COMPREHENSIVE GROUNDWATER MONITORING REPORT FOR 2016-2017
Former York Naval Ordnance Plant
1425 Eden Road, Springettsbury Township
York, Pennsylvania

Prepared for:

Former York Naval Ordnance Plant Remediation Team

August 1, 2018

Prepared by:

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Table of Contents

Tables

Figures

Plate

Appendices

** - in portable document format (PDF) on the USB Drive attached to this report.*

LIST OF ACRONYMS AND ABBREVIATIONS

%D	percent difference
%R	percent recovery
%RSD	percent relative standard deviation
µg/L	micrograms per liter
amsl	above mean sea level
ArcIMS	Arc Internet Map Server
bgs	below ground surface
Bldg3	Building 3
Bldg58	Building 58
cis12DCE	cis-1,2-dichloroethene
COC	constituents of concern
CPA	Central Plant Area
CVOC	chlorinated volatile organic compounds
DNAPL	dense non-aqueous phase liquid
DQO	data quality objective
EA	EA Engineering, Science, and Technology, Inc., PBC
EDD	electronic data deliverables
FSP	Field Sampling Plan
fYNOP	former York Naval Ordnance Plant
GSC	Groundwater Sciences Corporation
GWTS	groundwater extraction and treatment system
Harley-Davidson	Harley-Davidson Motor Company Operations, Inc.
HHRA	human health risk assessment
HTG	Hydro-Terra Group

IS	internal standard
LCS/LCSD	laboratory control sample/laboratory control sample duplicate
Leidos	Leidos, Inc.
LL	low level
MCL	maximum contaminant levels
MG	million gallons
MMRP	Military Munitions Response Program
MS/MSD	matrix spike/matrix spike duplicate
MSC	medium specific concentration
NBldg4	North Building 4
NETT	North End of Test Track
NPBA	Northern Property Boundary Area
PADEP	Pennsylvania Department of Environmental Protection
Part 2 SRI	Part 2 Supplemental Groundwater Remedial Investigation
PCE	tetrachloroethene
ppm	part per million
QA/QC	quality assurance/quality control
QAPP	Quality Assurance Project Plan
QC	quality control
RI	remedial investigation
RPD	relative percent difference
RRF	relative response factors
RSL	regional screening level
SAIC	Science Applications International Company
SDG	sample delivery group
SPBA	Southern Property Boundary Area

SPA	South Plume Area
SW-WPL	Southwest Corner of the West Parking Lot
TCA	1,1,1-trichloroethane
TCE	trichloroethene
USEPA	United States Environmental Protection Agency
VI	vapor intrusion
VOCs	volatile organic compounds
WPL	West Parking Lot

EXECUTIVE SUMMARY

This report provides the results of comprehensive groundwater monitoring completed in 2016 and 2017 at the former York Naval Ordnance Plant (fYNOP). The monitoring was performed to meet the objectives stated in the Groundwater and Surface Water Monitoring Plan dated September 2016. In 2016, the monitoring scope in the plan was reduced because of the redevelopment activities on the West Campus. The scope in 2017 was also reduced because sampling and testing efforts were focused in the Southern Property Boundary Area (SPBA) to support the completion of the Part 2 Supplemental Remedial Investigation (SRI) Report and the human health risk assessment (HHRA) for groundwater.

An evaluation of the Site-wide water level elevations from October 2017 indicated that the shallow groundwater gradient in the wells was generally westward across the fYNOP towards Codorus Creek. Pumping of groundwater from active collection wells CW-9, CW-13, CW-15A, CW-17 and CW-20 in the West Parking Lot (WPL) forms a coalescing cone of drawdown that prevents groundwater flow to Codorus Creek. These results are consistent with previous evaluations completed under the same pumping conditions.

Below is a summary of the comprehensive groundwater sampling results for 2016 and 2017 listed by area at the fYNOP:

- Northern Property Boundary Area (NPBA) - The third and fourth years of shutdown monitoring in 2016 and 2017 indicate the groundwater gradient and chemistry conditions have remained substantially the same since the groundwater extraction system was shut down in June 2013.

- North End of the Test Track (NETT) – Volatile organic compound (VOC) concentrations are stable or declining and indicate an improvement in the groundwater quality over time.

- Eastern Landfill – The groundwater sampling results continue to indicate the landfill is not a source of additional constituents of concern (COCs) to groundwater, which was a conclusion of the SRI.

- Former Building 58 (Bldg58) Area - The potential for groundwater in the vicinity of former Bldg58 to migrate southward following the shutdown of CW-8 in November 2013 was not indicated based on the groundwater chemistry results.

- Southwest Corner of the West Parking Lot (SW-WPL) – Samples collected during the pumping of extraction well CW-20 and from the monitoring wells surrounding CW-20 have shown a general reduction in COC concentrations; however, the concentrations fluctuate upwards and downwards and exceed part per million (ppm) levels in some of the samples from the monitoring wells.

- South Plume Area (SPA) – COC concentrations are stable or declining except for samples from two off-Site wells on the K. G. Whiteford Ltd. property (i.e., the former Cole Steel and Pfaltzgraff Company manufacturing facilities) where increasing trichloroethene (TCE) and tetracloroethene (PCE) concentration trends were observed.

- WPL Groundwater Extraction System – Stable to declining COC concentrations were observed in the samples from the active extraction wells in the WPL.

- Former Building 3 (Bldg3) Dewatering System – The third year of post-shutdown monitoring in 2016 indicated no adverse effects since the shutdown of the system in June 2013. In September 2017, the system was decommissioned/abandoned following receipt of regulatory approval.

- SPBA – The results from these supplemental investigation and remedial testing samples were used to support the design and installation of the interim groundwater extraction system in the SPBA.

- Eastern Perimeter Road (MW-15 Area) – These results were used in the HHRA for groundwater and showed that TCE and PCE concentrations do not pose a potential vapor intrusion exposure risk to an off-Site occupied residential building.

- Former North Building 4 (NBldg4), Bldg58 and 1,1,1-Trichloroethane (TCA) Tank Areas – 1,4-dioxane concentrations in samples from wells in these areas exceeded the Pennsylvania

Department of Environmental Protection (PADEP) medium specific concentration (MSC); however, the concentration trends are either stable or declining over time.

- Former Cyanide Spill Area (MW-2) – Concentrations of total and available cyanide show an overall declining trend in the samples from MW-2.

The next round of comprehensive groundwater monitoring will be completed in the fall of 2018 and a report summarizing the results will be prepared for submittal to the PADEP and the United States Environmental Protection Agency (USEPA). The sampling will consist of plume perimeter monitoring in the NPBA, WPL, Levee Area, Eastern Perimeter Road, SPBA and SPA along with surface water sampling in Codorus Creek. In addition, remedial action performance monitoring will be completed at the active groundwater collection wells in the WPL/NBldg4 areas and the monitoring wells around CW-20 in the SW-WPL that consist of MW-37S&D, MW-75S&D and Waterloo™ multilevel well MW-136A (5 sample ports at various depths).

1 INTRODUCTION

Groundwater Sciences Corporation (GSC) has prepared this report to document the results of the comprehensive groundwater monitoring completed in 2016 and 2017 at the former York Naval Ordnance Plant (fYNOP or Site) located at 1425 Eden Road, Springettsbury Township, York, Pennsylvania. As shown on **Figure 1.0-1**, the Site is divided into the East Campus, owned by Harley-Davidson Motor Operations, Inc. (Harley-Davidson), and the West Campus, owned by NP York 58, LLC.

1.1 Background and Purpose

During the completion of the Part 2 Supplemental Remedial Investigation (SRI) Report (GSC, 2018a) and the human health risk assessment (HHRA) for groundwater (NewFields, 2018), a groundwater and surface water monitoring plan (GSC, 2016c), hereinafter referred to as the 2016 Monitoring Plan, was approved by the Pennsylvania Department of Environmental Protection (PADEP) and the United State Environmental Protection Agency (USEPA). The 2016 Monitoring Plan replaced the ongoing key well sampling program and was designed to monitor constituents of concern (COCs) at selected locations across the Site during the operation of the interim groundwater extraction and treatment system (GWTS) and to accomplish the following objectives:

- Plume perimeter and surface water monitoring.
- Determination of concentration and mass remaining in the aquifer.
- Remedial action performance monitoring.

The 2016 Monitoring Plan was developed to be the basis for post remedial investigation (RI) sampling, anticipating the main components of the final remedy for the Site and working toward a post remediation monitoring plan. However, due to a few continuing data requirements to support the proposed plan/final remedy, the interim remedy in the Southern Property Boundary Area (SPBA), construction on the West Campus that impacted the operation of the groundwater extraction wells, and access to other wells, the 2016 and 2017 scopes varied from the 2016 Monitoring Plan. Information on the scope of the comprehensive sampling performed in 2016 and 2017 is detailed in Subsection 2.2 of this report.

1.2 Report Organization

This comprehensive groundwater monitoring report is organized into five Sections. The results of the monitoring performed in 2016 and 2017 are included in Section 2. As noted in Section 2, all of the data generated during the 2016 and 2017 comprehensive monitoring is documented in this report. Section 3 provides the results of the laboratory data quality assessment performed on all of the 2016 and 2017 comprehensive groundwater samples, including the samples from the Northern Property Boundary Area (NPBA) and SPBA. The planned scope for the 2018 comprehensive monitoring is detailed in Section 4. Section 5 provides a list of references.

2 COMPREHENSIVE GROUNDWATER MONITORING RESULTS FOR 2016 AND 2017

This section documents the results of the 2016 and 2017 groundwater monitoring at the Site. The results of the monitoring are described in two subsections. The first subsection describes Site-wide water level elevations and gradient. The second subsection presents the groundwater chemistry results.

2.1 Site-Wide Water Level Elevations and Flow

Site-wide water level measurements were collected in October 2016, December 2016 and October 2017 at wells, springs and surface water stage locations. A listing of the water level measurement locations, measurement point elevations and calculated water level elevations for these measurements is provided on **Table 2.1-1**. This data was entered into to the fYNOP database, which is stored in the ArcIMS system.

The water level elevations from October 16, 2017 were used to develop the interpreted groundwater table surface elevation contours illustrated on **Plate 2.1-1**. Water levels from 2016 were not contoured because a few key extraction wells were not operating due to interruption of electrical power to those wells as a result of construction in the West Campus. In areas where karst conditions occur, flow direction arrows indicate a generalized net flow direction, and actual paths may be circuitous. At locations with multiple well screen depths, only the groundwater level elevation from the shallowest well was used in preparing the interpreted groundwater table elevation contours. All of the water level elevations are illustrated on **Plate 2.1-1.** Some water level elevations were not used to construct the contours because they represent groundwater at a piezometric elevation deeper in the aquifer, and are not representative of the water table surface elevation. These locations and elevations are shown on the plate for reference in gray font.

As shown on **Plate 2.1-1**, the shallow lateral groundwater gradient at the Site is generally westward from the quartzitic sandstone aquifer in the upland area with a groundwater elevation of approximately 530 feet above mean sea level (amsl) towards the karstic carbonate aquifer in the lower topographic areas and Codorus Creek with a groundwater/surface elevation of approximately 340 feet amsl. As observed in the Part 2 SRI report (GSC, 2018a), there is minimal vertical groundwater gradient in the wells screened in the upper 100 feet of the carbonate aquifer. Also consistent with the Part 2 SRI report (GSC, 2018a), there was an upward vertical gradient in deep vertical extent wells MW-136A and 141A (greater than 200 feet below ground surface (bgs)).

In the western portion of the Site, localized groundwater flow is controlled by the West Parking Lot (WPL) groundwater extraction system. The system in the WPL consists of pumping at collection wells (CW-9, CW-13, CW-15A, CW-17 and CW-20) that forms a coalescing cone of drawdown around the collection wells and prevents groundwater flow to Codorus Creek. In the southwest corner of the Site at MW-85, there is localized groundwater mounding due to enhanced groundwater recharge associated with the discharge from the adjacent storm water facility. In the SPBA in the vicinity of MW-178S&D, there is a downward vertical gradient from the residuum to the underlying karst bedrock aquifer.

2.2 Groundwater Sampling Scope

Groundwater sampling in 2016 and 2017 was performed in accordance with the procedures in the Field Sampling Plan (FSP) (GSC, 2012a) and the Quality Assurance Project Plan (QAPP) (GSC, 2012b and 2014b). Copies of the FSP and QAPP are included in **Appendix A** and **B**, respectively. Purge logs for the groundwater samples are included in **Appendix C**. All samples were submitted to Test America Pittsburgh for laboratory analyses. The following subsections provide descriptions of the 2016 and 2017 sample locations.

2.2.1 Samples for 2016

The comprehensive sampling in 2016 was performed at the locations highlighted on **Figure 2.2-1**. The plume perimeter monitoring was performed in the NPBA, SPBA and South Plume Area (SPA). Due to ongoing construction activities associated with the redevelopment of the West Campus, access was limited in the WPL and Central Plant Area (CPA) and collection wells CW-9, CW-15A and CW-20 were temporarily shut down. For that reason, plume perimeter sampling was not completed in the WPL, Levee Area and at the Codorus Creek surface water stations.

In accordance with the 2016 Monitoring Plan, sampling to determine concentration and mass remaining in the aquifer is planned to be performed on a sampling frequency of once every five years with the next round recommended for 2019 (GSC, 2016c). In 2016, samples were collected from wells in this category from the NPBA, SPBA, SPA and the following additional locations:

- Wells downgradient of the NPBA, which included wells located at the North End Test Track (NETT), to monitor the potential migration of COCs in accordance with the NPBA extraction system post shutdown monitoring plan (GSC, 2014a).
- Wells in the area of North Building 4 (NBldg4) and Building 58 (Bldg58) to monitor for 1,4-dioxane concentration trends (a stabilizer added to 1,1,1-trichloroethane (TCA) product).
- At the Eastern Landfill where the wells were last sampled in 2008.

Remedial action performance sampling was completed at former Bldg58, at Building 3 (Bldg3) dewatering system's Lift Station, and at the active collection wells in the WPL as part of the routine GWTS monitoring.

In addition, a sample was collected at a drain pipe carrying spring water that was discharging into the concrete drainage way to the southwest of former Building 31 (designated as Spring S-10), to provide supplemental information for the Military Munitions Response Program (MMRP) remedial investigation.

2.2.2 Samples for 2017

The comprehensive sampling in 2017 was performed at the locations highlighted on **Figure 2.2-2**. The plume perimeter monitoring was completed in the NPBA, SPBA and SPA. Sampling was not performed at the WPL, Levee Area and at the Codorus Creek surface water stations because field and reporting efforts were focused primarily on the supplemental investigation and testing activities at the SPBA that were completed consistent with the work scope included in the letter response on the HHRA for groundwater (GSC, 2017c).

In 2017, samples were collected from wells that are included in the 2016 Monitoring Plan category for determining concentration in the aquifer from the NPBA, SPBA, SPA and the following additional locations:

- Wells downgradient of the NPBA, which included wells located at the NETT to monitor the potential migration of COCs in accordance with the NPBA extraction system post shutdown monitoring plan (GSC, 2014a).

- Wells in the area of NBldg4, Bldg58 and the southwest corner of the west parking lot (SW-WPL) were sampled for 1,4-dioxane to monitor concentration trends.

- Wells along the eastern perimeter road (MW-15 Area) were completed consistent with the work scope included in the letter response on the HHRA for groundwater to address the potential vapor intrusion (VI) pathway (GSC, 2017c).

Remedial action performance sampling was completed at former Bldg58, at the SW-WPL and at the active collection wells in the WPL as part of the routine GWTS monitoring.

2.3 Groundwater Sampling Results

The groundwater sample analytical results are summarized on **Table 2.3-1** (VOCs), **Table 2.3-2** (Metals), **Table 2.3-3** (1,4-Dioxane) and **Table 2.3-4** (Cyanide). A tabulated summary of the VOC results for 2016 and 2017 and all of the historic results is included for reference in **Appendix D**. For comparison to the results, the tables include the USEPA Maximum Contaminant Levels (MCLs), PADEP residential and non-residential medium specific concentrations (MSCs) and the USEPA Regional Screening Levels (RSLs).

Laboratory analysis reports for the 2016 and 2017 samples are included in **Appendix E** and **Appendix F**, respectively. **Appendix G** includes time versus concentration graphs for the samples that show the primary COCs that consist of tetrachloroethene (PCE), trichloroethene (TCE), and TCA and their degradation products. In addition, time versus concentration graphs showing the PCE and TCE results of the last 5 years of comprehensive sampling are included on the figures for wells with elevated concentrations in each of the areas at the fYNOP where the 2016 and 2017 samples were collected.

As part of the fYNOP chemistry data management process, electronic data deliverables (EDDs) from the laboratory are entered into the fYNOP database. GSC reviewed the laboratory-provided data packages for the groundwater samples in accordance with the QAPP (GSC, 2012b and 2014b) and then individual sample results were qualified (as necessary) in the fYNOP database. Section 3 of this report provides a complete description of the laboratory data quality assessment performed on the samples. **Appendix H** includes the data validation reports.

2.3.1 Northern Property Boundary Area

The NPBA groundwater extraction system was operated from 1990 until June 2013 when it was deactivated. Post-shutdown monitoring involves the monitoring and reporting of water levels and chemistry on an annual basis for a period of five years (GSC, 2014a). The annual post-shutdown monitoring at the NPBA was completed concurrent with the 2016 and 2017 annual comprehensive monitoring events at the locations illustrated on **Figure 2.2-1** and **Figure 2.2-2**, respectively. In addition, seven on-Site wells located downgradient of the NPBA (MW-3, MW-77, MW-82, MW-

102S&D and MW-103S&D) were sampled to track the potential migration of COCs downgradient of the NPBA.

Groundwater sampling results for the NPBA wells are included in **Table 2.3-1**. A detailed evaluation of the results for the samples collected in 2016 and 2017 indicated that the groundwater gradient and chemistry conditions have remained substantially the same since shutdown in June 2013 (GSC, 2017a and 2018c).

2.3.2 North End of the Test Track

The NETT is a source area with chlorinated volatile organic compounds (CVOCs) in groundwater (GSC, 2011). As shown on **Figure 2.3-1**, the NETT is located in the north-central portion of the fYNOP and downgradient (southwest) of the NPBA. Sampling for volatile organic compounds (VOCs) at four wells located in the central portion of the NETT Area (monitoring well couplets MW-102S&D and MW-103S&D) was completed in 2016 and 2017 as part of the NPBA post-shutdown monitoring scope.

VOC concentrations in the samples from MW-102S&D and MW-103S&D in 2016 and 2017 declined compared to previous sample results. For example, TCE (the predominant VOC detected in groundwater at the NETT) concentrations in these wells in 2016 and 2017 ranged from 2.2 to 76 micrograms per liter (µg/L) and the range in concentrations prior to 2016 was 18 to 280 µg/L. The 2017 detections of TCE in these wells are the lowest detected to date and the concentrations of cis-1,2-dichloroethene (cis12DCE), PCE and TCE in these wells have shown stable or declining trends since sampling began in 2008.

These results suggest an improvement in the groundwater quality over time in the NETT Area. In 2019, wells located upgradient of the NETT (MW-19 and MW-104), side-gradient of the NETT (MW-70S&D and MW-86S&D) and downgradient of the NETT (MW-26) will be sampled for VOCs in accordance with the 2016 Monitoring Plan, in addition to wells MW-102S&D and MW-103S&D. The results from these groundwater samples will be used to evaluate the concentration trends and update the isoconcentration plume maps for the NETT.

2.3.3 Eastern Landfill

Previous monitoring dating back to 1987 indicates that the Eastern Landfill is not a significant contributing source of additional COCs to groundwater. The shallow groundwater gradient is consistently to the southwest from the eastern perimeter road towards the CPA (GSC, 2011).

Sampling of seven wells in the area of the landfill was completed in 2016 to obtain recent groundwater chemistry and to confirm the previous conclusions. The samples were collected for analysis of VOCs and total/dissolved metals. As shown on **Figure 2.3-2**, the wells are located upgradient of the landfill (MW-65S/D and MW-14), at the downgradient (southwest) corner of the landfill (MW-66S/D) and further downgradient of the landfill (MW-17 and MW-68).

The sampling results show that the concentration of PCE and TCE in the upgradient wells are generally higher than the downgradient wells. This is believed to be the result of historical waste disposal practices along the eastern perimeter road (GSC, 2011). In addition, PCE and TCE concentrations in wells MW-17 and MW-68 that are located downgradient of the landfill are low, ranging from 0.47J to 2.6 µg/L. These results continue to support the observation that the Eastern Landfill is not a source of additional COCs to groundwater.

As shown on the graphs in **Appendix G-2**, the VOC results show a continued steady decline in COC concentrations in the wells, and all of the detections except TCE at upgradient well MW-65S and PCE at upgradient well MW-14 were below the PADEP MSCs (**Table 2.3-1**). For example, at upgradient well MW-65S, which is sourced by historical waste disposal practices along the eastern perimeter road (GSC, 2011), historical TCE detections ranged from 99 µg/L to 200 µg/L and the concentration in 2016 was 40 µg/L. Likewise, TCE concentrations at downgradient well MW-17 have steadily declined from 254 µg/L in 1987 to 2.5 µg/L in 2016. One exception to this trend is at upgradient well MW-14, where stable PCE concentrations were observed in the last three samples collected in 2005, 2008 and 2016.

As shown on **Table 2.3-2**, total and dissolved metals in the seven wells sampled were either undetected or detected at concentrations below the PADEP MSCs.

2.3.4 Former Building 58 Area

The CVOC plume from the source area located near former Bldg58 was captured and controlled by pumping of CW-8 (located to the west of Bldg58) until it was shut down in November 2013 (GSC, 2018a) and subsequently abandoned in January 2016 (Leidos, Inc. (Leidos), 2016). Groundwater chemistry results were used to evaluate the potential for groundwater in the vicinity of Bldg58 to migrate southward following the shutdown of CW-8.

Sampling of five wells in and around Bldg58 was completed in 2016 and 2017. Three wells, MW-87, MW-127 and MW-129 were sampled in the northwest quadrant of the Bldg58 area. As shown on **Figure 2.3-3**, concentrations of TCE and PCE have shown an overall declining trend at MW-87 and MW-127 and the historic minimum TCE concentrations were detected in the 2017 samples from these wells. The concentrations of TCE and PCE at MW-129 are higher than the concentrations at the other four wells being monitored. Following the shutdown of CW-8, TCE and PCE concentrations at MW-129 gradually increased in 2014, 2015 and 2016 and then decreased in 2017.

In the two wells located in the southwest quadrant of Bldg58, relatively low and variable COC concentrations have been observed following the shutdown of CW-8. As shown on **Figure 2.3-3** TCE and PCE concentrations at MW-57 decreased in consecutive samples collected in 2014, 2015 and 2016 and then leveled out in 2017. The concentrations of TCE and PCE at MW-88 increased and then decreased following the shutdown of CW-8.

The groundwater chemistry results from the five wells that were sampled have varied since the shutdown of CW-8 in 2013, with overall stable or downward trends in three wells (MW-57, MW-87 and MW-127) and increasing and then decreasing trends in two wells (MW-88 and MW-129). The potential for groundwater in the vicinity of Bldg58 to migrate southward after the shutdown of CW-8 is not indicated based on the groundwater chemistry results.

2.3.5 Southwest Corner of the West Parking Lot

Sampling of seven wells located in the SW-WPL was completed in October 2017 to monitor the groundwater chemistry at various depths in the aquifer around CW-20 and evaluate the effects of pumping at this suspected dense non-aqueous phase liquid (DNAPL) source area. The groundwater samples were collected at wells MW-37S&D, MW-75S&D, MW-93S&D and Waterloo™ multilevel well MW-136A (5 sample ports at various depths) for laboratory analysis of VOCs. In addition, samples from MW-75S&D and MW-93S&D were analyzed for total and dissolved metals. **Figure 2.3-4** illustrates the location of the wells in the SW-WPL, posts the TCE and PCE concentrations from sampling dating back to 2013 and provides time versus concentration graphs of the TCE and PCE results.

Below is a description of the VOC analytical results listed by well sampled:

- CW-20 (screened 205-215 feet bgs) – As shown on the graphs in **Appendix G-4**, concentrations of TCE, PCE and cis12DCE show overall stable to declining trends during the pumping of CW-20 since 2015.

- MW-37S&D (screened 11-22 and 125-141 feet bgs, respectively) – As shown on **Figure 2.3-4,** the detected concentrations of TCE and PCE at these wells have fluctuated upwards and downwards. These changes correlate with whether collection well CW-20 is operating during the sampling event, consistent with previous observations (GSC 2018a).

- MW-75S&D (screened 151-190 and 200-217 feet bgs, respectively) – As shown on the graphs in **Appendix G-4**, TCE, PCE and cis12DCE concentrations at MW-75S show an overall declining trend and the 2017 concentrations of PCE and cis12DCE are the lowest detections for these compounds to date. At MW-75D, which is screened at a similar depth to CW-20 (205-215 feet bgs), TCE, PCE and cis12DCE have fluctuated upwards and downwards as shown on the graphs in **Appendix G-4**. These changes correlate with whether collection well CW-20 is operating during the sampling event, consistent with previous observations (GSC 2018a).

- MW-93S&D (screened 24-45 and 135-160 feet bgs) – As shown on **Figure 2.3-4**, these wells are located to the west of CW-9 and to the north of CW-20 and the samples from the wells exhibited TCE concentrations ranging from 19 µg/L to 48 µg/L and PCE concentrations ranging from 41J µg/L to 44 µg/L.

- MW-136A (multi-port deep well) – As shown on **Figure 2.3-4**, the detected TCE and PCE concentrations in the samples from the two middle sample ports (356-356.5 and 372.5-373 feet bgs) were higher than the detections in the shallow and deep ports (270-348, 434-434.5 and 459.5-460 feet bgs), and TCE was detected at higher concentrations than PCE. TCE and PCE concentration trends at all of the ports are generally stable to declining with two notable exceptions. Specifically, the TCE concentration at the deepest port (459.5-460 feet bgs) increased from a maximum historical concentration of 170 µg/L to 600 µg/L in 2017 and cis12DCE at the middle port (434-434.5 feet bgs) increased from a maximum historical concentration of 14,000 µg/L to 36,000 µg/L in 2017 as shown on the table in **Appendix D**.

Figure 2.3-5 is a cross sectional view of the SW-WPL showing the screened intervals of the numerous wells in this area discussed above, and TCE and PCE detections in annual comprehensive groundwater samples collected from 2013 through 2017. The shaded contour intervals are the interpreted TCE concentration distribution during 2013 through 2015 taken from **Figure 3.1-5** in the Part 2 SRI report (GSC, 2018a). By comparing the TCE and PCE concentrations from earlier sampling events to the 2017 results, it is obvious that, while there is a general reduction in concentrations in some sampling points, the reductions are not consistent, and in a few cases the concentrations are high enough to be indicative of DNAPL presence in the area.

Table 2.3-5 presents groundwater volumes pumped and VOC concentrations in CW-20 from March 2014, when testing of this well began, through December 2017. Mass removed from the aquifer by pumping CW-20 and removal efficiency was calculated. Over 1,500 pounds of VOCs were removed from the aquifer by CW-20 during this time period of record.

Figure 2.3-6 illustrates the variability of the data, which is mostly dependent on the volume of water pumped from the well. Well operation was sporadic until it was included as part of the WPL extraction system and pumping was consistent in January 2016. Mass removed and volume pumped from January 2016 through December 2017, represented by the four periods on the right side of this bar graph show higher values of mass and volumes, while efficiency (pounds of VOC removed / million gallons (MG) pumped) range from 120 to 21 pounds / MG.

Total mass removed from the aquifer by pumping 61 MG from CW-20 from January 2016 through December 2017, a two-year period, was 973 pounds according to **Table 2.3-1**. During the same period, the entire groundwater extraction system pumped 227 MG of groundwater and removed 2,099 pounds (Hydro Terra Group (HTG), 2018). Thus, 46% of the mass removed during this period was from CW-20. The removal efficiency of CW-20 was 15.8 pounds/MG, while the overall system efficiency was 9.3 pounds /MG. The overall system removal efficiency without CW-20 was 6.8 pounds /MG.

Samples from MW-75S&D and MW-93S&D were also analyzed for total and dissolved metals in 2017 for comparison to the results of the most recent previous samples collected in 2008. As shown on **Table 2.3-2**, total lead at MW-93S was the only metals compound that exceeded a PADEP MSC. However, turbidity in the sample is believed to be the cause of the exceedance because dissolved lead was undetected at 1 µg/L and lead has not been previously detected in the samples from MW-93S. Although the 2008 samples from these wells had vanadium detections exceeding the PADEP MSC, vanadium was detected at concentrations below the PADEP MSC in the 2017 samples.

2.3.6 South Plume Area

On the south side of the fYNOP, samples were collected for VOC analysis from on-Site wells MW-1 and MW-43S&D and off-Site well MW-110. As shown on **Figure 2.3-7,** TCE concentrations at MW-1 are continuing to trend downward and the 2017 concentration represents the lowest concentration detected to date. PCE concentrations at MW-1 remain low and stable. Consistent with previous sampling results, TCE and PCE were undetected at MW-43S. TCE concentrations at MW-43D are continuing on a declining trend and the 2017 concentration represents the lowest concentration detected to date. At MW-110, TCE and PCE detections were consistent with recent previous detections in 2013, 2014 and 2015.

To the southwest of the fYNOP on the Giambolvo automotive dealership property, off-Site wells RW-5 and MW-152S&D were sampled for VOCs in 2016. Consistent with previous recent results, a concentration of TCE below regulatory standards was detected at RW-5 and TCE and PCE were undetected at MW-152.

To the south of the fYNOP, on the K. G. Whiteford Ltd. property (i.e., the former Cole Steel and Pfaltzgraff Company manufacturing facilities), samples were collected from the off-Site wells illustrated on **Figure 2.3-7** for VOC analysis. A summary of the sampling results is provided below:

- Consistent with previous sampling results, TCE and PCE was undetected at MW-4 (Cole) along the eastern side of the property and at Cole (Flush) and Cole B along the southern side of the property.

- The sample from MW-12 (Cole Steel) was the only shallow well on the property that had a TCE concentration that exceeded the PADEP MSC. As shown on **Figure 2.3-7**, TCE concentrations at MW-12 indicate an increasing trend. The highest TCE concentration was detected in the northeast corner of the property at deep bedrock well MW-150 in 2016. Based on dye tracer testing performed in 2014, MW-150 is located along the suspected groundwater flow path of Site-related COC migration from the northeast (up gradient) at the SPBA (GSC, 2018a).

- With the exception of Cole D, PCE was either undetected or detected at concentrations below the PADEP MSC.

- TCE concentrations are stable or declining at four wells (Cole D, Cole F, GM-1D and MW-151), and TCE and PCE are increasing at two wells (MW-150 and MW-12 (Cole Steel)). PCE concentrations are either stable or declining at these same six wells.

As indicated in the Part 2 SRI report (GSC, 2018a), additional characterization information to address USEPA comments on the SPA (USEPA, 2017a) will be presented in a separate future report to be submitted in 2018.

2.3.7 West Parking Lot Groundwater Extraction System

In 2016 and 2017, samples were collected for VOC analysis from active groundwater collection wells in the WPL (CW-9, CW-13, CW-17 and CW-20) and the NBldg4 area (CW-15A) (**Figures 2.2-1** and **2.2-2**). An evaluation of the CW-20 results is provided in Section 2.3.5 (above). As indicated in the GWTS annual operations reports for 2016 and 2017, the concentrations of cis12DCE, PCE, TCA and TCE in CW-9, CW-13, CW-15A and CW-17 are stable to declining (Leidos, 2017 and HTG, 2018).

2.3.8 Building 3 Dewatering System

The Bldg3 dewatering system was constructed and operated to eliminate the potential for the water table to rise upward due to infiltration of precipitation to elevations that may impact Bldg3 operations. In June 2013, the system was deactivated for post-shutdown monitoring to evaluate whether the continued operation of the system was necessary (GSC, 2014a).

The results of the first two years of annual post-shutdown groundwater monitoring in 2014 and 2015 indicated there were no adverse effects from the shutdown (GSC, 2015b and GSC, 2016b). Likewise, the third year of post-shutdown monitoring in 2016 indicated that conditions had remained substantially the same since shutdown with no adverse effects (GSC, 2017b).

Monitoring of the Bldg3 dewatering system was recommended to be discontinued based on the results of the third year of post-shutdown monitoring (2016). USEPA subsequently concurred with the recommendation to not reactivate the system and to discontinue further post-shutdown monitoring (USEPA, 2017b). In February 2018, following notification to USEPA and PADEP, the lift station vault and well CW-19 were abandoned by licensed well driller (Eichelbergers, Inc.) to accommodate the expansion of Bldg3 in 2018.

2.3.9 Southern Property Boundary Area

In 2016, groundwater samples were collected from MW-64S&D in the SPBA (**Figure 2.2-1**). In 2017, a more substantial array of wells was sampled in the SPBA to support the supplemental investigation and testing activities associated with the design and installation of an interim groundwater extraction system in this area (GSC, 2017d). The investigations and remedial testing in 2017 consisted of baseline monitoring, well installations, aquifer testing and vacuum enhanced extraction testing. Below is a listing of the groundwater sampling that was performed and the sample locations are shown on **Figure 2.2-2**:

- **August 2017 –** Samples for analysis of VOCs from existing wells in the SPBA, the area upgradient of the SPBA, and the Canterbury Road neighborhood were originally scheduled during the Site-wide comprehensive monitoring. However, the schedule was moved to August to complete the sampling prior to the well installation and testing activities.

- **September and October 2017 –** Samples for VOCs and remedial design parameters from new SPBA collection wells CW-21, CW-22 and CW-23 were collected during aquifer pumping tests conducted on these wells.

- **October and November 2017** - Samples for VOCs were collected from the new SPBA monitoring wells concurrent with the Site-wide comprehensive monitoring.

The analytical results for the above sampling are summarized on **Table 2.3-1**. As indicated in the Part 2 SRI report (GSC, 2018a), additional information on the results of the supplemental investigation and testing activities performed in the SPBA will be presented in a separate future report to be submitted in 2018. The report will also address USEPA comments on the Part 2 SRI report (GSC, 2018a) related to the SPBA and the SPA (USEPA, 2017a).

2.3.10 Eastern Perimeter Road (MW-15 Area)

In 2017, groundwater samples for VOC analyses were collected from five wells located along the Eastern Perimeter Road, which consisted of MW-2, MW-15, MW-91, MW-92 and newly installed well MW-185. These wells are shown on **Figure 2.2-2**. The purpose of the new well installation and this sampling was to monitor the PCE plume conditions and evaluate the potential for residential VI exposure risk for an off-Site occupied building located to the southeast of MW-15.

The groundwater sampling results for these wells is included in **Table 2.3-1**. An in-depth evaluation of the sampling results is included in the HHRA for groundwater, which determined that VI is not considered a health risk to occupants of the off-Site occupied building (NewFields, 2018).

2.3.11 Additional Groundwater Chemistry Results

2.3.11.1 1-4 Dioxane

As shown on the figure in **Appendix I** from the Part 1 SRI report (GSC, 2011), 1,4-dioxane was detected in groundwater at elevated concentrations at wells located in the former NBldg4, former TCA Tank and former Bldg58 areas in 2008. In 2016 and 2017, sampling and analysis for 1,4-dioxane using Method 8270D low level (LL) was performed at selected wells in these areas to monitor concentration trends.

As shown on **Figure 2.2-2,** samples were collected from CW-15A at former NBldg4 and from MW-87 and MW-127 in the former Bldg58 area, east of the former TCA tank, where historic TCA concentrations were reduced significantly by groundwater pumping at CW-8. Samples from two depths in Waterloo™ multi-level well MW-136A (356 to 356.5 feet bgs) and 372.5 to 373 feet bgs) were also analyzed for 1,4-dioxane due to historic exceedances of the PADEP MSC in the SW-WPL.

Figure 2.3-8 shows the current and historic 1,4-dioxane results and time versus concentration graphs for wells CW-15A, MW-87, MW-127 and MW-136A. The following is a summary of the 1,4-dioxane results:

- 1,4-dioxane was detected in the samples from all of the wells. As shown on **Table 2.3-3**, the detections at CW-15A, MW-87 and MW-127 exceed the PADEP MSC.

- From 2008 through 2017, 1,4-dioxane concentrations at CW-15A were stable, notwithstanding the elevated concentration in 2014 and the lowest concentration on record in the most recent 2017 sample. The 1,4-dioxane detections at MW-87 and MW-127 show overall declining concentrations trends. Three rounds of samples for 1,4-dioxane have been collected from MW-136A, which showed concentrations ranging from 0.88J µg/L to 9.9 µg/L.

2.3.11.2 Cyanide

Groundwater at monitoring well MW-2 was sampled and analyzed for total and available cyanide in 2017 to monitor concentrations in the vicinity of the former cyanide spill area. As shown on **Figure 2.2-2**, MW-2 is located in the Eastern Area of the Site. Both total cyanide and available cyanide (i.e., free cyanide plus complexes that easily dissociate) were detected in the MW-2 samples. Although the detected total cyanide concentration exceeded the PADEP MSC, total and available cyanide concentrations have shown an overall declining trend (see graphs in **Appendix G-7**).

2.3.11.3 Spring S-10

In 2016, a water sample was collected from a drain pipe carrying spring water that was discharging into the concrete drainage way to the southwest of former Building 31. This location was designated as Spring S-10 and is shown on **Figure 2.2-1**.

The Spring S-10 water sample was analyzed for VOCs and total/dissolved metals and the purpose for the sample was to provide supplemental information for the MMRP RI at the fYNOP. The analytical results did not show any exceedances of the PADEP MSCs in the sample. Additional information on these results is included in the MMRP RI report (EA Engineering, Science, and Technology, Inc., PBC (EA), 2018).

3 LABORATORY DATA QUALITY ASSESSMENT

A quality assurance/quality control (QA/QC) program was conducted on the samples collected during the 2016 and 2017 comprehensive groundwater sampling events that are described in Subsections 2.2.1 and 2.2.2, respectively. The samples were grouped together by date sampled for discussion purposes in this assessment:

- October 2016 Comprehensive Sampling Event.
- August 2017 SPBA Background Sampling Event.
- September through October 2017 SPBA Collection Well Aquifer Testing Sampling Event.
- October through December 2017 Comprehensive Sampling Event.

A total of 25 sample delivery groups (SDGs) were generated for groundwater samples collected during these sampling events from October 1, 2016 through December 20, 2017. Data packages from all 25 SDGs were screened for holding time exceedances, surrogate recoveries, and blank detections of VOCs as part of the general review of data packages. The laboratory case narratives for all SDGs were also reviewed.

Groundwater and associated quality control (QC) blank samples were analyzed for VOCs using approved methods specified in the QAPP (GSC, 2012b and 2014b). The GSC data validator conducted a complete validation of the VOC analytical data for 11 of the 25 SDGs for compliance with QC criteria in accordance with Section B.2.8 of the QAPP using SAIC Technical Procedure TP-DM-300-7 (Rev. 3, June 2009). TP-DM-300-7 uses the following categories to address the data quality objectives (DQOs) of precision, accuracy, bias, representativeness, comparability, completeness, and sensitivity listed on Table A-4 of the QAPP:

1. Review and verification of the laboratory case narrative.
2. Verification of sample reanalysis and secondary dilutions, which were used to assess the DQOs for comparability and sensitivity.
3. Holding time limits, which were used to assess the DQOs for representativeness and low bias.

4. Surrogate (System Monitoring Compound) percent recoveries (%R) for organic methods, which were used to assess the DQOs for accuracy and low/high bias.

5. Internal Standard (IS) area counts and retention times for organic methods, which were used to assess the DQO for accuracy.

6. Blank contamination (in method, field, equipment rinse, and trip blanks), which was used to assess the DQOs for accuracy and high bias.

7. Relative Response Factors (RRFs) in initial calibration and continuing calibrations, Percent Relative Standard Deviation (%RSD) in initial calibrations, and Percent Difference (%D) in continuing calibrations, which were used to assess the DQOs for accuracy and low/high bias.

8. Matrix Spike and Matrix Spike Duplicate (MS/MSD) %R and Relative Percent Difference (RPD), which were used to assess the DQO for low/high bias.

9. Laboratory Control Sample and Laboratory Control Sample Duplicate (LCS/LCSD) %R and RPD, which were used to assess the DQOs for precision, accuracy and low/high bias.

10. Field duplicate samples, which were used to assess the DQO for precision at the frequency of one field duplicate per 20 environmental samples being analyzed for VOCs.

Consistent with the data quality requirements as defined by the DQOs, groundwater chemistry data and associated QC data were evaluated on these categories and qualified according to the outcome of the review. During the review, laboratory-applied data qualifiers such as “E” (estimated concentration outside the calibration limits) and “B” (analyte detected in the associated method blank) were evaluated. During verification, individual sample results were qualified as necessary to designate usability of the data toward meeting project objectives. Data qualifiers were applied based on deviations from the measurement performance criteria identified in TP-DM-300-7 and Table A-4 of the QAPP. The qualifiers that were used are defined as follows:

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit. These results are qualitatively acceptable.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. Although estimated, these results are qualitatively acceptable.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. Although estimated, these results are qualitatively acceptable.

R - The analyte result was rejected due to serious deficiencies in the ability to analyze the sample and/or meet QC criteria. The presence or absence of the analyte cannot be verified.

GSC performed complete validation on eight of the nine SDGs generated during the 2017 Comprehensive Sampling Event, and on the two SDGs generated during the 2017 SPBA Background Sampling Event. GSC also performed complete validation on one SDG randomly selected from the eight SDGs generated during 2016 Comprehensive Sampling Event (10 percent of the data packages). Complete validation was not performed on analytical data for the six SDGs generated during the 2017 Collection Well Aquifer Testing as this data was generated for remedial design and treatment purposes and included results for inorganic parameters, indicator parameters, and metals as well as VOCs.

For the 11 SDGs subjected to complete validation per TP-DM-300-7, the contents of the data packages and QA/QC results were compared to the requirements of the analytical method. GSC evaluated QC data reported by the laboratory against required precision and accuracy limits established in Table A-4 of the QAPP. Validation reports generated for the 11 SDGs receiving complete validation are presented on the tables in **Appendix H**. These tables list only the analytical results that were qualified by the data validator and show the original laboratory qualifiers and reported values together with the final qualifiers (U, J, UJ, or R) and values applied by the validator. A detailed narrative on precision, accuracy, bias, representativeness, comparability, completeness, and sensitivity is provided in **Appendix J.**

In summary, the analytical results were acceptable as reported by the analytical laboratory with the following exceptions:

- 132 results for 1,4-dioxane were rejected (R) due to very low RRFs in the initial calibrations for this parameter. The requirement for RRF of less than 0.01 was not met for any sample where 1,4-dioxane was analyzed by SW-846 Method 8260C because that method is not appropriate for quantifying 1,4-dioxane concentrations in aqueous samples. The appropriate analytical method for 1,4-dioxane is SW-846 Method 8270D and groundwater samples that were analyzed for 1,4-dioxane using Method 8270D did not require further qualification during validation.

- 16 detections of acetone and one detection of methylene chloride reported by the analytical laboratory were determined to be spurious due to blank contamination. Acetone and methylene chloride are common laboratory contaminants and these detections were U qualified.

- 38 detections reported by the analytical laboratory were J qualified for various reasons that consist of holding time exceedance, continuing calibration %D outside control limits, and surrogate recovery or MS/MSD results outside control limits.

- 208 non-detect results reported by the analytical laboratory were UJ qualified for various reasons that consist of holding time exceedance, continuing calibration %D outside control limits, and LCS/LCSD or MS/MSD results outside control limits.

4 RECOMMENDATIONS ON COMPREHENSIVE MONITORING SCOPE FOR 2018

The next round of comprehensive monitoring will be completed at the fYNOP in the fall of 2018 and will consist of a Site-wide round of synoptic water level measurements and the collection and laboratory analysis of groundwater and surface water samples. Sampling to determine concentration and mass remaining in the aquifer category is not planned for 2018. Rather, sampling to meet this objective is planned to be performed in 2019 in accordance with the 2016 Work Plan. The 2018 round of sampling scope will be completed as described below at the locations illustrated on **Figure 4.0-1**.

- **Plume Perimeter and Surface Water Monitoring –** Sampling for VOCs in accordance with the 2016 Monitoring Plan, which consists of wells in the NPBA, WPL, Levee Area, SPBA, and SPA along with surface water in Codorus Creek. Surface water sample stations COD-SW-15, COD-SW-17, and COD-SW-26, will be added. These are three spring discharges to Codorus Creek that respond to groundwater extraction system pumping. In addition, along the eastern Site perimeter, monitoring well MW-185 will be sampled for VOCs as agreed to by the USEPA in email correspondence (USEPA, 2018) related to their approval of the monitored startup plan for the SPBA (GSC, 2018b).

- **Remedial Action Performance Monitoring –** Sampling of the five active groundwater collection wells in the WPL/NBldg4 areas for VOCs as part of the routine GWTS monitoring. VOC sampling of the monitoring wells sampled in 2017 around CW-20 in the SW-WPL will be completed to evaluate the long-term effectiveness of CW-20 pumping to improve groundwater quality and increase mass removal at this suspected DNAPL source area. In addition, a confirmation sample will be analyzed for total lead from MW-93S due to the PADEP MSC exceedance in the sample collected in 2017. Sampling will also be completed for VOCs as part of the SPBA interim groundwater extraction system monitored startup plan. However, depending on the system startup date, this sampling may or may not occur concurrent with the comprehensive sampling. Thus, these sample locations are not shown on **Figure 4.0-1.**

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Tables

TABLE 2.1-1
SITE-WIDE GROUNDWATER LEVELS AND ELEVATION DATA
FYNOP 1425 EDEN ROAD, YOKR PA 17402

Location	Site Type	10/3/2016 October 2016 Site Wide Water Levels			12/9/2016 December 2016 Site Wide Water Levels			10/16/2017 October 2017 Site Wide Water Levels		
		MRP	DTW	GW Elev	MRP	DTW	GW Elev	MRP	DTW	GW Elev
CW-1	Collection Well	570.07	42.72	527.35	570.07	44.09	525.98	570.07	40.28	529.79
CW-1A	Collection Well	568.28	39.00	529.28	568.28	40.41	527.87	568.28	36.93	531.35
CW-2	Collection Well	556.95	29.30	527.65	556.95	32.32	524.63	556.95	27.49	529.46
CW-3	Collection Well	518.66	16.93	501.73	518.66	18.42	500.24	518.66	16.22	502.44
CW-4	Collection Well	541.55	25.20	516.35	541.55	29.45	512.10	541.55	23.97	517.58
CW-5	Collection Well	470.34	19.40	450.94	470.34	19.55	450.79	470.34	18.70	451.64
CW-6	Collection Well	484.67	8.15	476.52	484.67	8.55	476.12	484.67	7.63	477.04
CW-7	Collection Well	573.78	41.55	532.23	573.78	43.42	530.36	573.78	38.19	535.59
CW-7A	Collection Well	573.91	44.00	529.91	573.91	45.48	528.43	573.91	41.38	532.53
CW-8	Collection Well	AB	AB	AB	AB	AB	AB	AB	AB	AB
CW-9	Collection Well	356.82	17.72	339.10	356.82	23.25	333.57	356.82	23.42	333.40
CW-13	Collection Well	358.85	34.55	324.30	358.85	31.00	327.85	358.85	35.75	323.10
CW-14	Monitoring Well	361.63	29.88	331.75	361.63	26.45	335.18	361.63	28.40	333.23
CW-15	Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM
CW-15A	Collection Well	361.40	32.12	329.28	360.11	28.58	331.53	360.11	35.82	324.29
CW-16	Monitoring Well	AB	AB	AB	AB	AB	AB	AB	AB	AB
CW-17	Collection Well	358.70	27.10	331.60	358.70	22.65	336.05	358.70	25.62	333.08
CW-18	Monitoring Well	AB	AB	AB	AB	AB	AB	AB	AB	AB
CW-19	Collection Well	D	D	D	D	D	D	D	D	D
CW-20	Collection Well	361.49	29.88	331.61	361.49	74.93	286.56	NM	NM	NM
CW-21	Collection Well	NM	NM	NM	NM	NM	NM	415.69	61.40	354.29
CW-22	Collection Well	NM	NM	NM	NM	NM	NM	415.97	62.20	353.77
CW-23	Collection Well	NM	NM	NM	NM	NM	NM	417.98	35.80	382.18
MPE-1	Monitoring Well	NM	NM	NM	NM	NM	NM	415.88	47.29	368.59
MPE-2	Monitoring Well	NM	NM	NM	NM	NM	NM	415.15	61.44	353.71
MPE-3	Monitoring Well	NM	NM	NM	NM	NM	NM	417.65	35.16	382.49
MW-1	Monitoring Well	380.73	36.59	344.14	380.73	38.60	342.13	380.73	38.11	342.62
MW-2	Monitoring Well	508.88	69.50	439.38	508.88	72.06	436.82	508.88	66.60	442.28
MW-3	Monitoring Well	541.10	68.08	473.02	541.10	69.49	471.61	541.10	66.25	474.85
MW-5	Monitoring Well	369.71	24.90	344.81	369.71	26.56	343.15	369.71	25.36	344.35
MW-6	Monitoring Well	359.62	19.56	340.06	359.62	19.05	340.57	359.62	19.75	339.87
MW-7	Monitoring Well	359.48	27.60	331.88	359.48	24.27	335.21	359.48	26.55	332.93
MW-8	Monitoring Well	358.09	19.00	339.09	358.09	22.10	335.99	358.09	21.40	336.69
MW-9	Monitoring Well	558.78	32.57	526.21	558.78	34.14	524.64	558.78	30.74	528.04
MW-10	Monitoring Well	567.80	41.43	526.37	567.80	42.87	524.93	567.80	39.03	528.77

See Page 9 For Data Flag Definitions.

TABLE 2.1-1
SITE-WIDE GROUNDWATER LEVELS AND ELEVATION DATA
FYNOP 1425 EDEN ROAD, YOKR PA 17402

Location	Site Type	10/3/2016 October 2016 Site Wide Water Levels			12/9/2016 December 2016 Site Wide Water Levels			10/16/2017 October 2017 Site Wide Water Levels		
		MRP	DTW	GW Elev	MRP	DTW	GW Elev	MRP	DTW	GW Elev
MW-11	Monitoring Well	563.08	26.10	536.98	563.08	27.41	535.67	563.08	24.57	538.51
MW-12	Monitoring Well	535.93	35.33	500.60	535.93	37.91	498.02	535.93	35.10	500.83
MW-14	Monitoring Well	519.54	33.93	485.61	519.54	35.23	484.31	519.54	32.81	486.73
MW-15	Monitoring Well	523.95	61.85	462.10	523.95	62.39	461.56	523.95	61.37	462.58
MW-16D	Monitoring Well	516.51	-3.70	520.21	516.73	-2.55	519.28	516.51	-6.52	523.25
MW-16S	Monitoring Well	516.60	20.05	496.55	516.60	21.24	495.36	516.60	16.83	499.77
MW-17	Monitoring Well	456.86	7.95	448.91	456.86	16.37	440.49	456.86	14.64	442.22
MW-18D	Monitoring Well	464.19	-5.06	469.25	464.52	-6.89	471.41	464.19	-7.16	471.68
MW-18S	Monitoring Well	464.12	-0.38	464.50	464.52	-1.09	465.61	464.12	-3.75	468.27
MW-19	Monitoring Well	427.36	24.50	402.86	427.36	26.68	400.68	427.36	23.20	404.16
MW-20D	Monitoring Well	573.85	33.76	540.09	573.85	36.13	537.72	573.85	30.21	543.64
MW-20M	Monitoring Well	574.19	42.53	531.66	574.19	45.55	528.64	574.19	41.24	532.95
MW-20S	Monitoring Well	574.05	44.27	529.78	574.05	45.81	528.24	574.05	41.68	532.37
MW-22	Monitoring Well	447.57	66.15	381.42	447.57	69.39	378.18	447.57	61.22	386.35
MW-26	Monitoring Well	376.46	25.95	350.51	379.44	28.94	350.50	376.46	26.40	353.04
MW-27	Monitoring Well	AB	AB	AB	AB	AB	AB	AB	AB	AB
MW-28	Monitoring Well	NM	NM	NM	366.78	24.79	341.99	366.78	24.38	342.40
MW-29	Monitoring Well	AB	AB	AB	AB	AB	AB	AB	AB	AB
MW-30	Monitoring Well	362.26	15.34	346.92	362.26	16.83	345.43	362.26	16.58	345.68
MW-31D	Monitoring Well	369.30	19.04	350.26	369.30	21.22	348.08	369.30	18.65	350.65
MW-31S	Monitoring Well	369.28	18.65	350.63	369.28	20.43	348.85	369.28	18.09	351.19
MW-32D	Monitoring Well	NM	NM	NM	366.65	24.57	342.08	366.65	24.16	342.49
MW-32S	Monitoring Well	NM	NM	NM	366.62	24.61	342.01	366.62	24.21	342.41
MW-33	Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-34D	Monitoring Well	AB	AB	AB	AB	AB	AB	AB	AB	AB
MW-34S	Monitoring Well	AB	AB	AB	AB	AB	AB	AB	AB	AB
MW-35D	Monitoring Well	AB	AB	AB	AB	AB	AB	AB	AB	AB
MW-35S	Monitoring Well	AB	AB	AB	AB	AB	AB	AB	AB	AB
MW-36D	Monitoring Well	370.96	25.69	345.27	370.96	27.42	343.54	370.96	26.30	344.66
MW-36S	Monitoring Well	370.95	25.36	345.59	370.95	26.94	344.01	370.95	25.73	345.22
MW-37D	Monitoring Well	359.11	20.21	338.90	359.11	23.95	335.16	359.11	22.76	336.35
MW-37S	Monitoring Well	359.13	19.81	339.32	359.13	21.62	337.51	359.13	20.97	338.16
MW-38D	Monitoring Well	358.62	20.48	338.14	358.62	21.75	336.87	358.62	21.82	336.80
MW-39D	Monitoring Well	360.21	23.12	337.09	360.21	22.15	338.06	360.21	23.37	336.84
MW-39S	Monitoring Well	360.14	23.35	336.79	360.14	22.68	337.46	360.14	22.94	337.20

See Page 9 For Data Flag Definitions.

TABLE 2.1-1
SITE-WIDE GROUNDWATER LEVELS AND ELEVATION DATA
FYNOP 1425 EDEN ROAD, YOKR PA 17402

Location	Site Type	10/3/2016 October 2016 Site Wide Water Levels			12/9/2016 December 2016 Site Wide Water Levels			10/16/2017 October 2017 Site Wide Water Levels		
		MRP	DTW	GW Elev	MRP	DTW	GW Elev	MRP	DTW	GW Elev
MW-40D	Monitoring Well	374.65	29.73	344.92	374.65	32.16	342.49	374.65	31.62	343.03
MW-40S	Monitoring Well	374.69	29.37	345.32	374.69	32.33	342.36	374.69	31.35	343.34
MW-43D	Monitoring Well	380.08	34.51	345.57	380.08	36.21	343.87	380.08	35.50	344.58
MW-43S	Monitoring Well	379.76	34.92	344.84	379.76	36.55	343.21	379.76	35.29	344.47
MW-45	Monitoring Well	359.91	15.90	344.01	360.57	18.53	342.04	360.57	18.45	342.12
MW-46	Monitoring Well	359.19	15.69	343.50	360.24	18.69	341.55	360.24	18.64	341.60
MW-47	Monitoring Well	360.57	15.80	344.77	360.45	19.32	341.13	360.45	20.47	339.98
MW-49D	Monitoring Well	361.44	17.37	344.07	360.45	17.94	342.51	360.45	17.97	342.48
MW-49S	Monitoring Well	361.45	17.41	344.04	360.44	17.88	342.56	360.44	17.95	342.49
MW-50D	Monitoring Well	363.36	23.78	339.58	363.36	23.93	339.43	363.36	24.21	339.15
MW-50S	Monitoring Well	363.42	22.28	341.14	363.42	22.84	340.58	363.42	24.42	339.00
MW-51D	Monitoring Well	363.11	28.75	334.36	363.11	26.98	336.13	363.11	27.85	335.26
MW-51S	Monitoring Well	363.20	27.13	336.07	363.20	25.63	337.57	363.20	27.74	335.46
MW-53	Abandoned Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-54	Monitoring Well	AB	AB	AB	AB	AB	AB	AB	AB	AB
MW-55	Monitoring Well	AB	AB	AB	AB	AB	AB	AB	AB	AB
MW-56	Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-57	Monitoring Well	362.30	16.84	345.46	362.30	19.14	343.16	362.30	19.14	343.16
MW-64D	Monitoring Well	416.43	62.65	353.78	416.43	64.43	352.00	416.43	62.09	354.34
MW-64S	Monitoring Well	416.34	41.05	375.29	D	D	D	416.34	38.45	377.89
MW-65D	Monitoring Well	546.80	51.00	495.80	546.80	51.12	495.68	546.80	48.73	498.07
MW-65S	Monitoring Well	546.82	49.70	497.12	546.82	52.09	494.73	546.82	49.80	497.02
MW-66D	Monitoring Well	506.92	42.37	464.55	506.92	43.56	463.36	506.92	40.78	466.14
MW-66S	Monitoring Well	506.73	40.55	466.18	506.73	41.70	465.03	506.73	39.50	467.23
MW-67D	Monitoring Well	446.26	1.59	444.67	446.26	-0.31	446.57	446.26	-0.76	447.02
MW-67S	Monitoring Well	446.26	14.60	431.66	446.26	15.09	431.17	446.26	11.41	434.85
MW-68	Monitoring Well	458.06	8.05	450.01	458.06	8.47	449.59	458.06	7.23	450.83
MW-69	Monitoring Well	411.90	15.14	396.76	411.90	18.24	393.66	411.90	12.42	399.48
MW-70D	Monitoring Well	413.26	26.97	386.29	416.31	30.03	386.28	413.26	24.81	391.50
MW-70S	Monitoring Well	413.20	26.40	386.80	416.21	29.96	386.25	413.20	24.41	391.80
MW-74D	Monitoring Well	359.79	20.87	338.92	359.79	20.83	338.96	359.79	21.27	338.52
MW-74S	Monitoring Well	359.85	21.48	338.37	359.85	21.15	338.70	359.85	21.55	338.30
MW-75D	Monitoring Well	359.85	22.02	337.83	359.85	25.13	334.72	359.85	23.80	336.05
MW-75S	Monitoring Well	359.03	19.91	339.12	359.03	23.62	335.41	359.03	22.60	336.43
MW-77	Monitoring Well	379.48	24.94	354.54	379.48	27.82	351.66	379.48	24.41	355.07

See Page 9 For Data Flag Definitions.

TABLE 2.1-1
SITE-WIDE GROUNDWATER LEVELS AND ELEVATION DATA
FYNOP 1425 EDEN ROAD, YOKR PA 17402

Location	Site Type	10/3/2016 October 2016 Site Wide Water Levels			12/9/2016 December 2016 Site Wide Water Levels			10/16/2017 October 2017 Site Wide Water Levels		
		MRP	DTW	GW Elev	MRP	DTW	GW Elev	MRP	DTW	GW Elev
MW-78	Monitoring Well	367.08	24.01	343.07	375.32	26.51	348.81	367.08	23.30	352.02
MW-79	Monitoring Well	375.84	23.71	352.13	375.84	22.61	353.23	375.84	24.15	351.69
MW-80	Monitoring Well	370.29	24.31	345.98	370.29	26.69	343.60	370.29	26.42	343.87
MW-81D	Monitoring Well	NM	NM	NM	366.92	24.33	342.59	366.92	24.38	342.54
MW-81S	Monitoring Well	NM	NM	NM	366.90	24.52	342.38	366.90	24.45	342.45
MW-82	Monitoring Well	384.27	37.63	346.64	382.18	39.13	343.05	384.27	37.84	344.34
MW-83	Monitoring Well	AB	AB	AB	AB	AB	AB	AB	AB	AB
MW-84	Monitoring Well	366.97	25.67	341.30	376.53	28.04	348.49	366.97	25.33	351.20
MW-85	Monitoring Well	371.54	17.35	354.19	371.54	21.13	350.41	371.54	17.45	354.09
MW-86D	Monitoring Well	406.56	11.30	395.26	406.56	14.99	391.57	406.56	9.61	396.95
MW-86S	Monitoring Well	406.50	14.36	392.14	406.50	20.22	386.28	406.50	8.65	397.85
MW-87	Monitoring Well	370.64	24.69	345.95	370.64	27.07	343.57	370.64	26.81	343.83
MW-88	Monitoring Well	367.93	23.71	344.22	367.93	25.79	342.14	367.93	25.30	342.63
MW-91	Monitoring Well	501.18	60.64	440.54	501.18	62.91	438.27	501.18	57.75	443.43
MW-92	Monitoring Well	476.87	91.15	385.72	476.87	93.87	383.00	476.87	86.94	389.93
MW-93D	Monitoring Well	360.14	20.67	339.47	360.14	22.60	337.54	360.14	23.90	336.24
MW-93S	Monitoring Well	360.76	21.14	339.62	360.76	22.86	337.90	360.76	22.26	338.50
MW-94	Monitoring Well	AB	AB	AB	AB	AB	AB	AB	AB	AB
MW-95	Monitoring Well	358.72	20.27	338.45	358.72	20.02	338.70	358.72	20.44	338.28
MW-96D	Monitoring Well	361.00	23.12	337.88	361.00	22.61	338.39	361.00	23.24	337.76
MW-96S	Monitoring Well	361.21	23.39	337.82	361.21	22.90	338.31	361.21	23.49	337.72
MW-97	Monitoring Well	357.39	21.97	335.42	357.39	21.20	336.19	357.39	21.05	336.34
MW-98D	Monitoring Well	361.41	21.32	340.09	361.41	21.80	339.61	361.41	22.00	339.41
MW-98I	Monitoring Well	360.78	21.56	339.22	360.78	22.11	338.67	360.78	22.02	338.76
MW-98S	Monitoring Well	360.77	21.62	339.15	360.77	22.00	338.77	360.77	21.92	338.85
MW-99D	Monitoring Well	359.91	20.08	339.83	359.91	20.54	339.37	359.91	20.45	339.46
MW-99S	Monitoring Well	360.37	20.48	339.89	360.37	21.06	339.31	360.37	20.91	339.46
MW-100D	Monitoring Well	362.14	22.00	340.14	362.14	22.60	339.54	362.14	22.45	339.69
MW-100I	Monitoring Well	361.81	21.64	340.17	361.81	22.32	339.49	361.81	22.19	339.62
MW-100S	Monitoring Well	362.28	22.18	340.10	362.28	22.79	339.49	362.28	22.60	339.68
MW-101D	Monitoring Well	356.22	16.41	339.81	356.22	16.90	339.32	356.22	16.75	339.47
MW-101S	Monitoring Well	356.54	16.89	339.65	356.54	17.29	339.25	356.54	17.15	339.39
MW-102D	Monitoring Well	401.71	16.31	385.40	405.23	19.32	385.91	401.71	14.09	391.14
MW-102S	Monitoring Well	401.95	43.18	358.77	405.41	46.81	358.60	401.95	41.58	363.83
MW-103D	Monitoring Well	397.62	21.50	376.12	401.61	25.00	376.61	397.62	20.22	381.39

See Page 9 For Data Flag Definitions.

TABLE 2.1-1
SITE-WIDE GROUNDWATER LEVELS AND ELEVATION DATA
FYNOP 1425 EDEN ROAD, YOKR PA 17402

		10/3/2016			12/9/2016			10/16/2017		
		October 2016 Site Wide Water Levels			December 2016 Site Wide Water Levels			October 2017 Site Wide Water Levels		
Location	Site Type	MRP	DTW	GW Elev	MRP	DTW	GW Elev	MRP	DTW	GW Elev
MW-103S	Monitoring Well	397.96	19.67	378.29	402.00	23.22	378.78	397.96	18.21	383.79
MW-104	Monitoring Well	428.72	29.31	399.41	428.72	29.54	399.18	428.72	28.96	399.76
MW-105	Monitoring Well	362.05	23.78	338.27	362.05	23.65	338.40	362.05	23.77	338.28
MW-106	Monitoring Well	360.15	25.26	334.89	360.15	24.45	335.70	360.15	25.26	334.89
MW-107	Monitoring Well	363.56	22.98	340.58	363.56	24.06	339.50	363.56	23.82	339.74
MW-108D	Monitoring Well	426.35	27.10	399.25	426.35	28.52	397.83	426.35	23.13	403.22
MW-108S	Monitoring Well	425.46	39.03	386.43	425.46	42.70	382.76	425.46	23.34	402.12
MW-109D	Monitoring Well	389.12	35.94	353.18	389.12	37.57	351.55	389.12	35.81	353.31
MW-109S	Monitoring Well	388.39	36.20	352.19	388.39	37.88	350.51	388.39	36.12	352.27
MW-110	Monitoring Well	378.36	26.30	352.06	378.36	28.00	350.36	378.36	26.24	352.12
MW-111	Monitoring Well	433.63	28.83	404.80	433.63	31.61	402.02	433.63	25.67	407.96
MW-112	Monitoring Well	393.52	48.44	345.08	393.52	50.51	343.01	393.52	50.15	343.37
MW-113	Monitoring Well	371.02	25.06	345.96	371.02	27.38	343.64	371.02	27.19	343.83
MW-114	Monitoring Well	366.88	21.54	345.34	366.88	24.45	342.43	366.88	24.32	342.56
MW-115	Monitoring Well	373.30	22.45	350.85	373.30	23.71	349.59	373.30	23.92	349.38
MW-116	Monitoring Well	364.59	19.43	345.16	364.59	21.19	343.40	364.59	20.21	344.38
MW-117	Monitoring Well	AB	AB	AB	AB	AB	AB	AB	AB	AB
MW-118	Monitoring Well	AB	AB	AB	AB	AB	AB	AB	AB	AB
MW-119	Monitoring Well	AB	AB	AB	AB	AB	AB	AB	AB	AB
MW-120	Monitoring Well	AB	AB	AB	AB	AB	AB	AB	AB	AB
MW-121	Monitoring Well	AB	AB	AB	AB	AB	AB	AB	AB	AB
MW-122	Monitoring Well	AB	AB	AB	AB	AB	AB	AB	AB	AB
MW-123	Monitoring Well	AB	AB	AB	AB	AB	AB	AB	AB	AB
MW-124	Monitoring Well	AB	AB	AB	AB	AB	AB	AB	AB	AB
MW-125	Monitoring Well	AB	AB	AB	AB	AB	AB	AB	AB	AB
MW-126	Monitoring Well	371.42	25.08	346.34	371.42	27.40	344.02	371.42	27.00	344.42
MW-127	Monitoring Well	371.55	25.81	345.74	371.55	28.00	343.55	371.55	27.69	343.86
MW-128	Monitoring Well	370.58	24.70	345.88	370.58	27.03	343.55	370.58	26.71	343.87
MW-129	Monitoring Well	365.41	14.41	351.00	361.20	17.00	344.20	361.20	17.16	344.04
MW-130	Monitoring Well	AB	AB	AB	AB	AB	AB	AB	AB	AB
MW-131	Monitoring Well	366.32	19.44	346.88	366.32	23.30	343.02	NM	NM	NM
MW-132	Monitoring Well	AB	AB	AB	AB	AB	AB	AB	AB	AB
MW-133	Monitoring Well	AB	AB	AB	AB	AB	AB	AB	AB	AB
MW-134	Monitoring Well	361.21	16.52	344.69	362.18	19.53	342.65	362.18	19.47	342.71
MW-135	Monitoring Well	AB	AB	AB	AB	AB	AB	AB	AB	AB

See Page 9 For Data Flag Definitions.

TABLE 2.1-1
SITE-WIDE GROUNDWATER LEVELS AND ELEVATION DATA
FYNOP 1425 EDEN ROAD, YOKR PA 17402

Location	Site Type	10/3/2016 October 2016 Site Wide Water Levels			12/9/2016 December 2016 Site Wide Water Levels			10/16/2017 October 2017 Site Wide Water Levels		
		MRP	DTW	GW Elev	MRP	DTW	GW Elev	MRP	DTW	GW Elev
MW-136A	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-136A (270-348)	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	359.78	23.78	336.00
MW-136A (356-356.5)	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	359.78	22.50	337.28
MW-136A (372.5-373)	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	359.78	22.06	337.72
MW-136A (434-434.5)	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	359.78	20.34	339.44
MW-136A (459.5-460)	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	359.78	18.78	341.00
MW-137A	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-137A (270-306)	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-137A (295.5-296)	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-137A (343-343.5)	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-137A (374.5-375)	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-137A (420-420.5)	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-137A (434.5-435)	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-138A	Monitoring Well	370.82	23.71	347.11	370.82	29.37	341.45	370.82	15.52	355.30
MW-139A	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-139A (270-285)	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-139A (305-305.5)	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-139A (333.5-334)	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-139A (365-365.5)	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-139A (421.5-422)	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-139A (454-454.5)	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-140A	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-140A (209.5-210)	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-140A (285-285.5)	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-140A (323.5-324)	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-140A (372-372.5)	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-140A (407.5-408)	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-141A	Monitoring Well	416.96	52.30	364.66	416.96	54.05	362.91	416.96	45.88	371.08
MW-142D	Monitoring Well	437.78	16.50	421.28	437.78	16.92	420.86	437.78	15.07	422.71
MW-142S	Monitoring Well	437.44	2.90	434.54	437.44	3.20	434.24	437.44	2.66	434.78
MW-143D	Monitoring Well	403.71	11.43	392.28	403.71	12.60	391.11	403.71	9.14	394.57
MW-143S	Monitoring Well	403.56	38.40	365.16	403.56	40.74	362.82	403.56	34.87	368.69
MW-144	Monitoring Well	361.52	21.92	339.60	361.52	22.31	339.21	361.52	22.31	339.21
MW-145A	Monitoring Well	362.44	22.20	340.24	362.44	22.75	339.69	362.44	22.66	339.78
MW-146	Monitoring Well	362.39	22.07	340.32	362.39	22.71	339.68	362.39	22.55	339.84

See Page 9 For Data Flag Definitions.

TABLE 2.1-1
SITE-WIDE GROUNDWATER LEVELS AND ELEVATION DATA
FYNOP 1425 EDEN ROAD, YOKR PA 17402

		10/3/2016			12/9/2016			10/16/2017		
		October 2016 Site Wide Water Levels			December 2016 Site Wide Water Levels			October 2017 Site Wide Water Levels		
Location	Site Type	MRP	DTW	GW Elev	MRP	DTW	GW Elev	MRP	DTW	GW Elev
MW-147A	Monitoring Well	361.25	20.40	340.85	361.25	21.25	340.00	361.25	20.96	340.29
MW-148A (72.5-73)	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-148A (136-136.5)	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-148A (218-218.5)	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-150	Monitoring Well	366.80	14.82	351.98	NM	NM	NM	366.80	12.95	353.85
MW-151	Monitoring Well	374.11	24.70	349.41	374.11	26.45	347.66	374.11	25.92	348.19
MW-152 (0-10)	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-152 (23-23.5)	Waterloo Monitoring Well	358.92	14.48	344.44	NM	NM	NM	358.92	14.35	344.57
MW-152 (137.5-138)	Waterloo Monitoring Well	358.92	9.06	349.86	NM	NM	NM	358.92	15.67	343.25
MW-155	Monitoring Well	359.92	19.60	340.32	359.92	20.19	339.73	359.92	20.05	339.87
MW-156	Monitoring Well	353.53	13.12	340.41	353.53	14.21	339.32	353.53	13.85	339.68
MW-160	Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-161	Monitoring Well	415.92	62.33	353.59	415.92	64.17	351.75	415.92	61.74	354.18
MW-162	Monitoring Well	415.78	46.65	369.13	415.78	49.09	366.69	415.78	45.77	370.01
MW-163	Monitoring Well	419.41	39.75	379.66	419.41	42.86	376.55	419.41	34.66	384.75
MW-164	Monitoring Well	424.50	45.18	379.32	424.50	48.11	376.39	424.50	40.34	384.16
MW-165	Monitoring Well	419.41	47.79	371.62	419.41	49.28	370.13	419.41	44.50	374.91
MW-166	Monitoring Well	402.03	42.03	360.00	402.03	43.69	358.34	402.03	40.90	361.13
MW-167	Monitoring Well	399.07	35.85	363.22	399.07	38.88	360.19	399.07	33.34	365.73
MW-168	Monitoring Well	NM	NM	NM	395.19	28.76	366.43	395.19	18.81	376.38
MW-169	Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-170	Monitoring Well	385.60	29.88	355.72	385.60	30.48	355.12	385.60	25.31	360.29
MW-171	Monitoring Well	386.75	34.60	352.15	386.75	36.29	350.46	386.75	34.45	352.30
MW-172	Monitoring Well	386.75	31.08	355.67	NM	NM	NM	NM	NM	NM
MW-173	Monitoring Well	381.57	26.33	355.24	381.57	28.17	353.40	381.57	20.87	360.70
MW-174	Monitoring Well	NM	NM	NM	378.31	28.27	350.04	378.31	26.37	351.94
MW-175	Monitoring Well	376.18	24.55	351.63	376.18	26.62	349.56	376.18	24.91	351.27
MW-176	Monitoring Well	NM	NM	NM	NM	NM	NM	415.46	51.94	363.52
MW-177R	Monitoring Well	NM	NM	NM	NM	NM	NM	415.54	43.91	371.63
MW-178D	Monitoring Well	NM	NM	NM	NM	NM	NM	414.81	60.61	354.20
MW-178S	Monitoring Well	NM	NM	NM	NM	NM	NM	415.11	60.89	354.22
MW-179	Monitoring Well	NM	NM	NM	NM	NM	NM	414.74	57.47	357.27
MW-180	Monitoring Well	NM	NM	NM	NM	NM	NM	414.36	59.25	355.11
MW-181D	Monitoring Well	NM	NM	NM	NM	NM	NM	414.91	53.85	361.06
MW-181S	Monitoring Well	NM	NM	NM	NM	NM	NM	414.86	61.23	353.63

See Page 9 For Data Flag Definitions.

TABLE 2.1-1
SITE-WIDE GROUNDWATER LEVELS AND ELEVATION DATA
FYNOP 1425 EDEN ROAD, YOKR PA 17402

		10/3/2016			12/9/2016			10/16/2017		
		October 2016 Site Wide Water Levels			December 2016 Site Wide Water Levels			October 2017 Site Wide Water Levels		
Location	Site Type	MRP	DTW	GW Elev	MRP	DTW	GW Elev	MRP	DTW	GW Elev
MW-182	Monitoring Well	NM	NM	NM	NM	NM	NM	416.41	34.51	381.90
MW-183	Monitoring Well	NM	NM	NM	NM	NM	NM	417.14	34.81	382.33
MW-184D	Monitoring Well	NM	NM	NM	NM	NM	NM	416.29	33.32	382.97
MW-184S	Monitoring Well	NM	NM	NM	NM	NM	NM	416.19	46.61	369.58
MW-185	Monitoring Well	NM	NM	NM	NM	NM	NM	514.13	69.23	444.90
Cole B	Monitoring Well	363.75	12.74	351.01	363.75	15.81	347.94	363.75	14.23	349.52
Cole D	Monitoring Well	370.15	14.16	355.99	370.15	19.61	350.54	370.15	16.11	354.04
Cole E deep	Monitoring Well	369.17	17.32	351.85	369.17	20.42	348.75	369.17	18.45	350.72
Cole E shallow	Monitoring Well	369.54	18.31	351.23	369.54	20.85	348.69	369.54	18.64	350.90
Cole F	Monitoring Well	370.39	18.80	351.59	370.39	21.73	348.66	370.39	19.63	350.76
Cole (Flush)	Monitoring Well	361.92	19.83	342.09	361.92	14.23	347.69	361.92	12.80	349.12
GM-1D	Monitoring Well	366.11	16.49	349.62	366.11	18.02	348.09	NM	NM	NM
MW-4 (Cole)	Monitoring Well	367.21	17.82	349.39	367.21	19.37	347.84	367.21	17.84	349.37
Cole Steel MW-12	Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM
Ru-MW-1	Monitoring Well	389.05	35.60	353.45	389.05	38.69	350.36	389.05	35.60	353.45
Ru-MW-2	Monitoring Well	NM	NM	NM	390.72	40.35	350.37	390.72	38.52	352.20
Ru-MW-3	Monitoring Well	NM	NM	NM	395.23	44.87	350.36	NM	NM	NM
Ru-MW-4	Abandoned Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM
Ru-MW-4R	Recovery Well	394.07	42.10	351.97	NM	NM	NM	NM	NM	NM
Ru-MW-5	Monitoring Well	378.11	25.98	352.13	378.11	27.72	350.39	378.11	25.76	352.35
Ru-MW-6	Monitoring Well	382.68	30.68	352.00	382.68	32.34	350.34	382.68	30.45	352.23
Ru-MW-7	Monitoring Well	386.34	34.10	352.24	386.34	35.94	350.40	386.34	34.15	352.19
Ru-MW-8	Monitoring Well	384.10	26.35	357.75	384.10	33.72	350.38	384.10	31.80	352.30
Ru-MW-9	Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM
Ru-MW-10	Monitoring Well	390.15	36.55	353.60	390.15	40.00	350.15	390.15	38.15	352.00
Ru-MW-100	Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM
Ru-MW-101	Monitoring Well	NM	NM	NM	390.60	40.99	349.61	390.60	38.44	352.16
Ru-MW-102	Monitoring Well	393.87	41.80	352.07	393.87	76.37	317.50	393.87	41.60	352.27
Ru-MW-103	Monitoring Well	389.28	36.10	353.18	389.28	38.89	350.39	389.28	36.81	352.47
Kinsley Well	Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM
Herman (S-7)	Spring	NM	NM	NM	NM	NM	NM	NM	NM	NM
TATE (S-6)	Spring	NM	NM	NM	NM	NM	NM	NM	NM	NM
TATE (S-6) Staff Gauge	Staff Gauge	NM	NM	NM	NM	NM	NM	NM	NM	NM
CODORUS 1	Bridge Surface Gauging Point	379.69	41.15	338.54	379.69	41.70	337.99	379.69	41.35	338.34
CODORUS 2	Staff Gauge	NM	NM	NM	341.15		NA	341.63	0.92	340.23

See Page 9 For Data Flag Definitions.

TABLE 2.1-1
SITE-WIDE GROUNDWATER LEVELS AND ELEVATION DATA
FYNOP 1425 EDEN ROAD, YOKR PA 17402

Location	Site Type	10/3/2016 October 2016 Site Wide Water Levels			12/9/2016 December 2016 Site Wide Water Levels			10/16/2017 October 2017 Site Wide Water Levels		
		MRP	DTW	GW Elev	MRP	DTW	GW Elev	MRP	DTW	GW Elev
JOHNSON 1	Surface Water	380.32	6.02	374.30	380.32	6.07	374.25	380.32	6.14	374.18
JOHNSON 2	Surface Water	376.79	5.77	371.02	376.79	5.45	371.34	376.79	5.41	371.38
SCP MP-1 (High)	Water Level Measuring Point	NM	NM	NM	NM	NM	NM	NM	NM	NM
SCP MP-1 (Low)	Water Level Measuring Point	NM	NM	NM	NM	NM	NM	NM	NM	NM
RW-2	Residential Well	548.46	21.24	527.22	NM	NM	NA	548.46	21.24	527.22
RW-4 (Folk)	Residential Well	575.93	37.93	538.00	NM	NM	NM	575.93	37.93	538.00
RW-5	Residential Well	375.54	31.32	344.22	375.54	31.62	343.92	375.54	31.32	344.22
RW-6	Residential Well	NM	NM	NM	NM	NM	NM	NM	NM	NM
SOFTAIL LIFT STATION	Lift Station	392.60	24.63	367.97	396.62	24.80	371.82	392.60	27.35	369.27
WPL-SS-7	Monitoring Well	357.78	22.14	335.64	357.78	26.15	331.63	357.78	20.15	337.63
WPL-SS-8	Monitoring Well	364.40	26.18	338.22	364.40	25.07	339.33	364.40	25.76	338.64

NOTE:
1-The staff gauge measurements are not depth to water measurements and is the water level on the gauge.
2- This table has as of 6/9/15 corrected waterloo water levels based on the table below.
H:\10000\10012\GW RI Part 2\Multiport Samplers\Water levels\April 2015 download & Plots\Waterloo Water Levels 2015_05_15.xlsx
3- * Water levels are projected due to debris on the staff gauge and water level above the staff gauge.
The numbers were projected based on historic results compared to Codorus-1 which is 0.74 higher then Codorus-2.
Bold indicates that the water level measurement was collected on 9/14/2015.

Data Flags:
A: Location was artesian
AB: Abandoned
AN: Reading was Anomalous
D: Location was Dry
DT: Location Dry and is Temporary Well
NE: Well Not Equilibrated
NM: Not Measured
OG: Water was Over the Gauge
SI: Well was impacted by surface water infiltration thus reading is not accurate/possible.
T: Temporary Well
TM: Transducer Measurement
NC: Waterloo Location with no manual correction.

See Page 9 For Data Flag Definitions.

Table 2.3-1
Groundwater Data Summary - Volatile Organic Compounds (VOCs)
Former York Naval Ordnance Plant - York, PA

Location/ID	PA MSC	PA MSC	Federal	EPA	MPE-1	MPE-2	MPE-3	MPE-3 Dup	MW-1	MW-1	MW-2	MW-3	MW-3	MW-4 (Cole)	MW-4 (Cole)	MW-9	MW-9	MW-11	MW-11	MW-12	MW-12	MW-14	MW-15	MW-16D	MW-16D	MW-16S	MW-16S Dup	MW-16S	MW-17	MW-17 Dup	MW-18D	MW-18D Dup
Depth (ft.)																																
Sample Date	UA R	UA NR	MCL	RSL	10/31/17	10/31/17	10/31/17	10/31/17	10/10/16	10/24/17	10/26/17	10/7/16	10/24/17	10/5/16	10/27/17	10/10/16	10/20/17	10/11/16	10/24/17	10/12/16	10/25/17	10/4/16	10/25/17	10/7/16	10/25/17	10/11/16	10/11/16	10/25/17	10/6/16	10/6/16	10/7/16	10/26/17
Parameter	(µg/L)	(µg/L)	(µg/L)	(µg/L)																												
TOTAL VOC																																
TOTAL VOC					1832.4	319.71	11	14.4	6.7	3.4	36.5	31.67	35.02	0	0	58.6	50.7	3.17	2.6	155.3	109.7	15.3	141.8	18.9	15.7	91.2	91	21.4	7.58	4.49	21.03	20.7
Volatile Organic Compound																																
1,1,1,2-Tetrachloroethane	70	70		0.57	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1 U	1 U	1 U	1 U	1.0 U	1 U	1 U	3.0 U	2 U	1.0 U	2 U	1.0 U	1 U	1 U	1 U	2 U	1 U	1 U	1.0 U	1 U
1,1,1-Trichloroethane	200	200	200	8000	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1 U	1 U	1 U	1 U	1.0 U	1 U	1 U	3.0 U	2 U	1.0 U	2 U	1.0 U	1 U	1 U	1 U	2 U	1 U	1 U	1.0 U	1 U
1,1,2,2-Tetrachloroethane	0.84	4.3		0.076	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1 UJ	1 U	1 U	1 U	1.0 U	1 U	1 U	3.0 U	2 U	1.0 U	2 U	1.0 U	1 U	1 U	1 U	2 U	1 U	1 U	1.0 U	1 U
1,1,2-Trichloroethane	5	5	5	0.28	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1 U	1 U	1 U	1 U	1.0 U	1 U	1 U	3.0 U	2 U	1.0 U	2 U	1.0 U	1 U	1 U	1 U	2 U	1 U	1 U	1.0 U	1 U
1,1,2-Trichlorofluoromethane	2000	2000		5200																												
1,1,2-Trichlorotrifluoroethane	63000	170000		10000																												
1,1-Dichloroethane	31	160		2.8	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1 U	1 U	1 U	1 U	1.0 U	1 U	1 U	3.0 U	2 U	1.0 U	2 U	1.0 U	1 U	1 U	1 U	2 U	1 U	1 U	1.0 U	1 U
1,1-Dichloroethene	7	7	7	280	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1 U	1 U	1 U	1 U	1.0 U	1 U	1 U	3.0 U	2 U	1.0 U	2 U	1.0 U	1 UJ	1 U	1 U	2 U	1 U	1 U	1.0 U	1 U
1,2,4-Trimethylbenzene	15	62		56																												
1,2-Dibromoethane	0.05	0.05	0.05	0.0075	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1 U	1 U	1 U	1 U	1.0 U	1 U	1 U	3.0 U	2 U	1.0 U	2 U	1.0 U	1 U	1 U	1 U	2 U	1 U	1 U	1.0 U	1 U
1,2-Dichloroethane	5	5	5	0.17	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1 U	1 U	1 U	1 U	1.0 U	1 U	1 U	3.0 U	2 U	1.0 U	2 U	1.0 U	1 U	1 U	1 U	2 U	1 U	1 U	1.0 U	1 U
1,2-Dichloroethene	70	70	70																													
1,2-Dichloropropane	5	5	5	0.85	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1 U	1 U	1 U	1 U	1.0 U	1 U	1 U	3.0 U	2 U	1.0 U	2 U	1.0 U	1 U	1 U	1 U	2 U	1 U	1 U	1.0 U	1 U
1,3,5-Trimethylbenzene	420	1200		60																												
1,3-Dichlorobenzene	600	600																														
1,3-Dichloropropene	7.3	34		0.47																												
1,3-Dioxolane																																
1,4-Dioxane	6.4	32		0.46	R	R	R	R	200 U	R	R	200 U	R	200 U	R	200 U ^c	R	200 U	R	600 U	R	200 U	R	200 U	R	200 U	200 U	R	200 U	200 U	200 U ^c	R
2-Butanone	4000	4000		5600	1600	14 J	5 U	3.6 J	5 U	5 U	5 U	5.0 U	5 U	5 U ^c	5 U	5 U	5.0 U	5 U	5 U	15 U	10 U	5.0 U ^c	10 U	5.0 U	5 U	5 U	5 U	10 U	5 U ^c	5 U ^c	5.0 U	5 U
2-Chloroethyl Vinyl Ether																																
2-Hexanone	63	260		38	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5.0 U	5 U	5 U	5 U	5 U	5.0 U	5 U	5 U	15 U	10 U	5.0 U	10 U	5.0 U	5 U	5 U	5 U	10 U	5 U	5 U	5.0 U	5 U
4-Methyl-2-Pentanone	3300	9300		6300	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5.0 U	5 U	5 U	5 U	5 U	5.0 U	5 U	5 U	15 U	10 U	5.0 U	10 U	5.0 U	5 U	5 U	5 U	10 U	5 U	5 U	5.0 U	5 U
Acetone	38000	110000		14000	21	5 UJ	5 U	5 U	5 U ^c	5 U	5 U	5.0 U	5 U	5 U	5 UJ	5 U ^c	5.0 U	5 U ^c	5 U	15 U	10 U	2.5 J ^c	10 U	5.0 U ^c	5 U	5 U	5 U	10 U	3.2 J ^c	5 U ^c	5.0 U ^c	5 U
Acrolein	0.042	0.18		0.042																												
Acrylonitrile	0.72	3.7		0.052	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U ^c	20 U	20 U	20 U	60 U	40 U	20 U	40 U	20 U	20 U	20 U ^c	20 U ^c	40 U	20 U ^c	20 U ^c	20 U ^c	20 U
Benzene	5	5	5	0.46	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1 U	1 U	1 U	1 U	1.0 U	1 U	1 U	3.0 U	2 U	1.0 U	2 U	1.0 U	1 U	1 U	1 U	2 U	1 U	1 U	1.0 U	1 U
Bromochloromethane	90	90		83	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1 U	1 U	1 U	1 U	1.0 U	1 U	1 U	3.0 U	2 U	1.0 U	2 U	1.0 U	1 U	1 U	1 U	2 U	1 U	1 U	1.0 U	1 U
Bromodichloromethane	80	80		0.13	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1 U	1 U	1 U	1 U	1.0 U	1 U	1 U	3.0 U	2 U	1.0 U	2 U	1.0 U	1 U	1 U	1 U	2 U	1 U	1 U	1.0 U	1 U
Bromoform	80	80		3.3	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1 U	1 U	1 U	1 U	1.0 U	1 U	1 U	3.0 U	2 U	1.0 U	2 U	1.0 U	1 U	1 U	1 U	2 U	1 U	1 U	1.0 U	1 U
Bromomethane	10	10		7.5	1 U	1 U	1 U	1 U	1 U ^c	1 U	1 U	1.0 U ^c	1 UJ	1 U	1 U	1 U ^c	1.0 UJ	1 U ^c	1 U	3.0 U	2 U	1.0 U	2 U	1.0 U ^c	1 U	1 U ^c	1 U ^c	2 U	1 U	1 U	1.0 U ^c	1 U
Carbon Disulfide	1500	6200		810	1.4	1 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1 U	1 U	1 U	1 U	1.0 U	1 U	1 U	3.0 U	2 U	1.0 U	2 U	1.0 U	1 U	1 U	1 U	2 U	1 U	1 U	1.0 U	1 U
Carbon Tetrachloride	5	5	5	0.46	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1 U	1 U	1 U	1 U	1.0 U	1 U	1 U	3.0 U	2 U	1.0 U	2 U	1.0 U	1 U	1 U	1 U	2 U	1 U	1 U	1.0 U	1 U
Chlorobenzene	100	100	100	78	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1 U	1 U	1 U	1 U	1.0 U	1 U	1 U	3.0 U	2 U	1.0 U	2 U	1.0 U	1 U	1 U	1 U	2 U	1 U	1 U	1.0 U	1 U
Chlorodibromomethane	80	80		0.87	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1 U	1 U	1 U	1 U	1.0 U	1 U	1 U	3.0 U	2 U	1.0 U	2 U	1.0 U	1 U	1 U	1 U	2 U	1 U	1 U	1.0 U	1 U
Chloroethane	250	1200		21000	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1 U	1 U ^c	1 U	1 U	1.0 U	1 U	1 U	3.0 U	2 U	1.0 U ^c	2 U	1.0 U	1 U	1 U	1 U	2 U	1 U	1 U	1.0 U	1 U
Chloroform	80	80		0.22	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2.4	2.2	1 U	1 U	1 U	1.0 U	0.46 J	1 U	3.0 U	2 U	1.0 U	2 U	1.0 U	1 U	1 U	1 U	2 U	1	1	1.0 U	1 U
Chloromethane	30	30		190	1 U	1 U	1 U	1 U	1 U ^c	1 U	1 UJ	1.0 U ^c	1 U	1 U ^c	1 U	1 U ^c	1.0 U	1 U ^c	1 U	3.0 U	2 UJ	1.0 U ^c	2 UJ	1.0 U ^c	1 U	1 U ^c	1 U ^c	2 U	1 U ^c	1 U ^c	1.0 U ^c	1 U
cis-1,2-Dichloroethene	70	70	70	36	1 U	0.71 J	1 U	1 U	1.6	0.8 J	1 U	0.73 J	0.82 J	1 U	1 U	34	27	1 U	1 U	58	46	1.0 U	2 U	8.9	7	37	35	12	0.36 J	0.31 J	15	16
cis-1,3-Dichloropropene	7.3	34		0.47	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1 U	1 U	1 U	1 U	1.0 U	1 U	1 U	3.0 U	2 U	1.0 U	2 U	1.0 U	1 U	1 U	1 U	2 U	1 U	1 U	1.0 U	1 U
Dodecane																																
Ethanol																																
Ethylbenzene	700	700	700	1.5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1 U	1 U	1 U	1 U	1.0 U	1 U	1 U	3.0 U	2 U	1.0 U	2 U	1.0 U	1 U	1 U	1 U	2 U	1 U	1 U	1.0 U	1 U
Isopropylbenzene	840	3500		450																												
Methyl tert-butyl ether	20	20		14	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1 U	1 U	1 U	1 U	1.0 U	1 U	1 U	3.0 U	2 U	1.0 U	2 U	1.0 U	1 U	1 U	1 U	2 U	1 U	1 U	1.0 U	1 U
Methylene chloride	5	5		11	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1 U	1 U	1 U	1 U	1.0 U	1 U	1 U	3.0 U	2 U	1.0 U	2 U	1.0 U	1 U	1 U	1 U	2 U	1 U	1 U	1.0 U	1 U
Naphthalene	100	100		0.17																												
Petroleum Hydrocarbons (TPH)				60000																												
P-Xylene	10000	10000	10000	190																												
Styrene	100	100	100	1200	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1 U	1 U	1 U	1 U	1.0 U	1 U	1 U	3.0 U	2 U	1.0 U	2 U	1.0 U	1 U	1 U	1 U	2 U	1 U	1 U	1.0 U	1 U
Tetrachloroethene	5	5	5	11	100	220	9.7	9.5	2.8	1.4	35	0.54 J	1 U	1 U	1 U	1 U	1.0 U	0.31 J	1 U	4.3	2.7	11	140	1.0 U	1 U	48	50	1.7 J	0.52 J	0.58 J	1.0 U	1 U
Toluene	1000	1000	1000	1100	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1 U	1 U	1 U	1 U	1.0 U	1 U	1 U	3.0 U	2 U	1.0 U	2 U	1.0 U	1 U	1 U	1 U	2 U	1 U	1 U	1.0 U	1 U
trans-1,2-Dichloroethene	100	100	100	360	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1 U	1 U	1 U	1 U	1.0 U	1 U	1 U	3.0 U	2 U	1.0 U	2 U	1.0 U	1 U	1 U	1 U	2 U	1 U	1 U	1.0 U	1 U
trans-1,3-Dichloropropene	7.3	34		0.47	1 U	1 U	1 U	1 U	1 U ^c	1 U	1 U	1.0 U ^c	1 U	1 U ^c	1 U	1 U	1.0 U	1 U ^c	1 U	3.0 U	2 U	1.0 U ^c	2 U	1.0 U ^c	1 U	1 U	1 U	2 U	1 U ^c	1 U ^c	1.0 U	1 U
Trichloroethene	5	5	5	0.49	110	85	1.3	1.3	2.3	1.2	1.5	28	32	1 U	1 U	19	20	2.4	2.6	93	61	1.8	1.8 J	10	8.7 J	6.2	6	7.7 J	2.5	2.6	5.5	4.7
Vinyl Acetate	420	1800		410																												
Vinyl Chloride	2	2	2	0.019	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1 U	1 U ^c *	1 U	5.6 ^c	3.7	1 U	1 U	3.0 U	2 U	1.0 U ^c *	2 U	1.0 U	1 UJ	1 U	1 U	2 U	1 U ^c	1 U ^c	0.53 J ^c	1 U
VOC Library Search																																
Xylenes (Total)	10000	10000	10000	190	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2.0 U	2 U	2 U	2 U	2 U	2.0 U	2 U	2 U	6.0 U	4 U	2.0 U	4 U	2.0 U	2 U	2 U	2 U	4 U	2 U	2 U	2.0 U	2 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 2.3-1
Groundwater Data Summary - Volatile Organic Compounds (VOCs)
Former York Naval Ordnance Plant - York, PA

