1220 B	2750 B
Selenium	50	50	50	180														
Silver	100	100		180														
Sodium					105000	93100	26000	386000	144000	3780 B	5550	18300	153000	765000	87300	43500	3820 B	3190 B
Thallium	2	2	2	2.4														
Vanadium	260	720		260														
Zinc	2000	2000		11000														
TDS																		
Total Dissolved Solids					710000	1730000	275000	1380000	696000	179000	279000	521000	980000	1930000	426000	351000	353000	217000

Blank results = analyte not analyzed. U = Not detected. J = Organics; estimated. Inorganics; blank contamination. B = Organics; blank contamination. Inorganics; estimated. E = Inorganics: matrix interference.

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June 2010 Key Well Sampling Event
Former York Naval Ordnance Plant - York, PA

Location/ID Sample Date Parameter	MSC Used Aquifer R (ug/L)	MSC Used Aquifer NR (ug/L)	Federal MCL (ug/L)	EPA RSL Tap Water (ug/L)	MW-34S 6/18/2010	MW-35S 6/21/2010	MW-37S 6/28/2010	MW-40D 6/16/2010	MW-40S 6/15/2010	MW-43D 6/29/2010	MW-43S 6/16/2010	MW-47 6/24/2010	MW-50D 7/2/2010	MW-50S 6/29/2010	MW-51D 6/30/2010	MW-51S 7/6/2010	MW-55 7/9/2010	MW-64D 6/28/2010
TOTAL VOC																		
					42.29	43.71	314	0.92	0	267.7	0.63	566.9	13140	388.7	28.34	3475	3427	1624
Volatile Organic Compound																		
1,1,1,2-Tetrachloroethane	70	70		0.52	1 U	1 U	20 U	1 U	1 U	20 U	1 U	12 U	250 U	10 U	1 U	100 U	100 U	50 U
1,1,1-Trichloroethane	200	200	200	9100	0.44 J	1 U	20 U	1 U	1 U	20 U	1 U	12 U	150 J	10 U	1 U	43 J	100 U	50 U
1,1,2,2-Tetrachloroethane	0.3	0.3		0.067	1 U	1 U	20 U	1 U	1 U	20 U	1 U	12 U	250 U	10 U	1 U	100 U	100 U	50 U
1,1,2-Trichloroethane	5	5	5	0.24	1 U	1 U	20 U	1 U	1 U	20 U	1 U	12 U	250 U	10 U	1 U	100 U	100 U	50 U
1,1-Dichloroethane	27	110		2.4	1 U	0.32 J	20 U	1 U	1 U	20 U	1 U	3.6 J	1200	4.4 J	1 U	14 J	46 J	50 U
1,1-Dichloroethene	7	7	7	340	0.6 J	1 U	20 U	1 U	1 U	20 U	1 U	14	320	10 U	1	68 J	2500	50 U
1,2-Dibromoethane	0.05	0.05	0.05	0.0065	1 U	1 U	20 U	1 U	1 U	20 U	1 U	12 U	250 U	10 U	1 U	100 U	100 U	50 U
1,2-Dichloroethane	5	5	5	0.15	1 U	1 U	20 U	1 U	1 U	8.1 J	1 U	12 U	250 U	10 U	1 U	100 U	100 U	50 U
1,2-Dichloropropane	5	5	5	0.39	1 U	1 U	20 U	1 U	1 U	20 U	1 U	12 U	250 U	10 U	1 U	100 U	100 U	50 U
1,4-Dioxane	5.6	24		6.1	200 U	200 U	4000 U	200 U	200 U	4000 U	200 U	2500 U	50000 U	2000 U	200 U	20000 U	20000 U	10000 U
2-Butanone	4000	4000		7100	10 U	10 U	200 U	10 U	10 U	200 U	10 U	120 U	2500 U	100 U	10 U	1000 U	1000 U	500 U
2-Hexanone					10 U	10 U	200 U	10 U	10 U	200 U	10 U	120 U	2500 U	100 U	10 U	1000 U	1000 U	500 U
4-Methyl-2-Pentanone	190	410		2000	10 U	10 U	200 U	10 U	10 U	200 U	10 U	120 U	2500 U	100 U	10 U	1000 U	1000 U	500 U
Acetone	3700	10000		22000	10 U	10 U	200 U	10 U	10 U	200 U	10 U	120 U	2500 U	100 U	2.9 J	1000 U	1000 U	500 U
Acrylonitrile	0.63	2.7		0.045	20 U	25 U	400 U	20 U	20 U	400 U	20 U	250 U	5000 U	200 U	20 U	2000 U	2000 U	1000 U
Benzene	5	5	5	0.41	1 U	1 U	20 U	1 U	1 U	20 U	1 U	12 U	250 U	10 U	0.12 J	100 U	100 U	50 U
Bromochloromethane	90	90			1 U	1 U	20 U	1 U	1 U	20 U	1 U	12 U	250 U	10 U	1 U	100 U	100 U	50 U
Bromodichloromethane	100	100		0.12	0.45 J	1 U	20 U	1 U	1 U	20 U	1 U	12 U	250 U	10 U	1 U	100 U	100 U	50 U
Bromoform	80	80		8.5	1 U	1 U	20 U	1 U	1 U	20 U	1 U	12 U	250 U	10 U	1 U	100 U	100 U	50 U
Bromomethane	10	10		8.7	1 U	1 U	20 U	1 U	1 U	20 U	1 U	12 U	250 U	10 U	1 U	100 U	100 U	50 U
Carbon Disulfide	1900	4100		1000	1 U	1 U	16 J	0.32 J B	1 U	11 J	0.32 J B	12 U	2600 B	3.5 J	0.53 J	120 B	43 J	50 U
Carbon Tetrachloride	5	5	5	0.2	1 U	1 U	20 U	1 U	1 U	20 U	1 U	12 U	250 U	10 U	1 U	100 U	100 U	50 U
Chlorobenzene	100	100	100	91	1 U	1 U	20 U	1 U	1 U	20 U	1 U	12 U	250 U	10 U	1 U	100 U	100 U	50 U
Chlorodibromomethane	80	80		0.15	1 U	1 U	20 U	1 U	1 U	6.7 J	1 U	12 U	250 U	10 U	1 U	100 U	100 U	50 U
Chloroethane	230	900		21000	1 U	1 U	20 U	1 U	1 U	20 U	1 U	12 U	250 U	10 U	1 U	100 U	100 U	50 U
Chloroform	80	80		0.19	4.9	0.24 J	20 U	1 U	1 U	20 U	1 U	12 U	250 U	10 U	1 U	100 U	100 U	50 U
Chloromethane	30	30		190	1 U	1 U	20 U	1 U	1 U	20 U	1 U	12 U	250 U	10 U	0.4 J	100 U	100 U	50 U
cis-1,2-Dichloroethene	70	70	70	370	6.7	11	17 J	1 U	1 U	12 J	1 U	150	5100	190	5.6	600	69 J	50 U
cis-1,3-Dichloropropene	6.6	26		0.43	1 U	1 U	20 U	1 U	1 U	20 U	1 U	12 U	250 U	10 U	1 U	100 U	100 U	50 U
Ethylbenzene	700	700	700	1.5	1 U	1 U	20 U	1 U	1 U	20 U	1 U	12 U	250 U	10 U	1 U	100 U	100 U	50 U
Methyl tert-butyl ether	20	20		12	1 U	1 U	20 U	1 U	1 U	20 U	1 U	12 U	250 U	10 U	1 U	100 U	100 U	50 U
Methylene chloride	5	5		4.8	1 U	1 U	14 J	1 U	1 U	13 J	1 U	3 J	250 U	10 U	1 U	100 U	100 U	34 J
Styrene	100	100	100	1600	1 U	1 U	20 U	1 U	1 U	20 U	1 U	12 U	250 U	10 U	1 U	100 U	100 U	50 U
Tetrachloroethene	5	5	5	0.11	3.2	0.95 J	250	1 U	1 U	6.9 J	0.31 J	64	470	9 J	1.1	1400	29 J	680
Toluene	1000	1000	1000	2300	1 U	1 U	20 U	1 U	1 U	20 U	1 U	12 U	250 U	1.8 J	0.69 J	100 U	100 U	50 U
trans-1,2-Dichloroethene	100	100	100	110	1 U	1.2	20 U	1 U	1 U	20 U	1 U	2.3 J	250 U	10 U	1 U	100 U	100 U	50 U
trans-1,3-Dichloropropene	6.6	26		0.43	1 U	1 U	20 U	1 U	1 U	20 U	1 U	12 U	250 U	10 U	1 U	100 U	100 U	50 U
Trichloroethene	5	5	5	1.7	26	30	17 J	0.6 J	1 U	210	1 U	330	3300	180	16	1200	740	910
Vinyl Chloride	2	2	2	0.016	1 U	1 U	20 U	1 U	1 U	20 U	1 U	12 U	250 U	10 U	1 U	30 J	100 U	50 U
Xylenes (Total)	10000	10000	10000	200	3 U	3 U	60 U	3 U	3 U	60 U	3 U	38 U	750 U	30 U	3 U	300 U	300 U	150 U