Location/ID	PA MSC	PA MSC	Federal	EPA	MW-18D	MW-18S	MW-18S	MW-20D	MW-20D	MW-20M	MW-20M	MW-20S	MW-20S	MW-22	MW-37D	MW-37S	MW-43D	MW-43D	MW-43S	MW-43S	MW-57	MW-57	MW-64D	MW-64D	MW-64S	MW-64S	MW-65D	MW-65S	MW-66D	MW-66S	MW-68	MW-75D	MW-75S	MW-77
Depth (ft.)																																		
Sample Date	UA R	UA NR	MCL	RSL	10/26/17	10/13/16	10/27/17	10/13/16	10/20/17	10/14/16	10/20/17	10/13/16	10/19/17	8/11/17	10/23/17	10/23/17	10/6/16	10/26/17	10/6/16	10/26/17	10/12/16	10/17/17	10/4/16	8/1/17	10/5/16	8/3/17	10/6/16	10/6/16	10/4/16	10/5/16	10/5/16	10/23/17	10/23/17	10/18/17
Parameter	(µg/L)	(µg/L)	(µg/L)	(µg/L)																														
TOTAL VOC																																		
TOTAL VOC					17.8	4.9	18.1	0.43	0.74	8.2	33.31	54.9	36.95	6.9	847.1	179	33.8	18.6	0	0	39.38	32.34	518.1	304.17	88	50	9.71	44.81	8.47	5.01	4.46	4744	8448	738
Volatile Organic Compound																																		
1,1,1,2-Tetrachloroethane	70	70		0.57	1 U	1.0 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 UJ	1 UJ	1 U	1 U	1 U	1 U	1.0 U	1 U	2.5 U	1 UJ	2 U	5 U	1 U	1 U	1.0 U	1 U	1 U	25 U	25 UJ	1.0 U
1,1,1-Trichloroethane	200	200	200	8000	1 U	1.0 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	47	13 J	1 U	1 U	1 U	1 U	1.0 U	1 U	2.5 U	1 UJ	2 U	5 U	1 U	1 U	1.0 U	1 U	1 U	92	150	1.0 U
1,1,2,2-Tetrachloroethane	0.84	4.3		0.076	1 U	1.0 U	1 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1 UJ	1 UJ	1 U	1 U	1 U	1 U	1.0 U	1 U	2.5 U	1 UJ	2 U	5 U	1 U	1 U	1.0 U	1 U	1 U	25 U	25 U	1.0 U
1,1,2-Trichloroethane	5	5	5	0.28	1 U	1.0 U	1 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1 UJ	1 UJ	1 U	1 U	1 U	1 U	1.0 U	1 U	2.5 U	1 UJ	2 U	5 U	1 U	1 U	1.0 U	1 U	1 U	25 U	25 U	1.0 U
1,1,2-Trichlorofluoromethane	2000	2000		5200																														
1,1,2-Trichlorotrifluoroethane	63000	170000		10000																														
1,1-Dichloroethane	31	160		2.8	1 U	1.0 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.5 J	2.7 J	1 U	1 U	1 U	1 U	0.28 J	1 U	2.5 U	1 UJ	2 U	5 U	1 U	1 U	1.0 U	1 U	1 U	34	25 U	1.0 U
1,1-Dichloroethene	7	7	7	280	1 UJ	1.0 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.6 J	1 UJ	1 U	1 U	1 U	1 U	5.7	6.6	2.5 U	1 UJ	2 U	5 U	1 U	1 U	1.0 U	1 U	1 U	18 J	26	1.0 U
1,2,4-Trimethylbenzene	15	62		56																														
1,2-Dibromoethane	0.05	0.05	0.05	0.0075	1 U	1.0 U	1 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1 UJ	1 UJ	1 U	1 U	1 U	1 U	1.0 U	1 U	2.5 U	1 UJ	2 U	5 U	1 U	1 U	1.0 U	1 U	1 U	25 U	25 U	1.0 U
1,2-Dichloroethane	5	5	5	0.17	1 U	1.0 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 UJ	1 UJ	1 U	1 UJ	1 U	1 U	1.0 U	1 U	2.5 U	1 UJ	2 U	5 U	1 U	1 U	1.0 U	1 U	1 U	25 U	25 U	1.0 U
1,2-Dichloroethene	70	70	70																															
1,2-Dichloropropane	5	5	5	0.85	1 U	1.0 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 UJ	1 UJ	1 U	1 U	1 U	1 U	1.0 U	1 U	2.5 U	1 UJ	2 U	5 U	1 U	1 U	1.0 U	1 U	1 U	25 U	25 U	1.0 U
1,3,5-Trimethylbenzene	420	1200		60																														
1,3-Dichlorobenzene	600	600																																
1,3-Dichloropropene	7.3	34		0.47																														
1,3-Dioxolane																																		
1,4-Dioxane	6.4	32		0.46	R	200 U	R	200 U	R	200 U	R	200 U	R	R	R	R	200 U	R	200 U	R	12 J	R	500 U	R	400 U	R	200 U	200 U	200 U	200 U	200 U	R	R	R
2-Butanone	4000	4000		5600	5 U	5.0 U	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5 UJ	5 UJ	5 U	5 U	5 U ^c	5 U	5.0 U	5 U	13 U ^c	5 UJ	10 U ^c	25 U	5 U ^c	5 U ^c	5.0 U ^c	5 U ^c	5 U ^c	130 U	130 U	5.0 U
2-Chloroethyl Vinyl Ether																																		
2-Hexanone	63	260		38	5 U	5.0 U	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5 UJ	5 UJ	5 U	5 U	5 U	5 U	5.0 U	5 U	13 U	5 UJ	10 U	25 U	5 U	5 U	5.0 U	5 U	5 U	130 U	130 U	5.0 U
4-Methyl-2-Pentanone	3300	9300		6300	5 U	5.0 U	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5 UJ	5 UJ	5 U	5 U	5 U	5 U	5.0 U	5 U	13 U	5 UJ	10 U	25 U	5 U	5 U	5.0 U	5 U	5 U	130 U	130 U	5.0 U
Acetone	38000	110000		14000	5 U	5.0 U	5 U	5.0 U	5.0 U	2.7 J	5.0 U	5.0 U	5.0 U	5.0 U	5 UJ	5 UJ	2.5 J ^c	5 U	5 U ^c	5 U	5.0 U	5 U	13 U ^c	5 UJ	10 U ^c	25 U	2.8 J ^c	5 U ^c	3.7 J ^c	5 U ^c	5 U	130 U	130 U	5.0 U
Acrolein	0.042	0.18		0.042																														
Acrylonitrile	0.72	3.7		0.052	20 U	20 U	20 U	20 U	20 U	20 U	20 UJ	20 U	20 U	20 U	20 UJ	20 UJ	20 U	20 U	20 U ^c	20 U	20 U ^c	20 U	50 U ^c	20 UJ	40 U ^c	100 U	20 U ^c	20 U ^c	20 U ^c	20 U ^c	20 U	500 U	500 U	20 U
Benzene	5	5	5	0.46	1 U	1.0 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 UJ	1 UJ	1 U	1 U	1 U	1 U	1.0 U	1 U	2.5 U	1 UJ	2 U	5 U	1 U	1 U	1.0 U	1 U	1 U	25 U	25 U	460
Bromochloromethane	90	90		83	1 U	1.0 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 UJ	1 UJ	1 U	1 U	1 U	1 U	1.0 U	1 U	2.5 U	1 UJ	2 U	5 U	1 U	1 U	1.0 U	1 U	1 U	25 U	25 U	1.0 U
Bromodichloromethane	80	80		0.13	1 U	1.0 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 UJ	1 UJ	1 U	1 U	1 U	1 U	1.0 U	1 U	2.5 U	1 UJ	2 U	5 U	1 U	1 U	1.0 U	1 U	1 U	25 U	25 U	1.0 U
Bromoform	80	80		3.3	1 U	1.0 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 UJ	1 UJ	1 U	1 U	1 U	1 U	1.0 U ^c	1 U	2.5 U	1 UJ	2 U	5 U	1 U	1 U	1.0 U	1 U	1 U	25 U	25 U	1.0 U
Bromomethane	10	10		7.5	1 U	1.0 U	1 U	1.0 U	1.0 UJ	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1 UJ	1 UJ	1 U ^c	1 U	1 U	1 U	1.0 U	1 U	2.5 U	1 UJ	2 U	5 U	1 U	1 U	1.0 U	1 U	1 U	25 U	25 U	1.0 U
Carbon Disulfide	1500	6200		810	1 U	1.0 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 UJ	1 UJ	1 U	1 U	1 U	1 U	1.0 U	1 U	2.5 U	1 UJ	2 U	5 U	1 U	1 U	1.0 U	1 U	1 U	25 U	25 UJ	1.0 U
Carbon Tetrachloride	5	5	5	0.46	1 U	1.0 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 UJ	1 UJ	1 U	1 U	1 U	1 U	1.0 U ^c	1 U	2.5 U	1 UJ	2 U	5 U	1 U	1 U	1.0 U	1 U	1 U	25 U	25 U	1.0 U
Chlorobenzene	100	100	100	78	1 U	1.0 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 UJ	1 UJ	1 U	1 U	1 U	1 U	1.0 U	1 U	2.5 U	1 UJ	2 U	5 U	1 U	1 U	1.0 U	1 U	1 U	25 U	25 U	1.0 U
Chlorodibromomethane	80	80		0.87	1 U	1.0 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 UJ	1 UJ	1 U	1 U	1 U	1 U	1.0 U ^c	1 U	2.5 U	1 UJ	2 U	5 U	1 U	1 U	1.0 U	1 U	1 U	25 U	25 U	1.0 U
Chloroethane	250	1200		21000	1 U	1.0 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 UJ	1 UJ	1 U	1 U	1 U	1 U	1.0 U	1 U	2.5 U	1 UJ	2 U	5 U	1 U	1 U	1.0 U	1 U	1 U ^c	25 U	25 U	1.0 U
Chloroform	80	80		0.22	1 U	1.0 U	1 U	0.43 J	1.0 U	0.38 J	0.83 J	1.6	1.4	1.0 U	1 UJ	1 UJ	1 U	1 UJ	1 U	1 U	1.1	0.64 J	2.5 U	0.27 J	2 U	5 U	2.6	1.5	1.7	1.4	1.8	25 U	25 U	1.0 U
Chloromethane	30	30		190	1 U	1.0 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 UJ	1 UJ	1 U ^c	1 U	1 U ^c	1 U	1.0 U	1 U	2.5 U ^c	1 UJ	2 U ^c	5 U	1 U ^c	1 U ^c	1.0 U ^c	1 U ^c	1 U ^c	25 U	25 U	1.0 U
cis-1,2-Dichloroethene	70	70	70	36	14	3.7	14	1.0 U	1.0 U	1.0 U	1.0 U	1	0.95 J	1.0 U	30 J	5.9 J	7	5.2	1 U	1 U	4.6	6.8	2.5 U	1 UJ	2 U	5 U	1 U	0.31 J	1.0 U	1 U	0.49 J	310	62	1.0 U
cis-1,3-Dichloropropene	7.3	34		0.47	1 U	1.0 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 UJ	1 UJ	1 U	1 U	1 U	1 U	1.0 U ^c	1 U	2.5 U	1 UJ	2 U	5 U	1 U	1 U	1.0 U	1 U	1 U	25 U	25 U	1.0 U
Dodecane																																		
Ethanol																																		
Ethylbenzene	700	700	700	1.5	1 U	1.0 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 UJ	1 UJ	1 U	1 U	1 U	1 U	1.0 U	1 U	2.5 U	1 UJ	2 U	5 U	1 U	1 U	1.0 U	1 U	1 U	25 U	25 U	31
Isopropylbenzene	840	3500		450																														
Methyl tert-butyl ether	20	20		14	1 U	1.0 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 UJ	1 UJ	1 U	1 U	1 U	1 U	1.0 U	1 U	2.5 U	1 UJ	2 U	5 U	1 U	1 U	1.0 U	1 U	1 U	25 U	25 U	200
Methylene chloride	5	5		11	1 U	1.0 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 UJ	1 UJ	1 U	1 U	1 U	1 U	1.0 U	1 U	3.1	1 UJ	2.2	5 U	1 U	1 U	1.0 U	1 U	1 U	25 U	10 J	1.0 U
Naphthalene	100	100		0.17																														
Petroleum Hydrocarbons (TPH)				60000																														
P-Xylene	10000	10000	10000	190																														
Styrene	100	100	100	1200	1 U	1.0 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 UJ	1 UJ	1 U	1 U	1 U	1 U	1.0 U	1 U	2.5 U	1 UJ	2 U	5 U	1 U	1 U	1.0 U	1 U	1 U	25 U	25 U	1.0 U
Tetrachloroethene	5	5	5	11	1 U	1.0 U	1 U	1.0 U	1.0 U	0.52 J	0.48 J	4.3	2.6	3.9	610	150	8.3	7.5 J	1 U	1 U	1.7	1.3	490	300	76	39	0.41 J	3	0.47 J	0.61 J	0.47 J	3600	7000	1.0 U
Toluene	1000	1000	1000	1100	1 U	1.0 U	1 U	1.0 U	0.74 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1.0 U	1 U	2.5 U	1 UJ	2 U	5 U	1 U	1 U	1.0 U	1 U	1 U	25 U	25 U	22
trans-1,2-Dichloroethene	100	100	100	360	1 U	1.0 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 UJ	1 UJ	1 U	1 U	1 U	1 U	1.0 U	1 U	2.5 U	1 UJ	2 U	5 U	1 U	1 U	1.0 U	1 U	1 U	25 U	25 U	1.0 U
trans-1,3-Dichloropropene	7.3	34		0.47	1 U	1.0 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 UJ	1 UJ	1 U ^c	1 U	1 U ^c	1 U	1.0 U ^c	1 U	2.5 U ^c	1 UJ	2 U ^c	5 U	1 U ^c	1 U ^c	1.0 U ^c	1 U ^c	1 U ^c	25 U	25 U	1.0 U
Trichloroethene	5	5	5	0.49	3.8	1.2	4.1	1.0 U	1.0 U	4.6	32 J	48	32	3	150	7.4 J	16	5.9 J	1 U	1 U	14	17	25	3.9 J	9.8	11	3.9	40	2.6	3	1.7	690	1200	1.0 U
Vinyl Acetate	420	1800		410																														
Vinyl Chloride	2	2	2	0.019	1 UJ	1.0 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 UJ	1 UJ	1 U	1 UJ	1 U ^c	1 U	1.0 U	1 U	2.5 U ^c	1 UJ	2 U ^c	5 U	1 U ^c	1 U ^c	1.0 U ^c	1 U ^c	1 U ^c *	25 U	25 U	1.0 U
VOC Library Search																																		
Xylenes (Total)	10000	10000	10000	190	2 U	2.0 U	2 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2 UJ	2 UJ	2 U	2 U	2 U	2 U	2.0 U	2 U	5.0 U	2 UJ	4 U	10 U	2 U	2 U	2.0 U	2 U	2 U	50 U	50 U	25

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 2.3-1
Groundwater Data Summary - Volatile Organic Compounds (VOCs)
Former York Naval Ordnance Plant - York, PA

Location/ID Depth (ft.) Sample Date Parameter	PA MSC UA R (µg/L)	PA MSC UA NR (µg/L)	Federal MCL (µg/L)	EPA RSL (µg/L)	MW-82 10/7/16	MW-82 10/26/17	MW-87 10/12/16	MW-87 10/18/17	MW-88 10/12/16	MW-88 10/20/17	MW-91 10/25/17	MW-92 10/27/17	MW-93D 10/24/17	MW-93D Dup 10/24/17	MW-93S 10/24/17	MW-102D 10/11/16	MW-102D 10/17/17	MW-102D Dup 10/17/17	MW-102S 10/11/16	MW-102S 10/17/17	MW-103D 10/10/16	MW-103D 10/16/17	MW-103S 10/10/16	MW-103S 10/16/17	MW-108D 8/3/17	MW-108S 8/3/17	MW-109D 8/2/17	MW-109S 8/2/17	MW-110 10/5/16	MW-110 8/2/17	MW-110 Dup 8/2/17
TOTAL VOC																															
TOTAL VOC					26.44	21.7	442.1	353.23	136.1	6.51	151.7	74	113	120.9	90.3	18.08	13.2	18.2	72.5	53.4	21.07	13.3	108.7	72.7	2.47	0	2.2	1.3	60.59	44	34.57
Volatile Organic Compound																															
1,1,1,2-Tetrachloroethane	70	70		0.57	1.0 U	1 U	10 U	1.0 U	1.0 U	1.0 U	1 U	2 U	5 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U
1,1,1-Trichloroethane	200	200	200	8000	1.0 U	1 U	4.4 J	7	0.32 J	1.0 U	1 U	2 U	5 U	2.5	12	1 U	1 U	1 U	8.7	4.6	1 U	1 U	0.76 J	5 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U
1,1,2,2-Tetrachloroethane	0.84	4.3		0.076	1.0 U	1 U	10 U	1.0 U	1.0 U	1.0 U	1 U	2 U	5 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U
1,1,2-Trichloroethane	5	5	5	0.28	1.0 U	1 U	10 U	1.0 U	1.0 U	1.0 U	1 U	2 U	5 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U
1,1,2-Trichlorofluoromethane	2000	2000		5200																											
1,1,2-Trichlorotrifluoroethane	63000	170000		10000																											
1,1-Dichloroethane	31	160		2.8	0.55 J	1 U	5.4 J	6.3	1.6	1.0 U	1 U	2 U	5 U	2.5	1.3	1 U	1 U	1 U	2.4	1.2	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U
1,1-Dichloroethene	7	7	7	280	0.39 J	1 U	2.9 J	3.4	1.6	1.0 U	1 UJ	2 U	5 U	1.9 J	1 U	1 U	1 U	1 U	6.3	4.6	1 U	1 U	0.64 J	5 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U
1,2,4-Trimethylbenzene	15	62		56																											
1,2-Dibromoethane	0.05	0.05	0.05	0.0075	1.0 U	1 U	10 U	1.0 U	1.0 U	1.0 U	1 U	2 U	5 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U
1,2-Dichloroethane	5	5	5	0.17	1.0 U	1 U	10 U	1.0 U	1.0 U	1.0 U	1 U	2 U	5 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U
1,2-Dichloroethene	70	70	70																												
1,2-Dichloropropane	5	5	5	0.85	1.0 U	1 U	10 U	1.0 U	1.0 U	1.0 U	1 U	2 U	5 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U
1,3,5-Trimethylbenzene	420	1200		60																											
1,3-Dichlorobenzene	600	600																													
1,3-Dichloropropene	7.3	34		0.47																											
1,3-Dioxolane																															
1,4-Dioxane	6.4	32		0.46	200 U	R	2000 U	R	200 U	R	R	R	R	R	R	200 U	R	R	8 J	R	200 U	R	400 U ^c	R	R	R	R	R	200 U	R	R
2-Butanone	4000	4000		5600	5.0 U	5 U	50 U	5.0 U	5.0 U	5.0 U	5 U	10 U	25 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	25 U	5 U	5 U	5 U	5 U	5 U ^c	25 U	5 U
2-Chloroethyl Vinyl Ether																															
2-Hexanone	63	260		38	5.0 U	5 U	50 U	5.0 U	5.0 U	5.0 U	5 U	10 U	25 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	25 U	5 U	5 U	5 U	5 U	5 U	25 U	5 U
4-Methyl-2-Pentanone	3300	9300		6300	5.0 U	5 U	50 U	5.0 U	5.0 U	5.0 U	5 U	10 U	25 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	25 U	5 U	5 U	5 U	5 U	5 U	25 U	5 U
Acetone	38000	110000		14000	5.0 U ^c	5 U	50 U	5.0 U	5.0 U	5.0 U	5 U	10 U	25 U	10 U	5 U	5 U	5 U	4.6 J	5 U	5 UJ	4.1 J ^c	5 U	10 U ^c	25 U	5 U	5 U	5 U	5 U	5 U	25 U	5 U
Acrolein	0.042	0.18		0.042																											
Acrylonitrile	0.72	3.7		0.052	20 U	20 U	200 U ^c	20 U	20 U ^c	20 U	20 U	40 U	100 U	40 U	20 U	20 U ^c	20 U	20 U	20 U	20 U	20 U	20 U	40 U ^c	100 U	20 U	20 U	20 U	20 U	20 U	100 U	20 U
Benzene	5	5	5	0.46	1.0 U	1 U	10 U	1.0 U	1.0 U	1.0 U	1 U	2 U	5 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U
Bromochloromethane	90	90		83	1.0 U	1 U	10 U	1.0 U	1.0 U	1.0 U	1 U	2 U	5 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U
Bromodichloromethane	80	80		0.13	1.0 U	1 U	10 U	1.0 U	1.0 U	1.0 U	1 U	2 U	5 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U
Bromoform	80	80		3.3	1.0 U	1 U	10 U ^c	1.0 U	1.0 U	1.0 U	1 U	2 U	5 U	2 U	1 U	1 U ^c	1 U	1 U	1 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U
Bromomethane	10	10		7.5	1.0 U ^c	1 U	10 U	1.0 U	1.0 U ^c	1.0 UJ	1 U	2 U	5 U	2 U	1 U	1 U	1 U	1 U	1 U ^c	1 U	1 U ^c	1 U	2 U ^c	5 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U
Carbon Disulfide	1500	6200		810	1.0 U	1 U	10 U	1.0 U	1.0 U	1.0 U	1 U	2 U	5 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U
Carbon Tetrachloride	5	5	5	0.46	1.0 U	1 U	10 U ^c	2.2	1.0 U	1.0 U	1 U	2 U	5 U	2 U	1 U	1 U ^c	1 U	1 U	1 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U
Chlorobenzene	100	100	100	78	1.0 U	1 U	10 U	1.0 U	1.0 U	1.0 U	1 U	2 U	5 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U
Chlorodibromomethane	80	80		0.87	1.0 U	1 U	10 U ^c	1.0 U	1.0 U	1.0 U	1 U	2 U	5 U	2 U	1 U	1 U ^c	1 U	1 U	1 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U
Chloroethane	250	1200		21000	1.0 U	1 U	10 U	1.0 U	1.0 U	1.0 U	1 U	2 U	5 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U ^c	5 U	1 U
Chloroform	80	80		0.22	1.0 U	1 U	10 U	0.63 J	0.28 J	1.0 U	1 U	2 U	5 U	2 U	1 U	0.38 J	1 U	1 U	1 U	1 U	0.57 J	1 U	2 U	5 U	0.38 J	1 U	1 U	1 U	0.59 J	5 U	0.6 J
Chloromethane	30	30		190	1.0 U ^c	1 UJ	10 U	1.0 U	1.0 U ^c	1.0 U	1 U	2 U	5 U	2 U	1 U	1 U	1 U	1 U	1 U ^c	1 UJ	1 U ^c	1 U	2 U ^c	5 U	1 U	1 U	1 U	1 U	1 U ^c	5 U	1 U
cis-1,2-Dichloroethene	70	70	70	36	17	15	300	250	9.3	0.91 J	1 U	2 U	21	22	17	3.6	3.4	3.2	8.1	6	1.7	1.8	4.3	3.7 J	1 U	1 U	1 U	1 U	1 U	5 U	1 U
cis-1,3-Dichloropropene	7.3	34		0.47	1.0 U	1 U	10 U ^c	1.0 U	1.0 U	1.0 U	1 U	2 U	5 U	2 U	1 U	1 U ^c	1 U	1 U	1 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U
Dodecane																															
Ethanol																															
Ethylbenzene	700	700	700	1.5	1.0 U	1 U	10 U	1.0 U	1.0 U	1.0 U	1 U	2 U	5 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U
Isopropylbenzene	840	3500		450																											
Methyl tert-butyl ether	20	20		14	1.0 U	1 U	10 U	1.0 U	1.0 U	1.0 U	1 U	2 U	5 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	2.2	1.3	1 U	5 U	1 U
Methylene chloride	5	5		11	1.0 U	1 U	4.4 J	1.0 U	1.0 U	1.0 U	1 U	2 U	5 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U
Naphthalene	100	100		0.17																											
Petroleum Hydrocarbons (TPH)				60000																											
P-Xylene	10000	10000	10000	190																											
Styrene	100	100	100	1200	1.0 U	1 U	10 U	1.0 U	1.0 U	1.0 U	1 U	2 U	5 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U
Tetrachloroethene	5	5	5	11	1.8	1.3	15	20	60	2.9	150	74	44	46	41 J	9.6	6.9	7.6	15 J	13 J	10	9.3	27	15	1.4	1 U	1 U	1 U	59	44 J	33
Toluene	1000	1000	1000	1100	1.0 U	1 U	10 U	1.0 U	1.0 U	1.0 U	1 U	2 U	5 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U
trans-1,2-Dichloroethene	100	100	100	360	1.0 U	1 U	10 U	1.7	1.0 U	1.0 U	1 U	2 U	5 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U
trans-1,3-Dichloropropene	7.3	34		0.47	1.0 U ^c	1 U	10 U ^c	1.0 U	1.0 U	1.0 U	1 U	2 U	5 U	2 U	1 U	1 U ^c	1 U	1 U	1 U ^c	1 U	1 U ^c	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U ^c	5 U	1 U
Trichloroethene	5	5	5	0.49	6.7	5.4	110	62	63	2.7	1.7	2 U	48	46	19	4.5	2.9	2.8	24 J	24 J	4.7	2.2	76	54	0.69 J	1 U	1 U	1 U	1	5 U	0.97 J
Vinyl Acetate	420	1800		410																											
Vinyl Chloride	2	2	2	0.019	1.0 U	1 U	10 U	1.0 U	1.0 U	1.0 U	1 UJ	2 U	5 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U ^c	5 U	1 U	1 U	1 U	1 U	1 U ^c *	5 U	1 U
VOC Library Search																															
Xylenes (Total)	10000	10000	10000	190	2.0 U	2 U	20 U	2.0 U	2.0 U	2.0 U	2 U	4 U	10 U	4 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	4 U	10 U	2 U	2 U	2 U	2 U	2 U	10 U	2 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 2.3-1
Groundwater Data Summary - Volatile Organic Compounds (VOCs)
Former York Naval Ordnance Plant - York, PA

Location/ID	PA MSC	PA MSC	Federal	EPA	MW-127	MW-127	MW-129	MW-129	MW-136A	MW-136A	MW-136A	MW-136A	MW-136A	MW-141A	MW-142D	MW-142D	MW-142S	MW-142S	MW-143D	MW-143D	MW-143S	MW-143S	MW-150	MW-151	MW-151	MW-152	MW-152	MW-161	MW-162	MW-163	MW-164	MW-165
Depth (ft.)									270 - 348	356 - 356.5	372.5 - 373	434 - 434.5	459.5 - 460													23 - 23.5	137.5 - 138					
Sample Date	UA R	UA NR	MCL	RSL	10/12/16	10/18/17	10/12/16	10/18/17	10/26/17	10/25/17	10/25/17	10/25/17	11/1/17	8/4/17	10/13/16	10/18/17	10/13/16	10/18/17	10/7/16	10/18/17	10/7/16	10/18/17	10/5/16	10/5/16	10/27/17	10/4/16	10/4/16	8/1/17	8/2/17	8/1/17	8/4/17	8/11/17
Parameter	(µg/L)	(µg/L)	(µg/L)	(µg/L)																												
TOTAL VOC																																
TOTAL VOC					329.4	278.6	5083.8	1284.3	729.3	8330	16220	37500	3057.19	8.5	5.78	0.79	6.8	2.4	0.66	0.74	2.06	1.67	58.39	2.2	1.4	0	4	174.3	381	38.45	2.2	13.1
Volatile Organic Compound																																
1,1,1,2-Tetrachloroethane	70	70		0.57	10 U	1.0 U	10 U	1.0 U	5 U	50 U	50 U	100 U	1 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U	1 U	1 U	1.0 U	1.0 U	1 U	20 U	1 U	5 U	1.0 U
1,1,1-Trichloroethane	200	200	200	8000	4.9 J	5.5	10 U	1.0 U	5 U	50 U	50 U	100 U	1.2	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U	1 U	1 U	1.0 U	1.0 U	1 U	20 U	1 U	5 U	1.0 U
1,1,2,2-Tetrachloroethane	0.84	4.3		0.076	10 U	1.0 U	10 U	1.0 U	5 U	50 U	50 U	100 U	1 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U	1 U	1 U	1.0 U	1.0 U	1 U	20 U	1 U	5 U	1.0 U
1,1,2-Trichloroethane	5	5	5	0.28	10 U	1.0 U	10 U	1.0 U	5 U	50 U	50 U	100 U	1 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U	1 U	1 U	1.0 U	1.0 U	1 U	20 U	1 U	5 U	1.0 U
1,1,2-Trichlorofluoromethane	2000	2000		5200																												
1,1,2-Trichlorotrifluoroethane	63000	170000		10000																												
1,1-Dichloroethane	31	160		2.8	3.9 J	4.4	10 U	1.0 U	5 U	50 U	50 U	100 U	5.8	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U	1 U	1 U	1.0 U	1.0 U	1 U	20 U	1 U	5 U	1.0 U
1,1-Dichloroethene	7	7	7	280	10 U	2.8	10 U	2.4	5 UJ	50 UJ	50 UJ	100 UJ	4.8	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.39 J	1 U	1 U	1.0 U	1.0 U	1 U	20 U	1 U	5 U	1.0 U
1,2,4-Trimethylbenzene	15	62		56																												
1,2-Dibromoethane	0.05	0.05	0.05	0.0075	10 U	1.0 U	10 U	1.0 U	5 U	50 U	50 U	100 U	1 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U	1 U	1 U	1.0 U	1.0 U	1 U	20 U	1 U	5 U	1.0 U
1,2-Dichloroethane	5	5	5	0.17	10 U	1.0 U	10 U	1.0 U	5 U	50 U	50 U	100 U	1 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U	1 U	1 U	1.0 U	1.0 U	1 U	20 U	1 U	5 U	1.0 U
1,2-Dichloroethene	70	70	70																													
1,2-Dichloropropane	5	5	5	0.85	10 U	1.0 U	10 U	1.0 U	5 U	50 U	50 U	100 U	1 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U	1 U	1 U	1.0 U	1.0 U	1 U	20 U	1 U	5 U	1.0 U
1,3,5-Trimethylbenzene	420	1200		60																												
1,3-Dichlorobenzene	600	600																														
1,3-Dichloropropene	7.3	34		0.47																												
1,3-Dioxolane																																
1,4-Dioxane	6.4	32		0.46	2000 U	R	2000 U	R	R	R	R	R	R	R	200 U	R	200 U	R	200 U	R	200 U	R	200 U	200 U	R	200 U	200 U	R	R	R	R	R
2-Butanone	4000	4000		5600	50 U	5.0 U	50 U	5.0 U	25 U	250 U	250 U	500 U	5 U	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5 U ^c	5 U ^c	5 U	5.0 U ^c	2.9 J ^c	5 U	100 U	5 U	25 U	5.0 U
2-Chloroethyl Vinyl Ether																																
2-Hexanone	63	260		38	50 U	5.0 U	50 U	5.0 U	25 U	250 U	250 U	500 U	5 U	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5 U	5 U	5 U	5.0 U	5.0 U	5 U	100 U	5 U	25 U	5.0 U
4-Methyl-2-Pentanone	3300	9300		6300	50 U	5.0 U	50 U	5.0 U	25 U	250 U	250 U	500 U	5 U	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5 U	5 U	5 U	5.0 U	5.0 U	5 U	100 U	5 U	25 U	5.0 U
Acetone	38000	110000		14000	50 U	5.0 U	50 U	5.0 U	25 U	250 U	250 U	500 U	14 J	5 U	5	5.0 U	4.2 J	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5 U	5.0 U	5 U	5.0 U ^c	5.0 U ^c	5 U	100 U	5 U	25 U	5.0 U
Acrolein	0.042	0.18		0.042																												
Acrylonitrile	0.72	3.7		0.052	200 U ^c	20 U	200 U ^c	20 U	100 U	1000 U	1000 U	2000 U	77 J	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	400 U	20 U	100 U	20 U
Benzene	5	5	5	0.46	10 U	1.0 U	10 U	1.0 U	5 U	50 U	50 U	100 U	1 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U	1 U	1 U	1.0 U	1.0 U	1 U	20 U	1 U	5 U	1.0 U
Bromochloromethane	90	90		83	10 U	1.0 U	10 U	1.0 U	5 U	50 U	50 U	100 U	1 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U	1 U	1 U	1.0 U	1.0 U	1 U	20 U	1 U	5 U	1.0 U
Bromodichloromethane	80	80		0.13	10 U	1.0 U	10 U	1.0 U	5 U	50 U	50 U	100 U	1 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U	1 U	1 U	1.0 U	1.0 U	1 U	20 U	1 U	5 U	1.0 U
Bromoform	80	80		3.3	10 U ^c	1.0 U	10 U ^c	1.0 U	5 U	50 U	50 U	100 U	1 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U	1 U	1 U	1.0 U	1.0 U	1 U	20 U	1 U	5 U	1.0 U
Bromomethane	10	10		7.5	10 U	1.0 U	10 U	1.0 U	5 U	50 U	50 U	100 U	1 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U ^c	1.0 U	1.0 U ^c	1.0 U	1 U	1 U	1 U	1.0 U	1.0 U	1 U	20 U	1 U	5 U	1.0 U
Carbon Disulfide	1500	6200		810	10 U	1.0 U	10 U	1.0 U	5 U	50 U	50 U	100 U	1 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U	1 U	1 U	1.0 U	1.0 U	1 U	20 U	1 U	5 U	1.0 U
Carbon Tetrachloride	5	5	5	0.46	10 U ^c	1.6	10 U ^c	1.0 U	5 U	50 U	50 U	100 U	1 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U	1 U	1 U	1.0 U	1.0 U	1 U	20 U	1 U	5 U	1.0 U
Chlorobenzene	100	100	100	78	10 U	1.0 U	10 U	1.0 U	5 U	50 U	50 U	100 U	1 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U	1 U	1 U	1.0 U	1.0 U	1 U	20 U	1 U	5 U	1.0 U
Chlorodibromomethane	80	80		0.87	10 U ^c	1.0 U	10 U ^c	1.0 U	5 U	50 U	50 U	100 U	1 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U	1 U	1 U	1.0 U	1.0 U	1 U	20 U	1 U	5 U	1.0 U
Chloroethane	250	1200		21000	10 U	1.0 U	10 U	1.0 U	5 U	50 U	50 U	100 U	1.1	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U ^c	1 U ^c	1 U	1.0 U ^c	1.0 U ^c	1 U	20 U	1 U	5 U	1.0 U
Chloroform	80	80		0.22	10 U	1.0 U	10 U	1.0 U	3.1 J	50 U	50 U	100 U	1 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U	1 U	1 U	1.0 U	1.0 U	1 U	20 U	0.62 J	5 U	1.0 U
Chloromethane	30	30		190	10 U	1.0 U	10 U	1.0 U	5 U	50 U	50 U	100 U	1 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U ^c	1.0 U	1.0 U ^c	1.0 U	1 U ^c	1 U ^c	1 U	1.0 U ^c	1.0 U ^c	1 U	20 U	1 U	5 U	1.0 U
cis-1,2-Dichloroethene	70	70	70	36	240	200	310	400	600	1200	6900	36000	2300 J	2.3	0.78 J	0.79 J	2.6	2.4	0.66 J	0.74 J	1.0 U	1.0 U	28	1 U	1 U	1.0 U	1.0 U	1 U	20 U	1 U	5 U	1.0 U
cis-1,3-Dichloropropene	7.3	34		0.47	10 U ^c	1.0 U	10 U ^c	1.0 U	5 U	50 U	50 U	100 U	1 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U	1 U	1 U	1.0 U	1.0 U	1 U	20 U	1 U	5 U	1.0 U
Dodecane																																
Ethanol																																
Ethylbenzene	700	700	700	1.5	10 U	1.0 U	10 U	1.0 U	5 U	50 U	50 U	100 U	1 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U	1 U	1 U	1.0 U	1.0 U	1 U	20 U	1 U	5 U	1.0 U
Isopropylbenzene	840	3500		450																												
Methyl tert-butyl ether	20	20		14	10 U	1.0 U	10 U	1.0 U	5 U	50 U	50 U	100 U	1 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U	1 U	1 U	1.0 U	1.0 U	1 U	20 U	1 U	5 U	1.0 U
Methylene chloride	5	5		11	4.6 J	1.0 U	3.8 J	1.0 U	8.2	30 J	120	120	1 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U	1 U	1 U	1.0 U	1.0 U	1 U	20 U	1 U	5 U	1.0 U
Naphthalene	100	100		0.17																												
Petroleum Hydrocarbons (TPH)				60000																												
P-Xylene	10000	10000	10000	190																												
Styrene	100	100	100	1200	10 U	1.0 U	10 U	1.0 U	5 U	50 U	50 U	100 U	1 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U	1 U	1 U	1.0 U	1.0 U	1 U	20 U	1 U	5 U	1.0 U
Tetrachloroethene	5	5	5	11	15	14	470	99	39	1500	2000	180	28	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.76 J	0.57 J	1 U	2.2	1.4	1.0 U	1.0 U	170	330	37	2.2 J	4.3
Toluene	1000	1000	1000	1100	10 U	1.0 U	10 U	1.0 U	5 U	50 U	50 U	100 U	0.49 J	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U	1 U	1 U	1.0 U	1.1	1 U	20 U	1 U	5 U	1.0 U
trans-1,2-Dichloroethene	100	100	100	360	10 U	1.3	10 U	2.9	5 U	50 U	50 U	100 U	6.8	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U	1 U	1 U	1.0 U	1.0 U	1 U	20 U	1 U	5 U	1.0 U
trans-1,3-Dichloropropene	7.3	34		0.47	10 U ^c	1.0 U	10 U ^c	1.0 U	5 U	50 U	50 U	100 U	1 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U ^c	1.0 U	1.0 U ^c	1.0 U	1 U ^c	1 U ^c	1 U	1.0 U ^c	1.0 U ^c	1 U	20 U	1 U	5 U	1.0 U
Trichloroethene	5	5	5	0.49	61	49	4300	780	79	5600	7200	1200	600 J	1.2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.3	1.1	30	1 U	1 U	1.0 U	1.0 U	4.3	51	0.83 J	5 U	8.8
Vinyl Acetate	420	1800		410																												
Vinyl Chloride	2	2	2	0.019	10 U	1.0 U	10 U	1.0 U	5 UJ	50 UJ	50 UJ	100 UJ	18	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U ^c *	1 U ^c *	1 U	1.0 U ^c *	1.0 U ^c *	1 U	20 U	1 U	5 U	1.0 U
VOC Library Search																																
Xylenes (Total)	10000	10000	10000	190	20 U	2.0 U	20 U	2.0 U	10 U	100 U	100 U	200 U	2 U	2 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2 U	2 U	2 U	2.0 U	2.0 U	2 U	40 U	2 U	10 U	2.0 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 2.3-1
Groundwater Data Summary - Volatile Organic Compounds (VOCs)
Former York Naval Ordnance Plant - York, PA

Location/ID	PA MSC	PA MSC	Federal	EPA	MW-166	MW-167	MW-168	MW-169	MW-170	MW-171	MW-172	MW-173	MW-174	MW-175	MW-177	MW-178D	MW-178S	MW-179	MW-180	MW-181D	MW-181S	MW-182	MW-183	MW-184D	MW-184S	MW-185	MW-185	CW-1	CW-1	CW-1A	CW-1A	CW-2	CW-2	CW-3
Depth (ft.)																																		
Sample Date	UA R	UA NR	MCL	RSL	8/4/17	8/4/17	8/4/17	8/4/17	8/4/17	8/4/17	8/3/17	8/3/17	8/4/17	8/4/17	10/31/17	10/31/17	10/31/17	10/31/17	10/31/17	11/1/17	10/31/17	11/1/17	10/31/17	10/31/17	11/1/17	10/4/17	10/26/17	10/25/16	10/27/17	10/26/16	10/31/17	10/26/16	10/24/17	10/25/16
Parameter	(µg/L)	(µg/L)	(µg/L)	(µg/L)																														
TOTAL VOC																																		
TOTAL VOC					3.44	7	0	0	0	1.44	0	0	0.57	0	570	652.2	153	245.64	952.6	136.59	186	16.2	14.98	58.9	70	57	44.2	3.2	0.79	59.47	54.8	22.07	10.91	517.5
Volatile Organic Compound																																		
1,1,1,2-Tetrachloroethane	70	70		0.57	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	5 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U
1,1,1-Trichloroethane	200	200	200	8000	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	5 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U
1,1,2,2-Tetrachloroethane	0.84	4.3		0.076	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	5 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U
1,1,2-Trichloroethane	5	5	5	0.28	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	5 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U
1,1,2-Trichlorofluoroethane	2000	2000		5200																														
1,1,2-Trichlorotrifluoroethane	63000	170000		10000																														
1,1-Dichloroethane	31	160		2.8	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	5 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U
1,1-Dichloroethene	7	7	7	280	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.64 J	2.6	1 UJ	1 U	1 U	1 U	1 U	1 U	5 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U
1,2,4-Trimethylbenzene	15	62		56																														
1,2-Dibromoethane	0.05	0.05	0.05	0.0075	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	5 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U
1,2-Dichloroethane	5	5	5	0.17	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	5 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U
1,2-Dichloroethene	70	70	70																															
1,2-Dichloropropane	5	5	5	0.85	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	5 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U
1,3,5-Trimethylbenzene	420	1200		60																														
1,3-Dichlorobenzene	600	600																																
1,3-Dichloropropene	7.3	34		0.47																														
1,3-Dioxolane																																		
1,4-Dioxane	6.4	32		0.46	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	1000 U	R	200 U ^c	R	200 U ^c	R	200 U	R	400 U ^c
2-Butanone	4000	4000		5600	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U	25 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U
2-Chloroethyl Vinyl Ether																																		
2-Hexanone	63	260		38	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U	25 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U
4-Methyl-2-Pentanone	3300	9300		6300	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U	25 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U
Acetone	38000	110000		14000	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 U	5 U	5 U	5 U	25 U ^c	10 UJ	5 U	5 UJ	5 U	5 U	5 U	5 U	470
Acrolein	0.042	0.18		0.042																														
Acrylonitrile	0.72	3.7		0.052	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 UJ	20 U	20 U	20 U	20 U	20 U	100 U	40 U	20 U	20 U	20 U	20 U	20 U	20 U	40 U
Benzene	5	5	5	0.46	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	5 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U
Bromochloromethane	90	90		83	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	5 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U
Bromodichloromethane	80	80		0.13	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	5 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U
Bromoform	80	80		3.3	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	5 U	2 U	1 U	1 U	1 U	1 U	1 U ^c	1 U	11
Bromomethane	10	10		7.5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 UJ	1 UJ	1 U	1 U	5 U ^c	2 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U
Carbon Disulfide	1500	6200		810	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	5 U	2 U	1 U	1 U	1 U	1 U	1 U ^c	1 U	2 U
Carbon Tetrachloride	5	5	5	0.46	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	5 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U
Chlorobenzene	100	100	100	78	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	5 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U
Chlorodibromomethane	80	80		0.87	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	5 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1.9 J
Chloroethane	250	1200		21000	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	5 U	2 UJ	1 U	1 U	1 U	1 U	1 U	1 U	2 U
Chloroform	80	80		0.22	1.2	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	5 U	2 U	1 U	1 U	0.44 J	1 U	1 U	1 U	2 U
Chloromethane	30	30		190	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 UJ	1 U	1 U	5 U	2 UJ	1 U	1 U	1 U	1 U	1 U	1 U	2 U
cis-1,2-Dichloroethene	70	70	70	36	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2.2	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	5 U	2 U	1.6	1 U	0.73 J	1 U	6.1	1 U	33
cis-1,3-Dichloropropene	7.3	34		0.47	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	5 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U
Dodecane																																		
Ethanol																																		
Ethylbenzene	700	700	700	1.5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	5 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U
Isopropylbenzene	840	3500		450																														
Methyl tert-butyl ether	20	20		14	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	5 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U
Methylene chloride	5	5		11	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.59 J	1 U	1 U	1 U	1 U	1 U	2.2 J	2 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U
Naphthalene	100	100		0.17																														
Petroleum Hydrocarbons (TPH)				60000																														
P-Xylene	10000	10000	10000	190																														
Styrene	100	100	100	1200	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	5 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U
Tetrachloroethene	5	5	5	11	0.94 J	5.3	1 U	1 U	1 U	1.2	1 U	1 U	0.57 J	1 U	220	410	100	210	690	91 J	110	15	14	57	39 J	47	42	1 U	1 U	2.3	1.8	0.97 J	0.91 J	2 U
Toluene	1000	1000	1000	1100	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	5 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U
trans-1,2-Dichloroethene	100	100	100	360	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	5 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1.6 J
trans-1,3-Dichloropropene	7.3	34		0.47	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	5 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U
Trichloroethene	5	5	5	0.49	1.3	1.7	1 U	1 U	1 U	0.24 J	1 U	1 U	1 U	1 U	350	240	53	35	260	45 J	76	1.2	0.98 J	1.9	31	7.8	2.2	1.6	0.79 J	56	53	15	10	2 U
Vinyl Acetate	420	1800		410																														
Vinyl Chloride	2	2	2	0.019	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	5 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U
VOC Library Search																																		
Xylenes (Total)	10000	10000	10000	190	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 UJ	2 U	2 U	2 U	2 U	2 U	10 U	4 U	2 U	2 U	2 U	2 U	2 U	2 U	4 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 2.3-1
Groundwater Data Summary - Volatile Organic Compounds (VOCs)
Former York Naval Ordnance Plant - York, PA

Location/ID	PA MSC	PA MSC	Federal	EPA	CW-3	CW-4	CW-4	CW-5	CW-5	CW-6	CW-6	CW-7	CW-7	CW-7A	CW-7A	CW-9	CW-9
Depth (ft.)																	
Sample Date	UA R	UA NR	MCL	RSL	10/23/17	10/26/16	10/23/17	10/26/16	10/24/17	10/26/16	10/23/17	10/26/16	10/24/17	10/26/16	10/27/17	6/27/16	10/26/16
Parameter	(µg/L)	(µg/L)	(µg/L)	(µg/L)													
TOTAL VOC																	
TOTAL VOC					331.2	36.22	0	65	52.4	92	74	2.67	1.77	94.6	55.4	572.8	594.2
Volatile Organic Compound																	
1,1,1,2-Tetrachloroethane	70	70		0.57	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	25 U	13 U
1,1,1-Trichloroethane	200	200	200	8000	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	20 J	23
1,1,2,2-Tetrachloroethane	0.84	4.3		0.076	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	25 U	13 U
1,1,2-Trichloroethane	5	5	5	0.28	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	25 U	13 U
1,1,2-Trichlorofluoromethane	2000	2000		5200													
1,1,2-Trichlorotrifluoroethane	63000	170000		10000													
1,1-Dichloroethane	31	160		2.8	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	25 U	4.3 J
1,1-Dichloroethene	7	7	7	280	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	8.2 J	5.9 J
1,2,4-Trimethylbenzene	15	62		56													
1,2-Dibromoethane	0.05	0.05	0.05	0.0075	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	25 U	13 U
1,2-Dichloroethane	5	5	5	0.17	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	25 U	13 U
1,2-Dichloroethene	70	70	70														
1,2-Dichloropropane	5	5	5	0.85	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	25 U	13 U
1,3,5-Trimethylbenzene	420	1200		60													
1,3-Dichlorobenzene	600	600															
1,3-Dichloropropene	7.3	34		0.47													
1,3-Dioxolane																	
1,4-Dioxane	6.4	32		0.46	R	200 U	R	200 U	R	200 U	R	200 U	R	400 U ^c	R	R	2500 U ^c
2-Butanone	4000	4000		5600	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U	130 U	63 U
2-Chloroethyl Vinyl Ether																	
2-Hexanone	63	260		38	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U	130 U	63 U
4-Methyl-2-Pentanone	3300	9300		6300	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U	130 U	63 U
Acetone	38000	110000		14000	290 ^c	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U	130 U	63 U
Acrolein	0.042	0.18		0.042													
Acrylonitrile	0.72	3.7		0.052	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	40 U	40 U	250 U	250 U
Benzene	5	5	5	0.46	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	25 U	13 U
Bromochloromethane	90	90		83	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	25 U	13 U
Bromodichloromethane	80	80		0.13	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	25 U	13 U
Bromoform	80	80		3.3	10	1 U ^c	1 U	1 U ^c	1 U	1 U ^c	1 U	1 U ^c	1 U	2 U	2 U	25 U	13 U
Bromomethane	10	10		7.5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	25 U	13 U
Carbon Disulfide	1500	6200		810	1 U	1 U ^c	1 U	1 U ^c	1 U	1 U ^c	1 U	1 U ^c	1 U	2 U	2 U	25 U	13 U
Carbon Tetrachloride	5	5	5	0.46	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	25 U	13 U
Chlorobenzene	100	100	100	78	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	25 U	13 U
Chlorodibromomethane	80	80		0.87	1.7	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	25 U	13 U
Chloroethane	250	1200		21000	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	25 U	13 U
Chloroform	80	80		0.22	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.91 J	0.67 J	1.1 J	2 U	25 U	13 U
Chloromethane	30	30		190	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	25 U	13 U
cis-1,2-Dichloroethene	70	70	70	36	28	33	1 U	12	12	35	28	1 U	1 U	1.9 J	2 U	96	91
cis-1,3-Dichloropropene	7.3	34		0.47	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	25 U	13 U
Dodecane																	
Ethanol																	
Ethylbenzene	700	700	700	1.5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	25 U	13 U
Isopropylbenzene	840	3500		450													
Methyl tert-butyl ether	20	20		14	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	25 U	13 U
Methylene chloride	5	5		11	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	9.6 J	13 U
Naphthalene	100	100		0.17													
Petroleum Hydrocarbons (TPH)				60000													
P-Xylene	10000	10000	10000	190													
Styrene	100	100	100	1200	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	25 U	13 U
Tetrachloroethene	5	5	5	11	1 U	0.52 J	1 U	41	31	46	37	0.76 J	1.1	5.6	3.4	350	360
Toluene	1000	1000	1000	1100	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	25 U	13 U
trans-1,2-Dichloroethene	100	100	100	360	1.5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	25 U	13 U
trans-1,3-Dichloropropene	7.3	34		0.47	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	25 U	13 U
Trichloroethene	5	5	5	0.49	1 U	2.7	1 U	12	9.4	11	9	1	1 U	86	52	89	110
Vinyl Acetate	420	1800		410													
Vinyl Chloride	2	2	2	0.019	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	25 U	13 U
VOC Library Search																	
Xylenes (Total)	10000	10000	10000	190	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	4 U	4 U	50 U	25 U

Location/ID	CW-9	CW-9	CW-13	CW-13	CW-13	CW-13	CW-15A	CW-15A	CW-15A	CW-15A	CW-17	CW-17	CW-17 Dup	CW-17	CW-17	CW-20
Depth (ft.)																
Sample Date	7/6/17	10/24/17	6/27/16	10/25/16	7/6/17	10/24/17	6/27/16	10/26/16	7/6/17	10/24/17	6/27/16	10/26/16	10/26/16	7/6/17	10/24/17	6/27/16
Parameter																
TOTAL VOC																
TOTAL VOC	362	392.5	809	681.8	502.6	619.8	31130	26770	12471.1	12760	238.7	123.1	112.3	132.4	120.2	2574
Volatile Organic Compound																
1,1,1,2-Tetrachloroethane	10 U	10 U	10 U	20 U	10 U	1 U	500 U	500 U	10 U	250 U	5.0 U	2 U	2 U	10 U	2 U	50 U
1,1,1-Trichloroethane	18	12 J	15	17 J	7.0 J	12	11000	9400	3800	4000	8.4	4.9	4.2	3.4 J	3.9	79
1,1,2,2-Tetrachloroethane	10 U	10 U	10 U	20 U	10 U	1 U	500 U	500 U	10 U	250 U	5.0 U	2 U	2 U	10 U	2 U	50 U
1,1,2-Trichloroethane	10 U	10 U	10 U	20 U	10 U	1 U	500 U	500 U	10 U	250 U	5.0 U	2 U	2 U	10 U	2 U	50 U
1,1,2-Trichlorofluoromethane																
1,1,2-Trichlorotrifluoroethane																
1,1-Dichloroethane	10 U	2.5 J	5.3 J	5.5 J	10 U	4.8	150 J	170 J	67	250 U	4.3 J	2.5	2.2	10 U	3.2	50 U
1,1-Dichloroethene	10 U	10 U	8.7 J	9.3 J	5.6 J	8.4	2500	1800	770 J	760	7	3.7	2.9	10 U	3.1	15 J
1,2,4-Trimethylbenzene																
1,2-Dibromoethane	10 U	10 U	10 U	20 U	10 U F1	1 U	500 U	500 U	10 U	250 U	5.0 U	2 U	2 U	10 U	2 U	50 U
1,2-Dichloroethane	10 U	10 U	10 U	20 U	10 U	1 U	500 U	500 U	3.7 J	250 U	5.0 U	2 U	2 U	10 U	2 U	50 U
1,2-Dichloroethene																
1,2-Dichloropropane	10 U	10 U	10 U	20 U	10 U F1 *	1 U	500 U	500 U	10 U *	250 U	5.0 U	2 U	2 U	10 U *	2 U	50 U
1,3,5-Trimethylbenzene																
1,3-Dichlorobenzene																
1,3-Dichloropropene																
1,3-Dioxolane																
1,4-Dioxane	2000 U ^c	R	R	4000 U ^c	2000 U ^c	R	R	100000 U ^c	2000 U ^c	R	R	400 U ^c	400 U	2000 U ^c	R	R
2-Butanone	50 U	50 U	50 U	100 U	50 U	5 U	2500 U	2500 U	50 U	1300 U	25 U	10 U	10 U	50 U	10 U	250 U
2-Chloroethyl Vinyl Ether																
2-Hexanone	50 U	50 U	50 U	100 U	50 U	5 U	2500 U	2500 U	50 U	1300 U	25 U	10 U	10 U	50 U	10 U	250 U
4-Methyl-2-Pentanone	50 U	50 U	50 U	100 U	50 U	5 U	2500 U	2500 U	50 U	1300 U	25 U	10 U	10 U	50 U	10 U	250 U
Acetone	50 U	50 UJ	50 U	100 U	50 U ^c	5 U	2500 U	2500 U	50 U ^c	1300 UJ	25 U	10 U	10 U	50 U ^c	10 UJ	250 U
Acrolein																
Acrylonitrile	200 U	200 U	100 U	400 U	200 U	20 U	5000 U	10000 U	200 U	5000 U	50 U	40 U	40 U	200 U	40 U	500 U
Benzene	10 U	10 U	10 U	20 U	10 U F1	1 U	500 U	500 U	10 U	250 U	5.0 U	2 U	2 U	10 U	2 U	50 U
Bromochloromethane	10 U	10 U	10 U	20 U	10 U	1 U	500 U	500 U	10 U	250 U	5.0 U	2 U	2 U	10 U	2 U	50 U
Bromodichloromethane	10 U	10 U	10 U	20 U	10 U	1 U	500 U	500 U	10 U	250 U	5.0 U	2 U	2 U	10 U	2 U	50 U
Bromoform	10 U	10 U	10 U	20 U	10 U	1 U	500 U	500 U	10 U	250 U	5.0 U	2 U	2 U ^c	10 U	2 U	50 U
Bromomethane	10 U	10 U	10 U	20 U	10 U ^c	1 U	500 U	500 U	10 U ^c	250 U	5.0 U	2 U	2 U	10 U ^c	2 U	50 U
Carbon Disulfide	10 U	10 U	10 U	20 U	10 U	1 U	500 U	500 U	10 U	250 U	5.0 U	2 U	2 U ^c	10 U	2 U	50 U
Carbon Tetrachloride	10 U	10 U	10 U	20 U	10 U	1 U	500 U	500 U	10 U	250 U	5.0 U	2 U	2 U	10 U	2 U	50 U
Chlorobenzene	10 U	10 U	10 U	20 U	10 U	1 U	500 U	500 U	10 U	250 U	5.0 U	2 U	2 U	10 U	2 U	50 U
Chlorodibromomethane	10 U	10 U	10 U	20 U	10 U	1 U	500 U	500 U	10 U	250 U	5.0 U	2 U	2 U	10 U	2 U	50 U
Chloroethane	10 U	10 U	10 U	20 U	10 U	1 U	500 U	500 U	10 U	250 U	5.0 U	2 U	2 U	10 U	2 U	50 U
Chloroform	10 U	10 U	10 U	20 U	10 U	1 U	500 U	500 U	10 U	250 U	5.0 U	2 U	2 U	10 U	2 U	50 U
Chloromethane	10 U ^c	10 UJ	10 U	20 U	10 U F1	1 UJ	500 U	500 U	10 U	250 UJ	5.0 U	2 U	2 U	10 U	2 UJ	50 U
cis-1,2-Dichloroethene	44	30	430	320	270 F1	350	9700	8600	4000	4400	98	55 F1	51	61	49	170
cis-1,3-Dichloropropene	10 U	10 U	10 U	20 U	10 U ^c	1 U	500 U	500 U	10 U ^c	250 U	5.0 U	2 U	2 U	10 U ^c	2 U	50 U
Dodecane																
Ethanol																
Ethylbenzene	10 U	10 U	10 U	20 U	10 U F1	1 U	500 U	500 U	10 U	250 U	5.0 U	2 U	2 U	10 U	2 U	50 U
Isopropylbenzene																
Methyl tert-butyl ether	10 U	10 U	10 U	20 U	10 U	1 U	500 U	500 U	10 U	250 U	5.0 U	2 U	2 U	10 U	2 U	50 U
Methylene chloride	10 U	10 U	10 U	20 U	10 U	1 U	180 J	500 U	10 U	250 U	5.0 U	2 U	2 U	10 U	2 U	50 U
Naphthalene																
Petroleum Hydrocarbons (TPH)																
P-Xylene																
Styrene	10 U	10 U	10 U	20 U	10 U	1 U	500 U	500 U	10 U	250 U	5.0 U	2 U	2 U	10 U	2 U	50 U
Tetrachloroethene	220	280	170	170	110 F1	110	1900	1600	920 J	900	49	20	19	30	26	1700
Toluene	10 U	10 U	10 U	20 U	10 U F1	1 U	500 U	500 U	10 U	250 U	5.0 U	2 U	2 U	10 U	2 U	50 U
trans-1,2-Dichloroethene	10 U	10 U	10 U	20 U	10 U F1	1.8	500 U	500 U	3.7 J	250 U	5.0 U	2 U	2 U	10 U	2 U	50 U
trans-1,3-Dichloropropene	10 U	10 U	10 U	20 U	10 U ^c	1 U	500 U	500 U	10 U ^c	250 U	5.0 U	2 U	2 U	10 U ^c	2 U	50 U
Trichloroethene	80	68	180	160	110 F1	130	5700	5200	2900	2700	72	37 F1	33	38	35	610
Vinyl Acetate																
Vinyl Chloride	10 U	10 U	10 U	20 U	10 U F1	2.8	500 U	500 U	6.7 J	250 U	5.0 U	2 U	2 U	10 U	2 U	50 U
VOC Library Search																
Xylenes (Total)	20 U	20 U	20 U	40 U	20 U F1	2 U	1000 U	1000 U	20 U	500 U	10 U	4 U	4 U	20 U	4 U	100 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 2.3-1
Groundwater Data Summary - Volatile Organic Compounds (VOCs)
Former York Naval Ordnance Plant - York, PA

Location/ID Depth (ft.) Sample Date Parameter	PA MSC UA R (µg/L)	PA MSC UA NR (µg/L)	Federal MCL (µg/L)	EPA RSL (µg/L)	CW-20 10/26/16	CW-20 7/6/17	CW-20 10/24/17	CW-21 9/20/17	CW-21 9/21/17	CW-21 9/22/17	CW-22 9/27/17	CW-22 9/28/17	CW-22 9/29/17	CW-23 10/4/17	CW-23 10/5/17	CW-23 10/6/17	Lift Station Deep Foundation 10/6/16	Cole (Flush) 10/27/17	Cole B 10/27/17	Cole D 10/6/16	Cole D 10/27/17	Cole F 10/27/17	Cole Steel 10/6/16	Cole Steel 10/27/17	GM-1D 10/6/16	GM-1D 12/20/17	RW-2 10/3/16	RW-2 10/17/17	RW-4 Folk 10/1/16	RW-4 Folk 10/24/17	RW-5 10/3/16	S-10 10/11/16
TOTAL VOC																																
TOTAL VOC					2238	1433.63	1508	116	81	522.48	343.3	410	481.7	47	46.1	47.4	0	0	0	19.69	20.75	5	26.6	13.1	5	2.6	8.2	3.4	3.66	0	0.28	2.09
Volatile Organic Compound																																
1,1,1,2-Tetrachloroethane	70	70		0.57	50 U	1.0 U	25 U	10 U	10 U	1 U	1 U ^c	13 U	1.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	1 U	1.0 U	1 U	1.0 U	1 U
1,1,1-Trichloroethane	200	200	200	8000	71	53	57 H	10 U	10 U	1 U	1 U ^c	13 U	1.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	1 U	1.0 U	1 U	1.0 U	1 U
1,1,2,2-Tetrachloroethane	0.84	4.3		0.076	50 U	1.0 U	25 U	10 U	10 U	1 U	1 U	13 U	1.0 U	1 U ^c	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	1 U	1.0 U	1 U	1.0 U	1 U
1,1,2-Trichloroethane	5	5	5	0.28	50 U	1.0 U	25 U	10 U	10 U	1 U	1 U	13 U	1.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	1 U	1.0 U	1 U	1.0 U	1 U
1,1,2-Trichlorofluoromethane	2000	2000		5200																												
1,1,2-Trichlorotrifluoroethane	63000	170000		10000																												
1,1-Dichloroethane	31	160		2.8	13 J	10 J	11 J	10 U	10 U	1 U	1 U	13 U	1.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	1 U	1.0 U	1 U	1.0 U	1 U
1,1-Dichloroethene	7	7	7	280	14 J	9.5 J	25 U	10 U	10 U	1 U	0.46 J	13 U	1.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	1 U	1.0 U	1 U	1.0 U	1 U
1,2,4-Trimethylbenzene	15	62		56																												
1,2-Dibromoethane	0.05	0.05	0.05	0.0075	50 U	1.0 U	25 U	10 U	10 U	1 U	1 U	13 U	1.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	1 U	1.0 U	1 U	1.0 U	1 U
1,2-Dichloroethane	5	5	5	0.17	50 U	1.0 U	25 U	10 U	10 U	1 U	1 U	13 U	1.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	1 U	1.0 U	1 U	1.0 U	1 U
1,2-Dichloroethene	70	70	70																													
1,2-Dichloropropane	5	5	5	0.85	50 U	1.0 U	25 U	10 U	10 U	1 U	1 U	13 U	1.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	1 U	1.0 U	1 U	1.0 U	1 U
1,3,5-Trimethylbenzene	420	1200		60																												
1,3-Dichlorobenzene	600	600																														
1,3-Dichloropropene	7.3	34		0.47																												
1,3-Dioxolane																																
1,4-Dioxane	6.4	32		0.46	10000 U ^c	200 U	R	2000 U	2000 U	200 U	200 U	2500 U	200 U	200 U	200 U	200 U	200 U	R	R	200 U	R	R	200 U	R	200 U	200 U ^c	200 U	R	200 U	R	200 U	200 U ^c
2-Butanone	4000	4000		5600	250 U	5.0 U	130 U	50 U	50 U	5 U	5 U	63 U	5.0 U	5 U	5 U	5 U	5 U ^c	5 U	5 U	5 U	5 U	5 U	5 U ^c	5 U	5 U ^c	5.0 U	5.0 U ^c	5 U	5.0 U	5 U	5.0 U ^c	5 U
2-Chloroethyl Vinyl Ether																																
2-Hexanone	63	260		38	250 U	5.0 U	130 U	50 U	50 U	5 U	5 U	63 U	5.0 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5.0 U	5.0 U	5 U	5.0 U	5 U	5.0 U	5 U
4-Methyl-2-Pentanone	3300	9300		6300	250 U	5.0 U	130 U	50 U	50 U	5 U	5 U	63 U	5.0 U	5 U	5 U ^c	5 U ^c	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5.0 U	5.0 U	5 U	5.0 U	5 U	5.0 U	5 U
Acetone	38000	110000		14000	250 U	5.0 U	130 UJ	50 U	50 U	5 U	5 U	63 U	5.0 U	5 U ^c	5 U ^c	5 U ^c	5 U ^c	5 UJ	5 UJ	5 U ^c	5 U	5 U	20 ^c	5 UJ	2.5 J ^c	5.0 U	4.5 J ^c	5 U	3.2 J ^c	5 U	5.0 U ^c	5 U ^c
Acrolein	0.042	0.18		0.042																												
Acrylonitrile	0.72	3.7		0.052	1000 U	20 U	500 U	200 U	200 U	20 U	20 U	250 U	20 U	20 U	20 U ^c	20 U ^c	20 U ^c	20 U	20 U	20 U	20 U	20 U	20 U ^c	20 U	20 U ^c	20 U	20 U	20 U	20 U	20 U	20 U	20 U ^c
Benzene	5	5	5	0.46	50 U	1.0 U	25 U	10 U	10 U	1 U	1 U	13 U	1.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	1 U	1.0 U	1 U	1.0 U	1 U
Bromochloromethane	90	90		83	50 U	1.0 U	25 U	10 U	10 U	1 U	1 U	13 U	1.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	1 U	1.0 U	1 U	1.0 U	1 U
Bromodichloromethane	80	80		0.13	50 U	1.0 U	25 U	10 U	10 U	1 U	1 U	13 U	1.0 U ^c	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	1 U	1.0 U	1 U	1.0 U	1 U
Bromoform	80	80		3.3	50 U	1.0 U	25 U	10 U	10 U	1 U	1 U ^c	13 U	1.0 U ^c	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	1 U	1.0 U	1 U	1.0 U	1 U
Bromomethane	10	10		7.5	50 U	1.0 U	25 U	10 U	10 U	1 U	1 U ^c	13 U	1.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U ^c	1 U	1 U	1 U	1 U	1 U	1.0 U ^c	1.0 U	1 U	1.0 U	1 U	1.0 U	1 U ^c
Carbon Disulfide	1500	6200		810	50 U	1.0 U ^c	25 U	10 U	10 U	1 U	1 U	13 U	1.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	1 U	1.0 U	1 U	1.0 U	1 U
Carbon Tetrachloride	5	5	5	0.46	50 U	1.0 U	25 U	10 U	10 U	1 U	1 U ^c	13 U	1.0 U	1 U	1 U ^c	1 U ^c	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	1 U	1.0 U	1 U	1.0 U	1 U
Chlorobenzene	100	100	100	78	50 U	1.0 U	25 U	10 U	10 U	1 U	1 U	13 U	1.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	1 U	1.0 U	1 U	1.0 U	1 U
Chlorodibromomethane	80	80		0.87	50 U	1.0 U	25 U	10 U	10 U	1 U	1 U ^c *	13 U	1.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0 U ^c	1.0 U	1 U	1.0 U	1 U	1.0 U	1 U
Chloroethane	250	1200		21000	50 U	1.0 U	25 U	10 U	10 U	1 U	1 U	13 U	1.0 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 UJ	1 U	1.0 U	1.0 U ^c	1 U	1.0 U	1 U	1.0 U ^c	1 U
Chloroform	80	80		0.22	50 U	0.43 J	25 U	10 U	10 U	0.38 J	0.34 J	13 U	1.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	1 U	0.46 J	1 U	1.0 U	0.69 J
Chloromethane	30	30		190	50 U	1.0 U ^c	25 UJ	10 U	10 U	1 U	1 U	13 U	1.0 U ^c	1 U ^c *	1 U	1 U	1 U ^c	1 U	1 UJ	1 U ^c	1 U	1 UJ	1 U ^c	1 UJ	1 U ^c	1.0 U	1.0 U ^c	1 U	1.0 U	1 U	1.0 U ^c	1 U ^c
cis-1,2-Dichloroethene	70	70	70	36	170	110	130	10 U	10 U	1.7	2.5	13 U	1.7	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2.8	6.1	1 U	1.0 U	1.0 U	1 U	1.0 U	1 U	1.0 U	1 U
cis-1,3-Dichloropropene	7.3	34		0.47	50 U	1.0 U	25 U	10 U	10 U	1 U	1 U	13 U	1.0 U ^c	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	1 U	1.0 U	1 U	1.0 U	1 U
Dodecane																																
Ethanol																																
Ethylbenzene	700	700	700	1.5	50 U	1.0 U	25 U	10 U	10 U	1 U	1 U	13 U	1.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	1 U	1.0 U	1 U	1.0 U	1 U
Isopropylbenzene	840	3500		450																												
Methyl tert-butyl ether	20	20		14	50 U	1.0 U	25 U	10 U	10 U	1 U	1 U	13 U	1.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	1 U	1.0 U	1 U	1.0 U	1 U
Methylene chloride	5	5		11	50 U	1.0 U	25 U	10 U	10 U	1 U	1 U	13 U	1.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	1 U	1.0 U	1 U	1.0 U	1 U
Naphthalene	100	100		0.17																												
Petroleum Hydrocarbons (TPH)				60000																												
P-Xylene	10000	10000	10000	190																												
Styrene	100	100	100	1200	50 U	1.0 U	25 U	10 U	10 U	1 U	1 U	13 U	1.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	1 U	1.0 U	1 U	1.0 U	1 U
Tetrachloroethene	5	5	5	11	1400	820	890	53	33	310	200	240	290	44	42	43	1 U	1 U	1 U	19	20	5 J	1 U	1 U	2.5	2.6	1.0 U	1 U	1.0 U	1 U	1.0 U	0.8 J
Toluene	1000	1000	1000	1100	50 U	1.0 U	25 U	10 U	10 U	0.4 J	1 U	13 U	1.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	1 U	1.0 U	1 U	1.0 U	1 U
trans-1,2-Dichloroethene	100	100	100	360	50 U	0.46 J	25 U	10 U	10 U	1 U	1 U	13 U	1.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	1 U	1.0 U	1 U	1.0 U	1 U
trans-1,3-Dichloropropene	7.3	34		0.47	50 U	1.0 U	25 U	10 U	10 U	1 U	1 U	13 U	1.0 U	1 U	1 U	1 U	1 U ^c	1 U	1 U	1 U ^c	1 U	1 U	1 U ^c	1 U	1 U ^c	1.0 U	1.0 U ^c	1 U	1.0 U ^c	1 U	1.0 U ^c	1 U
Trichloroethene	5	5	5	0.49	570	430	420	63	48	210	140	170	190	3	4.1	4.4	1 U	1 U	1 U	0.69 J	0.75 J	1 U	3.8	7	1 U	1.0 U	3.7	3.4	1.0 U	1 U	0.28 J	0.6 J
Vinyl Acetate	420	1800		410																												
Vinyl Chloride	2	2	2	0.019	50 U	0.24 J	25 U	10 U	10 U	1 U	1 U	13 U	1.0 U	1 U ^c	1 U	1 U	1 U ^c	1 U	1 U	1 U	1 U	1 U	1 U ^c	1 U	1 U ^c	1.0 U	1.0 U ^c *	1 U	1.0 U	1 U	1.0 U ^c * F1	1 U ^c
VOC Library Search																																
Xylenes (Total)	10000	10000	10000	190	100 U	2.0 U	50 U	20 U	20 U	2 U	2 U	25 U	2.0 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2.0 U	2.0 U	2 U	2.0 U	2 U	2.0 U	2 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 2.3-1
Groundwater Data Summary - Volatile Organic Compounds (VOCs)
Former York Naval Ordnance Plant - York, PA

Location/ID Depth (ft.) Sample Date Parameter	PA MSC UA R (µg/L)	PA MSC UA NR (µg/L)	Federal MCL (µg/L)	EPA RSL (µg/L)	TATE (S-6) 10/6/16	TATE (S-6) 10/26/17
TOTAL VOC						
TOTAL VOC					5.8	0
Volatile Organic Compound						
1,1,1,2-Tetrachloroethane	70	70		0.57	1 U	1 U
1,1,1-Trichloroethane	200	200	200	8000	1 U	1 U
1,1,2,2-Tetrachloroethane	0.84	4.3		0.076	1 U	1 U
1,1,2-Trichloroethane	5	5	5	0.28	1 U	1 U
1,1,2-Trichlorofluoromethane	2000	2000		5200		
1,1,2-Trichlorotrifluoroethane	63000	170000		10000		
1,1-Dichloroethane	31	160		2.8	1 U	1 U
1,1-Dichloroethene	7	7	7	280	1 U	1 U
1,2,4-Trimethylbenzene	15	62		56		
1,2-Dibromoethane	0.05	0.05	0.05	0.0075	1 U	1 U
1,2-Dichloroethane	5	5	5	0.17	1 U	1 U
1,2-Dichloroethene	70	70	70			
1,2-Dichloropropane	5	5	5	0.85	1 U	1 U
1,3,5-Trimethylbenzene	420	1200		60		
1,3-Dichlorobenzene	600	600				
1,3-Dichloropropene	7.3	34		0.47		
1,3-Dioxolane						
1,4-Dioxane	6.4	32		0.46	200 U	R
2-Butanone	4000	4000		5600	5 U ^c	5 U
2-Chloroethyl Vinyl Ether						
2-Hexanone	63	260		38	5 U	5 U
4-Methyl-2-Pentanone	3300	9300		6300	5 U	5 U
Acetone	38000	110000		14000	5.8 ^c	5 U
Acrolein	0.042	0.18		0.042		
Acrylonitrile	0.72	3.7		0.052	20 U ^c	20 U
Benzene	5	5	5	0.46	1 U	1 U
Bromochloromethane	90	90		83	1 U	1 U
Bromodichloromethane	80	80		0.13	1 U	1 U
Bromoform	80	80		3.3	1 U	1 U
Bromomethane	10	10		7.5	1 U	1 U
Carbon Disulfide	1500	6200		810	1 U	1 U
Carbon Tetrachloride	5	5	5	0.46	1 U	1 U
Chlorobenzene	100	100	100	78	1 U	1 U
Chlorodibromomethane	80	80		0.87	1 U	1 U
Chloroethane	250	1200		21000	1 U	1 U
Chloroform	80	80		0.22	1 U	1 U
Chloromethane	30	30		190	1 U ^c	1 UJ
cis-1,2-Dichloroethene	70	70	70	36	1 U	1 U
cis-1,3-Dichloropropene	7.3	34		0.47	1 U	1 U
Dodecane						
Ethanol						
Ethylbenzene	700	700	700	1.5	1 U	1 U
Isopropylbenzene	840	3500		450		
Methyl tert-butyl ether	20	20		14	1 U	1 U
Methylene chloride	5	5		11	1 U	1 U
Naphthalene	100	100		0.17		
Petroleum Hydrocarbons (TPH)				60000		
P-Xylene	10000	10000	10000	190		
Styrene	100	100	100	1200	1 U	1 U
Tetrachloroethene	5	5	5	11	1 U	1 U
Toluene	1000	1000	1000	1100	1 U	1 U
trans-1,2-Dichloroethene	100	100	100	360	1 U	1 U
trans-1,3-Dichloropropene	7.3	34		0.47	1 U ^c	1 U
Trichloroethene	5	5	5	0.49	1 U	1 U
Vinyl Acetate	420	1800		410		
Vinyl Chloride	2	2	2	0.019	1 U ^c	1 U
VOC Library Search						
Xylenes (Total)	10000	10000	10000	190	2 U	2 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 2.3-2
Groundwater Data Summary - Metals
Former York Naval Ordnance Plant - York, PA

Location/ID	PA MSC	PA MSC	Federal	EPA	MW-14	MW-14	MW-17	MW-17	MW-17	MW-17	MW-17	MW-17	MW-17 Dup	MW-65D	MW-65D	MW-65D	MW-65D Dup	MW-65D	MW-65D	MW-65D	MW-65S	MW-65S	MW-65S
Depth (ft.)																							
Sample Date	UA R	UA NR	MCL	RSL	4/24/08	10/4/16	9/14/99	3/23/00	4/28/08	9/12/08	6/18/10	10/6/16	10/6/16	9/7/99	3/27/00	4/25/08	4/25/08	9/10/08	6/22/09	10/6/16	9/1/99	4/4/00	5/8/08
Parameter	(µg/L)	(µg/L)	(µg/L)	(µg/L)																			
METAL																							
Aluminum		200	200	20000																			
Antimony	6	6	6	7.8	10 U	0.18 J B	5 U		10 U	2 U		0.21 J B	0.21 J B	5 U		10 U	10 U	0.17 B		0.2 J B	5 U		10 U
Arsenic	10	10	10	0.052	10 U	0.22 J	5 U		10 U	0.24 B		0.35 J	0.3 J	5 U		10 U	10 U	0.6 B		0.21 J	5 U		10 U
Barium	2000	2000	2000	3800	120 B	88			20.8 B	26		39	42			38.8 B	31.5 B	33.5		25			24.2 B
Beryllium	4	4	4	25	4 U	1.0 U	1		4 U	0.17 B		1 U	1 U	1		4 U	4 U	0.18 B		1 U	1		4 U
Cadmium	5	5	5		5 U	1.0 U	1 U		5 U	1 U		1 U	1 U	2		5 U	5 U	1 U		1 U	1		5 U
Calcium						15000	8700	100000				13000	15000	11700	12000					11000	7700	10000	
Chromium	100	100	100		1.6 B	0.47 J	5 U		5 U	5.3 J		2.8	3.3	6		37.4	40.9	237 J	17.3	0.48 J	5 U		11.5
Copper		1000	1300	800	25 U	2.0 B	13		25 U	1.1 B		2.3 B	2.2 B	5 U		5.4 B	7.6 B	10.3		2.6 B	5 U		25 U
Ferric Iron																							
FERROUS IRON																							
Hexavalent Chromium	100	100		0.035	50 U		10 U		50 U					10 U		50 U	50 U		50 U				50 U
Iron		300	300	14000			54	630						260	170						1400	1600	
Lead	5	5	15	15	3 U	0.26 J	5 U		3 U	1.6		0.39 J	0.44 J	5 U		2.8 B	3 U	2.2		0.44 J	5 U		3 U
Magnesium						7800	3100	6800				5200	5600	7500	7500					7600	4000	4200	
Manganese		50	50	430			20 U	79						100	38						100	280	
Mercury	2	2	2	0.63	0.2 U	0.20 U	0 U		0.2 U	0.2 U		0.2 U	0.2 U	0 U		0.2 U	0.2 U	0.2 U		0.2 U	0 U		0.2 U
Nickel	100	100		390	3.2 B	2.1	5 U		40 U	1.6		2.4	2.6	8		41.7	69.7	171	10.2	5.3	6		10.9 B
Potassium						4500	1100	1300				2600	2900	3100	3300					2900	3100	3100	
Selenium	50	50	50	100	5 U	1.1 J	5 U		5 U	5 U		5 U	5 U	5 U		5 U	5 U	5 U		5 U	5 U		5 U
Silver	100	100		94	5 U	1.0 U	5 U		5 U	1 U		1 U	1 U	5 U		5 U	5 U	1 U		1 U	5 U		5 U
Sodium						29000	2600	24000				5100	5700	13300	11000					12000	13900	13000	
Thallium	2	2	2	0.2	10 U	1.0 U	2 U		10 U	0.043 B		1 U	1 U	2 U		10 U	10 U	0.094 B		1 U	2 U		4 B
Vanadium	2.9	8.2		86	50 U	1.8 B			50 U	2.4 J		1.2	1.2			5.3 B	2.2 B	2.1 J		1.3			50 U
Zinc	2000	2000		6000	7.7 B	6.2	20 U		7.6 B	5 J		2.6 J	2.8 J	28		30.1	22.1	21.2 J		2.8 J	20 U		18.4 B J
METAL (Dissolved)																							
Aluminum		200	200	20000																			
Antimony	6	6	6	7.8	10 U	0.16 J B			10 U	2 U		0.17 J B	0.16 J B			10 U	10 U	0.14 B		0.27 J B			10 U
Arsenic	10	10	10	0.052	10 U	0.13 J			10 U	0.19 B		0.15 J	0.14 J			10 U	10 U	1 U		1 U			10 U
Barium	2000	2000	2000	3800	117 B	85			20.2 B	20.2		39 B	39			17.1 B	17.2 B	15.9		23 B			20.1 B
Beryllium	4	4	4	25	4 U	1.0 U			4 U	1 U		1 U	0.12 J			4 U	4 U	1 U		1 U			0.46 B J
Cadmium	5	5	5		5 U	1.0 U			5 U	1 U		1 U	1 U			5 U	5 U	1 U		1 U			5 U
Calcium						15000					16800	14000 B	13000							10000 B			
Chromium	100	100	100		5 U	2.0 U			5 U	4.9 J		0.71 J	0.65 J			2.2 B	5.2	9.8 J	6.2 J	2 U			4.6 B
Copper		1000	1300	800	25 U	1.2 J B			25 U	0.36 B		1 J B	1.6 J B			3.6 B	4.2 B	2.4		1.5 J B			25 U
Hexavalent Chromium	100	100		0.035	50 U				50 U							50 U	50 U		50 U				50 U
Iron		300	300	14000							100 U												
Lead	5	5	15	15	3 U	1.0 U			3 U	1 U		1 U	1 U			3 U	3 U	1.0 U		0.13 J			3 U
Magnesium						7600					5830	5100	5100							7500			
Manganese		50	50	430							2.3 B												
Mercury	2	2	2	0.63	0.2 U	0.20 U			0.2 U	0.2 U		0.2 U	0.2 U			0.2 U	0.2 U	0.2 U		0.2 U			0.2 U
Nickel	100	100		390	3.2 B	1.4			40 U	0.46 B		1.5	1.4			77.4	214	26.3	7.1	5			8.5 B
Potassium						4300					2180 B	2700 B	2600							2900 B			
Selenium	50	50	50	100	5 U	1.2 J			5 U	0.21 B J		5 U	0.98 J			5 U	5 U	0.5 B		5 U			5 U
Silver	100	100		94	5 U	1.0 U			5 U	1 U		1 U	1 U			5 U	5 U	1 U		1 U			5 U
Sodium						32000					5300	5300 B	5100							12000 B			
Thallium	2	2	2	0.2	10 U	1.0 U			10 U	0.025 B		1 U	1 U			10 U	10 U	1.0 U		1 U			6.8 B
Vanadium	2.9	8.2		86	50 U	0.92 J B			50 U	2.3 J		0.84 J	0.86 J			50 U	50 U	2.1		0.84 J			50 U
Zinc	2000	2000		6000	8 B J	8.8			3.5 B	2.9 B J		5 U	5 U			29.7 J	54.2 J	16.5 J		2.8 J			19.5 B J

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 2.3-2
Groundwater Data Summary - Metals
Former York Naval Ordnance Plant - York, PA

Location/ID Depth (ft.) Sample Date Parameter	PA MSC UA R (µg/L)	PA MSC UA NR (µg/L)	Federal MCL (µg/L)	EPA RSL (µg/L)	MW-65S 10/6/16	MW-66D 9/9/99	MW-66D 3/28/00	MW-66D 4/30/08	MW-66D 10/4/16	MW-66S 9/1/99	MW-66S 3/28/00	MW-66S 4/30/08	MW-66S 9/10/08	MW-66S 7/7/09	MW-66S 10/5/16	MW-75D 9/17/99	MW-75D 4/7/00	MW-75D 6/6/03	MW-75D 4/15/04	MW-75D 6/10/04	MW-75D 6/17/05
METAL																					
Aluminum		200	200	20000																	
Antimony	6	6	6	7.8	0.25 J B	5 U		10 U	0.17 J B	5 U		10 U	0.71 B		0.13 J B	5 U			3.9 U		
Arsenic	10	10	10	0.052	0.45 J	5 U		10 U	0.25 J	5 U		10 U	30.8	1 U	0.36 J	5 U			3.4 U		
Barium	2000	2000	2000	3800	27			4.2 B J	2.7 J			11 B J	388		4.2 J						
Beryllium	4	4	4	25	1 U	1 U		4 U	1.0 U	1		4 U	3.3		1 U	1 U			0.1 U		
Cadmium	5	5	5		1 U	1 U		5 U	1.0 U	1		5 U	0.38 B		1 U	1 U			0.4 U		
Calcium					7200	13000	19000		14000	12200	23000				12000	83600	74000				
Chromium	100	100	100		1.9 J	5 U		5 U	0.48 J	5 U		3.3 B	167 J	11.9	0.37 J	15		11	7.1 B	13.2	
Copper		1000	1300	800	6.1 B	5 U		0.9 B	2.3 B	5 U		8.3 B	53.1		0.79 J	5 U			2.1 U		
Ferric Iron																					
FERROUS IRON																					
Hexavalent Chromium	100	100		0.035		10 U		50 U		10 U		53	0 U	50 UJ		10		0 U	10 U	13.3	10 U
Iron		300	300	14000		1100	310			86	5900					590	50 U				
Lead	5	5	15	15	1.9	5 U		3 U	0.20 J	5 U		3 U	72	0.82 B	0.2 J	5 U		0 U	2.2 U	2.2 U	
Magnesium					5000	6600	7600		8100	6600	8000				7200	18400	16000				
Manganese		50	50	430		360	170			29	570					110	21				
Mercury	2	2	2	0.63	0.2 U	0 U		0.2 U	0.20 U	0 U		0.2 U	0.23		0.2 U	0 U			0.1 U		
Nickel	100	100		390	6.7	5 U		2.3 B	0.49 J	5 U		6 B	79.1		0.53 J	5 U		0 U	4.1 B	3.9 U	
Potassium					3200	2500	2700		2700	2400	2900				2000	2900	2600				
Selenium	50	50	50	100	5 U	5 U		5 U	0.58 J	5 U		5 U	2.8 B		5 U	5 U			3.9 U		
Silver	100	100		94	1 U	5 U		5 U	1.0 U	5 U		5 U	0.099 B		1 U	5 U			0.7 U		
Sodium					12000	6800	7500		7200	7100	8500				7800	18300	18000				
Thallium	2	2	2	0.2	1 U	2 U		10 U	1.0 U	2 U		3.4 B J	0.57 B		1 U	2 U			1.8 U		
Vanadium	2.9	8.2		86	2.6			50 U	2.0 B			50 U	78.2 J		1.1 B						
Zinc	2000	2000		6000	5.1	92		5.5 B J	3.1 J	20 U		8.7 B J	124 J		5 U	260		0 U	10.6 B	6.2 B	
METAL (Dissolved)																					
Aluminum		200	200	20000																	
Antimony	6	6	6	7.8	0.15 J B			10 U	0.19 J B			10 U	0.099 B		0.16 J B				3.9 U		
Arsenic	10	10	10	0.052	1 U			10 U	0.30 J			10 U	0.44 B	1 U	0.28 J				3.4 U		
Barium	2000	2000	2000	3800	16 B			2.5 B J	2.4 J			6.6 B J	6.9 B		4.6 J						
Beryllium	4	4	4	25	1 U			4 U	1.0 U			4 U	1 U		1 U				0.1 U		
Cadmium	5	5	5		1 U			5 U	1.0 U			5 U	1 U		1 U				0.4 U		
Calcium					6900 B				14000						13000						
Chromium	100	100	100		2 U			5 U	2.0 U			5 U	7.5 J	6.2	2 U				2.8 U		1.6 U
Copper		1000	1300	800	2.1 B			25 U	2.1 B			2.2 B	1 B		1.2 J				2.1 U		
Hexavalent Chromium	100	100		0.035				50 U				50 U	0 U	50 U					10 U		
Iron		300	300	14000																	
Lead	5	5	15	15	1 U			3 U	0.097 J			3 U	0.45 B J	0.17 B J	0.075 J				2.2 U		2.7 U
Magnesium					4500				8000						7500						
Manganese		50	50	430																	
Mercury	2	2	2	0.63	0.2 U			0.2 U	0.20 U			0.2 U	0.075 B		0.2 U				0.1 U		
Nickel	100	100		390	5.1			1.2 B	0.44 J			2.9 B	2.8		0.75 J				3.9 U		2.4 U
Potassium					2500 B				2700						2100						
Selenium	50	50	50	100	5 U			5 U	5.0 U			5 U	0.23 B		5 U				3.9 U		
Silver	100	100		94	1 U			5 U	1.0 U			5 U	1 U		1 U				0.7 U		
Sodium					11000 B				8900						8100						
Thallium	2	2	2	0.2	1 U			10 U	1.0 U			10 U	1.0 U		1 U				1.8 U		
Vanadium	2.9	8.2		86	0.72 J			50 U	2.0 B			50 U	2.1		1.1 B						
Zinc	2000	2000		6000	2.8 J			2.7 B J	11			4.3 B J	6.2 J		4.2 J				8.3 B		39.4

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 2.3-2
Groundwater Data Summary - Metals
Former York Naval Ordnance Plant - York, PA

Location/ID	PA MSC	PA MSC	Federal	EPA	MW-75D	MW-75D	MW-75D	MW-75D	MW-75D	MW-75D	MW-75D	MW-75D	MW-75D	MW-75D	MW-75D	MW-75D	MW-75D	MW-75D	MW-75D	MW-75D	MW-75D	MW-75D	MW-75D	MW-75D	MW-75S
Depth (ft.)																									
Sample Date	UA R	UA NR	MCL	RSL	6/24/06	6/29/07	5/21/08	10/2/08	1/24/14	2/19/14	3/20/14	5/8/14	6/2/14	7/1/14	8/7/14	9/9/14	10/7/14	10/29/14	1/14/15	2/24/15	3/27/15	4/21/15	5/19/15	10/23/17	9/17/99
Parameter	(µg/L)	(µg/L)	(µg/L)	(µg/L)																					
METAL																									
Aluminum		200	200	20000																					
Antimony	6	6	6	7.8			10 U	0.16 B																2 U	5 U
Arsenic	10	10	10	0.052			10 U	0.24 B J																0.77 J	5 U
Barium	2000	2000	2000	3800			43.8 B J	46.6																73	
Beryllium	4	4	4	25			0.4 B J	1 U																1 U	1 U
Cadmium	5	5	5				5 U	1 U																1 U	1 U
Calcium									110000	100000	100000	100000	86000 B	94000 B	85000	97000 B	93000 B	100000 B	100000 B	93000	91000 B	98000	89000 B	99000 B	68800
Chromium	100	100	100		5 U		10.2	13.7 J																19	5 U
Copper		1000	1300	800			25 U	1.4 B																1.8 J	8
Ferric Iron																									
FERROUS IRON																									
Hexavalent Chromium	100	100		0.035	10 U	10 U	50 U	0 U																	10 U
Iron		300	300	14000																					2800
Lead	5	5	15	15	2.2 JB		3 U	0.66 B																0.66 J	5 U
Magnesium									18000	21000	13000	27000	19000	26000	20000	21000	20000	18000 B	18000 B	23000	20000 B	18000	18000	22000	13500
Manganese		50	50	430																					570
Mercury	2	2	2	0.63			0.2 U	0.2 U																0.2 U	0 U
Nickel	100	100		390	40 U		19.8 B	2.1																1.4	6
Potassium									5700	5600	5400	18000 B	11000	14000 B	8700	6700	6600	6300	6800 B	7600	8700	7500	6300	6400	2000
Selenium	50	50	50	100			5 U	1.2 B																5 U	5 U
Silver	100	100		94			5 U	1 U																1 U	5 U
Sodium									43000 B	40000	37000	64000 B	49000	57000 B	53000 ^	55000	50000 B	48000	50000 B	61000	75000 B	59000	56000	76000	16300
Thallium	2	2	2	0.2			10 U	0.071 B J																1 U	2 U
Vanadium	2.9	8.2		86			50 U	4.9 J																2 B	
Zinc	2000	2000		6000	17.6 JB		19.8 B J	3.9 B																11	150
METAL (Dissolved)																									
Aluminum		200	200	20000																					
Antimony	6	6	6	7.8			10 U	2 U																2 U	
Arsenic	10	10	10	0.052			10 U	0.17 B																0.34 J	
Barium	2000	2000	2000	3800			43.7 B	41.4																70	
Beryllium	4	4	4	25			0.4 B J	1 U																1 U	
Cadmium	5	5	5				5 U	1 U																1 U	
Calcium																								100000 B	
Chromium	100	100	100			2 B	10.2	15.6 J																19	
Copper		1000	1300	800			25 U	0.78 B J																2 U	
Hexavalent Chromium	100	100		0.035			50 U	0 U																	
Iron		300	300	14000																					
Lead	5	5	15	15		3 U	3 U	0.068 B J																1 U	
Magnesium																								23000	
Manganese		50	50	430																					
Mercury	2	2	2	0.63			0.2 U	0.2 U																0.2 U	
Nickel	100	100		390		1.4 B	40 U	1.9																0.42 J	
Potassium																								6500	
Selenium	50	50	50	100			5 U	1.3 B																5 U	
Silver	100	100		94			5 U	1 U																1 U	
Sodium																								78000	
Thallium	2	2	2	0.2			10 U	0.029 B																1 U	
Vanadium	2.9	8.2		86			50 U	2.3 J																1.3 B	
Zinc	2000	2000		6000		18.1 B J	1.4 B J	2.3 B																7	

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 2.3-2
Groundwater Data Summary - Metals
Former York Naval Ordnance Plant - York, PA

Location/ID	PA MSC	PA MSC	Federal	EPA	MW-75S	MW-75S	MW-75S	MW-75S	MW-75S	MW-75S	MW-75S	MW-75S	MW-75S	MW-75S	MW-75S	MW-75S	MW-75S	MW-75S	MW-75S	MW-75S	MW-75S	MW-75S	MW-75S
Depth (ft.)																							
Sample Date	UA R	UA NR	MCL	RSL	4/7/00	6/6/03	4/15/04	6/10/04	6/17/05	6/23/06	6/29/07	5/21/08	10/6/08	7/6/10	1/24/14	2/19/14	3/19/14	5/8/14	6/2/14	7/1/14	8/6/14	9/8/14	10/6/14
Parameter	(µg/L)	(µg/L)	(µg/L)	(µg/L)																			
METAL																							
Aluminum		200	200	20000																			
Antimony	6	6	6	7.8			3.9 U					10 U	0.056 B										
Arsenic	10	10	10	0.052			3.4 U					10 U	1 U										
Barium	2000	2000	2000	3800								21.2 B J	22.7										
Beryllium	4	4	4	25			0.11 B					0.34 B J	1 U										
Cadmium	5	5	5				0.57 B					5 U	1 U										
Calcium					53000										91000	77000	85000	83000	72000 B	80000 B	81000 B	80000	88000 B
Chromium	100	100	100			0 U	7.3 B	2.8 U		1.3 B		5 U	5.5 J										
Copper		1000	1300	800			7.5 B					25 U	1 B										
Ferric Iron																							
FERROUS IRON																							
Hexavalent Chromium	100	100		0.035		0 U	10 U	10 U	10 U	10 U	10 U	50 U	0 U										
Iron		300	300	14000	53																		
Lead	5	5	15	15		0 U	7.1	2.2 U		3.4 J		3 U	0.85 B										
Magnesium					12000										18000	23000	16000	22000	17000	21000	22000	19000	19000
Manganese		50	50	430	20 U																		
Mercury	2	2	2	0.63			0.1 U					0.2 U	0.2 U										
Nickel	100	100		390		0 U	4.6 B	3.9 U		40 U		1.4 B	2.2										
Potassium					1800										7000	6500	7100	7900 B	7100	6700 B	5800	6600	7600
Selenium	50	50	50	100			3.9 U					5 U	0.41 B										
Silver	100	100		94			0.7 U					0.6 B	1 U										
Sodium					15000										48000 B	51000	48000	55000 B	48000	48000 B	54000 B	55000	55000
Thallium	2	2	2	0.2			1.8 U					10 U	1 U										
Vanadium	2.9	8.2		86								1.2 B	4.5 J										
Zinc	2000	2000		6000		0 U	29.2 B	8.7 B		12.4 JB		6.3 B J	10.1										
METAL (Dissolved)																							
Aluminum		200	200	20000																			
Antimony	6	6	6	7.8			3.9 U					10 U	0.063 B										
Arsenic	10	10	10	0.052			3.4 U					10 U	1 U										
Barium	2000	2000	2000	3800								20.7 B	20.6										
Beryllium	4	4	4	25			0.1 U					0.39 B J	1 U										
Cadmium	5	5	5				0.4 U					5 U	1 U										
Calcium														57500									
Chromium	100	100	100				2.8 U		1.6 U		5 U	5 U	6.8 J E										
Copper		1000	1300	800			2.1 U					25 U	0.37 B J										
Hexavalent Chromium	100	100		0.035			10 U					50 U	0 U										
Iron		300	300	14000										20.5 B J									
Lead	5	5	15	15			2.2 U		2.7 U		3 U	3 U	0.062 B J										
Magnesium														12500									
Manganese		50	50	430										28.6									
Mercury	2	2	2	0.63			0.1 U					0.2 U	0.2 U										
Nickel	100	100		390			3.9 U		2.4 U		1.6 B	1.1 B	1.7										
Potassium														6000									
Selenium	50	50	50	100			3.9 U					5 U	5 U										
Silver	100	100		94			0.7 U					5 U	1 U										
Sodium														20700									
Thallium	2	2	2	0.2			1.8 U					10 U	1 U										
Vanadium	2.9	8.2		86								2.1 B	3.6 J										
Zinc	2000	2000		6000			7.2 B		32.6		8.4 B J	6.5 B J	2.5 B										

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 2.3-2
Groundwater Data Summary - Metals
Former York Naval Ordnance Plant - York, PA

Location/ID Depth (ft.) Sample Date Parameter	PA MSC UA R (µg/L)	PA MSC UA NR (µg/L)	Federal MCL (µg/L)	EPA RSL (µg/L)	MW-75S 10/29/14	MW-75S 1/14/15	MW-75S 2/24/15	MW-75S 3/25/15	MW-75S 4/21/15	MW-75S 5/19/15	MW-75S 10/23/17	MW-93D 4/15/04	MW-93D 4/16/04	MW-93D 4/26/04	MW-93D Dup 4/26/04	MW-93D 6/20/05	MW-93D 6/23/06	MW-93D 6/27/07	MW-93D 5/13/08	MW-93D 9/22/08	MW-93D 6/28/10	MW-93D 1/20/14	MW-93D 2/18/14
METAL																							
Aluminum		200	200	20000																			
Antimony	6	6	6	7.8							0.47 J	0 U	5.8 U	3.9 U	7.8 U				10 U	0.057 B			
Arsenic	10	10	10	0.052							0.51 J	0 U	3.2 U	4.1 B	3.4 U				10 U	1 U			
Barium	2000	2000	2000	3800							37								18.6 B	19.8 J			
Beryllium	4	4	4	25							1 U	0 U	0.3 U	0.16 B	0.12 B				4 U	1 U			
Cadmium	5	5	5								1 U	0.5 B		2.4 B	2 B				5 U	1 U			
Calcium					91000 B	90000 B	76000	86000 B	92000	82000 B	84000 B											66000 B	58000
Chromium	100	100	100								1.3 J		3.4 B	16.5	12.4	1.6 U	5 U		5 U	14.4 J			
Copper		1000	1300	800							1.4 J		10.2 B	14.9 B	12.5 B				25 U	0.8 B			
Ferric Iron																							
FERROUS IRON																							
Hexavalent Chromium	100	100		0.035								0 U	10 U	10 U	10 U	10 U	10 U	10 U	50 U	0 U			
Iron		300	300	14000																			
Lead	5	5	15	15							1 U	0 U	2.3 U	5.9	5.1	2.7 U	3 U		3 U	0.1 B			
Magnesium					18000 B	20000 B	20000	18000	17000	17000	21000											13000	16000
Manganese		50	50	430																			
Mercury	2	2	2	0.63							0.2 U	0 U	0.1 U	0.1 U	0.1 U				0.2 U	0.2 U			
Nickel	100	100		390							0.53 J	2.4 B		16.1 B	13 B	2.4 U	40 U		40 U	1.6			
Potassium					7900	8600 B	5600	6000	5900	5400	5500											5100	4800
Selenium	50	50	50	100							5 U		4.2 U	3.9 U	3.9 U				5 U	5 U			
Silver	100	100		94							1 U		1.4 U	0.7 U	0.7 U				5 U	1 U			
Sodium					53000	56000 B	50000	63000	55000	53000	52000											32000	33000
Thallium	2	2	2	0.2							1 U		1.8 U	1.8 U	1.8 U				10 U	1 U			
Vanadium	2.9	8.2		86							1.7 B								50 U	3 J			
Zinc	2000	2000		6000							5 U	21.8 B		65	57.7	47.5	7.2 JB		20 U	3.6 B			
METAL (Dissolved)																							
Aluminum		200	200	20000																			
Antimony	6	6	6	7.8							2 U		5.8 U	3.9 U					10 U	0.052 B J			
Arsenic	10	10	10	0.052							0.52 J		3.2 U	3.4 U					10 U	1 U			
Barium	2000	2000	2000	3800							36								18 B	19.5			
Beryllium	4	4	4	25							1 U		0.3 U	0.1 U					4 U	1 U			
Cadmium	5	5	5								1 U		0.4 U	0.4 U					5 U	1 U			
Calcium											84000 B										51900		
Chromium	100	100	100								2.8		2.5 B	2.8 U				5 U	5 U	15.4 J			
Copper		1000	1300	800							2.4		3.7 U	2.1 U					25 U	0.68 B			
Hexavalent Chromium	100	100		0.035									10 U	10 U					50 U	0 U			
Iron		300	300	14000																	100 U		
Lead	5	5	15	15							1 U		2.3 U	2.2 U				3 U	3 U	0.081 B			
Magnesium											21000										11400		
Manganese		50	50	430																	22.5		
Mercury	2	2	2	0.63							0.2 U		0.1 U	0.1 U					0.2 U	0.2 U			
Nickel	100	100		390							1.4		1.6 U	3.9 U				1.3 B	40 U	1.6			
Potassium											5400										3430 B		
Selenium	50	50	50	100							5 U		4.2 U	3.9 U					5 U	5 U			
Silver	100	100		94							1 U		1.4 U	0.7 U					5 U	1 U			
Sodium											51000										14600		
Thallium	2	2	2	0.2							1 U		1.8 U	1.8 U					10 U	1 U			
Vanadium	2.9	8.2		86							1.3 B								50 U	3.7 J			
Zinc	2000	2000		6000							6.9		13 B	11.7 B				9.9 B J	4.4 B J	5.4			

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 2.3-2
Groundwater Data Summary - Metals
Former York Naval Ordnance Plant - York, PA

Location/ID	PA MSC	PA MSC	Federal	EPA	MW-93D	MW-93D	MW-93D	MW-93D	MW-93D	MW-93D	MW-93D	MW-93D	MW-93D	MW-93D	MW-93D	MW-93D	MW-93D	MW-93D Dup	MW-93D	MW-93S	MW-93S Dup	MW-93S	MW-93S
Depth (ft.)																							
Sample Date	UA R	UA NR	MCL	RSL	3/19/14	5/8/14	6/3/14	6/30/14	8/6/14	9/8/14	10/8/14	10/28/14	1/13/15	2/23/15	3/24/15	4/20/15	5/18/15	10/24/17	10/24/17	4/15/04	4/15/04	4/26/04	6/20/05
Parameter	(µg/L)	(µg/L)	(µg/L)	(µg/L)																			
METAL																							
Aluminum		200	200	20000																			
Antimony	6	6	6	7.8														1.1 J	1.1 J	3.9 U	3.9 U	3.9 U	
Arsenic	10	10	10	0.052														0.63 J	0.6 J	3.4 U	3.4 U	3.4 U	
Barium	2000	2000	2000	3800														46	46				
Beryllium	4	4	4	25														1 U	1 U		0.1 U	0.1 U	
Cadmium	5	5	5															1 U	1 U	0.4 U	0.4 U	0.4 U	
Calcium					65000	76000	74000	75000 B	73000 B	69000	71000	69000 B	81000 B	68000	72000 B	67000 B	63000	69000 B	69000 B				
Chromium	100	100	100															1.1 J	1.1 J		42.1	34.6	9 B
Copper		1000	1300	800														1.9 J	2.1	6.5 B	7 B	7.2 B	
Ferric Iron																							
FERROUS IRON																							
Hexavalent Chromium	100	100		0.035																	37.3	30.5	10 U
Iron		300	300	14000																			
Lead	5	5	15	15														0.59 J	0.65 J	2.2 U	2.2 U	2.2 U	2.7 U
Magnesium					11000	18000	15000	18000	18000	15000	14000	13000	15000 B	16000	15000	17000	13000	17000	16000				
Manganese		50	50	430																			
Mercury	2	2	2	0.63														0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	
Nickel	100	100		390														2	1.9	3.9 U	3.9 U	3.9 U	2.4 U
Potassium					5100	6000 B	6200	5800 B	5600	5300	5500 B	5500	6600 B	5400	5400	4600	4500	5300	5300				
Selenium	50	50	50	100														5 U	5 U	3.9 U	3.9 U	3.9 U	
Silver	100	100		94														1 U	1 U	0.7 U	0.7 U	0.7 U	
Sodium					32000	41000 B	40000	37000	42000 B	37000	35000 B	36000 B	41000 B	38000 B	43000	50000 B	35000	42000	42000				
Thallium	2	2	2	0.2														1 U	1 U	1.8 U	1.8 U	1.8 U	
Vanadium	2.9	8.2		86														1.6 B	1.7 B				
Zinc	2000	2000		6000														11	4.9 J	30.9	23 B	26 B	19.9 B
METAL (Dissolved)																							
Aluminum		200	200	20000																			
Antimony	6	6	6	7.8														0.53 J	0.63 J	3.9 U		3.9 U	
Arsenic	10	10	10	0.052														0.42 J	0.63 J	3.4 U		3.4 U	
Barium	2000	2000	2000	3800														46	44				
Beryllium	4	4	4	25														1 U	1 U	0.1 U		0.1 U	
Cadmium	5	5	5															1 U	1 U	0.4 U		0.4 U	
Calcium																		71000 B	68000 B				
Chromium	100	100	100															2 U	1.3 J	39.7		34.3	
Copper		1000	1300	800														2 U	2 U	5.5 B		2.8 B	
Hexavalent Chromium	100	100		0.035																37.3		29.5	
Iron		300	300	14000																			
Lead	5	5	15	15														1 U	1 U	2.2 U		2.2 U	
Magnesium																		17000	16000				
Manganese		50	50	430																			
Mercury	2	2	2	0.63														0.2 U	0.2 U	0.1 U		0.1 U	
Nickel	100	100		390														1.1	1.7	3.9 U		3.9 U	
Potassium																		5500	5200				
Selenium	50	50	50	100														5 U	5 U	3.9 U		3.9 U	
Silver	100	100		94														1 U	1 U	0.7 U		0.7 U	
Sodium																		43000	42000				
Thallium	2	2	2	0.2														1 U	1 U	1.8 U		1.8 U	
Vanadium	2.9	8.2		86														1 B	0.79 J B				
Zinc	2000	2000		6000														5 U	88	5.8 U		8 B	

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 2.3-2
Groundwater Data Summary - Metals
Former York Naval Ordnance Plant - York, PA

Location/ID Depth (ft.) Sample Date Parameter	PA MSC UA R (µg/L)	PA MSC UA NR (µg/L)	Federal MCL (µg/L)	EPA RSL (µg/L)	MW-93S 6/22/06	MW-93S 6/27/07	MW-93S 4/25/08	MW-93S 9/15/08	MW-93S 6/23/10	MW-93S 1/20/14	MW-93S 2/19/14	MW-93S 3/19/14	MW-93S 5/8/14	MW-93S 6/3/14	MW-93S 7/1/14	MW-93S 8/5/14	MW-93S 9/8/14	MW-93S 10/8/14	MW-93S 10/28/14	MW-93S 1/13/15	MW-93S 2/23/15	MW-93S Dup 2/23/15	MW-93S 3/24/15	MW-93S 4/20/15	MW-93S 5/18/15
METAL																									
Aluminum		200	200	20000																					
Antimony	6	6	6	7.8			10 U	0.92 B																	
Arsenic	10	10	10	0.052			10 U	0.47 B																	
Barium	2000	2000	2000	3800			34.3 B	25.5																	
Beryllium	4	4	4	25			4 U	1 U																	
Cadmium	5	5	5				5 U	1 U																	
Calcium										98000 B	79000	73000	73000	73000	70000 B	55000	68000	61000	66000 B	73000 B	70000	71000	69000 B	67000 B	61000
Chromium	100	100	100		6.7		1.9 B	6.2 J																	
Copper		1000	1300	800			25 U	0.6 B																	
Ferric Iron																									
FERROUS IRON																									
Hexavalent Chromium	100	100		0.035	10 U	10 U	50 U	0 U																	
Iron		300	300	14000																					
Lead	5	5	15	15	3 U		3 U	1 U																	
Magnesium										22000	26000	16000	26000	23000	22000	15000	19000	16000	17000	18000 B	21000	21000	17000	21000	15000
Manganese		50	50	430																					
Mercury	2	2	2	0.63			0.2 U	0.2 U																	
Nickel	100	100		390	40 U		40 U	0.62 B																	
Potassium										28000	31000	33000	35000 B	37000	21000 B	12000	16000	15000 B	18000	21000 B	14000	14000	9700	9200	9300
Selenium	50	50	50	100			5 U	0.39 B																	
Silver	100	100		94			5 U	1 U																	
Sodium										110000	140000	110000	120000 B	110000	75000 B	66000	70000	59000 B	65000 B	71000 B	73000 B	73000 B	94000	100000 B	61000
Thallium	2	2	2	0.2			10 U	0.021 B																	
Vanadium	2.9	8.2		86			50 U	2.9 J																	
Zinc	2000	2000		6000	4.3 JB		7 B	2.5 B J																	
METAL (Dissolved)																									
Aluminum		200	200	20000																					
Antimony	6	6	6	7.8			10 U	0.96 B																	
Arsenic	10	10	10	0.052			10 U	0.79 B																	
Barium	2000	2000	2000	3800			34.9 B	25.9																	
Beryllium	4	4	4	25			4 U	1 U																	
Cadmium	5	5	5				5 U	1 U																	
Calcium									39600																
Chromium	100	100	100			2.4 B	1.6 B	6.3 J																	
Copper		1000	1300	800			25 U	0.54 B																	
Hexavalent Chromium	100	100		0.035			50 U	0 U																	
Iron		300	300	14000					100 U																
Lead	5	5	15	15		3 U	3 U	1 U																	
Magnesium									8530																
Manganese		50	50	430					15 U																
Mercury	2	2	2	0.63			0.2 U	0.2 U																	
Nickel	100	100		390		40 U	40 U	0.38 B																	
Potassium									6910																
Selenium	50	50	50	100			5 U	0.77 B J																	
Silver	100	100		94			5 U	1 U																	
Sodium									33900																
Thallium	2	2	2	0.2			10 U	0.019 B																	
Vanadium	2.9	8.2		86			50 U	3.3 J																	
Zinc	2000	2000		6000		3.3 B J	2.8 B J	3.7 B J																	

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 2.3-2
Groundwater Data Summary - Metals
Former York Naval Ordnance Plant - York, PA

Location/ID	PA MSC	PA MSC	Federal	EPA	MW-93S	S-10
Depth (ft.)						
Sample Date	UA R	UA NR	MCL	RSL	10/24/17	10/11/16
Parameter	(µg/L)	(µg/L)	(µg/L)	(µg/L)		
METAL						
Aluminum		200	200	20000		30 U
Antimony	6	6	6	7.8	1.4 J	0.11 J B
Arsenic	10	10	10	0.052	0.7 J	1 U
Barium	2000	2000	2000	3800	44	85
Beryllium	4	4	4	25	1 U	1 U
Cadmium	5	5	5		1 U	1 U
Calcium					43000 B	15000
Chromium	100	100	100		1.9 J	2 U
Copper		1000	1300	800	160	2 U
Ferric Iron						
FERROUS IRON						
Hexavalent Chromium	100	100		0.035		
Iron		300	300	14000		24 J B
Lead	5	5	15	15	7.7	0.11 J B
Magnesium					17000	6400
Manganese		50	50	430		
Mercury	2	2	2	0.63	0.2 U	0.2 U
Nickel	100	100		390	0.75 J	0.78 J
Potassium					9900	4000
Selenium	50	50	50	100	5 U	0.42 J
Silver	100	100		94	1 U	1 U
Sodium					50000	12000
Thallium	2	2	2	0.2	1 U	1 U
Vanadium	2.9	8.2		86	2.4 B	0.53 J
Zinc	2000	2000		6000	96	2.6 J
METAL (Dissolved)						
Aluminum		200	200	20000		46 B
Antimony	6	6	6	7.8	1.2 J	0.19 J B
Arsenic	10	10	10	0.052	0.67 J	1 U
Barium	2000	2000	2000	3800	40	88
Beryllium	4	4	4	25	1 U	1 U
Cadmium	5	5	5		1 U	1 U
Calcium					39000 B	15000
Chromium	100	100	100		1.8 J	2 U
Copper		1000	1300	800	1.3 J	3.8
Hexavalent Chromium	100	100		0.035		
Iron		300	300	14000		28 J B
Lead	5	5	15	15	1 U	0.36 J B
Magnesium					16000	6400
Manganese		50	50	430		
Mercury	2	2	2	0.63	0.2 U	0.2 U
Nickel	100	100		390	0.54 J	1.2
Potassium					9200	4100
Selenium	50	50	50	100	5 U	5 U
Silver	100	100		94	1 U	1 U
Sodium					47000	12000
Thallium	2	2	2	0.2	1 U	1 U
Vanadium	2.9	8.2		86	2.3 B	1.4
Zinc	2000	2000		6000	5 U	7.4

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 2.3-3
Groundwater Data Summary - 1,4-Dioxane
Former York Naval Ordnance Plant - York, PA

Location/ID Depth (ft.) Sample Date Parameter	PA MSC UA R (µg/L)	PA MSC UA NR (µg/L)	Federal MCL (µg/L)	EPA RSL (µg/L)	MW-87 5/15/08	MW-87 7/9/09	MW-87 7/2/10	MW-87 9/4/13	MW-87 10/14/14	MW-87 9/30/15	MW-87 10/12/16	MW-87 10/18/17	MW-127 7/6/12	MW-127 9/4/13	MW-127 10/14/14	MW-127 9/29/15	MW-127 10/12/16	MW-127 10/18/17
1,4 Dioxane																		
1,4-Dioxane	6.4	32		0.46	29	19	41	14	16	9.7	6.9	10	24	11	10	6.8	3.1	6.9

U = Not detected. J = Organics; estimated. Inorganics; blank contamination.