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Table 5
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June 2010 Key Well Sampling Event
Former York Naval Ordnance Plant - York, PA

Location/ID Sample Date Parameter	MSC Used Aquifer R (ug/L)	MSC Used Aquifer NR (ug/L)	Federal MCL (ug/L)	EPA RSL Tap Water (ug/L)	MW-64S 7/1/2010	MW-74D 6/22/2010	MW-74S 6/22/2010	MW-75S 7/6/2010	MW-77 7/8/2010	MW-80 6/21/2010	MW-81D 7/8/2010	MW-81S 7/9/2010	MW-82 6/18/2010	MW-87 7/2/2010	MW-88 6/25/2010	MW-92 6/29/2010	MW-93D 6/28/2010
1,4-Dioxane																	
1,4-Dioxane	5.6	24		6.1						3.1				41			
Cyanide, Free																	
Cyanide, Free	200	200	200	730													
Cyanide, Total																	
Cyanide, Total	200	200		730													
METAL (Total)																	
Antimony	6	6	6	15													
Arsenic	10	10	10	0.045													
Barium	2000	2000	2000	7300													
Beryllium	4	4	4	73													
Cadmium	5	5	5	18													
Chromium	100	100	100			2.6 B	7.2										
Copper	1000	1000	1300	1500													
Hexavalent Chromium	100	100		110		10 U	10 U										
Lead	5	5	15											3 U			
Mercury	2	2	2	0.57													
Nickel	100	100		730													
Selenium	50	50	50	180													
Silver	100	100		180													
Thallium	2	2	2	2.4													
Vanadium	260	720		260													
Zinc	2000	2000		11000													
METAL (Dissolved)																	
Antimony	6	6	6	15													
Arsenic	10	10	10	0.045													
Barium	2000	2000	2000	7300													
Beryllium	4	4	4	73													
Cadmium	5	5	5	18													
Calcium					2980 B	91100	85600	57500	96900	97900	152000	155000	68400	95200	102000	15400	51900
Chromium	100	100	100			1.1 B	0.64 B										
Copper	1000	1000	1300	1500													
Hexavalent Chromium	100	100		110		10 U	10 U										
Iron				26000	100 U	100 U	100 U	20.5 B J	40000 J	100 U	100 U	100 U	100 U	100 U	100 U	19.7 B	100 U
Lead	5	5	15											3 U			
Magnesium					1030 B	20700	10400	12500	8490	34600	18600	21800	8950	14200	23500	5910	11400
Manganese	300	300		880	19.3	7.2 B	42.5	28.6	8620	11 B	9.6 B	1.3 B	2.4 B	1.3 B	8.4 B	3.7 B	22.5
Mercury	2	2	2	0.57													
Nickel	100	100		730													
Potassium					1970 B	3760 B	2850 B	6000	3380 B	7520	9640	20700	2100 B	2420 B J	59900	3410 B	3430 B
Selenium	50	50	50	180													
Silver	100	100		180													
Sodium					6900	34700	16800	20700	7910	32900	38300	57900	10200	11100	135000	8970	14600
Thallium	2	2	2	2.4													
Vanadium	260	720		260													
Zinc	2000	2000		11000													
TDS																	
Total Dissolved Solids					195000	474000	390000	757000	350000	1270000	941000	1030000	275000	387000	1010000	155000	231000

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TOTAL VOC																	
					250	121.62	64.12	31340	2948	284.1	1123	3327	56.92	2572	402	259.4	292.3
Volatile Organic Compound																	
1,1,1,2-Tetrachloroethane	70	70		0.52	10 U	4 U	1 U	1200 U	100 U	10 U	50 U	120 U	1 U	100 U	20 U	10 U	12 U
1,1,1-Trichloroethane	200	200	200	9100	10 U	4 U	1 U	630 J	100 U	3.1 J	50 U	120 U	1 U	100 U	20 U	10 U	12 U
1,1,2,2-Tetrachloroethane	0.3	0.3		0.067	10 U	4 U	1 U	1200 U	100 U	10 U	50 U	120 U	1 U	100 U	20 U	10 U	12 U
1,1,2-Trichloroethane	5	5	5	0.24	10 U	4 U	1 U	1200 U	100 U	10 U	50 U	120 U	1 U	100 U	20 U	10 U	12 U
1,1-Dichloroethane	27	110		2.4	10 U	0.91 J	0.41 J	1200 U	100 U	10 U	50 U	120 U	0.3 J	100 U	20 U	10 U	3.1 J
1,1-Dichloroethene	7	7	7	340	10 U	2.1 J	0.37 J	1200 U	100 U	4.1 J	50 U	120 U	1 U	100 U	20 U	10 U	4.6 J
1,2-Dibromoethane	0.05	0.05	0.05	0.0065	10 U	4 U	1 U	1200 U	100 U	10 U	50 U	120 U	1 U	100 U	20 U	10 U	12 U
1,2-Dichloroethane	5	5	5	0.15	10 U	4 U	1 U	1200 U	100 U	10 U	50 U	120 U	1 U	100 U	20 U	10 U	12 U
1,2-Dichloropropane	5	5	5	0.39	10 U	4 U	1 U	1200 U	100 U	10 U	50 U	120 U	1 U	100 U	20 U	10 U	12 U
1,4-Dioxane	5.6	24		6.1	2000 U	800 U	200 U	250000 U	20000 U	2000 U	10000 U	25000 U	200 U	20000 U	4000 U	2000 U	2500 U
2-Butanone	4000	4000		7100	100 U	40 U	10 U	12000 U	1000 U	100 U	500 U	1200 U	10 U	1000 U	200 U	100 U	120 U
2-Hexanone					100 U	40 U	10 U	12000 U	1000 U	100 U	500 U	1200 U	10 U	1000 U	200 U	100 U	120 U
4-Methyl-2-Pentanone	190	410		2000	100 U	40 U	10 U	12000 U	1000 U	100 U	500 U	1200 U	10 U	1000 U	200 U	100 U	120 U
Acetone	3700	10000		22000	100 U	40 U	10 U	12000 U	1000 U	100 U	500 U	1200 U	10 U	1000 U	200 U	100 U	120 U
Acrylonitrile	0.63	2.7		0.045	200 U	80 U	20 U	25000 U	2000 U	200 U	1000 U	2500 U	20 U	2000 U	400 U	200 U	250 U
Benzene	5	5	5	0.41	10 U	4 U	1 U	1200 U	2000	10 U	50 U	120 U	1 U	100 U	20 U	10 U	12 U
Bromochloromethane	90	90			10 U	4 U	1 U	1200 U	100 U	10 U	50 U	120 U	1 U	100 U	20 U	10 U	12 U
Bromodichloromethane	100	100		0.12	10 U	4 U	1 U	1200 U	100 U	10 U	50 U	120 U	1 U	100 U	20 U	10 U	12 U
Bromoform	80	80		8.5	10 U	4 U	1 U	1200 U	100 U	10 U	50 U	120 U	1 U	100 U	20 U	10 U	12 U
Bromomethane	10	10		8.7	10 U	4 U	1 U	1200 U	100 U	10 U	50 U	120 U	1 U	100 U	20 U	10 U	12 U
Carbon Disulfide	1900	4100		1000	36 B	2.9 J	1 U	1100 J B	78 J	3.7 J B	38 J	760	0.31 J	450 B	20 U	3.4 J	5.4 J
Carbon Tetrachloride	5	5	5	0.2	10 U	4 U	1 U	1200 U	100 U	10 U	50 U	120 U	1 U	100 U	20 U	10 U	12 U
Chlorobenzene	100	100	100	91	10 U	4 U	1 U	1200 U	100 U	10 U	50 U	120 U	1 U	100 U	20 U	10 U	12 U
Chlorodibromomethane	80	80		0.15	10 U	4 U	1 U	1200 U	100 U	10 U	50 U	120 U	1 U	100 U	20 U	10 U	12 U
Chloroethane	230	900		21000	10 U	4 U	1 U	1200 U	100 U	10 U	50 U	120 U	1 U	100 U	20 U	10 U	12 U
Chloroform	80	80		0.19	10 U	4 U	1 U	1200 U	100 U	10 U	50 U	120 U	1 U	100 U	20 U	10 U	12 U
Chloromethane	30	30		190	10 U	4 U	0.3 J	1200 U	100 U	10 U	50 U	120 U	1 U	100 U	20 U	10 U	12 U
cis-1,2-Dichloroethene	70	70	70	370	10 U	27	26	410 J	100 U	99	230	530	28	790	100	10 U	21
cis-1,3-Dichloropropene	6.6	26		0.43	10 U	4 U	1 U	1200 U	100 U	10 U	50 U	120 U	1 U	100 U	20 U	10 U	12 U
Ethylbenzene	700	700	700	1.5	10 U	4 U	1 U	1200 U	120	10 U	50 U	120 U	1 U	100 U	20 U	10 U	12 U
Methyl tert-butyl ether	20	20		12	10 U	4 U	1 U	1200 U	700	10 U	50 U	120 U	1 U	100 U	20 U	10 U	12 U
Methylene chloride	5	5		4.8	10 U	0.61 J	1 U	1200 U	100 U	10 U	11 J B	120 U	1 U	100 U	20 U	10 U	8.2 J
Styrene	100	100	100	1600	10 U	4 U	1 U	1200 U	100 U	10 U	50 U	120 U	1 U	100 U	20 U	10 U	12 U
Tetrachloroethene	5	5	5	0.11	74	7.1	3.5	22000	100 U	4.2 J	34 J	37 J	1.9	32 J	12 J	210	110
Toluene	1000	1000	1000	2300	10 U	4 U	1 U	1200 U	50 J	10 U	50 U	120 U	1 U	100 U	20 U	10 U	12 U
trans-1,2-Dichloroethene	100	100	100	110	10 U	4 U	0.54 J	1200 U	100 U	10 U	50 U	120 U	0.41 J	100 U	20 U	10 U	12 U
trans-1,3-Dichloropropene	6.6	26		0.43	10 U	4 U	1 U	1200 U	100 U	10 U	50 U	120 U	1 U	100 U	20 U	10 U	12 U
Trichloroethene	5	5	5	1.7	140	81	33	7200	100 U	170	810	2000	26	1300	290	46	140
Vinyl Chloride	2	2	2	0.016	10 U	4 U	1 U	1200 U	100 U	10 U	50 U	120 U	1 U	100 U	20 U	10 U	12 U
Xylenes (Total)	10000	10000	10000	200	30 U	12 U	3 U	3800 U	300 U	30 U	150 U	380 U	3 U	300 U	60 U	30 U	38 U

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1,4-Dioxane																		
1,4-Dioxane	5.6	24		6.1														
Cyanide, Free																		
Cyanide, Free	200	200	200	730														
Cyanide, Total																		
Cyanide, Total	200	200		730														
METAL (Total)																		
Antimony	6	6	6	15														
Arsenic	10	10	10	0.045		15.2												
Barium	2000	2000	2000	7300														
Beryllium	4	4	4	73		1.6 B												
Cadmium	5	5	5	18														
Chromium	100	100	100			44.5												
Copper	1000	1000	1300	1500														
Hexavalent Chromium	100	100		110														
Lead	5	5	15			30.4												
Mercury	2	2	2	0.57														
Nickel	100	100		730		29.8 B												
Selenium	50	50	50	180														
Silver	100	100		180														
Thallium	2	2	2	2.4														
Vanadium	260	720		260														
Zinc	2000	2000		11000														
METAL (Dissolved)																		
Antimony	6	6	6	15														
Arsenic	10	10	10	0.045		10 U												
Barium	2000	2000	2000	7300														
Beryllium	4	4	4	73		4 U												
Cadmium	5	5	5	18														
Calcium					39600	16100	104000	106000	110000	9620	134000 J	133000 J	91500	102000	86300	92200	90000	84600 J
Chromium	100	100	100			5 U												
Copper	1000	1000	1300	1500														
Hexavalent Chromium	100	100		110														
Iron				26000	100 U	810 J	100 U	100 U	100 U	10900	100 U	100 U	100 U	100 U	100 U	100 U	100 U	259
Lead	5	5	15			2.9 B												
Magnesium					8530	7690	9170	17900	19700	4300 B	16100	15100	17900	17700	19600	20100	18500	34200
Manganese	300	300		880	15 U	7.1 B	11.7 B	7.8 B	16.8	710	22.6	15 U	3.5 B	19	104	8 B	49.9	182
Mercury	2	2	2	0.57														
Nickel	100	100		730		40 U												
Potassium					6910	3580 B	2810 B	3580 B	3950 B J	2360 B	3010 B	3150 B	4730 B	3940 B	2830 B	3700 B	3770 B	2100 B
Selenium	50	50	50	180														
Silver	100	100		180														
Sodium					33900	17500	20000	34400	40500	3450 B	22900	24700	37800	37900	32000	36500	35600	13800
Thallium	2	2	2	2.4														
Vanadium	260	720		260														
Zinc	2000	2000		11000														
TDS																		
Total Dissolved Solids					211000	179000	391000	431000	499000	116000	138000	508000	446000	498000	401000	435000	470000	411000