Table 2.3-3
Groundwater Data Summary - 1,4-Dioxane
Former York Naval Ordnance Plant - York, PA

Location/ID Depth (ft.) Sample Date Parameter	PA MSC UA R (µg/L)	PA MSC UA NR (µg/L)	Federal MCL (µg/L)	EPA RSL (µg/L)	MW-136A 356 - 356.5 10/2/13	MW-136A 356 - 356.5 10/23/14	MW-136A 356 - 356.5 10/25/17	MW-136A 372.5 - 373 10/2/13	MW-136A 372.5 - 373 10/23/14	MW-136A 372.5 - 373 10/25/17	CW-15A 5/6/08	CW-15A 10/9/08	CW-15A 6/15/09	CW-15A 12/16/09	CW-15A 7/7/10	CW-15A 12/21/10
1,4 Dioxane																
1,4-Dioxane	6.4	32		0.46	1.6 J	9.8	0.88 J	1.7 J	7.3	1.3 J	250	140	99	140	180	110

U = Not detected. J = Organics; estimated. Inorganics; blank contamination.

Table 2.3-3
Groundwater Data Summary - 1,4-Dioxane
Former York Naval Ordnance Plant - York, PA

Location/ID Depth (ft.) Sample Date Parameter	PA MSC UA R (µg/L)	PA MSC UA NR (µg/L)	Federal MCL (µg/L)	EPA RSL (µg/L)	CW-15A 9/16/13	CW-15A 10/30/14	CW-15A 10/5/15	CW-15A 10/26/16	CW-15A 10/24/17
1,4 Dioxane									
1,4-Dioxane	6.4	32		0.46	180	390	120 J	120	36

U = Not detected. J = Organics; estimated. Inorganics; blank contamination.

Table 2.3-4
Groundwater Data Summary - Cyanide
Former York Naval Ordnance Plant - York, PA

Location/ID Depth (ft.) Sample Date Parameter	PA MSC UA R (µg/L)	PA MSC UA NR (µg/L)	Federal MCL (µg/L)	EPA RSL (µg/L)	MW-2 4/29/86	MW-2 7/22/86	MW-2 1/29/92	MW-2 6/22/93	MW-2 7/13/94	MW-2 10/27/95	MW-2 7/17/96	MW-2 10/22/97	MW-2 12/9/98	MW-2 9/21/99	MW-2 3/20/00	MW-2 3/30/00	MW-2 6/21/01	MW-2 6/14/02
Cyanide																		
Cyanide, Free	200	200	200	1.5		12	16	20	5 U	2800	1700	1500	200	300	356	360	852	43
Cyanide, Total	200	200		1.5	1060	1040	1500	120	1900	2800	1700	1500	1600	2300	10.1	10	3920	1470

Blank results = analyte not analyzed. U = Not detected. J = Organics; estimated. Inorganics; blank contamination.

Table 2.3-4
Groundwater Data Summary - Cyanide
Former York Naval Ordnance Plant - York, PA

Location/ID Depth (ft.) Sample Date Parameter	PA MSC UA R (µg/L)	PA MSC UA NR (µg/L)	Federal MCL (µg/L)	EPA RSL (µg/L)	MW-2 6/4/03	MW-2 6/10/04	MW-2 6/21/05	MW-2 6/23/06	MW-2 6/28/07	MW-2 5/8/08	MW-2 9/17/08	MW-2 6/24/09	MW-2 6/25/10	MW-2 6/29/11	MW-2 9/3/13	MW-2 10/14/14	MW-2 10/26/17
Cyanide																	
Cyanide, Free	200	200	200	1.5	247	220	280	11	14	100 J	100 J	100 J	45	2 U	12	2 U	6.9
Cyanide, Total	200	200		1.5	1670	1000	490	1390	1280	1300	930	980	660	670	370	590	360

Blank results = analyte not analyzed. U = Not detected. J = Organics; estimated. Inorganics; blank contamination.

Table 2.3-5

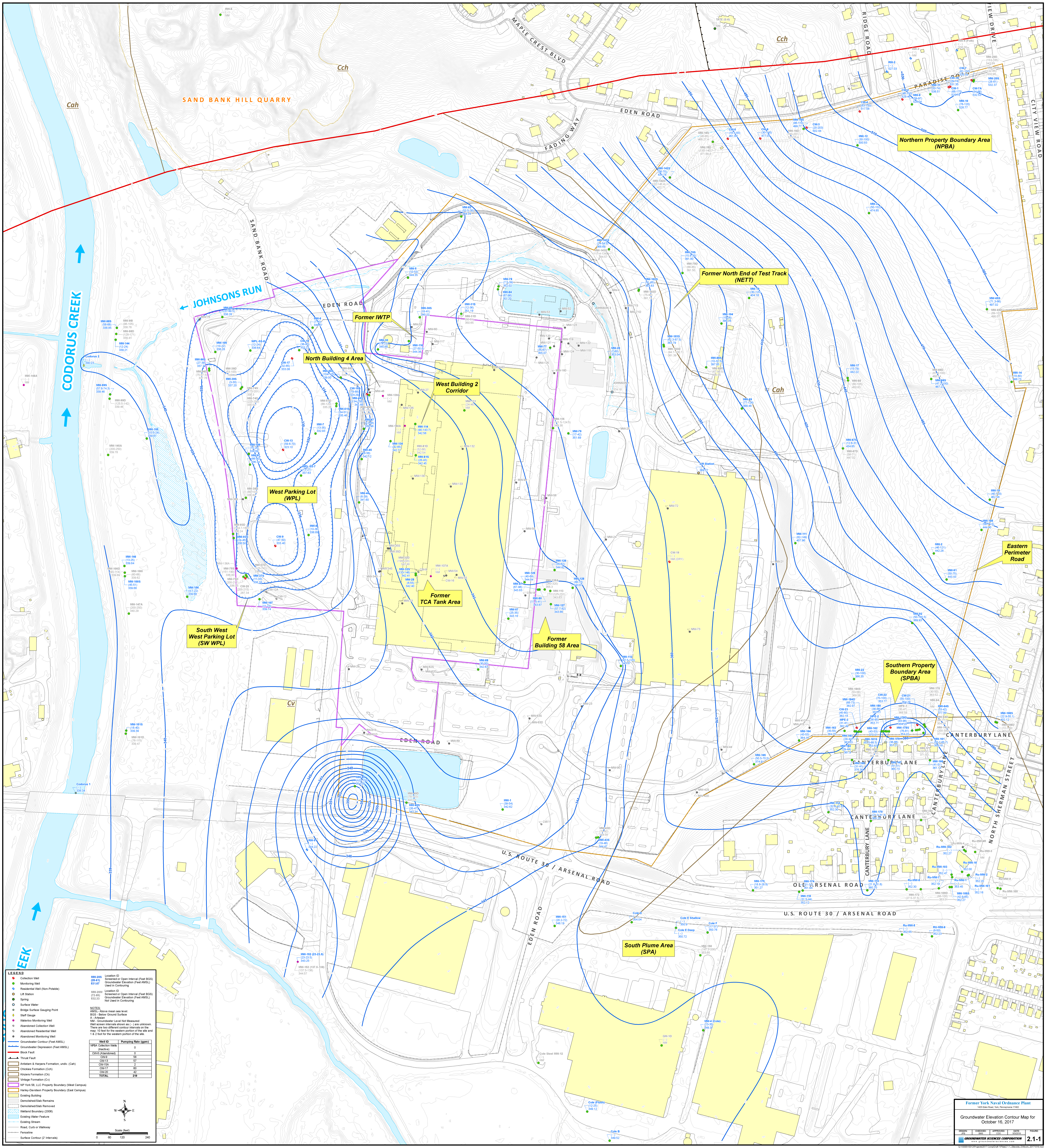
CW-20 Pumping Volumes, Total VOC Mass Removed and Total VOC Mass Removal Efficiency
Former York Naval Ordnance Plant - York, PA

Period	Sample Date	Total VOC Concentration (µg/l)	Volume of Groundwater Pumped per Period (gallons)	Volume of Groundwater Pumped per Period (MG)	Total VOC Mass Removed per Period (pounds)	Removal Efficiency per Period (pounds/MG)
Mar 14 - Apr 14	3/28/2014	1,542	2,771,243	3	36	13
May 14	5/7/2014	931	4,194,240	4	33	8
Jun 14	6/5/2014	1,130	4,023,097	4	38	9
Jul 14	7/2/2014	1,495	3,385,920	3	42	12
Aug 14	8/5/2014	2,760	1,278,216	1	29	23
Sep 14	9/10/2014	1,590	2,083	0	0	13
Oct 14 *	10/8/14 and 10/31/14	1,766	4,486	0	0	15
Nov 14	N/A	0	0	0	0	0
Dec 14	N/A	0	0	0	0	0
Jan 15	1/20/2015	1,793	570,010	1	9	15
Feb 15	2/25/2015	2,696	3,369,262	3	76	23
Mar 15	3/25/2015	1,606	3,289,408	3	44	13
Apr 15	4/22/2015	2,696	2,938,139	3	66	23
May 15	5/20/2015	2,002	2,805,871	3	47	17
Jul 15 - Oct 15	10/5/2015	2,104	6,027,759	6	106	18
Nov 15 - Dec 15	12/21/2015	2,426	2,028,599	2	41	20
Jan 16 - Jun 16	6/27/2016	2,574	12,005,114	12	258	21
Jul 16 - Dec 16	10/26/2016	2,238	16,685,115	17	312	19
Jan 17 - Jun 17	7/6/2017	1,445	16,679,443	17	201	12
Jul 17 - Dec 17	10/24/2017	1,508	16,052,062	16	202	13
TOTALS			98,110,067		1,540	

Notes:
* Two samples were collected in October 2014 and the average total VOC concentration of the two samples was used for the calculations.
µg/L - Micrograms per liter
MG - Million Gallons
NA - Not Applicable (CW-20 not pumping this period)

Figures

Plate



LEGEND

- Collection Well
- Monitoring Well
- Residential Well (Non-Potable)
- Lift Station
- Spring
- Surface Water
- Bridge Surface Gauging Point
- Staff Gauge
- Waterloo Monitoring Well
- Abandoned Collection Well
- Abandoned Residential Well
- Abandoned Monitoring Well
- Groundwater Contour (Feet AMSL)
- Groundwater Depression (Feet AMSL)
- Block Fault
- Thrust Fault
- Antietam & Harpers Formation, undiv. (Cah)
- Chickies Formation (Cch)
- Kinzers Formation (Ck)
- Vintage Formation (Cv)
- NP York 58, LLC Property Boundary (West Campus)
- Harley-Davidson Property Boundary (East Campus)
- Existing Building
- Demolished/Slab Remains
- Demolished/Slab Removed
- Wetland Boundary (2006)
- Existing Water Feature
- Existing Stream
- Road, Curb or Walkway
- Fenceline
- Surface Contour (2' Intervals)

MW-20S — Location ID
(28-61) — Screened or Open Interval (Feet BGS)
531.67 — Groundwater Elevation (Feet AMSL)
Used in Contouring

MW-20M — Location ID
(72-85) — Screened or Open Interval (Feet BGS)
532.33 — Groundwater Elevation (Feet AMSL)
Not Used in Contouring

NOTES:
AMSL- Above mean sea level.
BGS - Below Ground Surface
A - Artesian
NM - Groundwater Level Not Measured
Well screen intervals shown as (-) are unknown.
There are two different contour intervals on the map: 10 feet for the eastern portion of the site and 1 & 2 foot for the western portion of the site.

Well ID	Pumping Rate (gpm)
NPBA Collection Wells (Inactive)	0
CW-8 (Abandoned)	0
CW-9	58
CW-13	57
CW-15A	2
CW-17	60
CW-20	42
TOTAL	**219**

N / W / E / S

Scale (feet)
0 60 120 240

Former York Naval Ordnance Plant
1425 Eden Road, York, Pennsylvania 17402

Groundwater Elevation Contour Map for October 16, 2017

DRAWN:	CHECKED:	APPROVED:	DATE:	FIGURE:
JPB	SMS	CDO	5/3/2018	2.1-1

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Appendix A

Field Sampling Plan for Part 2 of the Supplemental Groundwater Remedial Investigation*

** - in portable document format (PDF) on the USB Drive attached to this report.*

Appendix B

Quality Assurance Project Plan*

** - in portable document format (PDF) on the USB Drive attached to this report.*

Appendix C

Groundwater Sample Purge Logs*

** - in portable document format (PDF) on the USB Drive attached to this report.*

Appendix D

Comprehensive Groundwater Data Summary – VOC Analysis*

** - in portable document format (PDF) on the USB Drive attached to this report.*

Appendix E

Laboratory Analysis Reports for 2016*

** - in portable document format (PDF) on the USB Drive attached to this report.*

Appendix F

Laboratory Analysis Reports for 2017*

** - in portable document format (PDF) on the USB Drive attached to this report.*

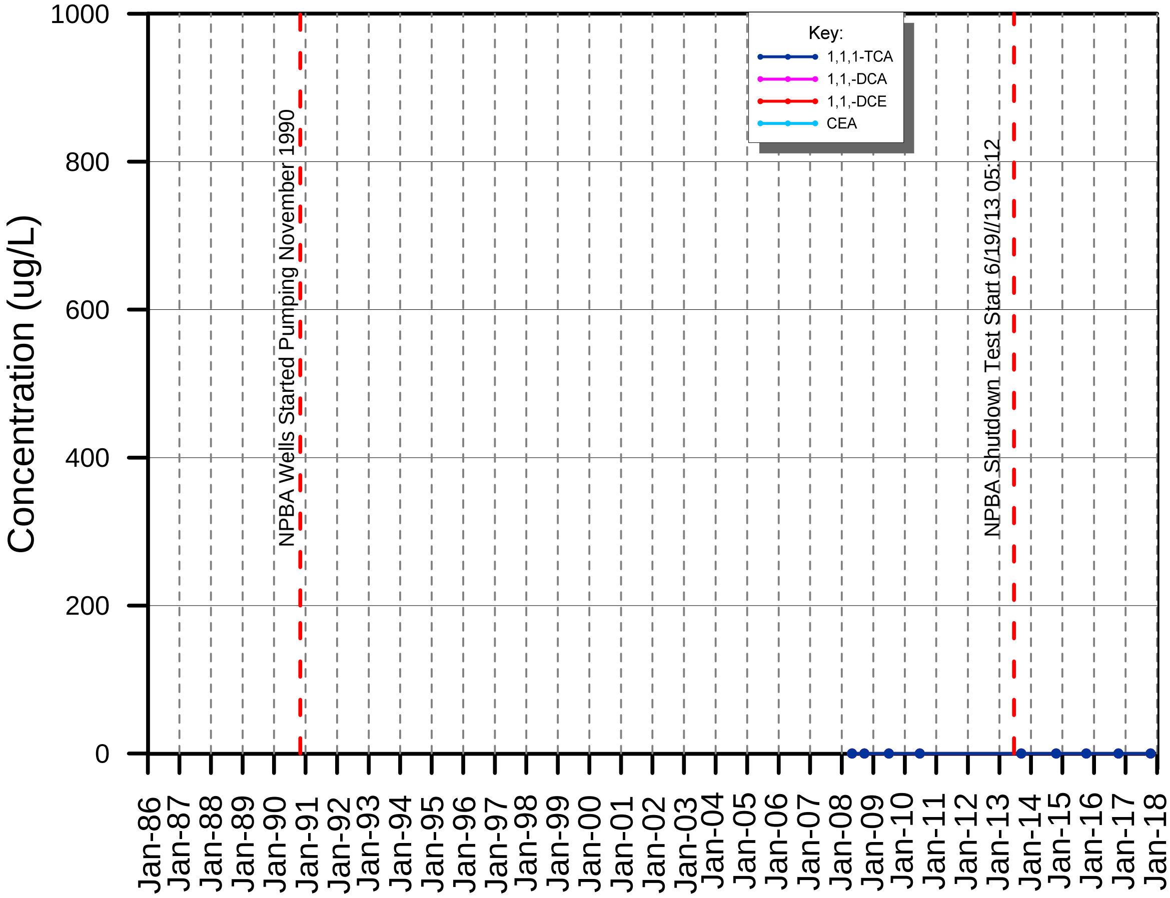
Appendix G

Groundwater Chemistry Graphs

Appendix G-1

North End Test Track Graphs

MW-102D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1000
800
600
400
200
0
Key:
1,1,1-TCA
1,1,-DCA
1,1,-DCE
CEA
NPBA Wells Started Pumping November 1990
NPBA Shutdown Test Start 6/19/13 05:12
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
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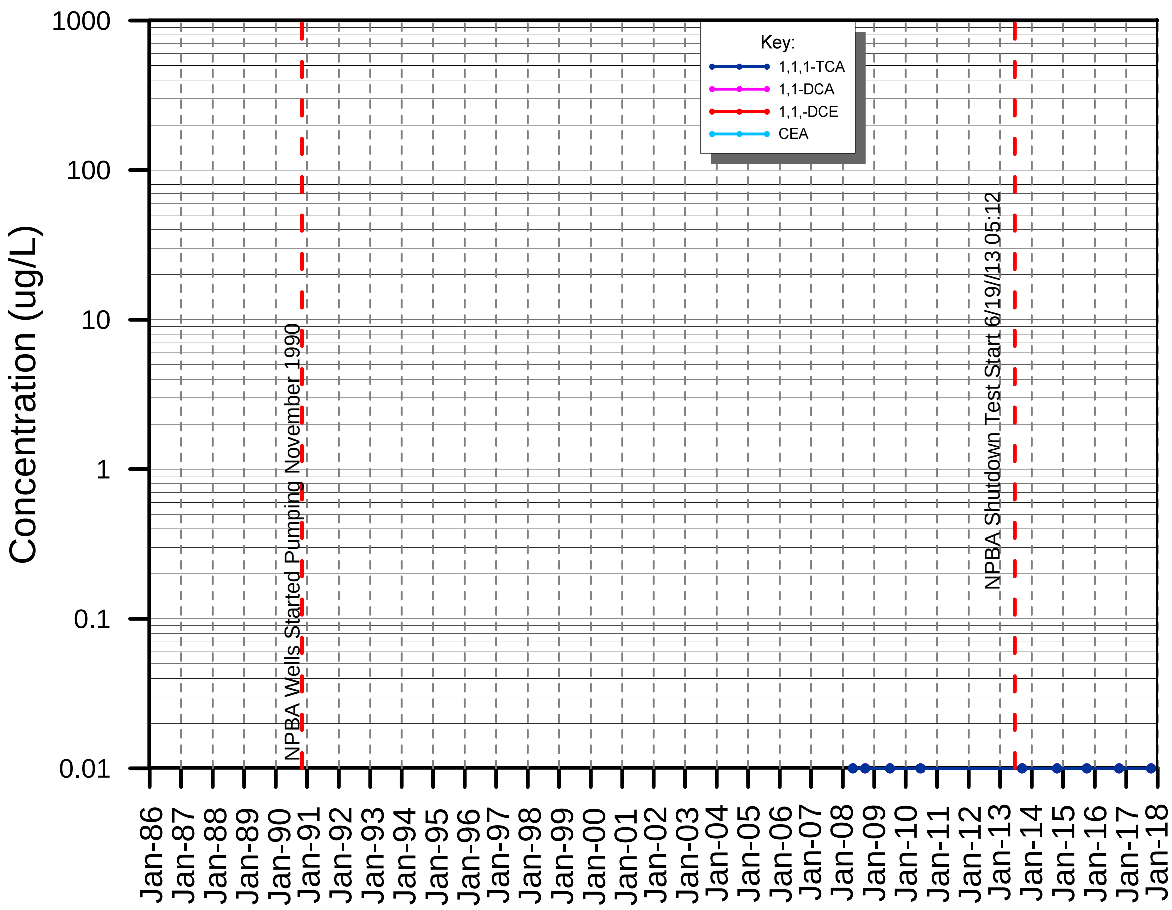
Jan-16
Jan-17
Jan-18


Concentration (ug/L)
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100
10
1
0.1
0.01
Key:
1,1,1-TCA
1,1-DCA
1,1,-DCE
CEA
NPBA Wells Started Pumping November 1990
NPBA Shutdown Test Start 6/19/13 05:12
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
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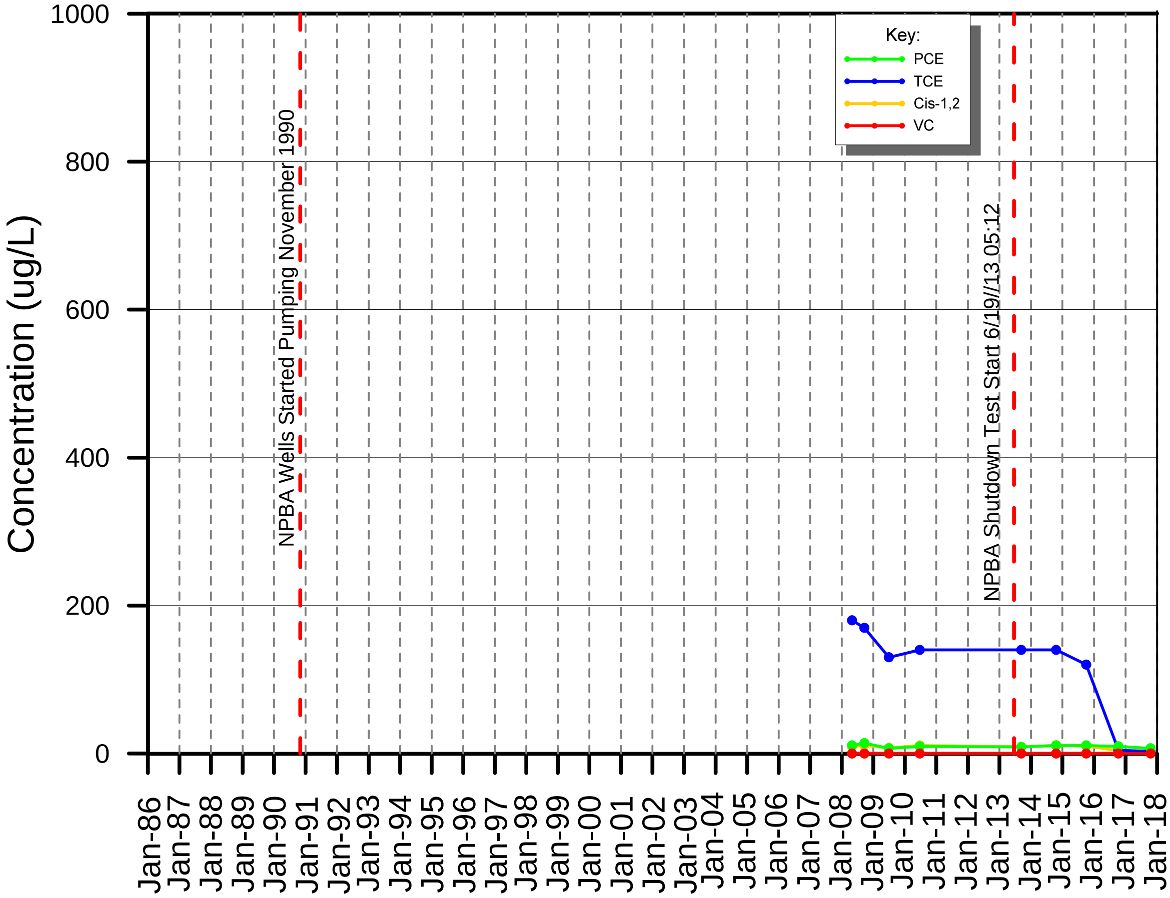
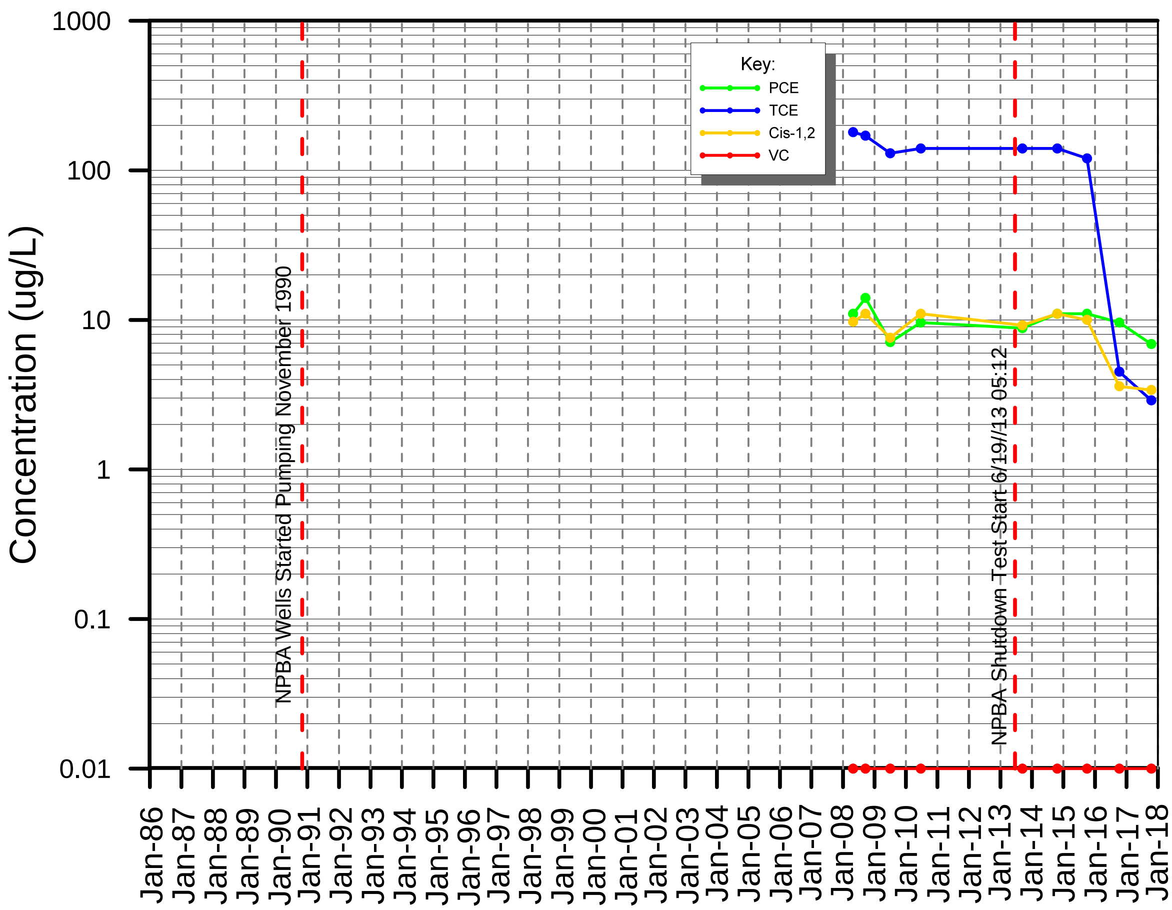
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18

MW-102D

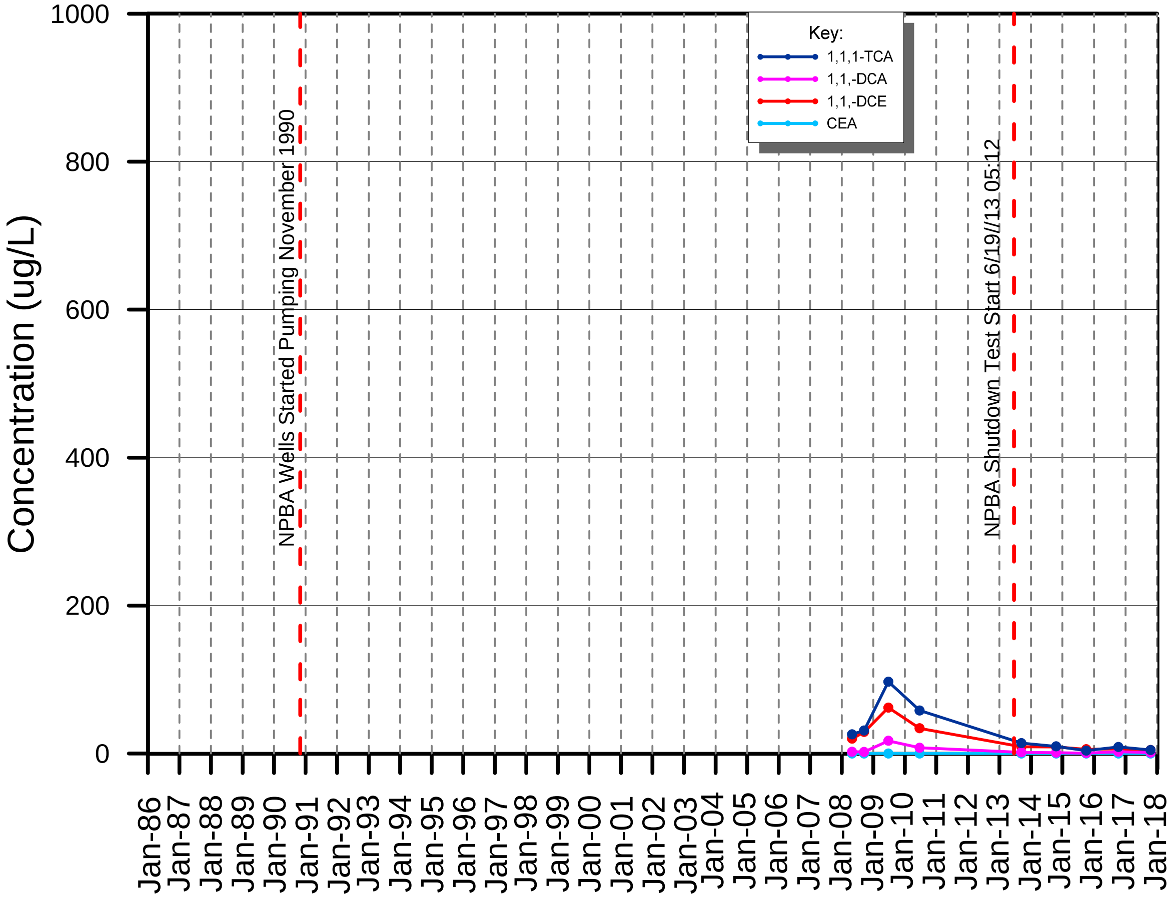


Concentration (ug/L)
1000
800
600
400
200
0
Key:
PCE
TCE
Cis-1,2
VC
NPBA Wells Started Pumping November 1990
NPBA Shutdown Test Start 6/19//13 05:12
Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09 Jan-10 Jan-11 Jan-12 Jan-13 Jan-14 Jan-15 Jan-16 Jan-17 Jan-18



Concentration (ug/L)
1000
100
10
1
0.1
0.01
Key:
PCE
TCE
Cis-1,2
VC
NPBA Wells Started Pumping November 1990
NPBA Shutdown Test Start 6/19//13 05:12
Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09 Jan-10 Jan-11 Jan-12 Jan-13 Jan-14 Jan-15 Jan-16 Jan-17 Jan-18

MW-102S



1000
800
600
400
200
0
Concentration (ug/L)
NPBA Wells Started Pumping November 1990
NPBA Shutdown Test Start 6/19/13 05:12
Key:
1,1,1-TCA
1,1,-DCA
1,1,-DCE
CEA
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
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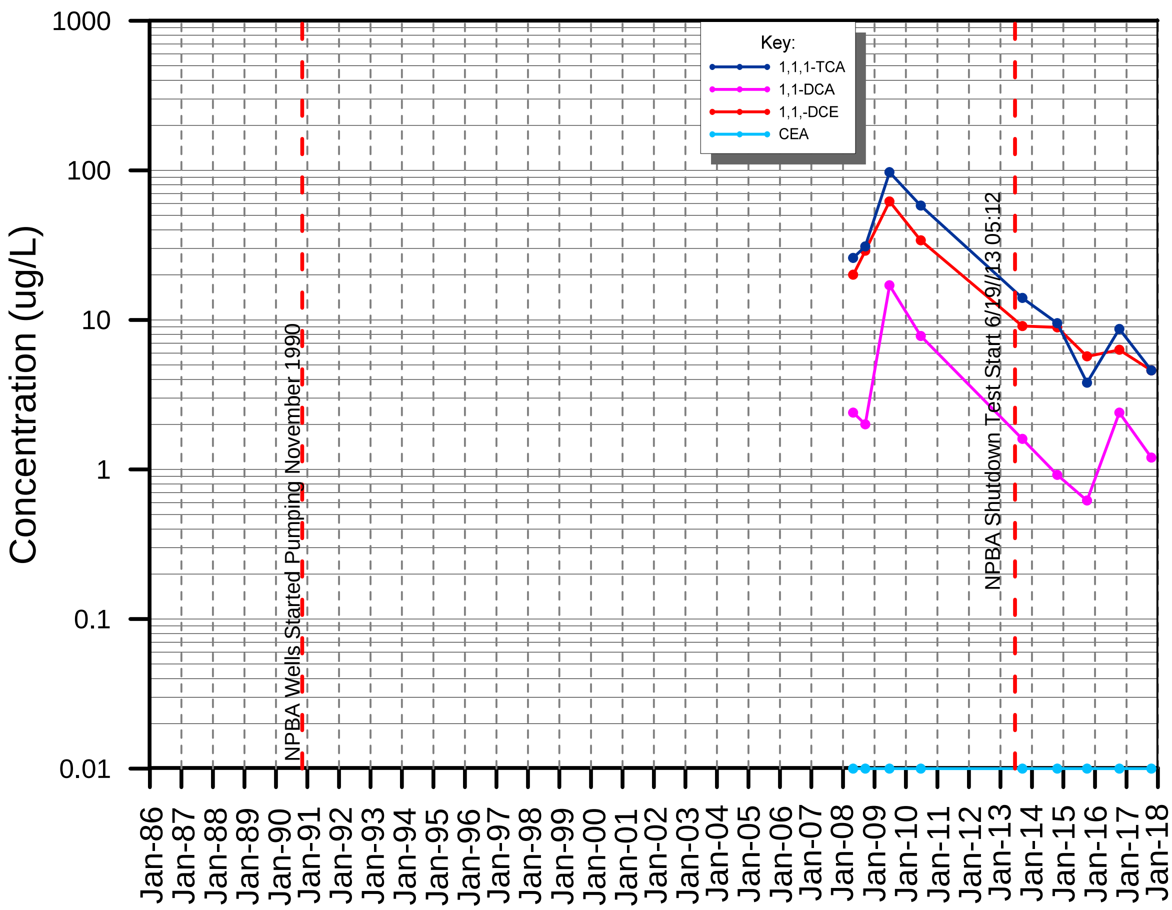
Jan-16
Jan-17
Jan-18



1000
100
10
1
0.1
0.01
Concentration (ug/L)
NPBA Wells Started Pumping November 1990
NPBA Shutdown Test Start 6/19/13 05:12
Key:
1,1,1-TCA
1,1-DCA
1,1,-DCE
CEA
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
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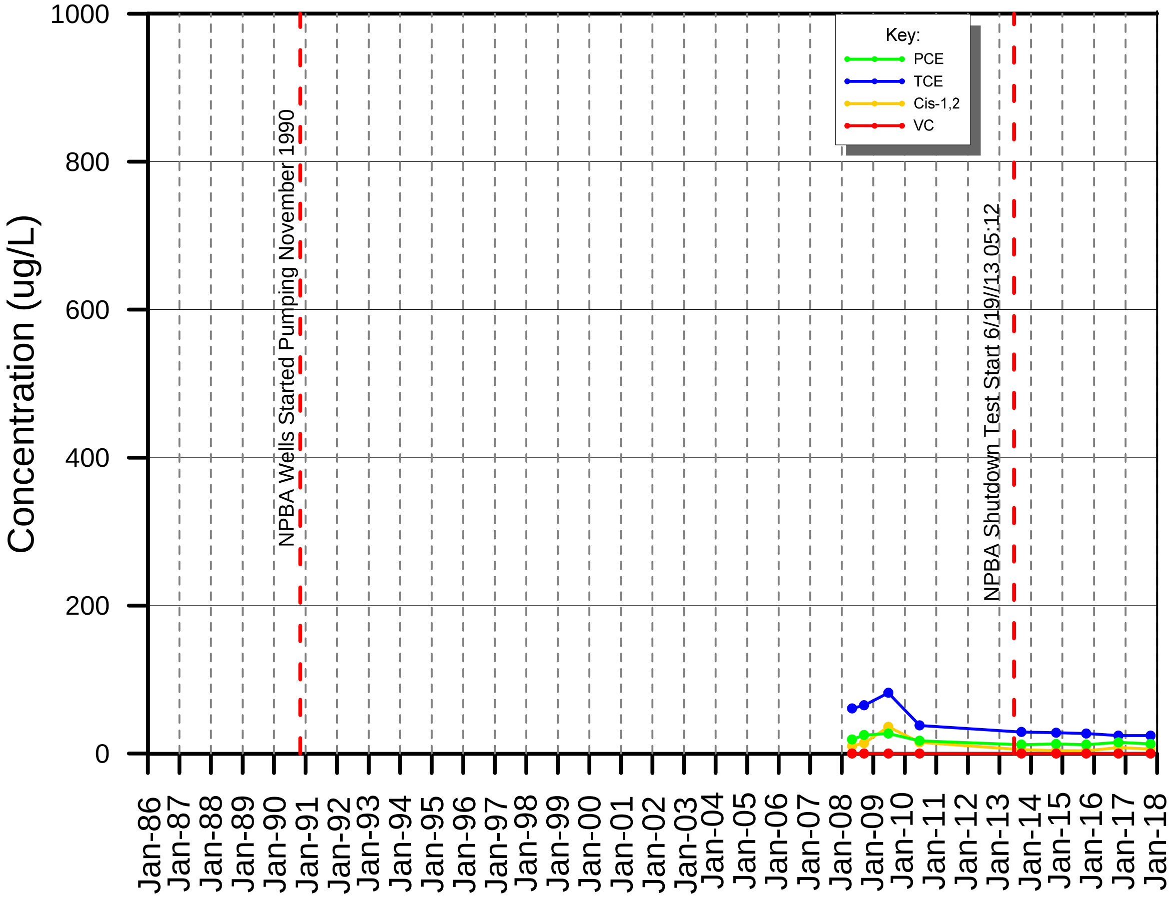
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18

MW-102S



Concentration (ug/L)
1000
800
600
400
200
0
NPBA Wells Started Pumping November 1990
NPBA Shutdown Test Start 6/19//13 05:12
Key:
PCE
TCE
Cis-1,2
VC
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
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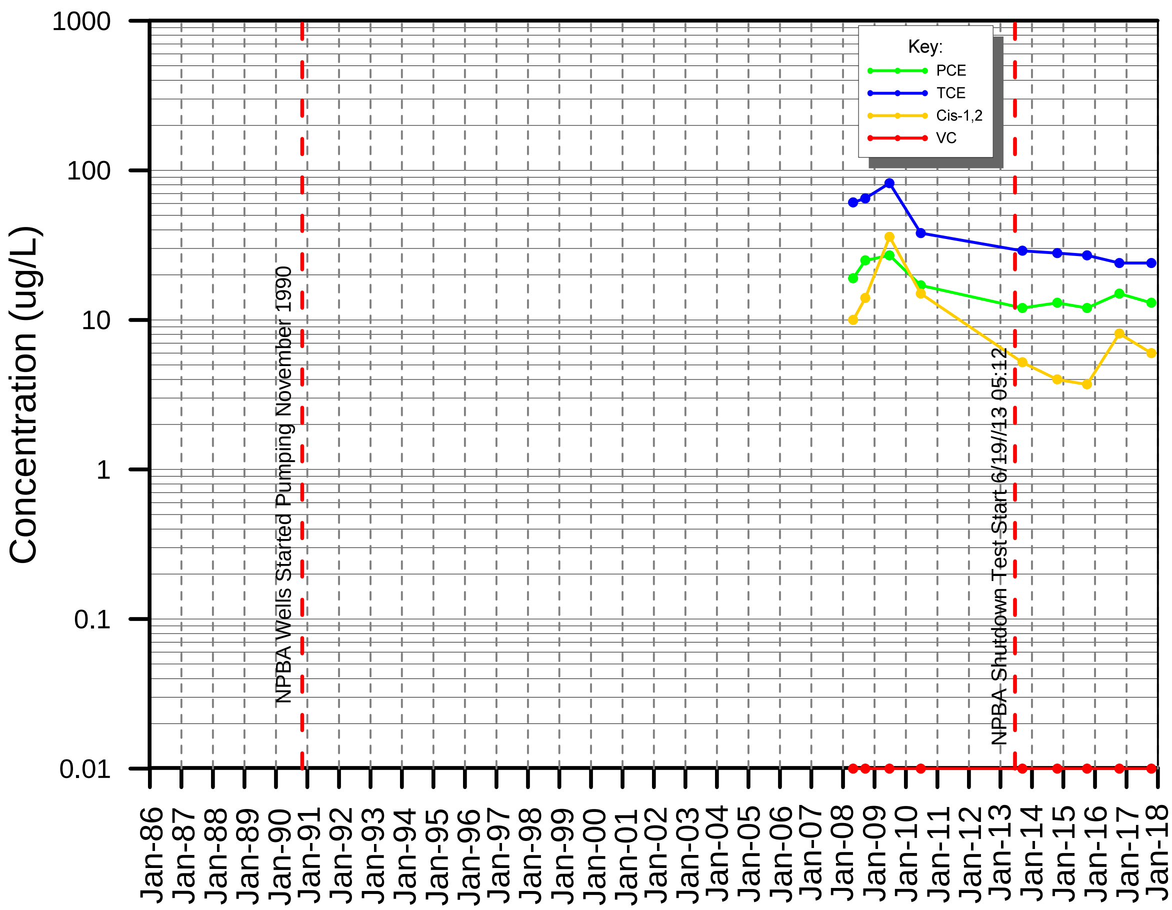
Jan-18



Concentration (ug/L)
1000
100
10
1
0.1
0.01
NPBA Wells Started Pumping November 1990
NPBA Shutdown Test Start 6/19//13 05:12
Key:
PCE
TCE
Cis-1,2
VC
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
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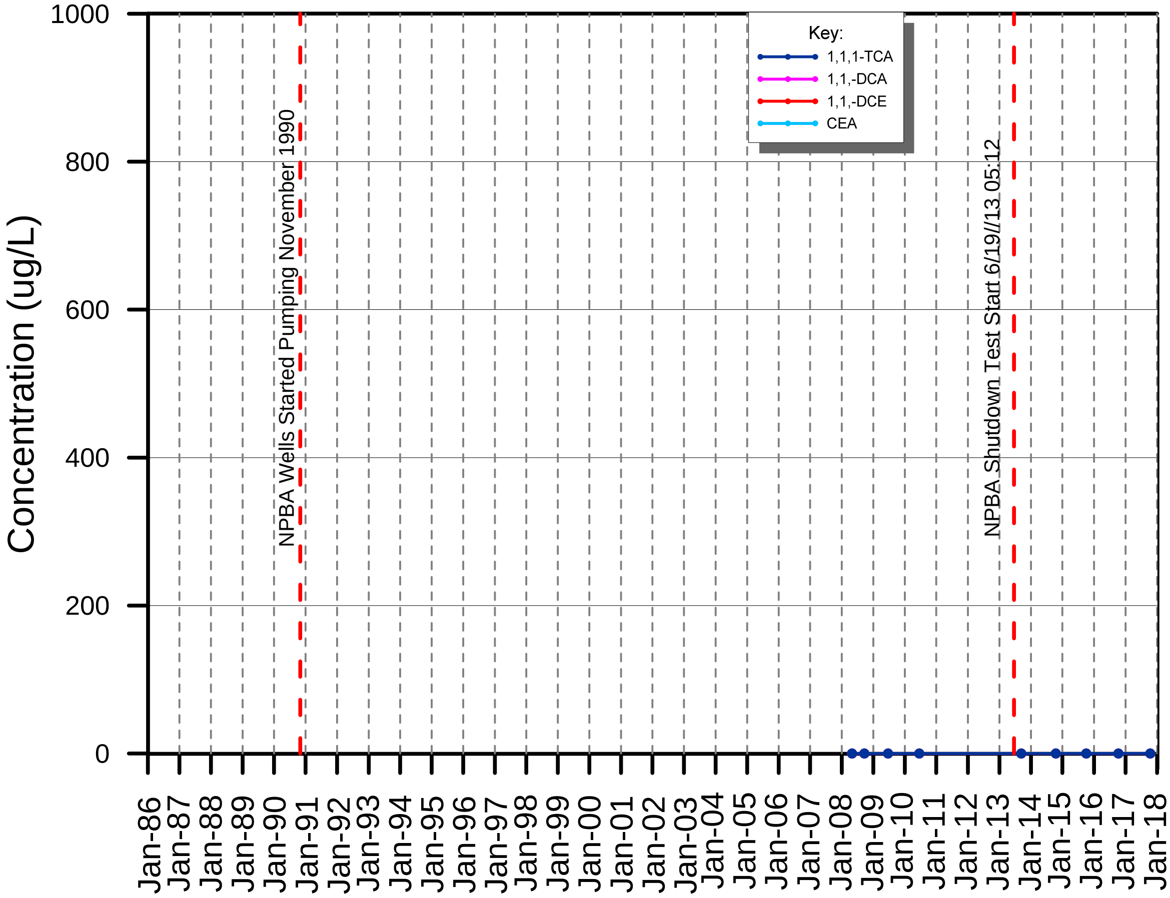
Jan-17
Jan-18

MW-103D



Concentration (ug/L)
1000
800
600
400
200
0
Key:
1,1,1-TCA
1,1,-DCA
1,1,-DCE
CEA
NPBA Wells Started Pumping November 1990
NPBA Shutdown Test Start 6/19/13 05:12
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
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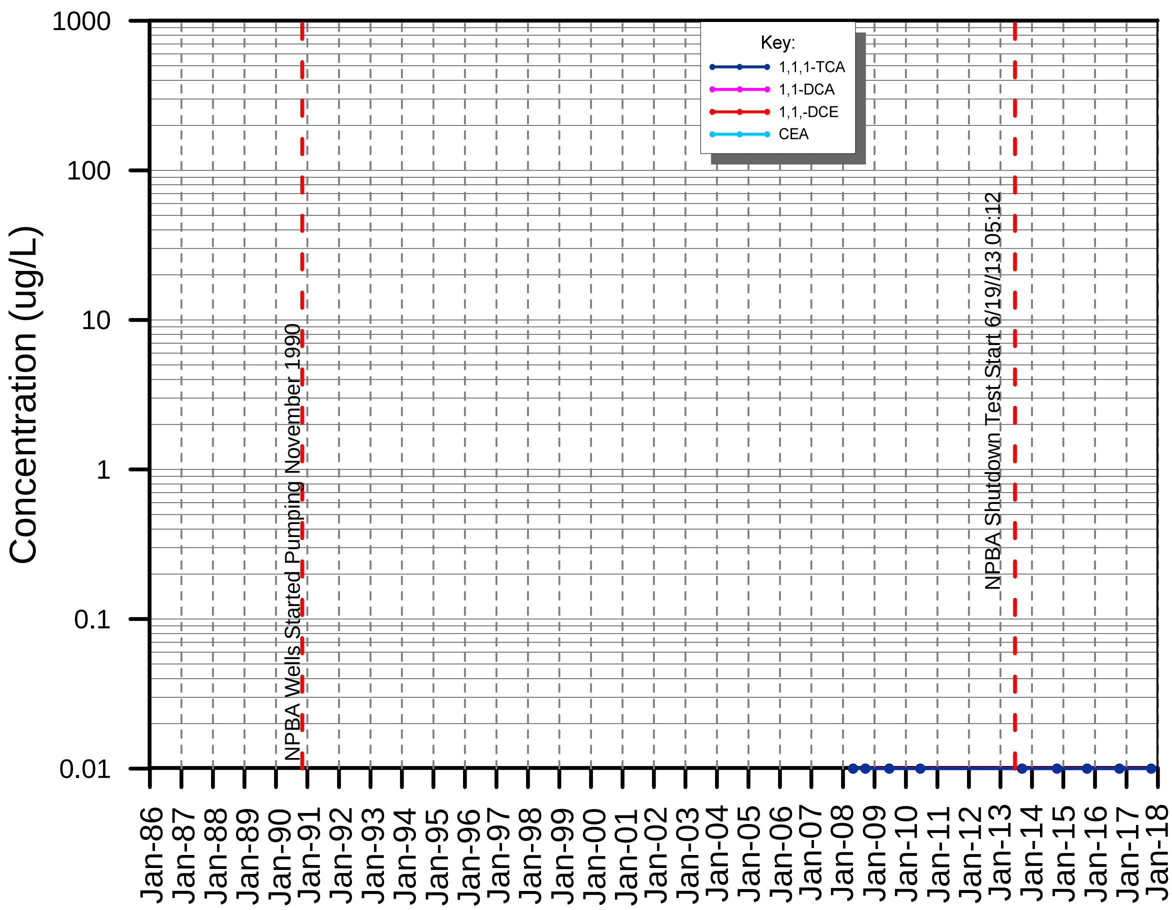
Jan-17
Jan-18



Concentration (ug/L)
1000
100
10
1
0.1
0.01
Key:
1,1,1-TCA
1,1-DCA
1,1,-DCE
CEA
NPBA Wells Started Pumping November 1990
NPBA Shutdown Test Start 6/19/13 05:12
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
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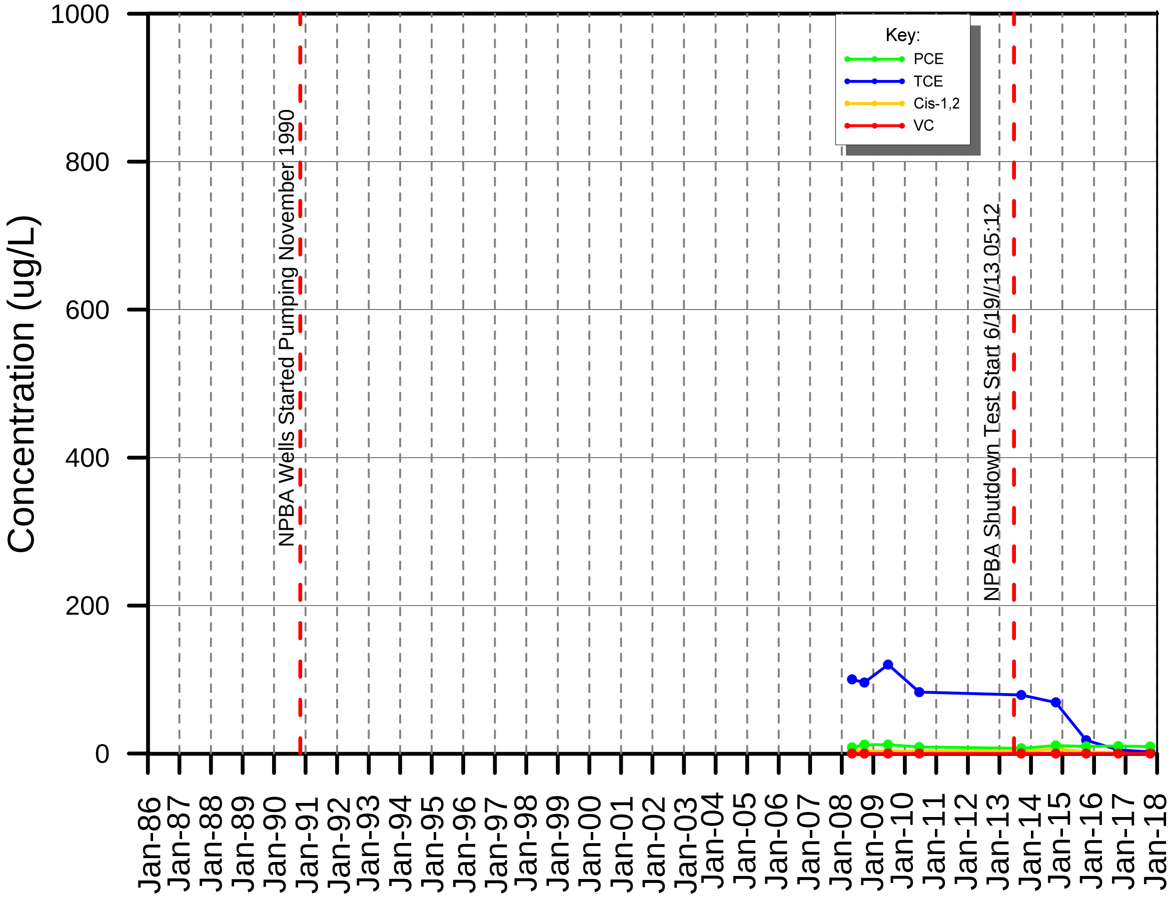
Jan-18

MW-103D



1000
800
600
400
200
0
Concentration (ug/L)
NPBA Wells Started Pumping November 1990
NPBA Shutdown Test Start 6/19//13 05:12
Key:
PCE
TCE
Cis-1,2
VC
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
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Jan-02
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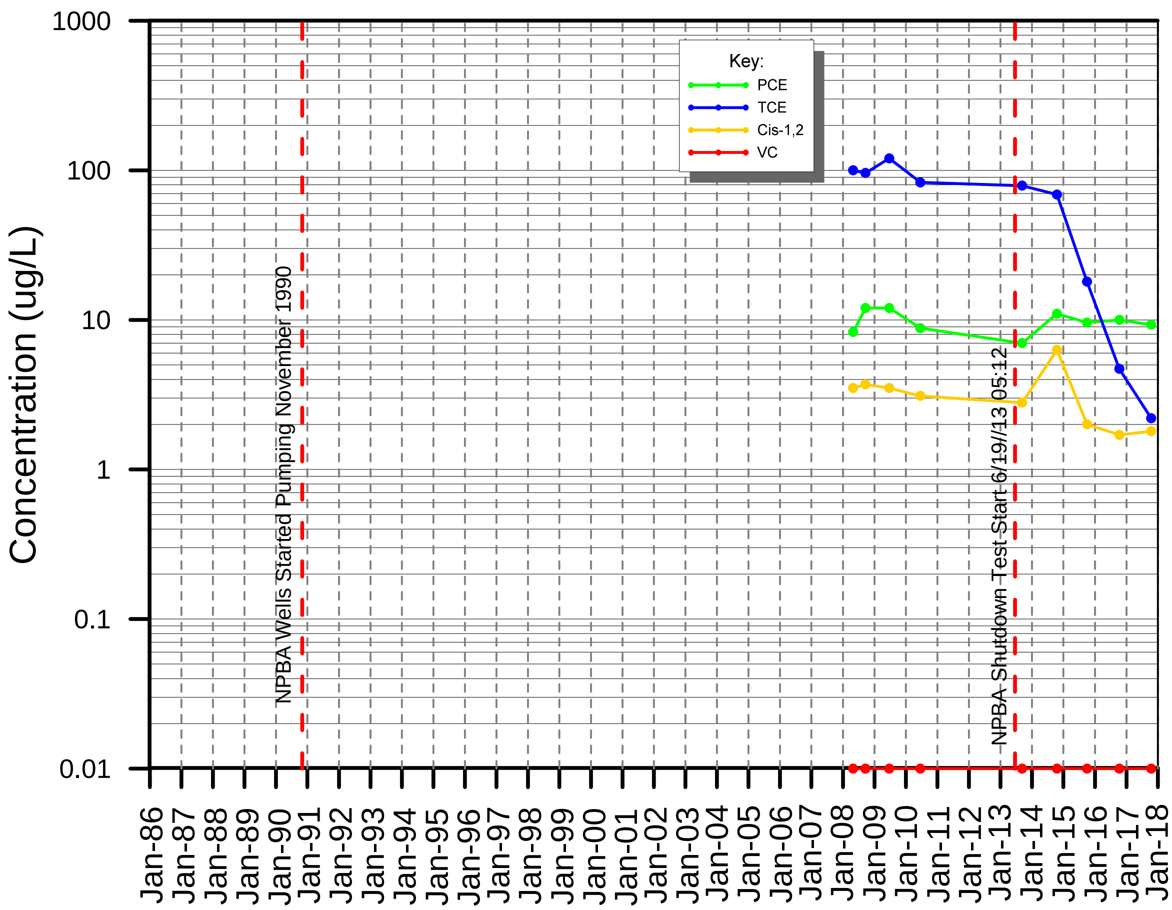

1000
100
10
1
0.1
0.01
Concentration (ug/L)
NPBA Wells Started Pumping November 1990
NPBA Shutdown Test Start 6/19//13 05:12
Key:
PCE
TCE
Cis-1,2
VC
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
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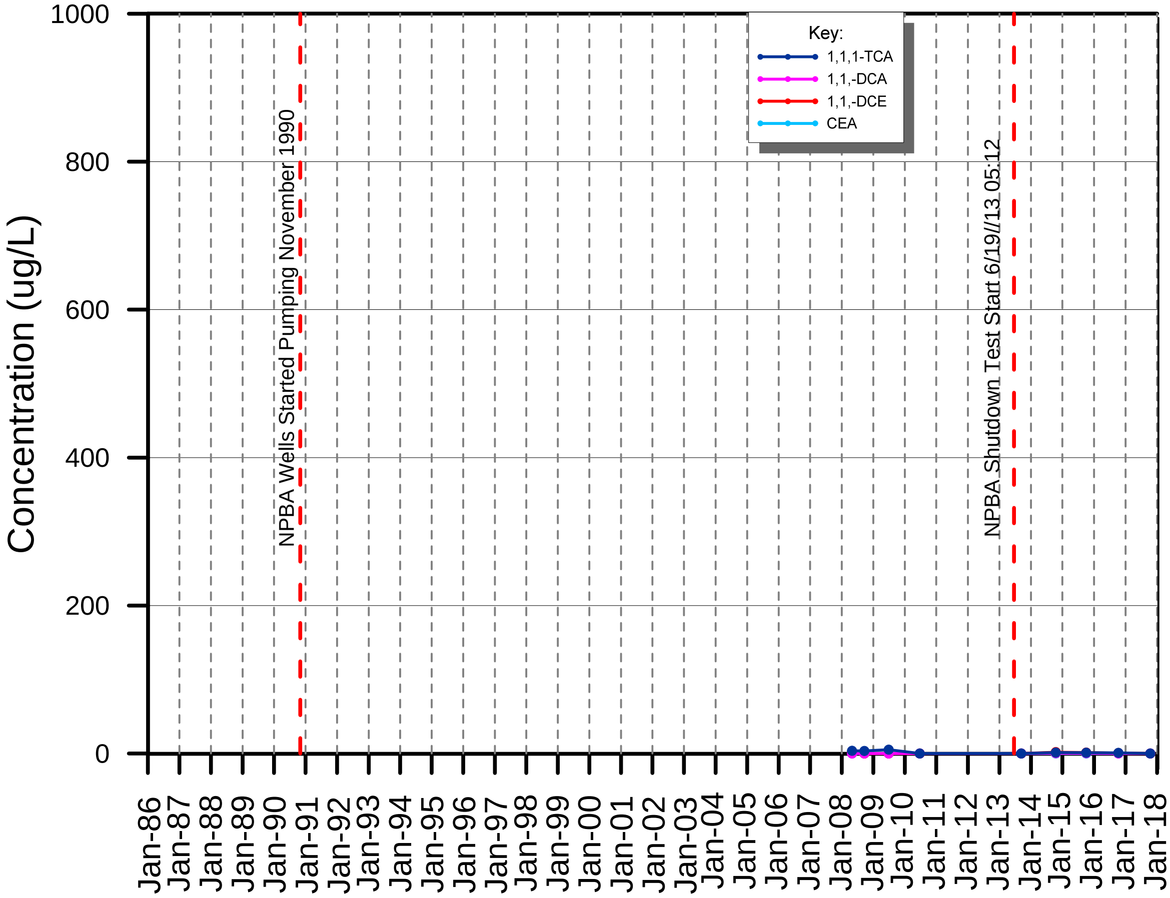
Jan-16
Jan-17
Jan-18

MW-103S



Key:
1,1,1-TCA
1,1,-DCA
1,1,-DCE
CEA
Concentration (ug/L)
1000
800
600
400
200
0
NPBA Wells Started Pumping November 1990
NPBA Shutdown Test Start 6/19/13 05:12
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
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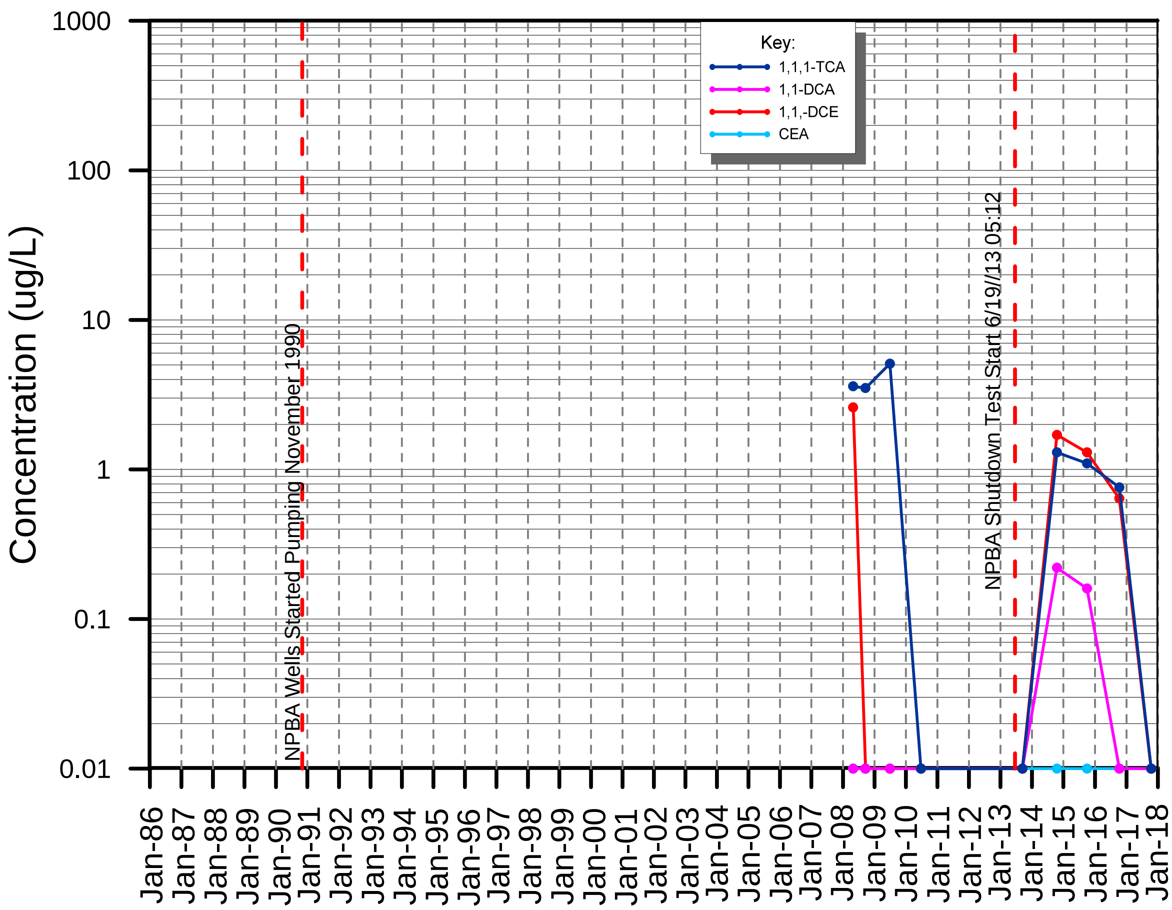
Jan-16
Jan-17
Jan-18



Key:
1,1,1-TCA
1,1-DCA
1,1,-DCE
CEA
Concentration (ug/L)
1000
100
10
1
0.1
0.01
NPBA Wells Started Pumping November 1990
NPBA Shutdown Test Start 6/19/13 05:12
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
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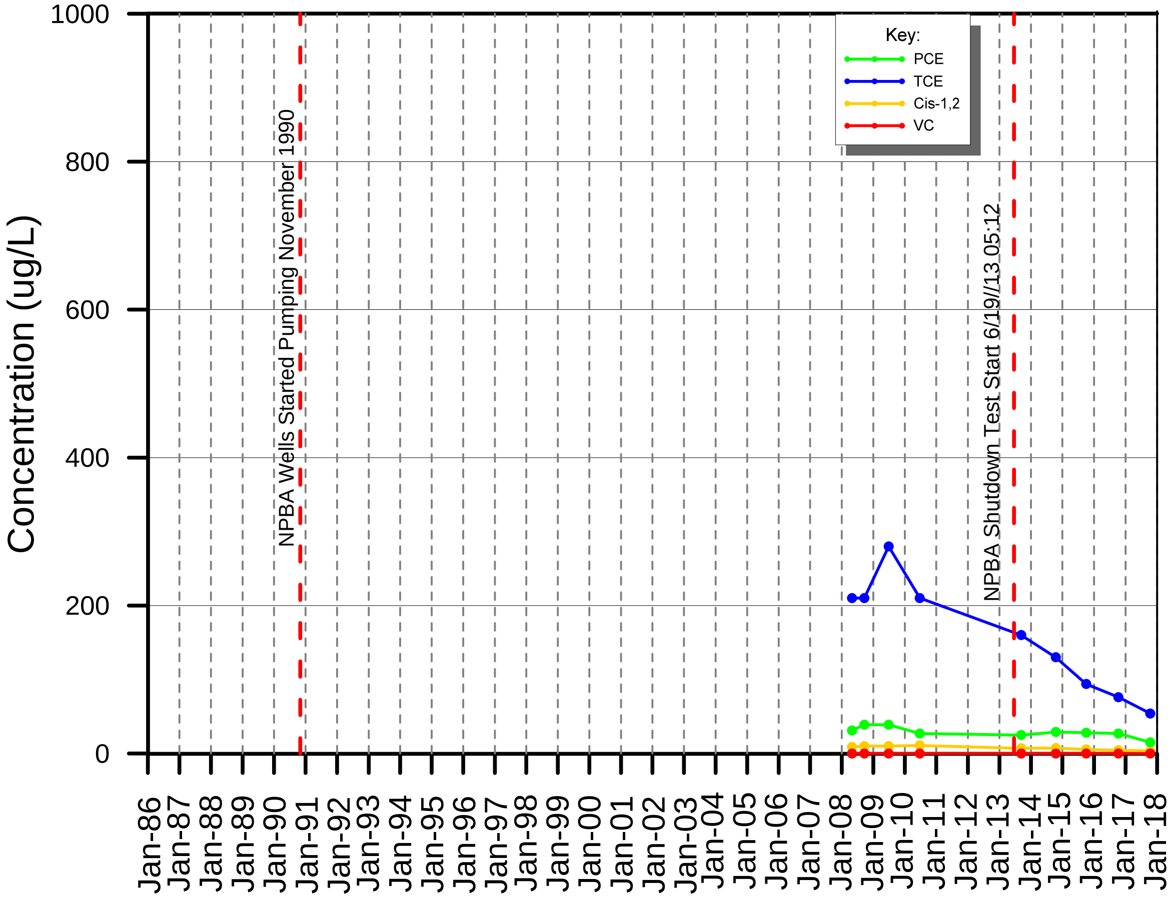
Jan-16
Jan-17
Jan-18

MW-103S


Concentration (ug/L)
1000
800
600
400
200
0
Key:
PCE
TCE
Cis-1,2
VC
NPBA Wells Started Pumping November 1990
NPBA Shutdown Test Start 6/19//13 05:12
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
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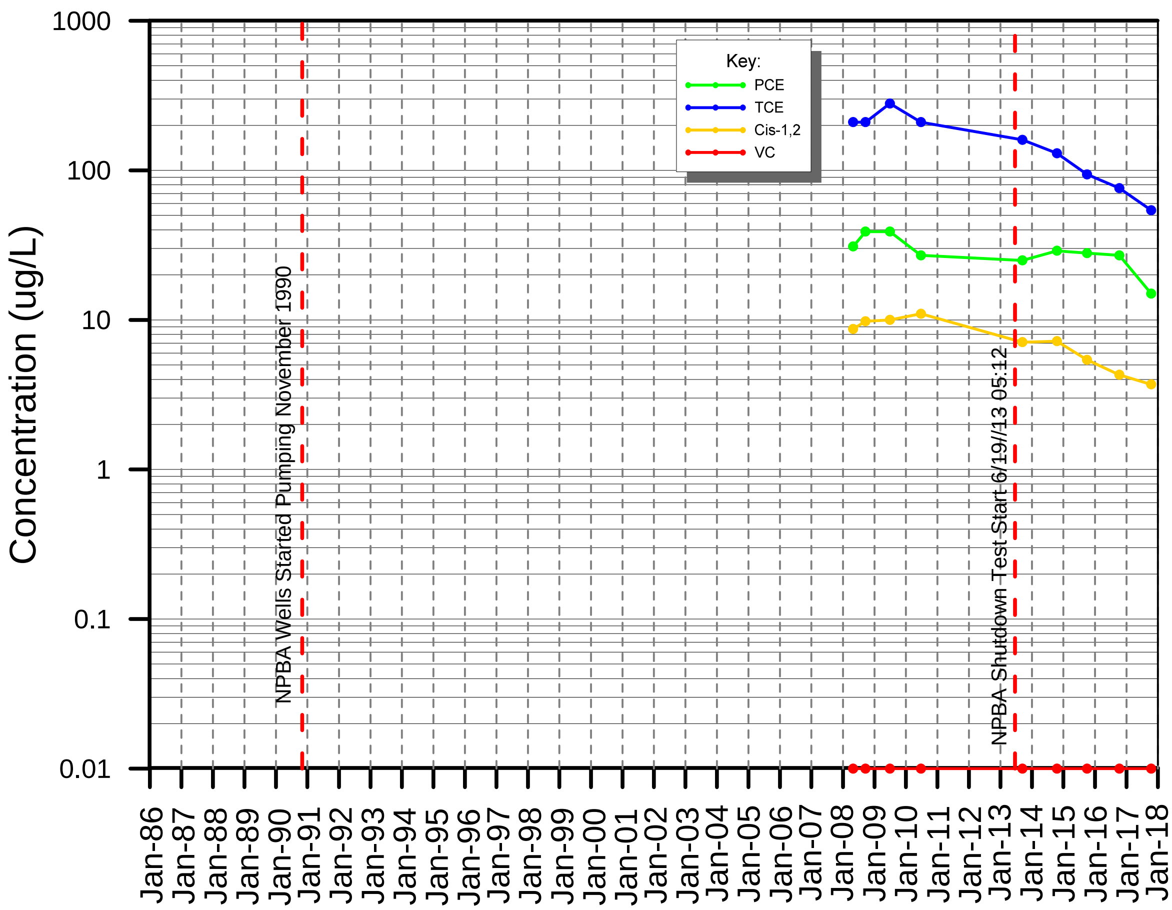
Jan-17
Jan-18


Concentration (ug/L)
1000
100
10
1
0.1
0.01
Key:
PCE
TCE
Cis-1,2
VC
NPBA Wells Started Pumping November 1990
NPBA Shutdown Test Start 6/19//13 05:12
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
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Jan-00
Jan-01
Jan-02
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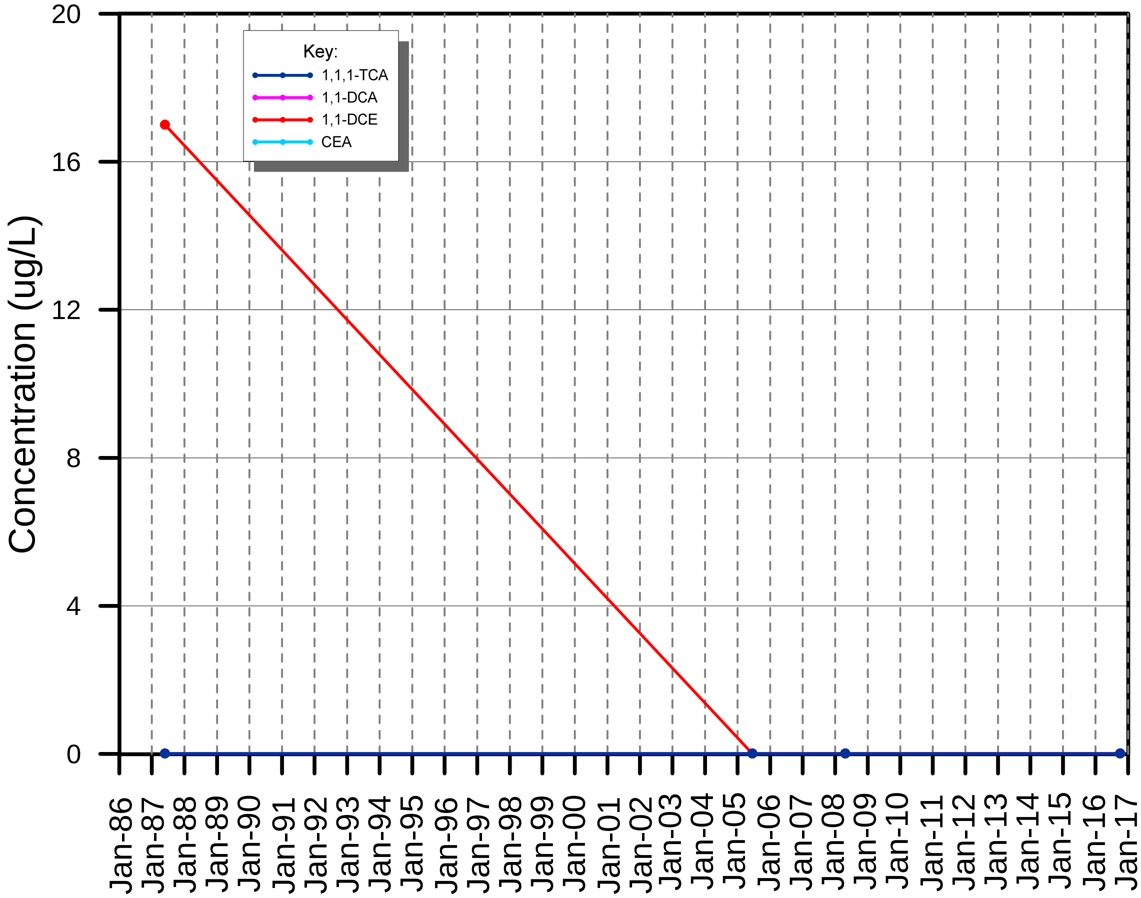
Jan-16
Jan-17
Jan-18

Appendix G-2

Eastern Landfill Graphs

MW-14



Concentration (ug/L)
20
16
12
8
4
0
Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
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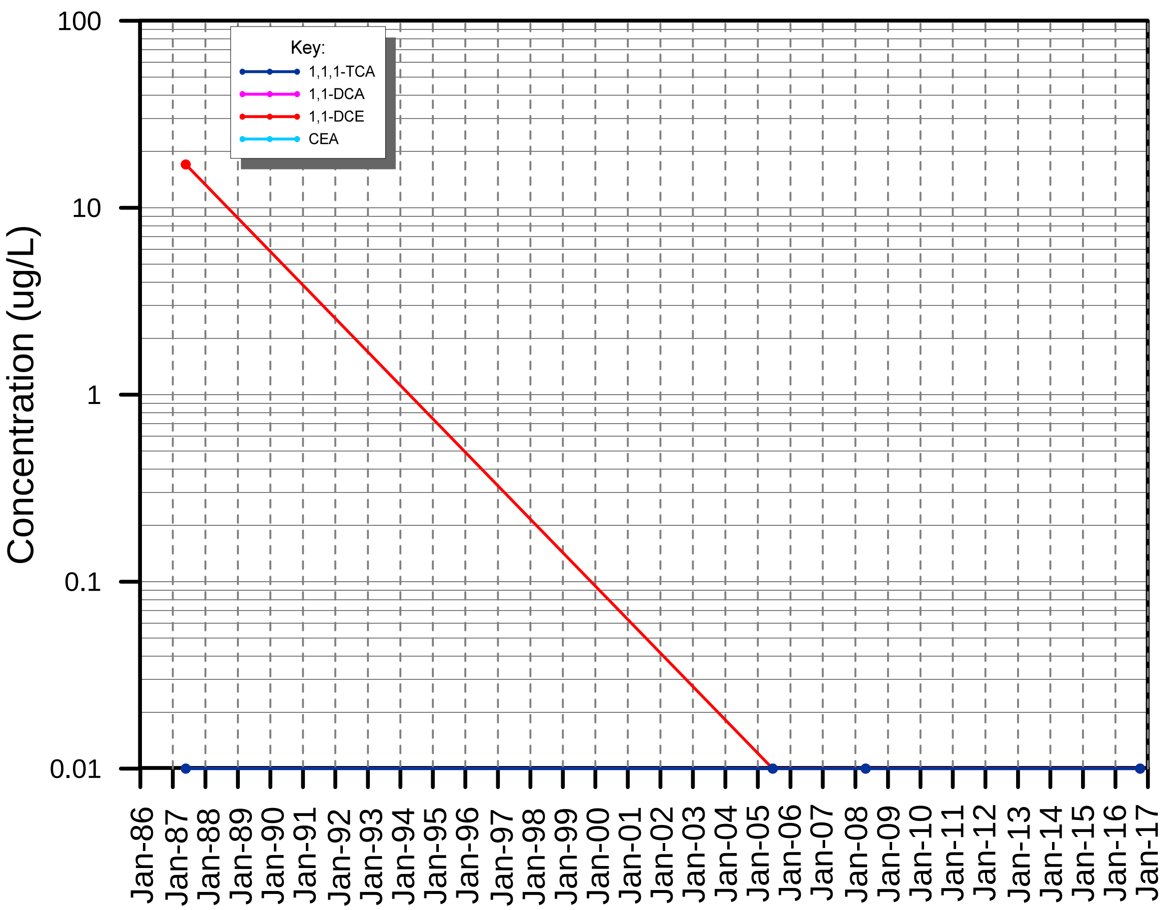
Jan-15
Jan-16
Jan-17



Concentration (ug/L)
100
10
1
0.1
0.01
Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
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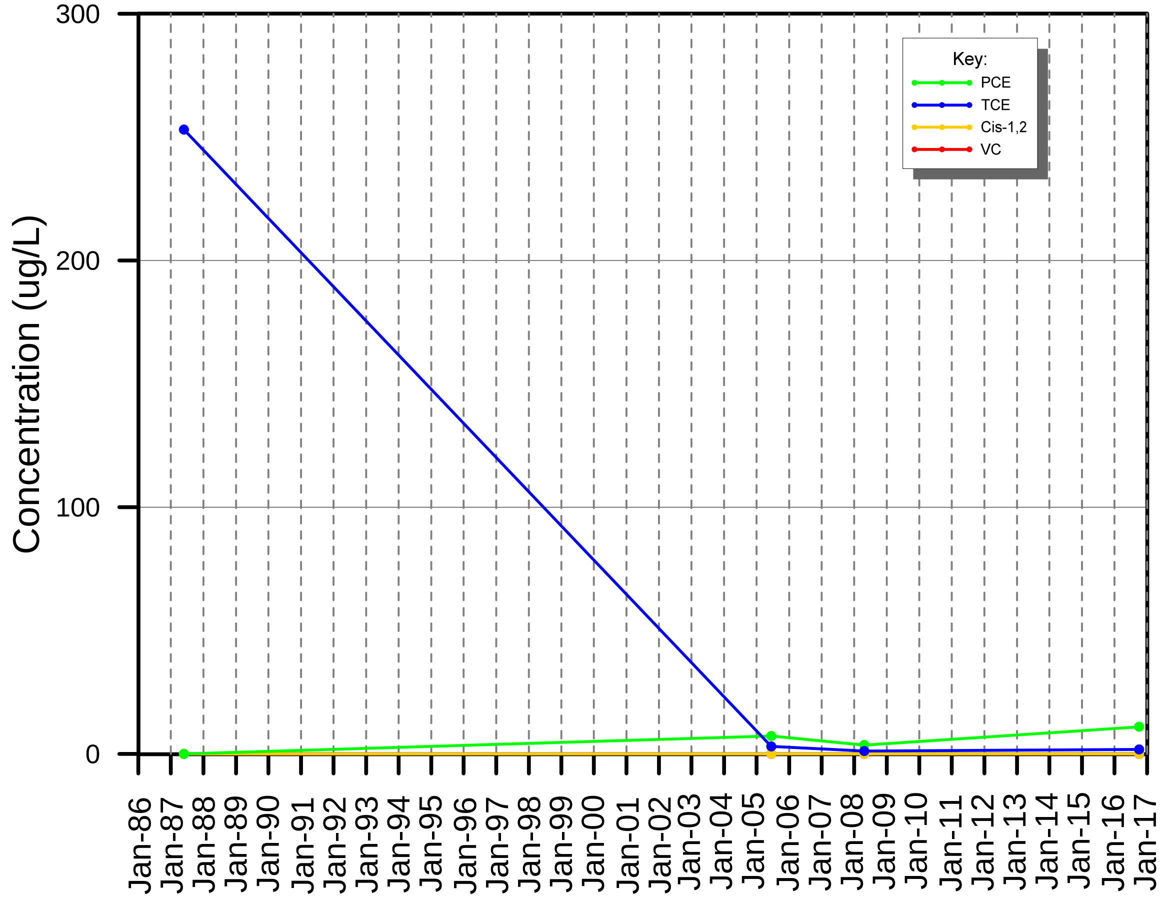
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17

MW-14



300
200
100
0
Concentration (ug/L)
Key:
PCE
TCE
Cis-1,2
VC
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
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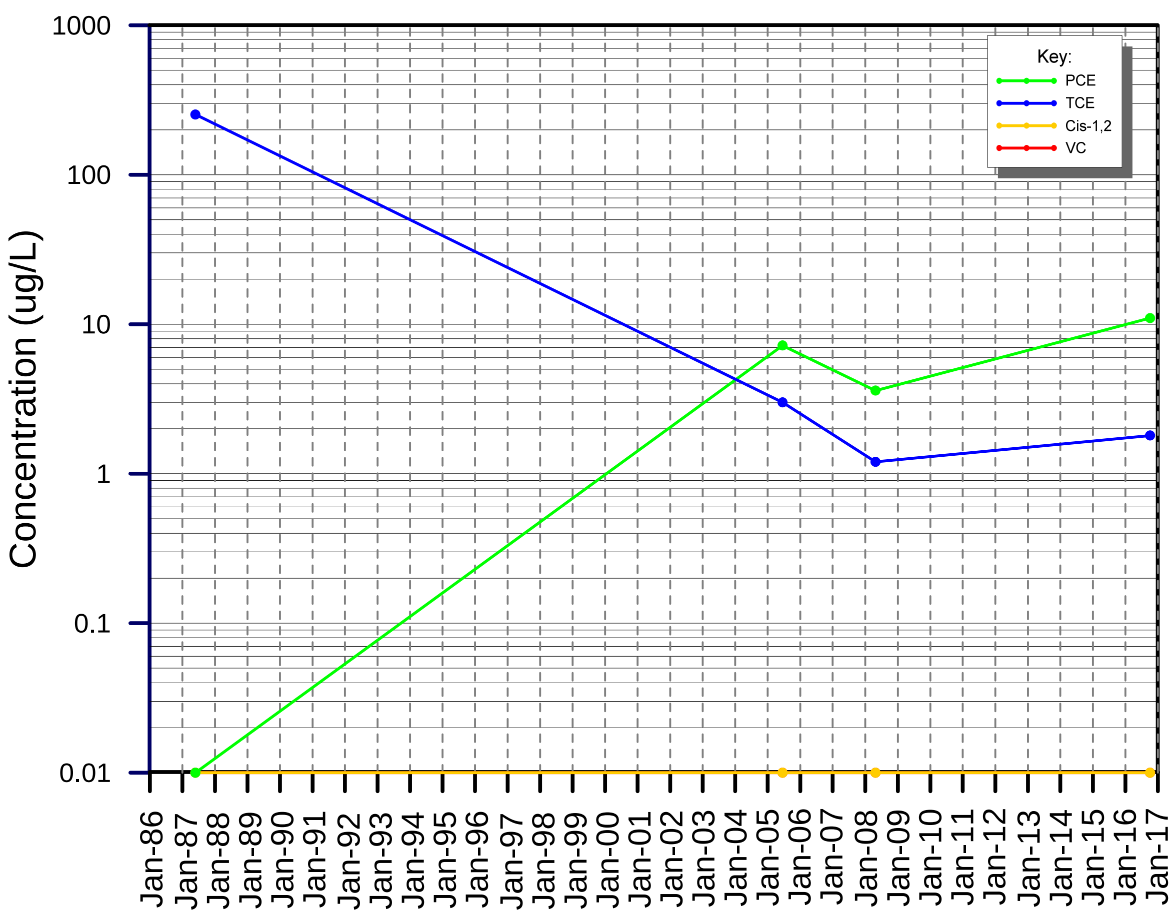
Jan-15
Jan-16
Jan-17



1000
100
10
1
0.1
0.01
Concentration (ug/L)
Key:
PCE
TCE
Cis-1,2
VC
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
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Jan-14
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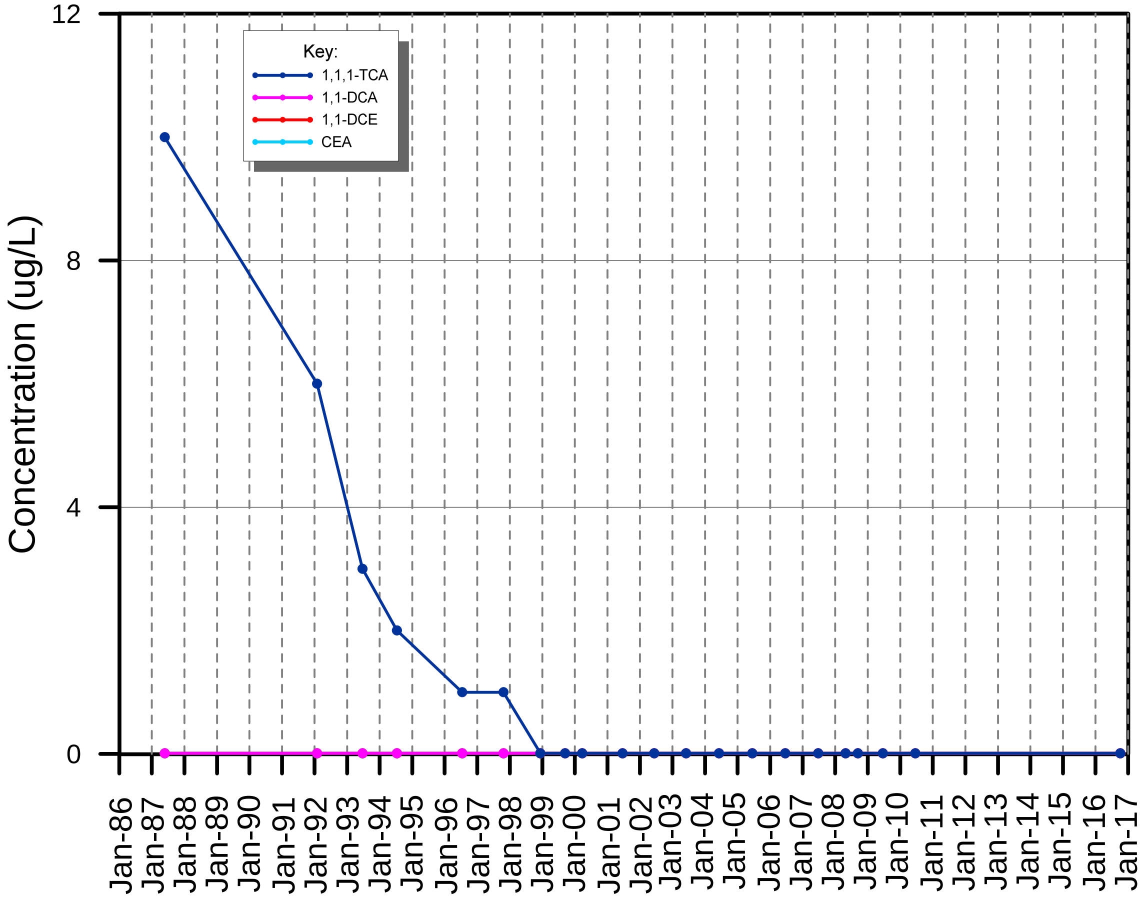
Jan-16
Jan-17

MW-17



Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
Concentration (ug/L)
12
8
4
0
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
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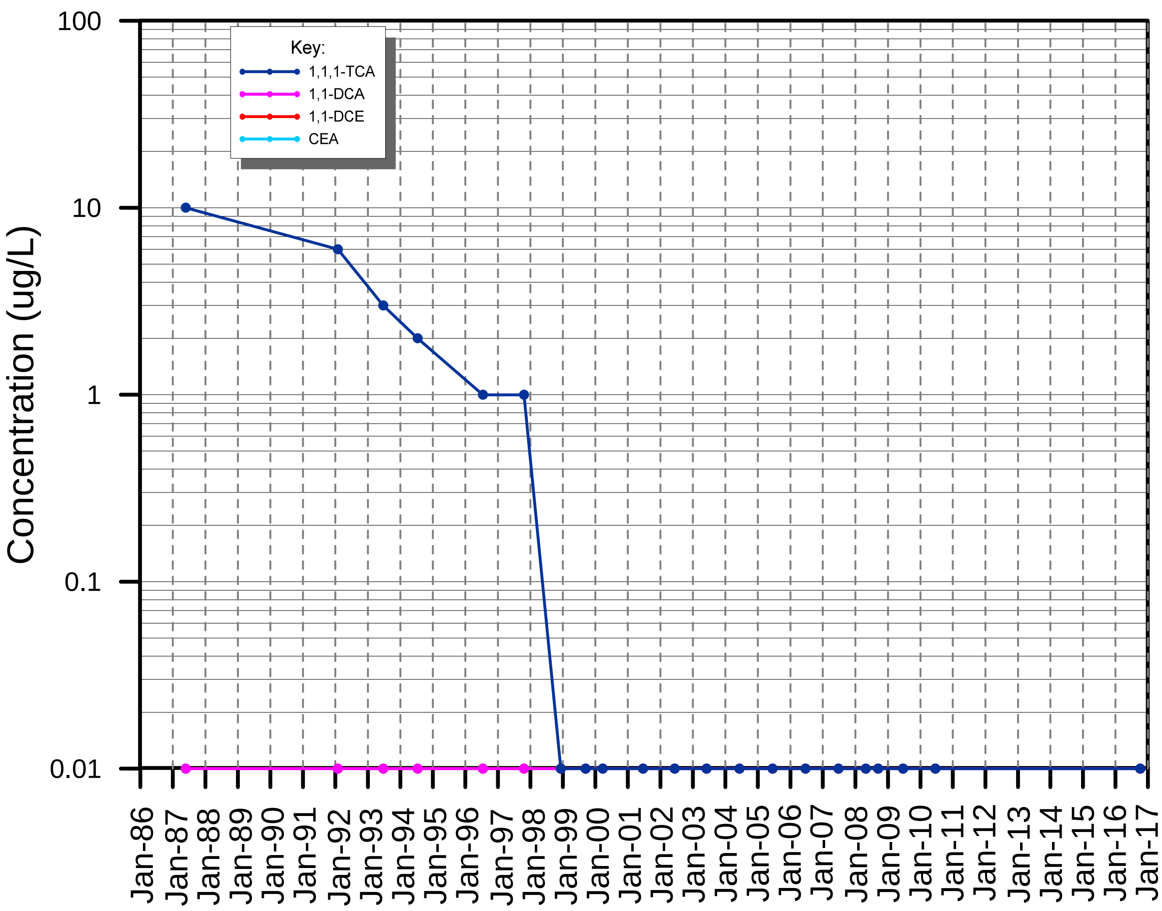
Jan-16
Jan-17



Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
Concentration (ug/L)
100
10
1
0.1
0.01
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
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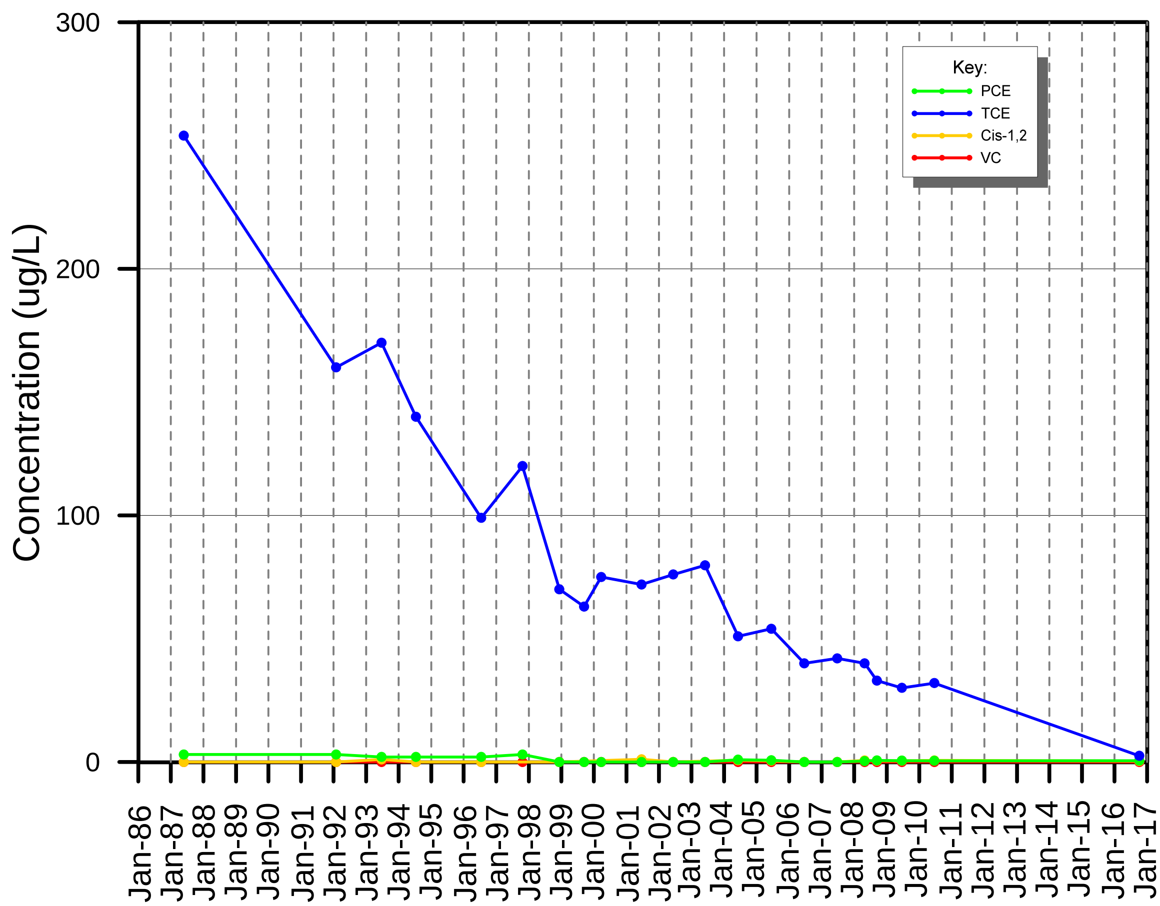
Jan-16
Jan-17