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TOTAL VOC																		
					5.44	250.1	35.26	750.5	2961	0.36	26.86	15.99	115.9	93.61	442.4	202	234.4	46.21
Volatile Organic Compound																		
1,1,1,2-Tetrachloroethane	70	70		0.52	1 U	10 U	1 U	25 U	100 U	1 U	1 U	1 U	5 U	4 U	10 U	10 U	10 U	1 U
1,1,1-Trichloroethane	200	200	200	9100	1 U	10 U	1 U	25 U	100 U	1 U	1 U	1 U	3.2 J	4 U	10 U	10 U	10 U	1 U
1,1,2,2-Tetrachloroethane	0.3	0.3		0.067	1 U	10 U	1 U	25 U	100 U	1 U	1 U	1 U	5 U	4 U	10 U	10 U	10 U	1 U
1,1,2-Trichloroethane	5	5	5	0.24	1 U	10 U	1 U	25 U	100 U	1 U	1 U	1 U	5 U	4 U	10 U	10 U	10 U	1 U
1,1-Dichloroethane	27	110		2.4	0.49 J	10 U	0.36 J	25 U	100 U	1 U	0.27 J	1 U	5 U	4 U	2.8 J	10 U	10 U	0.41 J
1,1-Dichloroethene	7	7	7	340	1 U	10 U	1 U	25 U	100 U	1 U	1 U	1 U	3 J	1.3 J	5.9 J	10 U	10 U	0.62 J
1,2-Dibromoethane	0.05	0.05	0.05	0.0065	1 U	10 U	1 U	25 U	100 U	1 U	1 U	1 U	5 U	4 U	10 U	10 U	10 U	1 U
1,2-Dichloroethane	5	5	5	0.15	1 U	10 U	1 U	25 U	100 U	1 U	1 U	1 U	5 U	4 U	10 U	10 U	10 U	1 U
1,2-Dichloropropane	5	5	5	0.39	1 U	10 U	1 U	25 U	100 U	1 U	1 U	1 U	5 U	4 U	10 U	10 U	10 U	1 U
1,4-Dioxane	5.6	24		6.1	200 U	2000 U	200 U	5000 U	20000 U	200 U	200 U	200 U	1000 U	800 U	2000 U	2000 U	2000 U	200 U
2-Butanone	4000	4000		7100	10 U	100 U	10 U	250 U	1000 U	10 U	10 U	10 U	50 U	40 U	100 U	100 U	100 U	10 U
2-Hexanone					10 U	100 U	10 U	250 U	1000 U	10 U	10 U	10 U	50 U	40 U	100 U	100 U	100 U	10 U
4-Methyl-2-Pentanone	190	410		2000	10 U	100 U	10 U	250 U	1000 U	10 U	10 U	10 U	50 U	40 U	100 U	100 U	100 U	10 U
Acetone	3700	10000		22000	10 U	100 U	10 U	250 U	1000 U	10 U	10 U	10 U	50 U	40 U	100 U	100 U	100 U	10 U
Acrylonitrile	0.63	2.7		0.045	20 U	200 U	20 U	500 U	2000 U	20 U	20 U	20 U	100 U	80 U	200 U	200 U	200 U	20 U
Benzene	5	5	5	0.41	1 U	10 U	1 U	25 U	100 U	1 U	1 U	1 U	5 U	4 U	10 U	10 U	10 U	1 U
Bromochloromethane	90	90			1 U	10 U	1 U	25 U	100 U	1 U	1 U	1 U	5 U	4 U	10 U	10 U	10 U	1 U
Bromodichloromethane	100	100		0.12	1 U	10 U	1 U	25 U	100 U	1 U	1 U	1 U	5 U	4 U	10 U	10 U	10 U	1 U
Bromoform	80	80		8.5	1 U	10 U	1 U	25 U	100 U	1 U	1 U	1 U	5 U	4 U	10 U	10 U	10 U	1 U
Bromomethane	10	10		8.7	1 U	10 U	1 U	25 U	100 U	1 U	1 U	1 U	5 U	4 U	10 U	10 U	10 U	1 U
Carbon Disulfide	1900	4100		1000	0.83 J	11 B	0.3 J B	8.5 J	170	0.36 J	0.29 J B	0.29 J B	2.5 J B	2 J B	5.9 J	16	3.2 J B	0.28 J B
Carbon Tetrachloride	5	5	5	0.2	1 U	10 U	1 U	25 U	100 U	1 U	1 U	1 U	5 U	4 U	10 U	10 U	10 U	1 U
Chlorobenzene	100	100	100	91	1 U	10 U	1 U	25 U	100 U	1 U	1 U	1 U	5 U	4 U	10 U	10 U	10 U	1 U
Chlorodibromomethane	80	80		0.15	1 U	10 U	1 U	25 U	100 U	1 U	1 U	1 U	5 U	4 U	10 U	10 U	10 U	1 U
Chloroethane	230	900		21000	1 U	10 U	1 U	25 U	100 U	1 U	1 U	1 U	5 U	4 U	10 U	10 U	10 U	1 U
Chloroform	80	80		0.19	0.34 J	10 U	1 U	25 U	100 U	1 U	1 U	1 U	5 U	4 U	10 U	10 U	10 U	0.9 J
Chloromethane	30	30		190	1 U	10 U	1 U	25 U	100 U	1 U	1 U	1 U	5 U	4 U	10 U	10 U	10 U	1 U
cis-1,2-Dichloroethene	70	70	70	370	0.68 J	150	13	74	81 J	1 U	5.4	2.1	13	15	83	32	37	20
cis-1,3-Dichloropropene	6.6	26		0.43	1 U	10 U	1 U	25 U	100 U	1 U	1 U	1 U	5 U	4 U	10 U	10 U	10 U	1 U
Ethylbenzene	700	700	700	1.5	1 U	10 U	1 U	25 U	100 U	1 U	1 U	1 U	5 U	4 U	10 U	10 U	10 U	1 U
Methyl tert-butyl ether	20	20		12	1 U	10 U	1 U	25 U	100 U	1 U	1 U	1 U	5 U	4 U	10 U	10 U	10 U	1 U
Methylene chloride	5	5		4.8	1 U	10 U	1 U	12 J	100 U	1 U	1 U	1 U	0.8 J	0.71 J	2.2 J	10 U	3.2 J	1 U
Styrene	100	100	100	1600	1 U	10 U	1 U	25 U	100 U	1 U	1 U	1 U	5 U	4 U	10 U	10 U	10 U	1 U
Tetrachloroethene	5	5	5	0.11	1.3	4.7 J	1.6	36	910	1 U	3.9	2.6	6.4	6.6	130	54	71	5
Toluene	1000	1000	1000	2300	1 U	10 U	1 U	25 U	100 U	1 U	1 U	1 U	5 U	4 U	10 U	10 U	10 U	1 U
trans-1,2-Dichloroethene	100	100	100	110	1 U	2.4 J	1 U	25 U	100 U	1 U	1 U	1 U	5 U	4 U	10 U	10 U	10 U	1 U
trans-1,3-Dichloropropene	6.6	26		0.43	1 U	10 U	1 U	25 U	100 U	1 U	1 U	1 U	5 U	4 U	10 U	10 U	10 U	1 U
Trichloroethene	5	5	5	1.7	1.8	82 B	20	620	1800	1 U	17	11	87	68	210	100	120	19
Vinyl Chloride	2	2	2	0.016	1 U	10 U	1 U	25 U	100 U	1 U	1 U	1 U	5 U	4 U	2.6 J	10 U	10 U	1 U
Xylenes (Total)	10000	10000	10000	200	3 U	30 U	3 U	75 U	300 U	3 U	3 U	3 U	15 U	12 U	30 U	30 U	30 U	3 U

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Table 5
Groundwater Quality Analyses Summary
June 2010 Key Well Sampling Event
Former York Naval Ordnance Plant - York, PA

Location/ID Sample Date Parameter	MSC Used Aquifer R (ug/L)	MSC Used Aquifer NR (ug/L)	Federal MCL (ug/L)	EPA RSL Tap Water (ug/L)	MW-101S 6/22/2010	MW-102D 6/23/2010	MW-102S 6/21/2010	MW-103D 6/18/2010	MW-103S 6/24/2010	MW-104 6/23/2010	MW-106 6/18/2010	MW-106 Dup 6/18/2010	MW-107 6/18/2010	MW-108S 7/1/2010	MW-109S 6/21/2010	MW-110 6/21/2010	MW-111 6/30/2010	MW-112 6/23/2010
1,4-Dioxane																		
1,4-Dioxane	5.6	24		6.1														
Cyanide, Free																		
Cyanide, Free	200	200	200	730													10 U	
Cyanide, Total																		
Cyanide, Total	200	200		730													10 U	
METAL (Total)																		
Antimony	6	6	6	15														
Arsenic	10	10	10	0.045										20.3				
Barium	2000	2000	2000	7300														
Beryllium	4	4	4	73										4 U				
Cadmium	5	5	5	18														
Chromium	100	100	100															
Copper	1000	1000	1300	1500														
Hexavalent Chromium	100	100		110														
Lead	5	5	15							3 U				164				
Mercury	2	2	2	0.57														
Nickel	100	100		730										187				
Selenium	50	50	50	180														
Silver	100	100		180														
Thallium	2	2	2	2.4														
Vanadium	260	720		260														
Zinc	2000	2000		11000														
METAL (Dissolved)																		
Antimony	6	6	6	15														
Arsenic	10	10	10	0.045										10 U				
Barium	2000	2000	2000	7300														
Beryllium	4	4	4	73										4 U				
Cadmium	5	5	5	18														
Calcium					119000	27400	8540	33500	27400	9030	130000	131000	191000	9270	86600	72700	34000	165000
Chromium	100	100	100															
Copper	1000	1000	1300	1500														
Hexavalent Chromium	100	100		110														
Iron				26000	100 U	1190	100 U	100 U	12.8 B	100 U	100 U	100 U	100 U	109	639	100 U	2120	100 U
Lead	5	5	15							3 U				3 U				
Magnesium					25500	7520	4250 B	14900	11100	4600 B	22900	23200	58700	4190 B	9410	8760	8790	19700
Manganese	300	300		880	6.8 B	80.3	23	15 U	5.7 B	4.1 B	1470	1500	1.6 B	85.3	1800	15 U	77.8	3.6 B
Mercury	2	2	2	0.57														
Nickel	100	100		730										31.9 B				
Potassium					3960 B	1120 B	2400 B	2520 B	2240 B	2980 B	74000	74500	25500	3330 B	2710 B	2380 B	1040 B	19400
Selenium	50	50	50	180														
Silver	100	100		180														
Sodium					41100	6400	12900	10400	8410	11800	87400	88300	26400	13500	27500	10500	4610 B	262000
Thallium	2	2	2	2.4														
Vanadium	260	720		260														
Zinc	2000	2000		11000														
TDS																		
Total Dissolved Solids					577000	151000	146000	196000	166000	124000	760000	890000	1170000	130000	460000	311000	174000	1580000

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TOTAL VOC																		
					41.94	170.9	169.8	98.1	257.5	57.95	94.3	92.8	46.86	0	245	121	37.62	9.82
Volatile Organic Compound																		
1,1,1,2-Tetrachloroethane	70	70		0.52	1 U	10 U	3 U	5 U	10 U	2 U	5 U	5 U	1 U	1 U	5 U	5 U	1 U	1 U
1,1,1-Trichloroethane	200	200	200	9100	0.58 J	10 U	58	5 U	10 U	2 U	5 U	5 U	5.1	1 U	5 U	5 U	1 U	1 U
1,1,2,2-Tetrachloroethane	0.3	0.3		0.067	1 U	10 U	3 U	5 U	10 U	2 U	5 U	5 U	1 U	1 U	5 U	5 U	1 U	1 U
1,1,2-Trichloroethane	5	5	5	0.24	1 U	10 U	3 U	5 U	10 U	2 U	5 U	5 U	1 U	1 U	5 U	5 U	1 U	1 U
1,1-Dichloroethane	27	110		2.4	1 U	10 U	7.8	5 U	10 U	2 U	5 U	5 U	0.55 J	1 U	5 U	5 U	1 U	1 U
1,1-Dichloroethene	7	7	7	340	0.58 J	10 U	34	5 U	10 U	2 U	5 U	5 U	0.56 J	1 U	5 U	5 U	0.36 J	1 U
1,2-Dibromoethane	0.05	0.05	0.05	0.0065	1 U	10 U	3 U	5 U	10 U	2 U	5 U	5 U	1 U	1 U	5 U	5 U	1 U	1 U
1,2-Dichloroethane	5	5	5	0.15	1 U	10 U	3 U	5 U	10 U	2 U	5 U	5 U	1 U	1 U	5 U	5 U	1 U	1 U
1,2-Dichloropropane	5	5	5	0.39	1 U	10 U	3 U	5 U	10 U	2 U	5 U	5 U	1 U	1 U	5 U	5 U	1 U	1 U
1,4-Dioxane	5.6	24		6.1	200 U	2000 U	600 U	1000 U	2000 U	400 U	1000 U	1000 U	200 U	200 U	1000 U	1000 U	200 U	200 U
2-Butanone	4000	4000		7100	10 U	100 U	30 U	50 U	100 U	20 U	50 U	50 U	10 U	10 U	50 U	50 U	10 U	10 U
2-Hexanone					10 U	100 U	30 U	50 U	100 U	20 U	50 U	50 U	10 U	10 U	50 U	50 U	10 U	10 U
4-Methyl-2-Pentanone	190	410		2000	10 U	100 U	30 U	50 U	100 U	20 U	50 U	50 U	10 U	10 U	50 U	50 U	10 U	10 U
Acetone	3700	10000		22000	10 U	100 U	30 U	50 U	100 U	20 U	50 U	50 U	10 U	1 U	50 U	50 U	10 U	10 U
Acrylonitrile	0.63	2.7		0.045	20 U	200 U	60 U	100 U	200 U	40 U	100 U	100 U	20 U	20 U	100 U	100 U	20 U	20 U
Benzene	5	5	5	0.41	1 U	10 U	3 U	5 U	10 U	2 U	5 U	5 U	1 U	1 U	87	5 U	1 U	1 U
Bromochloromethane	90	90			1 U	10 U	3 U	5 U	10 U	2 U	5 U	5 U	1 U	1 U	5 U	5 U	1 U	1 U
Bromodichloromethane	100	100		0.12	1 U	10 U	3 U	5 U	10 U	2 U	5 U	5 U	1 U	1 U	5 U	5 U	1 U	0.41 J
Bromoform	80	80		8.5	1 U	10 U	3 U	5 U	10 U	2 U	5 U	5 U	1 U	1 U	5 U	5 U	1 U	1 U
Bromomethane	10	10		8.7	1 U	10 U	3 U	5 U	10 U	2 U	5 U	5 U	1 U	1 U	5 U	5 U	1 U	1 U
Carbon Disulfide	1900	4100		1000	0.38 J B	7.1 J	3 U	3.2 J	9.5 J	0.99 J B	2.2 J	1.9 J	0.5 J B	1 U	16	5 B	0.96 J	0.28 J B
Carbon Tetrachloride	5	5	5	0.2	1 U	10 U	3 U	5 U	10 U	2 U	5 U	5 U	1 U	1 U	5 U	5 U	1 U	1 U
Chlorobenzene	100	100	100	91	1 U	10 U	3 U	5 U	10 U	2 U	5 U	5 U	1 U	1 U	5 U	5 U	1 U	1 U
Chlorodibromomethane	80	80		0.15	1 U	10 U	3 U	5 U	10 U	2 U	5 U	5 U	1 U	1 U	5 U	5 U	1 U	1 U
Chloroethane	230	900		21000	1 U	10 U	3 U	5 U	10 U	2 U	5 U	5 U	1 U	1 U	5 U	5 U	1 U	1 U
Chloroform	80	80		0.19	0.69 J	10 U	3 U	5 U	10 U	0.89 J	5 U	5 U	0.55 J	1 U	5 U	5 U	1 U	2.4
Chloromethane	30	30		190	0.31 J	10 U	3 U	5 U	10 U	2 U	5 U	5 U	1 U	1 U	5 U	5 U	1 U	0.43 J
cis-1,2-Dichloroethene	70	70	70	370	5	11	15	3.1 J	11	1.4 J	14	14	7.4	1 U	5 U	5 U	4.4	1 U
cis-1,3-Dichloropropene	6.6	26		0.43	1 U	10 U	3 U	5 U	10 U	2 U	5 U	5 U	1 U	1 U	5 U	5 U	1 U	1 U
Ethylbenzene	700	700	700	1.5	1 U	10 U	3 U	5 U	10 U	2 U	5 U	5 U	1 U	1 U	17	5 U	1 U	1 U
Methyl tert-butyl ether	20	20		12	1 U	10 U	3 U	5 U	10 U	2 U	5 U	5 U	1 U	1 U	15	5 U	1 U	1 U
Methylene chloride	5	5		4.8	1 U	3.2 J	3 U	5 U	10 U	0.47 J	5 U	5 U	1 U	1 U	5 U	5 U	1 U	1 U
Styrene	100	100	100	1600	1 U	10 U	3 U	5 U	10 U	2 U	5 U	5 U	1 U	1 U	5 U	5 U	1 U	1 U
Tetrachloroethene	5	5	5	0.11	4.4	9.6 J	17	8.8	27	5.2	9.1	9.9	22	1 U	5 U	50	1.9	1 U
Toluene	1000	1000	1000	2300	1 U	10 U	3 U	5 U	10 U	2 U	5 U	5 U	0.2 J	1 U	5 U	5 U	1 U	1 U
trans-1,2-Dichloroethene	100	100	100	110	1 U	10 U	3 U	5 U	10 U	2 U	5 U	5 U	1 U	1 U	5 U	5 U	1 U	1 U
trans-1,3-Dichloropropene	6.6	26		0.43	1 U	10 U	3 U	5 U	10 U	2 U	5 U	5 U	1 U	1 U	5 U	5 U	1 U	1 U
Trichloroethene	5	5	5	1.7	30	140	38	83	210	49	69	67	10	1 U	5 U	66	30	6.3
Vinyl Chloride	2	2	2	0.016	1 U	10 U	3 U	5 U	10 U	2 U	5 U	5 U	1 U	1 U	5 U	5 U	1 U	1 U
Xylenes (Total)	10000	10000	10000	200	3 U	30 U	9 U	15 U	30 U	6 U	15 U	15 U	3 U	1 U	110	15 U	3 U	3 U