MW-17



300
200
100
0
Concentration (ug/L)
Key:
PCE
TCE
Cis-1,2
VC
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
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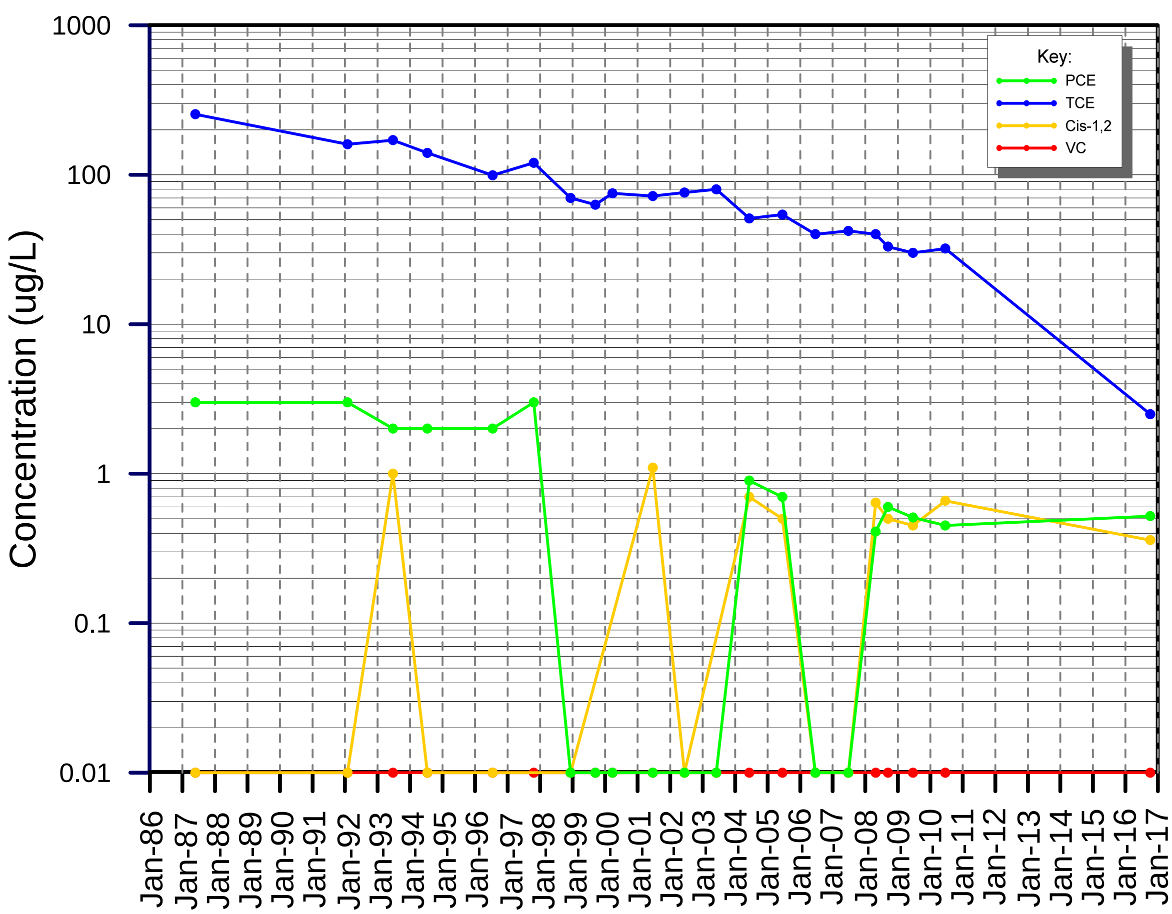
Jan-17



1000
100
10
1
0.1
0.01
Concentration (ug/L)
Key:
PCE
TCE
Cis-1,2
VC
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
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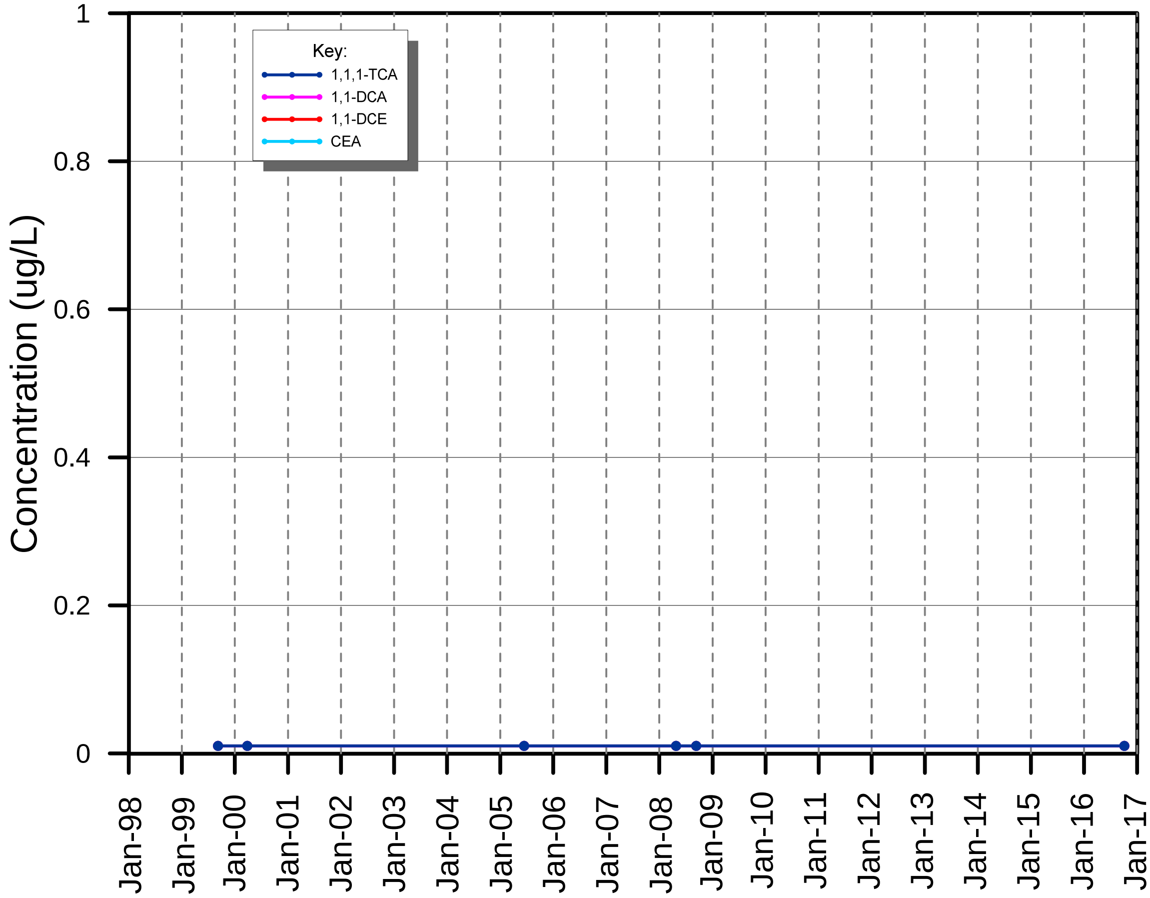
Jan-16
Jan-17

MW-65D


Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
Concentration (ug/L)
1
0.8
0.6
0.4
0.2
0
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
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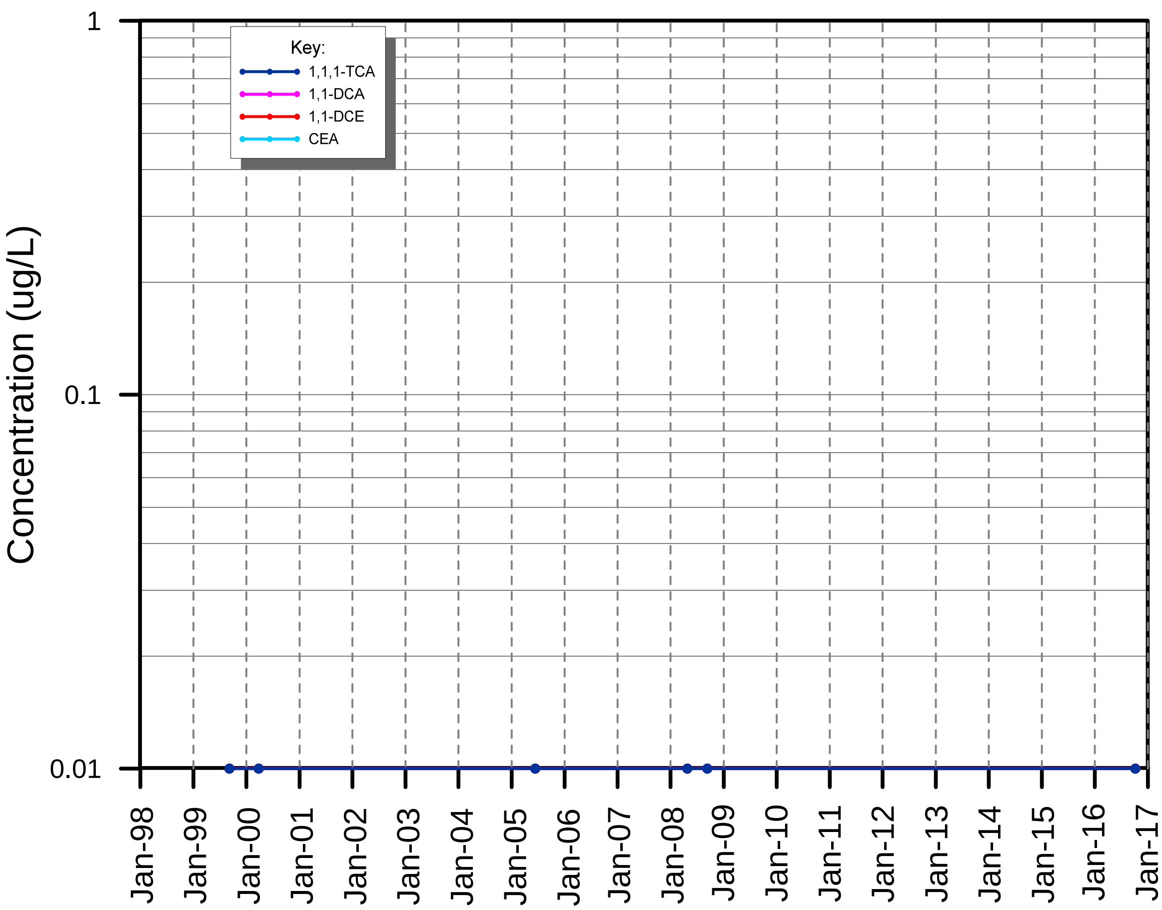
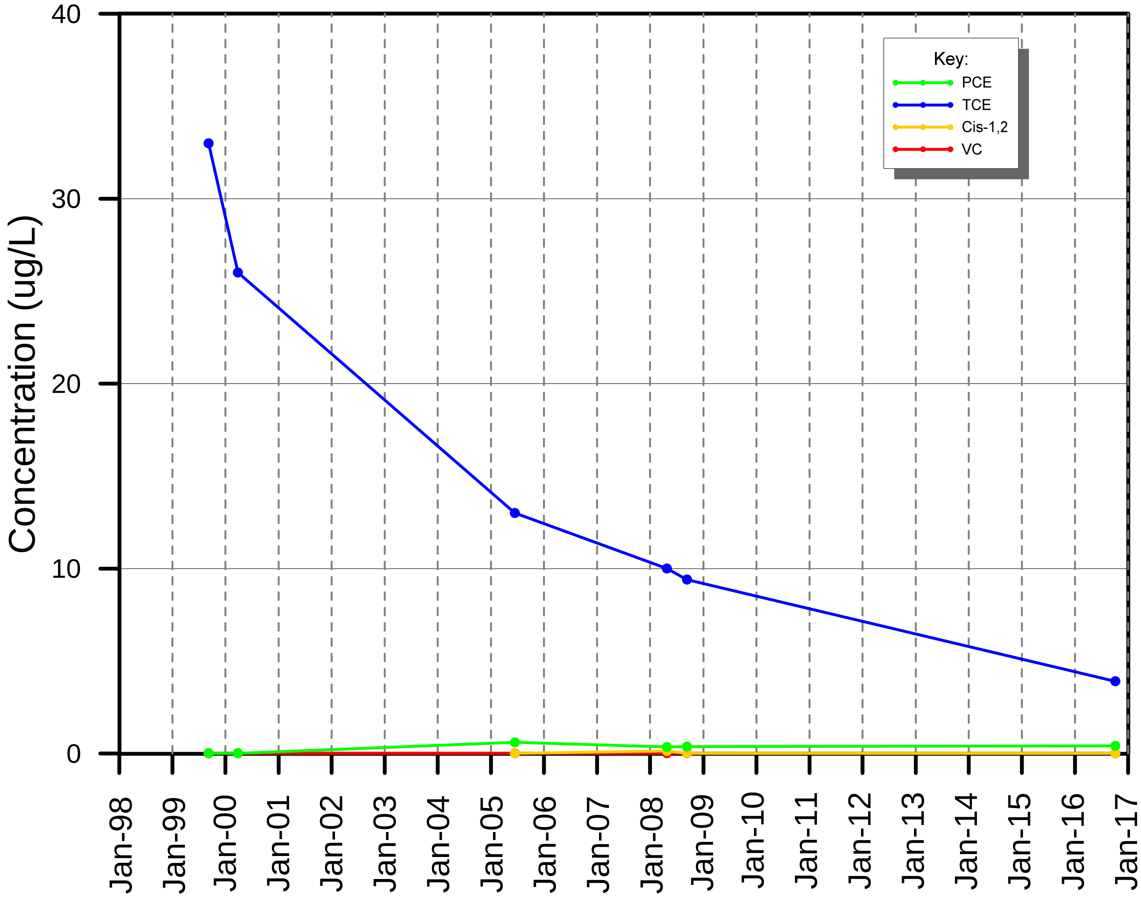
Jan-15
Jan-16
Jan-17


Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
Concentration (ug/L)
1
0.1
0.01
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17

MW-65D


Key:
PCE
TCE
Cis-1,2
VC
Concentration (ug/L)
40
30
20
10
0
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
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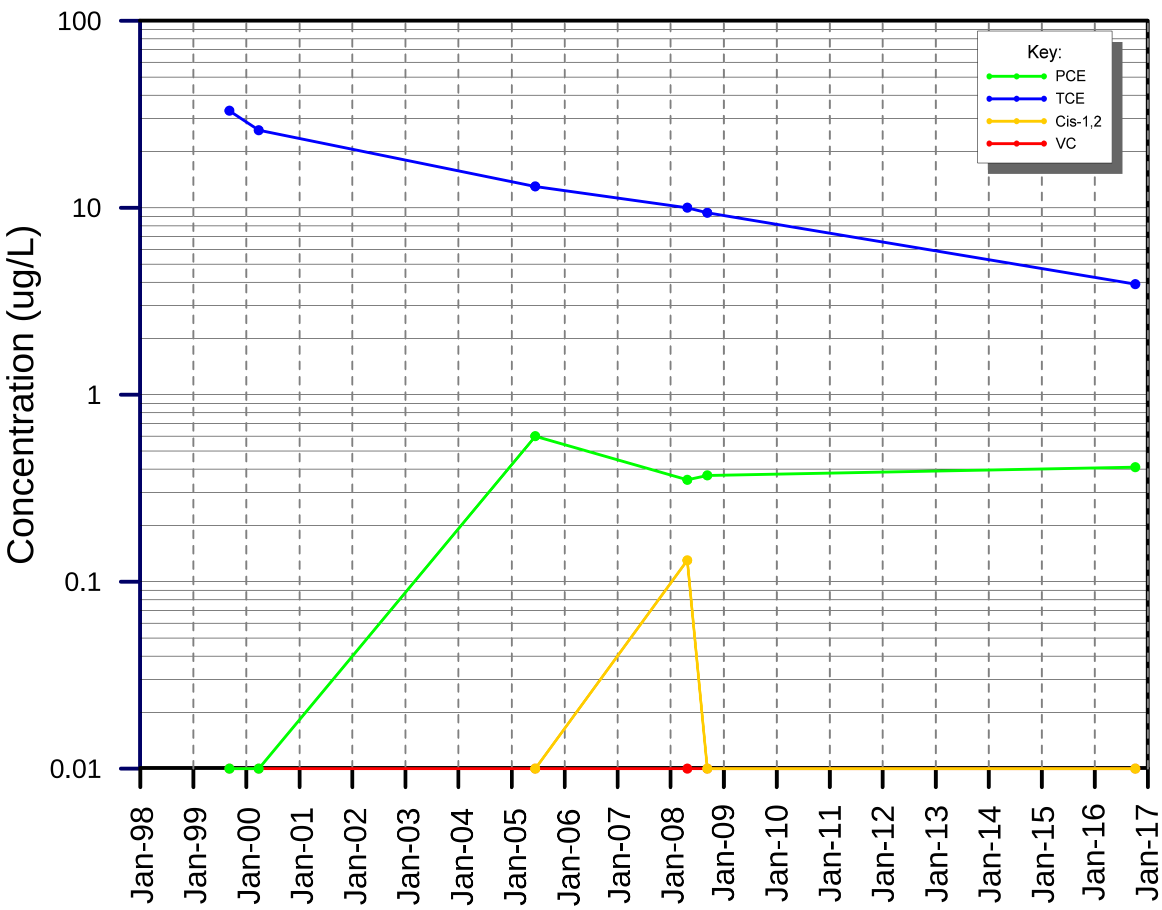
Jan-15
Jan-16
Jan-17


Key:
PCE
TCE
Cis-1,2
VC
Concentration (ug/L)
100
10
1
0.1
0.01
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
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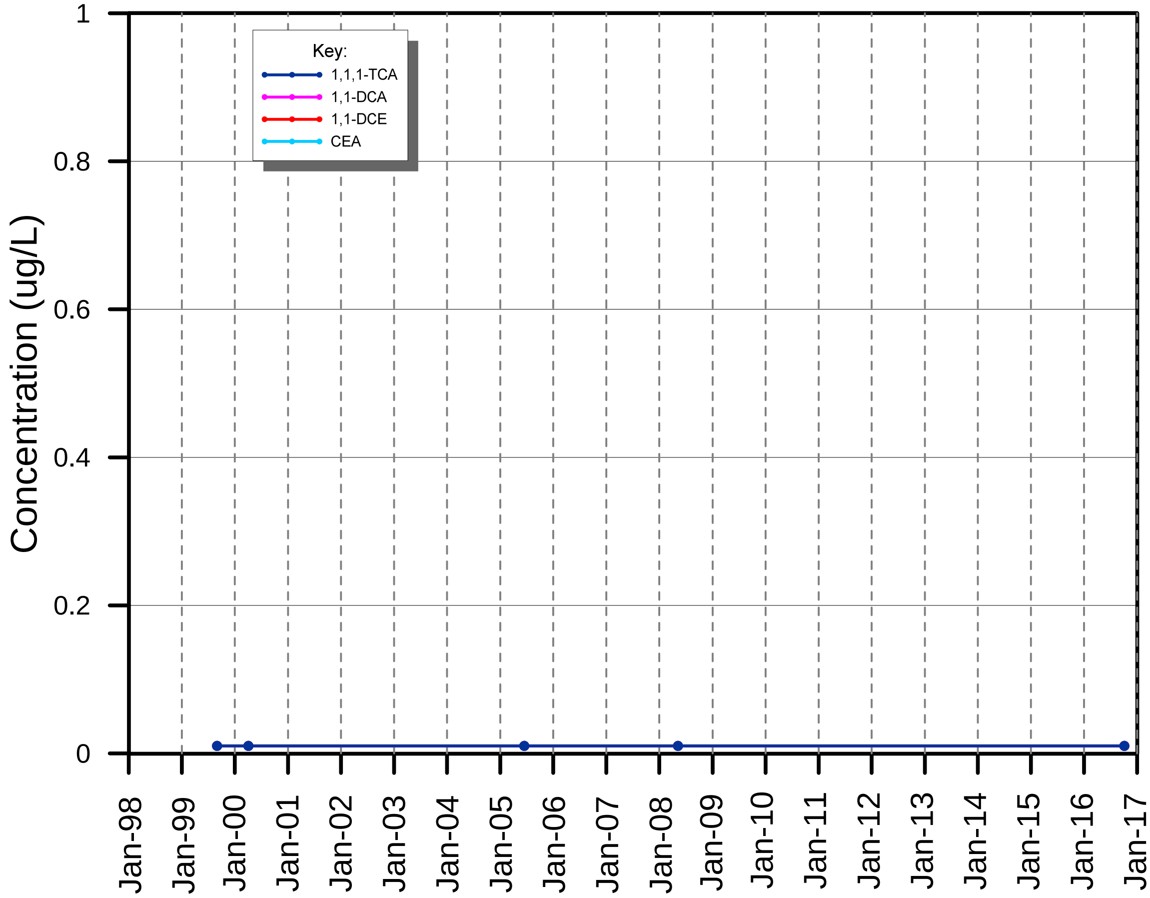
Jan-17

MW-65S



Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
Concentration (ug/L)
1
0.8
0.6
0.4
0.2
0
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
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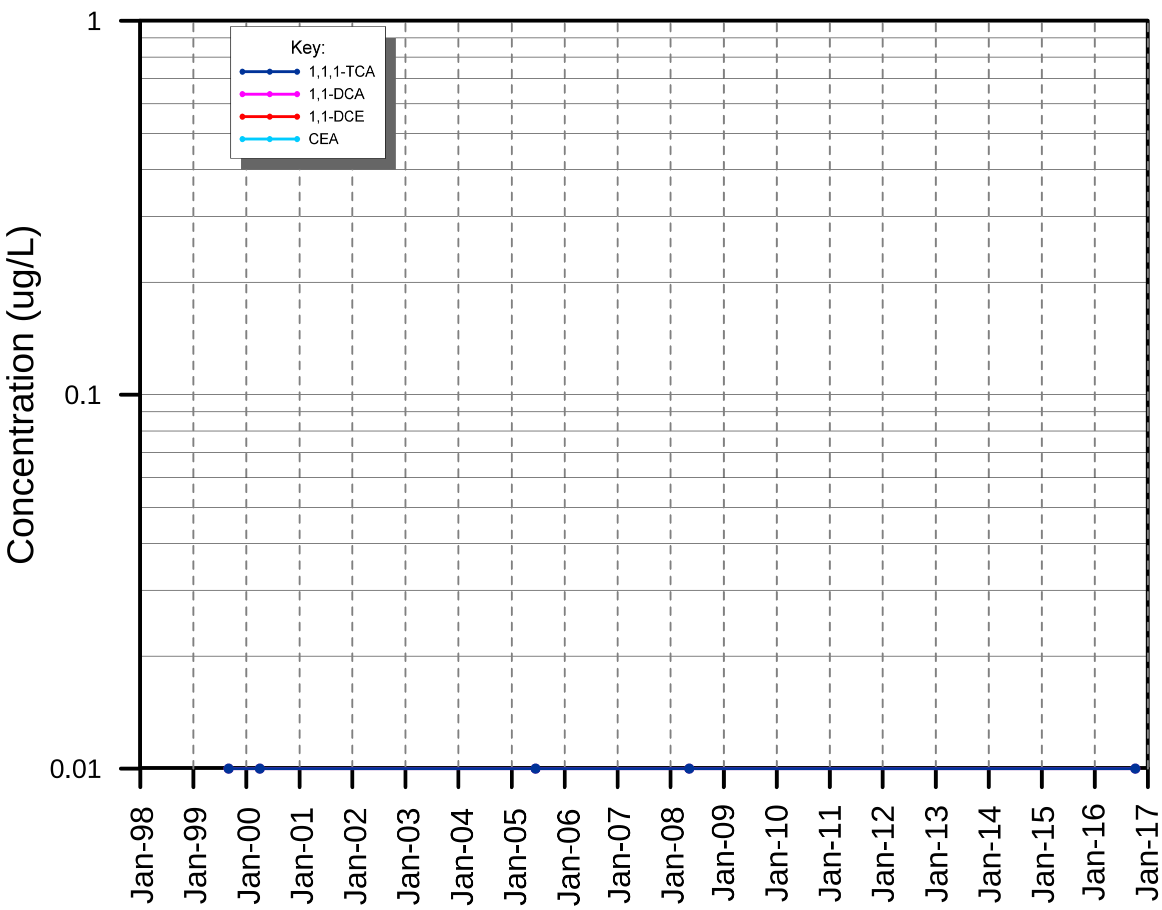
Jan-15
Jan-16
Jan-17



Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
Concentration (ug/L)
1
0.1
0.01
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
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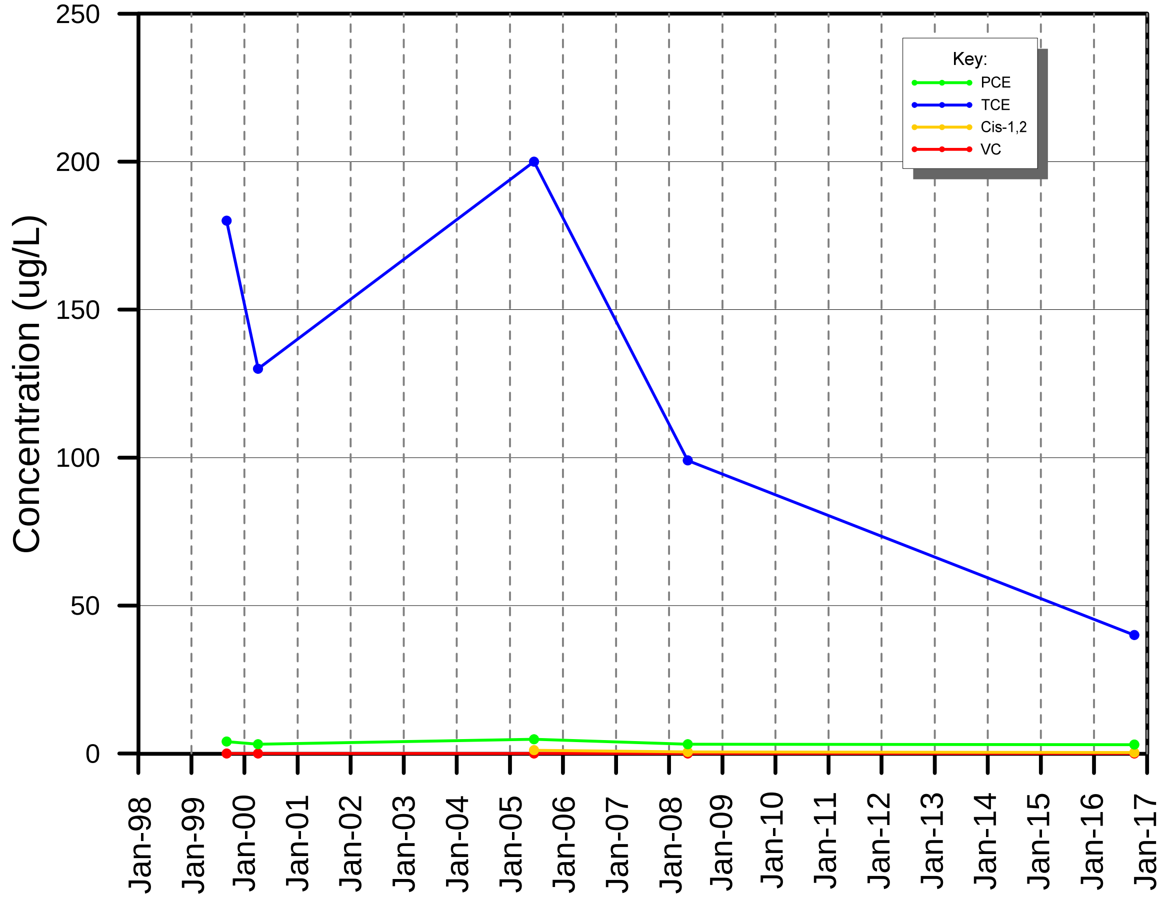
Jan-15
Jan-16
Jan-17

MW-65S


Key:
PCE
TCE
Cis-1,2
VC
Concentration (ug/L)
250
200
150
100
50
0
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
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Jan-09
Jan-10
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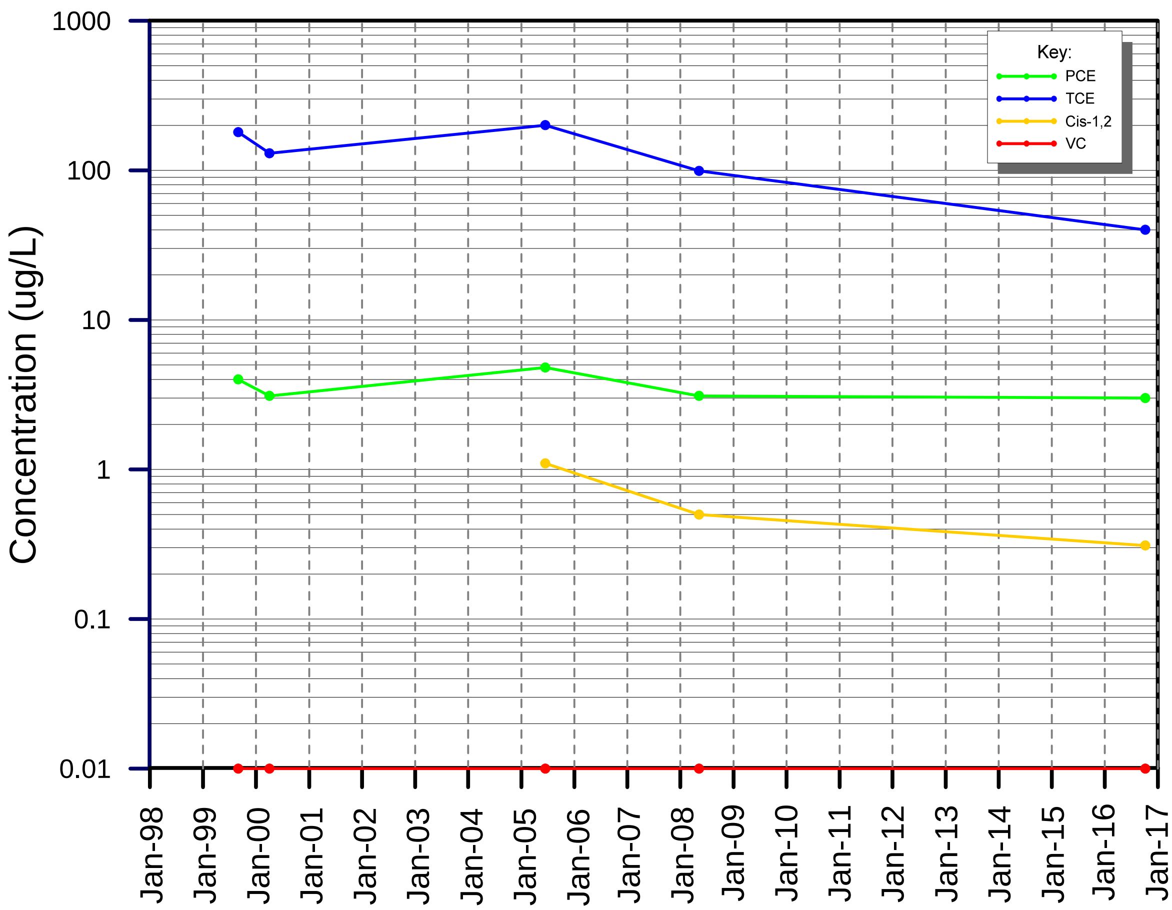
Jan-16
Jan-17


Key:
PCE
TCE
Cis-1,2
VC
Concentration (ug/L)
1000
100
10
1
0.1
0.01
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
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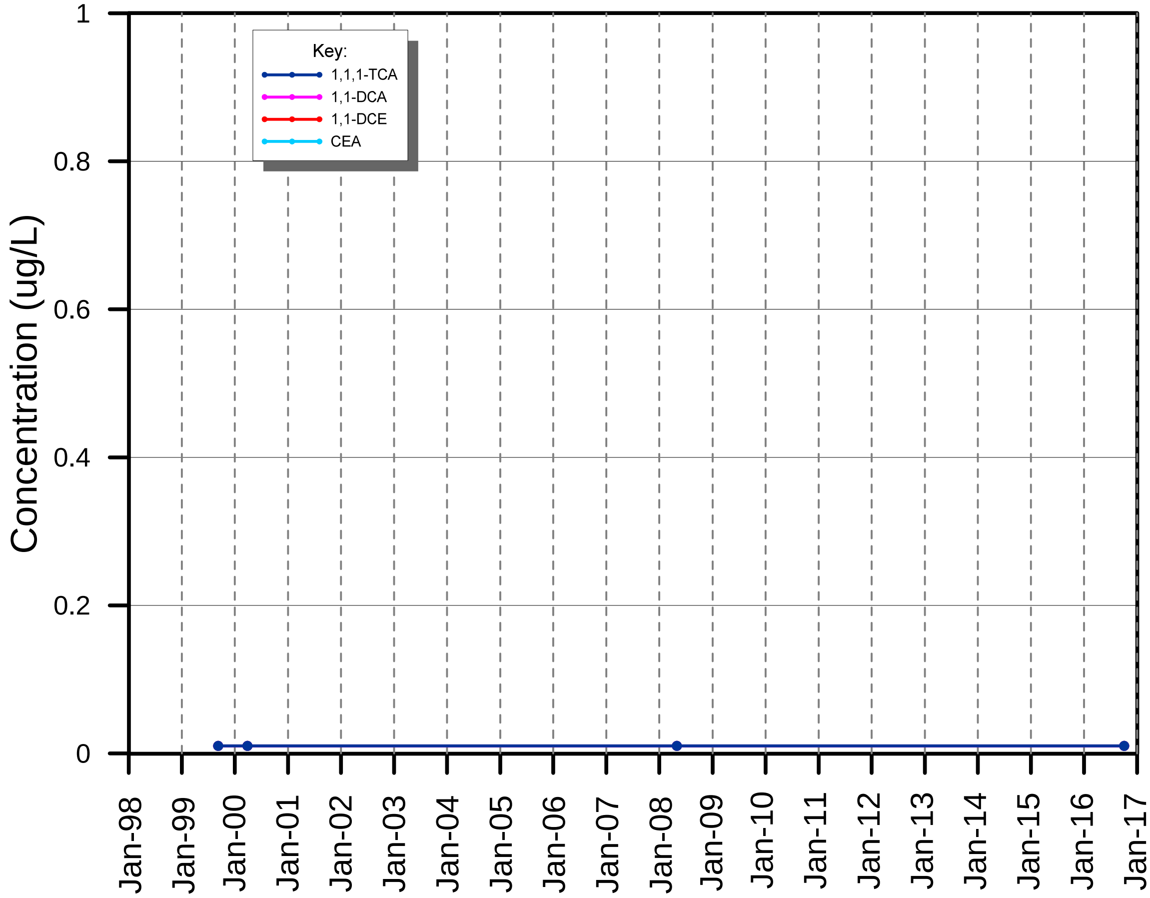
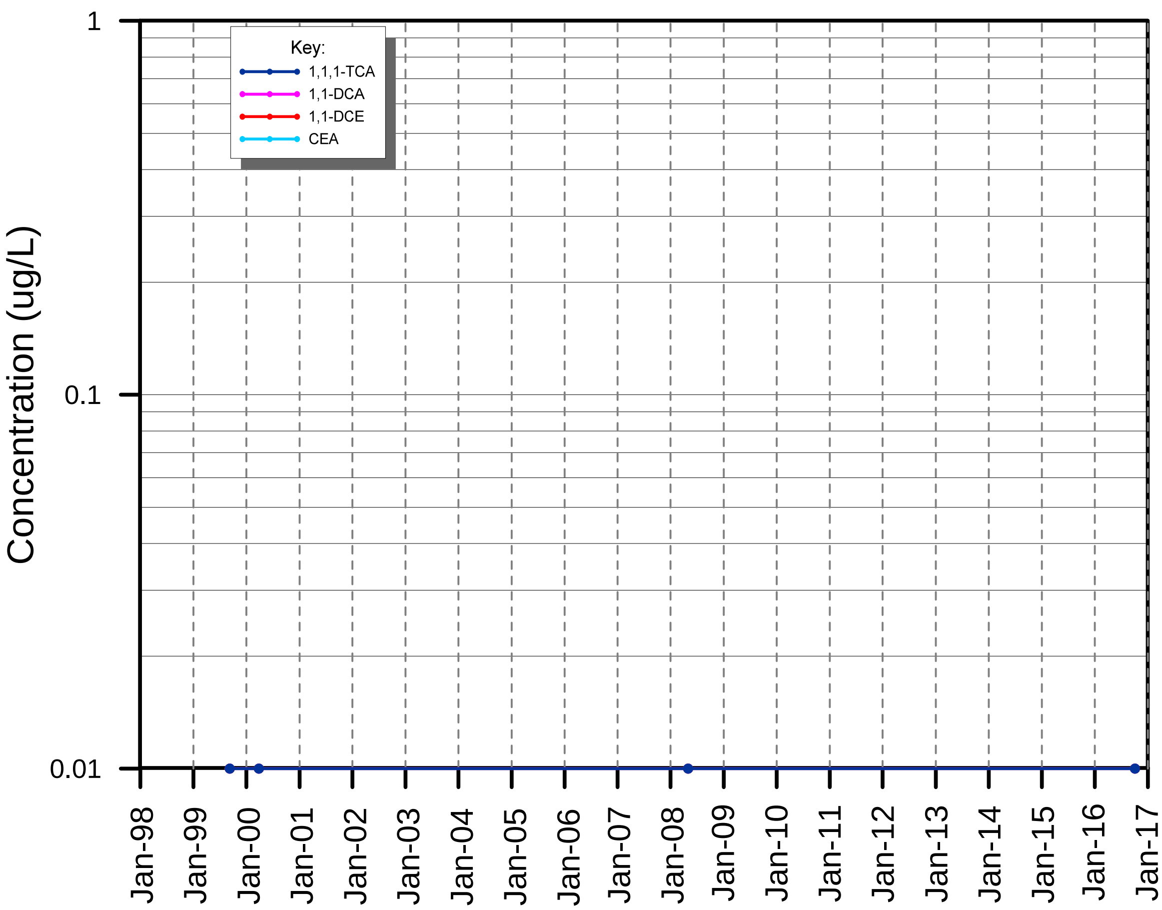
Jan-16
Jan-17

MW-66D



Concentration (ug/L)
1
0.8
0.6
0.4
0.2
0
Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17



Concentration (ug/L)
1
0.1
0.01
Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
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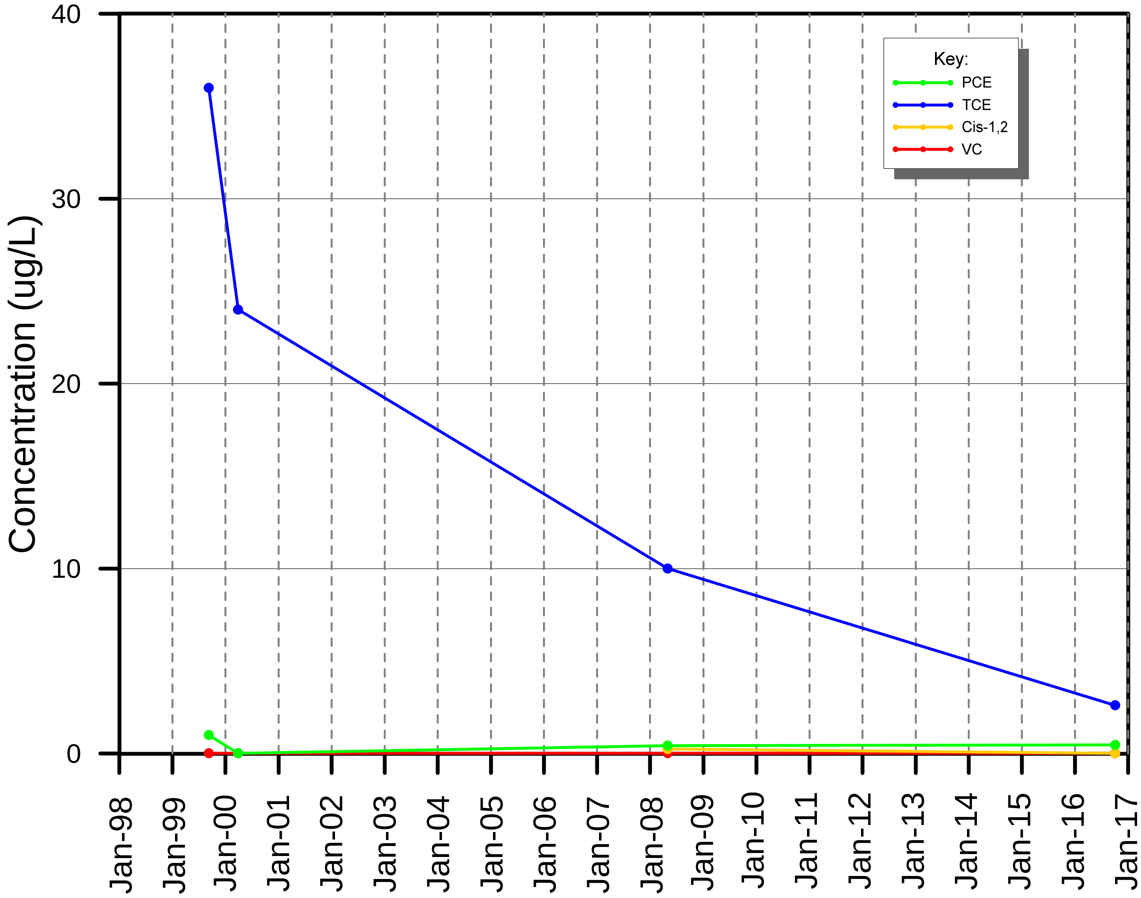
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17

MW-66D



Key:
PCE
TCE
Cis-1,2
VC
Concentration (ug/L)
40
30
20
10
0
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
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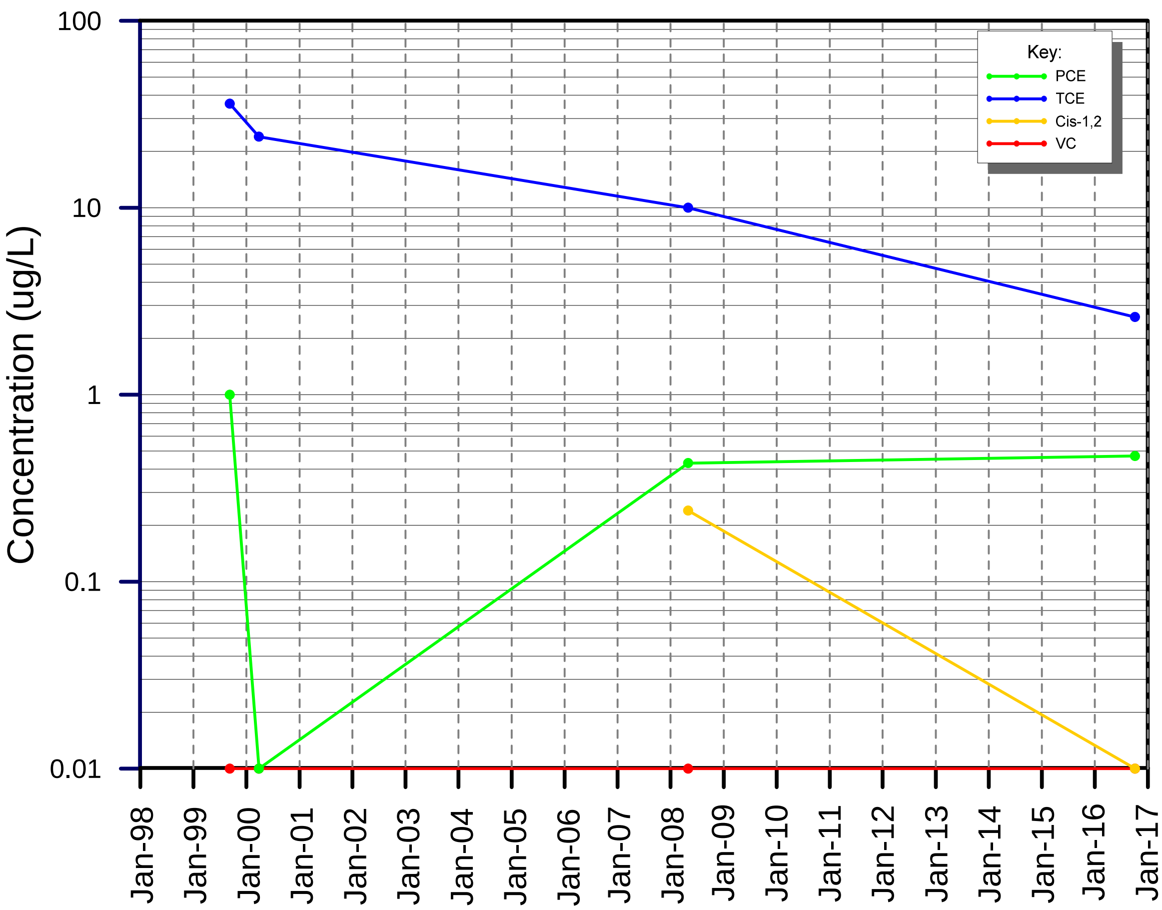
Jan-15
Jan-16
Jan-17



Key:
PCE
TCE
Cis-1,2
VC
Concentration (ug/L)
100
10
1
0.1
0.01
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
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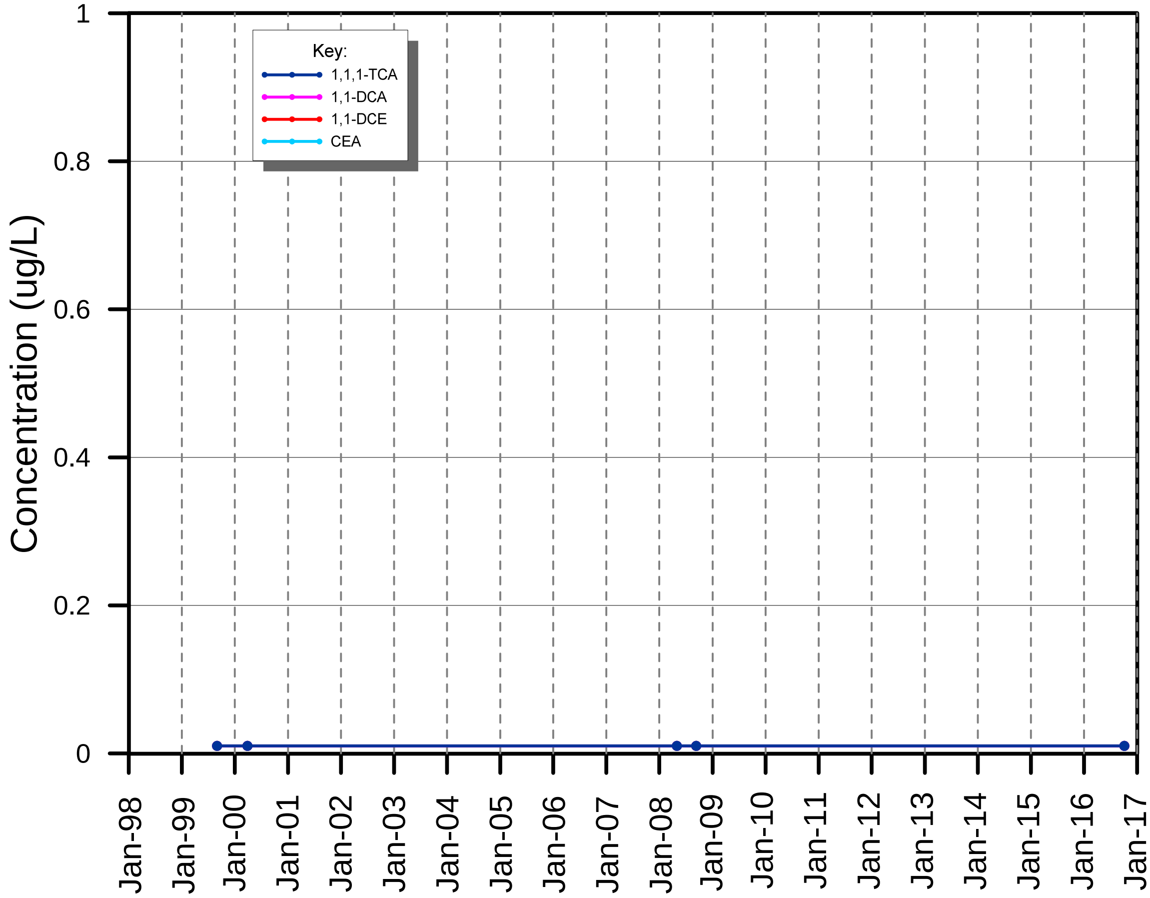
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17

MW-66S



Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
Concentration (ug/L)
1
0.8
0.6
0.4
0.2
0
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
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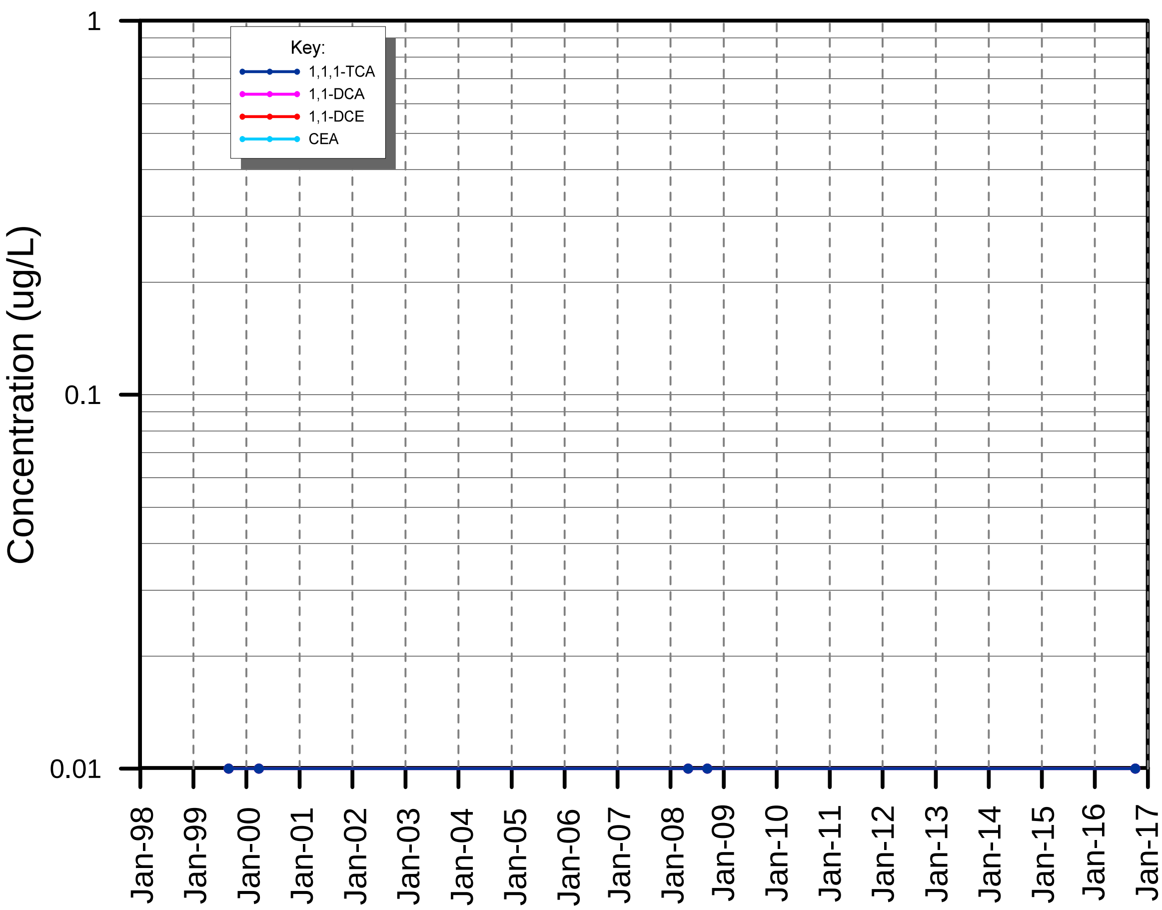
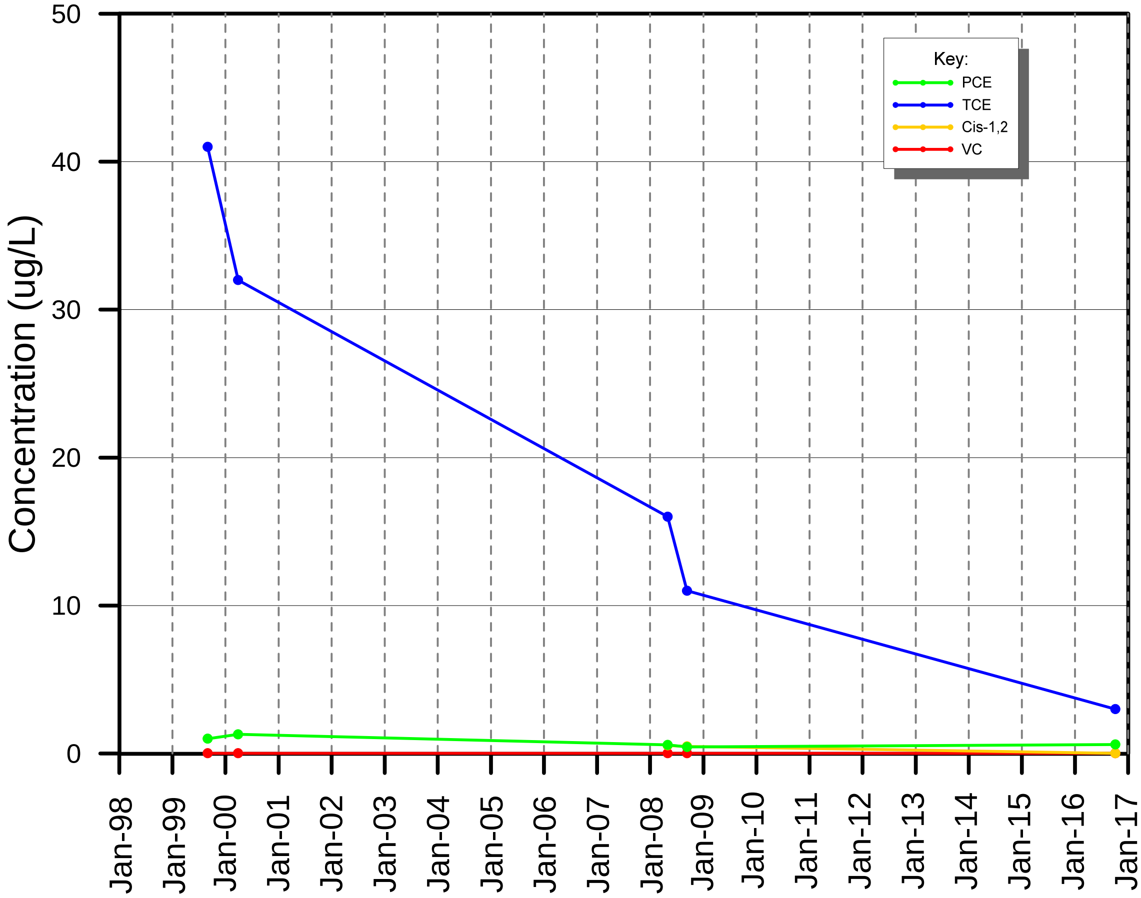
Jan-15
Jan-16
Jan-17



Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
Concentration (ug/L)
1
0.1
0.01
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17

MW-66S



Key:
PCE
TCE
Cis-1,2
VC
Concentration (ug/L)
0
10
20
30
40
50
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
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Jan-11
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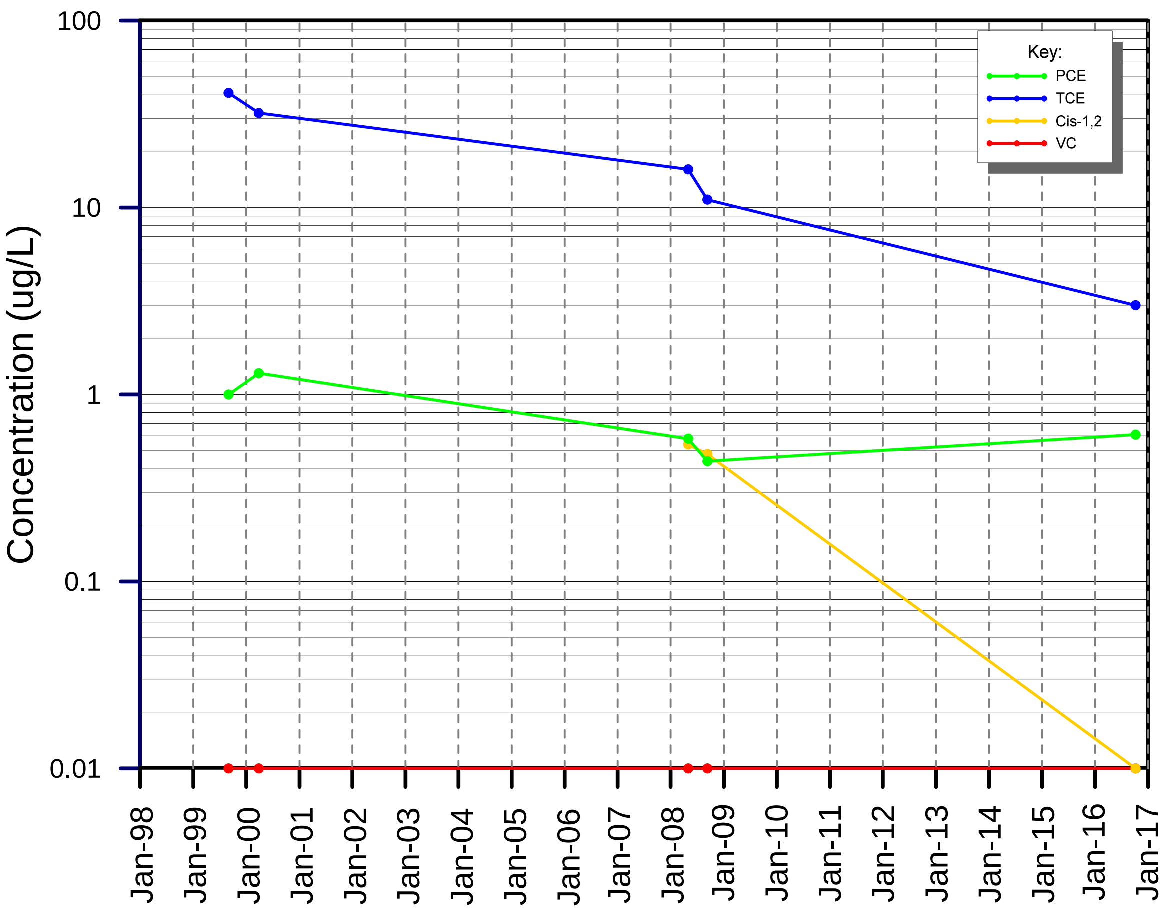
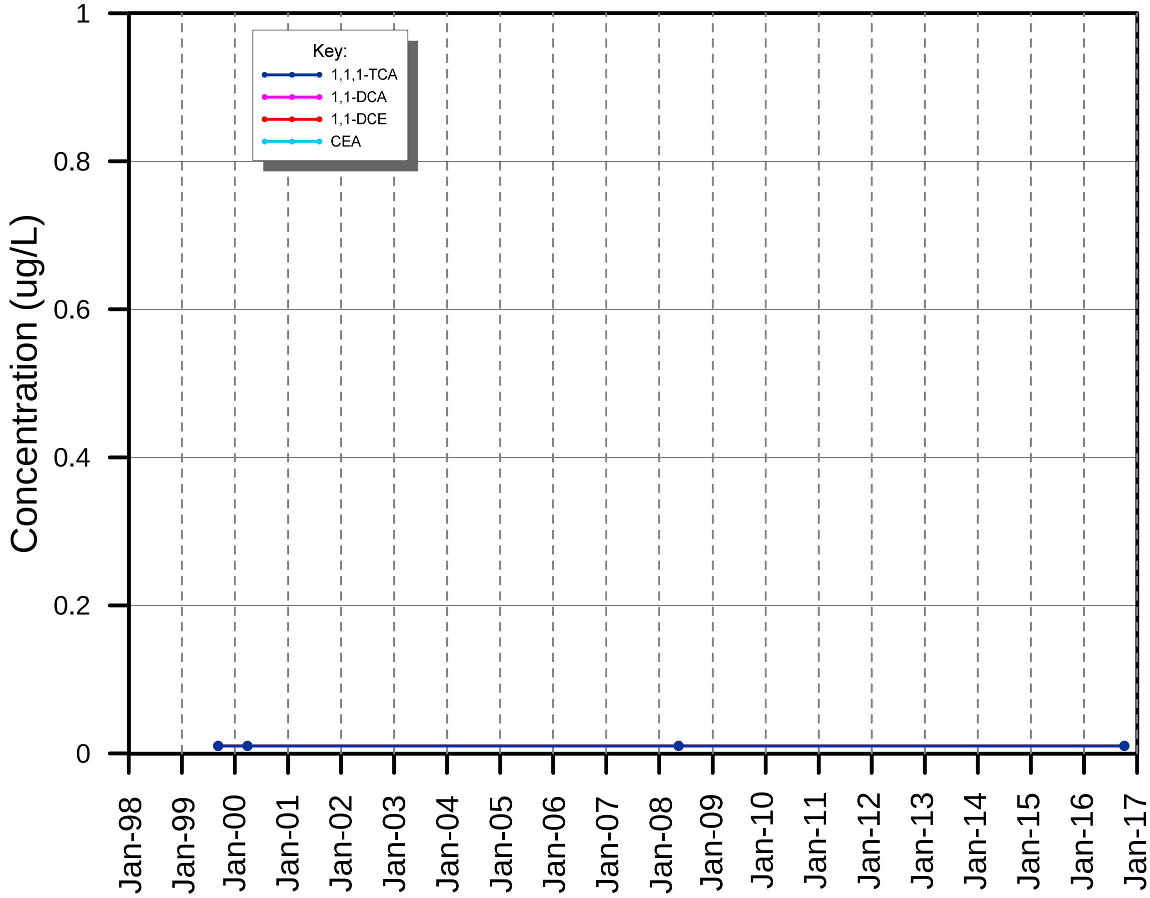
Jan-15
Jan-16
Jan-17



Key:
PCE
TCE
Cis-1,2
VC
Concentration (ug/L)
0.01
0.1
1
10
100
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17

MW-68



Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
Concentration (ug/L)
1
0.8
0.6
0.4
0.2
0
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
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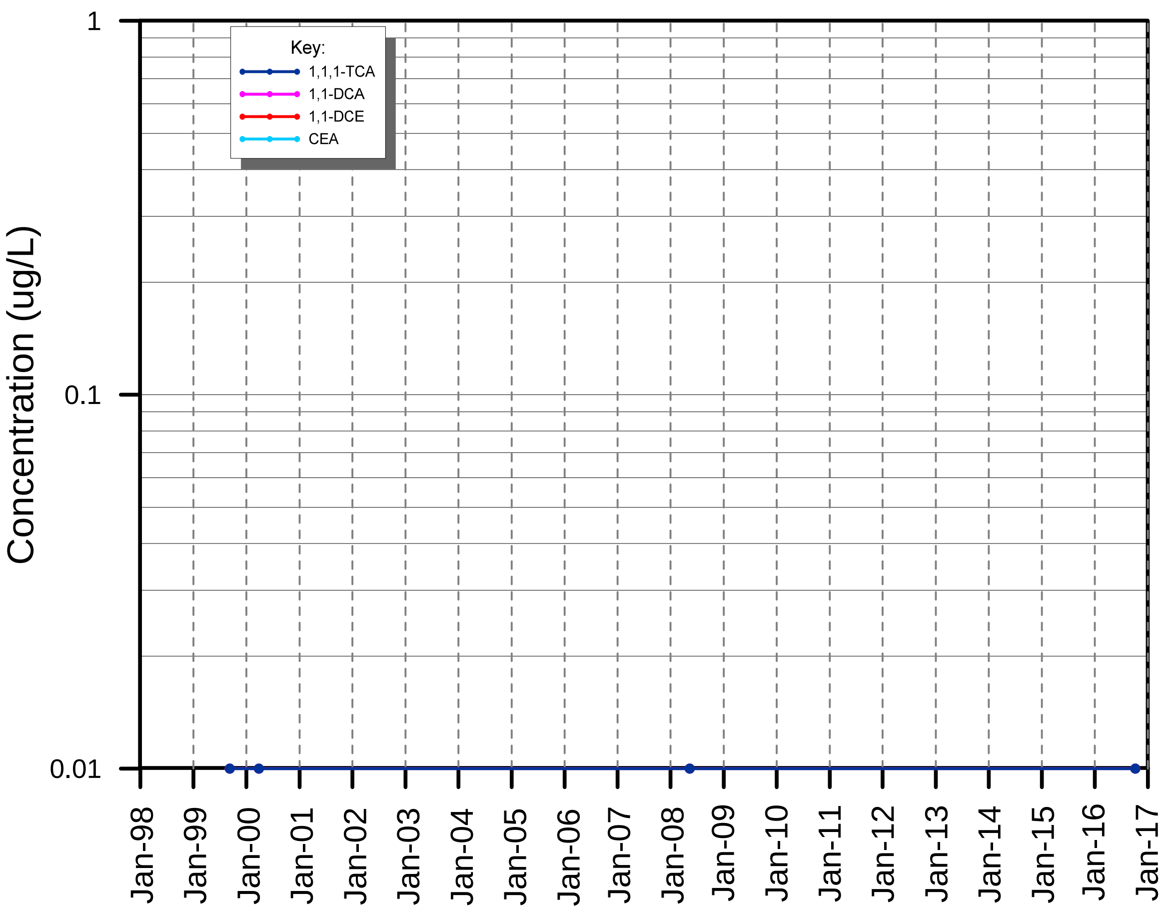
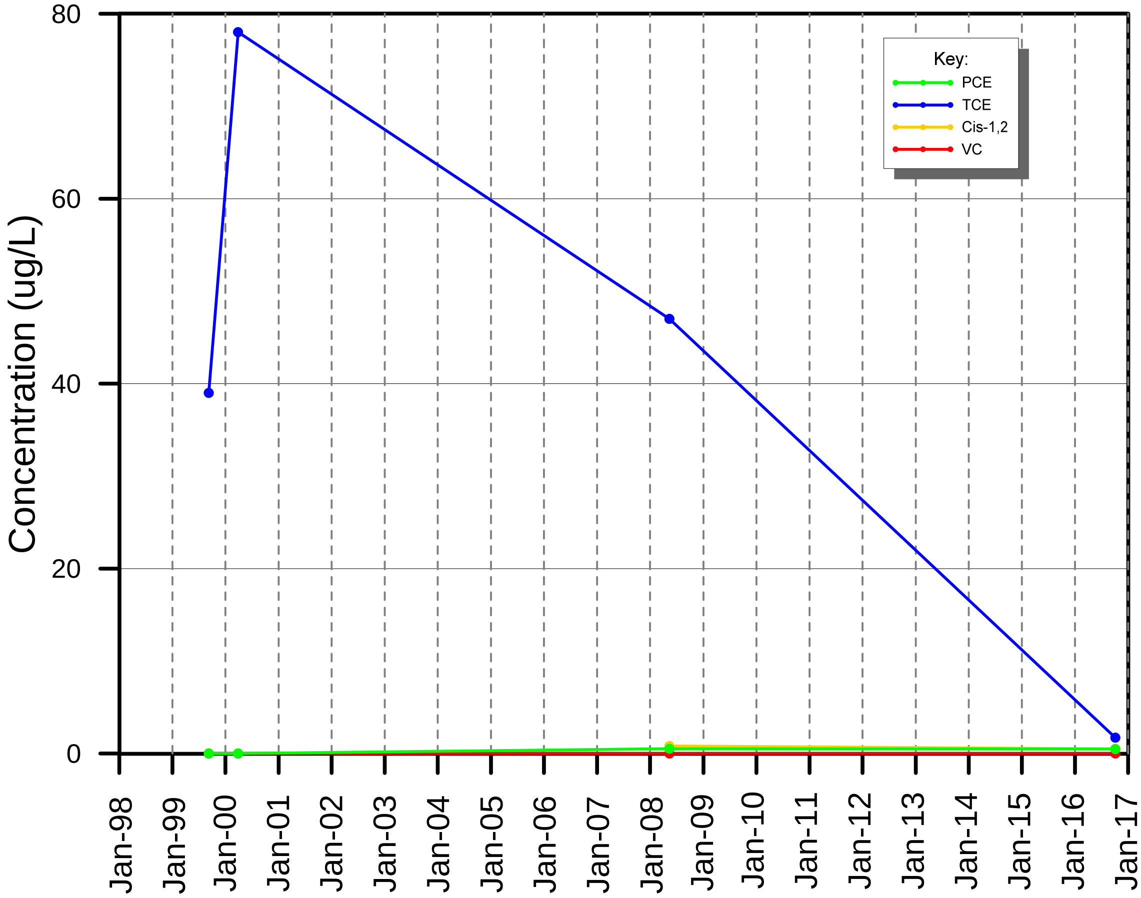
Jan-15
Jan-16
Jan-17



Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
Concentration (ug/L)
1
0.1
0.01
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17

MW-68


Concentration (ug/L)
80
60
40
20
0
Key:
PCE
TCE
Cis-1,2
VC
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
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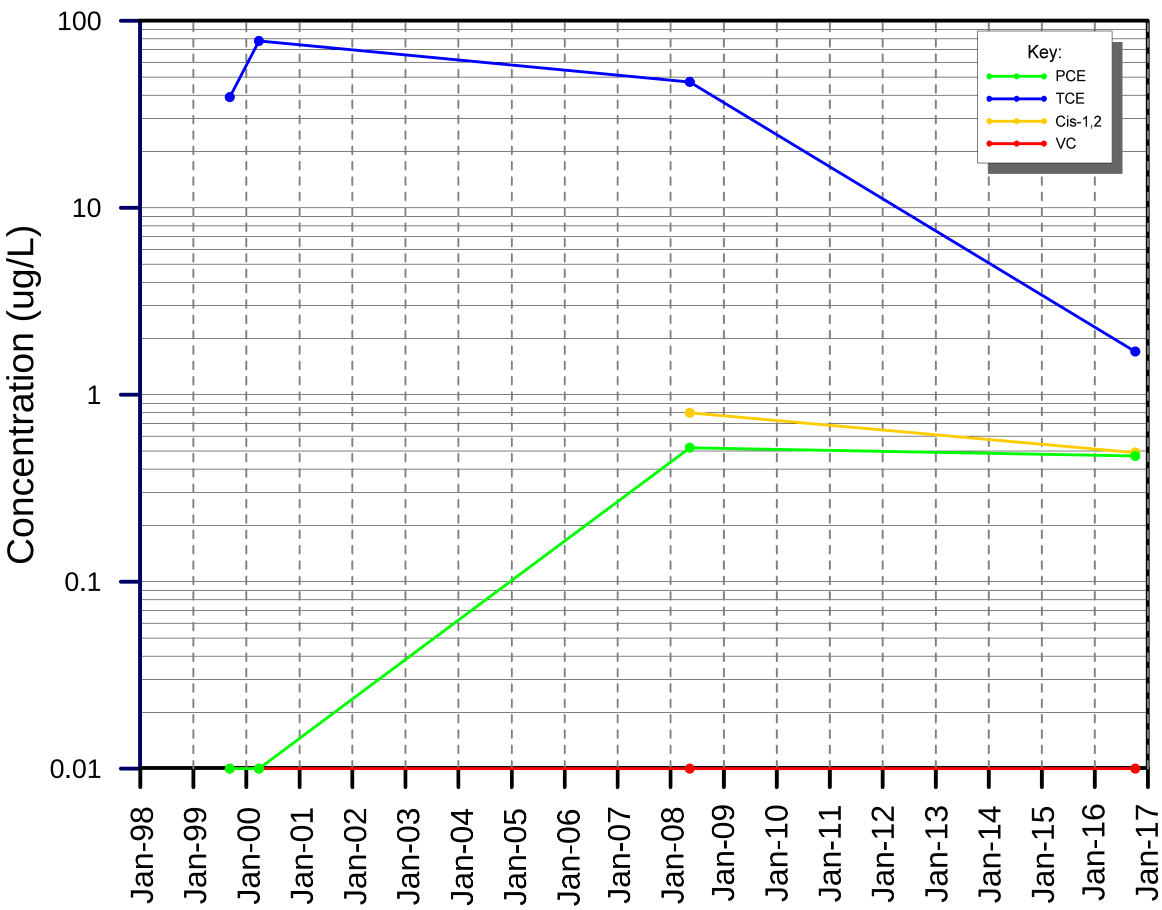
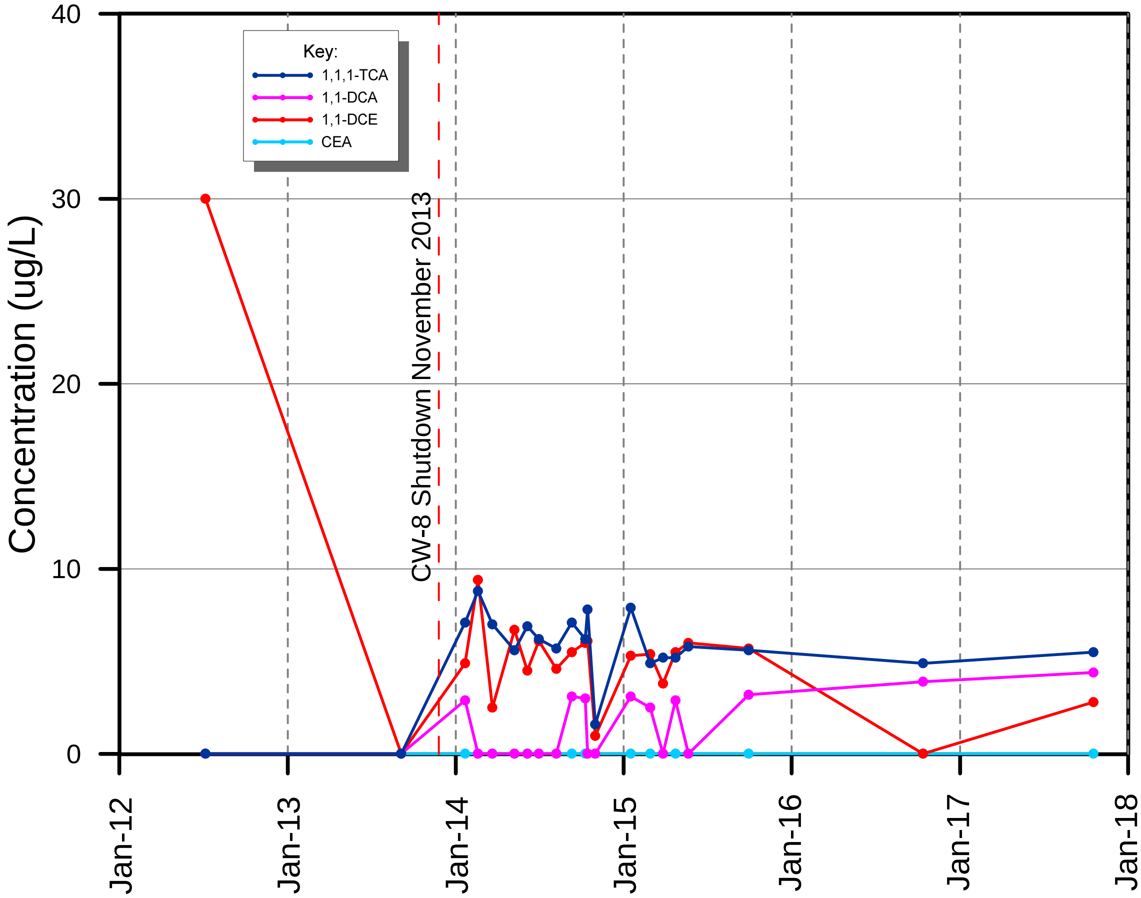
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17


Concentration (ug/L)
100
10
1
0.1
0.01
Key:
PCE
TCE
Cis-1,2
VC
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17

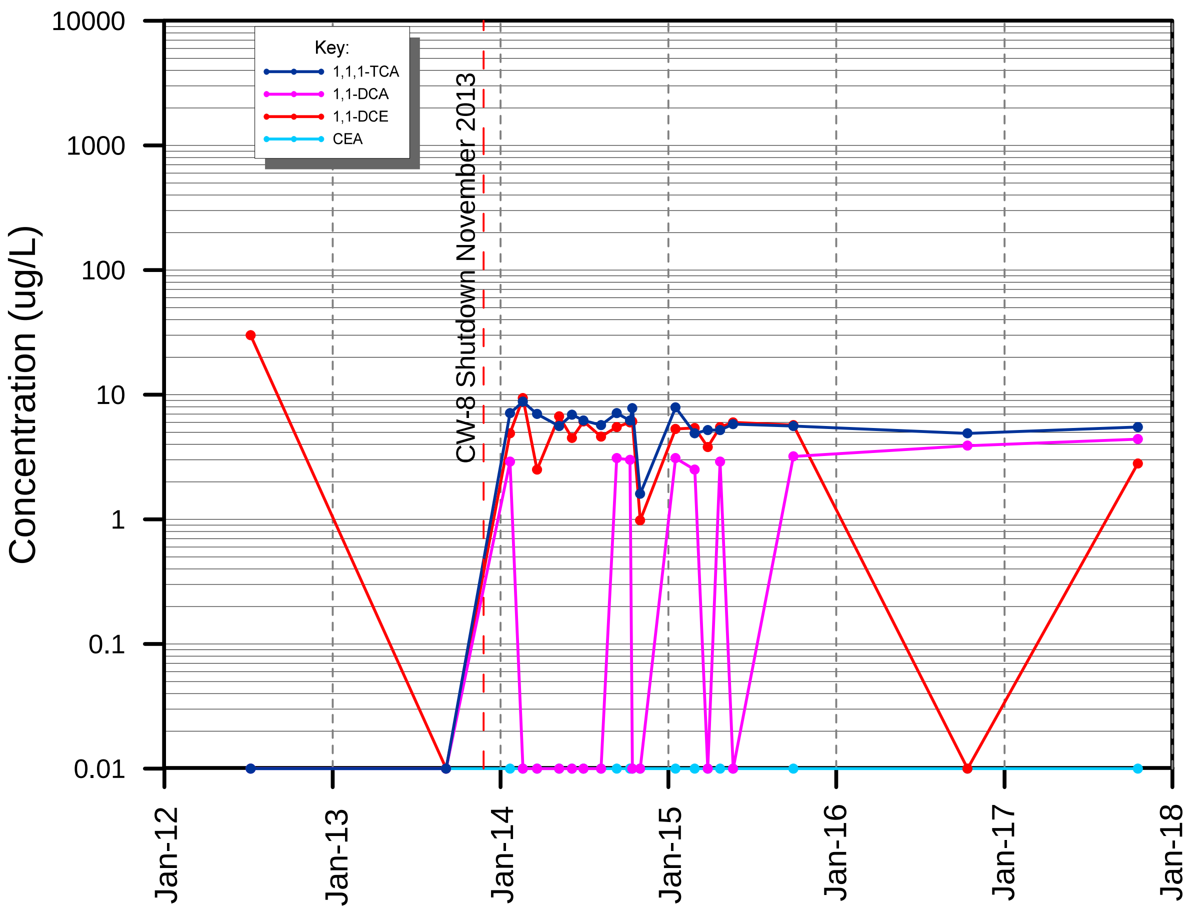
Appendix G-3

Former Building 58 Area Graphs

MW-127

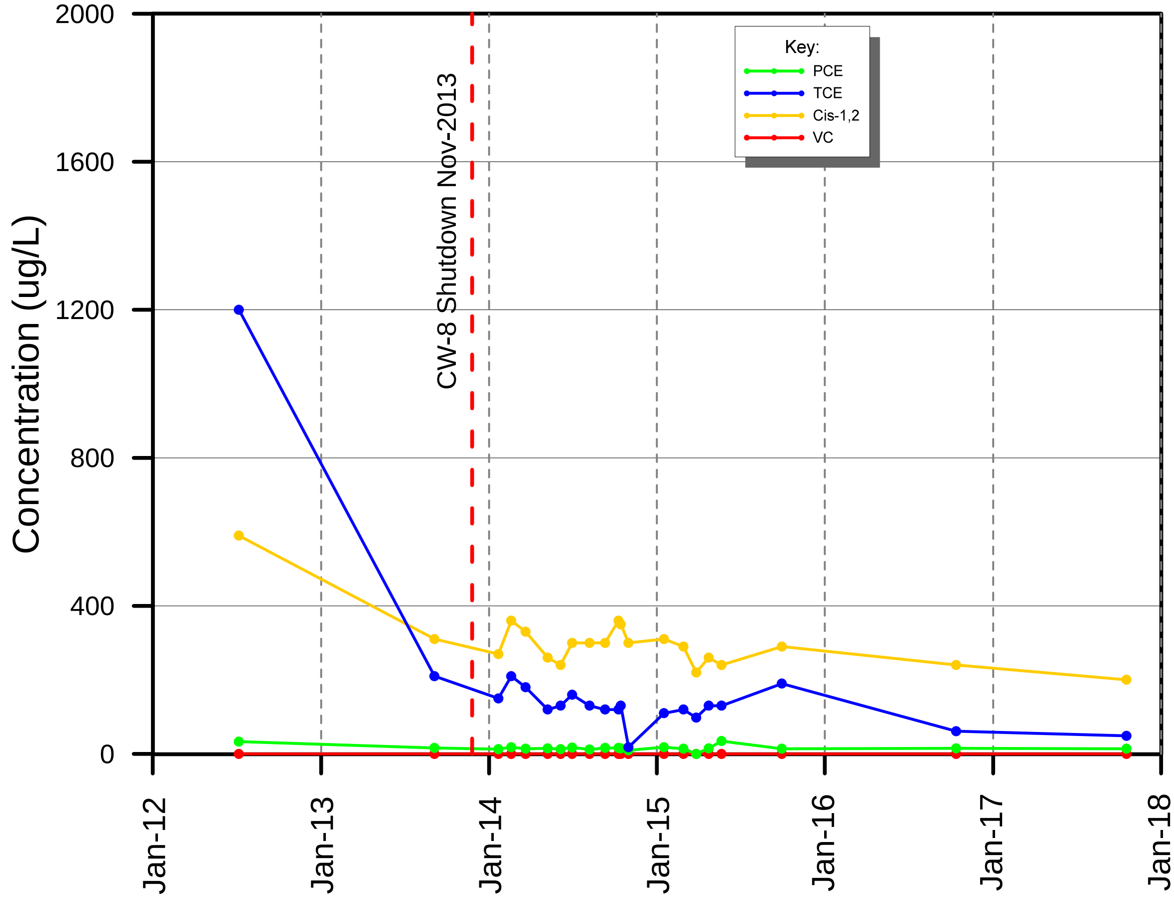


Concentration (ug/L)
40
30
20
10
0
Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
CW-8 Shutdown November 2013
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18

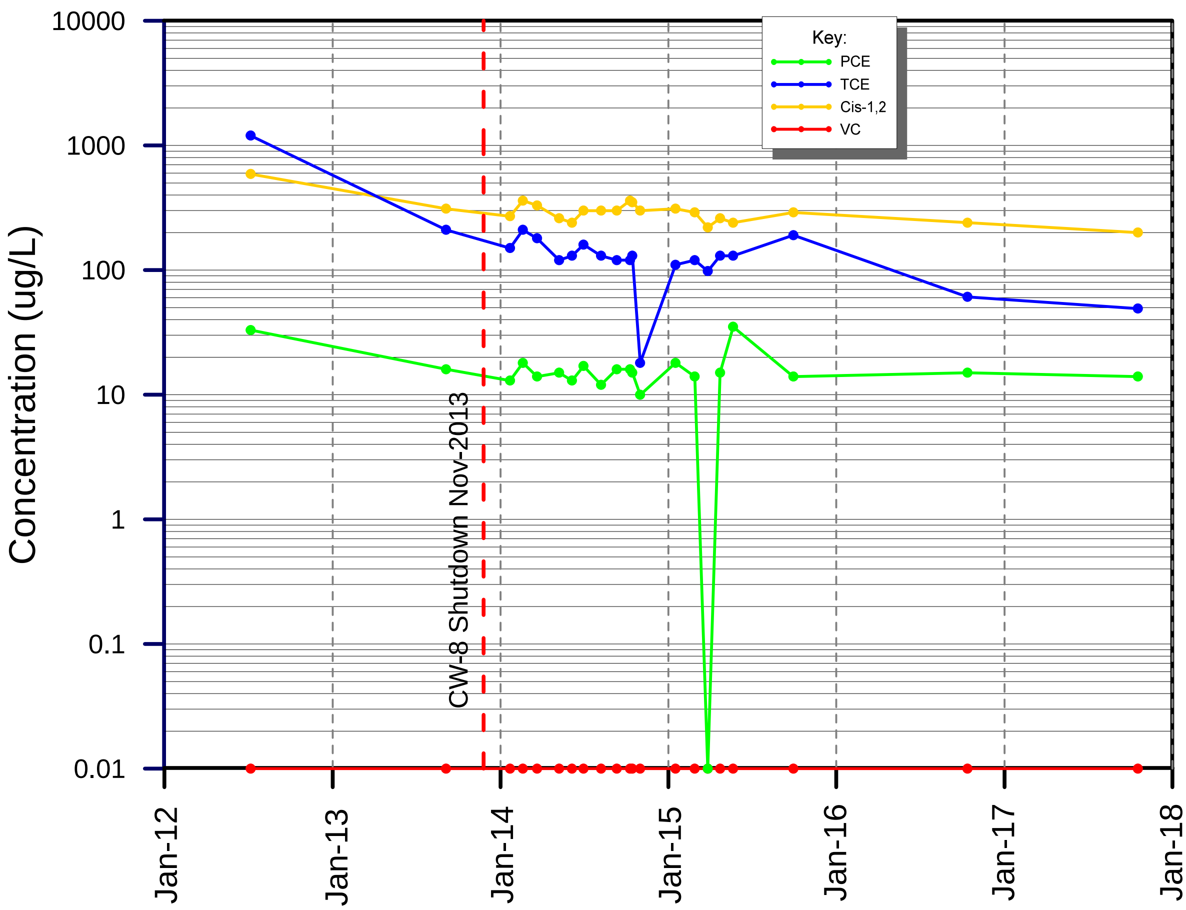


Concentration (ug/L)
10000
1000
100
10
1
0.1
0.01
Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
CW-8 Shutdown November 2013
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18

MW-127

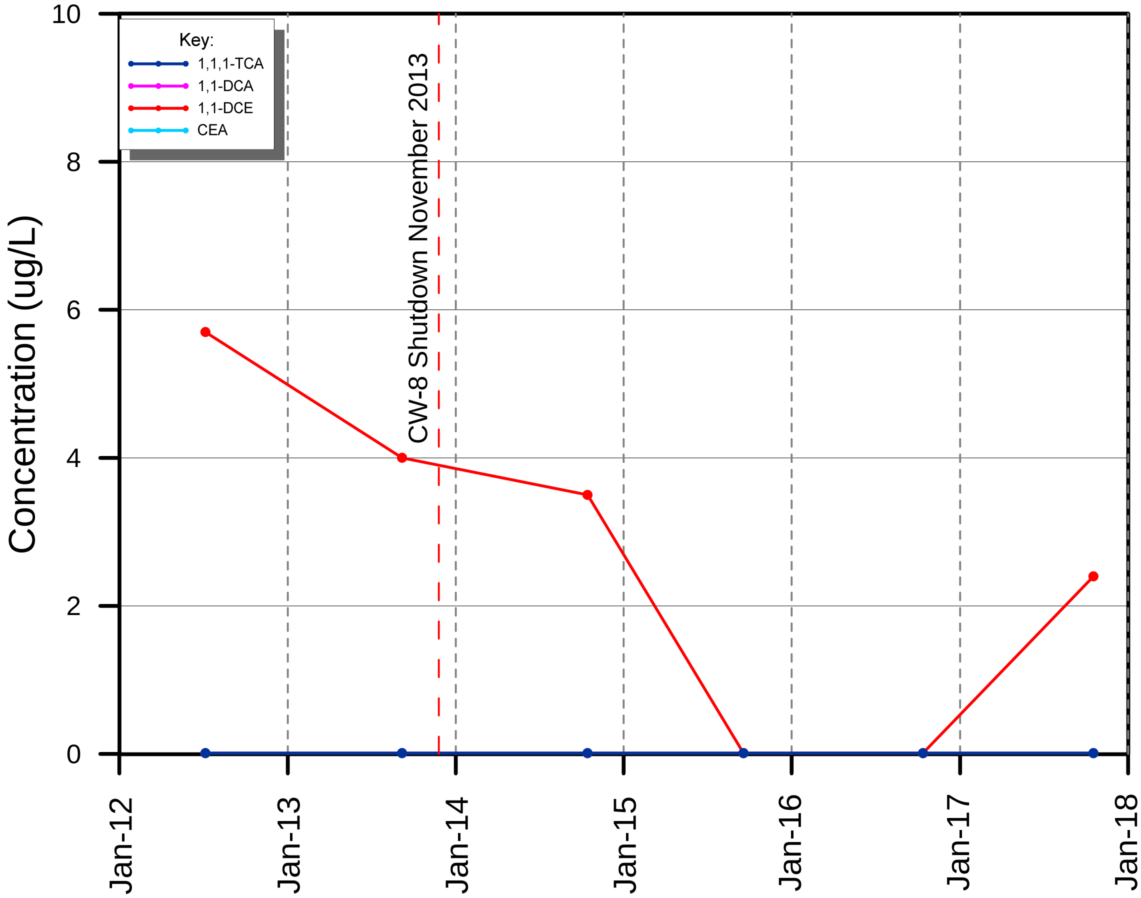


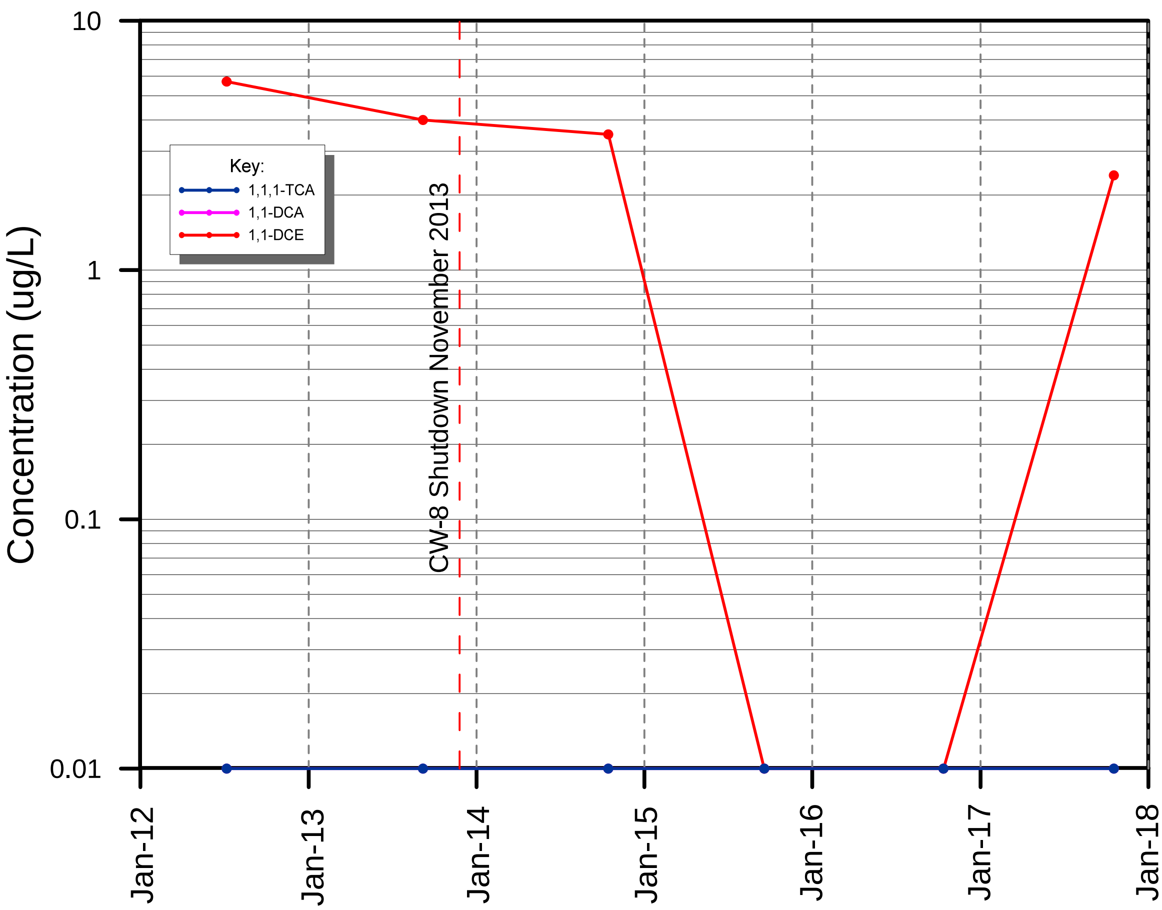
Concentration (ug/L)
2000
1600
1200
800
400
0
CW-8 Shutdown Nov-2013
Key:
PCE
TCE
Cis-1,2
VC
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18



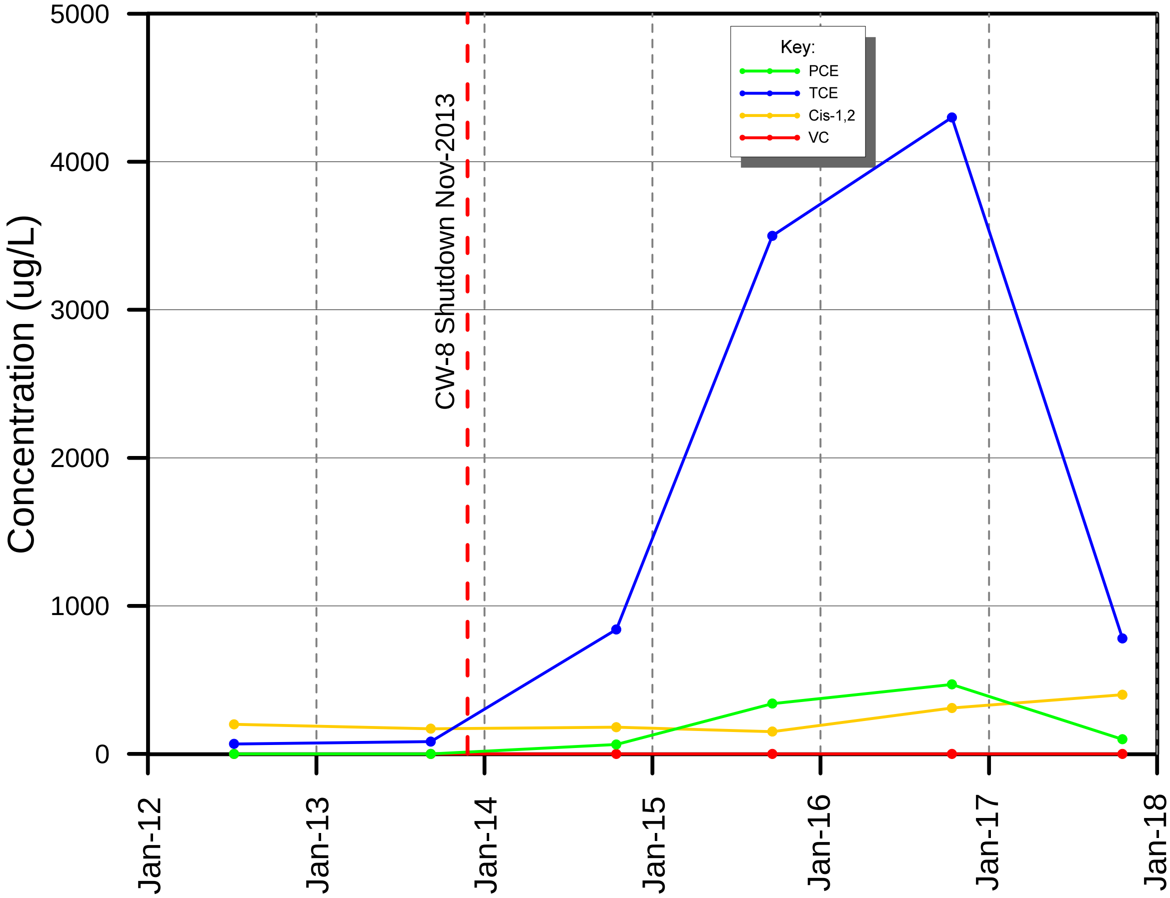
Concentration (ug/L)
10000
1000
100
10
1
0.1
0.01
CW-8 Shutdown Nov-2013
Key:
PCE
TCE
Cis-1,2
VC
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18

MW-129

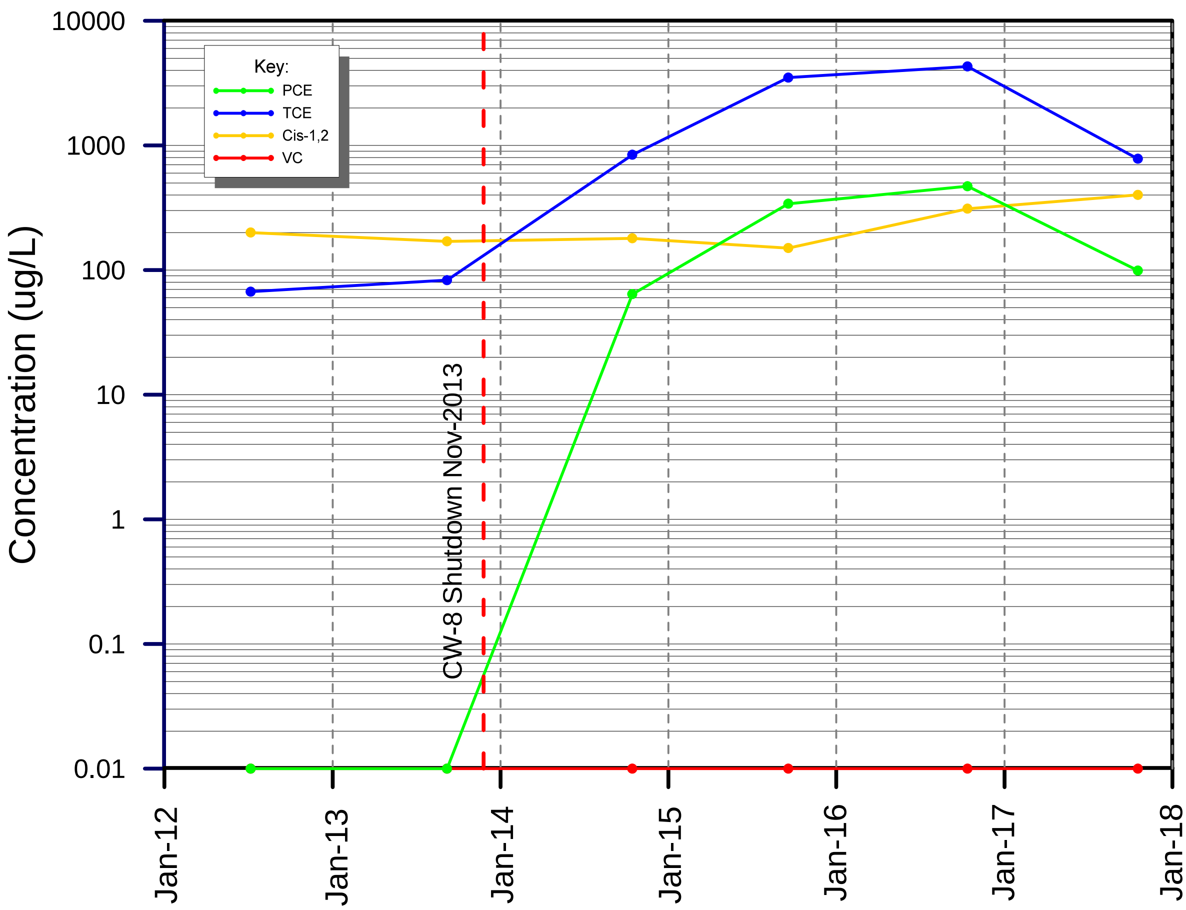

Concentration (ug/L)
10
8
6
4
2
0
Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
CW-8 Shutdown November 2013
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18


Concentration (ug/L)
10
1
0.1
0.01
Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CW-8 Shutdown November 2013
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18