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1,4-Dioxane																		
1,4-Dioxane	5.6	24		6.1	45			8.7										
Cyanide, Free																		
Cyanide, Free	200	200	200	730														
Cyanide, Total																		
Cyanide, Total	200	200		730														
METAL (Total)																		
Antimony	6	6	6	15					0.33 B J									
Arsenic	10	10	10	0.045	10 U		6 B		1 U									
Barium	2000	2000	2000	7300					102									
Beryllium	4	4	4	73					1 U									
Cadmium	5	5	5	18					1 U									
Chromium	100	100	100						4									
Copper	1000	1000	1300	1500					1.6 B									
Hexavalent Chromium	100	100		110					10 U									
Lead	5	5	15		3 U		2.2 B		0.57 B									
Mercury	2	2	2	0.57	0.091 B J				0.049 B J									
Nickel	100	100		730					1.7									
Selenium	50	50	50	180					1.3 B									
Silver	100	100		180					1 U									
Thallium	2	2	2	2.4					0.13 B									
Vanadium	260	720		260					2 J									
Zinc	2000	2000		11000					4.2 B									
METAL (Dissolved)																		
Antimony	6	6	6	15					0.26 B									
Arsenic	10	10	10	0.045	10 U		6 B		1 U									
Barium	2000	2000	2000	7300					101									
Beryllium	4	4	4	73					1 U									
Cadmium	5	5	5	18					1 U									
Calcium					80800	122000	173000	204000	117000	14300	6110	22400	19100	19300	28700	32300	32500	4280 B
Chromium	100	100	100						3.5									
Copper	1000	1000	1300	1500					1.4 B									
Hexavalent Chromium	100	100		110					10 U									
Iron				26000	100 U	846	9890	100 U	100 U	7580 J	100 U	663 J	6990 J	7040 J	6650 J	173 J	6240 J	100 U
Lead	5	5	15		3 U		3 U		0.094 B									
Magnesium					14100	22300	18300	41000	16000	7200	5870	9200	8380	8490	10800	7550	11100	3670 B
Manganese	300	300		880	1.1 B	84.7	723	3940	12.5 B	764	35.9	1520	488	495	483	435	385	54
Mercury	2	2	2	0.57	0.2 U				0.044 B									
Nickel	100	100		730					0.91 B									
Potassium					2180 B	18400 J	4810 B	6570	102000	1530 B	3410 B	1920 B	1490 B	1590 B	1250 B	2270 B	1170 B	2520 B
Selenium	50	50	50	180					0.72 B									
Silver	100	100		180					1 U									
Sodium					9170	30700	25400	44100	235000	7370	35400	10500	12600	12700	10700	18500	9540	10600
Thallium	2	2	2	2.4					0.14 B									
Vanadium	260	720		260					2									
Zinc	2000	2000		11000					4 B									
TDS																		
Total Dissolved Solids					372000	625000	784000	1110000	1330000	129000	183000	154000	170000	172000	196000	255000	213000	81000

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June 2010 Key Well Sampling Event
Former York Naval Ordnance Plant - York, PA

Location/ID Sample Date Parameter	MSC Used Aquifer R (ug/L)	MSC Used Aquifer NR (ug/L)	Federal MCL (ug/L)	EPA RSL Tap Water (ug/L)	MW-113 7/6/2010	MW-114 7/2/2010	MW-115 7/1/2010	MW-116 7/1/2010	MW-117 6/23/2010	CW-1 7/7/2010	CW-1A 7/7/2010	CW-2 7/7/2010	CW-3 7/7/2010	CW-3 Dup 7/7/2010	CW-4 7/7/2010	CW-5 7/7/2010	CW-6 7/7/2010	CW-7 7/7/2010
TOTAL VOC																		
					2761	7650	590.2	768	59.02	49.92	68.46	23.41	53.31	50.43	80.3	30.39	71.8	7.92
Volatile Organic Compound																		
1,1,1,2-Tetrachloroethane	70	70		0.52	100 U	200 U	10 U	25 U	1 U	1 U	2 U	1 U	1 U	1 U	2 U	1 U	2 U	1 U
1,1,1-Trichloroethane	200	200	200	9100	100 U	200 U	10 U	25 U	1 U	1 U	2 U	1 U	1 U	1 U	2 U	1 U	2 U	1 U
1,1,2,2-Tetrachloroethane	0.3	0.3		0.067	100 U	200 U	10 U	25 U	1 U	1 U	2 U	1 U	1 U	1 U	2 U	1 U	2 U	1 U
1,1,2-Trichloroethane	5	5	5	0.24	100 U	200 U	10 U	25 U	1 U	1 U	2 U	1 U	1 U	1 U	2 U	1 U	2 U	1 U
1,1-Dichloroethane	27	110		2.4	100 U	200 U	97	11 J	0.66 J	1 U	2 U	1 U	1 U	1 U	2 U	1 U	2 U	1 U
1,1-Dichloroethene	7	7	7	340	38 J	200 U	10	16 J	0.34 J	1 U	2 U	1 U	1 U	1 U	2 U	1 U	2 U	1 U
1,2-Dibromoethane	0.05	0.05	0.05	0.0065	100 U	200 U	10 U	25 U	1 U	1 U	2 U	1 U	1 U	1 U	2 U	1 U	2 U	1 U
1,2-Dichloroethane	5	5	5	0.15	100 U	200 U	10 U	25 U	1 U	1 U	2 U	1 U	1 U	1 U	2 U	1 U	2 U	1 U
1,2-Dichloropropane	5	5	5	0.39	100 U	200 U	10 U	25 U	1 U	1 U	2 U	1 U	1 U	1 U	2 U	1 U	2 U	1 U
1,4-Dioxane	5.6	24		6.1	20000 U	40000 U	2000 U	5000 U	200 U	200 U	400 U	200 U	200 U	200 U	400 U	200 U	400 U	200 U
2-Butanone	4000	4000		7100	1000 U	2000 U	100 U	250 U	10 U	10 U	20 U	10 U	10 U	10 U	20 U	10 U	20 U	10 U
2-Hexanone					1000 U	2000 U	100 U	250 U	10 U	10 U	20 U	10 U	10 U	10 U	20 U	10 U	20 U	10 U
4-Methyl-2-Pentanone	190	410		2000	1000 U	2000 U	100 U	250 U	10 U	10 U	20 U	10 U	10 U	10 U	20 U	10 U	20 U	10 U
Acetone	3700	10000		22000	1000 U	2000 U	100 U	250 U	10 U	10 U	20 U	10 U	10 U	10 U	20 U	10 U	20 U	10 U
Acrylonitrile	0.63	2.7		0.045	2000 U	4000 U	200 U	500 U	20 U	20 U	40 U	20 U	20 U	20 U	40 U	20 U	40 U	20 U
Benzene	5	5	5	0.41	100 U	200 U	1.5 J	25 U	1 U	1 U	2 U	1 U	1 U	1 U	2 U	1 U	2 U	1 U
Bromochloromethane	90	90			100 U	200 U	10 U	25 U	1 U	1 U	2 U	1 U	1 U	1 U	2 U	1 U	2 U	1 U
Bromodichloromethane	100	100		0.12	100 U	200 U	10 U	25 U	1 U	1 U	2 U	1 U	1 U	1 U	2 U	1 U	2 U	1 U
Bromoform	80	80		8.5	100 U	200 U	10 U	25 U	1 U	1 U	2 U	1 U	1 U	1 U	2 U	1 U	2 U	1 U
Bromomethane	10	10		8.7	100 U	200 U	10 U	25 U	1 U	1 U	2 U	1 U	1 U	1 U	2 U	1 U	2 U	1 U
Carbon Disulfide	1900	4100		1000	110 B	1400	180 B	26 B	0.42 J	0.47 J	17	2.7 B	0.41 J B	0.33 J	2.5	0.49 J B	4.1	0.45 J
Carbon Tetrachloride	5	5	5	0.2	100 U	200 U	10 U	25 U	1 U	1 U	2 U	1 U	1 U	1 U	2 U	1 U	2 U	1 U
Chlorobenzene	100	100	100	91	100 U	200 U	10 U	25 U	1 U	1 U	2 U	1 U	1 U	1 U	2 U	1 U	2 U	1 U
Chlorodibromomethane	80	80		0.15	100 U	200 U	10 U	25 U	1 U	1 U	2 U	1 U	1 U	1 U	2 U	1 U	2 U	1 U
Chloroethane	230	900		21000	100 U	200 U	10 U	25 U	1 U	1 U	2 U	1 U	1 U	1 U	2 U	1 U	2 U	1 U
Chloroform	80	80		0.19	100 U	200 U	10 U	25 U	0.83 J	1 U	2 U	1 U	1 U	1 U	2 U	1 U	2 U	1
Chloromethane	30	30		190	100 U	200 U	10 U	25 U	1 U	0.45 J	2 U	1 U	1 U	1 U	2 U	1 U	2 U	1 U
cis-1,2-Dichloroethene	70	70	70	370	870	2000	240	470	19	11	0.54 J	4.4	29	28	28	5	15	0.27 J
cis-1,3-Dichloropropene	6.6	26		0.43	100 U	200 U	10 U	25 U	1 U	1 U	2 U	1 U	1 U	1 U	2 U	1 U	2 U	1 U
Ethylbenzene	700	700	700	1.5	100 U	200 U	10 U	25 U	1 U	1 U	2 U	1 U	1 U	1 U	2 U	1 U	2 U	1 U
Methyl tert-butyl ether	20	20		12	100 U	200 U	10 U	25 U	1 U	1 U	2 U	1 U	1 U	1 U	2 U	1 U	2 U	1 U
Methylene chloride	5	5		4.8	100 U	200 U	10 U	25 U	1 U	1 U	1 J B	1 U	1 U	1 U	1.5 J B	1 U	1.4 J B	1 U
Styrene	100	100	100	1600	100 U	200 U	10 U	25 U	1 U	1 U	2 U	1 U	1 U	1 U	2 U	1 U	2 U	1 U
Tetrachloroethene	5	5	5	0.11	43 J	550	4.1 J	63	5.6	1 U	0.92 J	0.31 J	6.9	6.1	4.3	17	42	1 U
Toluene	1000	1000	1000	2300	100 U	200 U	10 U	25 U	1 U	1 U	2 U	1 U	1 U	1 U	2 U	1 U	2 U	1 U
trans-1,2-Dichloroethene	100	100	100	110	100 U	200 U	2.8 J	25 U	0.17 J	1 U	2 U	1 U	1 U	1 U	2 U	1 U	2 U	1 U
trans-1,3-Dichloropropene	6.6	26		0.43	100 U	200 U	10 U	25 U	1 U	1 U	2 U	1 U	1 U	1 U	2 U	1 U	2 U	1 U
Trichloroethene	5	5	5	1.7	1700	3700	4.8 J	160	32	38	49	16 B	17 B	16	44	7.9 B	9.3	6.2
Vinyl Chloride	2	2	2	0.016	100 U	200 U	50	22 J	1 U	1 U	2 U	1 U	1 U	1 U	2 U	1 U	2 U	1 U
Xylenes (Total)	10000	10000	10000	200	300 U	600 U	30 U	75 U	3 U	3 U	6 U	3 U	3 U	3 U	6 U	3 U	6 U	3 U

Blank results = analyte not analyzed. U = Not detected. J = Organics; estimated. Inorganics; blank contamination. B = Organics; blank contamination. Inorganics; estimated. E = Inorganics: matrix interference.

Table 5
Groundwater Quality Analyses Summary
June 2010 Key Well Sampling Event
Former York Naval Ordnance Plant - York, PA

Location/ID Sample Date Parameter	MSC Used Aquifer R (ug/L)	MSC Used Aquifer NR (ug/L)	Federal MCL (ug/L)	EPA RSL Tap Water (ug/L)	CW-7A 7/7/2010	CW-9 7/7/2010	CW-13 7/7/2010	CW-15A 7/7/2010	CW-17 7/7/2010	CW-20 7/8/2010	Cole D 7/9/2010	Cole F 7/8/2010	HERMAN (S-7) 6/25/2010	RW-2 7/6/2010	RW-4 FOLK 6/25/2010	RW-5 7/7/2010
1,4-Dioxane																
1,4-Dioxane	5.6	24		6.1				180								
Cyanide, Free																
Cyanide, Free	200	200	200	730												
Cyanide, Total																
Cyanide, Total	200	200		730												
METAL (Total)																
Antimony	6	6	6	15												
Arsenic	10	10	10	0.045												
Barium	2000	2000	2000	7300												
Beryllium	4	4	4	73												
Cadmium	5	5	5	18												
Chromium	100	100	100													
Copper	1000	1000	1300	1500												
Hexavalent Chromium	100	100		110												
Lead	5	5	15												9	
Mercury	2	2	2	0.57												
Nickel	100	100		730												
Selenium	50	50	50	180												
Silver	100	100		180												
Thallium	2	2	2	2.4												
Vanadium	260	720		260												
Zinc	2000	2000		11000												
METAL (Dissolved)																
Antimony	6	6	6	15												
Arsenic	10	10	10	0.045												
Barium	2000	2000	2000	7300												
Beryllium	4	4	4	73												
Cadmium	5	5	5	18												
Calcium					4840 B	72400	116000	187000	99200	81400	48800	79500		4470 B	3970 B	103000
Chromium	100	100	100													
Copper	1000	1000	1300	1500												
Hexavalent Chromium	100	100		110												
Iron				26000	100 U	100 U	100 U	100 U	100 U	41.1 B J	100 U	100 U		100 U	255	83.9 B J
Lead	5	5	15												7.8	
Magnesium					3930 B	18400	19100	23600	11900	18700	18100	7930		3340 B	3590 B	30800
Manganese	300	300		880	89.8	3.5 B	159	315	4 B	15.8	15 U	15 U		5.4 B	29.2	26.6
Mercury	2	2	2	0.57												
Nickel	100	100		730												
Potassium					3040 B	13300	15600	12800	6250	4040 B	3510 B	1850 B		1710 B	2710 B	7200
Selenium	50	50	50	180												
Silver	100	100		180												
Sodium					29200	37500	44800	45700	25800	36200	27100	36500		5140	16300	85500
Thallium	2	2	2	2.4												
Vanadium	260	720		260												
Zinc	2000	2000		11000												
TDS																
Total Dissolved Solids					151000	461000	656000	1040000	464000	421000	282000	327000		142000	110000	718000

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TOTAL VOC																
					398	1474.7	1150	12151	270.9	1610	52.18	48.17	0.6	4.3	0.17	3.5
Volatile Organic Compound																
1,1,1,2-Tetrachloroethane	70	70		0.52	20 U	25 U	25 U	250 U	10 U	50 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	200	200	200	9100	20 U	35	25 U	3100	10 U	39 J	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	0.3	0.3		0.067	20 U	25 U	25 U	250 U	10 U	50 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	5	5	5	0.24	20 U	25 U	25 U	250 U	10 U	50 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	27	110		2.4	20 U	4.7 J	3.8 J	81 J	3.3 J	50 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	7	7	7	340	20 U	12 J	9 J	860	6.6 J	50 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromoethane	0.05	0.05	0.05	0.0065	20 U	25 U	25 U	250 U	10 U	50 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	5	5	5	0.15	20 U	25 U	25 U	250 U	10 U	50 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	5	5	5	0.39	20 U	25 U	25 U	250 U	10 U	50 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dioxane	5.6	24		6.1	4000 U	5000 U	5000 U	50000 U	2000 U	10000 U	200 U	200 U	200 U	200 U	200 U	200 U
2-Butanone	4000	4000		7100	200 U	250 U	250 U	2500 U	100 U	500 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone					200 U	250 U	250 U	2500 U	100 U	500 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-Pentanone	190	410		2000	200 U	250 U	250 U	2500 U	100 U	500 U	10 U	10 U	10 U	10 U	10 U	10 U
Acetone	3700	10000		22000	200 U	250 U	250 U	2500 U	100 U	500 U	10 U	10 U	10 U	10 U	10 U	10 U
Acrylonitrile	0.63	2.7		0.045	400 U	500 U	500 U	5000 U	200 U	1000 U	20 U	20 U	20 U	20 U	20 U	20 U
Benzene	5	5	5	0.41	20 U	25 U	25 U	250 U	10 U	50 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromochloromethane	90	90			20 U	25 U	25 U	250 U	10 U	50 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	100	100		0.12	20 U	25 U	25 U	250 U	10 U	50 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	80	80		8.5	20 U	25 U	25 U	250 U	10 U	50 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromomethane	10	10		8.7	20 U	25 U	25 U	250 U	10 U	50 U	1 U	1 U	1 U	1 U	1 U	1 U
Carbon Disulfide	1900	4100		1000	240	310 B	280 B	600 B	28 B	26 J	1 U	0.79 J	1 U	0.81 J B	1 U	0.91 J
Carbon Tetrachloride	5	5	5	0.2	20 U	25 U	25 U	250 U	10 U	50 U	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	100	100	100	91	20 U	25 U	25 U	250 U	10 U	50 U	1 U	1 U	1 U	1 U	1 U	1 U
Chlorodibromomethane	80	80		0.15	20 U	25 U	25 U	250 U	10 U	50 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	230	900		21000	20 U	25 U	25 U	250 U	10 U	50 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	80	80		0.19	20 U	25 U	25 U	250 U	10 U	50 U	0.18 J	1 U	0.6 J	0.63 J	0.17 J	1 U
Chloromethane	30	30		190	20 U	25 U	25 U	250 U	10 U	50 U	1 U	1 U	1 U	0.54 J	1 U	1 U
cis-1,2-Dichloroethene	70	70	70	370	20 U	73	350	4100	60	90	1 U	0.38 J	1 U	1 U	1 U	1.5
cis-1,3-Dichloropropene	6.6	26		0.43	20 U	25 U	25 U	250 U	10 U	50 U	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	700	700	700	1.5	20 U	25 U	25 U	250 U	10 U	50 U	1 U	1 U	1 U	1 U	1 U	1 U
Methyl tert-butyl ether	20	20		12	20 U	25 U	25 U	250 U	10 U	50 U	1 U	1 U	1 U	1 U	1 U	1 U
Methylene chloride	5	5		4.8	14 J B	25 U	25 U	250 U	10 U	55 B	1 U	1 U	1 U	1 U	1 U	1 U
Styrene	100	100	100	1600	20 U	25 U	25 U	250 U	10 U	50 U	1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	5	5	5	0.11	4 J	660	150	910	53	880	36	14	1 U	1 U	1 U	0.19 J
Toluene	1000	1000	1000	2300	20 U	25 U	25 U	250 U	10 U	50 U	1 U	1 U	1 U	0.32 J	1 U	1 U
trans-1,2-Dichloroethene	100	100	100	110	20 U	25 U	25 U	250 U	10 U	50 U	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,3-Dichloropropene	6.6	26		0.43	20 U	25 U	25 U	250 U	10 U	50 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	5	5	5	1.7	140	380 B	350 B	2500 B	120 B	520	16	33	1 U	2	1 U	0.9 J
Vinyl Chloride	2	2	2	0.016	20 U	25 U	7.2 J	250 U	10 U	50 U	1 U	1 U	1 U	1 U	1 U	1 U
Xylenes (Total)	10000	10000	10000	200	60 U	75 U	75 U	750 U	30 U	150 U	3 U	3 U	3 U	3 U	3 U	3 U