MW-129

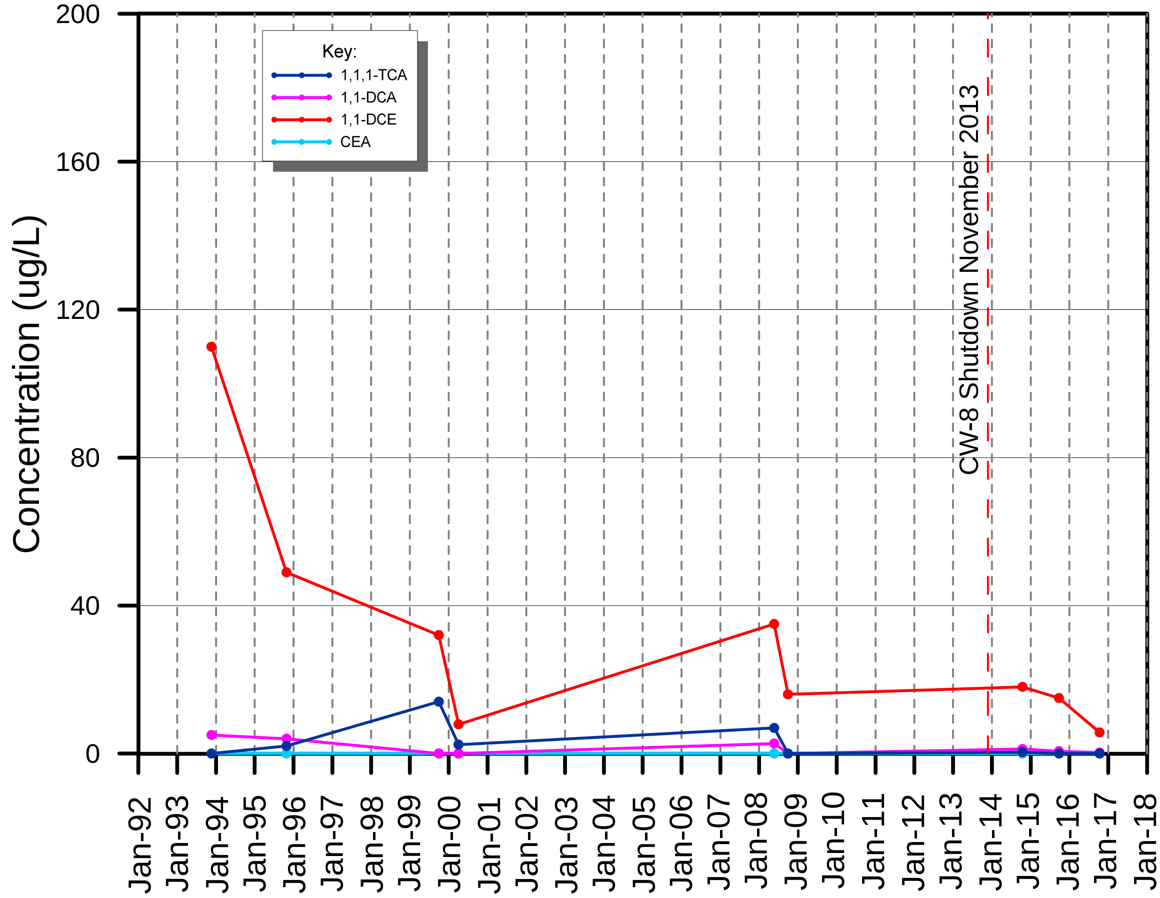


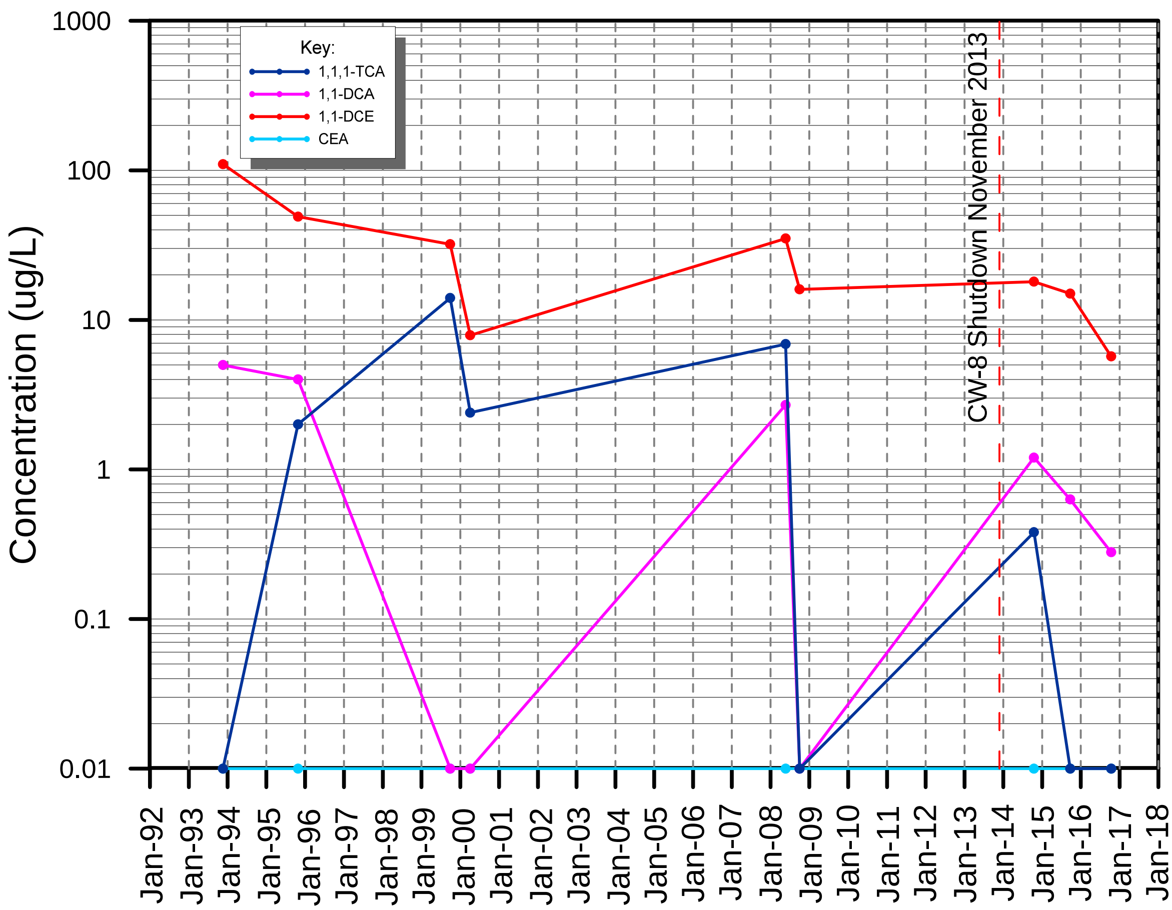
Concentration (ug/L)
5000
4000
3000
2000
1000
0
CW-8 Shutdown Nov-2013
Key:
PCE
TCE
Cis-1,2
VC
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18



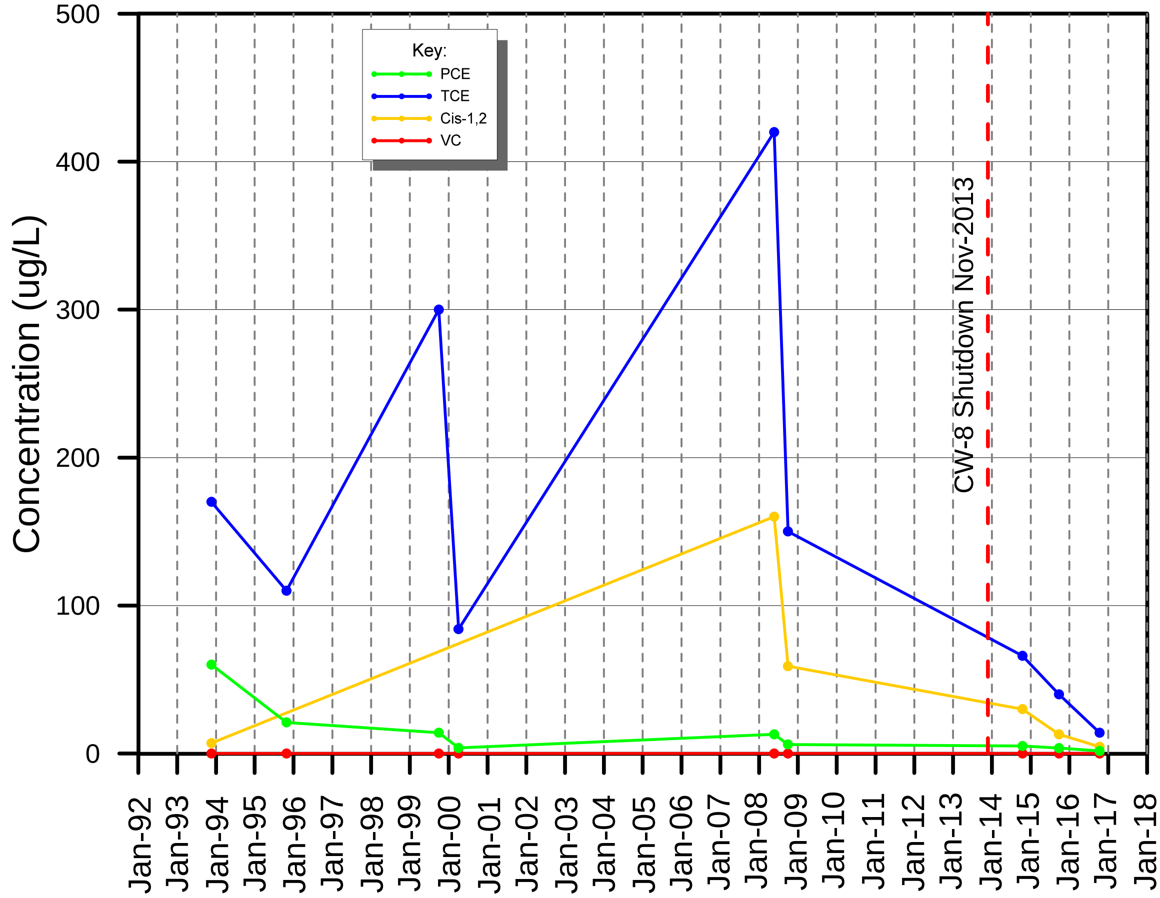
Concentration (ug/L)
10000
1000
100
10
1
0.1
0.01
CW-8 Shutdown Nov-2013
Key:
PCE
TCE
Cis-1,2
VC
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18

MW-57


Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
CW-8 Shutdown November 2013
Concentration (ug/L)
0
40
80
120
160
200
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18


Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
CW-8 Shutdown November 2013
Concentration (ug/L)
0.01
0.1
1
10
100
1000
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18

MW-57


Concentration (ug/L)
500
400
300
200
100
0
Key:
PCE
TCE
Cis-1,2
VC
CW-8 Shutdown Nov-2013
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
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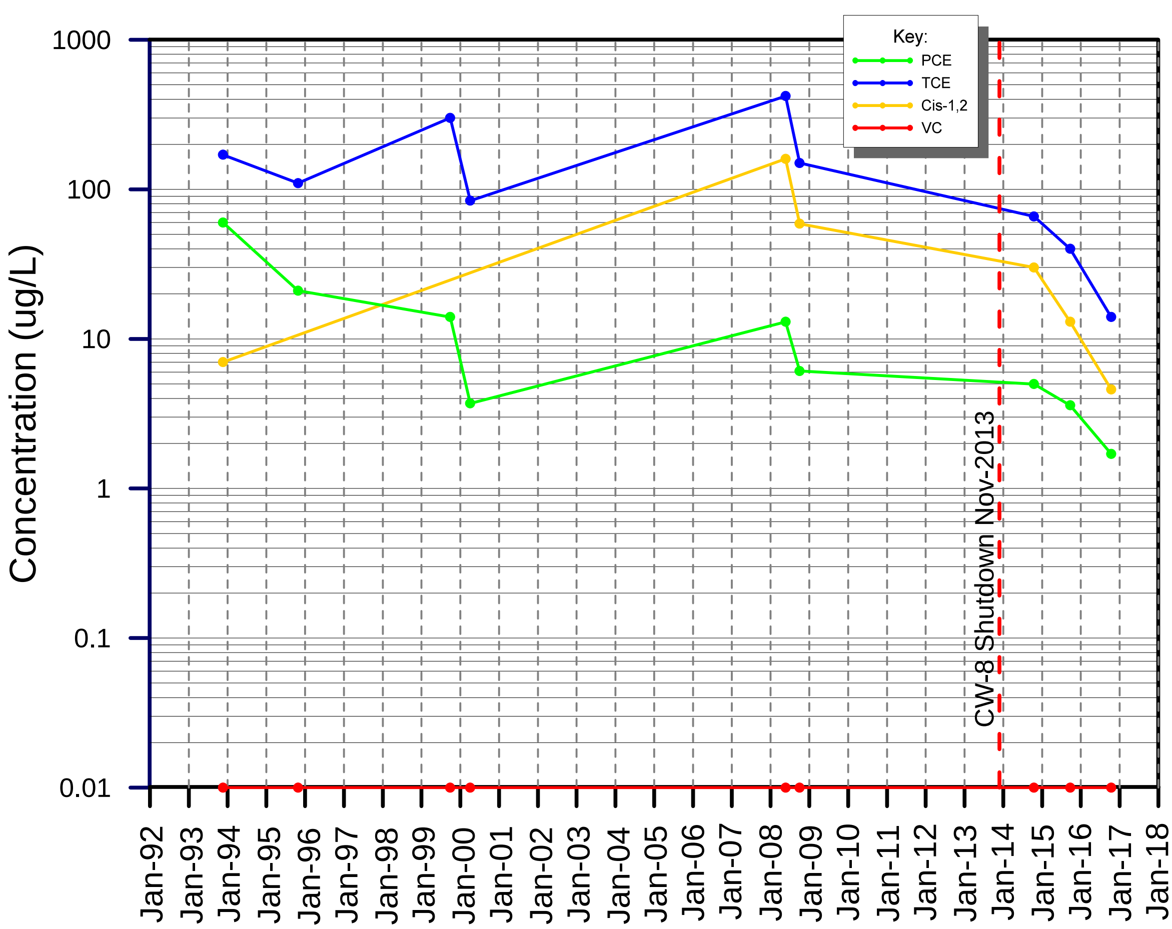
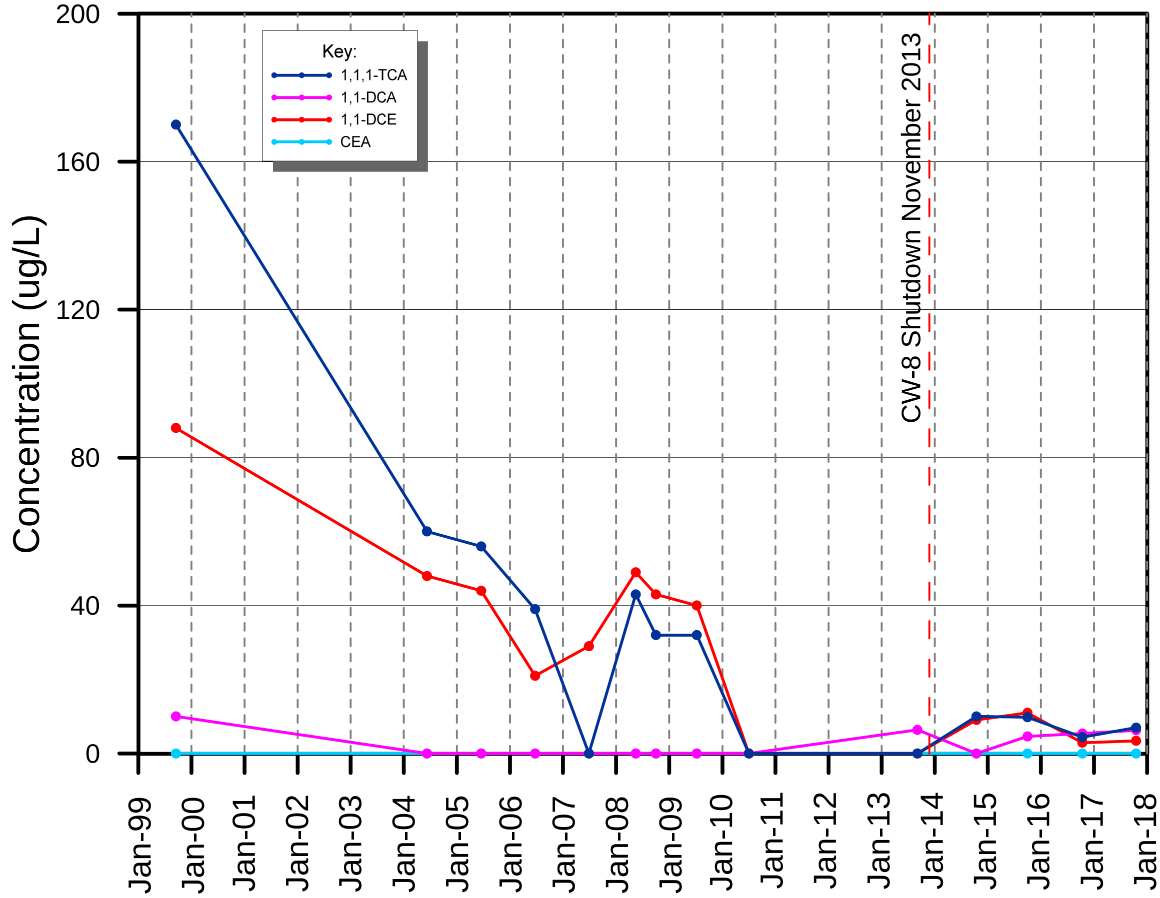
Jan-16
Jan-17
Jan-18


Concentration (ug/L)
1000
100
10
1
0.1
0.01
Key:
PCE
TCE
Cis-1,2
VC
CW-8 Shutdown Nov-2013
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18

MW-87



Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
CW-8 Shutdown November 2013
Concentration (ug/L)
200
160
120
80
40
0
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
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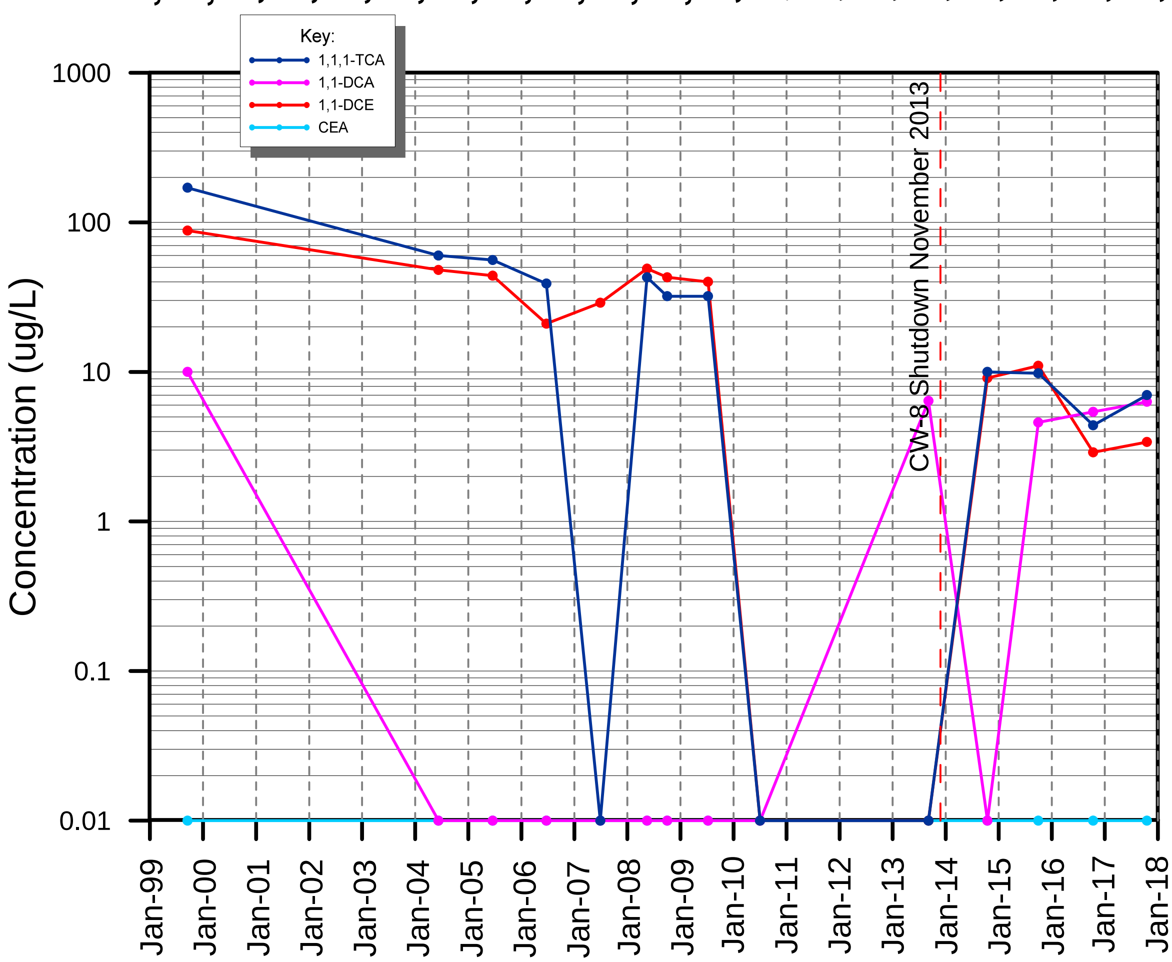
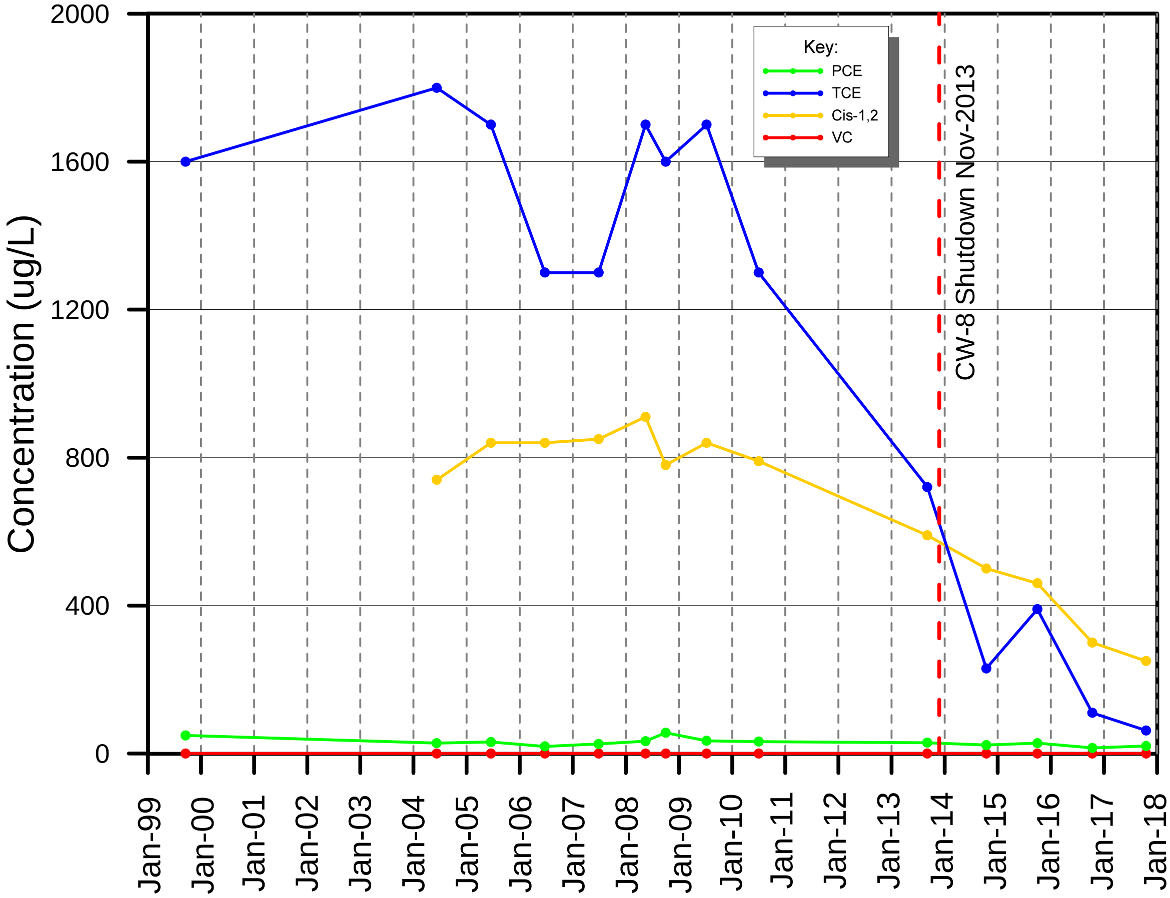
Jan-15
Jan-16
Jan-17
Jan-18



Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
CW-8 Shutdown November 2013
Concentration (ug/L)
1000
100
10
1
0.1
0.01
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18

MW-87



Concentration (ug/L)
2000
1600
1200
800
400
0
Key:
PCE
TCE
Cis-1,2
VC
CW-8 Shutdown Nov-2013
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
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Jan-12
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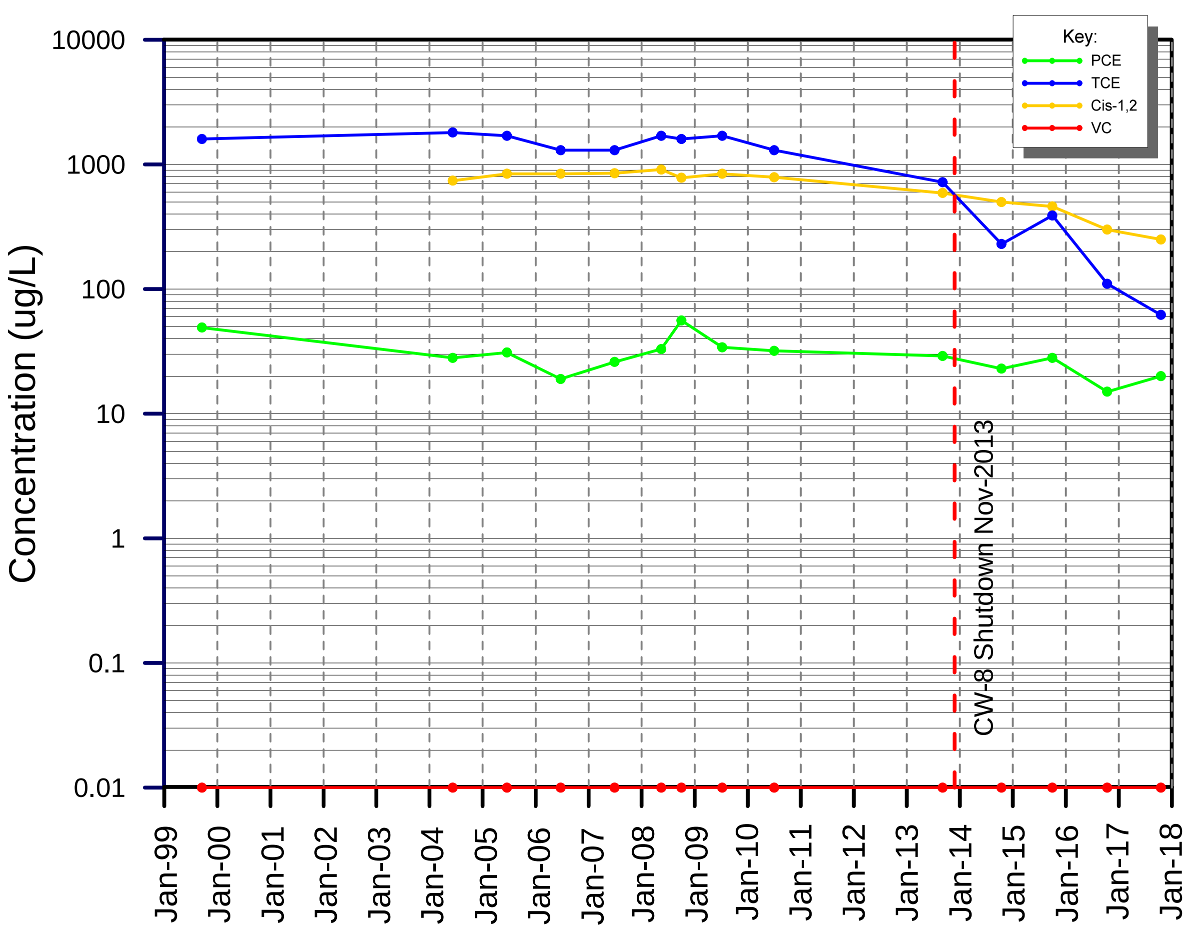
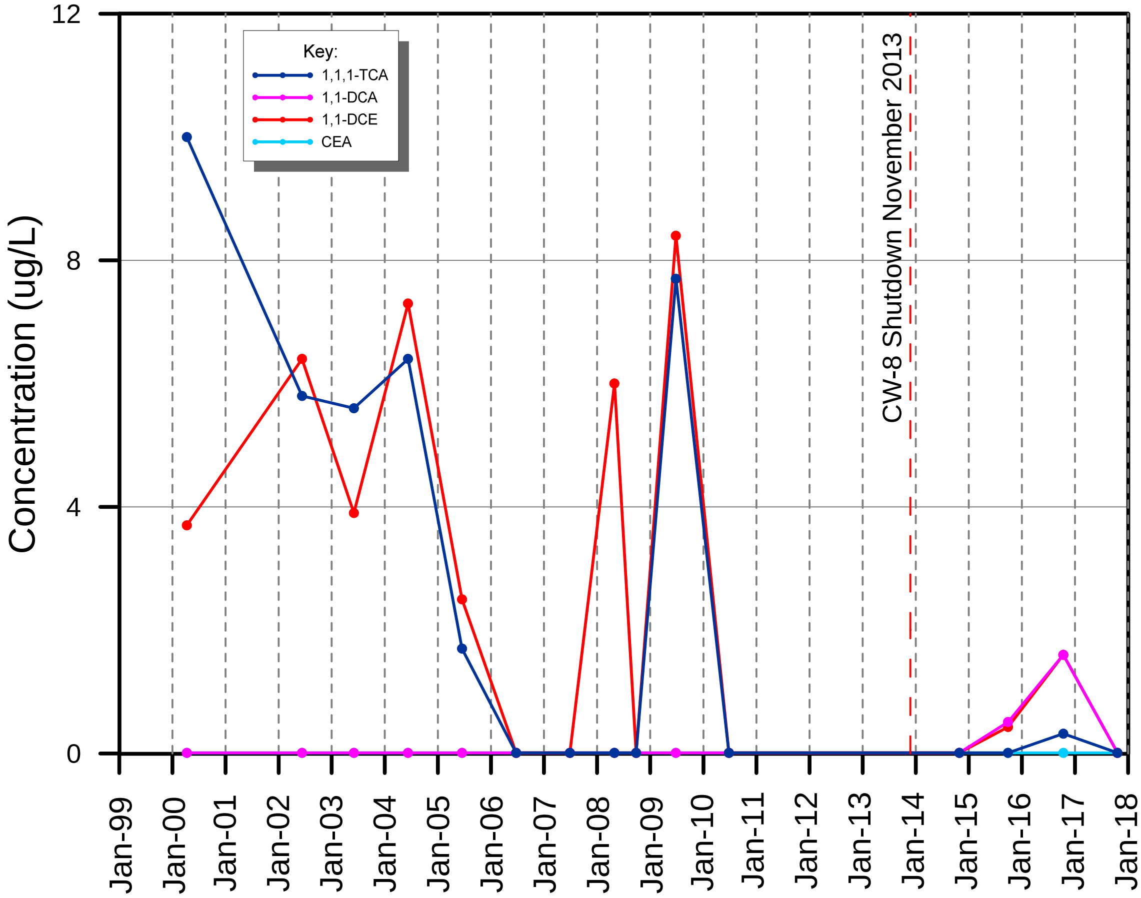
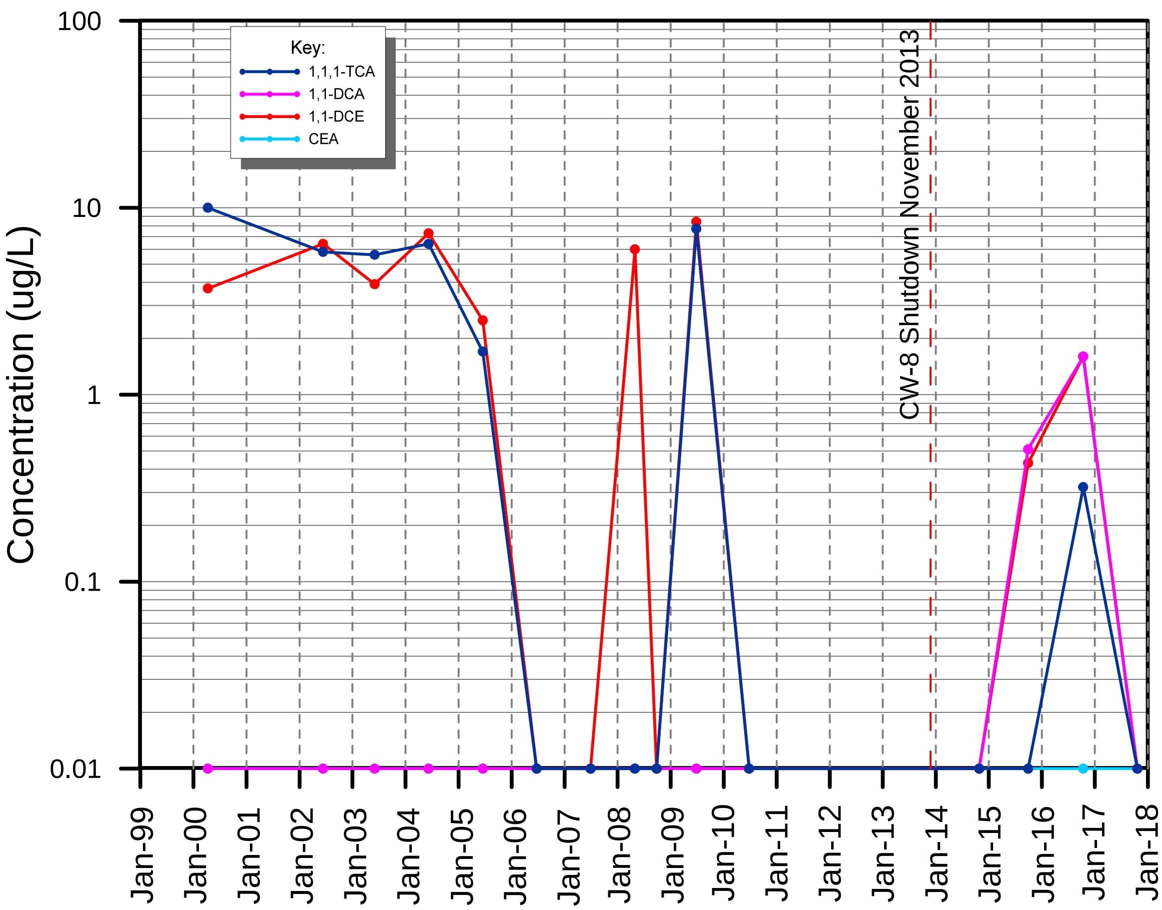
Jan-16
Jan-17
Jan-18



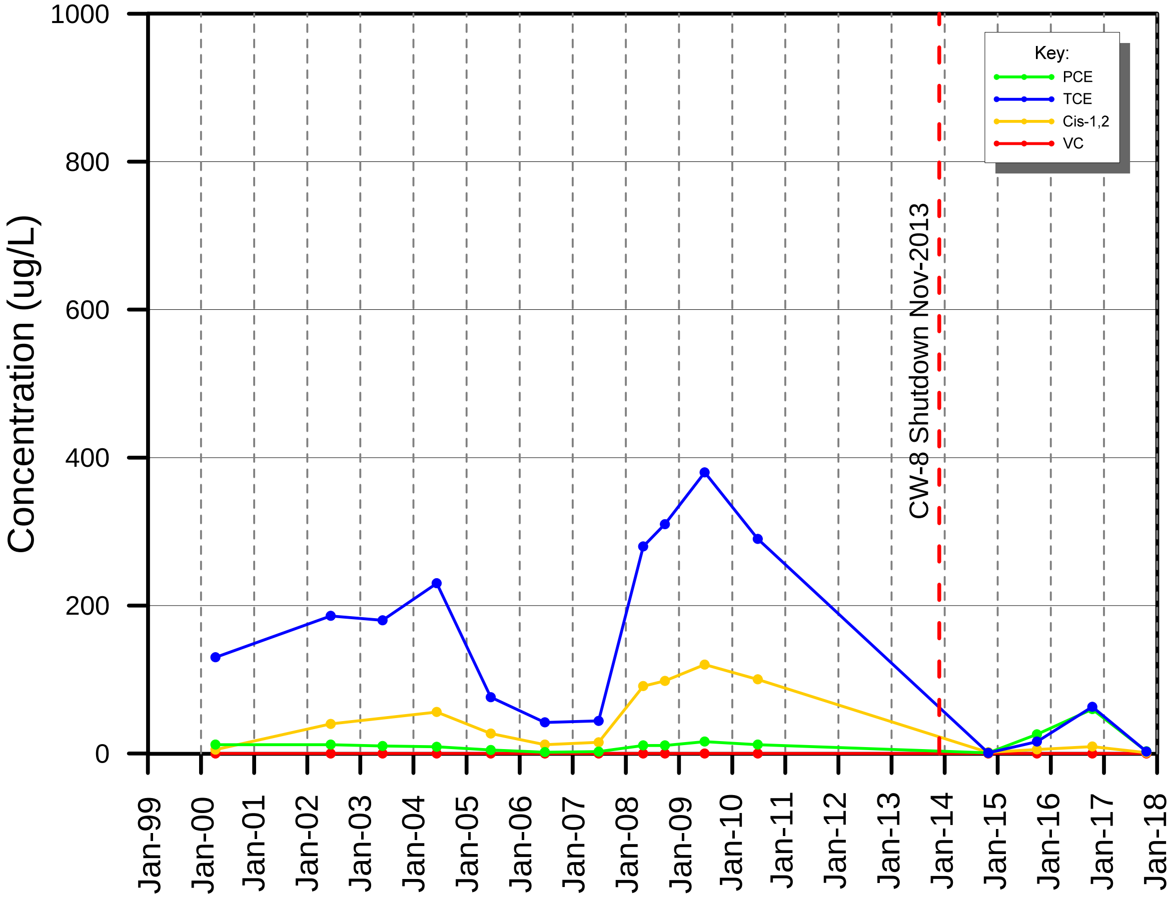
Concentration (ug/L)
10000
1000
100
10
1
0.1
0.01
Key:
PCE
TCE
Cis-1,2
VC
CW-8 Shutdown Nov-2013
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18

MW-88


Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
CW-8 Shutdown November 2013
Concentration (ug/L)
12
8
4
0
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18


Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
CW-8 Shutdown November 2013
Concentration (ug/L)
100
10
1
0.1
0.01
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18

MW-88



Concentration (ug/L)
1000
800
600
400
200
0
Key:
PCE
TCE
Cis-1,2
VC
CW-8 Shutdown Nov-2013
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
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Jan-12
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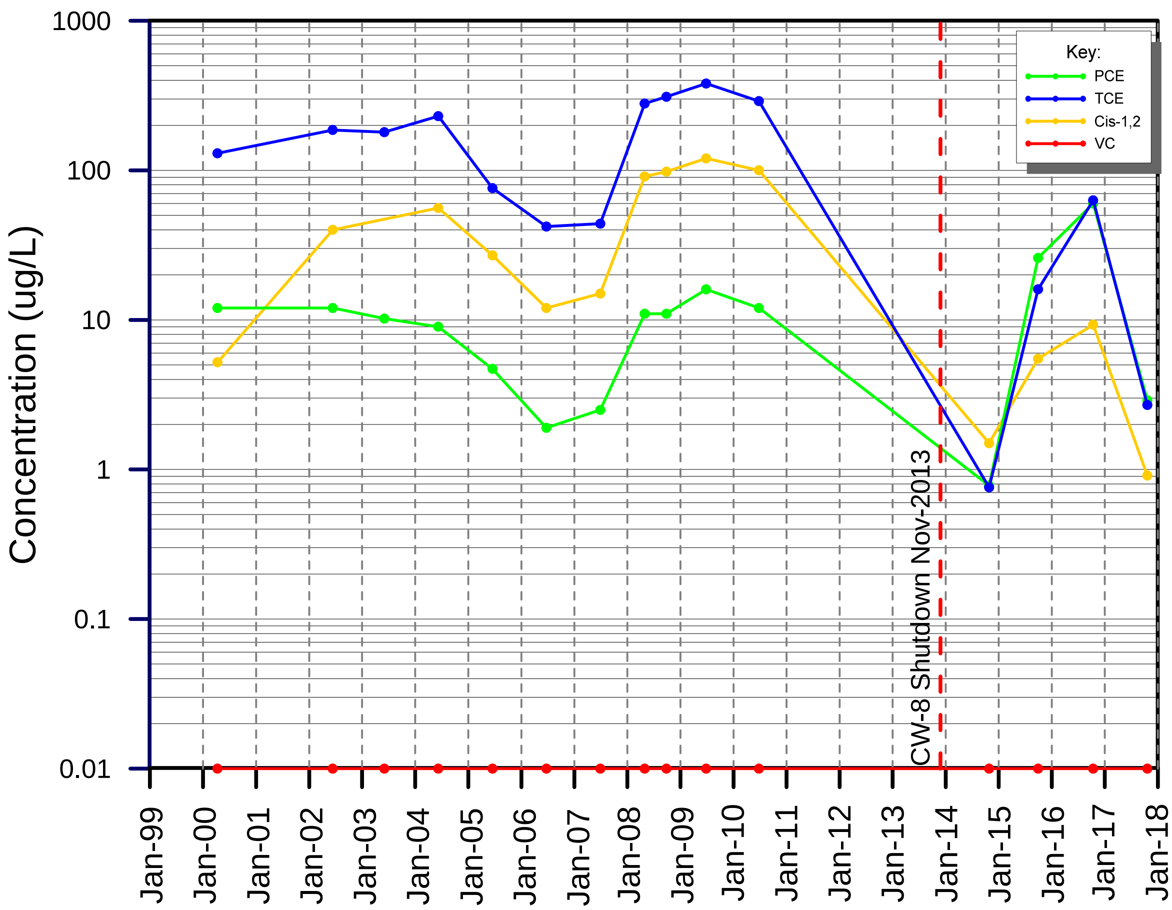
Jan-16
Jan-17
Jan-18

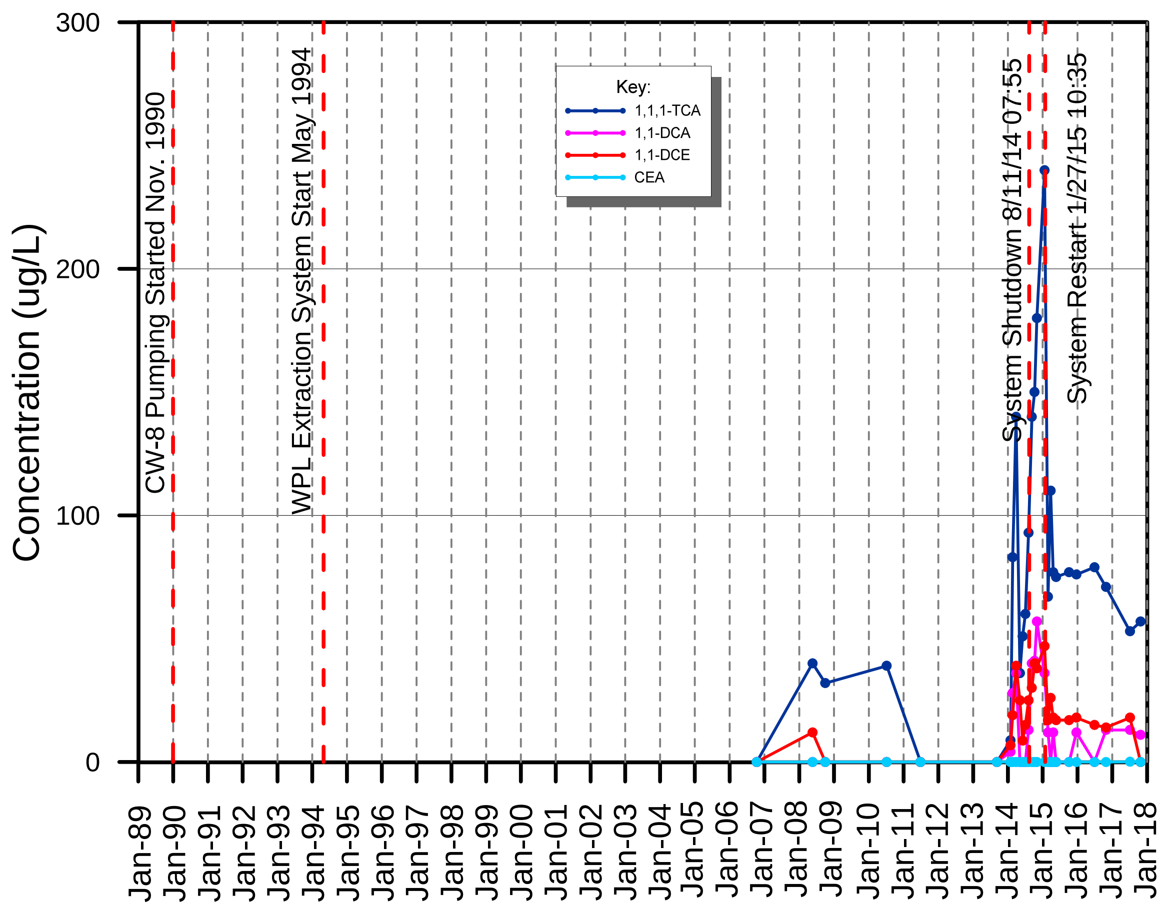


Concentration (ug/L)
1000
100
10
1
0.1
0.01
Key:
PCE
TCE
Cis-1,2
VC
CW-8 Shutdown Nov-2013
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18

Appendix G-4

Southwest Corner of the West Parking Lot Graphs

CW-20



Concentration (ug/L)
300
200
100
0
CW-8 Pumping Started Nov. 1990
WPL Extraction System Start May 1994
System Shutdown 8/11/14 07:55
System Restart 1/27/15 10:35
Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
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Jan-08
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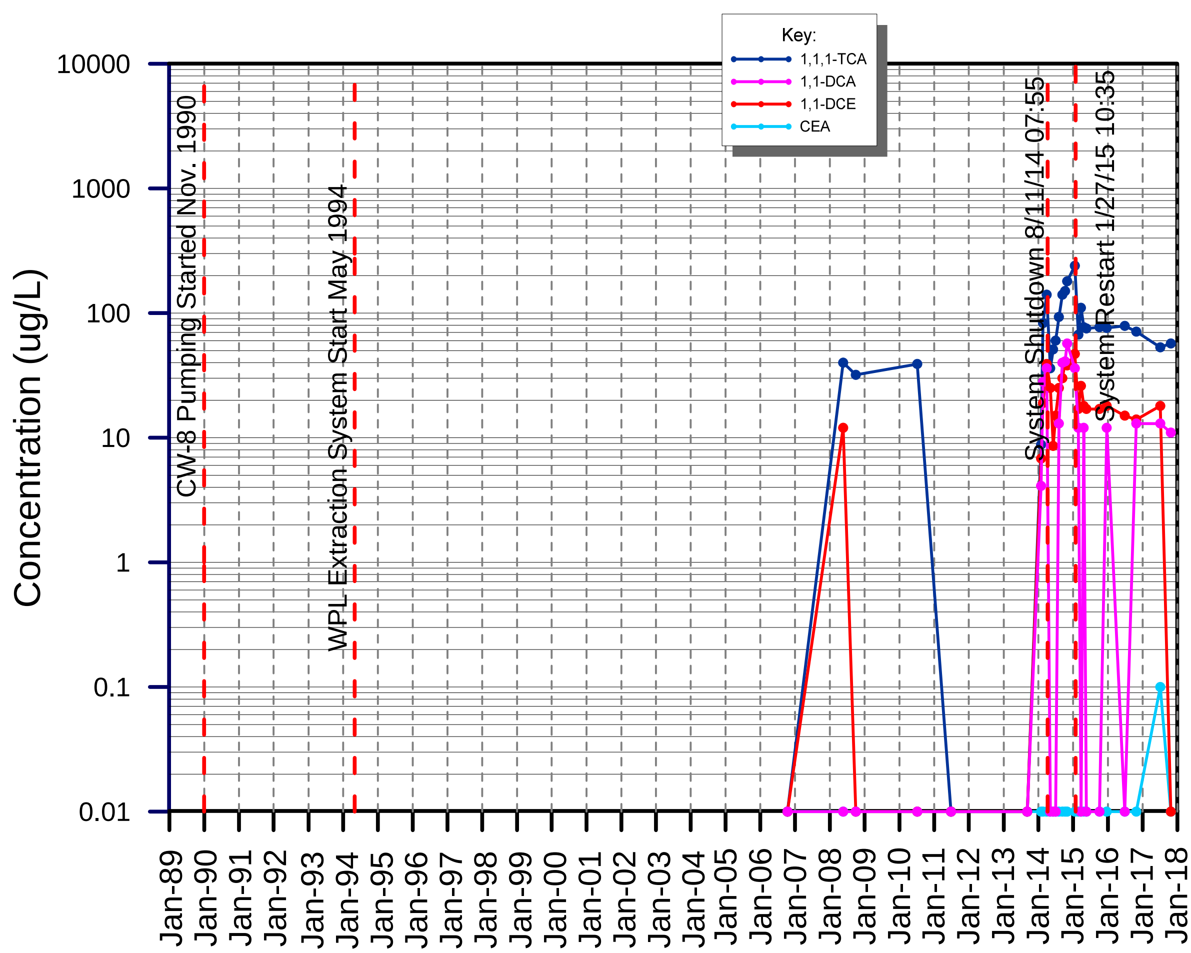
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18



Concentration (ug/L)
10000
1000
100
10
1
0.1
0.01
CW-8 Pumping Started Nov. 1990
WPL Extraction System Start May 1994
System Shutdown 8/11/14 07:55
System Restart 1/27/15 10:35
Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
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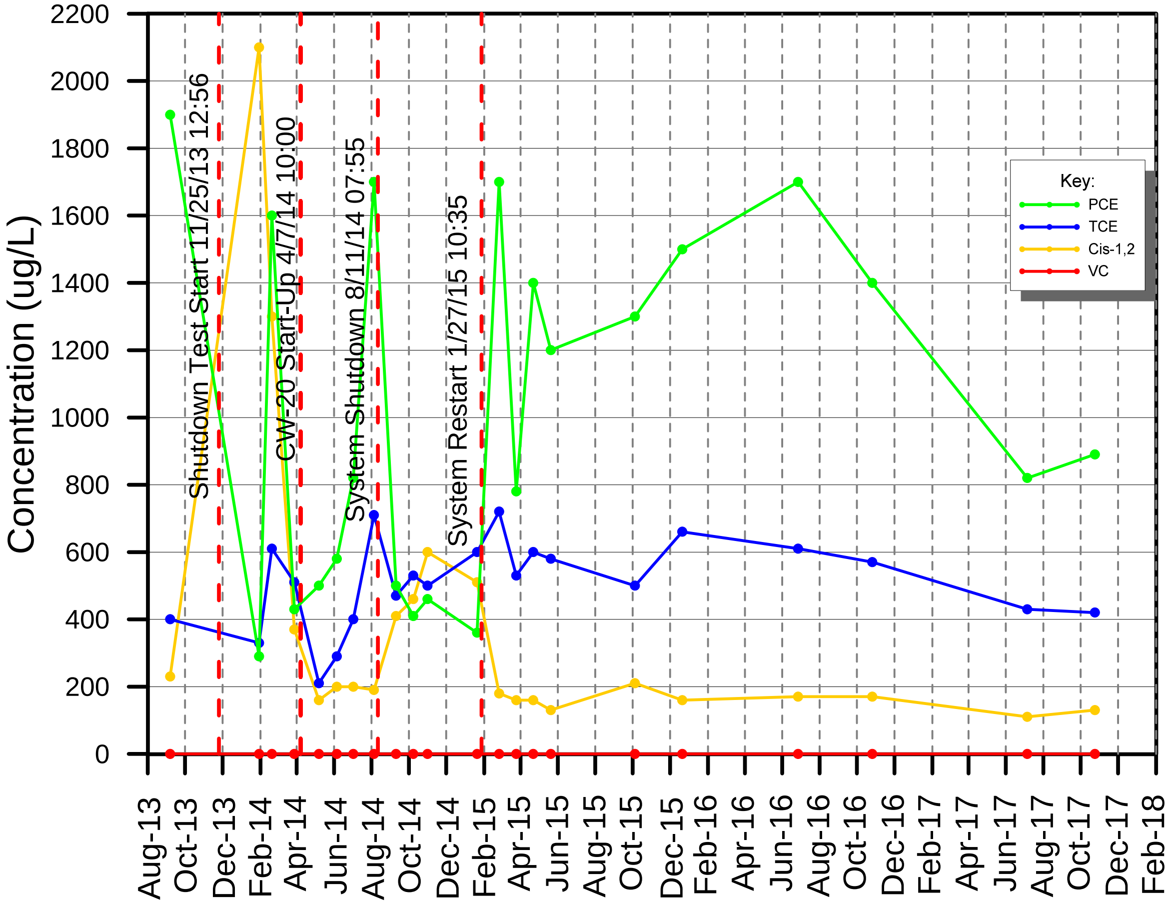
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18

CW-20



Concentration (ug/L)
2200
2000
1800
1600
1400
1200
1000
800
600
400
200
0
Shutdown Test Start 11/25/13 12:56
CW-20 Start-Up 4/7/14 10:00
System Shutdown 8/11/14 07:55
System Restart 1/27/15 10:35
Key:
PCE
TCE
Cis-1,2
VC
Aug-13
Oct-13
Dec-13
Feb-14
Apr-14
Jun-14
Aug-14
Oct-14
Dec-14
Feb-15
Apr-15
Jun-15
Aug-15
Oct-15
Dec-15
Feb-16
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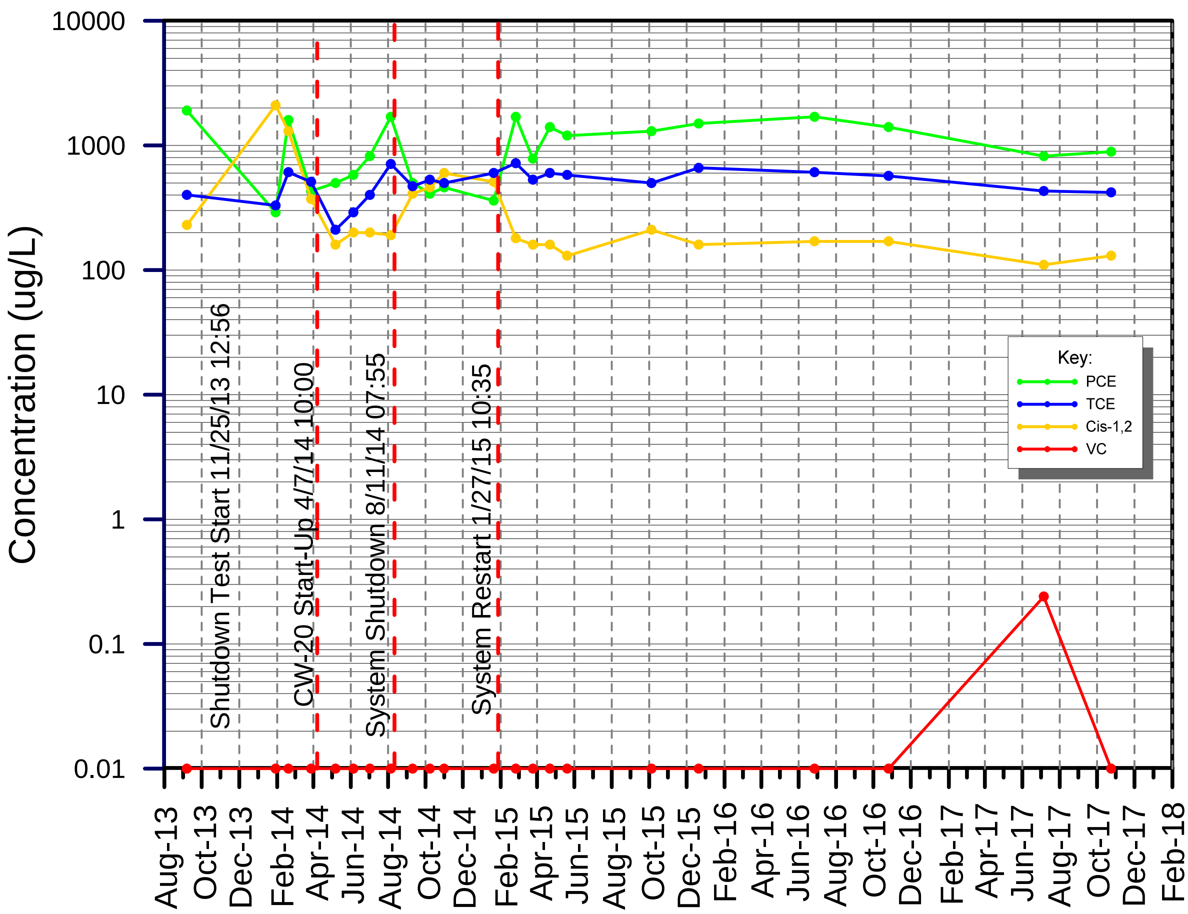
Feb-17
Apr-17
Jun-17
Aug-17
Oct-17
Dec-17
Feb-18



Concentration (ug/L)
10000
1000
100
10
1
0.1
0.01
Shutdown Test Start 11/25/13 12:56
CW-20 Start-Up 4/7/14 10:00
System Shutdown 8/11/14 07:55
System Restart 1/27/15 10:35
Key:
PCE
TCE
Cis-1,2
VC
Aug-13
Oct-13
Dec-13
Feb-14
Apr-14
Jun-14
Aug-14
Oct-14
Dec-14
Feb-15
Apr-15
Jun-15
Aug-15
Oct-15
Dec-15
Feb-16
Apr-16
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Dec-16
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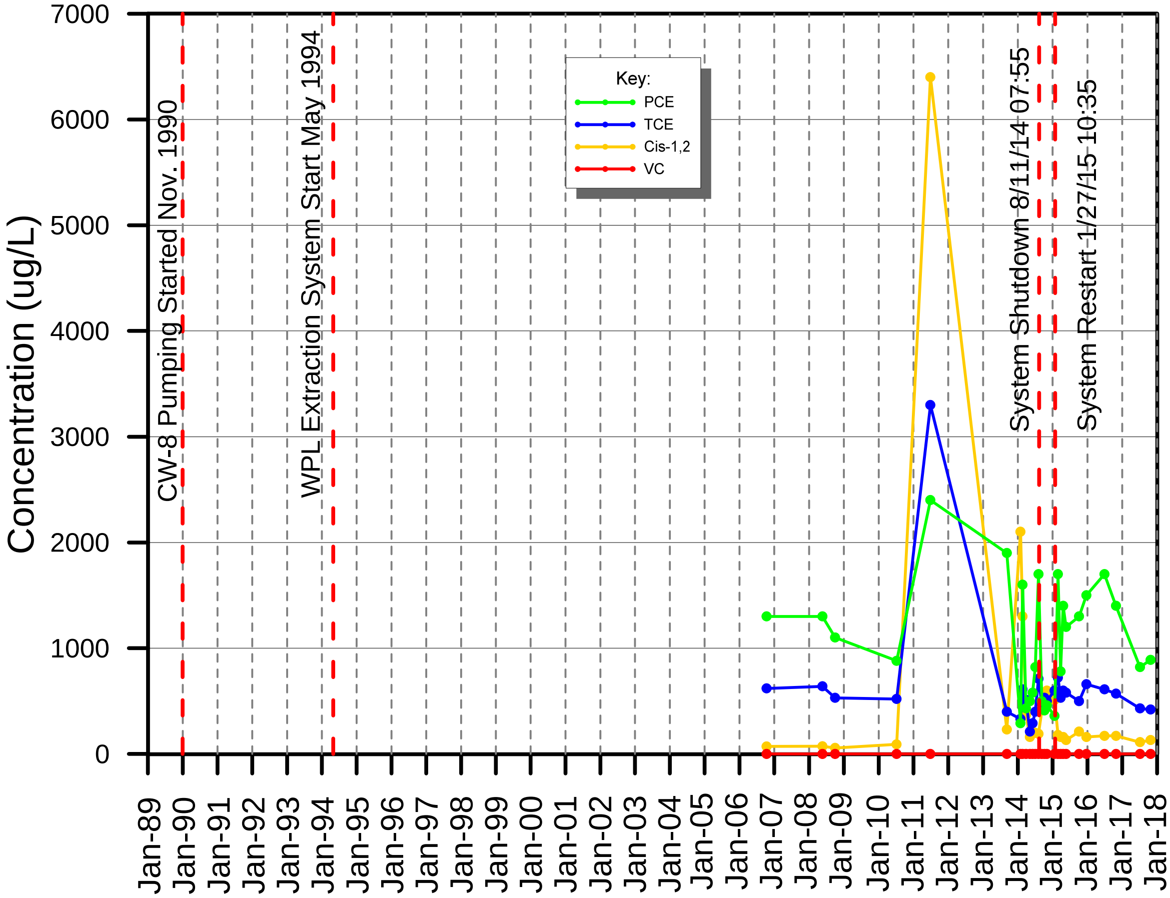
Apr-17
Jun-17
Aug-17
Oct-17
Dec-17
Feb-18

CW-20


Concentration (ug/L)
7000
6000
5000
4000
3000
2000
1000
0
Key:
PCE
TCE
Cis-1,2
VC
CW-8 Pumping Started Nov. 1990
WPL Extraction System Start May 1994
System Shutdown 8/11/14 07:55
System Restart 1/27/15 10:35
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
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Jan-16
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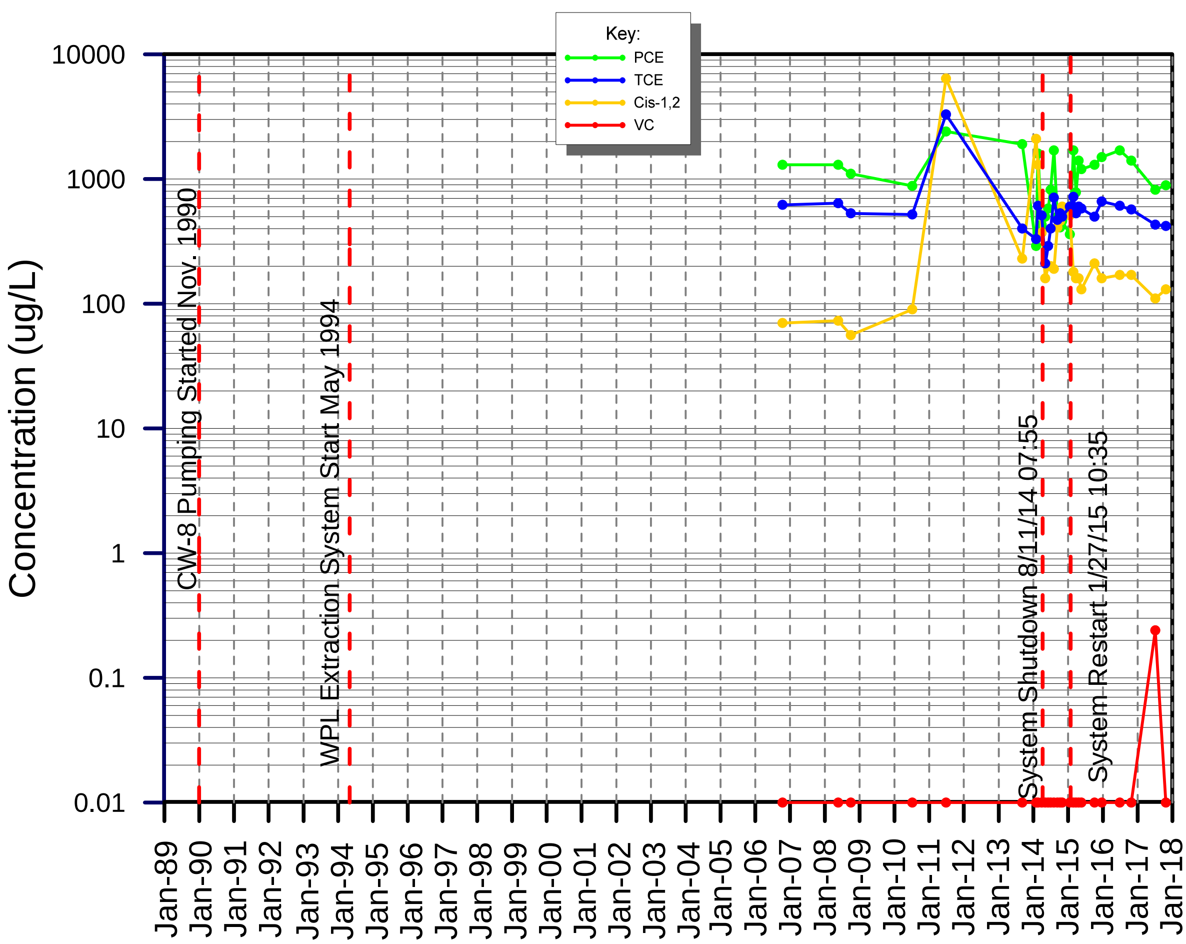
Jan-18


Concentration (ug/L)
10000
1000
100
10
1
0.1
0.01
Key:
PCE
TCE
Cis-1,2
VC
CW-8 Pumping Started Nov. 1990
WPL Extraction System Start May 1994
System Shutdown 8/11/14 07:55
System Restart 1/27/15 10:35
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
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Jan-08
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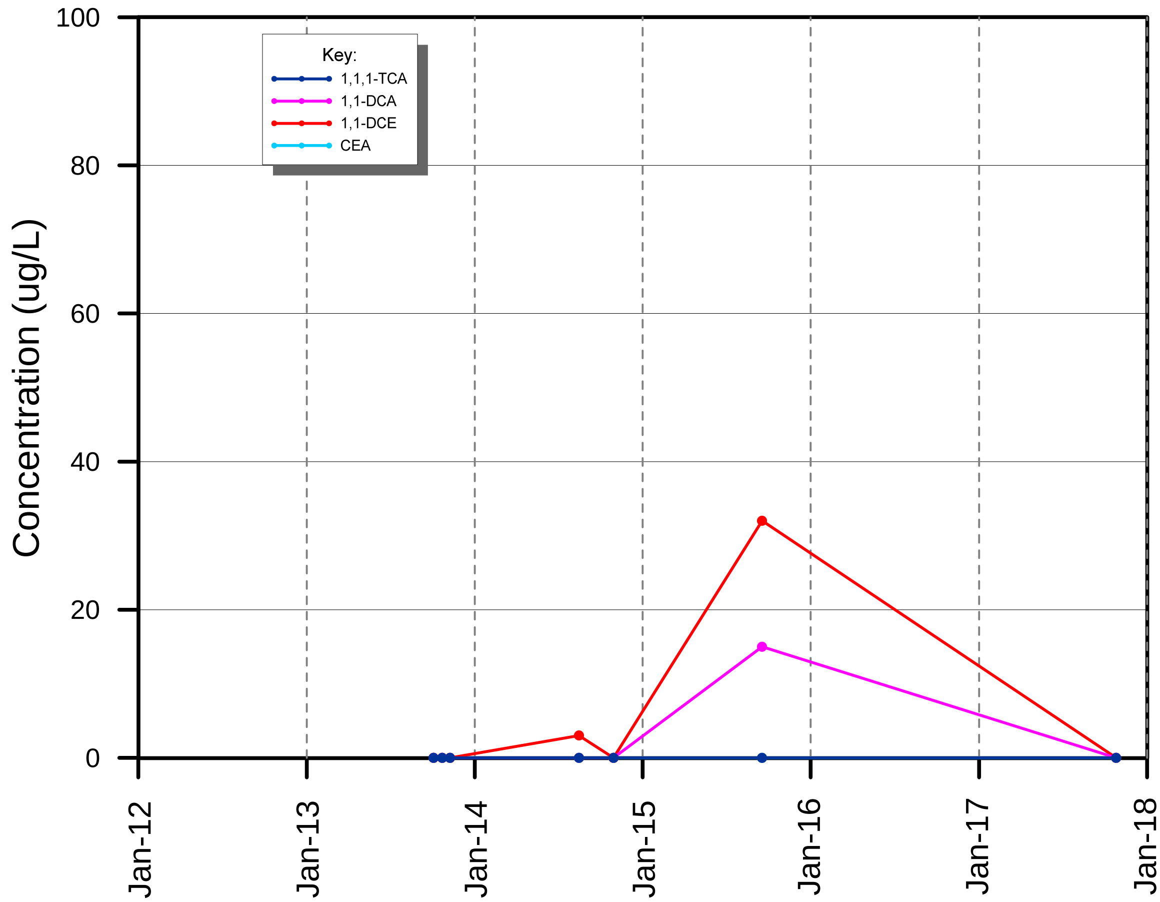
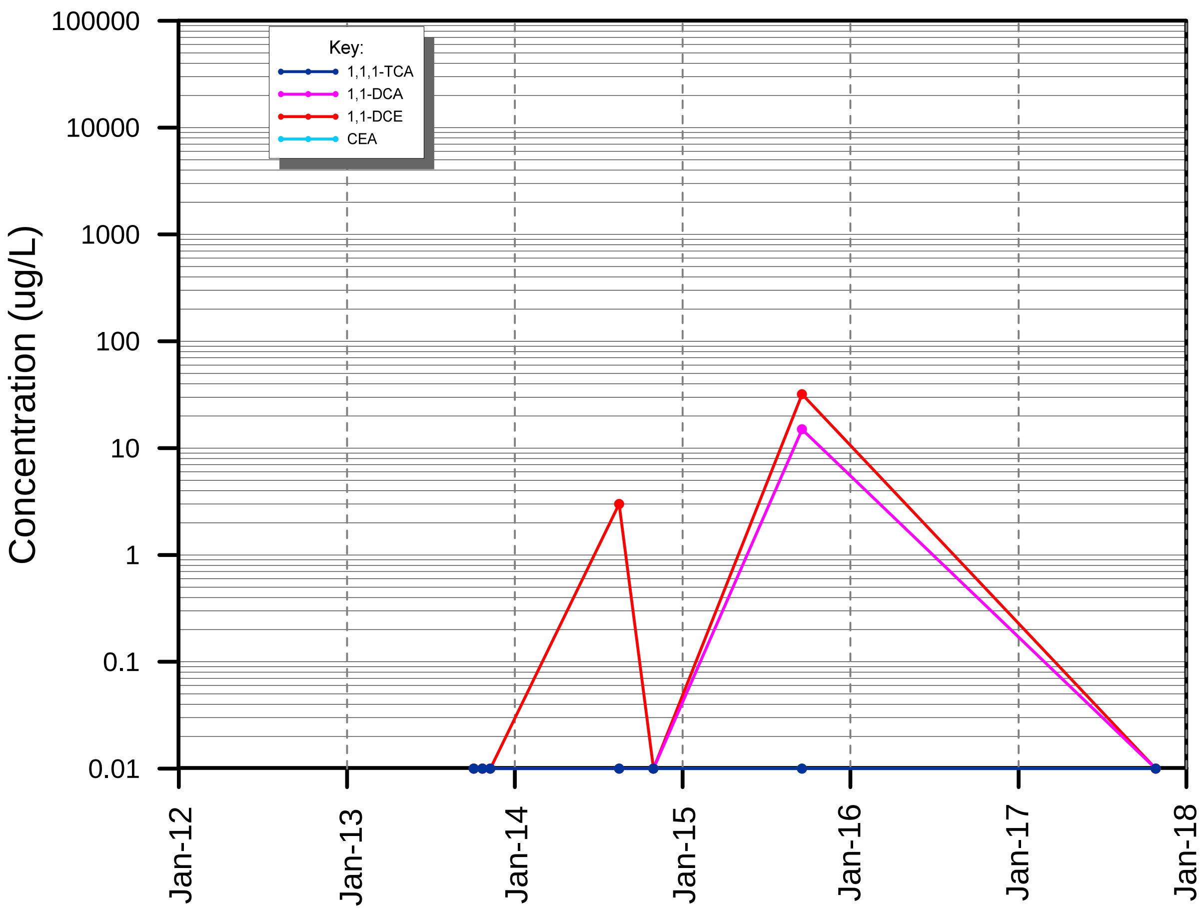
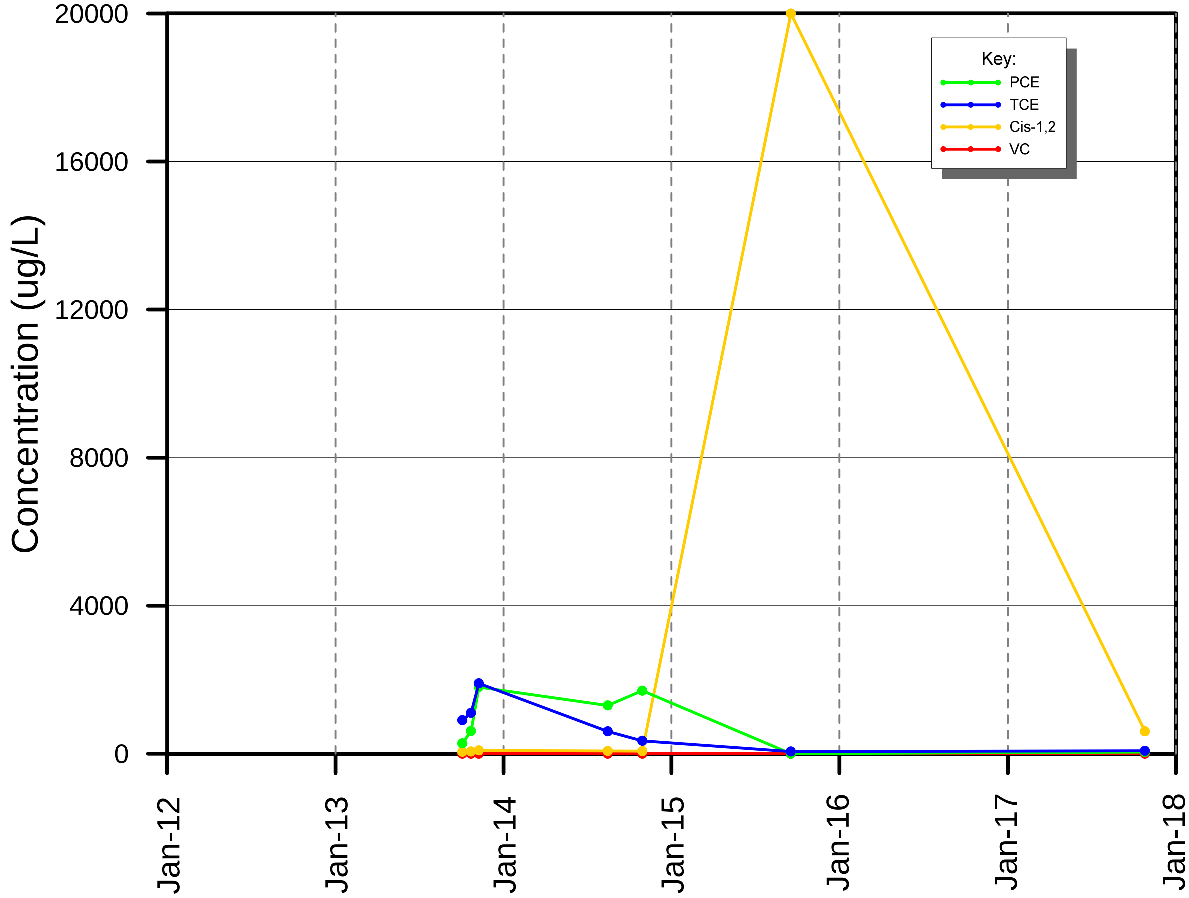
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18

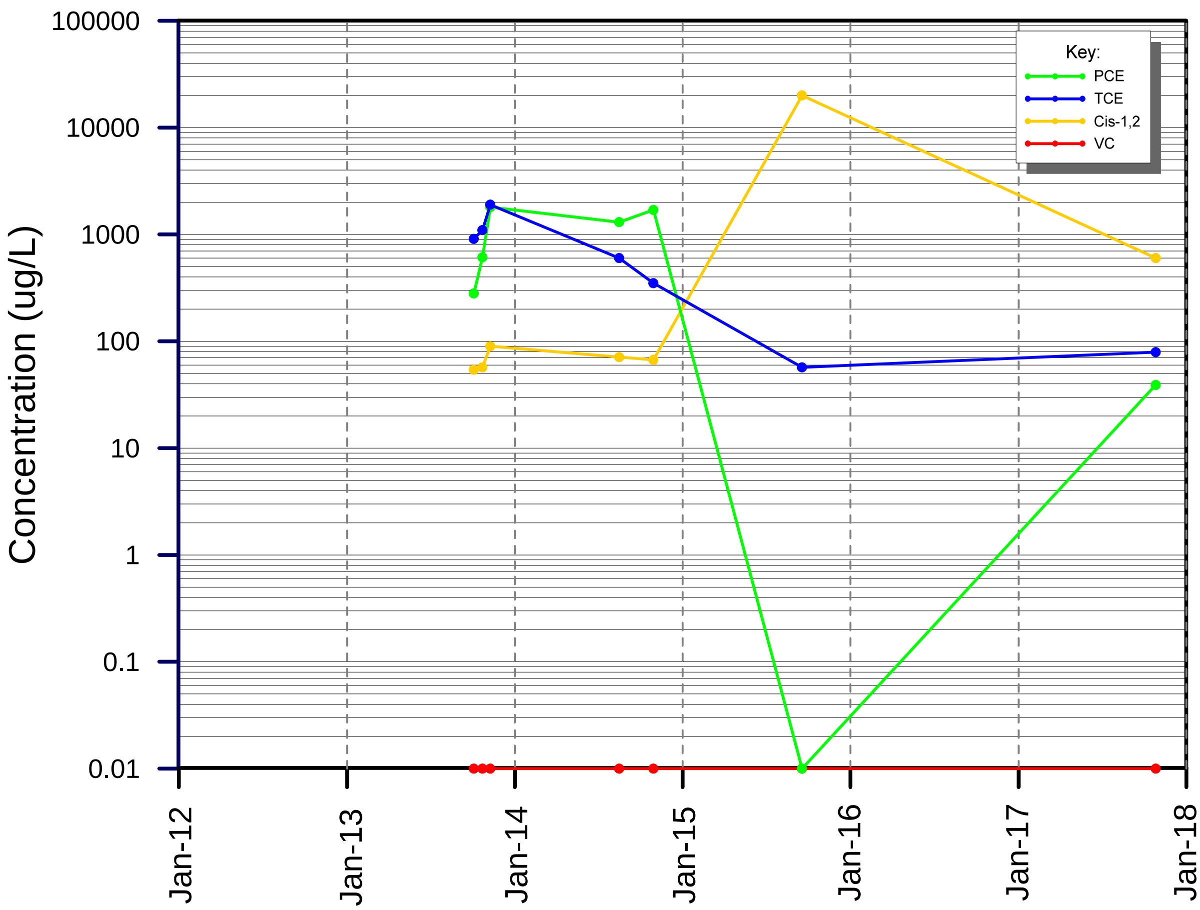
MW-136A(270-348)



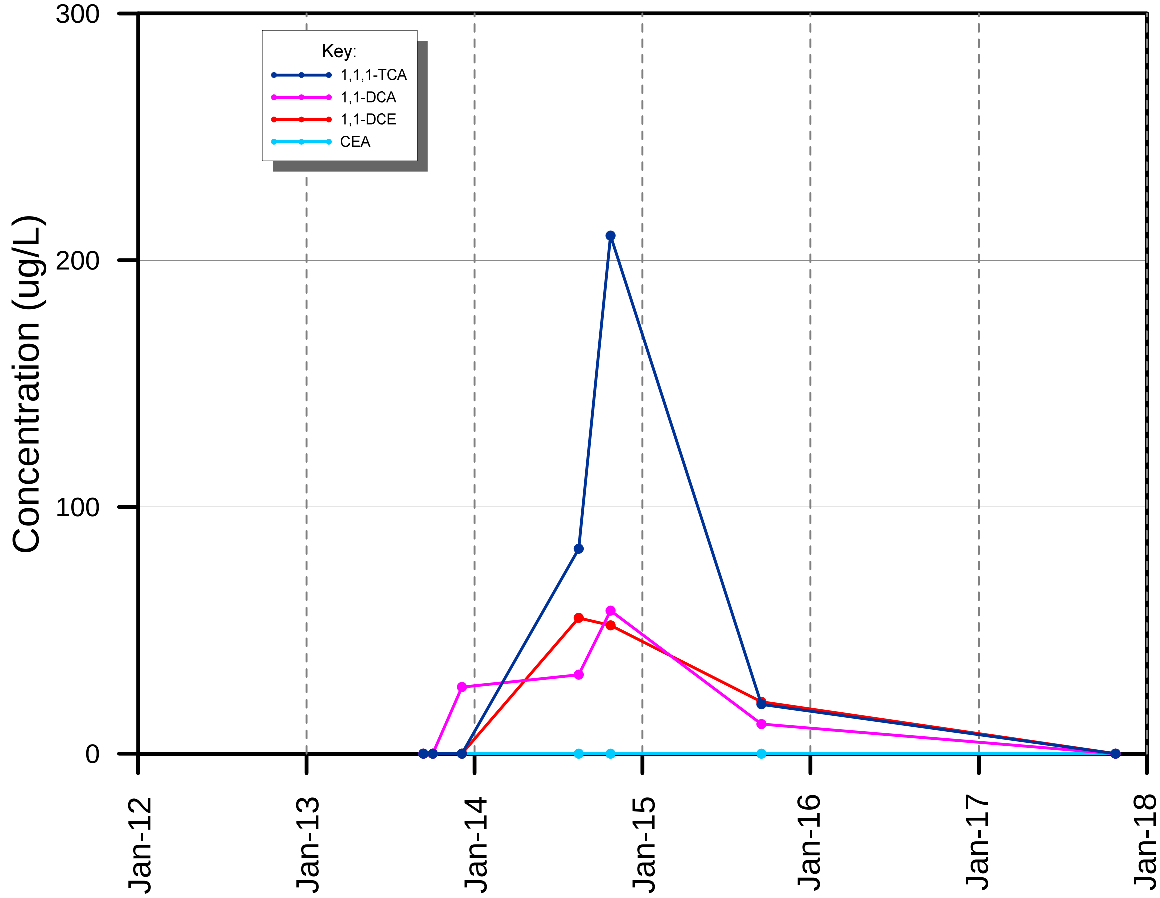


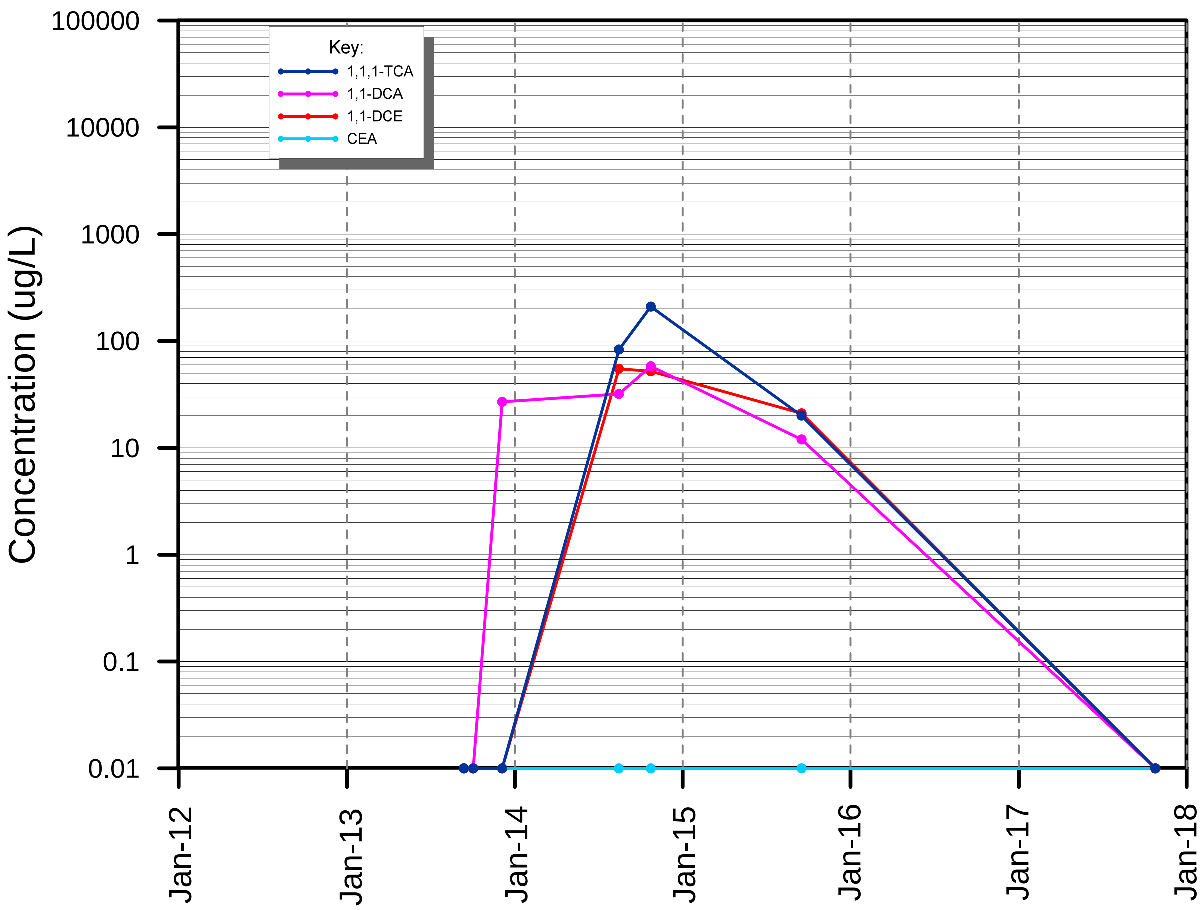
MW-136A(270-348)



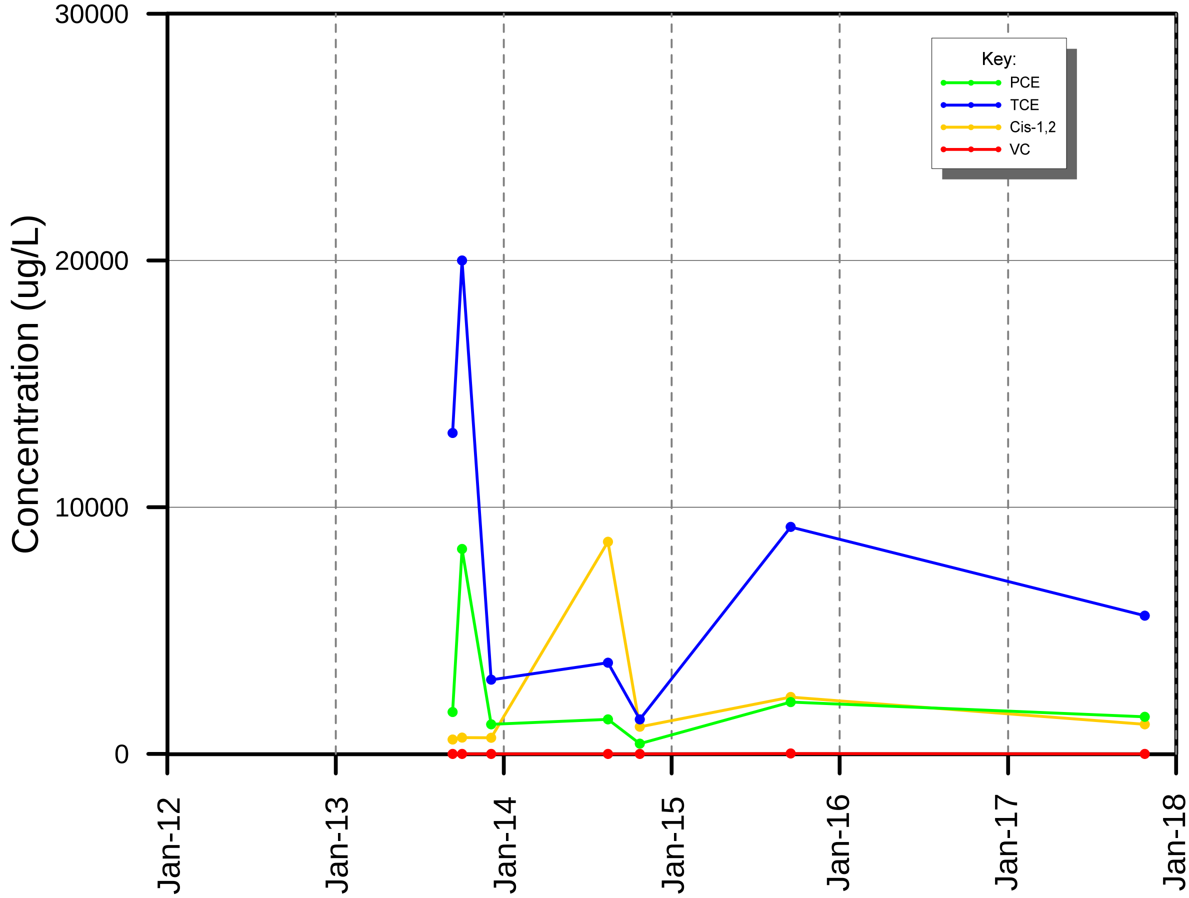


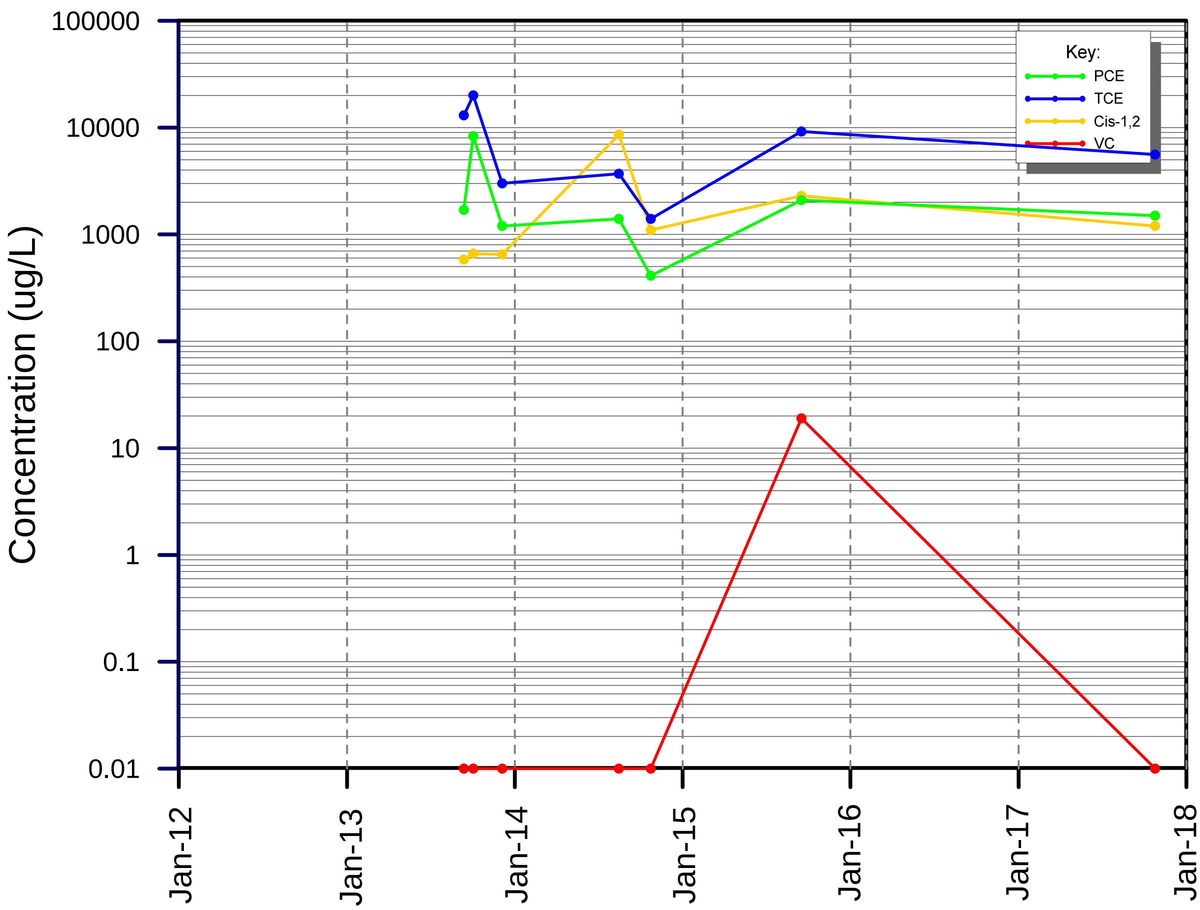
MW-136A(356-356.5)



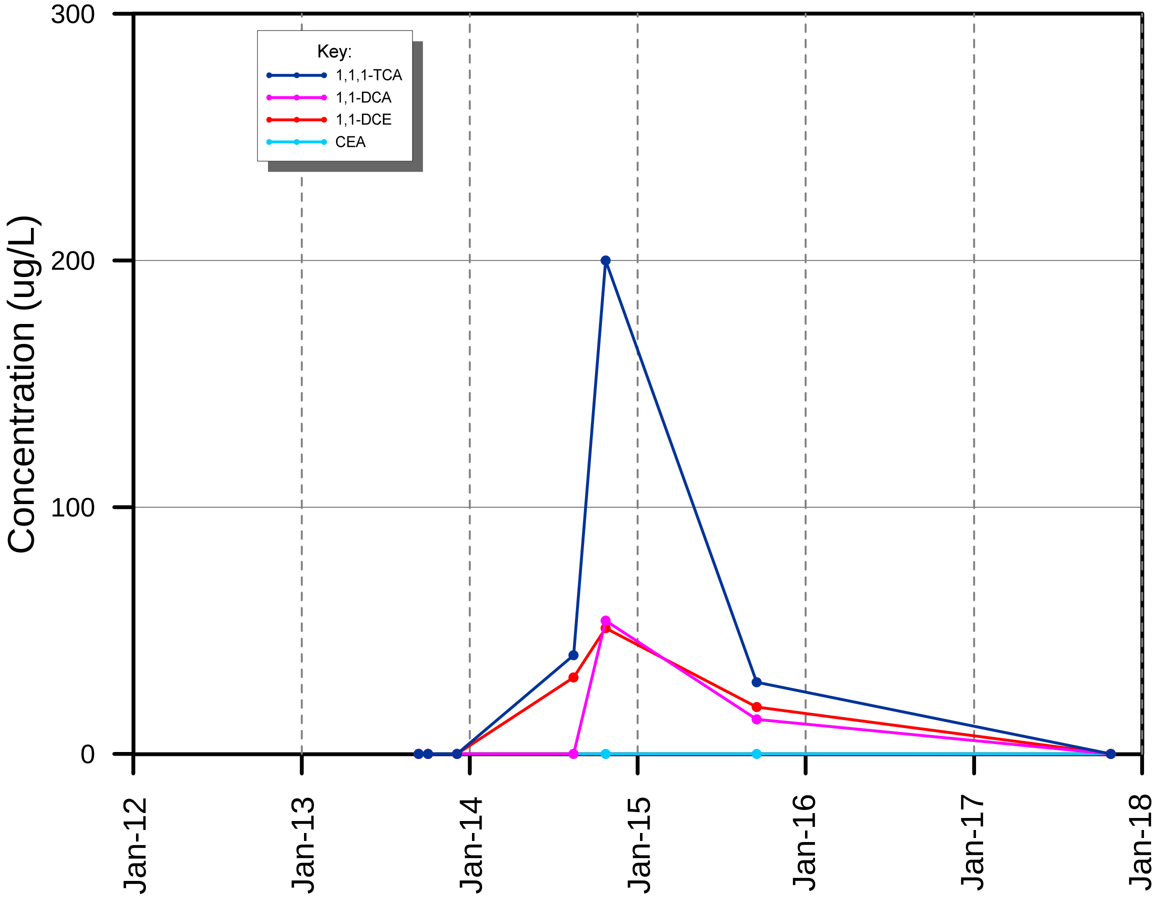


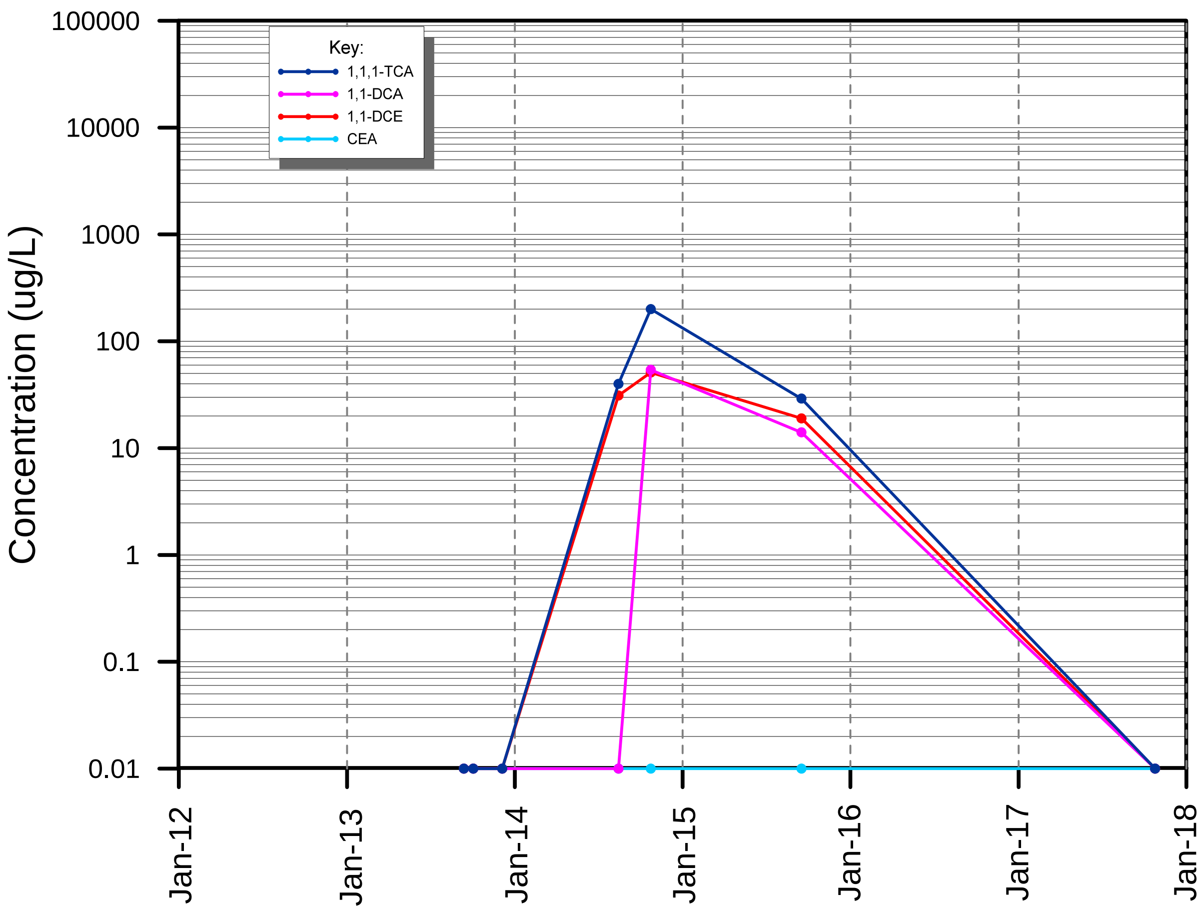
MW-136A(356-356.5)



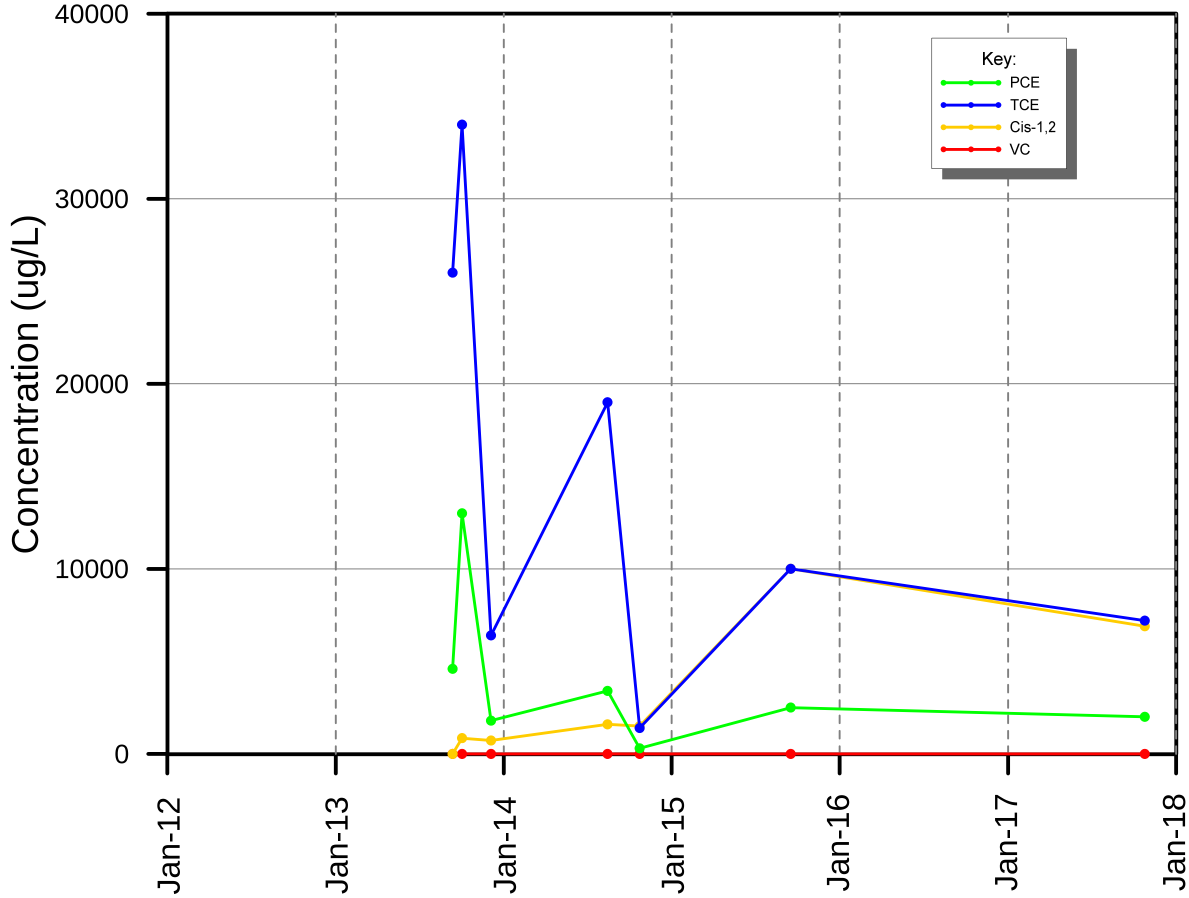


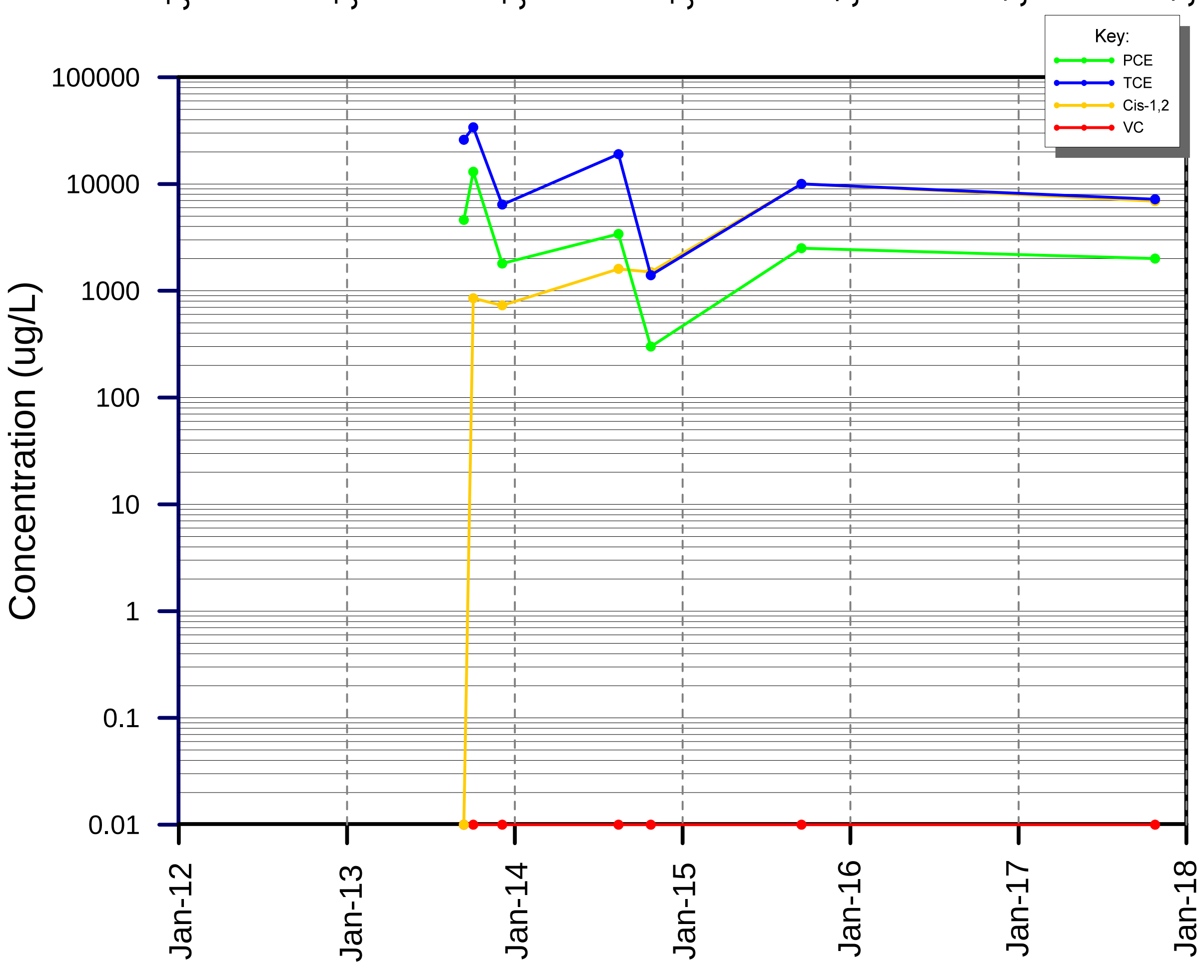
MW-136A(372.5-373)



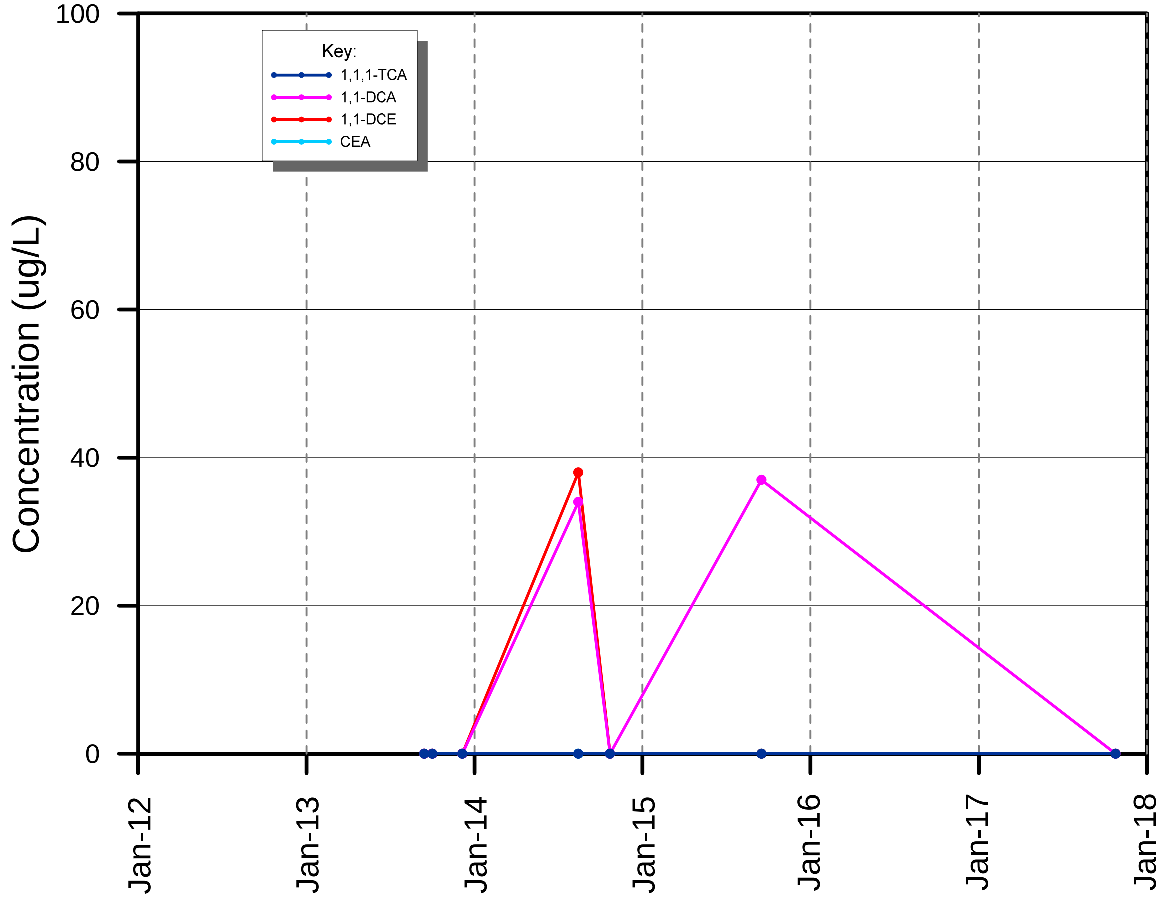


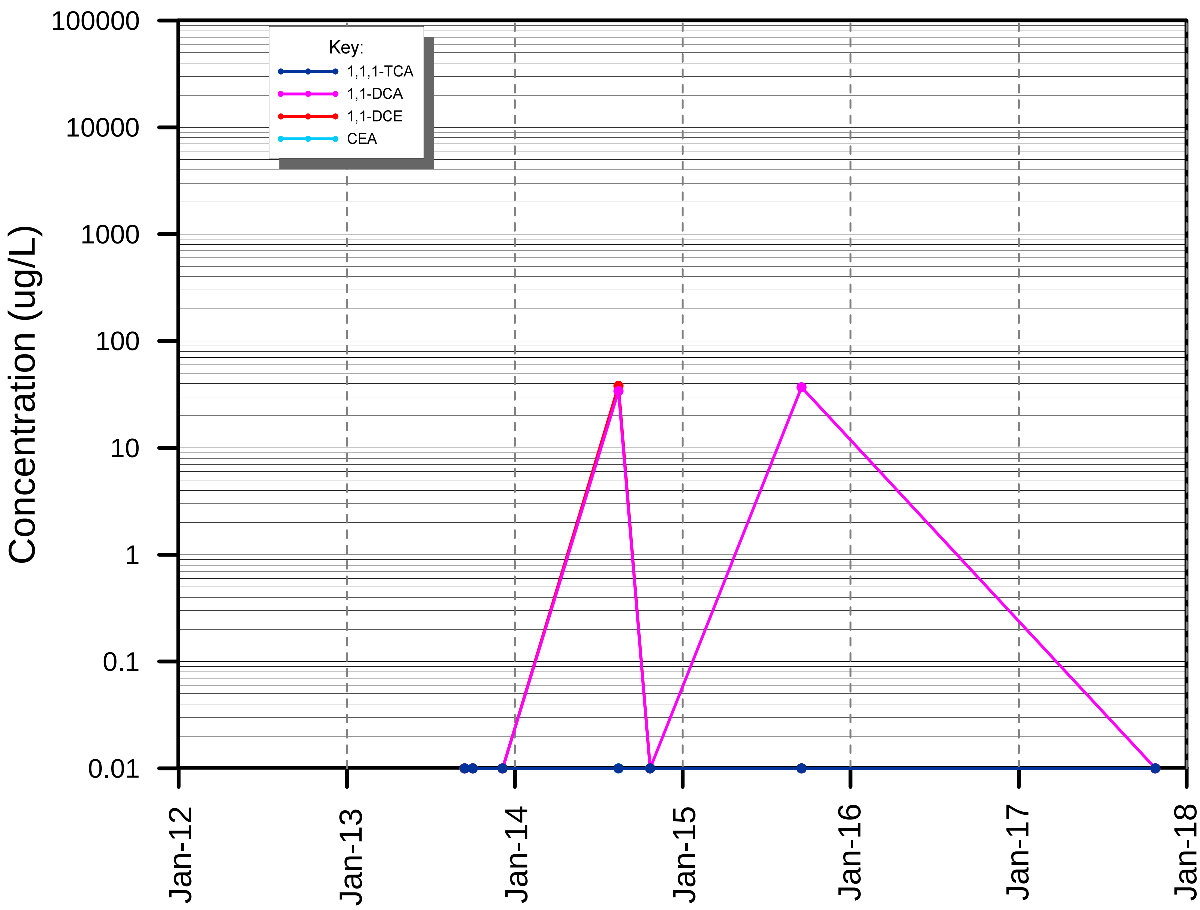
MW-136A(372.5-373)



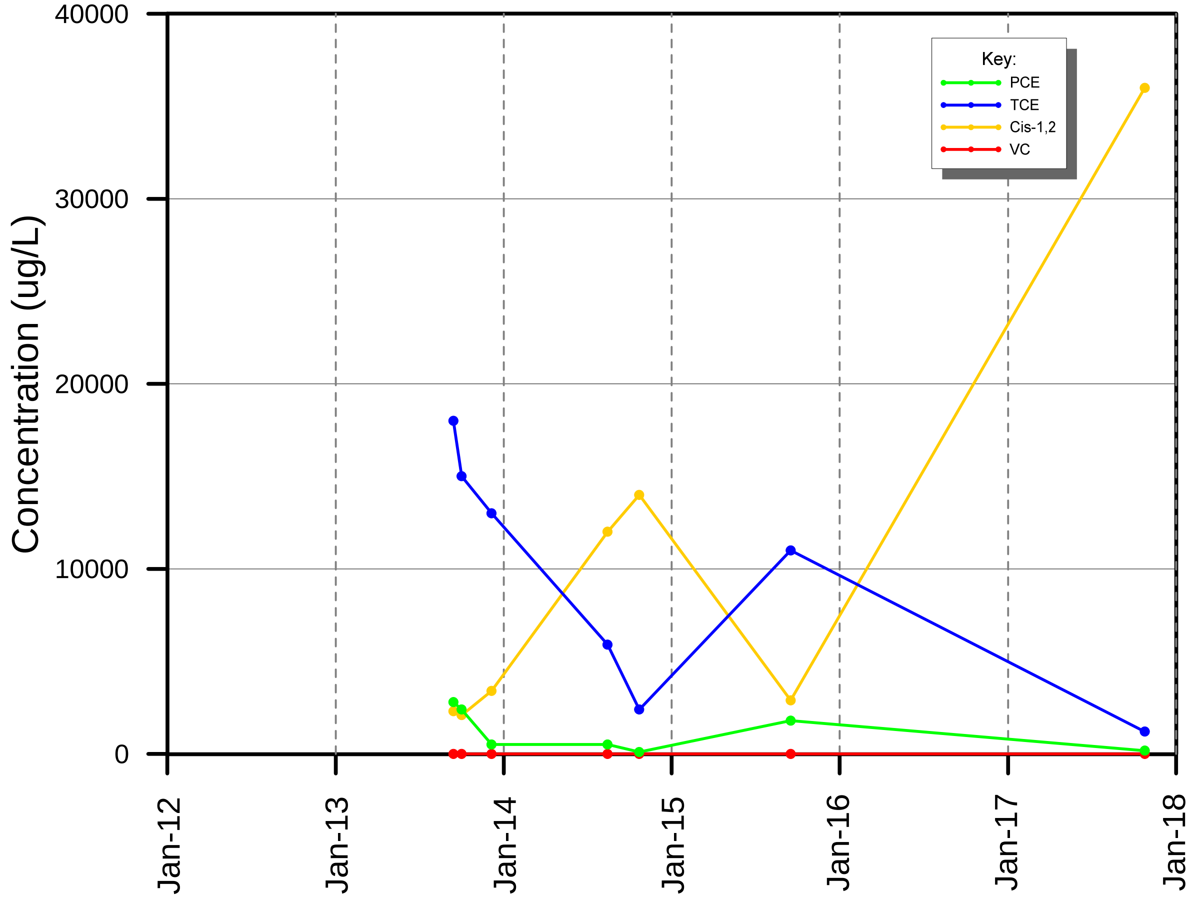


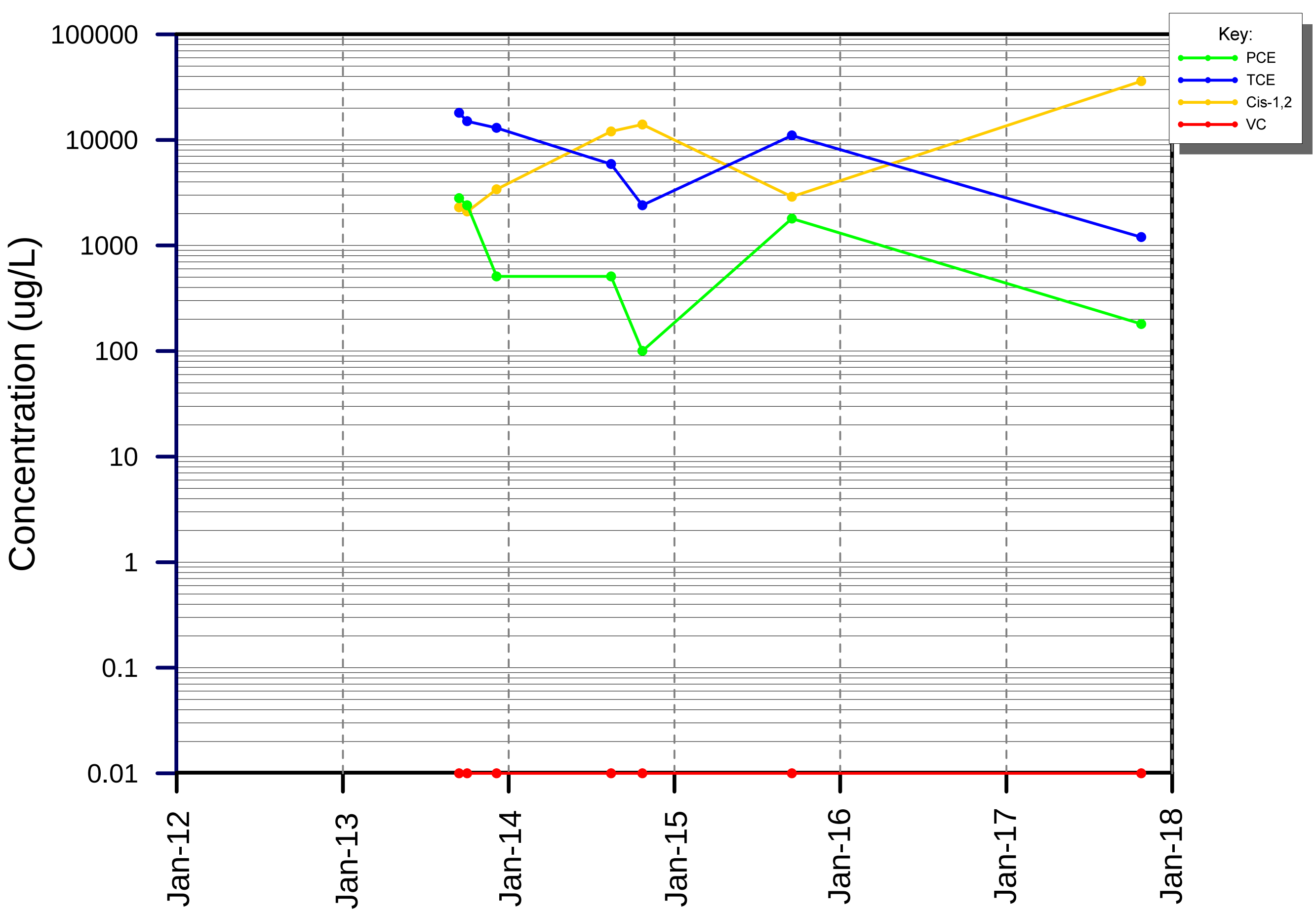
MW-136A(434-434.5)



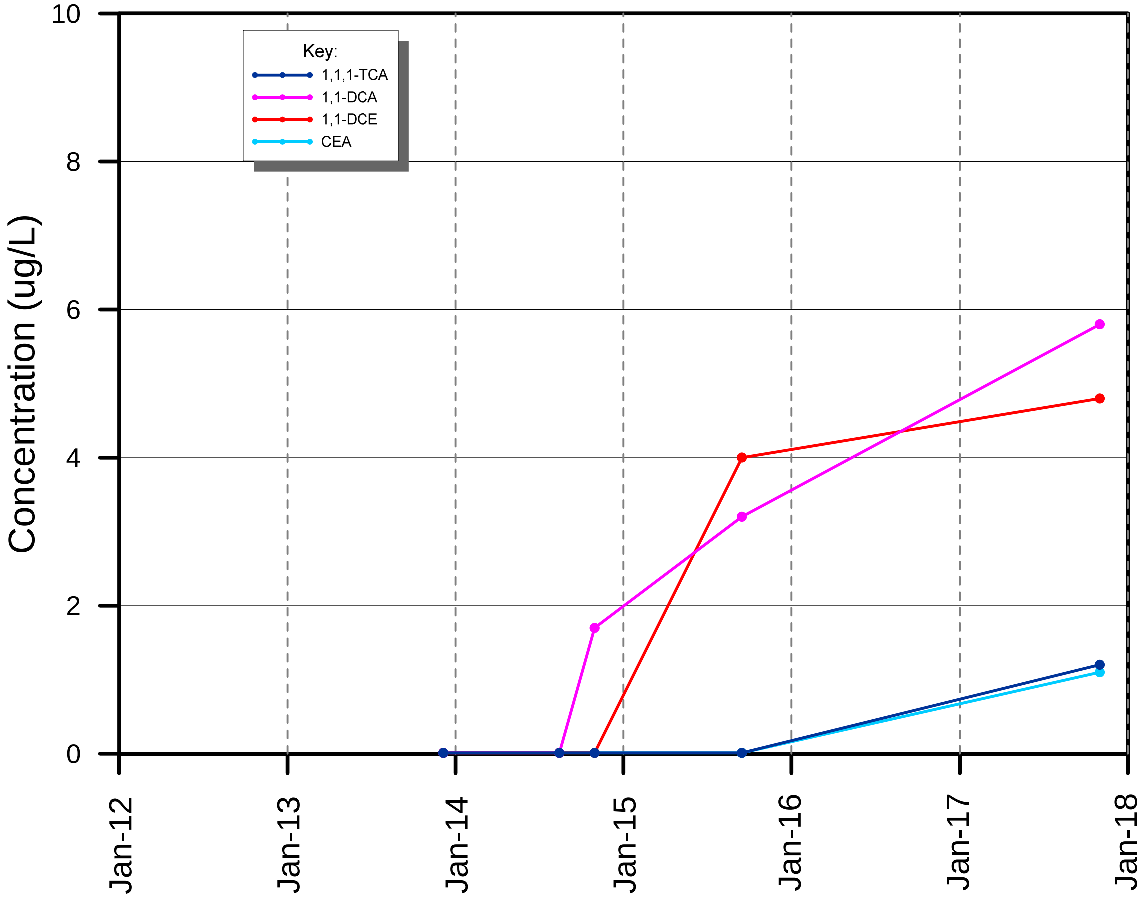


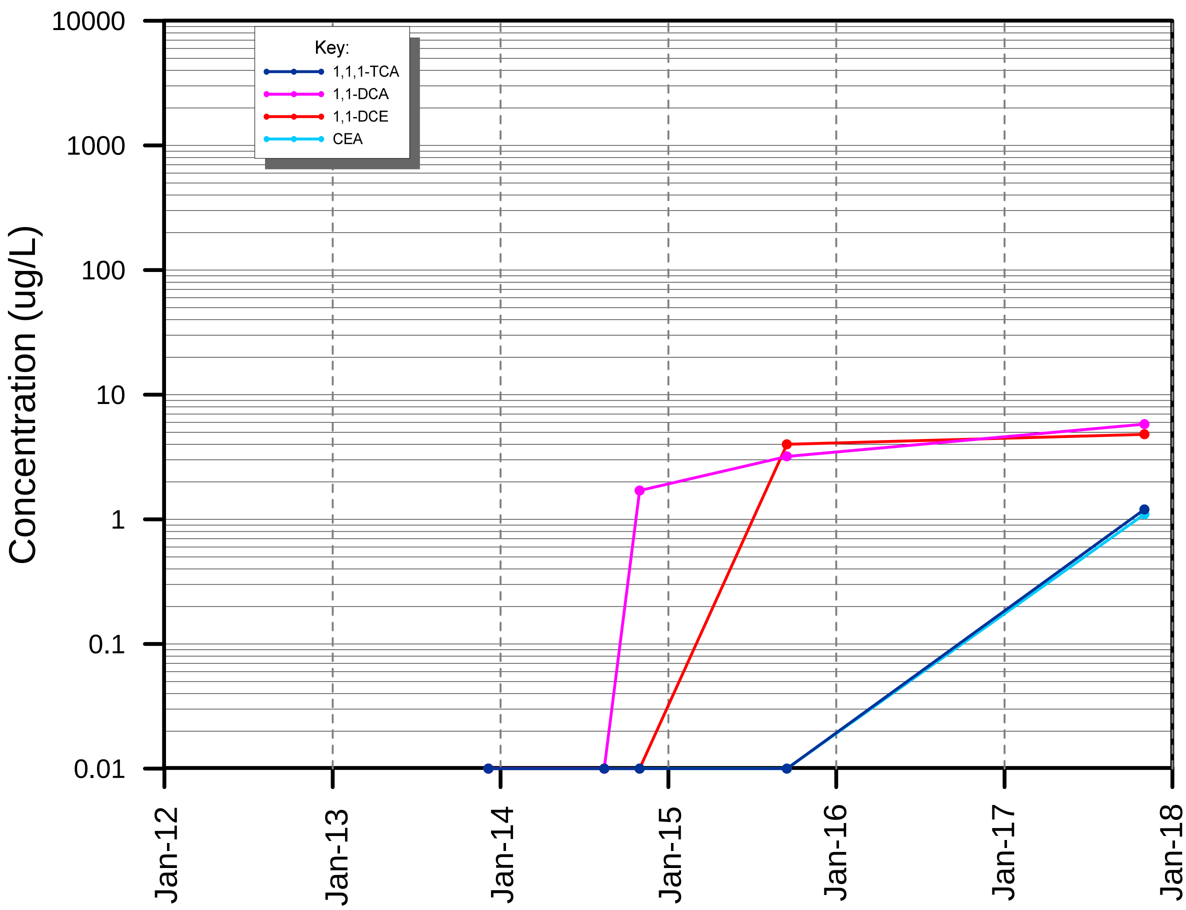
MW-136A(434-434.5)



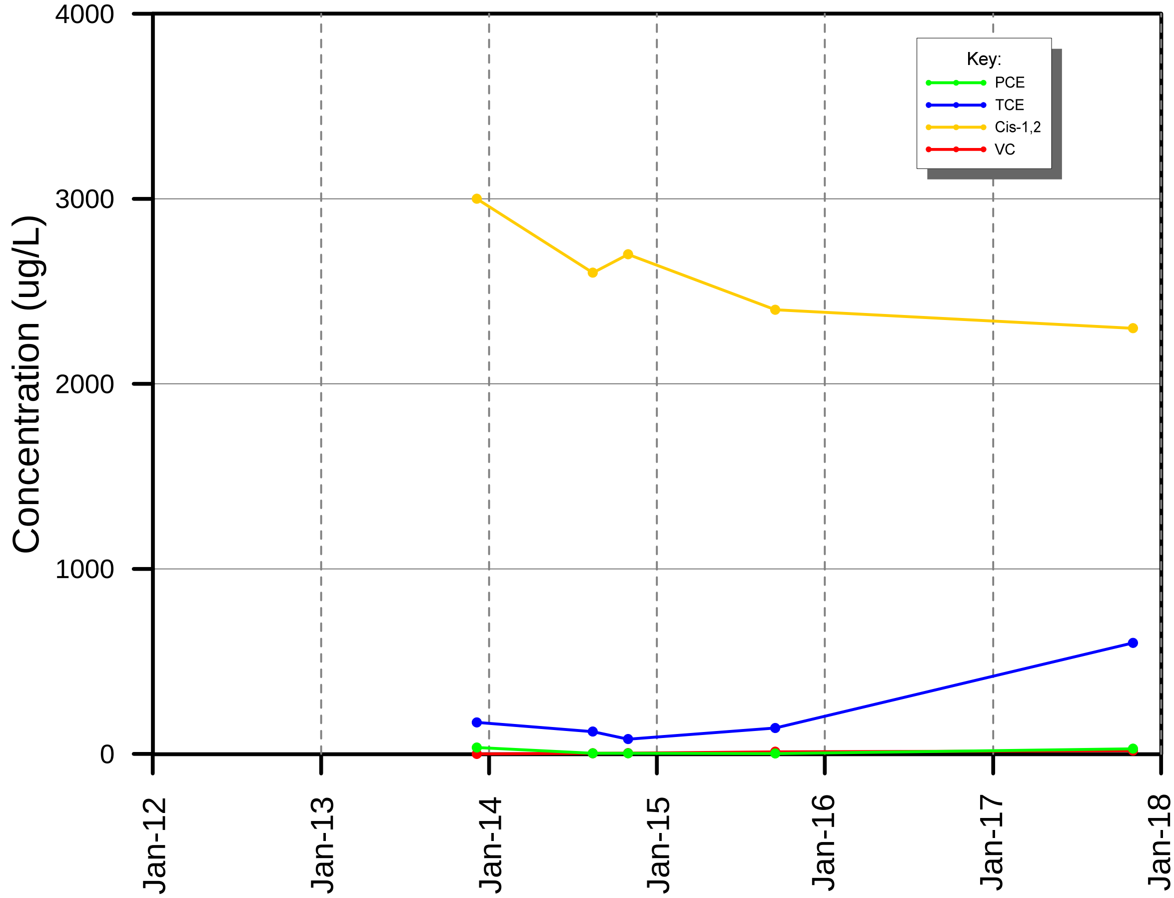


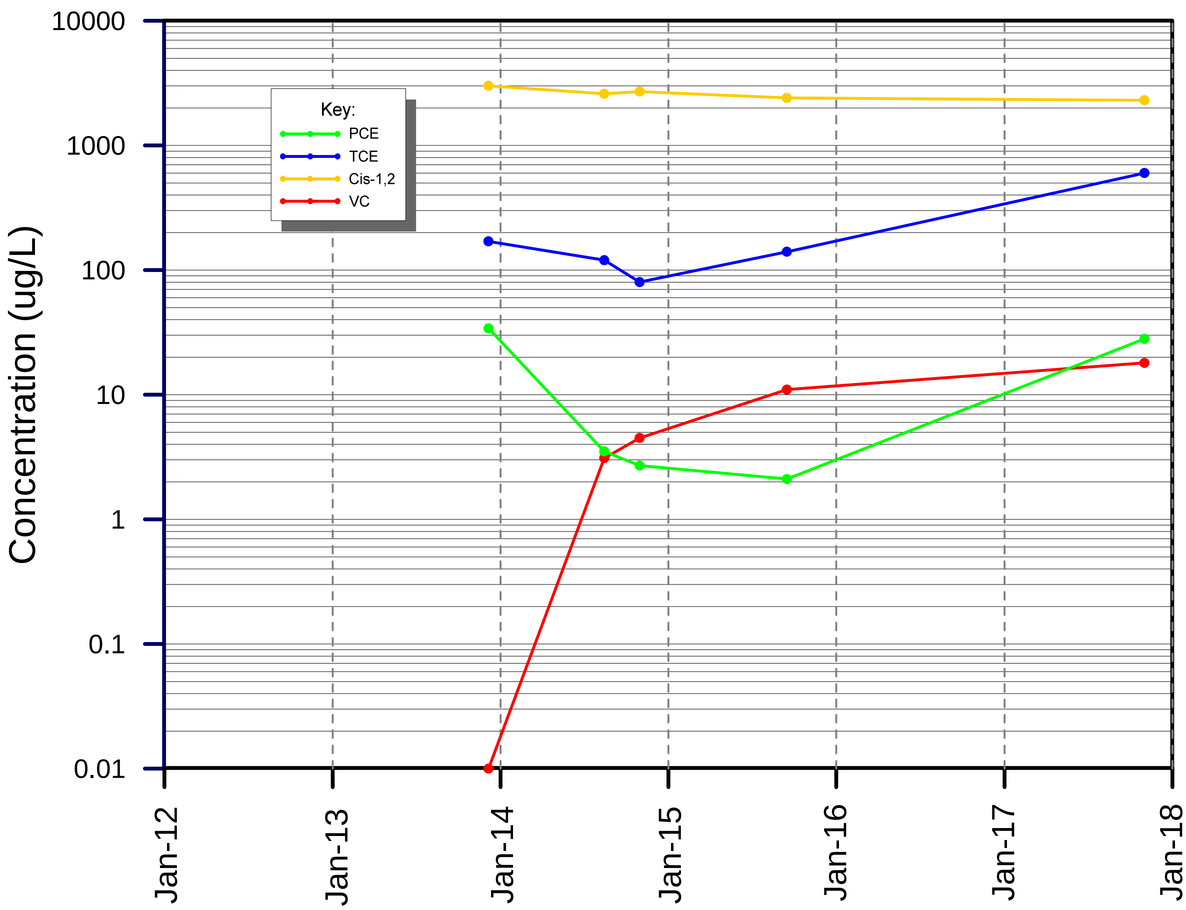
MW-136A (459.5-460)



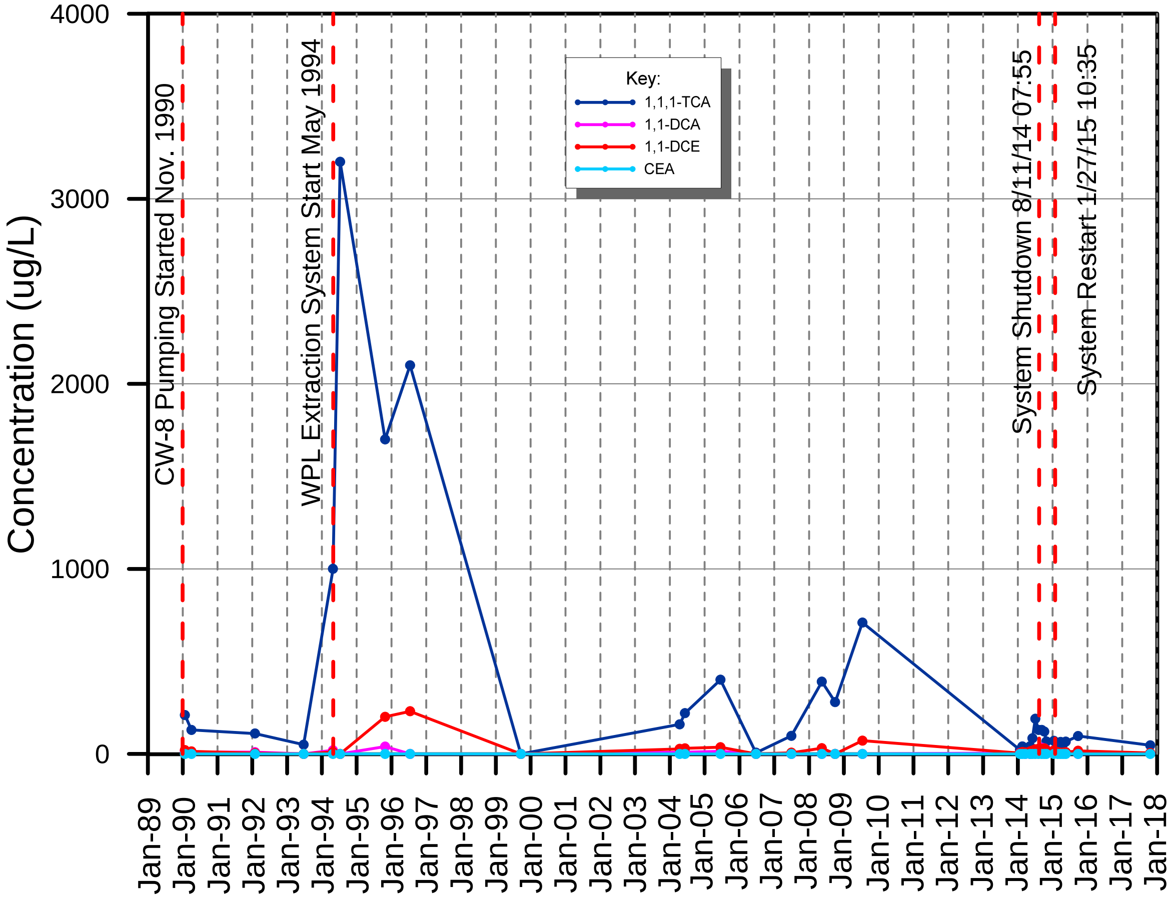


MW-136A (459.5-460)





MW-37D


Concentration (ug/L)
4000
3000
2000
1000
0
CW-8 Pumping Started Nov. 1990
WPL Extraction System Start May 1994
System Shutdown 8/11/14 07:55
System Restart 1/27/15 10:35
Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
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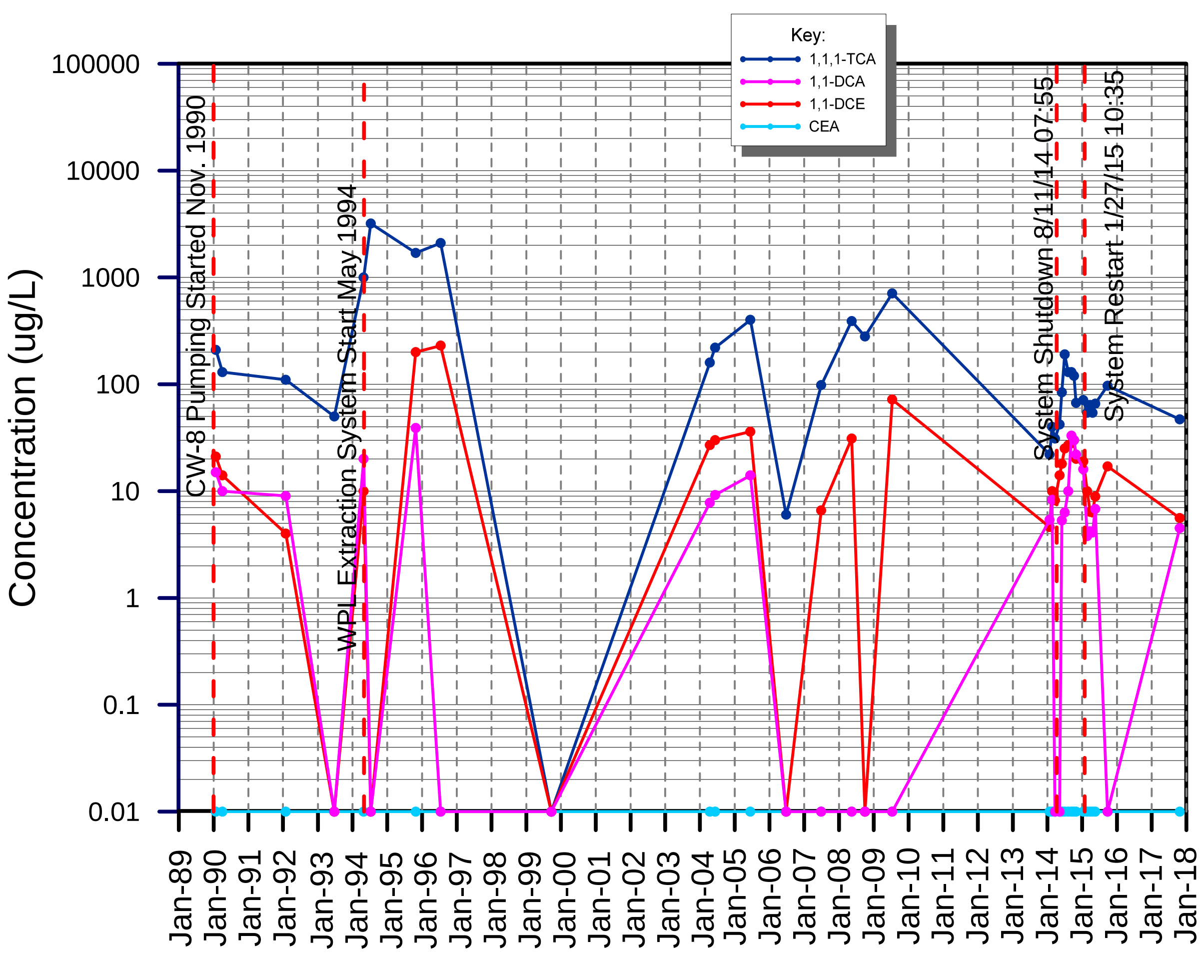
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18


Concentration (ug/L)
100000
10000
1000
100
10
1
0.1
0.01
CW-8 Pumping Started Nov. 1990
WPL Extraction System Start May 1994
System Shutdown 8/11/14 07:55
System Restart 1/27/15 10:35
Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
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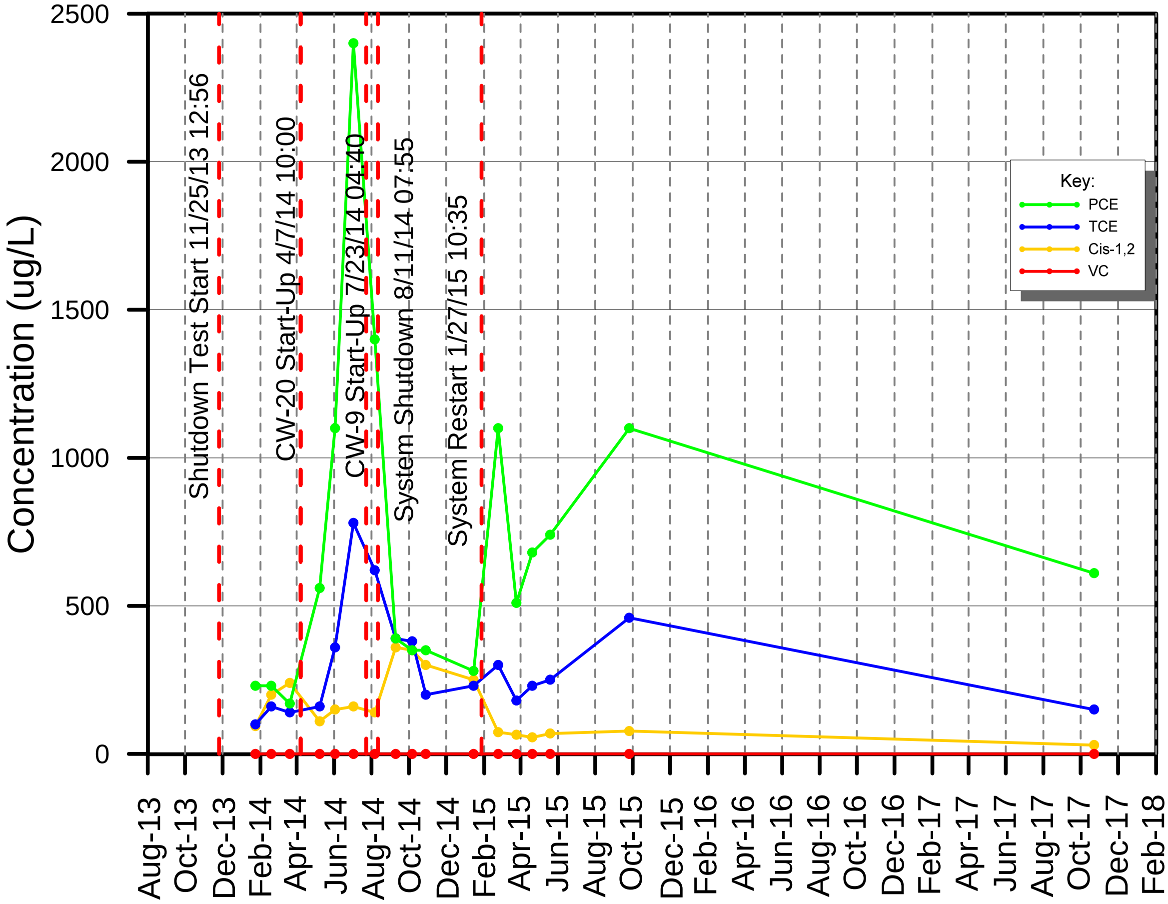
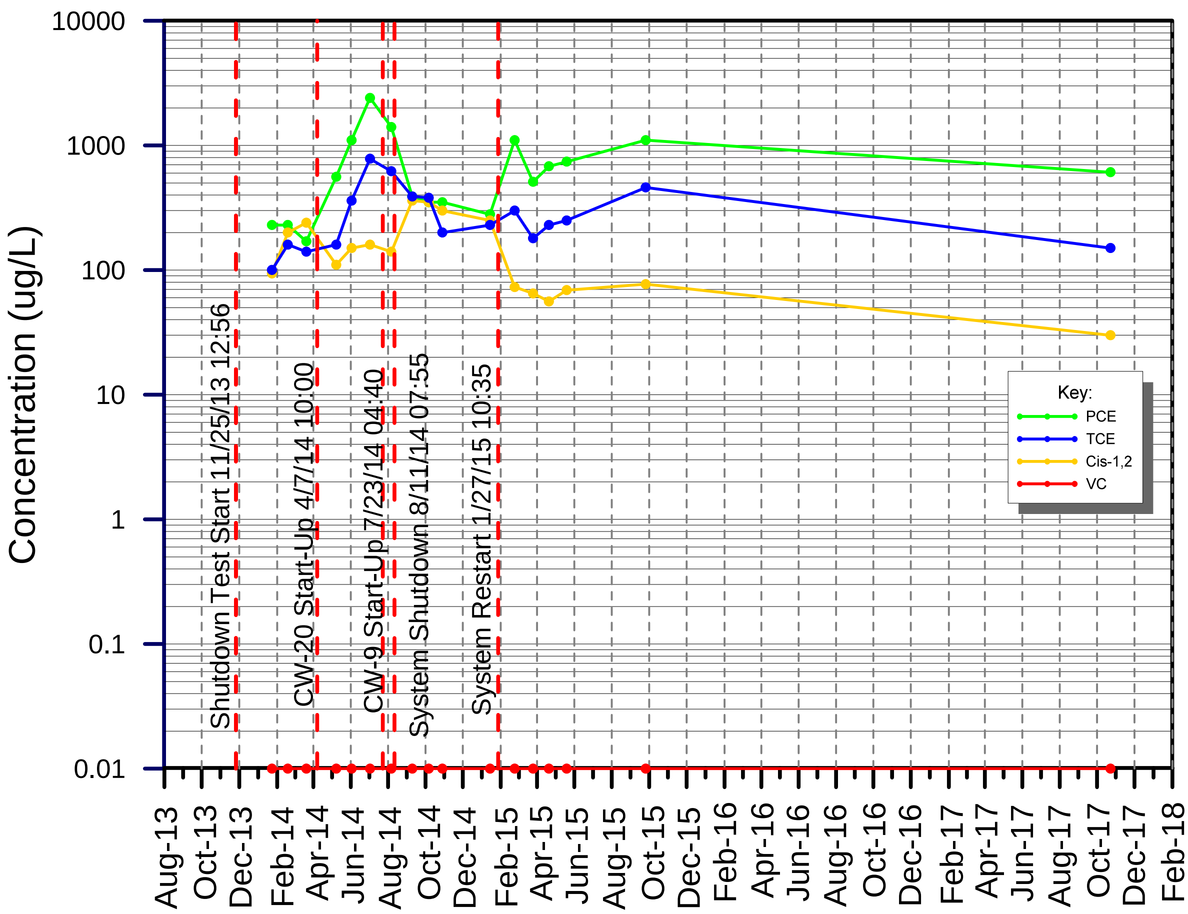
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18

MW-37D



2500
2000
1500
1000
500
0
Concentration (ug/L)
Shutdown Test Start 11/25/13 12:56
CW-20 Start-Up 4/7/14 10:00
CW-9 Start-Up 7/23/14 04:40
System Shutdown 8/11/14 07:55
System Restart 1/27/15 10:35
Key:
PCE
TCE
Cis-1,2
VC
Aug-13
Oct-13
Dec-13
Feb-14
Apr-14
Jun-14
Aug-14
Oct-14
Dec-14
Feb-15
Apr-15
Jun-15
Aug-15
Oct-15
Dec-15
Feb-16
Apr-16
Jun-16
Aug-16
Oct-16
Dec-16
Feb-17
Apr-17
Jun-17
Aug-17
Oct-17
Dec-17
Feb-18



10000
1000
100
10
1
0.1
0.01
Concentration (ug/L)
Shutdown Test Start 11/25/13 12:56
CW-20 Start-Up 4/7/14 10:00
CW-9 Start-Up 7/23/14 04:40
System Shutdown 8/11/14 07:55
System Restart 1/27/15 10:35
Key:
PCE
TCE
Cis-1,2
VC
Aug-13
Oct-13
Dec-13
Feb-14
Apr-14
Jun-14
Aug-14
Oct-14
Dec-14
Feb-15
Apr-15
Jun-15
Aug-15
Oct-15
Dec-15
Feb-16
Apr-16
Jun-16
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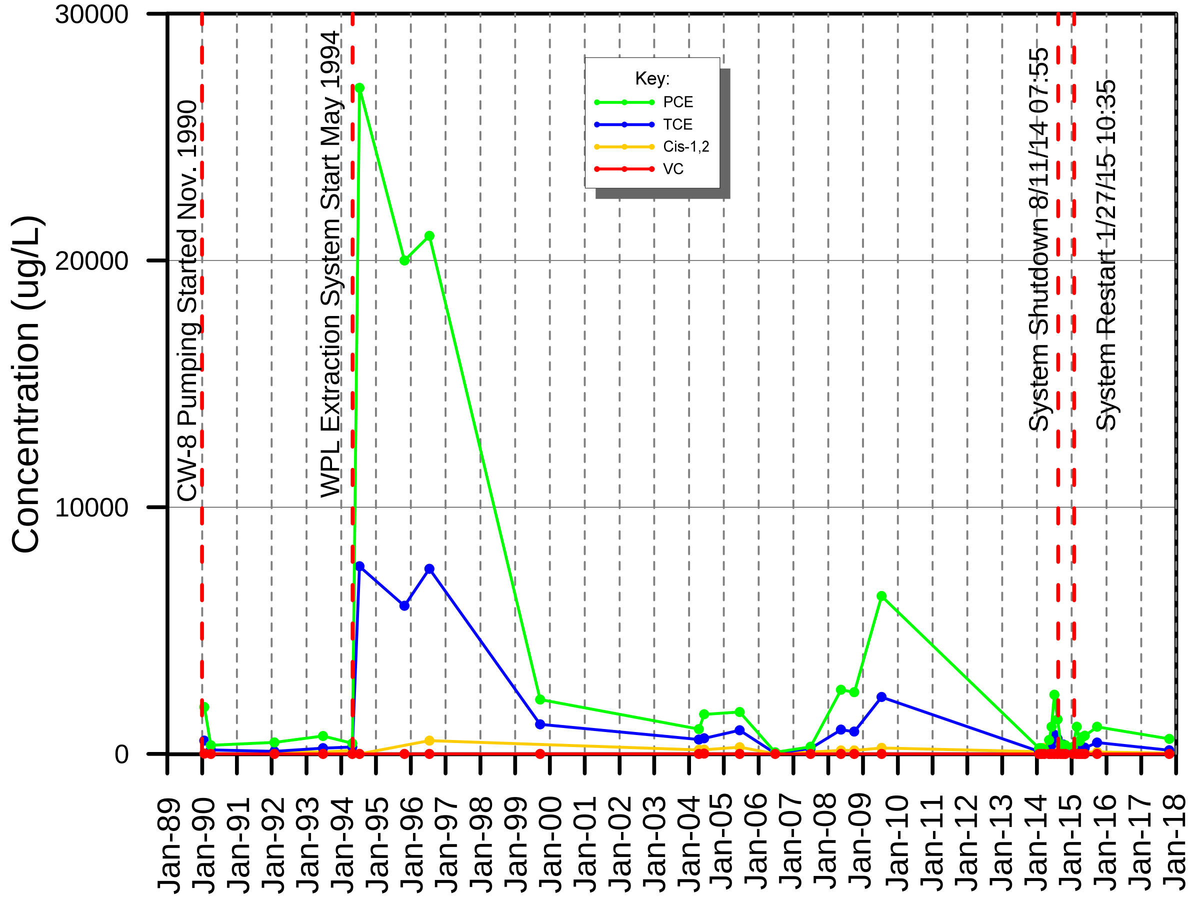
Dec-16
Feb-17
Apr-17
Jun-17
Aug-17
Oct-17
Dec-17
Feb-18

MW-37D



Key:
PCE
TCE
Cis-1,2
VC
Concentration (ug/L)
30000
20000
10000
0
CW-8 Pumping Started Nov. 1990
WPL Extraction System Start May 1994
System Shutdown 8/11/14 07:55
System Restart 1/27/15 10:35
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
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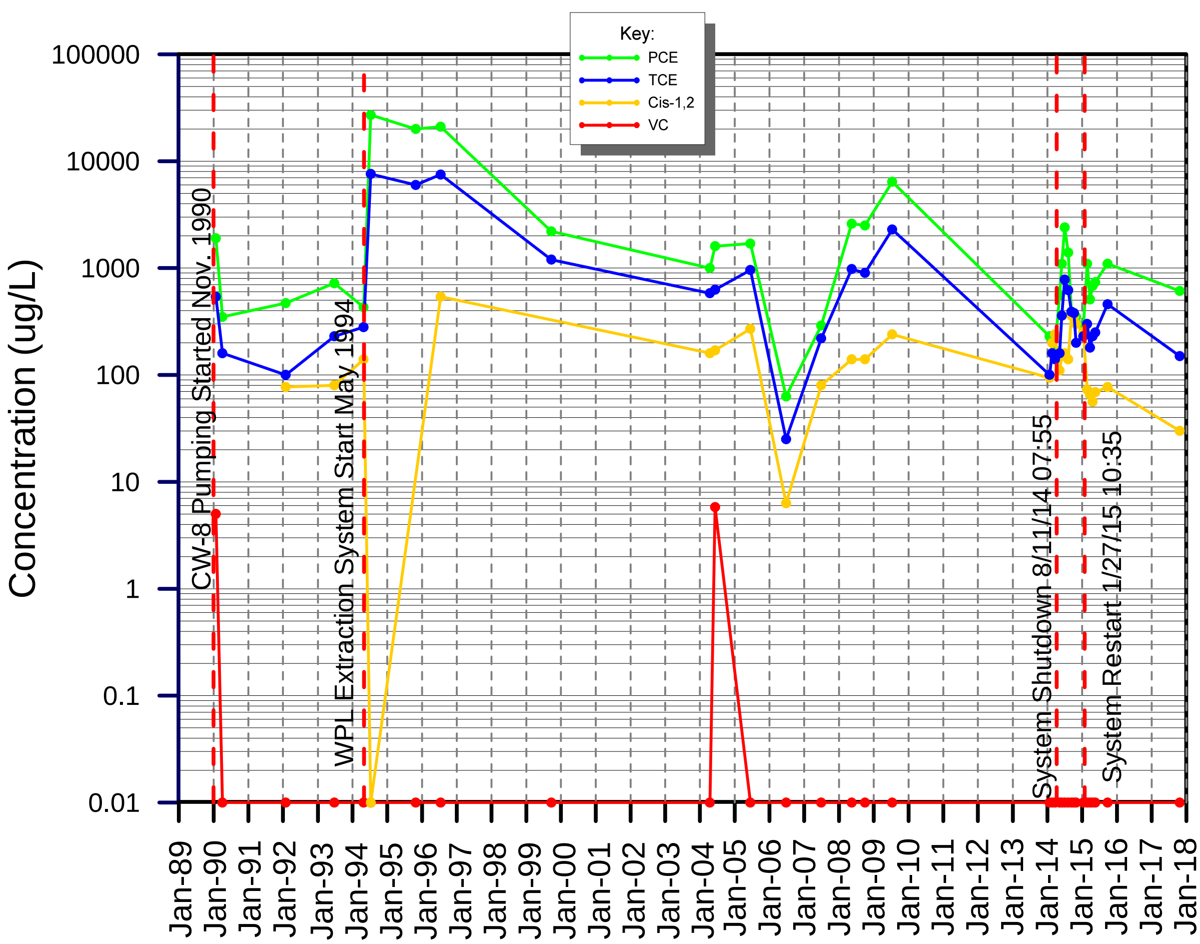
Jan-16
Jan-17
Jan-18



Key:
PCE
TCE
Cis-1,2
VC
Concentration (ug/L)
100000
10000
1000
100
10
1
0.1
0.01
CW-8 Pumping Started Nov. 1990
WPL Extraction System Start May 1994
System Shutdown 8/11/14 07:55
System Restart 1/27/15 10:35
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
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Jan-05
Jan-06
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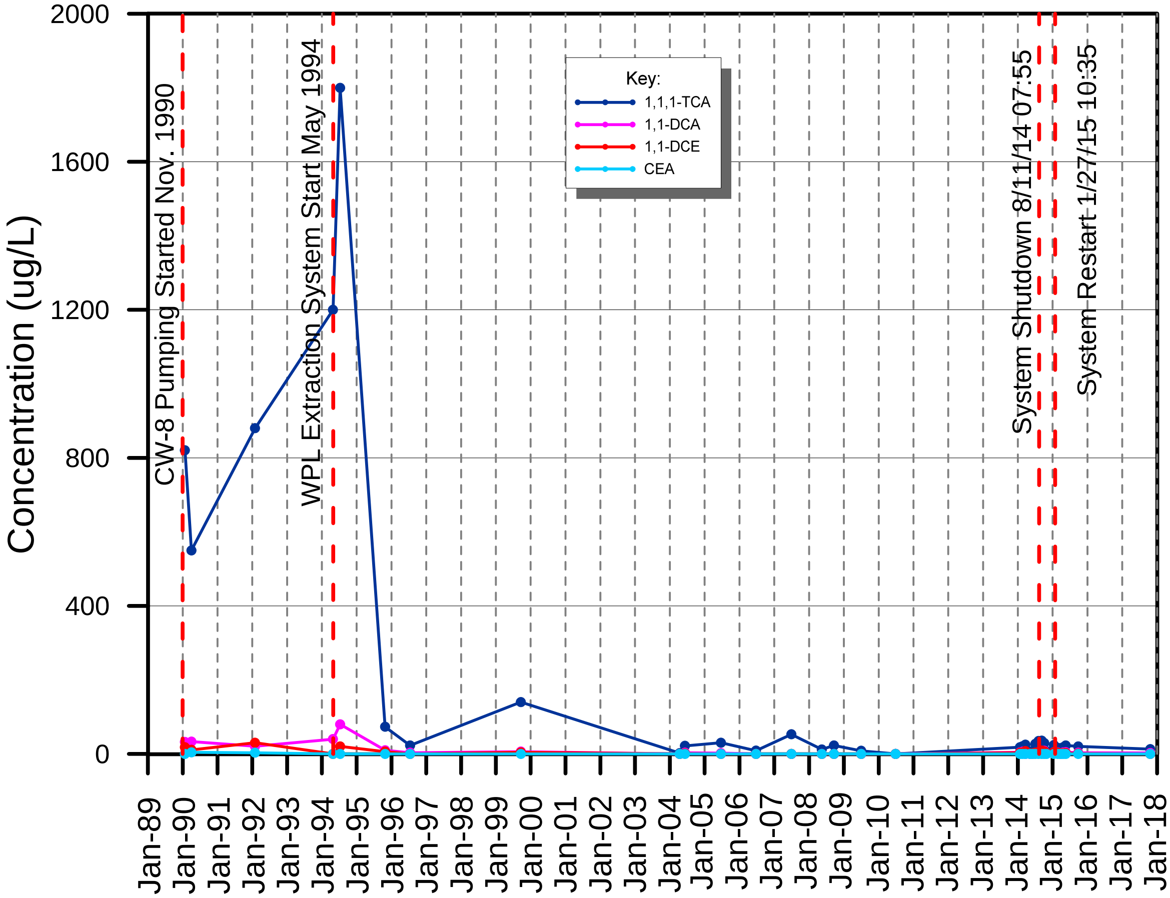
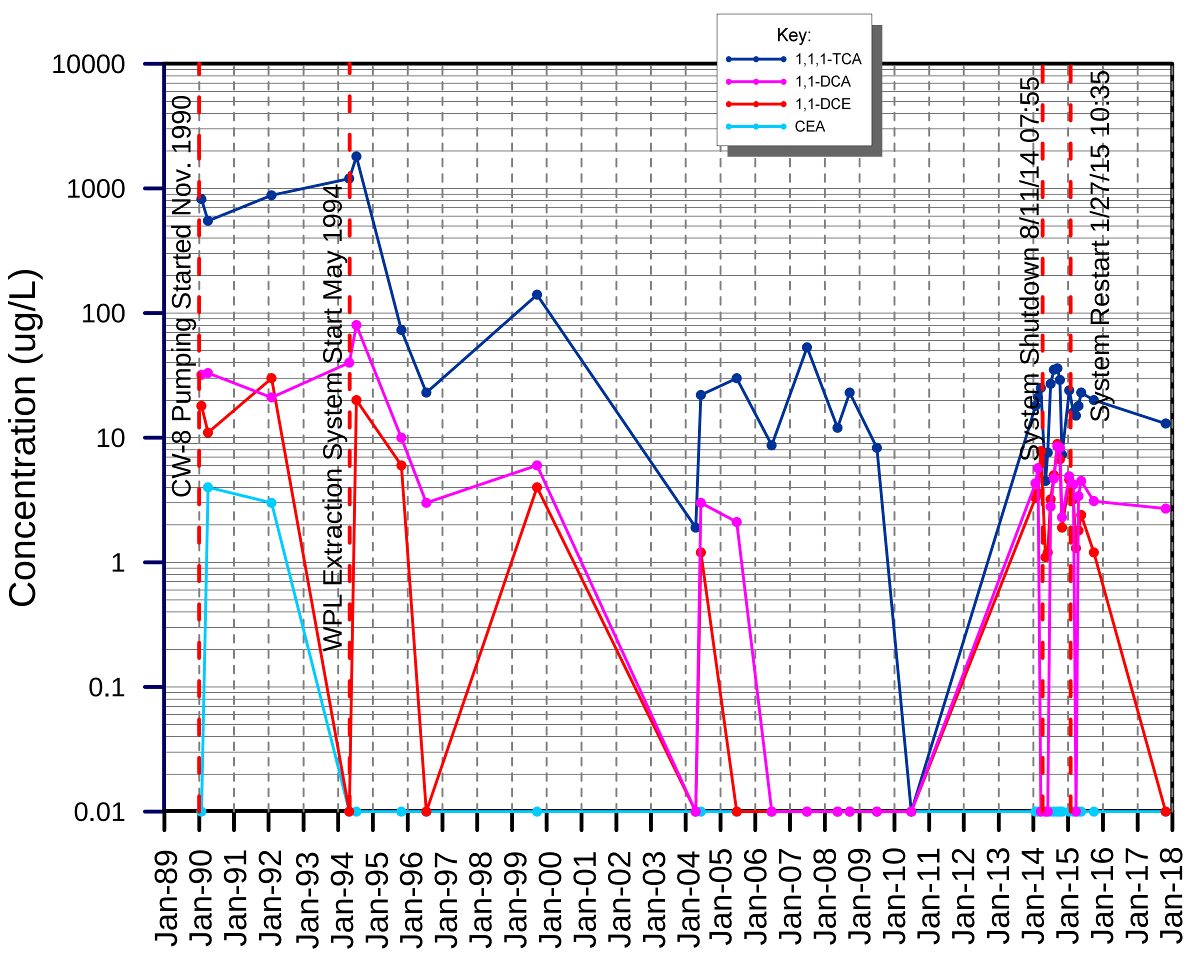
Jan-15
Jan-16
Jan-17
Jan-18

MW-37S

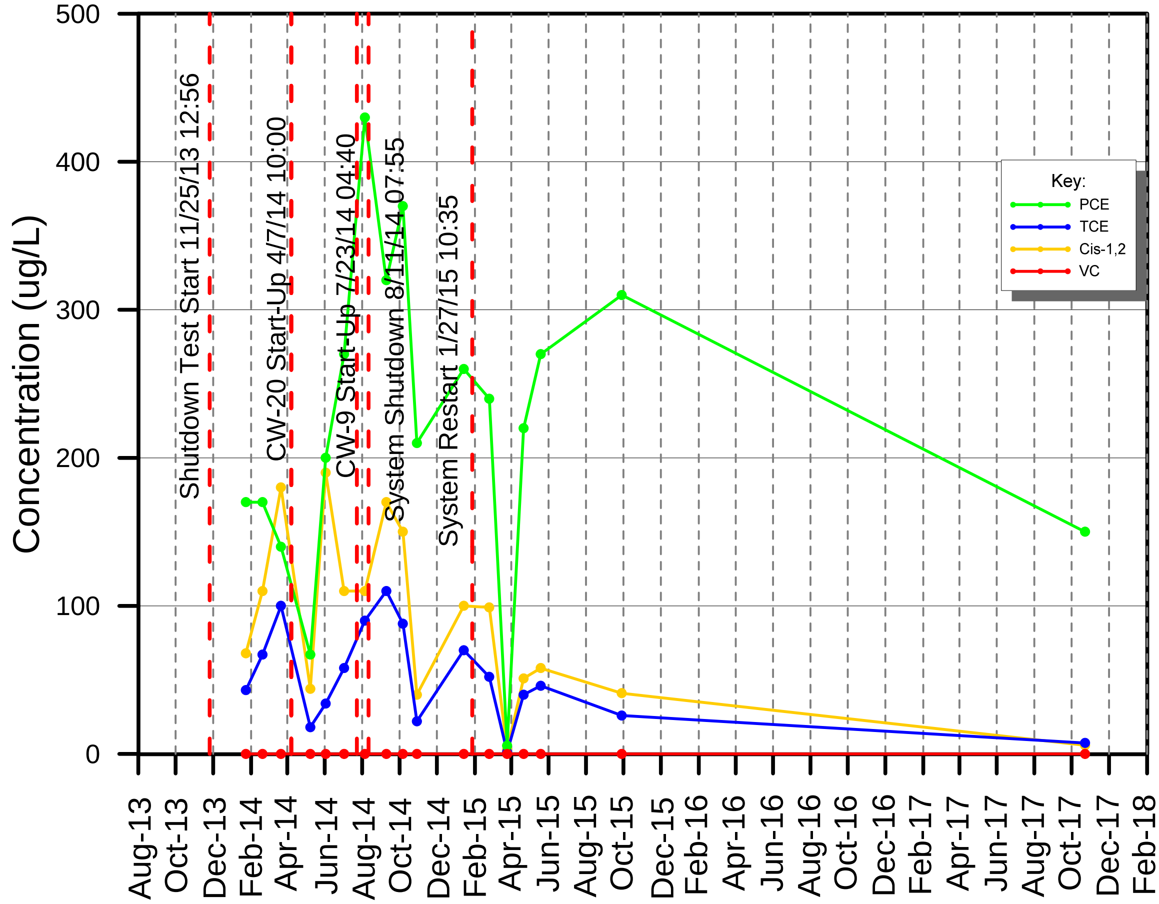


Concentration (ug/L)
2000
1600
1200
800
400
0
CW-8 Pumping Started Nov. 1990
WPL Extraction System Start May 1994
System Shutdown 8/11/14 07:55
System Restart 1/27/15 10:35
Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09 Jan-10 Jan-11 Jan-12 Jan-13 Jan-14 Jan-15 Jan-16 Jan-17 Jan-18



Concentration (ug/L)
10000
1000
100
10
1
0.1
0.01
CW-8 Pumping Started Nov. 1990
WPL Extraction System Start May 1994
System Shutdown 8/11/14 07:55
System Restart 1/27/15 10:35
Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09 Jan-10 Jan-11 Jan-12 Jan-13 Jan-14 Jan-15 Jan-16 Jan-17 Jan-18

MW-37S



500
400
300
200
100
0
Concentration (ug/L)
Shutdown Test Start 11/25/13 12:56
CW-20 Start-Up 4/7/14 10:00
CW-9 Start-Up 7/23/14 04:40
System Shutdown 8/11/14 07:55
System Restart 1/27/15 10:35
Key:
PCE
TCE
Cis-1,2
VC
Aug-13
Oct-13
Dec-13
Feb-14
Apr-14
Jun-14
Aug-14
Oct-14
Dec-14
Feb-15
Apr-15
Jun-15
Aug-15
Oct-15
Dec-15
Feb-16
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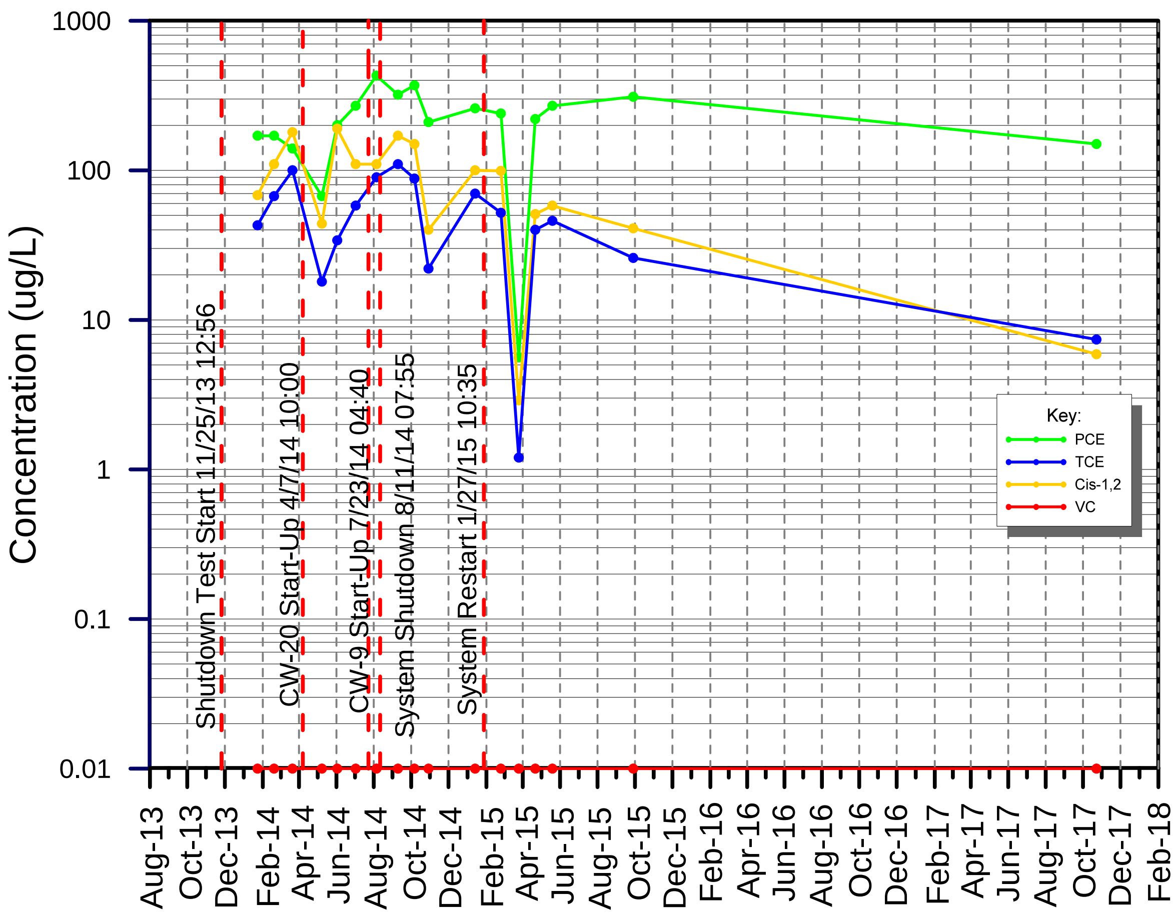
Oct-16
Dec-16
Feb-17
Apr-17
Jun-17
Aug-17
Oct-17
Dec-17
Feb-18



1000
100
10
1
0.1
0.01
Concentration (ug/L)
Shutdown Test Start 11/25/13 12:56
CW-20 Start-Up 4/7/14 10:00
CW-9 Start-Up 7/23/14 04:40
System Shutdown 8/11/14 07:55
System Restart 1/27/15 10:35
Key:
PCE
TCE
Cis-1,2
VC
Aug-13
Oct-13
Dec-13
Feb-14
Apr-14
Jun-14
Aug-14
Oct-14
Dec-14
Feb-15
Apr-15
Jun-15
Aug-15
Oct-15
Dec-15
Feb-16
Apr-16
Jun-16
Aug-16
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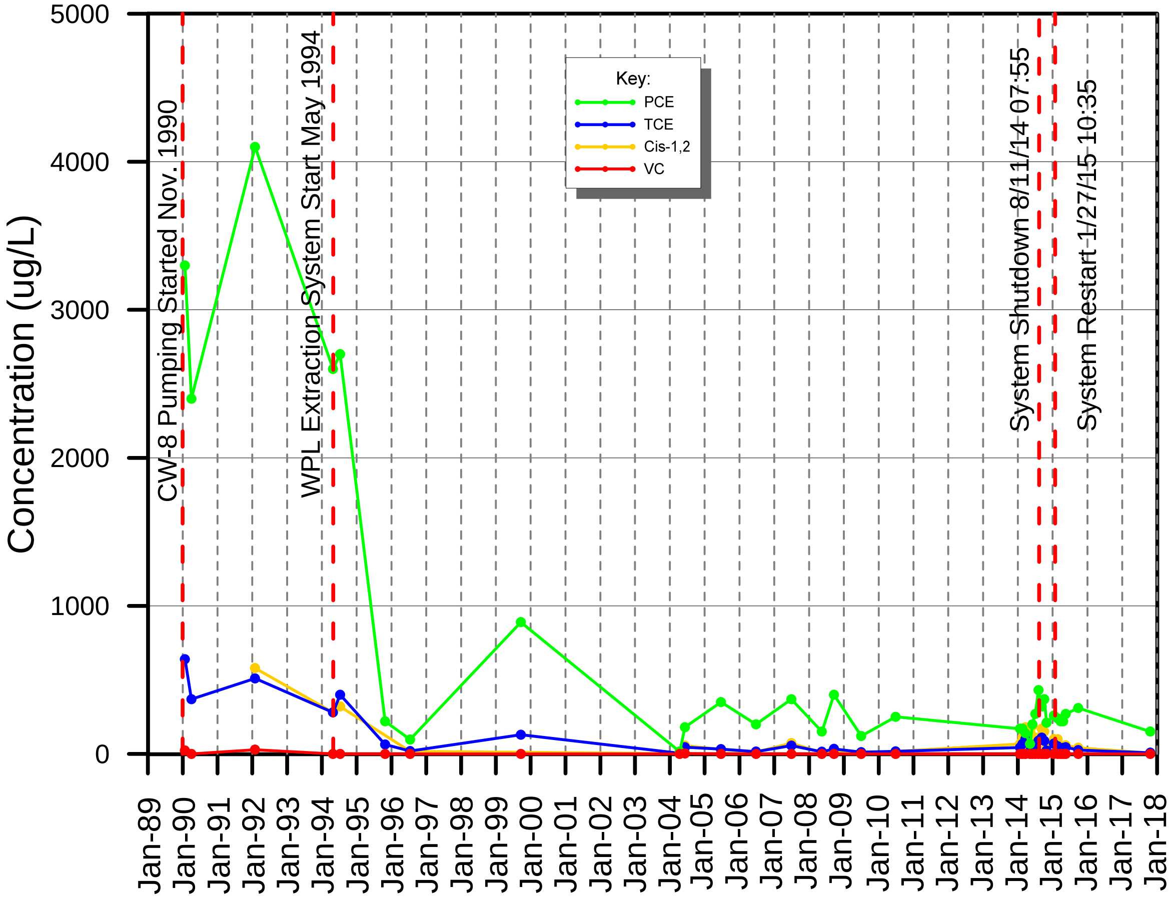
Dec-16
Feb-17
Apr-17
Jun-17
Aug-17
Oct-17
Dec-17
Feb-18

MW-37S



Concentration (ug/L)
5000
4000
3000
2000
1000
0
CW-8 Pumping Started Nov. 1990
WPL Extraction System Start May 1994
System Shutdown 8/11/14 07:55
System Restart 1/27/15 10:35
Key:
PCE
TCE
Cis-1,2
VC
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
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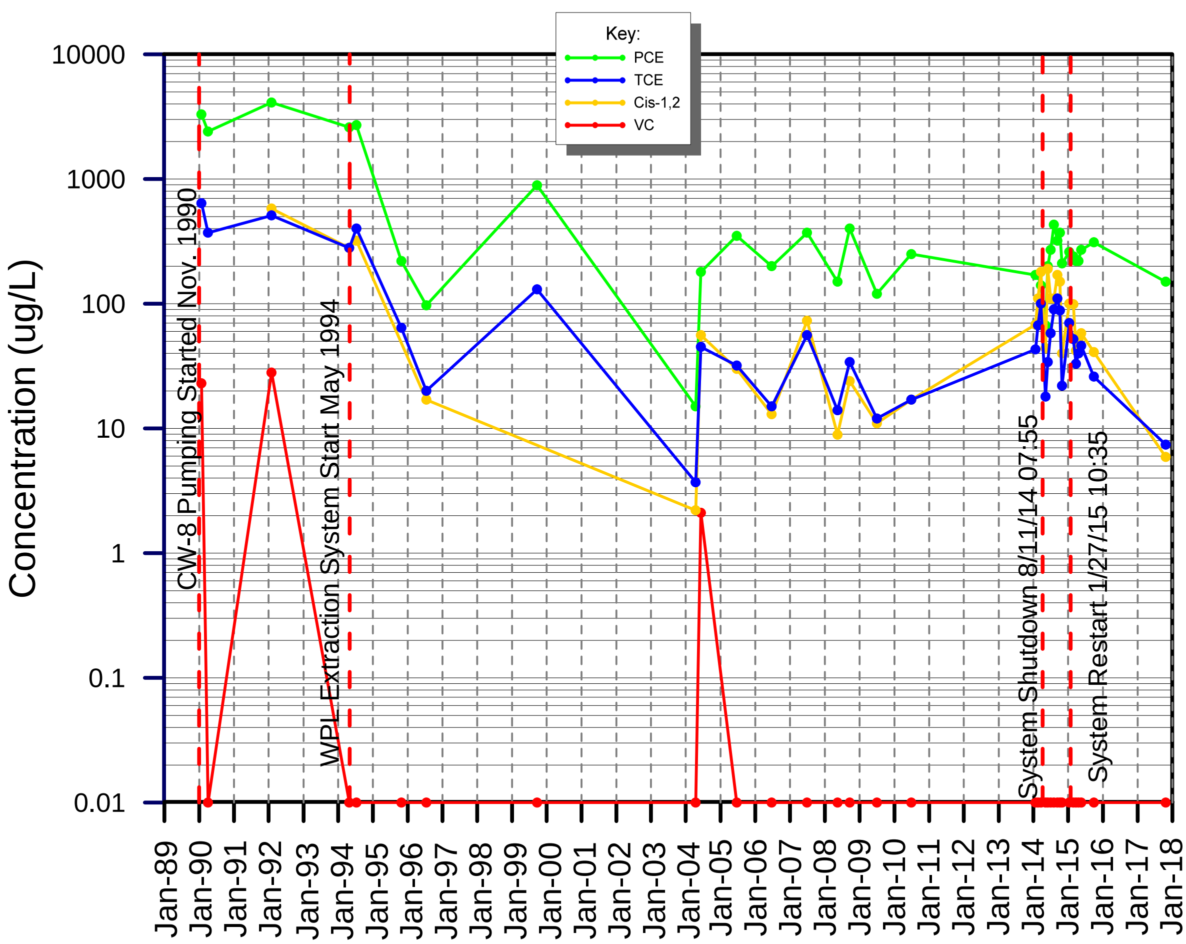
Jan-18



Concentration (ug/L)
10000
1000
100
10
1
0.1
0.01
CW-8 Pumping Started Nov. 1990
WPL Extraction System Start May 1994
System Shutdown 8/11/14 07:55
System Restart 1/27/15 10:35
Key:
PCE
TCE
Cis-1,2
VC
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
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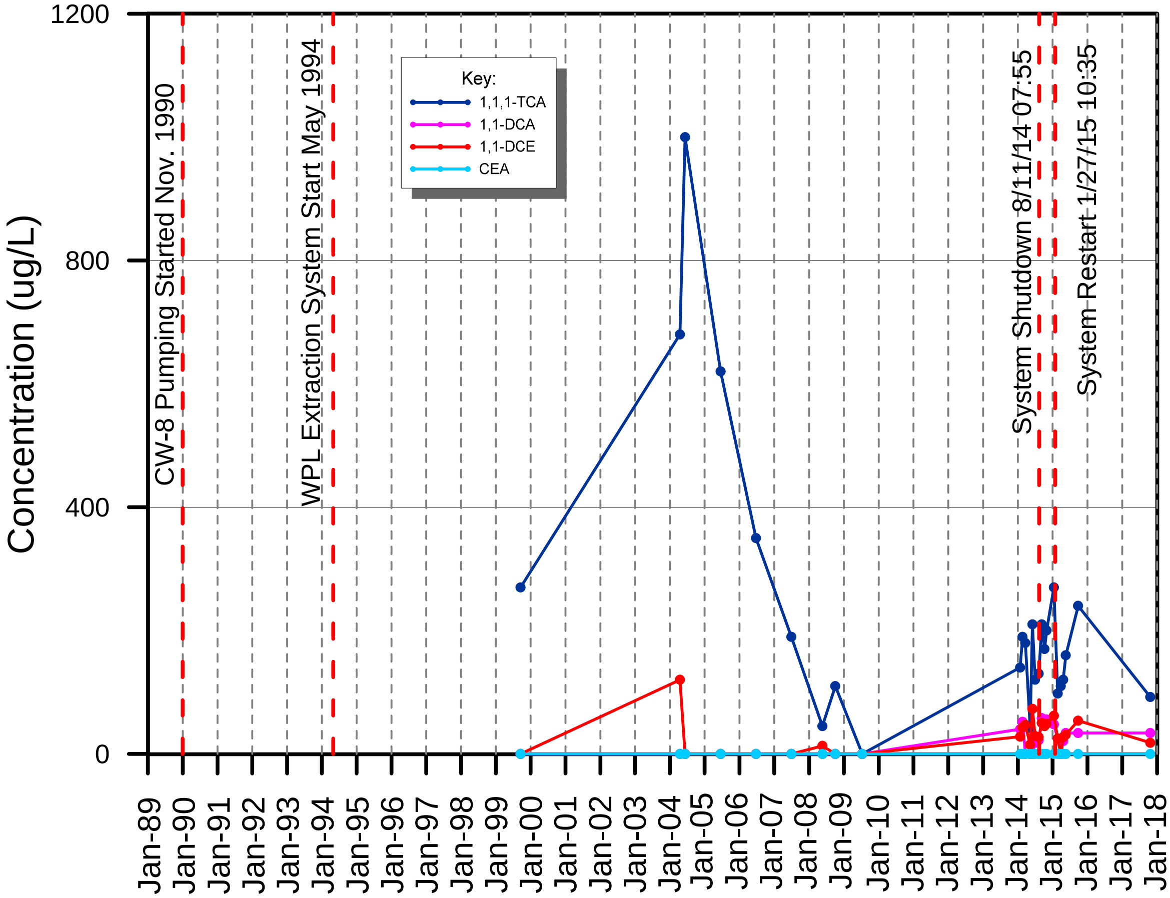
Jan-17
Jan-18

MW-75D



Concentration (ug/L)
1200
800
400
0
Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
CW-8 Pumping Started Nov. 1990
WPL Extraction System Start May 1994
System Shutdown 8/11/14 07:55
System Restart 1/27/15 10:35
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
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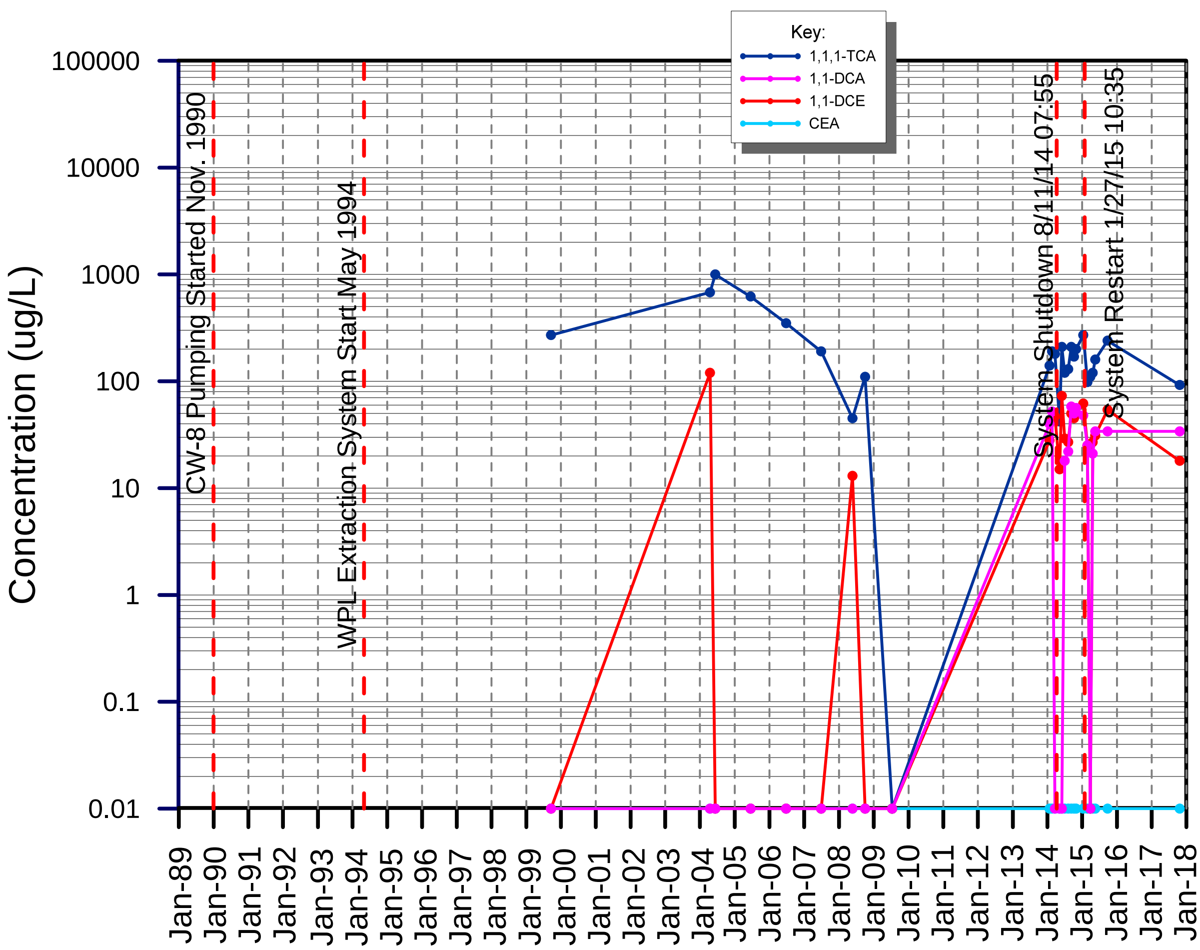
Jan-17
Jan-18



Concentration (ug/L)
100000
10000
1000
100
10
1
0.1
0.01
Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
CW-8 Pumping Started Nov. 1990
WPL Extraction System Start May 1994
System Shutdown 8/11/14 07:55
System Restart 1/27/15 10:35
Jan-89
Jan-90
Jan-91
Jan-92
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Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
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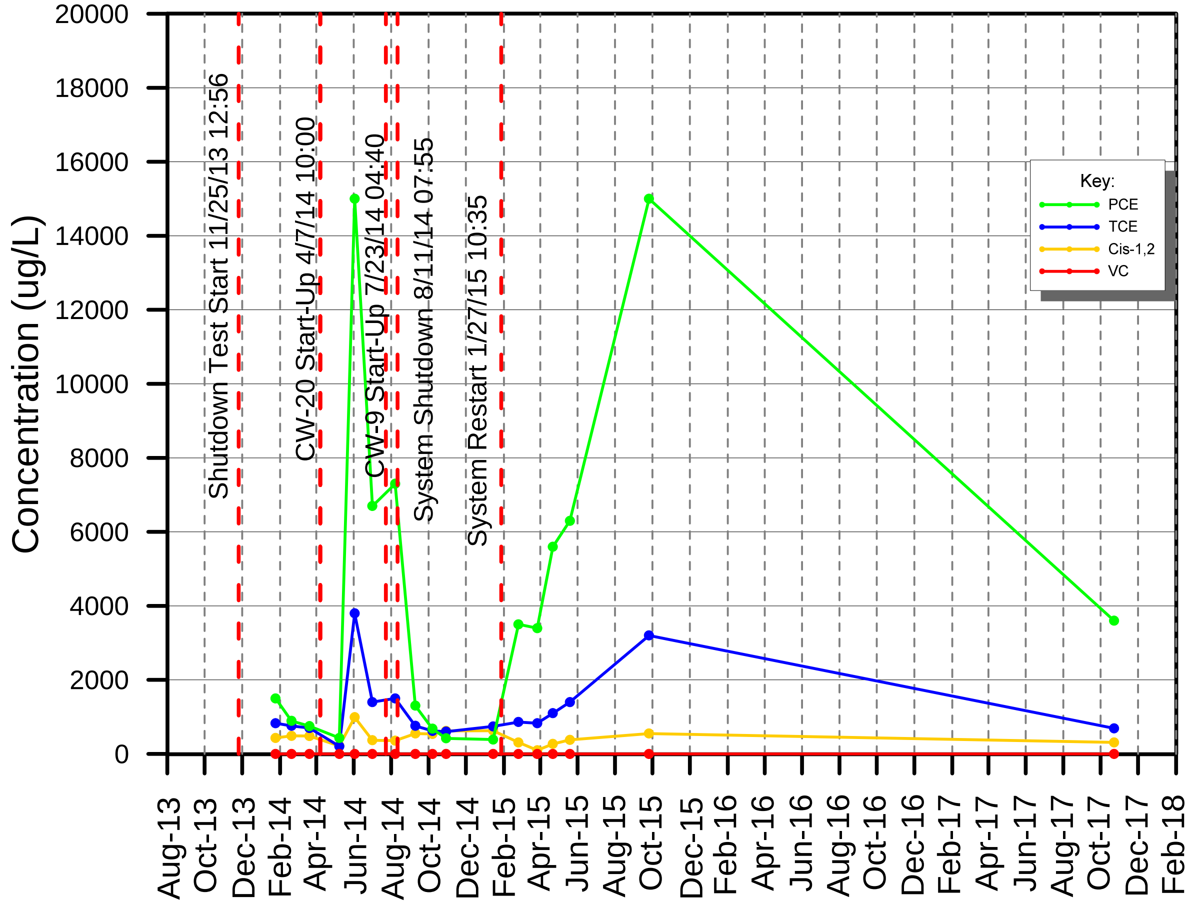
Jan-17
Jan-18

MW-75D



Concentration (ug/L)
20000
18000
16000
14000
12000
10000
8000
6000
4000
2000
0
Shutdown Test Start 11/25/13 12:56
CW-20 Start-Up 4/7/14 10:00
CW-9 Start-Up 7/23/14 04:40
System Shutdown 8/11/14 07:55
System Restart 1/27/15 10:35
Key:
PCE
TCE
Cis-1,2
VC
Aug-13
Oct-13
Dec-13
Feb-14
Apr-14
Jun-14
Aug-14
Oct-14
Dec-14
Feb-15
Apr-15
Jun-15
Aug-15
Oct-15
Dec-15
Feb-16
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Jun-17
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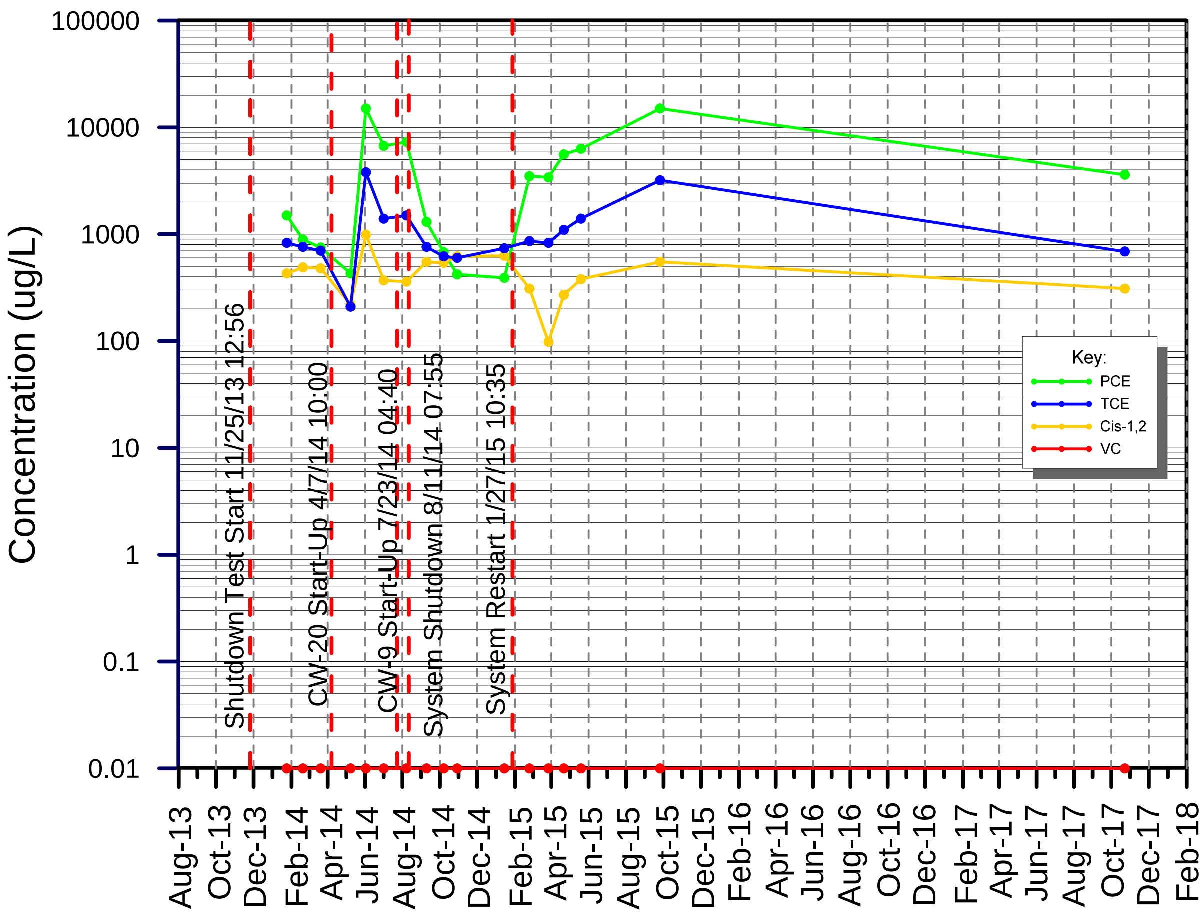
Oct-17
Dec-17
Feb-18



Concentration (ug/L)
100000
10000
1000
100
10
1
0.1
0.01
Shutdown Test Start 11/25/13 12:56
CW-20 Start-Up 4/7/14 10:00
CW-9 Start-Up 7/23/14 04:40
System Shutdown 8/11/14 07:55
System Restart 1/27/15 10:35
Key:
PCE
TCE
Cis-1,2
VC
Aug-13
Oct-13
Dec-13
Feb-14
Apr-14
Jun-14
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Feb-15
Apr-15
Jun-15
Aug-15
Oct-15
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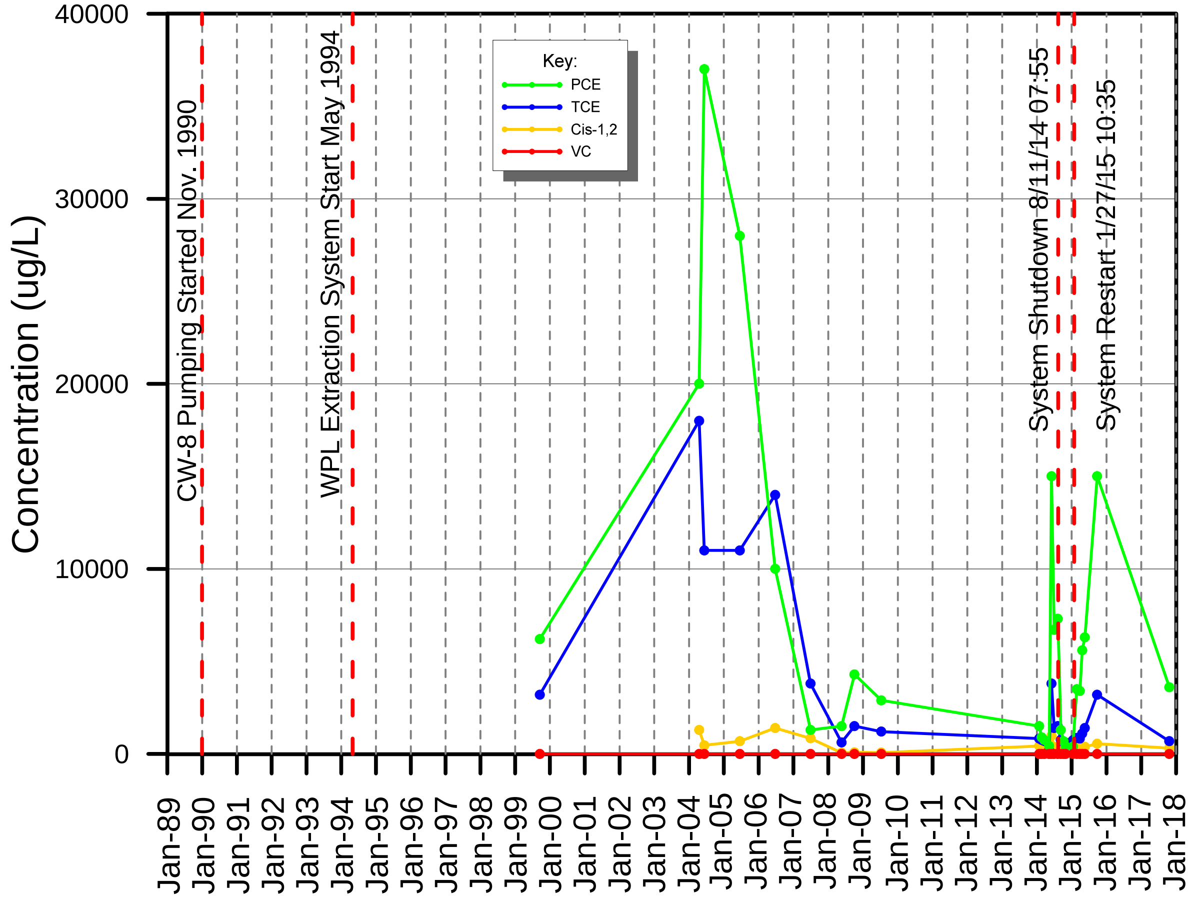
Oct-17
Dec-17
Feb-18

MW-75D



Concentration (ug/L)
40000
30000
20000
10000
0
Key:
PCE
TCE
Cis-1,2
VC
CW-8 Pumping Started Nov. 1990
WPL Extraction System Start May 1994
System Shutdown 8/11/14 07:55
System Restart 1/27/15 10:35
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
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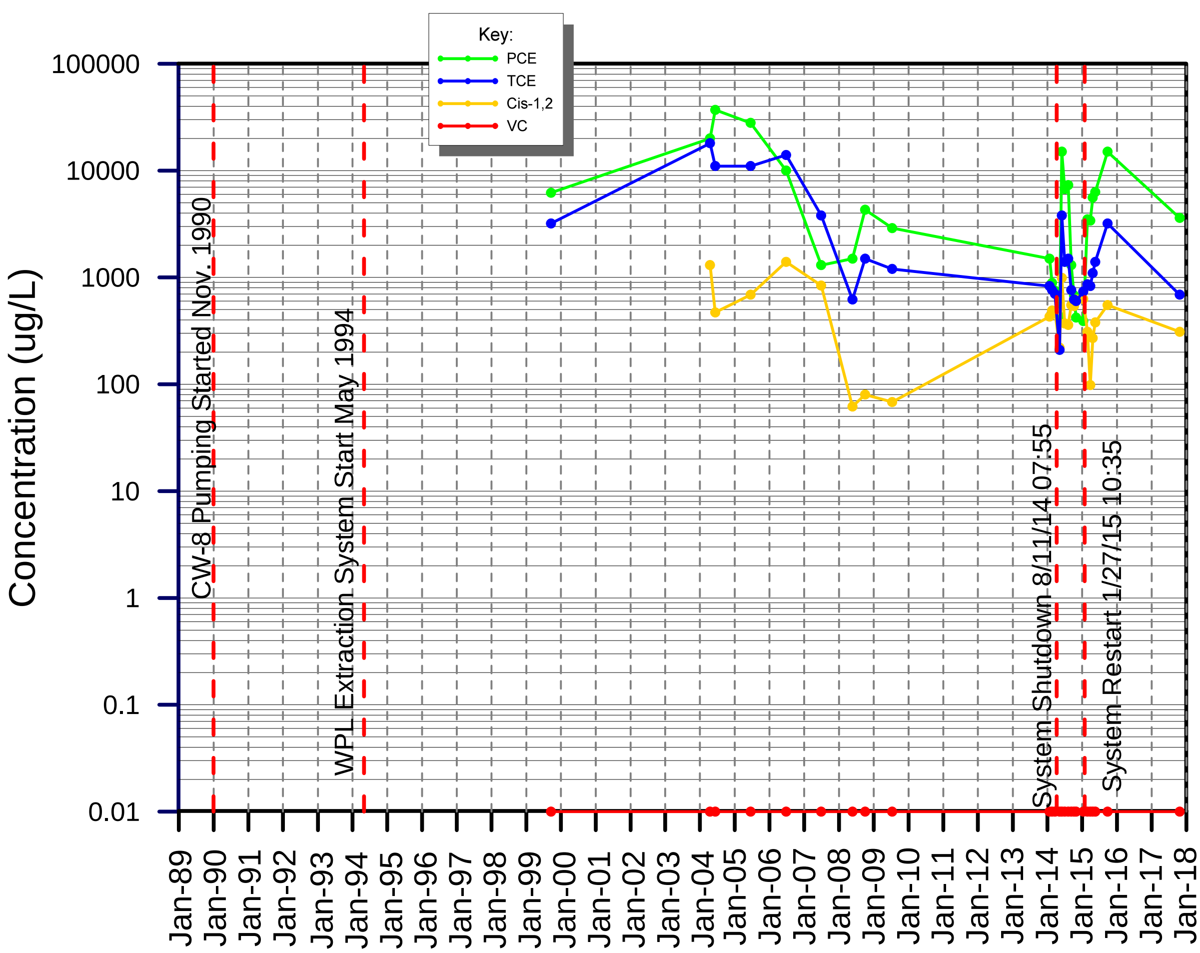
Jan-17
Jan-18