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Location/ID Sample Date Parameter	MSC Used Aquifer R (ug/L)	MSC Used Aquifer NR (ug/L)	Federal MCL (ug/L)	EPA RSL Tap Water (ug/L)	Spring at Bldg 14 S1 6/25/2010	Spring at Bldg 14 S2 7/9/2010	TATE (S-6) 6/25/2010
1,4-Dioxane							
1,4-Dioxane	5.6	24		6.1			
Cyanide, Free							
Cyanide, Free	200	200	200	730			
Cyanide, Total							
Cyanide, Total	200	200		730			
METAL (Total)							
Antimony	6	6	6	15	3.6 J	0.76 B J	
Arsenic	10	10	10	0.045			
Barium	2000	2000	2000	7300			
Beryllium	4	4	4	73			
Cadmium	5	5	5	18			
Chromium	100	100	100				
Copper	1000	1000	1300	1500			
Hexavalent Chromium	100	100		110			
Lead	5	5	15		1.3 B	4540	
Mercury	2	2	2	0.57			
Nickel	100	100		730			
Selenium	50	50	50	180			
Silver	100	100		180			
Thallium	2	2	2	2.4			
Vanadium	260	720		260			
Zinc	2000	2000		11000			
METAL (Dissolved)							
Antimony	6	6	6	15	5.6 J	0.098 B	
Arsenic	10	10	10	0.045			
Barium	2000	2000	2000	7300			
Beryllium	4	4	4	73			
Cadmium	5	5	5	18			
Calcium					82200	20300	
Chromium	100	100	100				
Copper	1000	1000	1300	1500			
Hexavalent Chromium	100	100		110			
Iron				26000	100 U	100 U	
Lead	5	5	15		3 U	8.3	
Magnesium					12500	5310	
Manganese	300	300		880	40.7	1.2 B	
Mercury	2	2	2	0.57			
Nickel	100	100		730			
Potassium					8700	3110 B	
Selenium	50	50	50	180			
Silver	100	100		180			
Sodium					30600	6790	
Thallium	2	2	2	2.4			
Vanadium	260	720		260			
Zinc	2000	2000		11000			
TDS							
Total Dissolved Solids					384000	143000	

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Location/ID Sample Date Parameter	MSC Used Aquifer R (ug/L)	MSC Used Aquifer NR (ug/L)	Federal MCL (ug/L)	EPA RSL Tap Water (ug/L)	Spring at Bldg 14 S1 6/25/2010	Spring at Bldg 14 S2 7/9/2010	TATE (S-6) 6/25/2010
TOTAL VOC							
					0.3	39.76	0.82
Volatile Organic Compound							
1,1,1,2-Tetrachloroethane	70	70		0.52	1 U	1 U	1 U
1,1,1-Trichloroethane	200	200	200	9100	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	0.3	0.3		0.067	1 U	1 U	1 U
1,1,2-Trichloroethane	5	5	5	0.24	1 U	1 U	1 U
1,1-Dichloroethane	27	110		2.4	1 U	1 U	1 U
1,1-Dichloroethene	7	7	7	340	1 U	1 U	1 U
1,2-Dibromoethane	0.05	0.05	0.05	0.0065	1 U	1 U	1 U
1,2-Dichloroethane	5	5	5	0.15	1 U	1 U	1 U
1,2-Dichloropropane	5	5	5	0.39	1 U	1 U	1 U
1,4-Dioxane	5.6	24		6.1	200 U	200 U	200 U
2-Butanone	4000	4000		7100	10 U	10 U	10 U
2-Hexanone					10 U	10 U	10 U
4-Methyl-2-Pentanone	190	410		2000	10 U	10 U	10 U
Acetone	3700	10000		22000	10 U	10 U	10 U
Acrylonitrile	0.63	2.7		0.045	20 U	20 U	20 U
Benzene	5	5	5	0.41	1 U	1 U	1 U
Bromochloromethane	90	90			1 U	1 U	1 U
Bromodichloromethane	100	100		0.12	1 U	1 U	1 U
Bromoform	80	80		8.5	1 U	1 U	1 U
Bromomethane	10	10		8.7	1 U	1 U	1 U
Carbon Disulfide	1900	4100		1000	1 U	1 U	1 U
Carbon Tetrachloride	5	5	5	0.2	1 U	1 U	1 U
Chlorobenzene	100	100	100	91	1 U	1 U	1 U
Chlorodibromomethane	80	80		0.15	1 U	1 U	1 U
Chloroethane	230	900		21000	1 U	1 U	1 U
Chloroform	80	80		0.19	1 U	0.92 J	0.82 J
Chloromethane	30	30		190	0.3 J	1 U	1 U
cis-1,2-Dichloroethene	70	70	70	370	1 U	0.88 J	1 U
cis-1,3-Dichloropropene	6.6	26		0.43	1 U	1 U	1 U
Ethylbenzene	700	700	700	1.5	1 U	1 U	1 U
Methyl tert-butyl ether	20	20		12	1 U	0.19 J	1 U
Methylene chloride	5	5		4.8	1 U	1 U	1 U
Styrene	100	100	100	1600	1 U	1 U	1 U
Tetrachloroethene	5	5	5	0.11	1 U	0.77 J	1 U
Toluene	1000	1000	1000	2300	1 U	1 U	1 U
trans-1,2-Dichloroethene	100	100	100	110	1 U	1 U	1 U
trans-1,3-Dichloropropene	6.6	26		0.43	1 U	1 U	1 U
Trichloroethene	5	5	5	1.7	1 U	37	1 U
Vinyl Chloride	2	2	2	0.016	1 U	1 U	1 U
Xylenes (Total)	10000	10000	10000	200	3 U	3 U	3 U

Blank results = analyte not analyzed. U = Not detected. J = Organics; estimated. Inorganics; blank contamination. B = Organics; blank contamination. Inorganics; estimated. E = Inorganics: matrix interference.