Concentration (ug/L)
100000
10000
1000
100
10
1
0.1
0.01
Key:
PCE
TCE
Cis-1,2
VC
CW-8 Pumping Started Nov. 1990
WPL Extraction System Start May 1994
System Shutdown 8/11/14 07:55
System Restart 1/27/15 10:35
Jan-89
Jan-90
Jan-91
Jan-92
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Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
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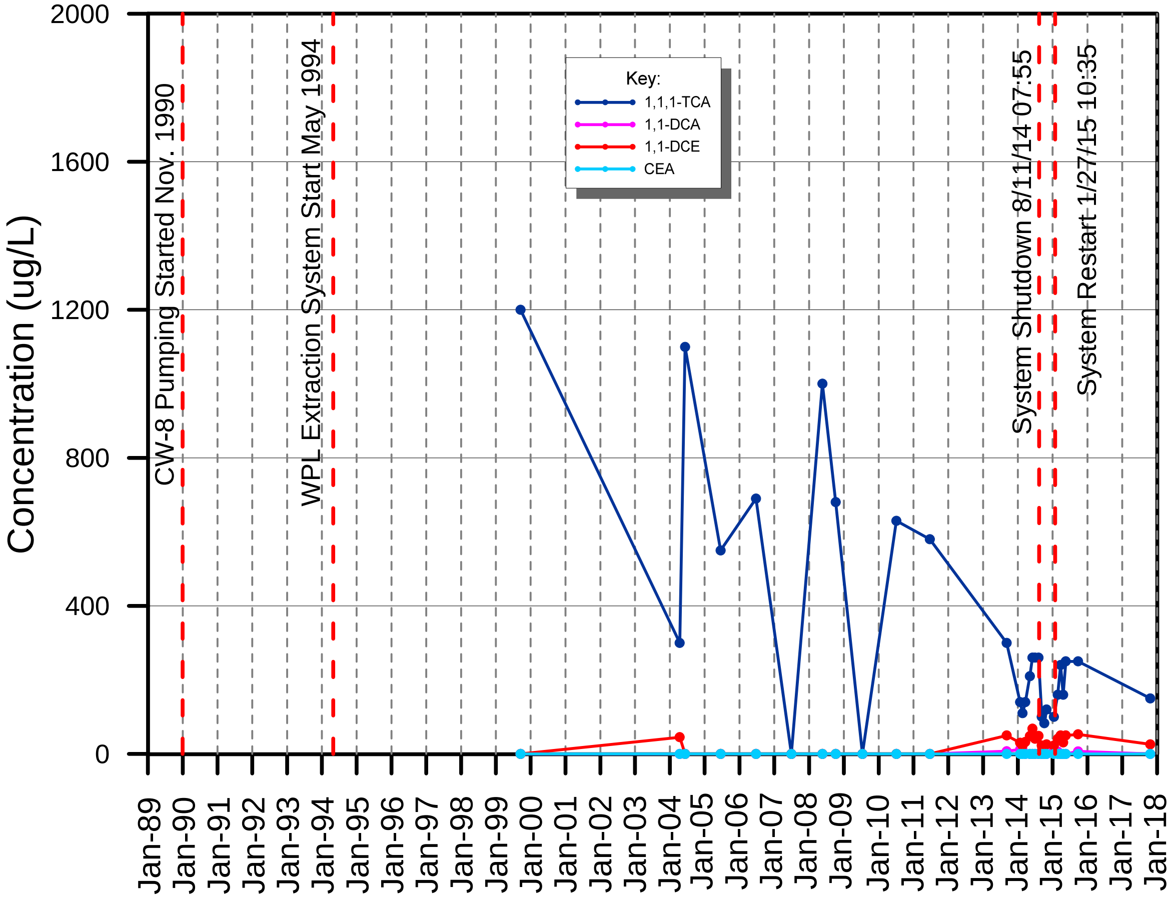
Jan-15
Jan-16
Jan-17
Jan-18

MW-75S



Concentration (ug/L)
2000
1600
1200
800
400
0
Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
CW-8 Pumping Started Nov. 1990
WPL Extraction System Start May 1994
System Shutdown 8/11/14 07:55
System Restart 1/27/15 10:35
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
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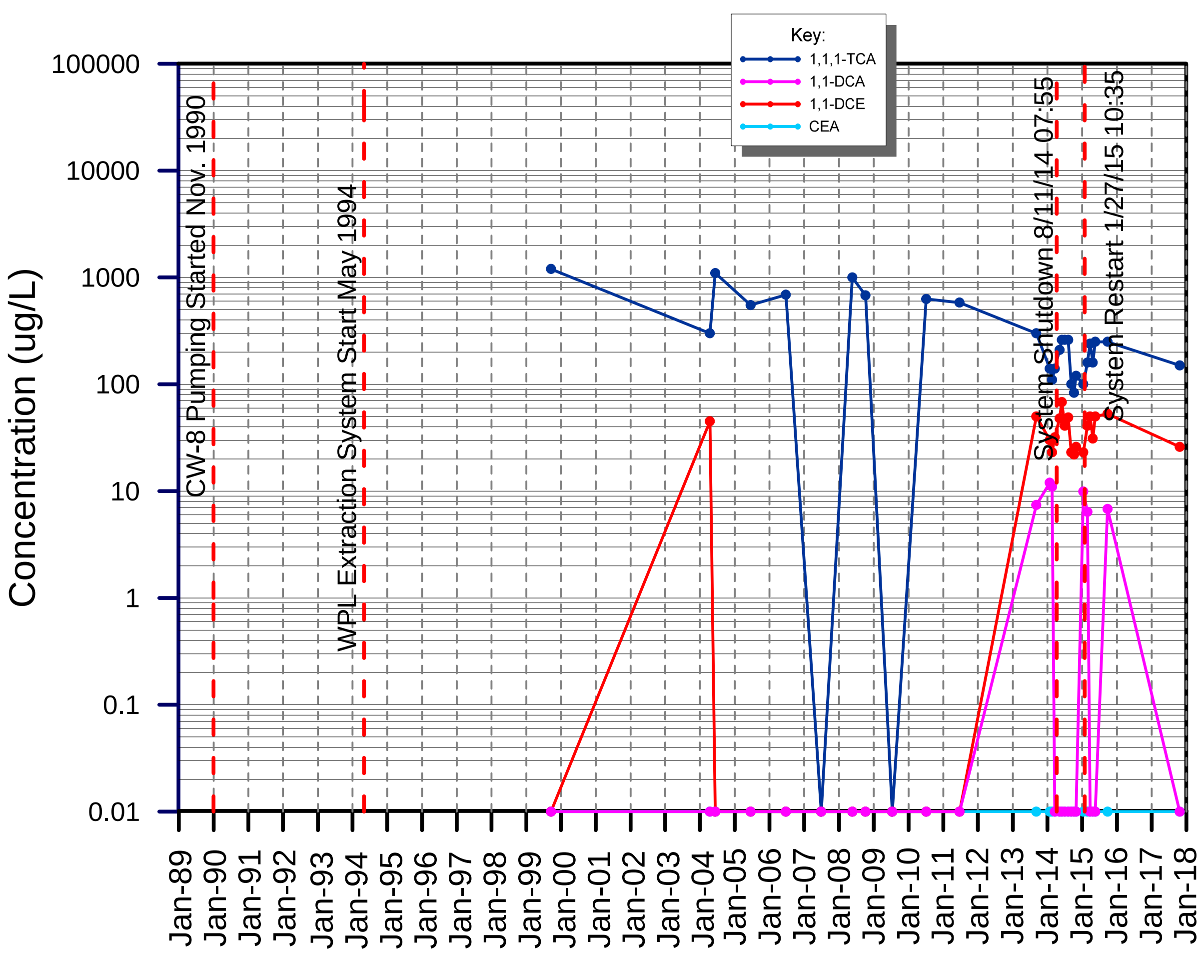
Jan-16
Jan-17
Jan-18



Concentration (ug/L)
100000
10000
1000
100
10
1
0.1
0.01
Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
CW-8 Pumping Started Nov. 1990
WPL Extraction System Start May 1994
System Shutdown 8/11/14 07:55
System Restart 1/27/15 10:35
Jan-89
Jan-90
Jan-91
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Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
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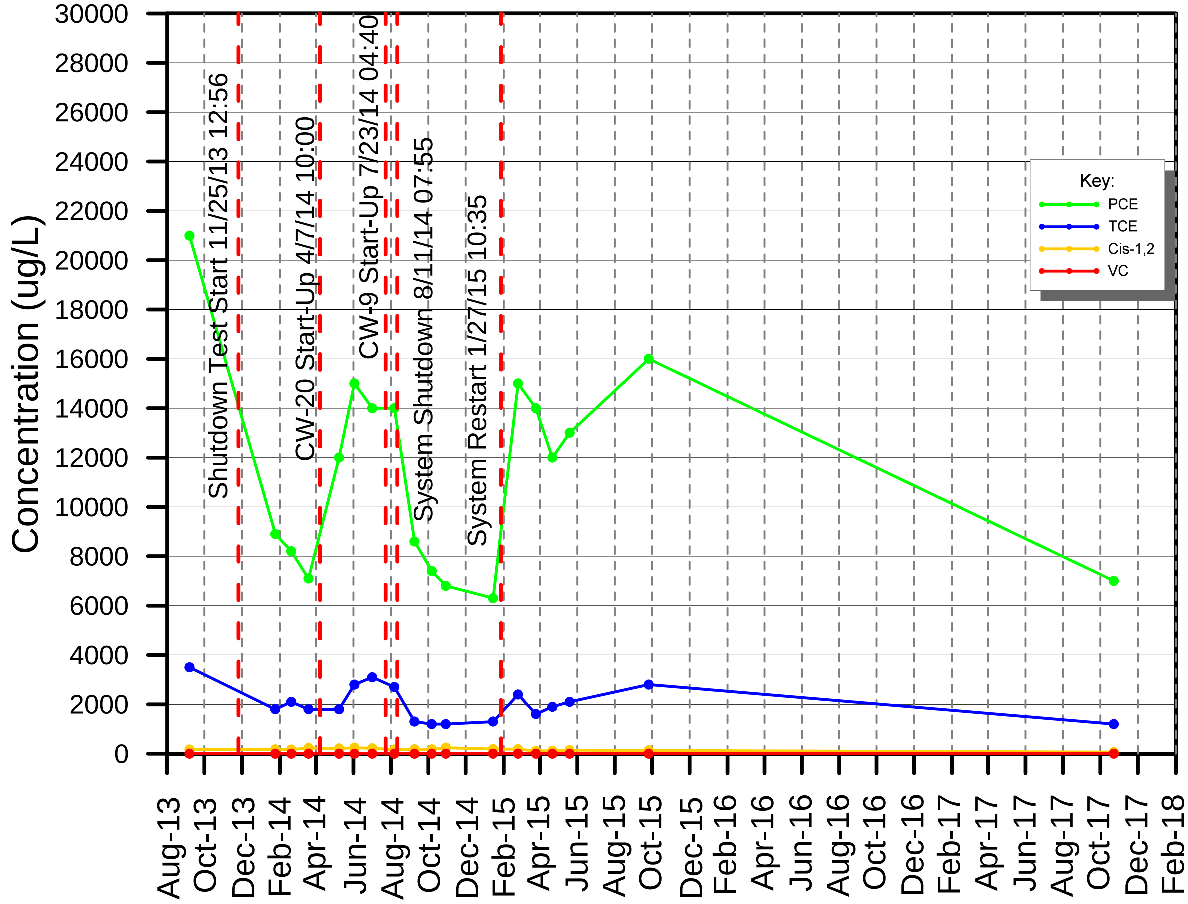
Jan-16
Jan-17
Jan-18

MW-75S



Concentration (ug/L)
30000
28000
26000
24000
22000
20000
18000
16000
14000
12000
10000
8000
6000
4000
2000
0
Shutdown Test Start 11/25/13 12:56
CW-20 Start-Up 4/7/14 10:00
CW-9 Start-Up 7/23/14 04:40
System Shutdown 8/11/14 07:55
System Restart 1/27/15 10:35
Key:
PCE
TCE
Cis-1,2
VC
Aug-13
Oct-13
Dec-13
Feb-14
Apr-14
Jun-14
Aug-14
Oct-14
Dec-14
Feb-15
Apr-15
Jun-15
Aug-15
Oct-15
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Feb-16
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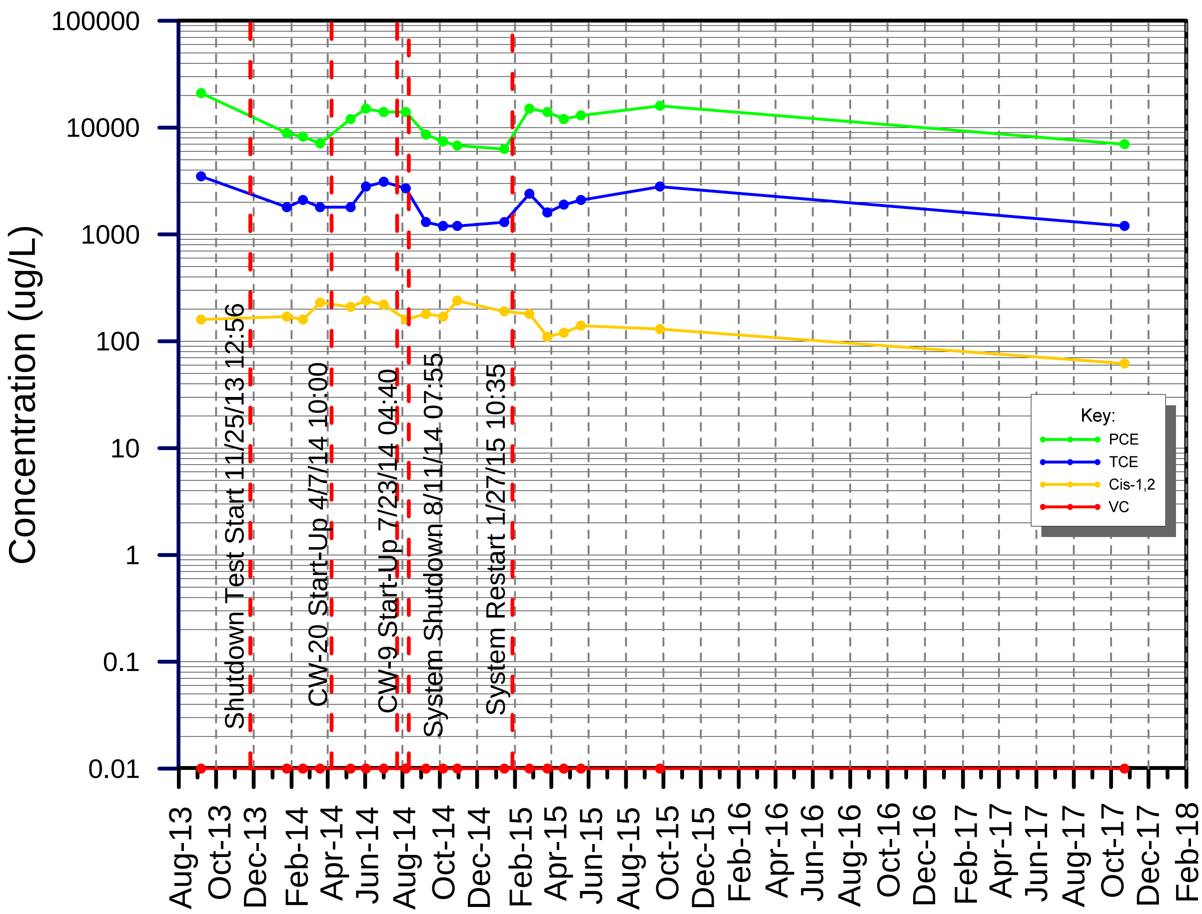
Oct-17
Dec-17
Feb-18



Concentration (ug/L)
100000
10000
1000
100
10
1
0.1
0.01
Shutdown Test Start 11/25/13 12:56
CW-20 Start-Up 4/7/14 10:00
CW-9 Start-Up 7/23/14 04:40
System Shutdown 8/11/14 07:55
System Restart 1/27/15 10:35
Key:
PCE
TCE
Cis-1,2
VC
Aug-13
Oct-13
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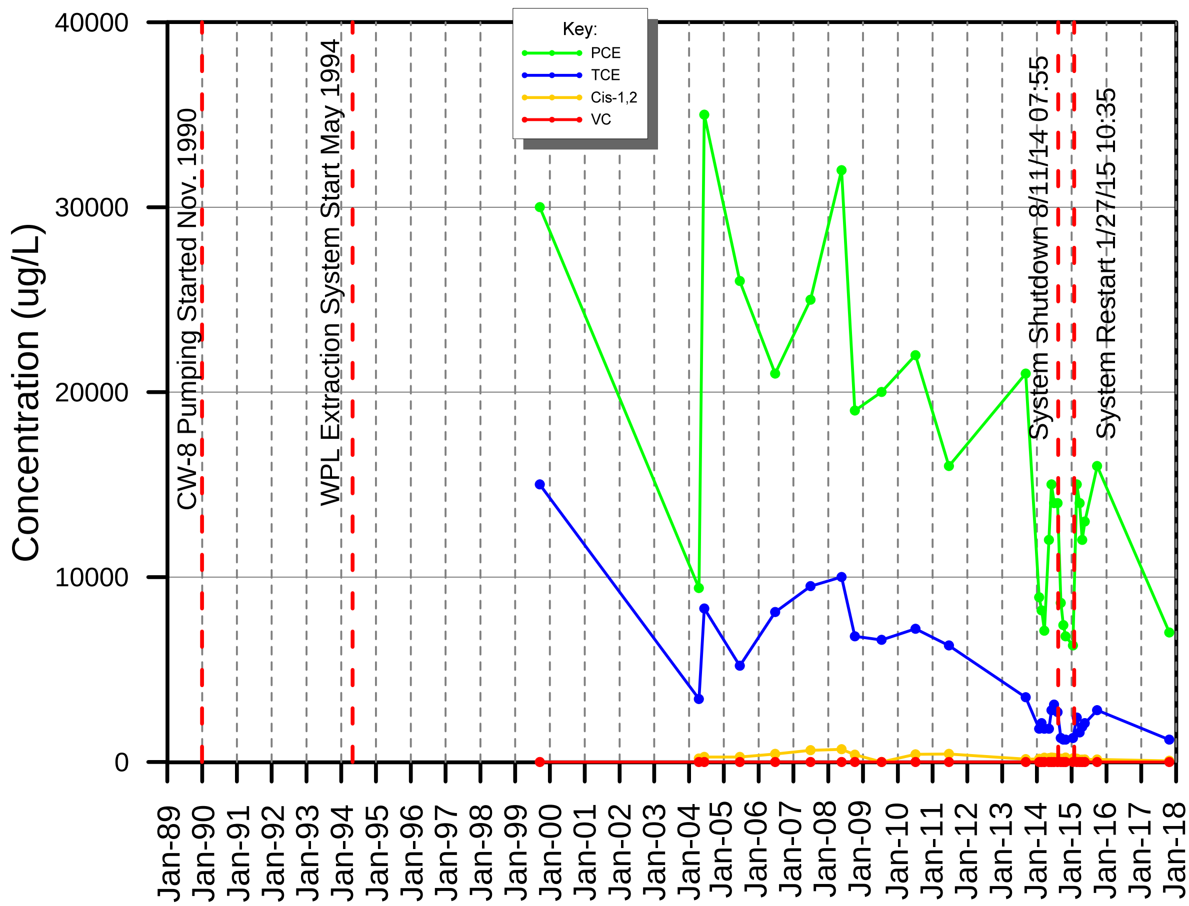
Dec-17
Feb-18

MW-75S



Concentration (ug/L)
0
10000
20000
30000
40000
Key:
PCE
TCE
Cis-1,2
VC
CW-8 Pumping Started Nov. 1990
WPL Extraction System Start May 1994
System Shutdown 8/11/14 07:55
System Restart 1/27/15 10:35
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
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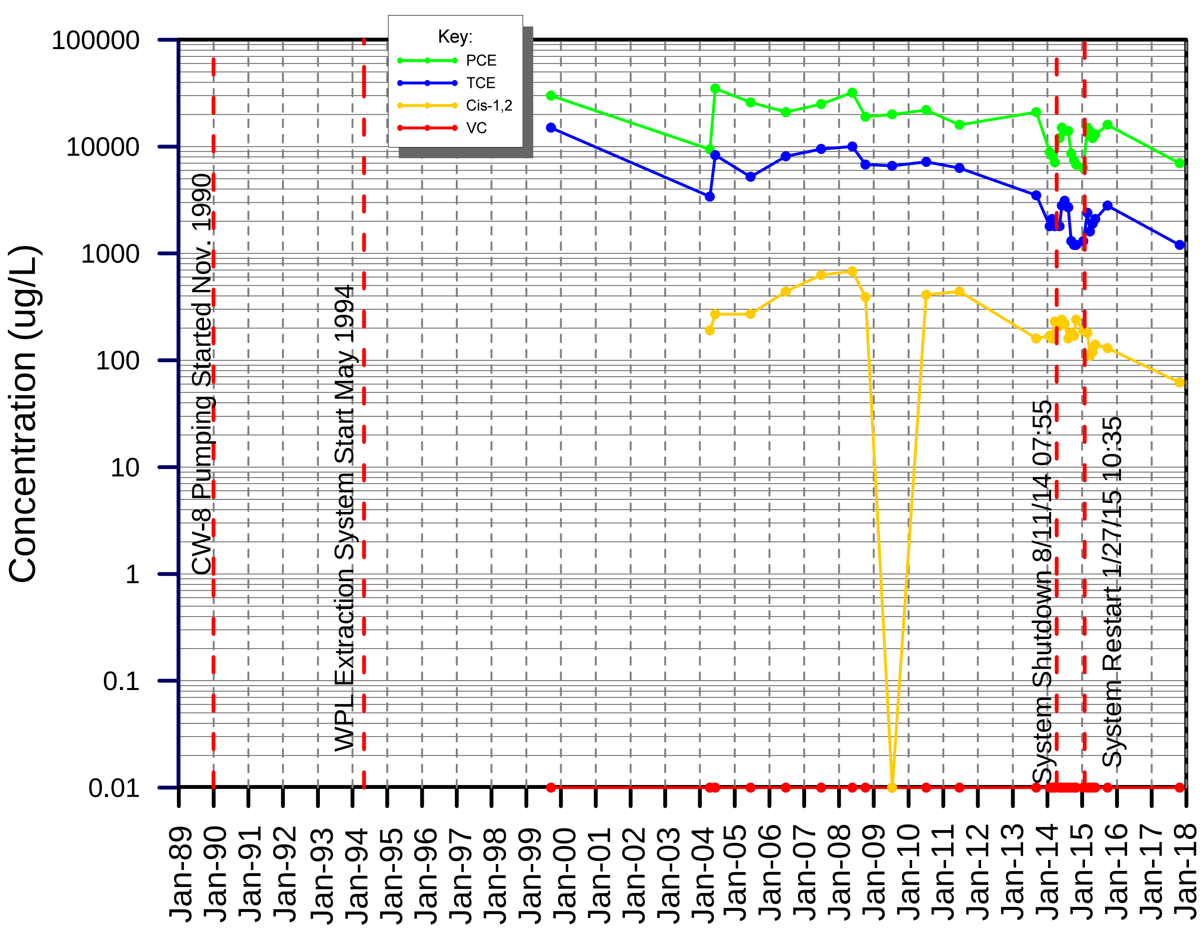
Jan-16
Jan-17
Jan-18



Concentration (ug/L)
0.01
0.1
1
10
100
1000
10000
100000
Key:
PCE
TCE
Cis-1,2
VC
CW-8 Pumping Started Nov. 1990
WPL Extraction System Start May 1994
System Shutdown 8/11/14 07:55
System Restart 1/27/15 10:35
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
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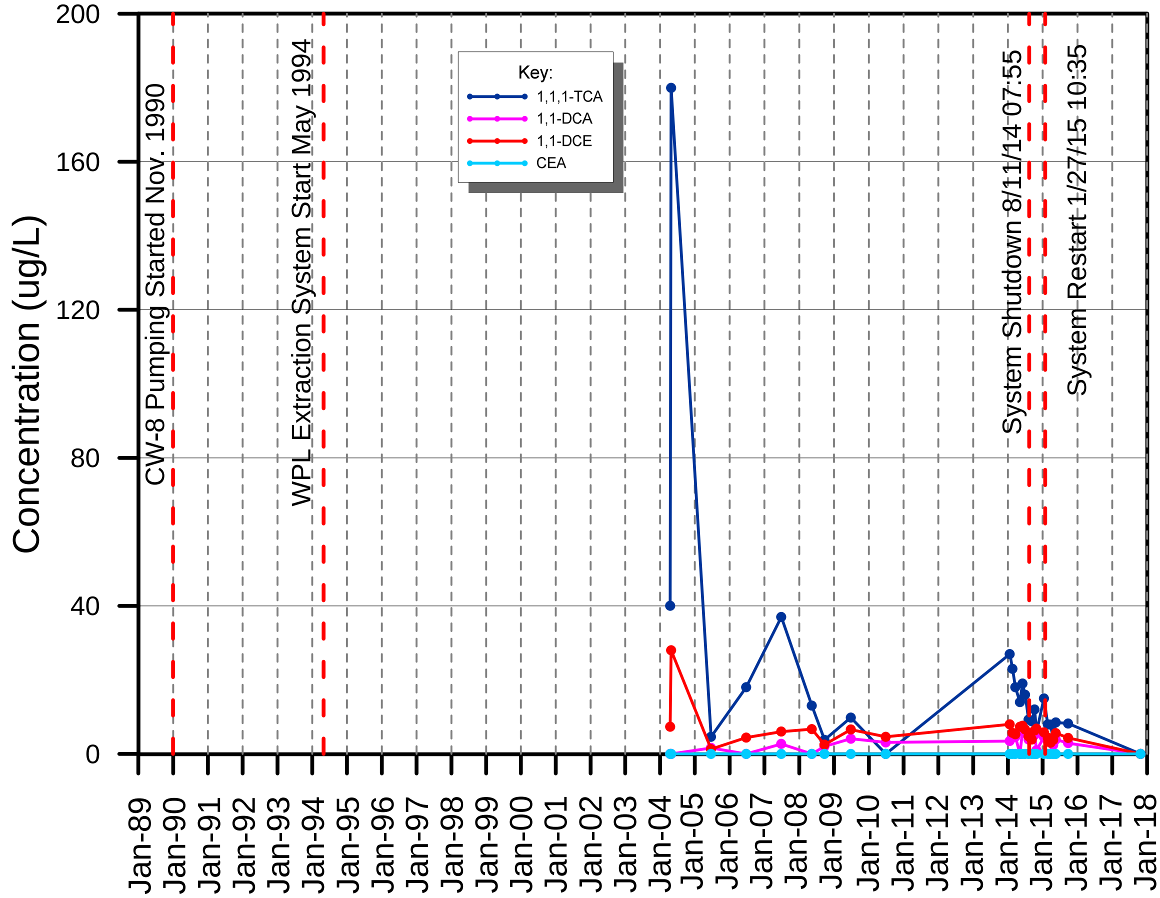
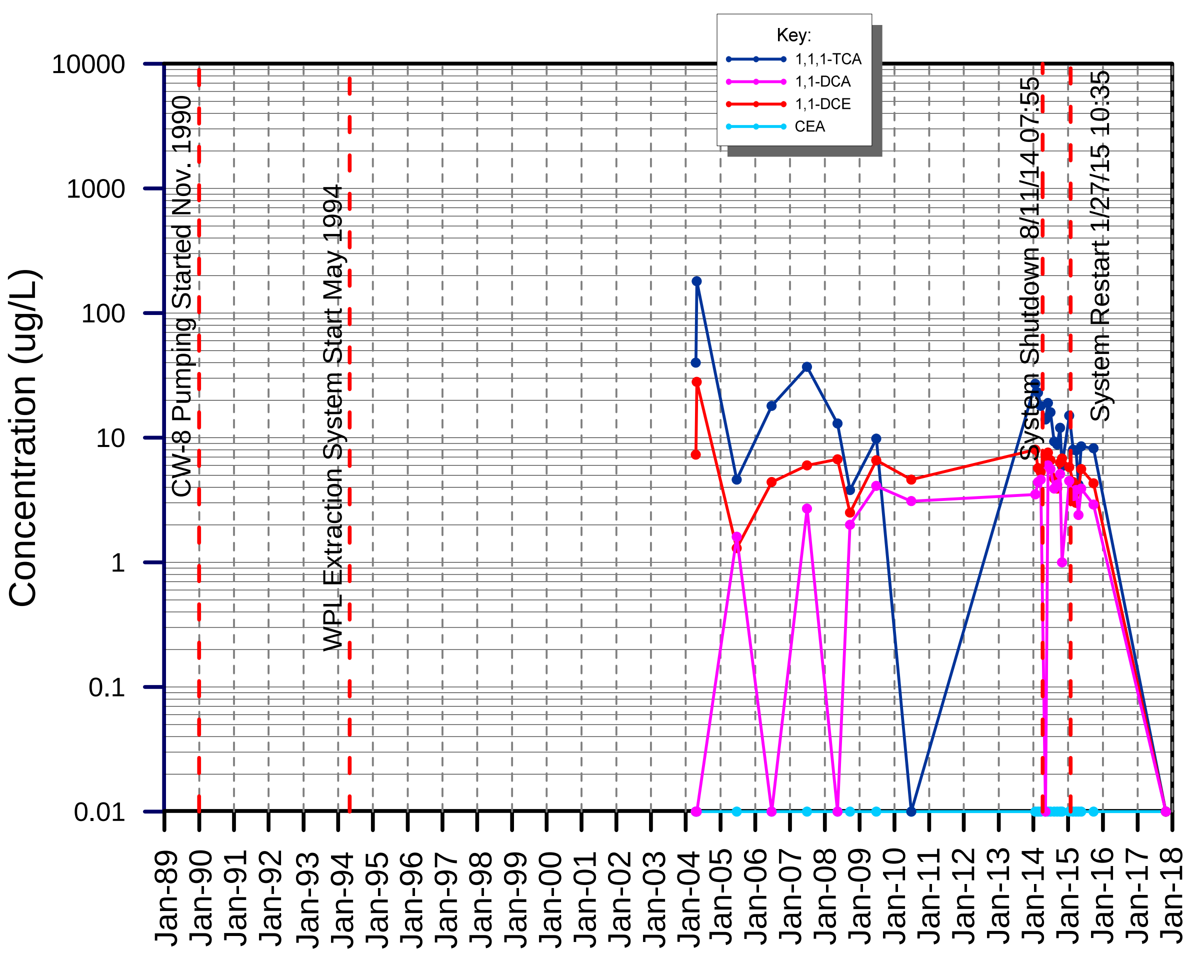
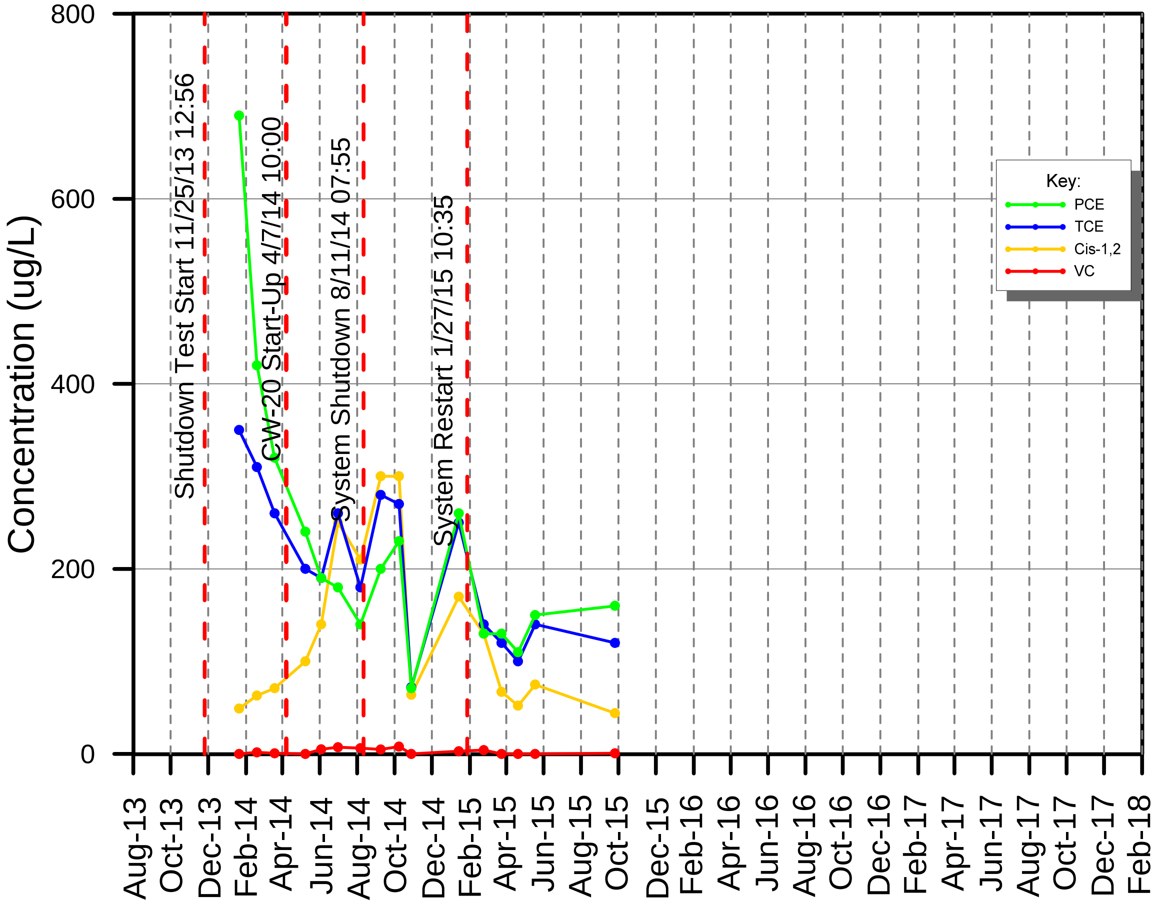
Jan-18

MW-93D


Concentration (ug/L)
200
160
120
80
40
0
CW-8 Pumping Started Nov. 1990
WPL Extraction System Start May 1994
System Shutdown 8/11/14 07:55
System Restart 1/27/15 10:35
Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09 Jan-10 Jan-11 Jan-12 Jan-13 Jan-14 Jan-15 Jan-16 Jan-17 Jan-18


Concentration (ug/L)
10000
1000
100
10
1
0.1
0.01
CW-8 Pumping Started Nov. 1990
WPL Extraction System Start May 1994
System Shutdown 8/11/14 07:55
System Restart 1/27/15 10:35
Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09 Jan-10 Jan-11 Jan-12 Jan-13 Jan-14 Jan-15 Jan-16 Jan-17 Jan-18

MW-93D


Concentration (ug/L)
800
600
400
200
0
Shutdown Test Start 11/25/13 12:56
CW-20 Start-Up 4/7/14 10:00
System Shutdown 8/11/14 07:55
System Restart 1/27/15 10:35
Key:
PCE
TCE
Cis-1,2
VC
Aug-13
Oct-13
Dec-13
Feb-14
Apr-14
Jun-14
Aug-14
Oct-14
Dec-14
Feb-15
Apr-15
Jun-15
Aug-15
Oct-15
Dec-15
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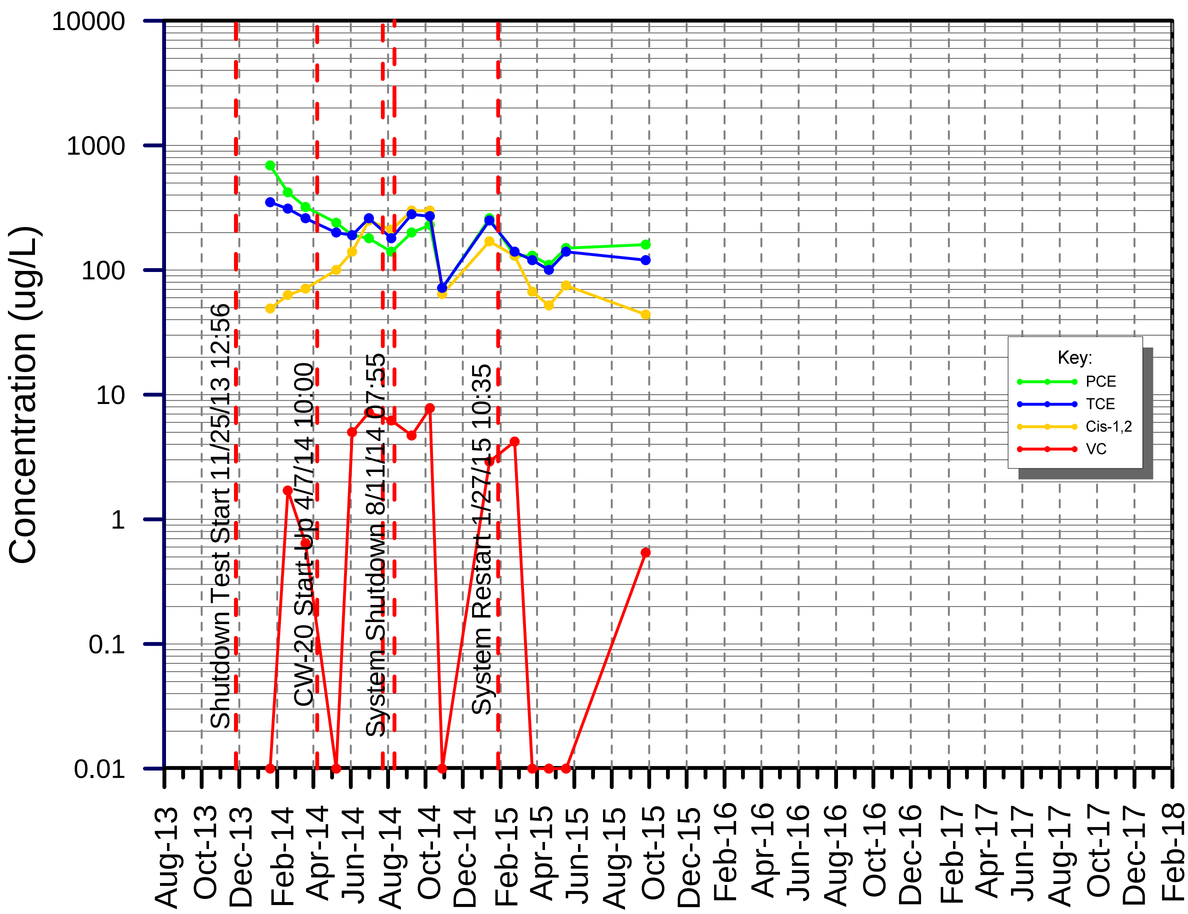
Oct-17
Dec-17
Feb-18


Concentration (ug/L)
10000
1000
100
10
1
0.1
0.01
Shutdown Test Start 11/25/13 12:56
CW-20 Start-Up 4/7/14 10:00
System Shutdown 8/11/14 07:55
System Restart 1/27/15 10:35
Key:
PCE
TCE
Cis-1,2
VC
Aug-13
Oct-13
Dec-13
Feb-14
Apr-14
Jun-14
Aug-14
Oct-14
Dec-14
Feb-15
Apr-15
Jun-15
Aug-15
Oct-15
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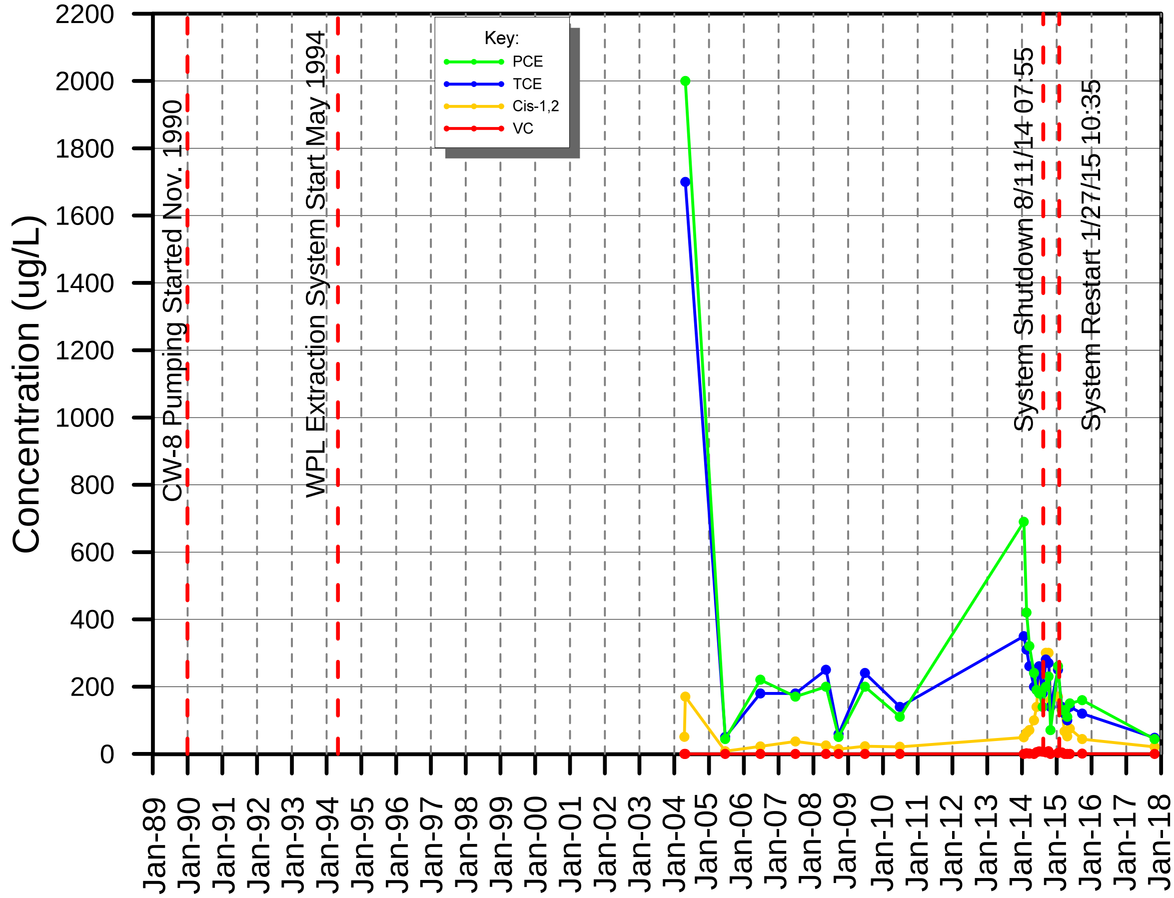
Aug-17
Oct-17
Dec-17
Feb-18

MW-93D



Concentration (ug/L)
2200
2000
1800
1600
1400
1200
1000
800
600
400
200
0
Key:
PCE
TCE
Cis-1,2
VC
CW-8 Pumping Started Nov. 1990
WPL Extraction System Start May 1994
System Shutdown 8/11/14 07:55
System Restart 1/27/15 10:35
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
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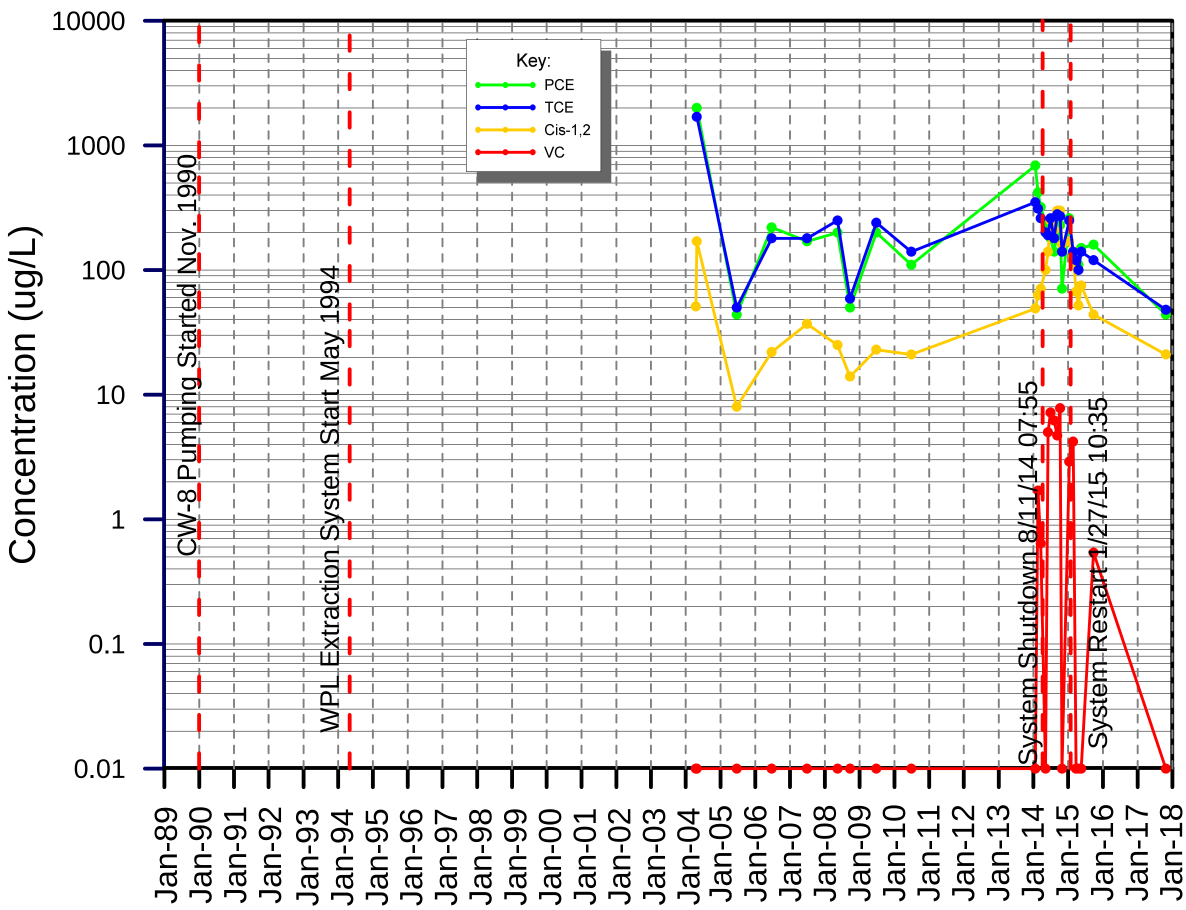
Jan-17
Jan-18



Concentration (ug/L)
10000
1000
100
10
1
0.1
0.01
Key:
PCE
TCE
Cis-1,2
VC
CW-8 Pumping Started Nov. 1990
WPL Extraction System Start May 1994
System Shutdown 8/11/14 07:55
System Restart 1/27/15 10:35
Jan-89
Jan-90
Jan-91
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Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
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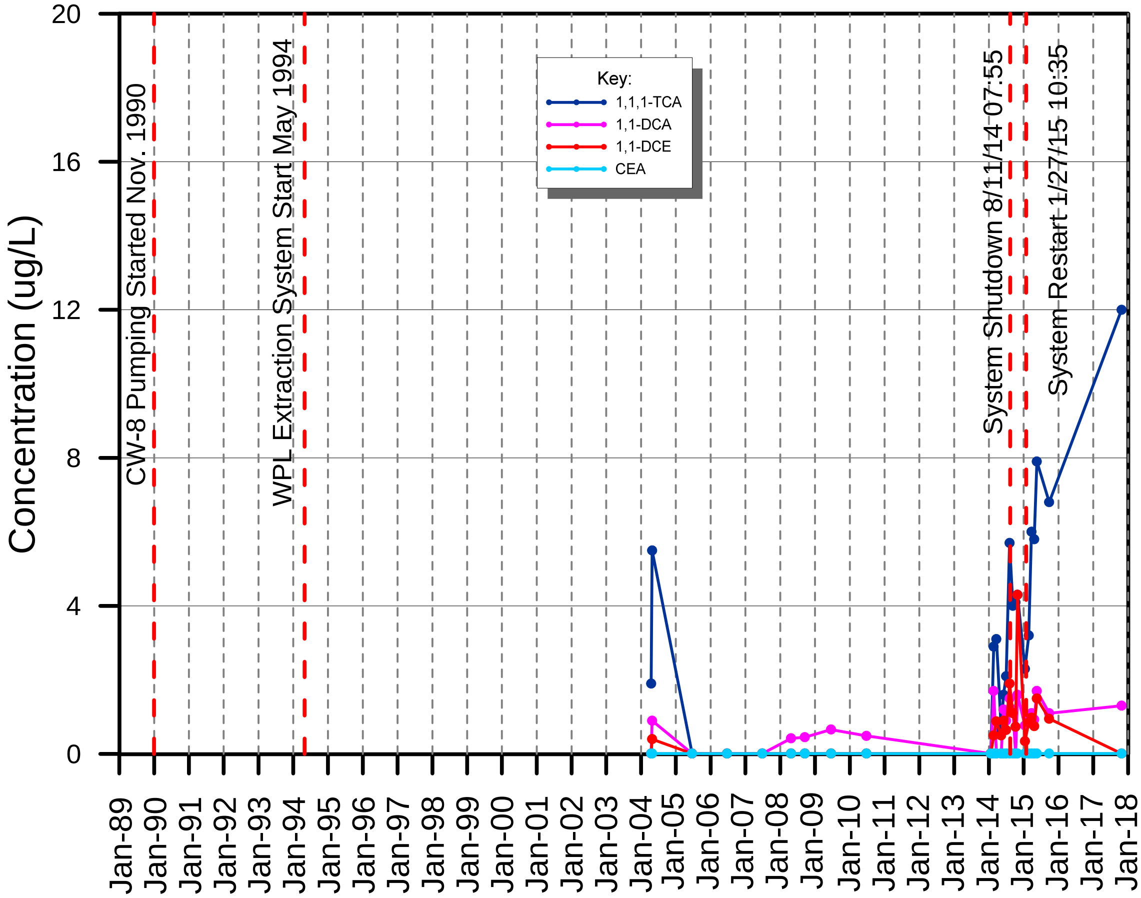
Jan-16
Jan-17
Jan-18

MW-93S



Concentration (ug/L)
0
4
8
12
16
20
CW-8 Pumping Started Nov. 1990
WPL Extraction System Start May 1994
System Shutdown 8/11/14 07:55
System Restart 1/27/15 10:35
Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
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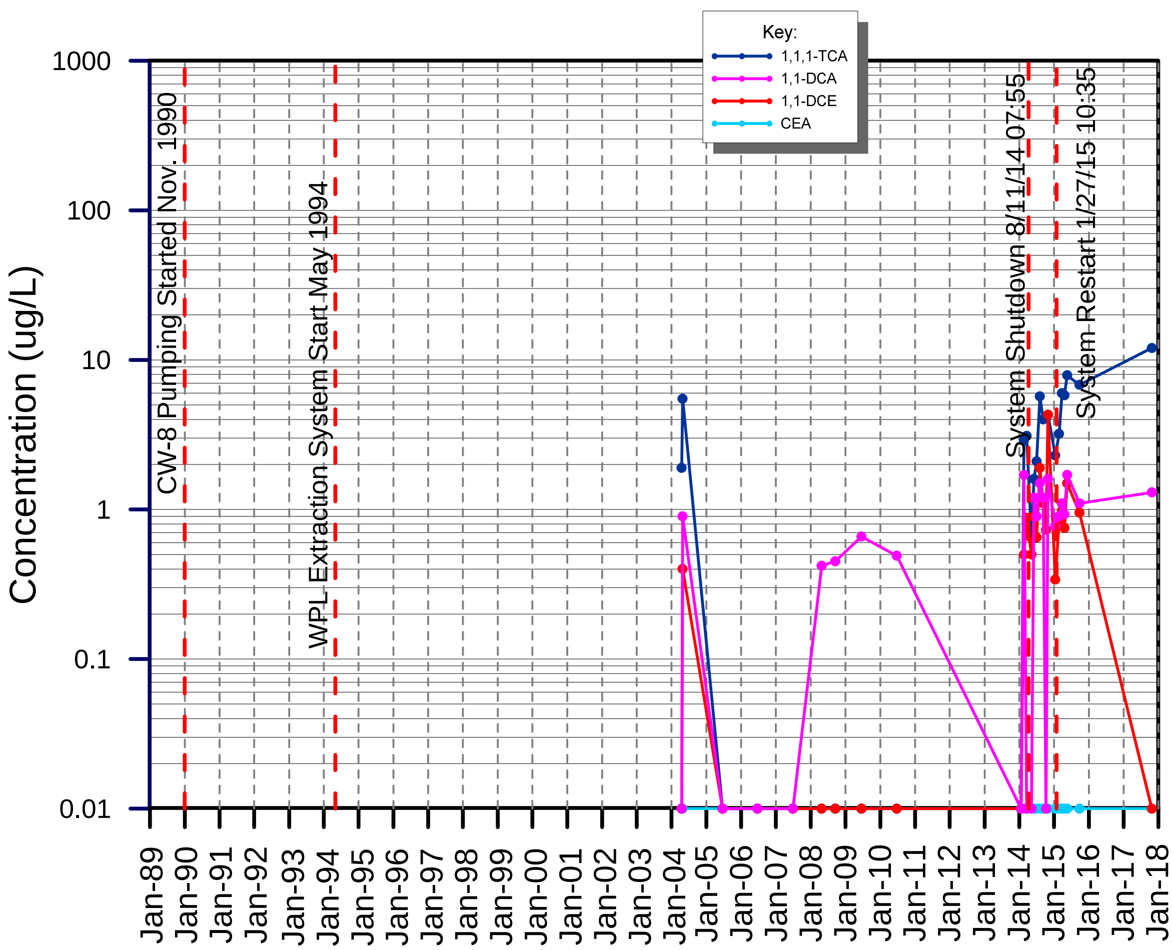
Jan-17
Jan-18



Concentration (ug/L)
0.01
0.1
1
10
100
1000
CW-8 Pumping Started Nov. 1990
WPL Extraction System Start May 1994
System Shutdown 8/11/14 07:55
System Restart 1/27/15 10:35
Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
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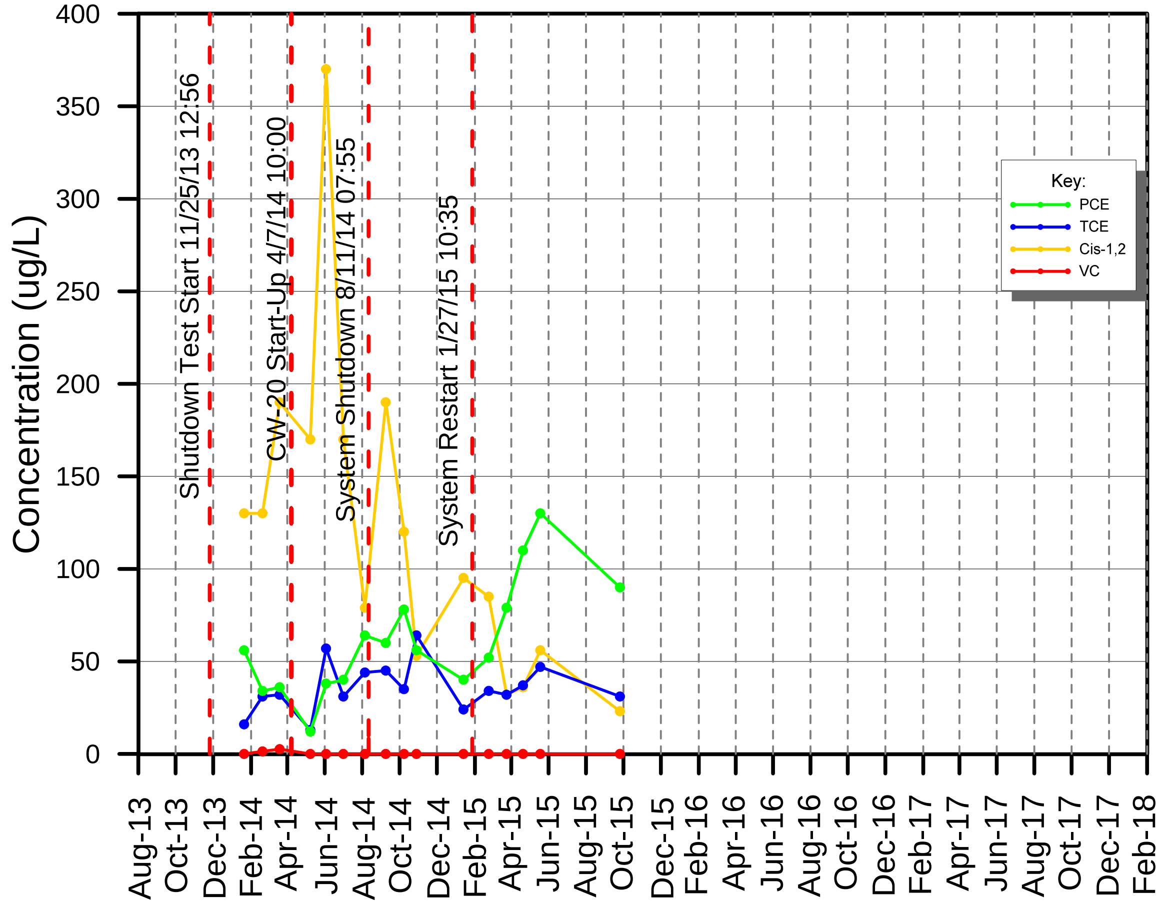
Jan-18

MW-93S



Concentration (ug/L)
400
350
300
250
200
150
100
50
0
Shutdown Test Start 11/25/13 12:56
CW-20 Start-Up 4/7/14 10:00
System Shutdown 8/11/14 07:55
System Restart 1/27/15 10:35
Key:
PCE
TCE
Cis-1,2
VC
Aug-13
Oct-13
Dec-13
Feb-14
Apr-14
Jun-14
Aug-14
Oct-14
Dec-14
Feb-15
Apr-15
Jun-15
Aug-15
Oct-15
Dec-15
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Apr-16
Jun-16
Aug-16
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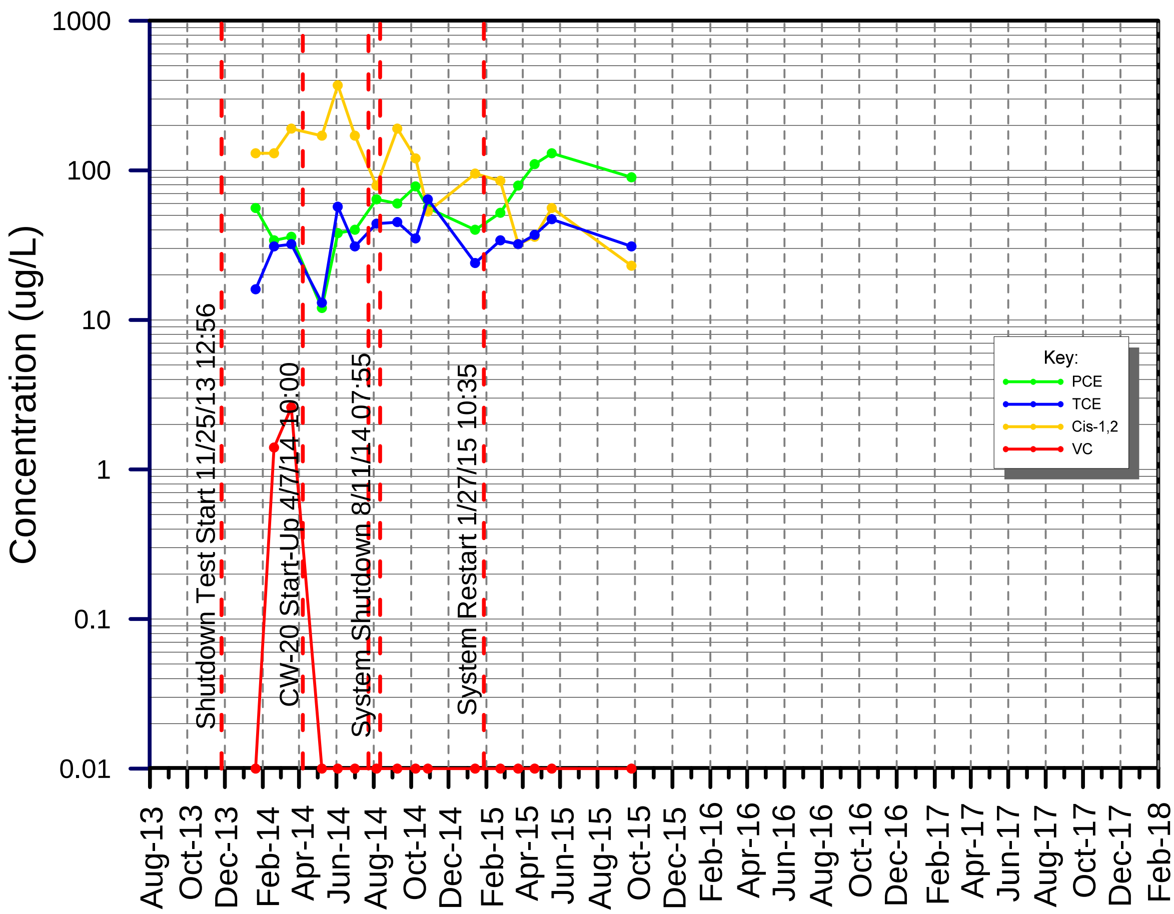
Dec-16
Feb-17
Apr-17
Jun-17
Aug-17
Oct-17
Dec-17
Feb-18



Concentration (ug/L)
1000
100
10
1
0.1
0.01
Shutdown Test Start 11/25/13 12:56
CW-20 Start-Up 4/7/14 10:00
System Shutdown 8/11/14 07:55
System Restart 1/27/15 10:35
Key:
PCE
TCE
Cis-1,2
VC
Aug-13
Oct-13
Dec-13
Feb-14
Apr-14
Jun-14
Aug-14
Oct-14
Dec-14
Feb-15
Apr-15
Jun-15
Aug-15
Oct-15
Dec-15
Feb-16
Apr-16
Jun-16
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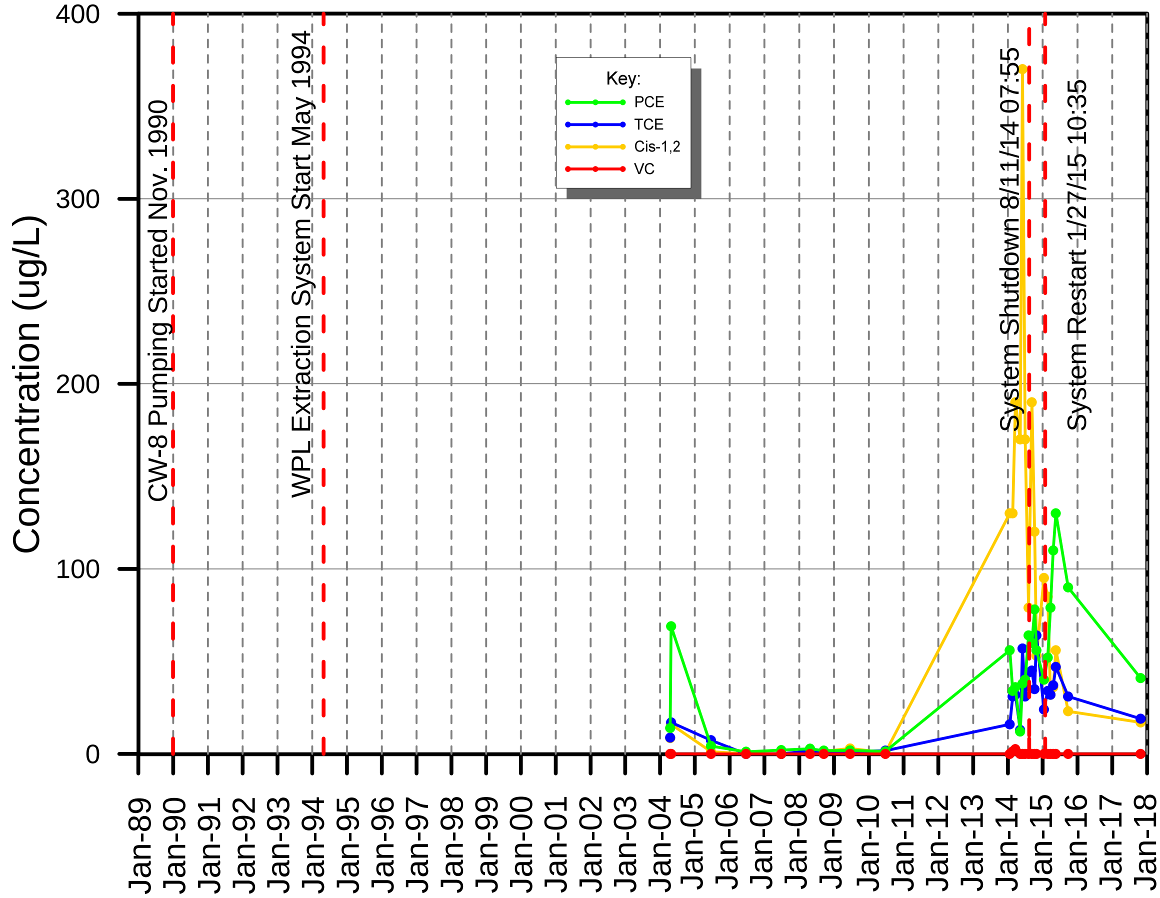
Dec-16
Feb-17
Apr-17
Jun-17
Aug-17
Oct-17
Dec-17
Feb-18

MW-93S



Concentration (ug/L)
400
300
200
100
0
Key:
PCE
TCE
Cis-1,2
VC
CW-8 Pumping Started Nov. 1990
WPL Extraction System Start May 1994
System Shutdown 8/11/14 07:55
System Restart 1/27/15 10:35
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
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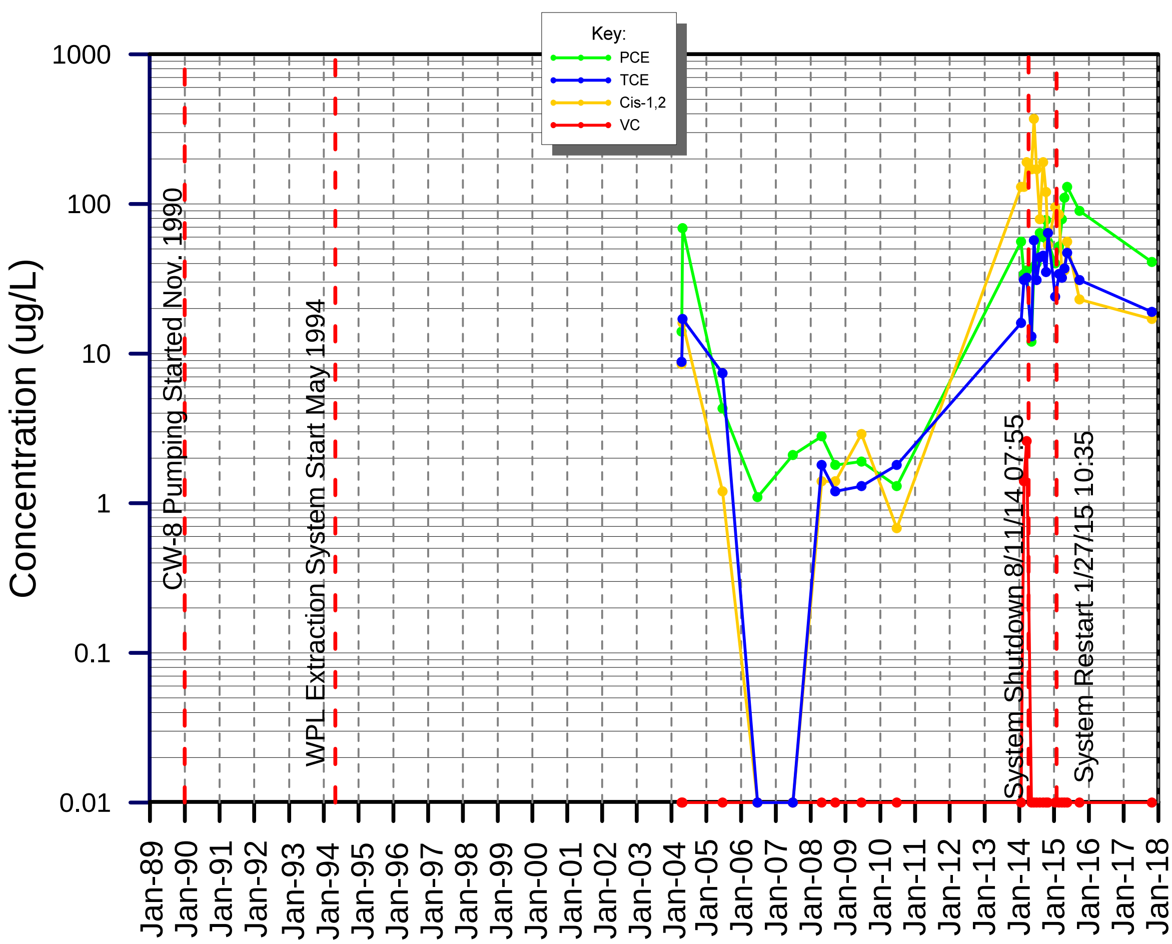
Jan-16
Jan-17
Jan-18



Concentration (ug/L)
1000
100
10
1
0.1
0.01
Key:
PCE
TCE
Cis-1,2
VC
CW-8 Pumping Started Nov. 1990
WPL Extraction System Start May 1994
System Shutdown 8/11/14 07:55
System Restart 1/27/15 10:35
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
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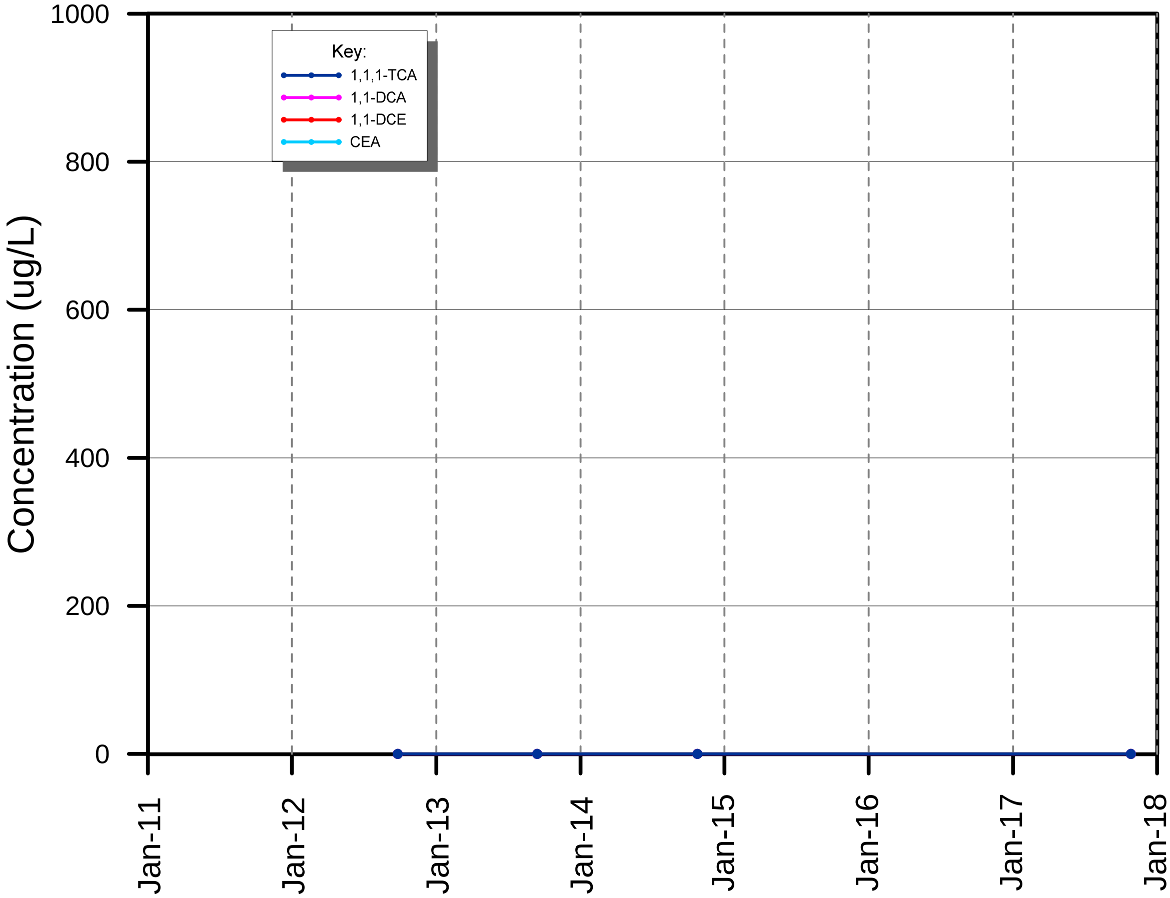
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18

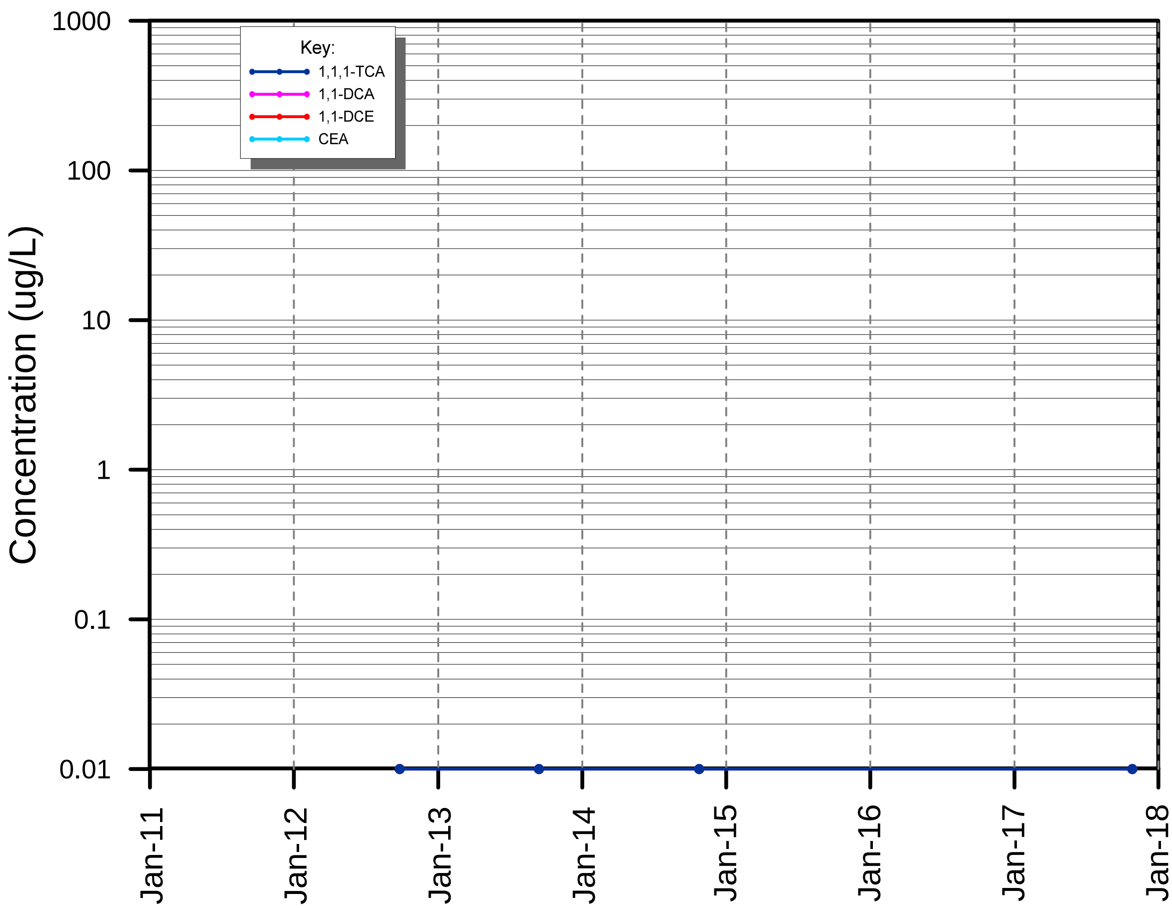
Appendix G-5

South Plume Area Graphs

ColeB

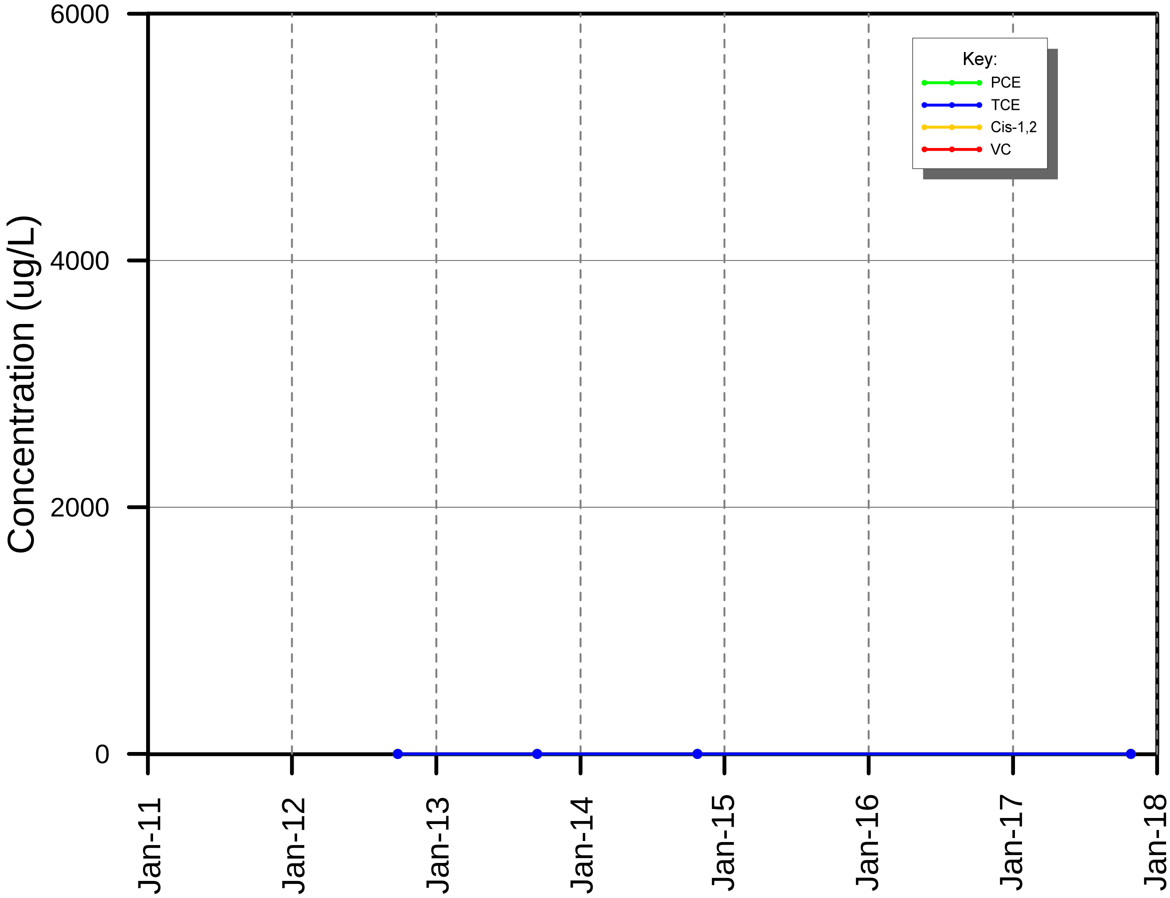


Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
Concentration (ug/L)
1000
800
600
400
200
0
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18

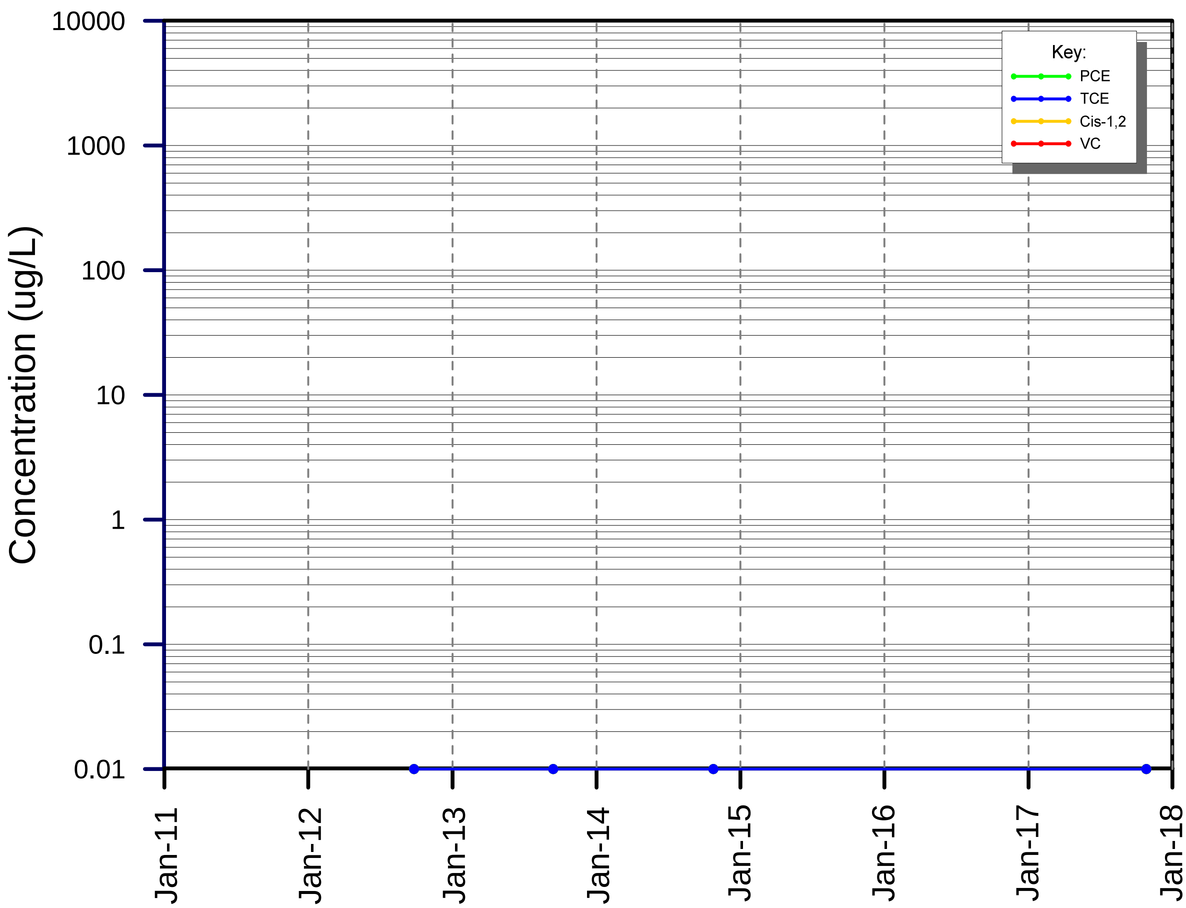


Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
Concentration (ug/L)
1000
100
10
1
0.1
0.01
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18

ColeB

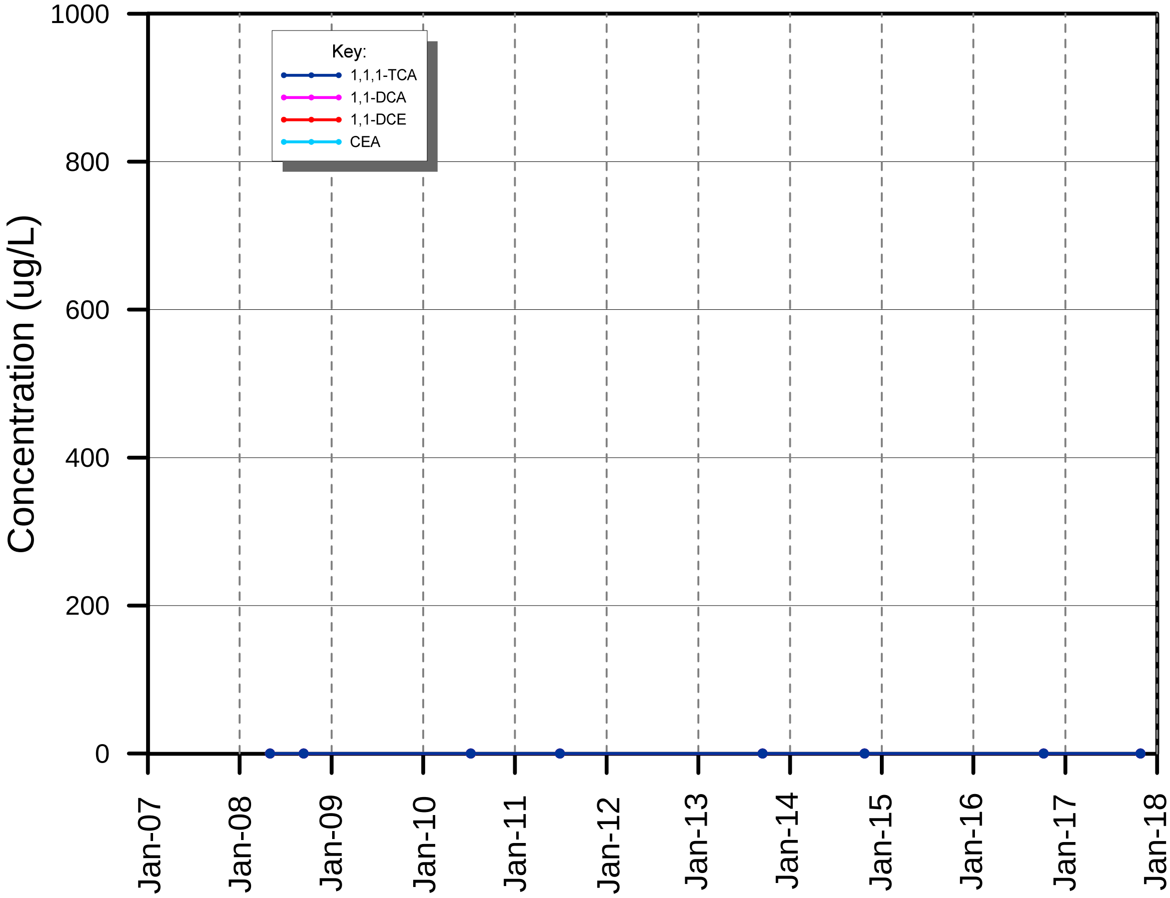


Concentration (ug/L)
6000
4000
2000
0
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18
Key:
PCE
TCE
Cis-1,2
VC

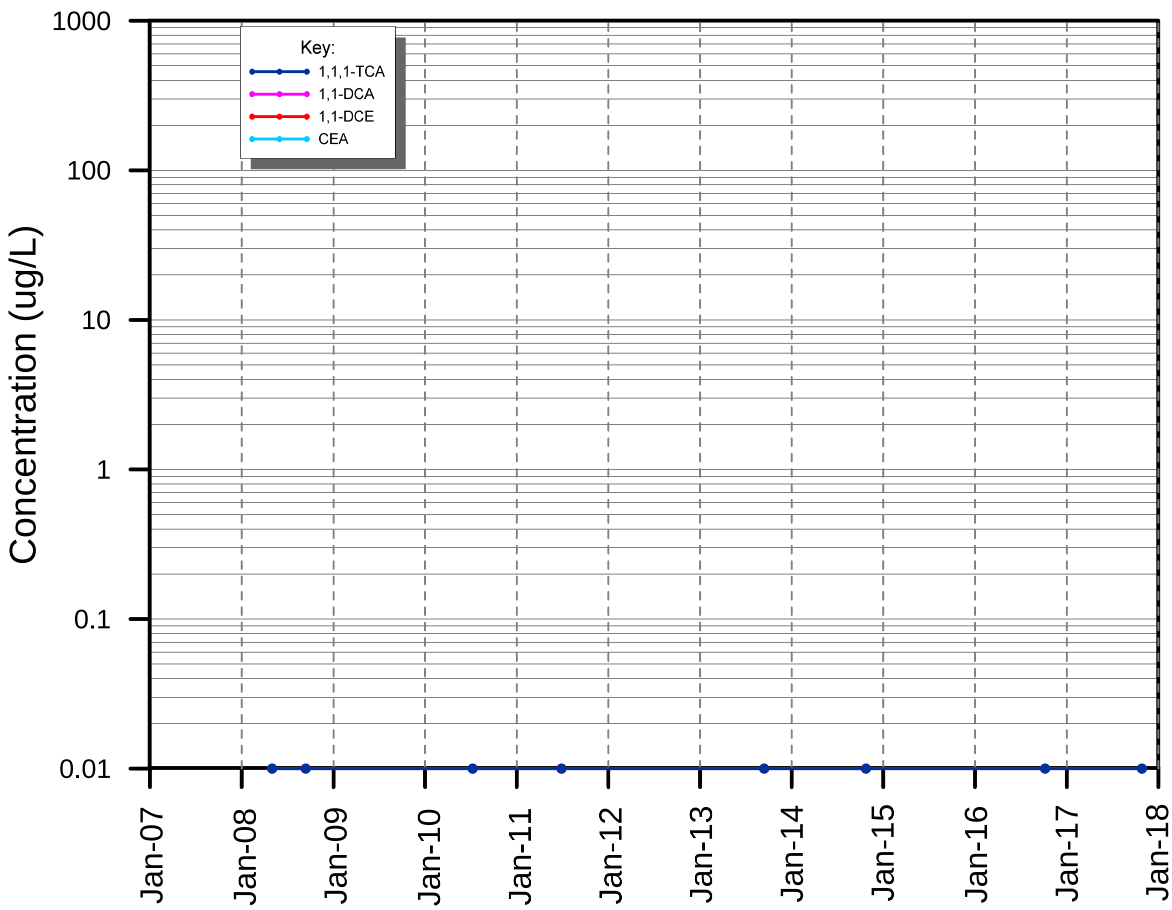


Concentration (ug/L)
10000
1000
100
10
1
0.1
0.01
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18
Key:
PCE
TCE
Cis-1,2
VC

Cole D

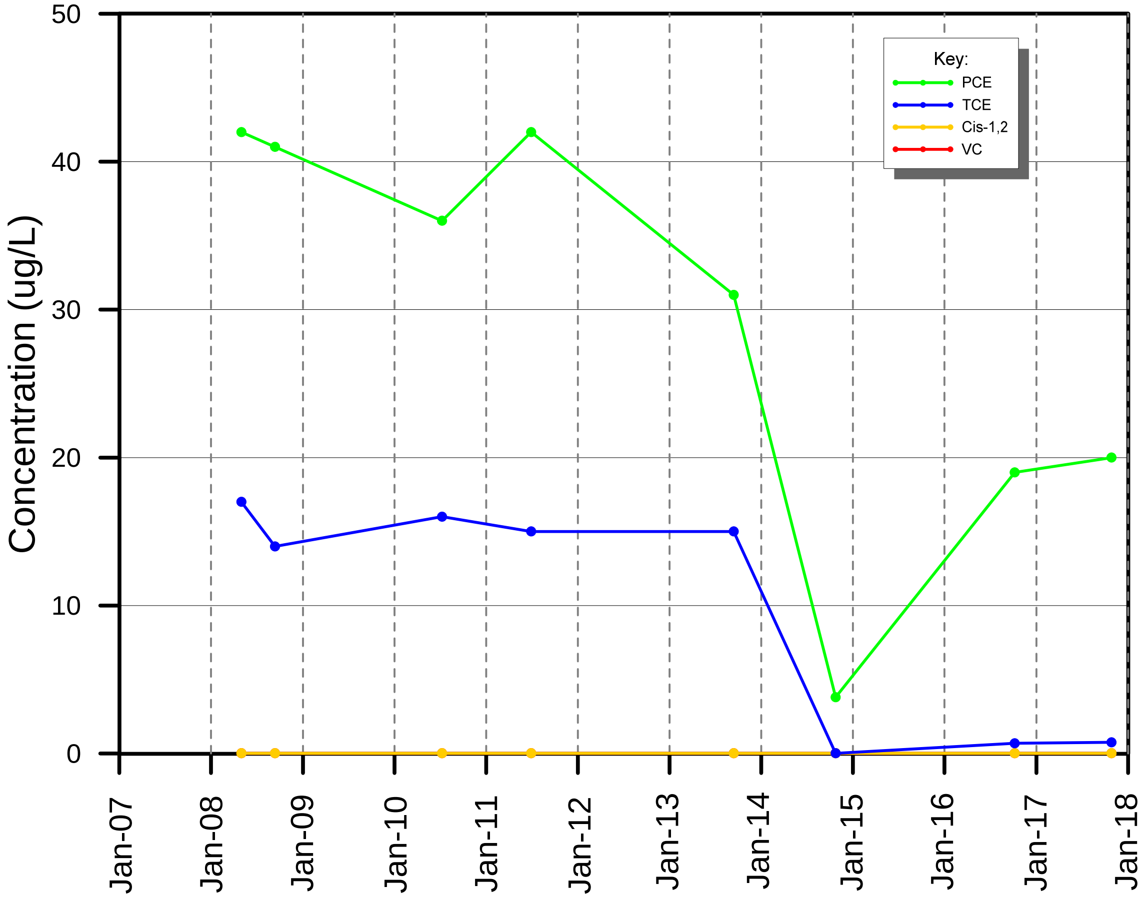


Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
Concentration (ug/L)
1000
800
600
400
200
0
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18



Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
Concentration (ug/L)
1000
100
10
1
0.1
0.01
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18

Cole D



Concentration (ug/L)
50
40
30
20
10
0
Key:
PCE
TCE
Cis-1,2
VC
Jan-07
Jan-08
Jan-09
Jan-10
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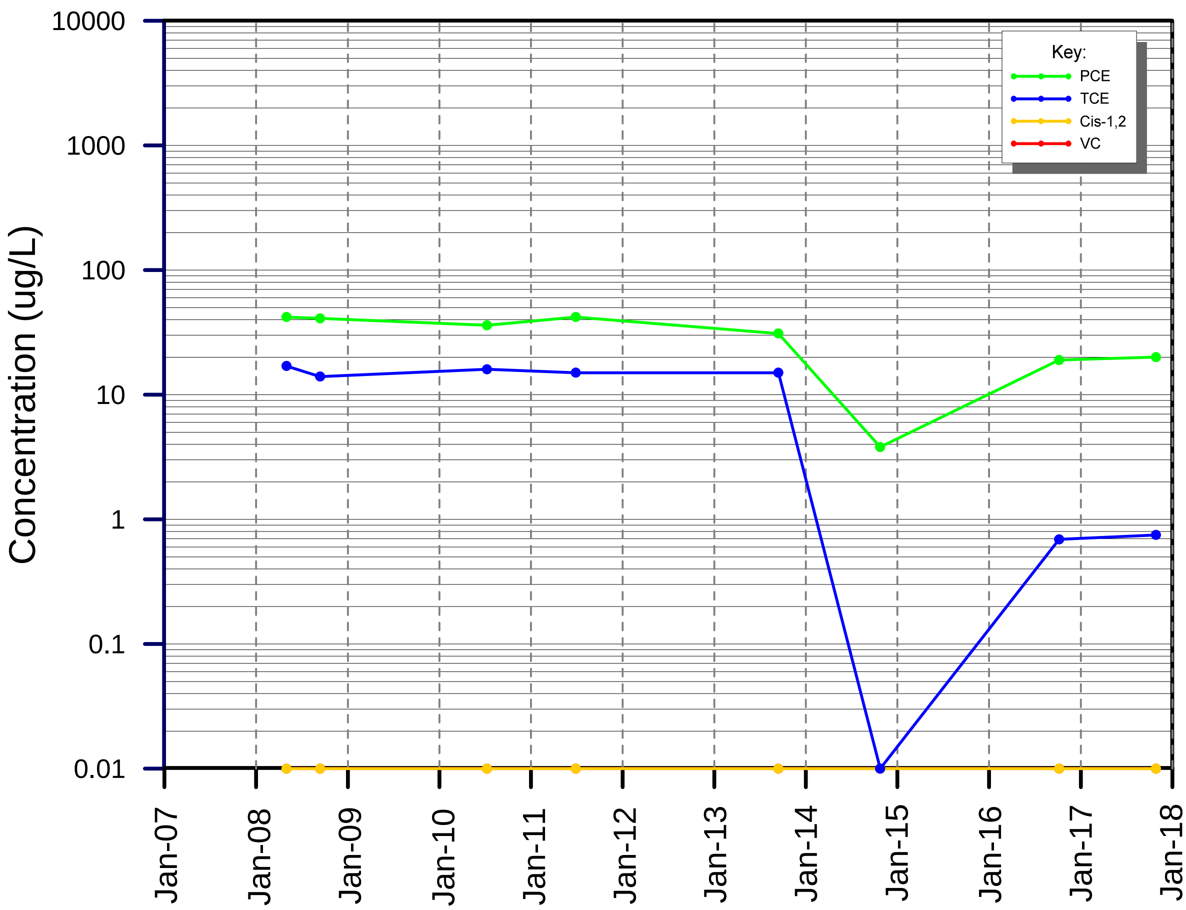
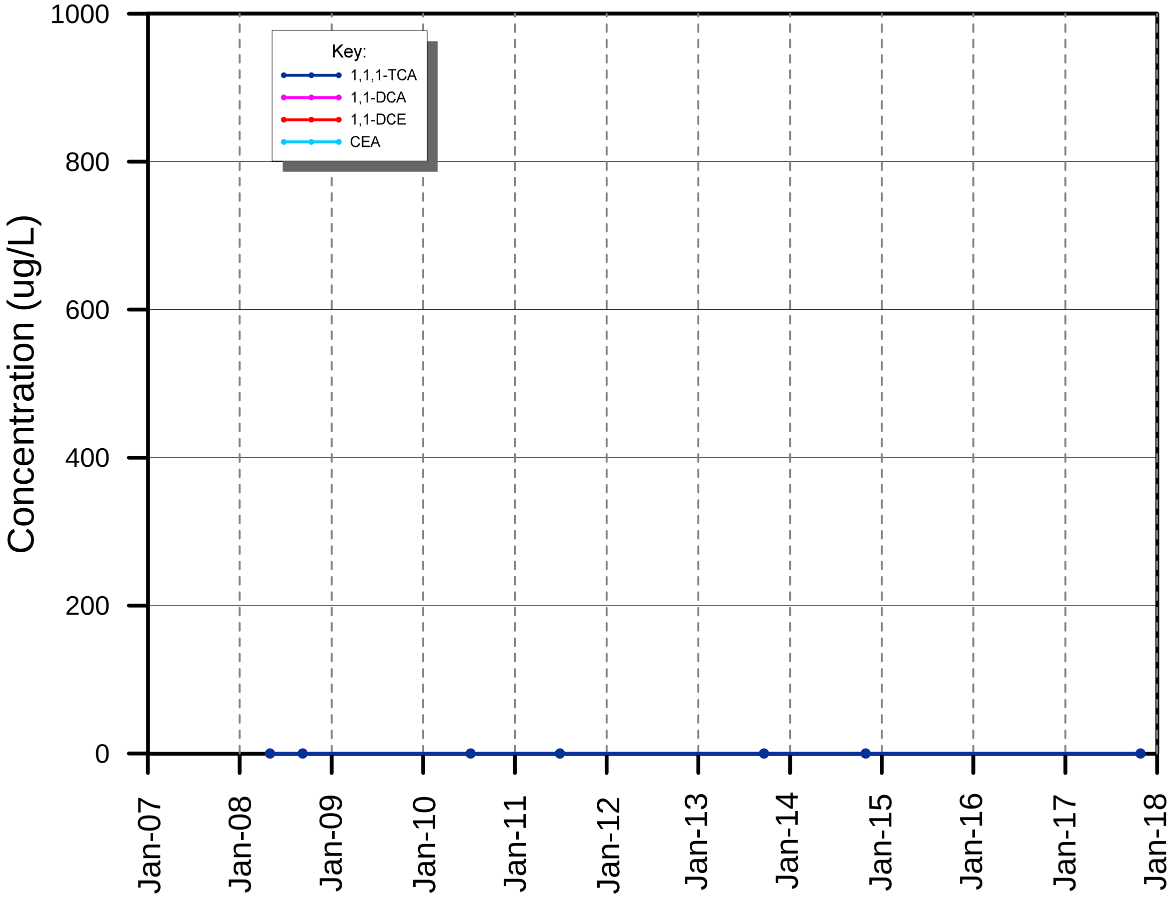
Jan-16
Jan-17
Jan-18

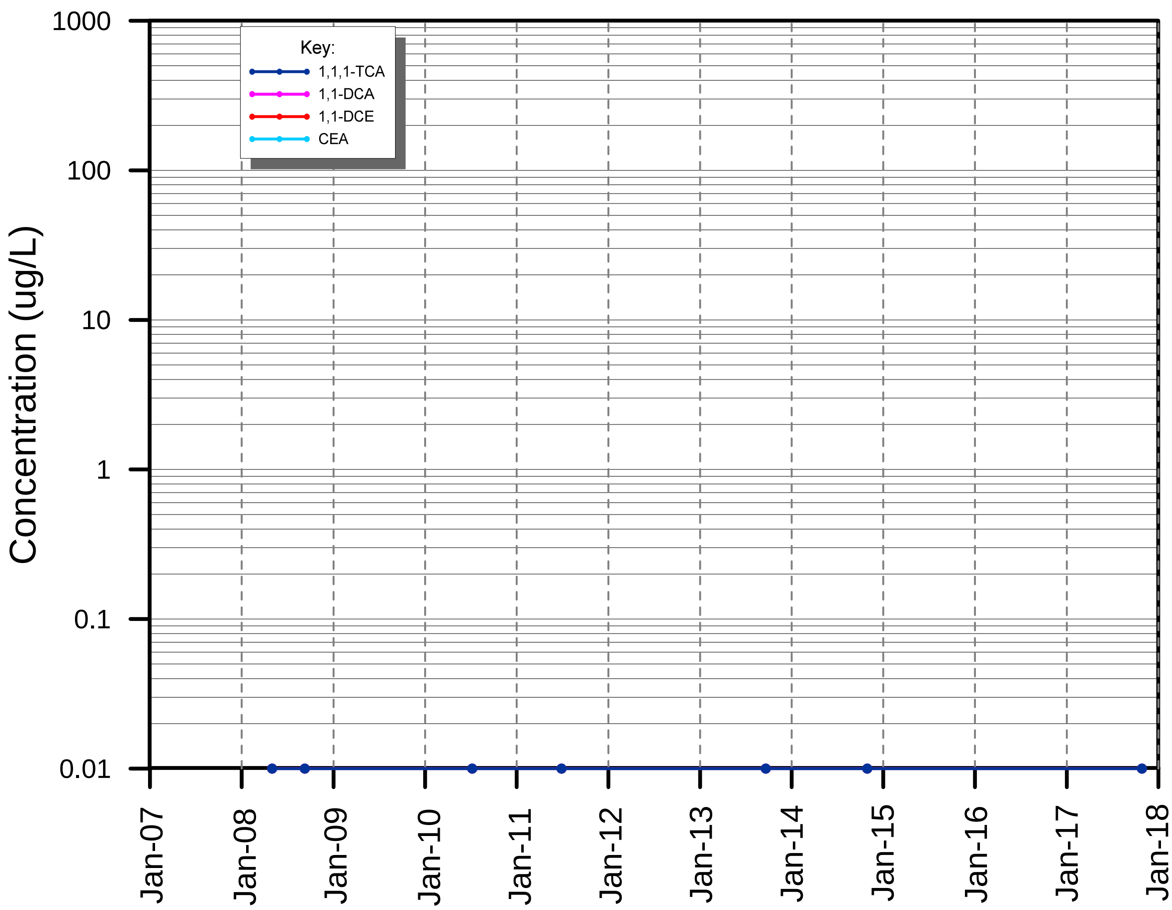


Concentration (ug/L)
10000
1000
100
10
1
0.1
0.01
Key:
PCE
TCE
Cis-1,2
VC
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18

Cole F

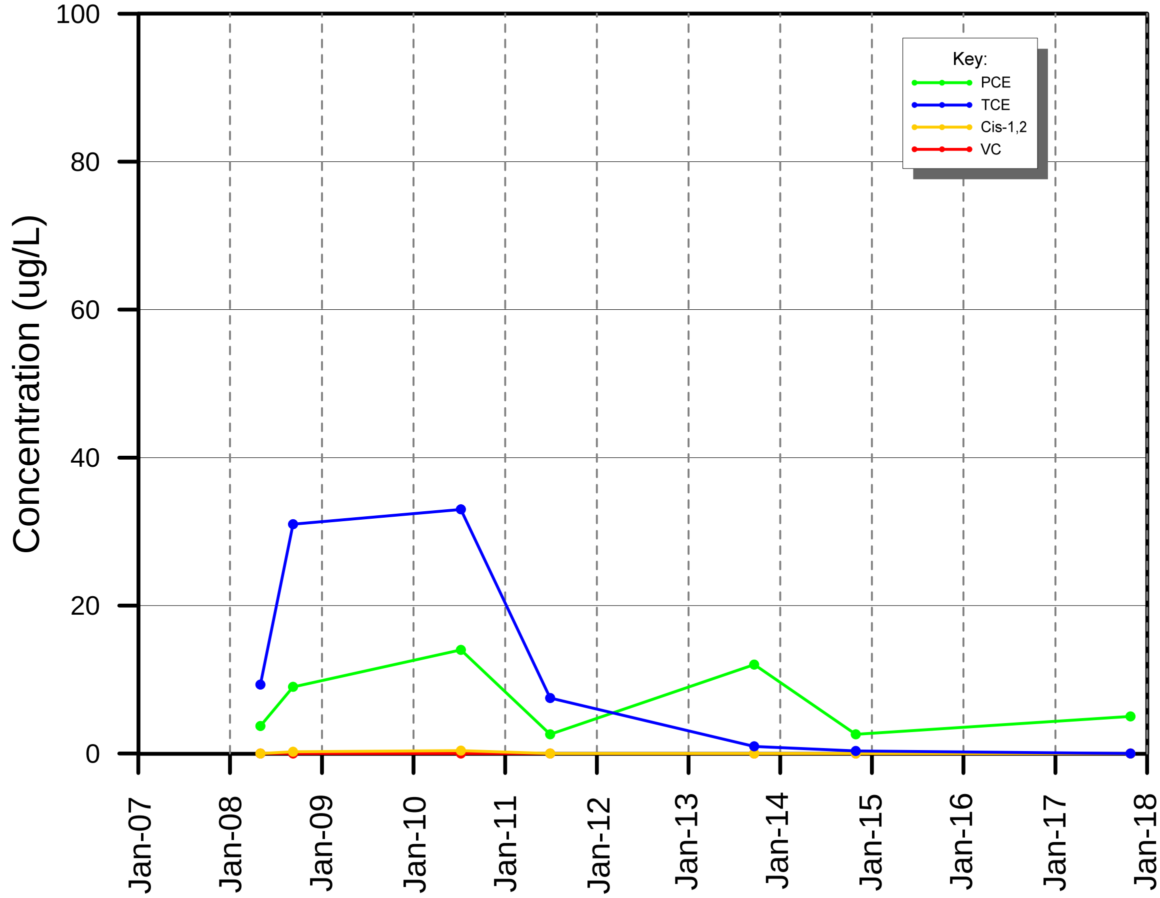


Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
Concentration (ug/L)
1000
800
600
400
200
0
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18

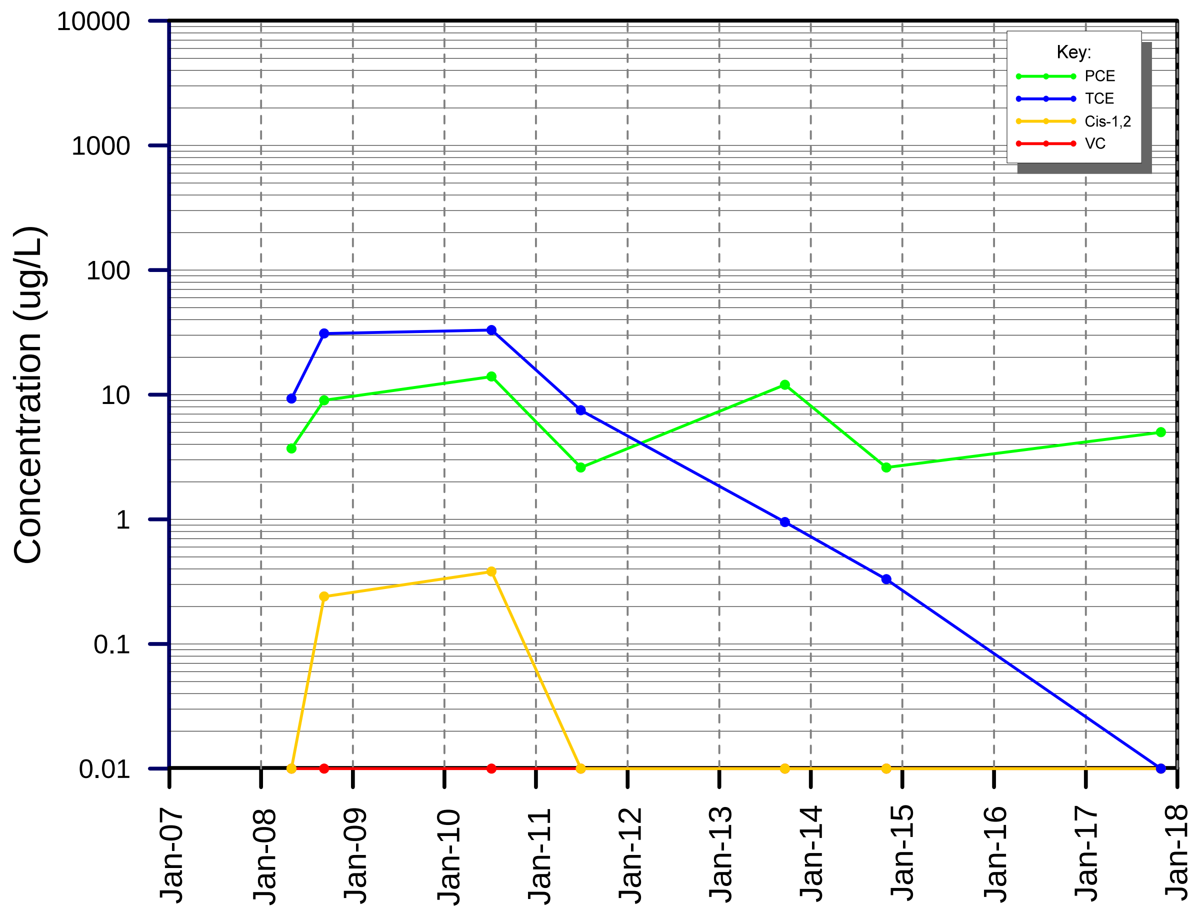


Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
Concentration (ug/L)
1000
100
10
1
0.1
0.01
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18

Cole F

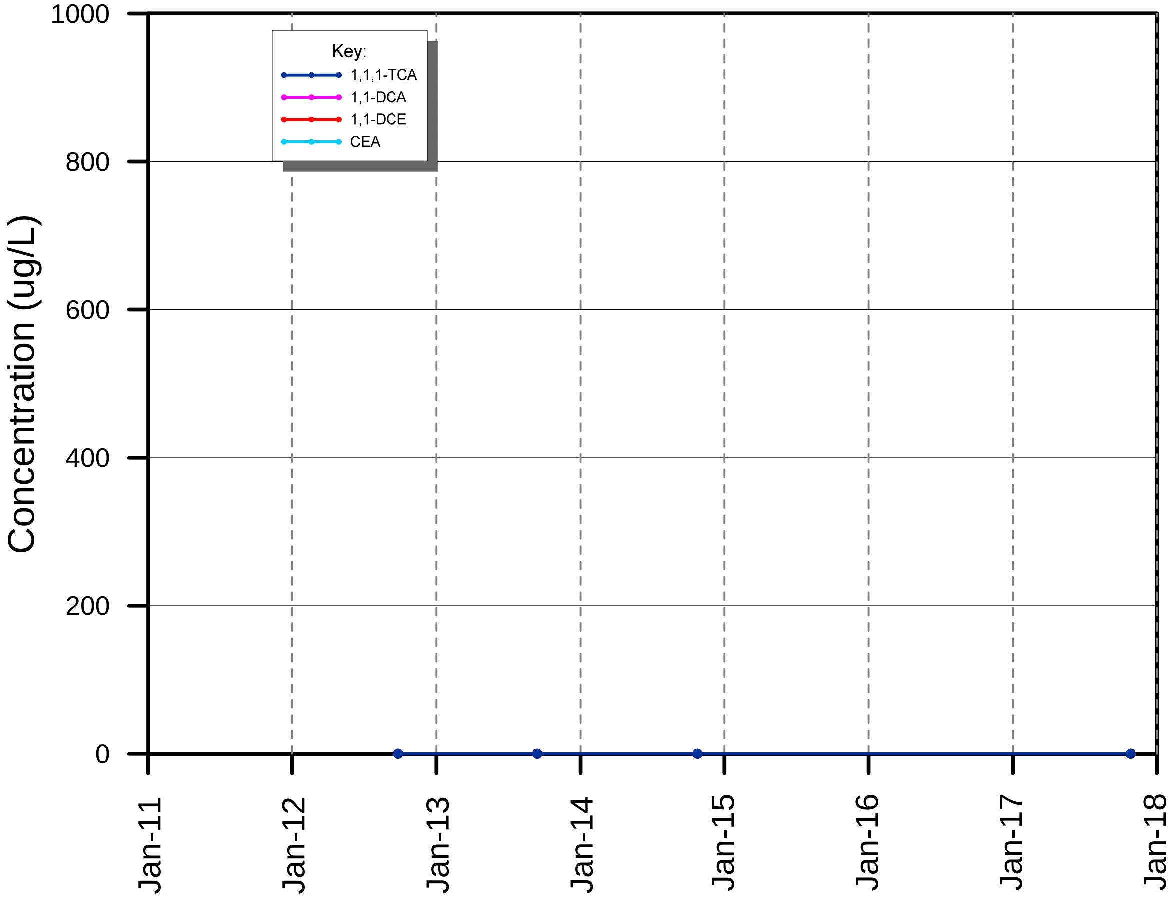


Concentration (ug/L)
100
80
60
40
20
0
Key:
PCE
TCE
Cis-1,2
VC
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18

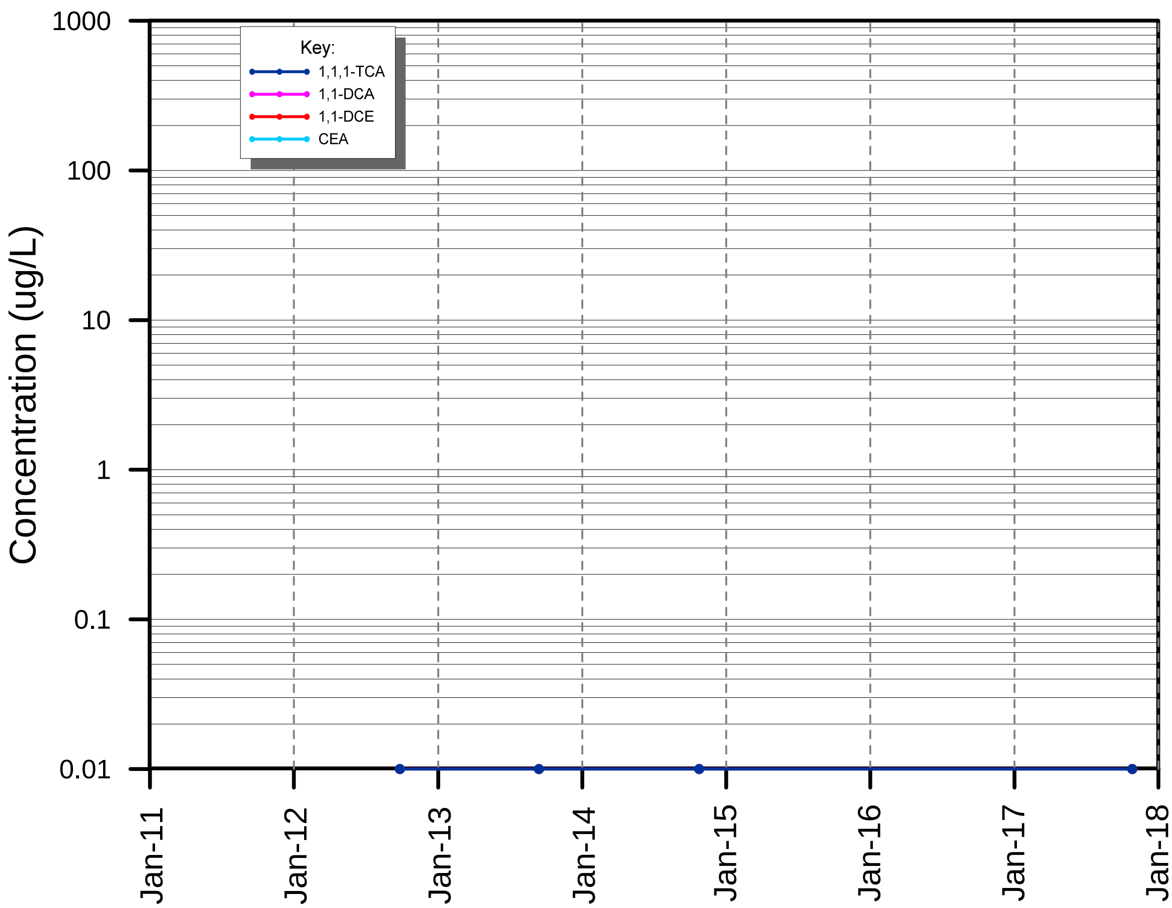


Concentration (ug/L)
10000
1000
100
10
1
0.1
0.01
Key:
PCE
TCE
Cis-1,2
VC
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18

Cole Flush

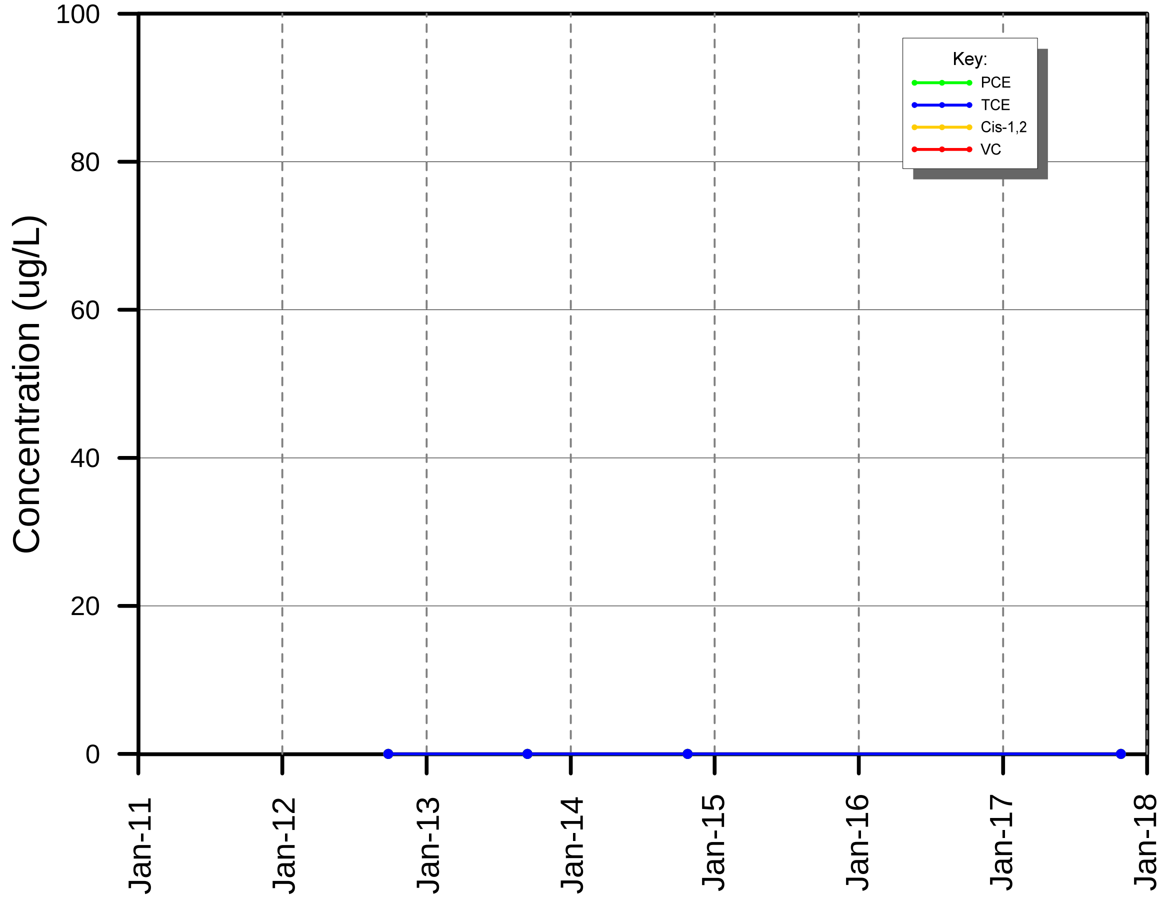


Concentration (ug/L)
1000
800
600
400
200
0
Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18

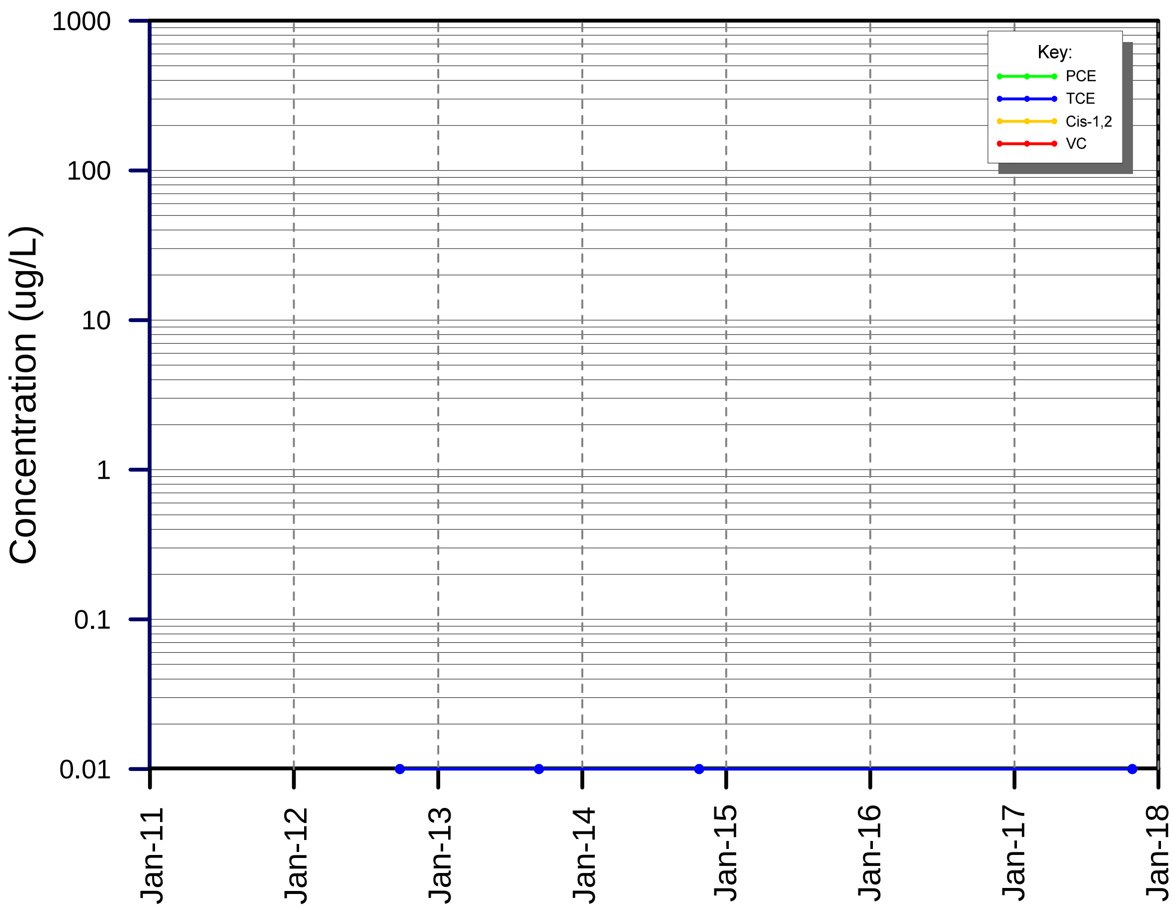


Concentration (ug/L)
1000
100
10
1
0.1
0.01
Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18

Cole Flush

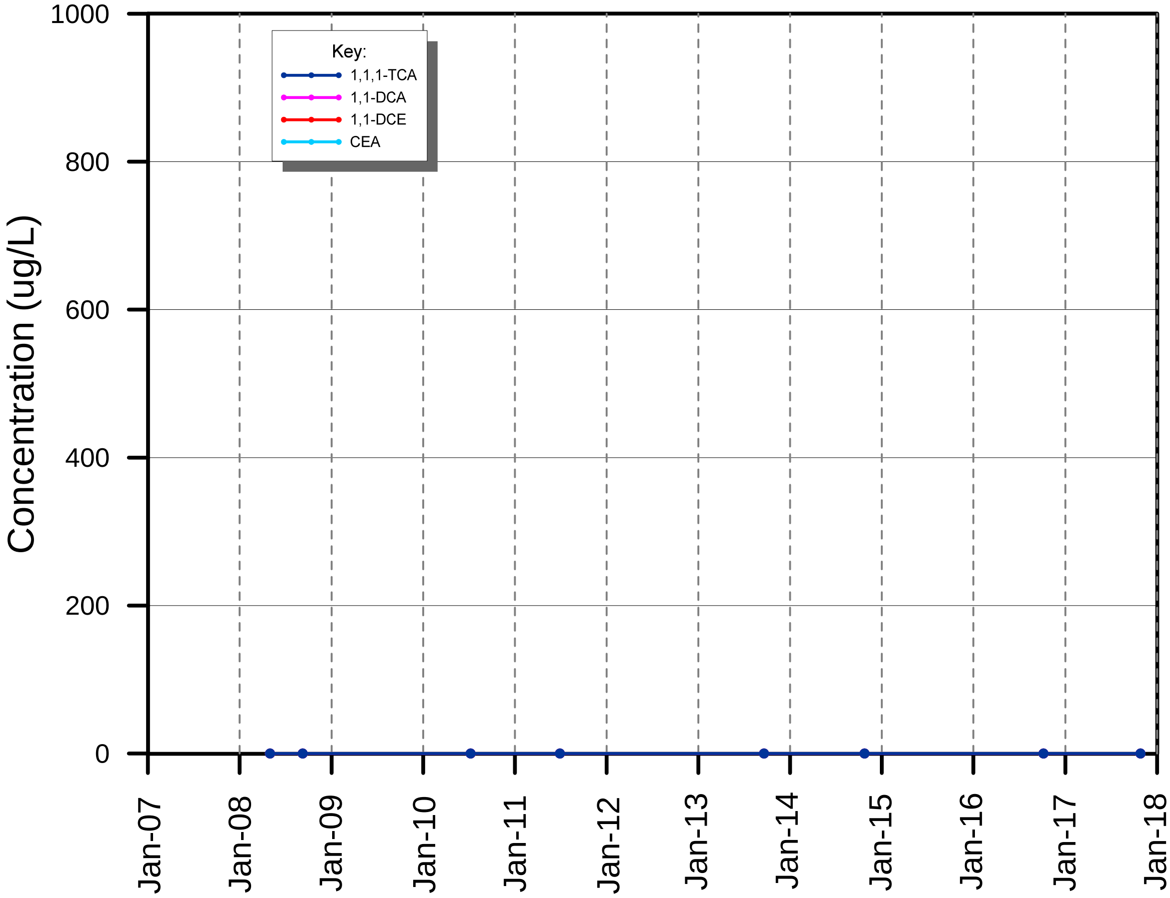


Concentration (ug/L)
100
80
60
40
20
0
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18
Key:
PCE
TCE
Cis-1,2
VC

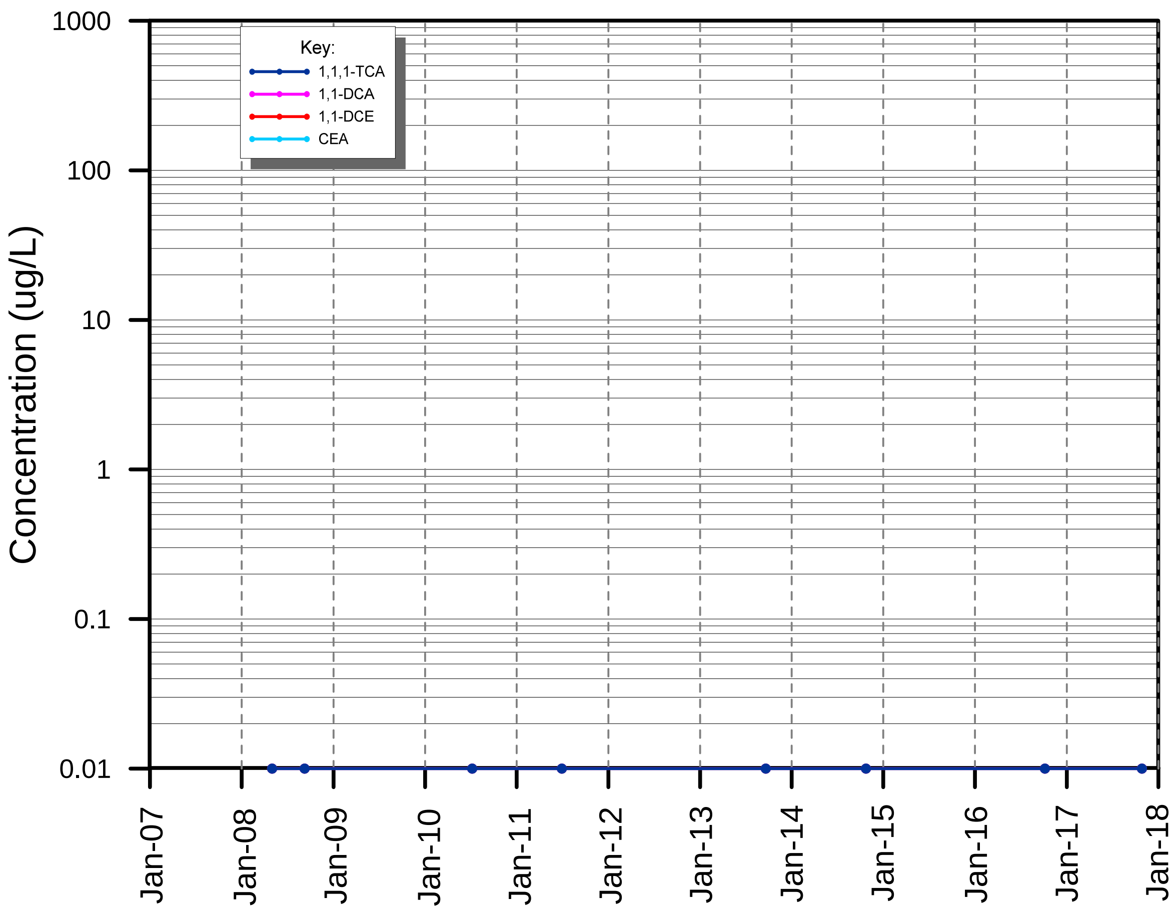


Concentration (ug/L)
1000
100
10
1
0.1
0.01
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18
Key:
PCE
TCE
Cis-1,2
VC

Cole MW-4

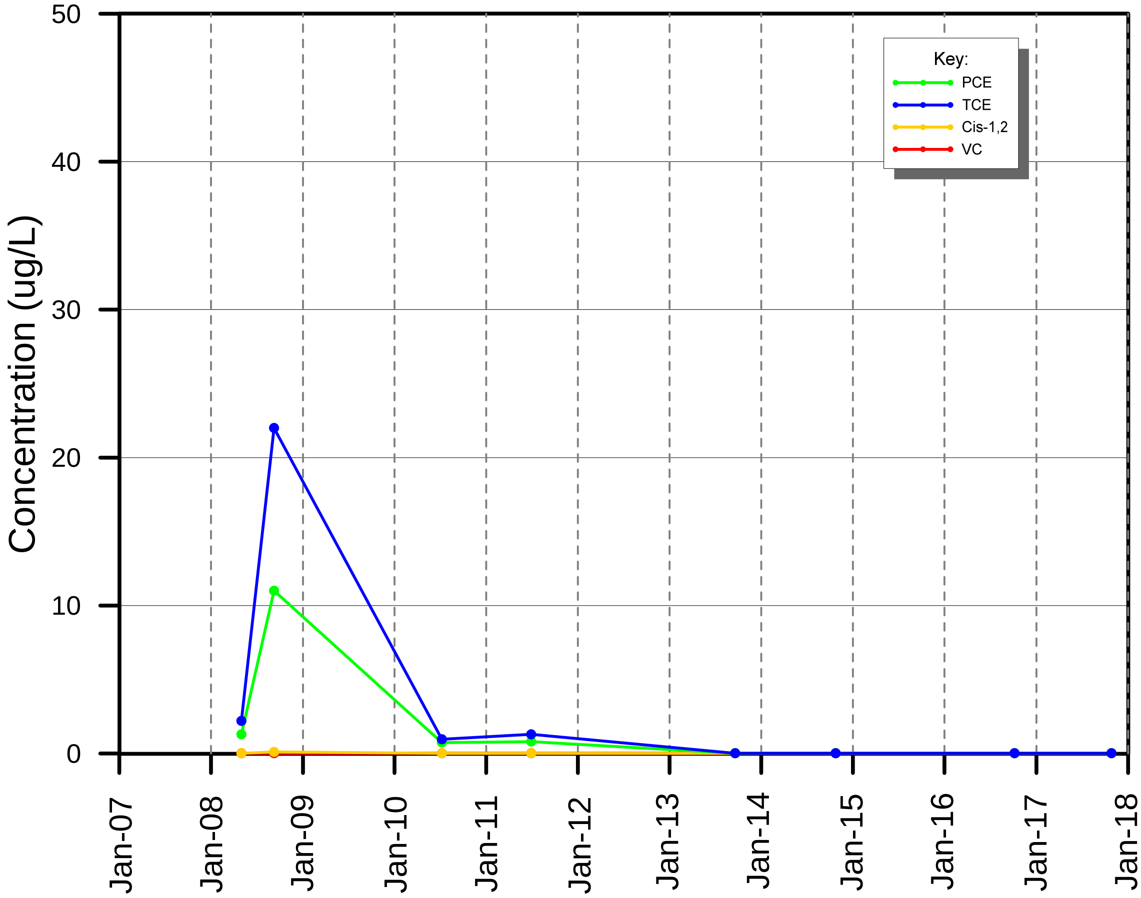


Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
Concentration (ug/L)
1000
800
600
400
200
0
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18

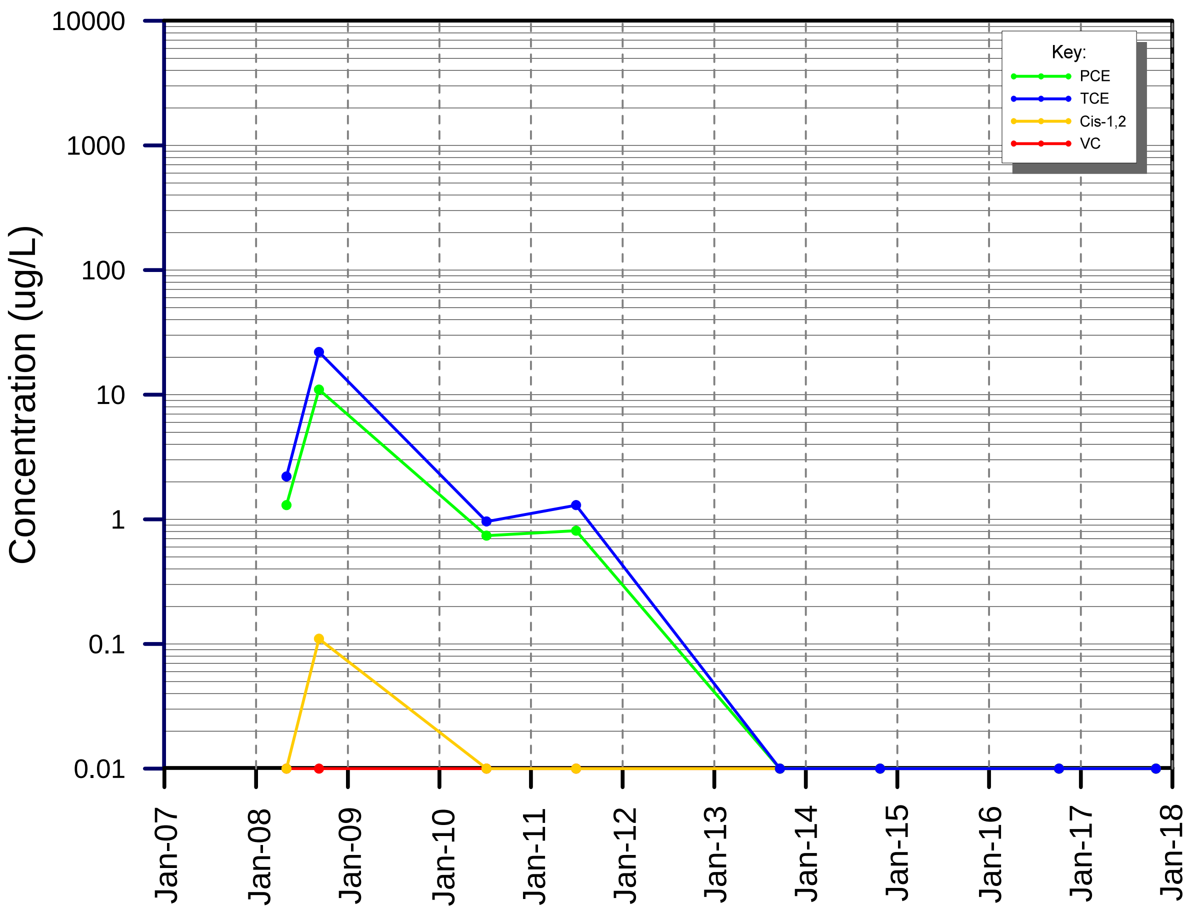


Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
Concentration (ug/L)
1000
100
10
1
0.1
0.01
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18

Cole MW-4

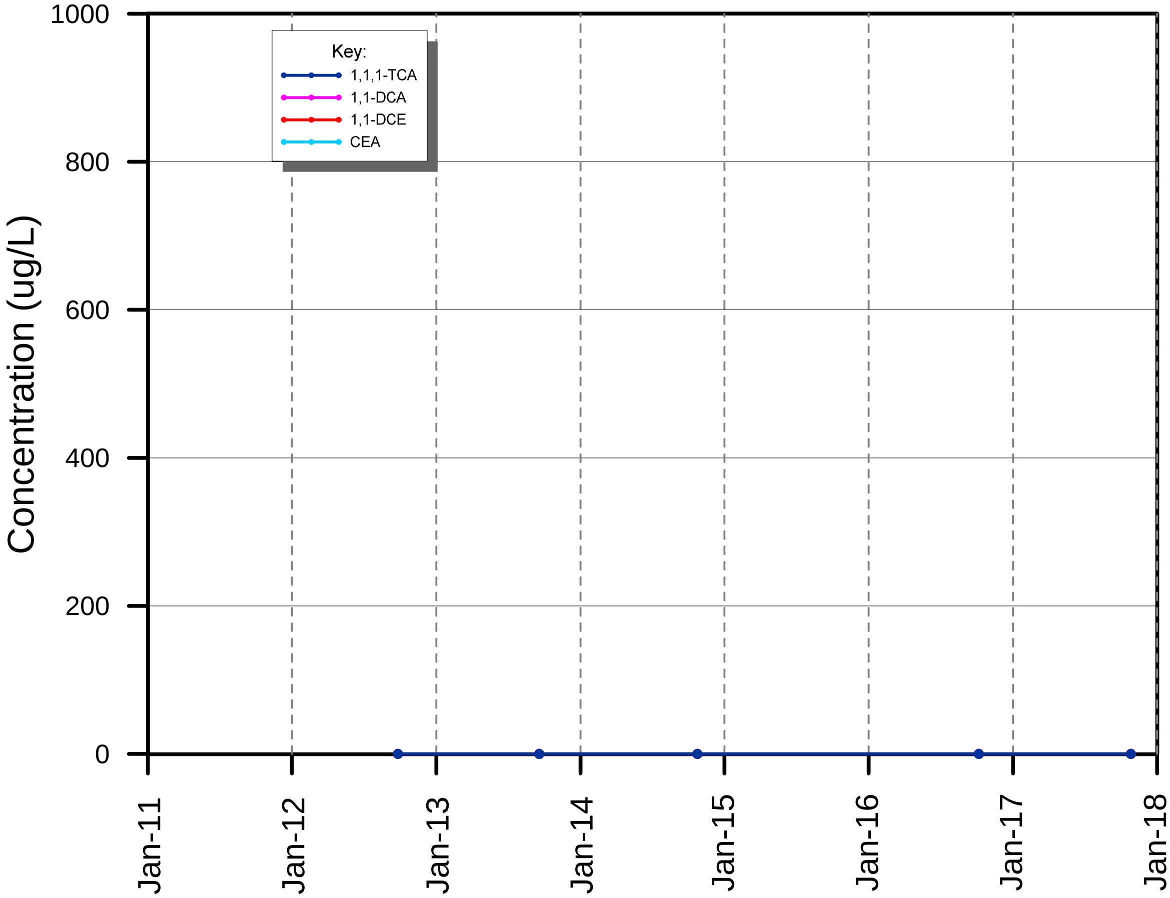


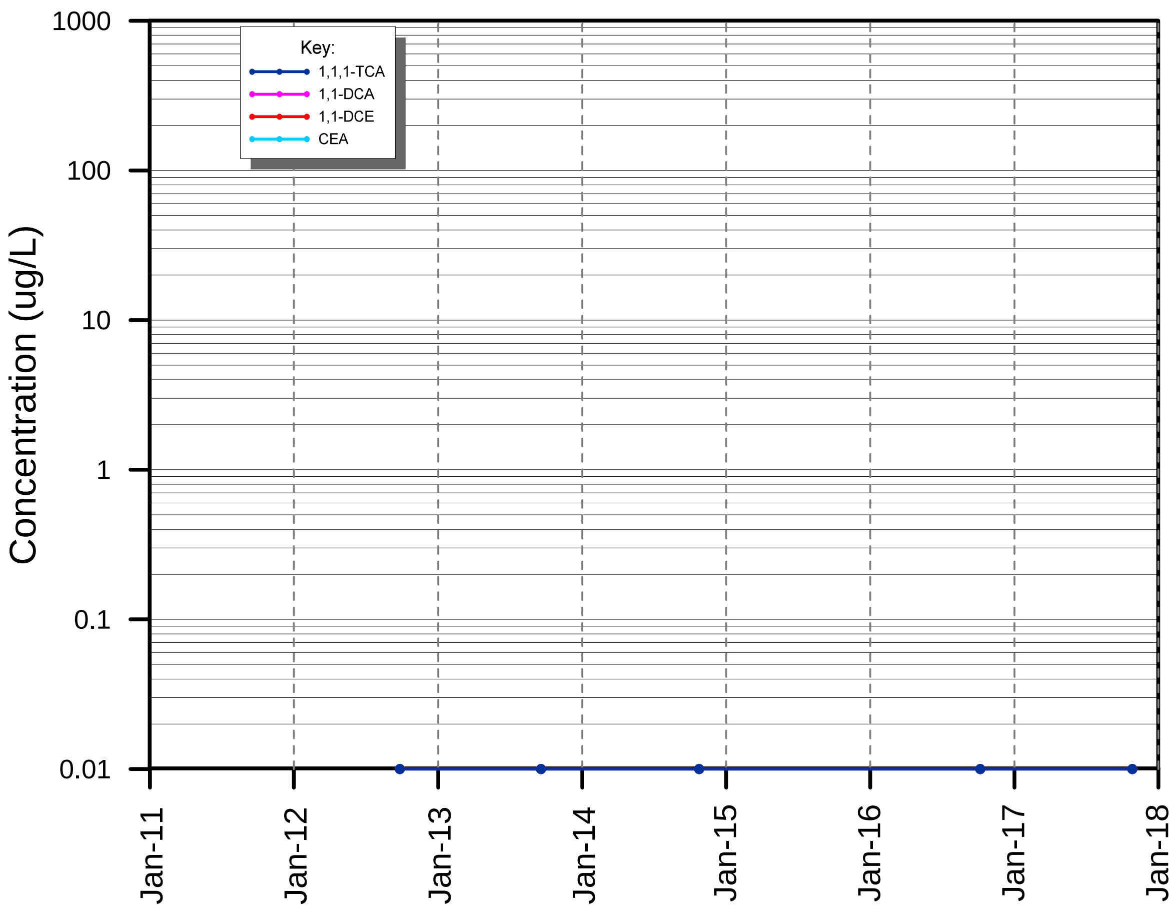
Concentration (ug/L)
50
40
30
20
10
0
Key:
PCE
TCE
Cis-1,2
VC
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18



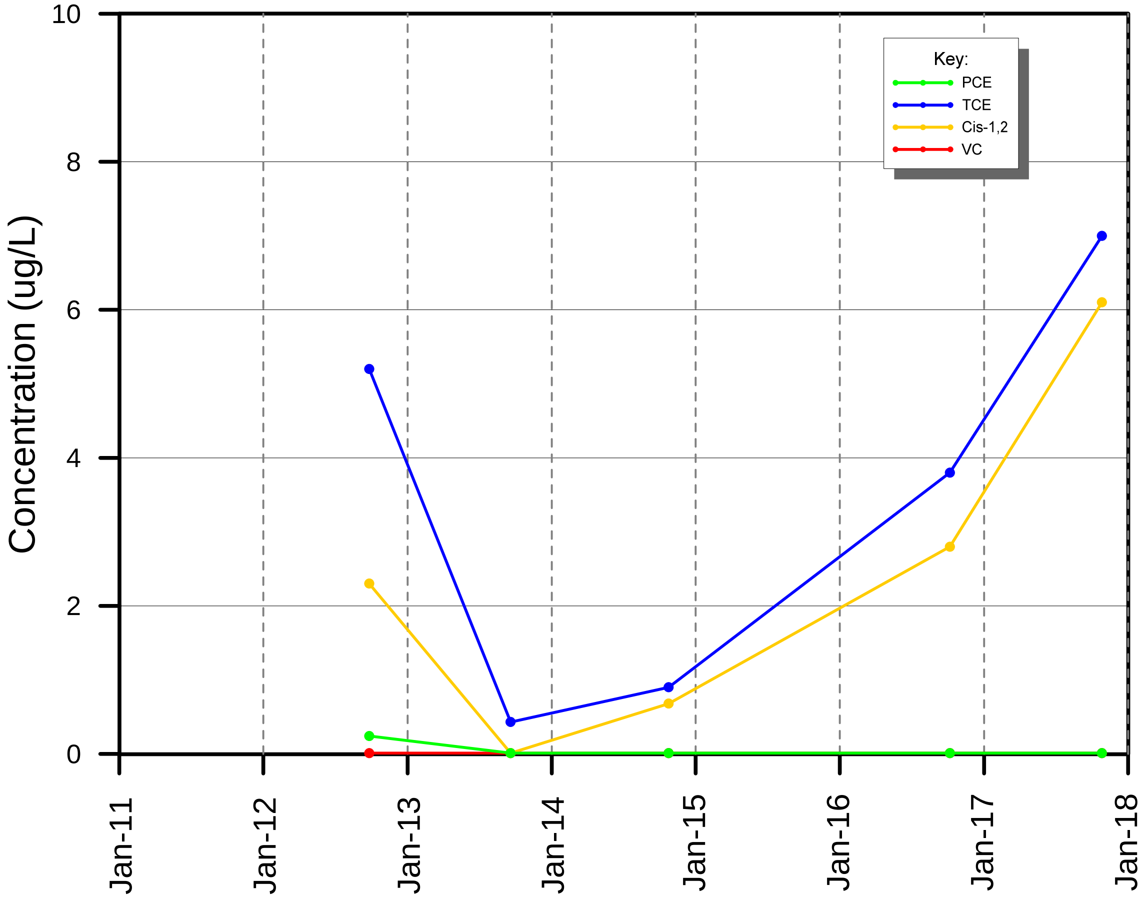
Concentration (ug/L)
10000
1000
100
10
1
0.1
0.01
Key:
PCE
TCE
Cis-1,2
VC
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18

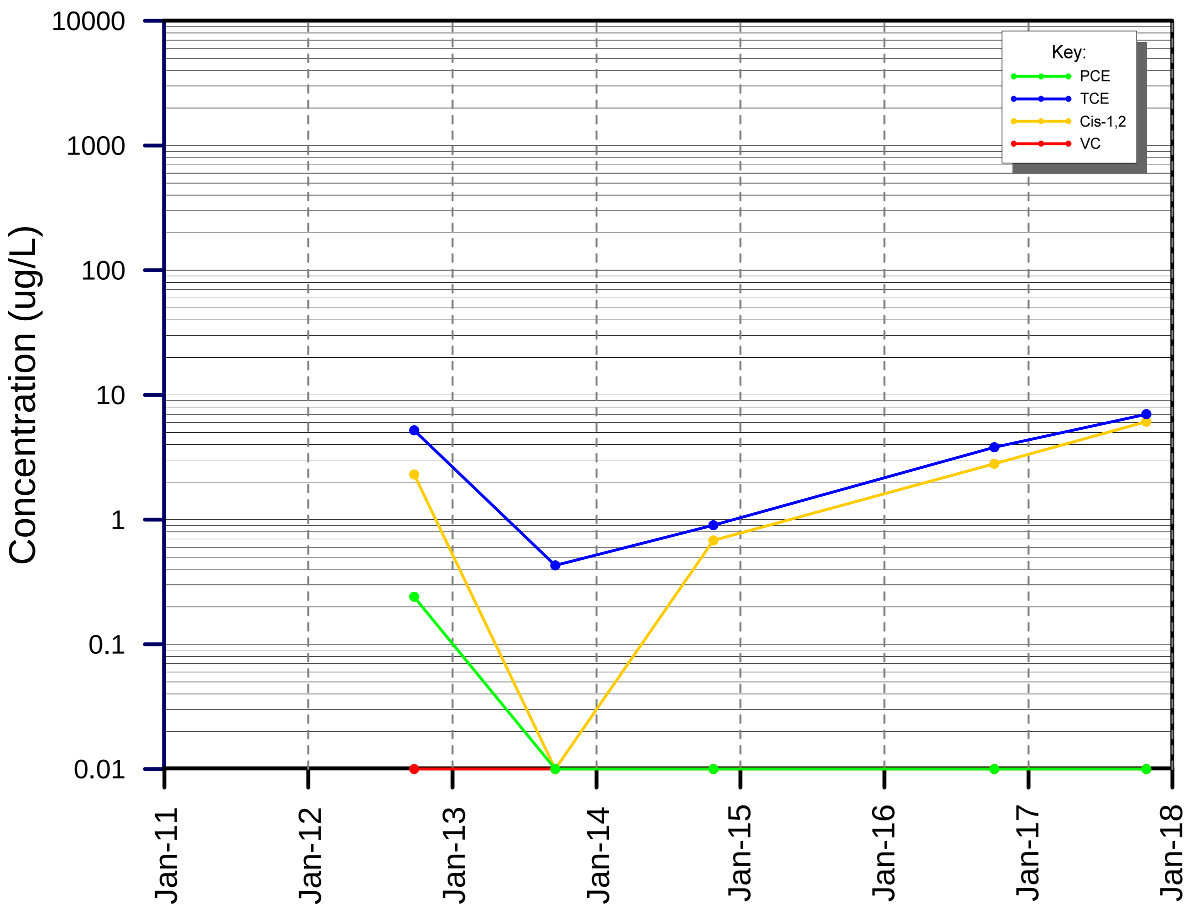
Cole Steel (MW-12)



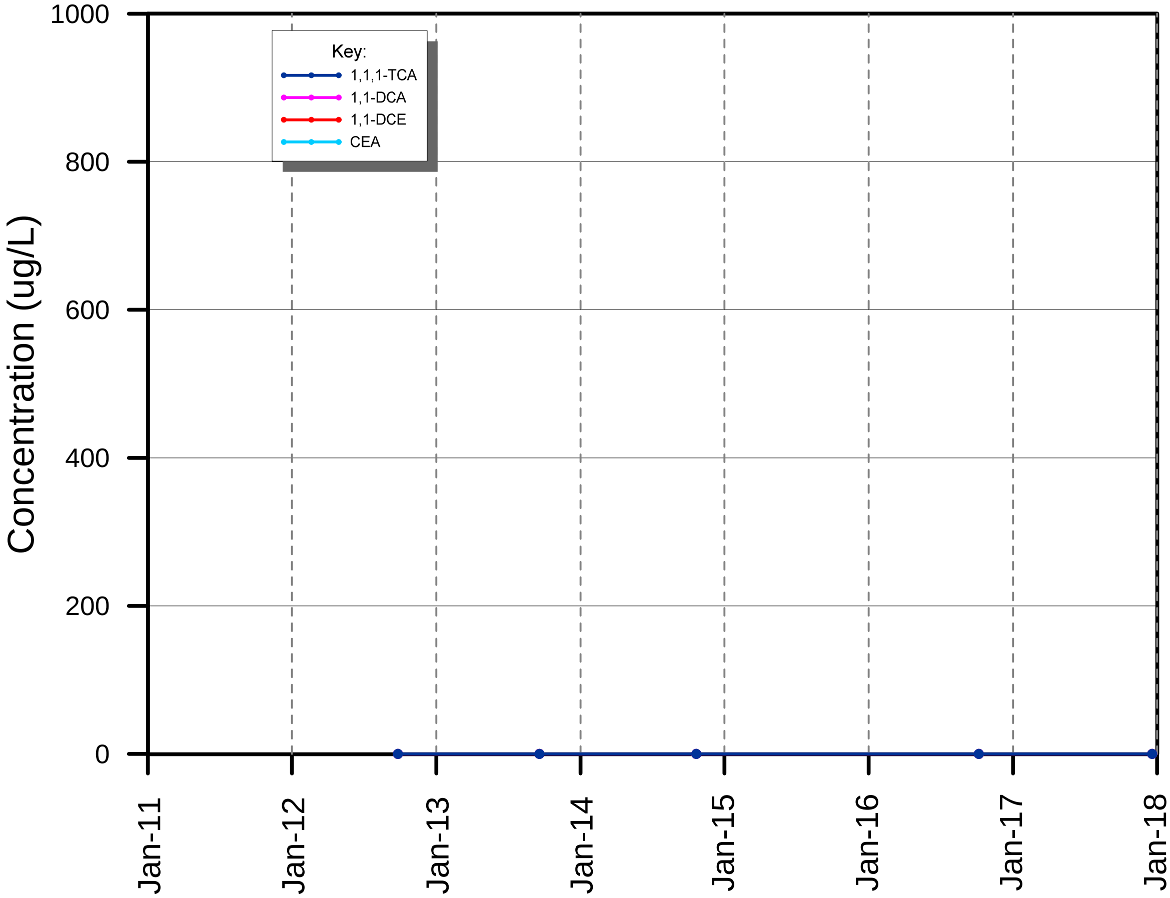


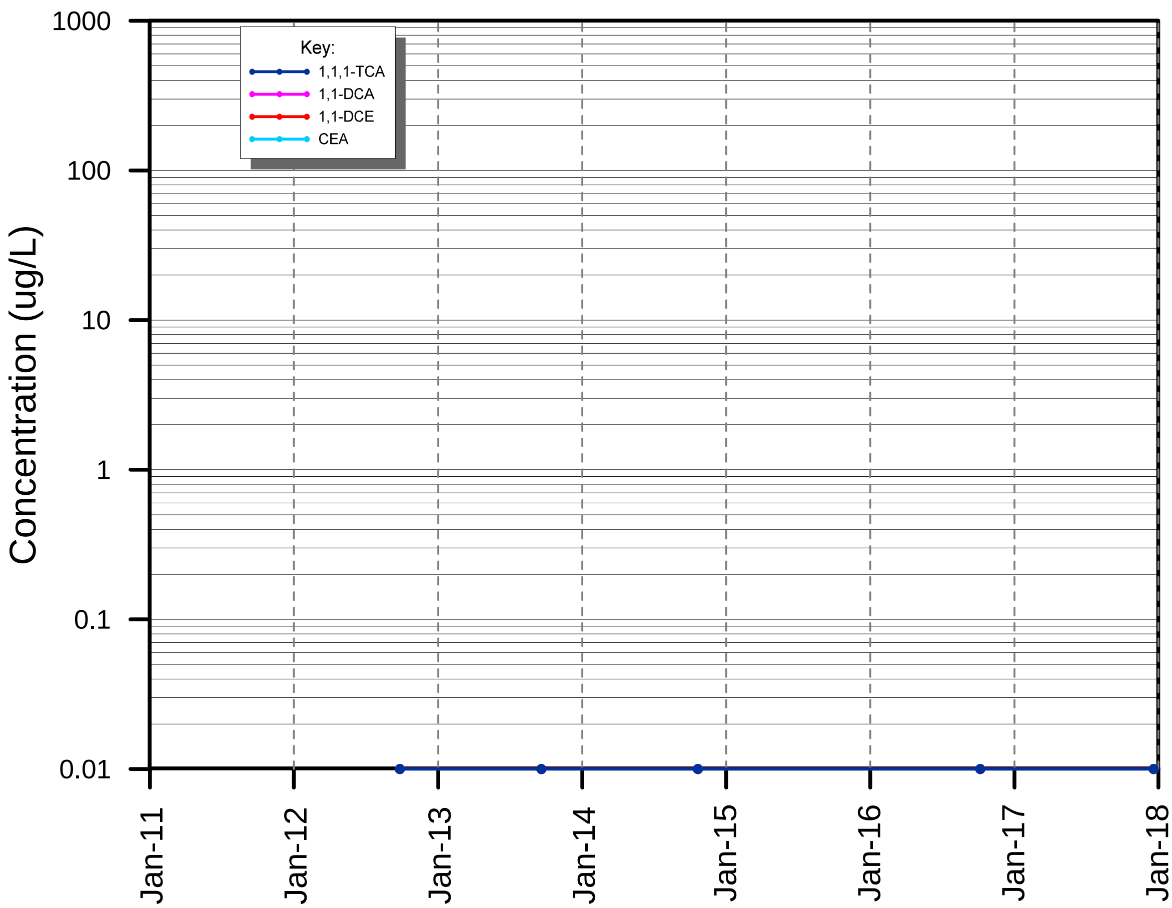
Cole Steel (MW-12)



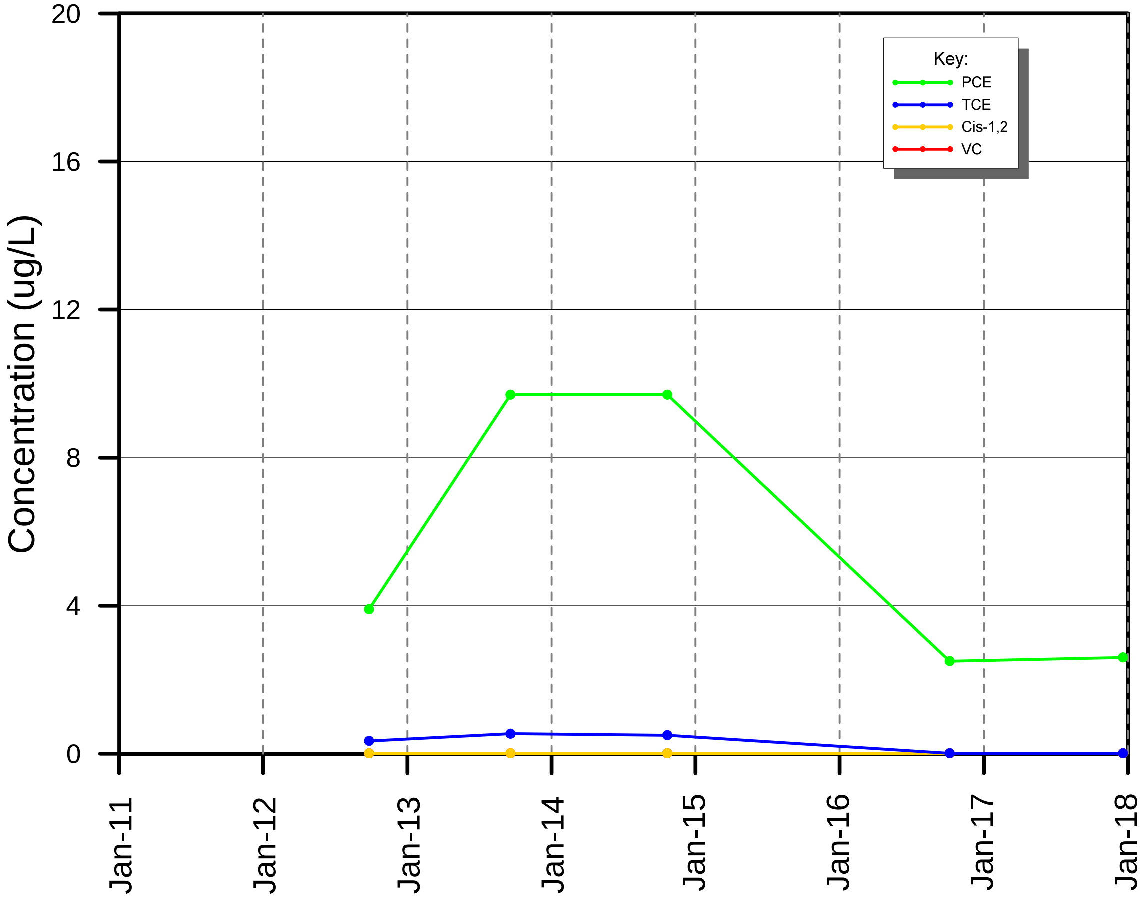


GM-1D


Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
Concentration (ug/L)
1000
800
600
400
200
0
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18


Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
Concentration (ug/L)
1000
100
10
1
0.1
0.01
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18

GM-1D


Concentration (ug/L)
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16
12
8
4
0
Key:
PCE
TCE
Cis-1,2
VC
Jan-11
Jan-12
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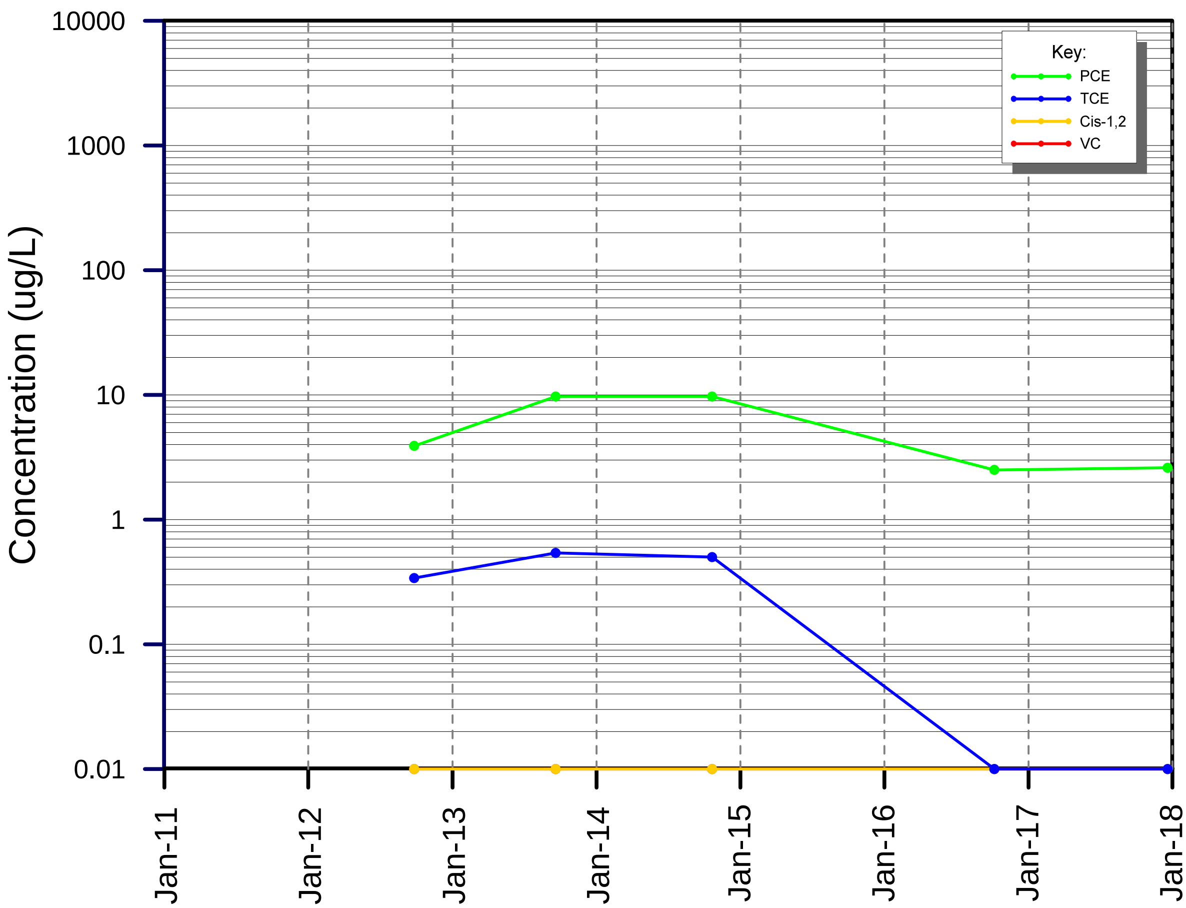
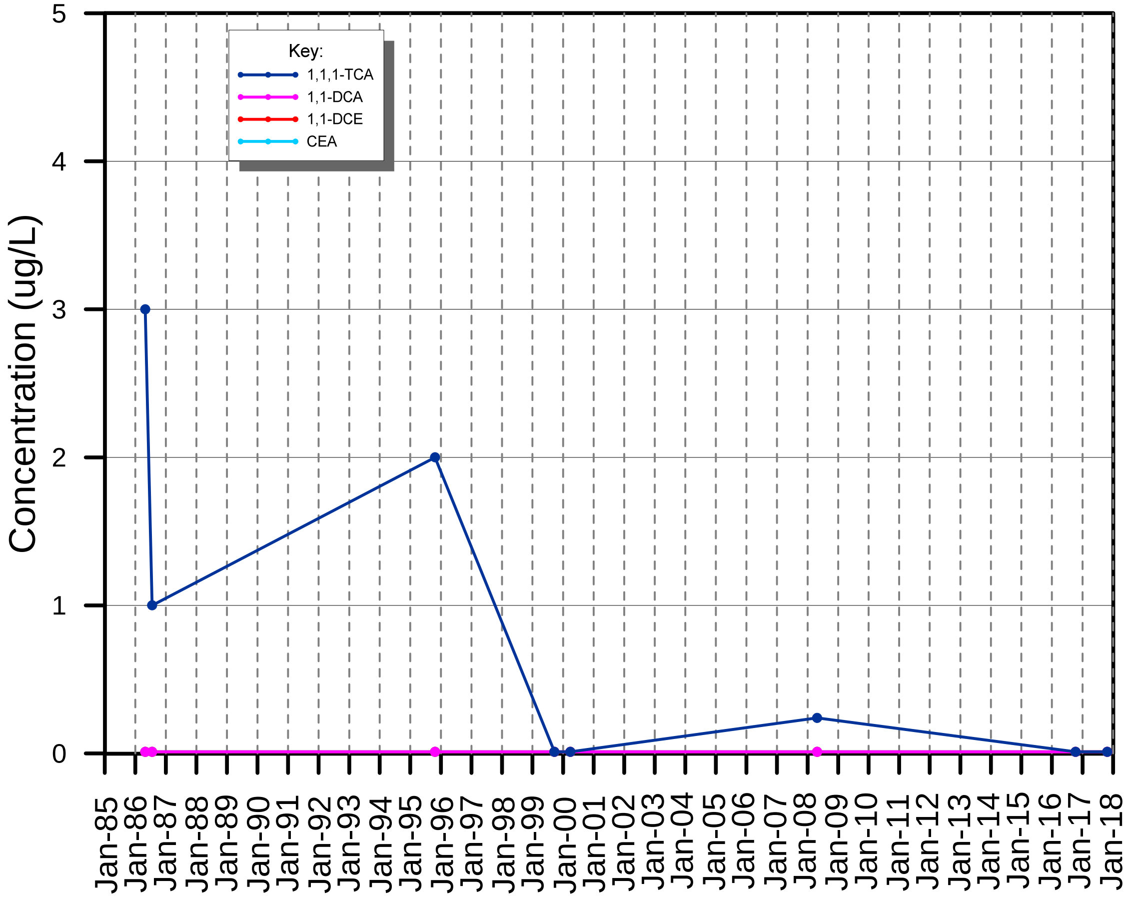
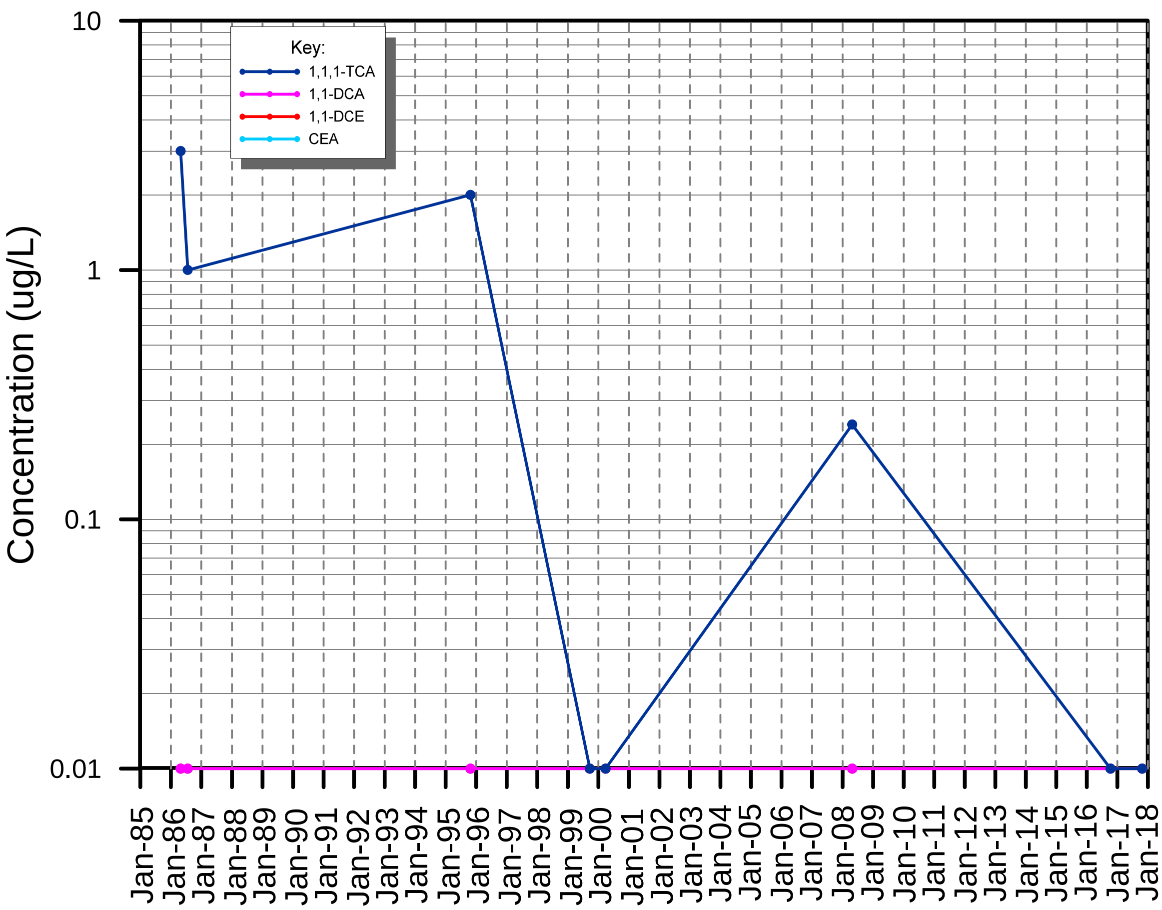
Jan-16
Jan-17
Jan-18


Concentration (ug/L)
10000
1000
100
10
1
0.1
0.01
Key:
PCE
TCE
Cis-1,2
VC
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18

MW-1

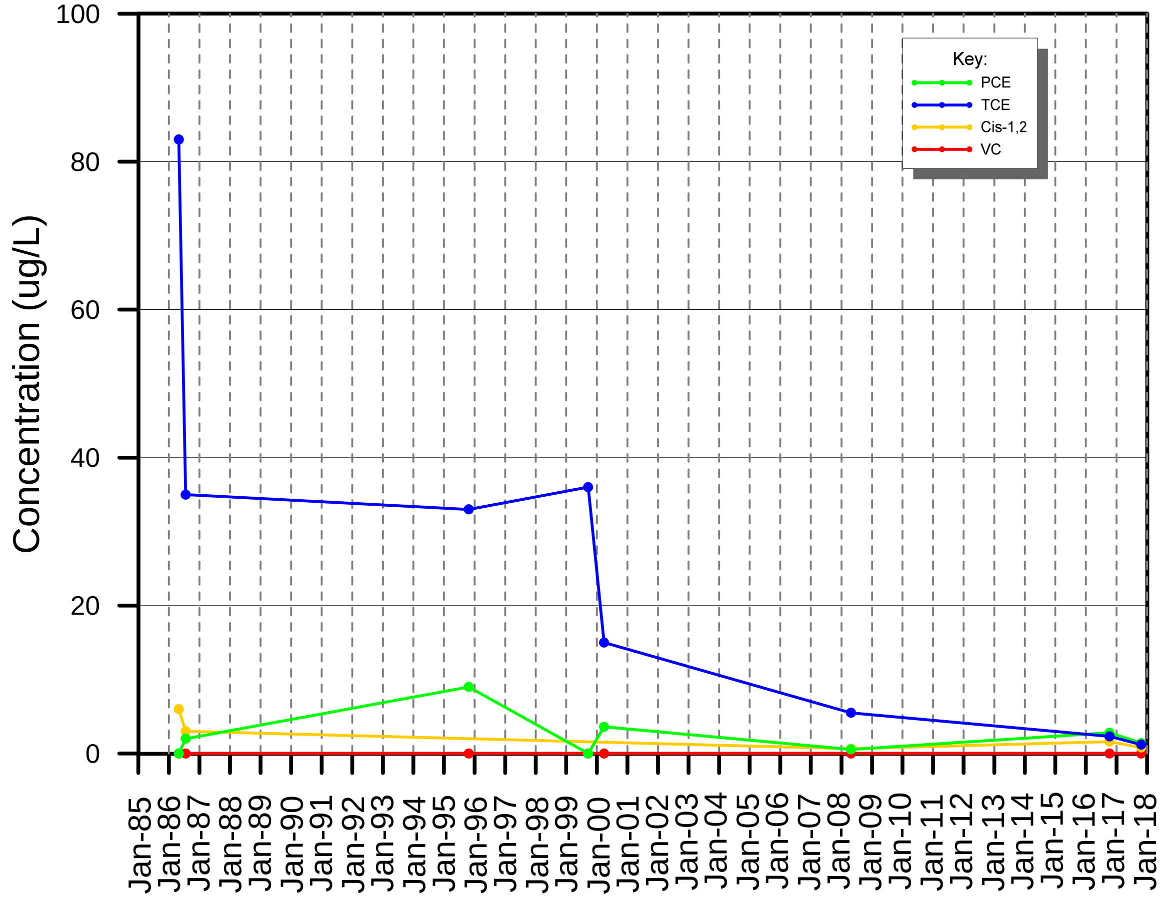


Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
Concentration (ug/L)
0
1
2
3
4
5
Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09 Jan-10 Jan-11 Jan-12 Jan-13 Jan-14 Jan-15 Jan-16 Jan-17 Jan-18



Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
Concentration (ug/L)
0.01
0.1
1
10
Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09 Jan-10 Jan-11 Jan-12 Jan-13 Jan-14 Jan-15 Jan-16 Jan-17 Jan-18

MW-1



Key:
PCE
TCE
Cis-1,2
VC
Concentration (ug/L)
100
80
60
40
20
0
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
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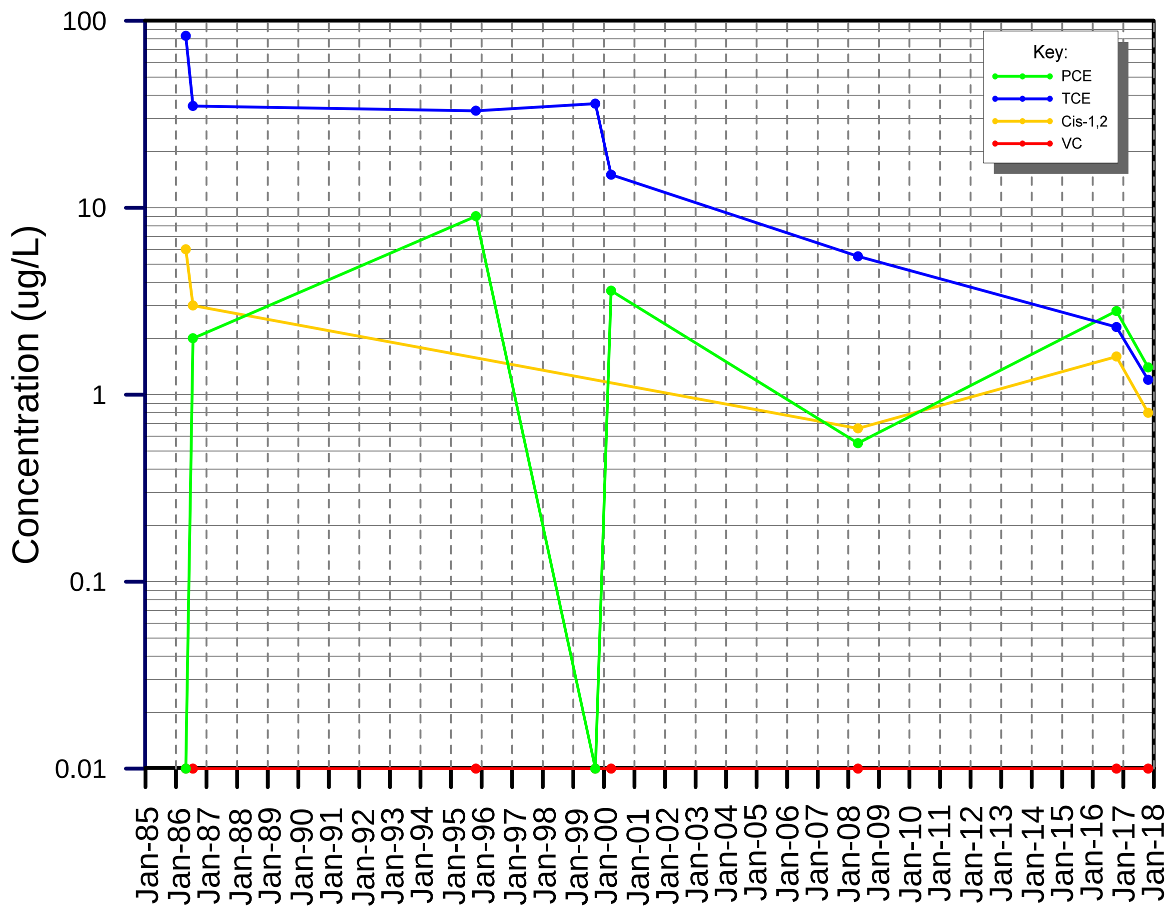
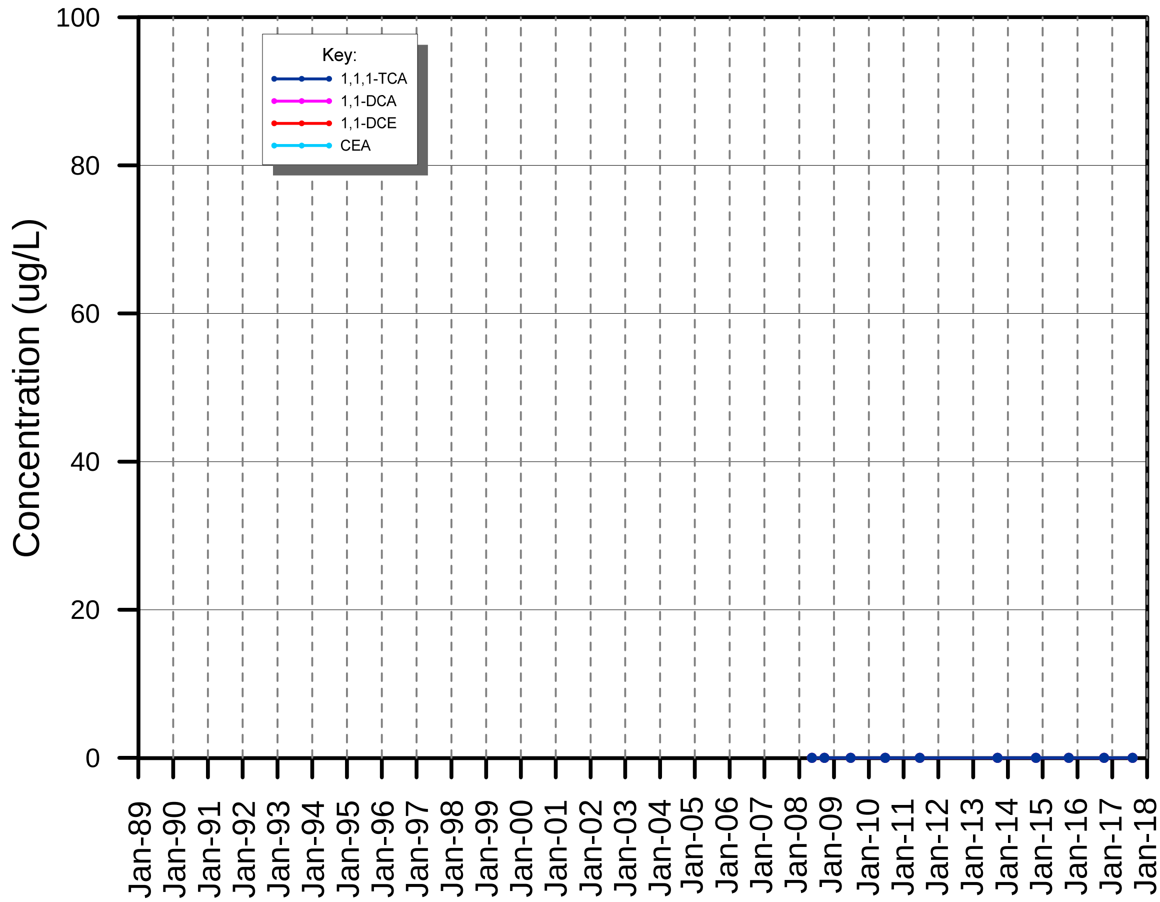
Jan-16
Jan-17
Jan-18

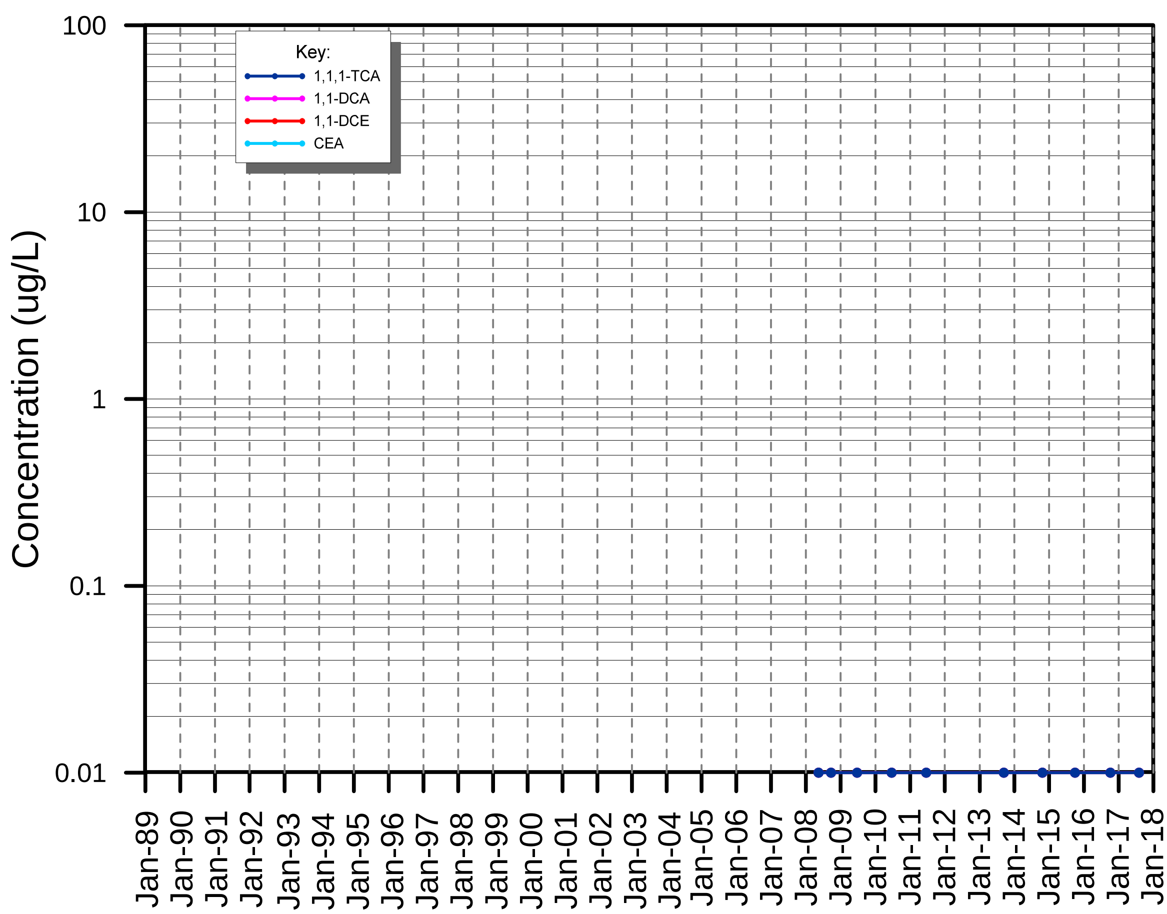


Key:
PCE
TCE
Cis-1,2
VC
Concentration (ug/L)
100
10
1
0.1
0.01
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18

MW-110



Concentration (ug/L)
100
80
60
40
20
0
Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18



Concentration (ug/L)
100
10
1
0.1
0.01
Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
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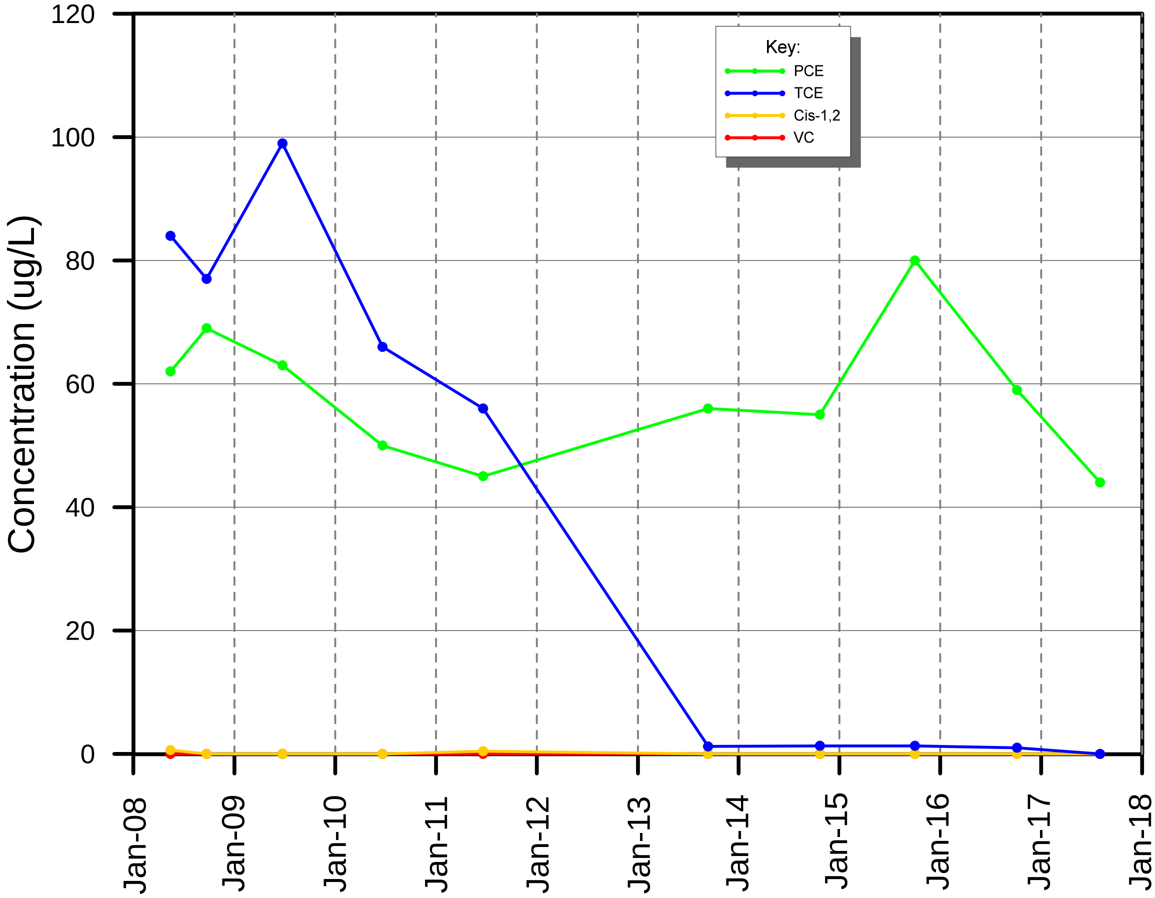
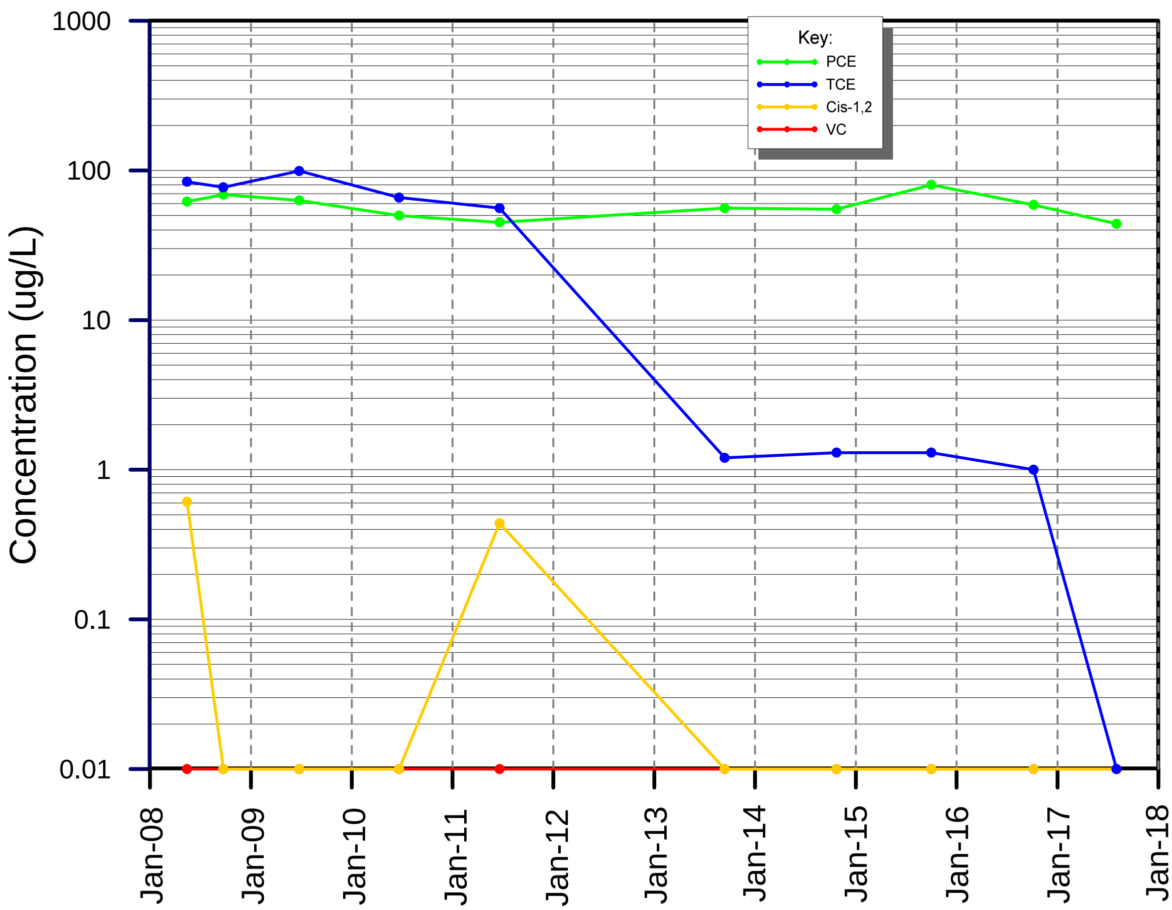
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18

MW-110

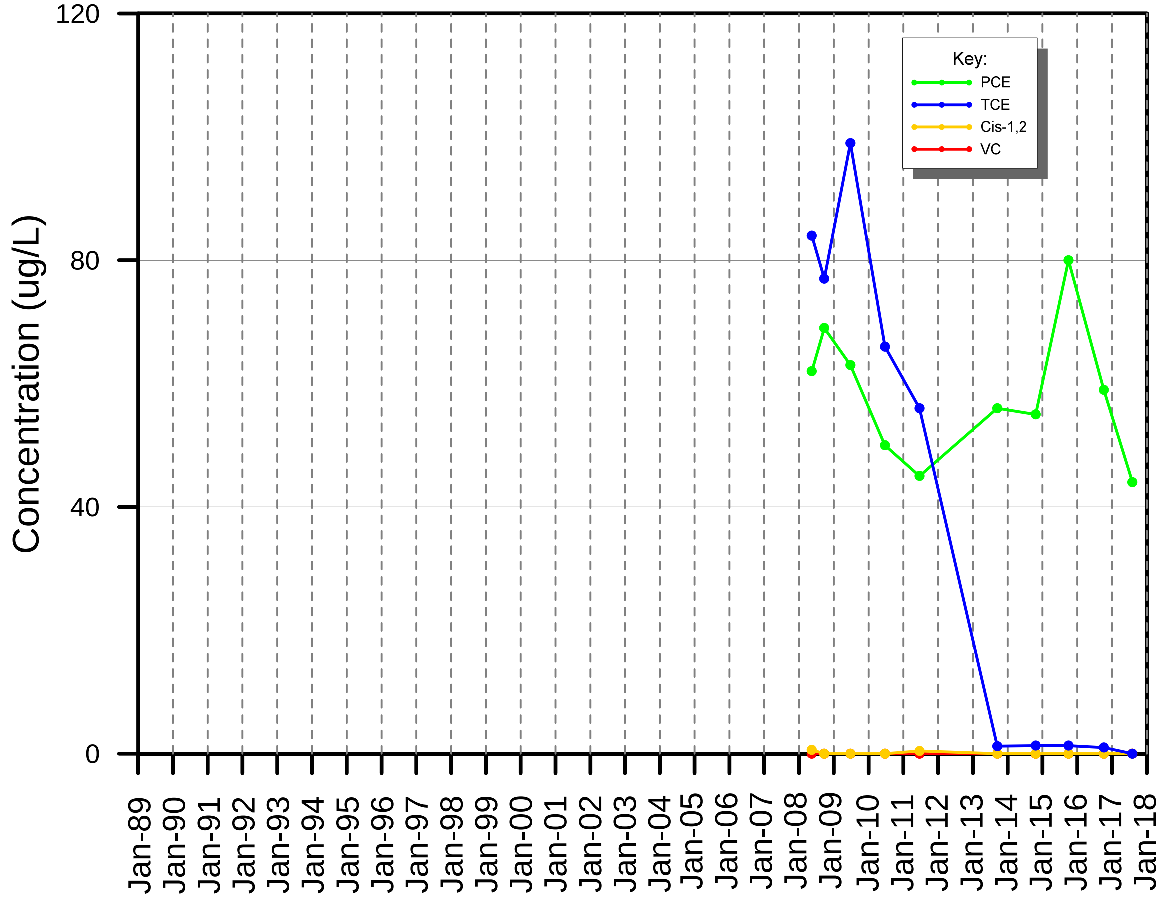


Key:
PCE
TCE
Cis-1,2
VC
Concentration (ug/L)
120
100
80
60
40
20
0
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18



Key:
PCE
TCE
Cis-1,2
VC
Concentration (ug/L)
1000
100
10
1
0.1
0.01
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18

MW-110



Key:
PCE
TCE
Cis-1,2
VC
Concentration (ug/L)
120
80
40
0
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
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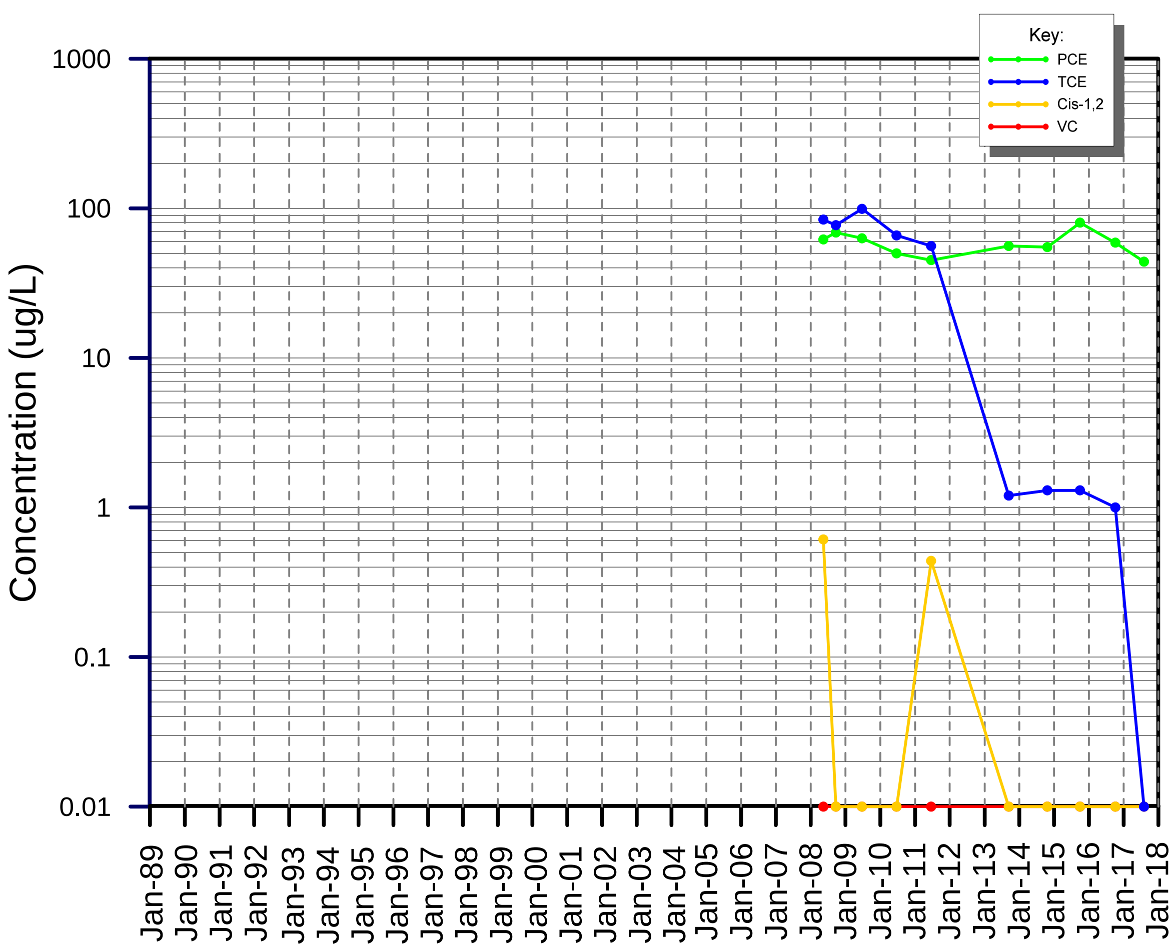
Jan-16
Jan-17
Jan-18



Key:
PCE
TCE
Cis-1,2
VC
Concentration (ug/L)
1000
100
10
1
0.1
0.01
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
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Jan-12
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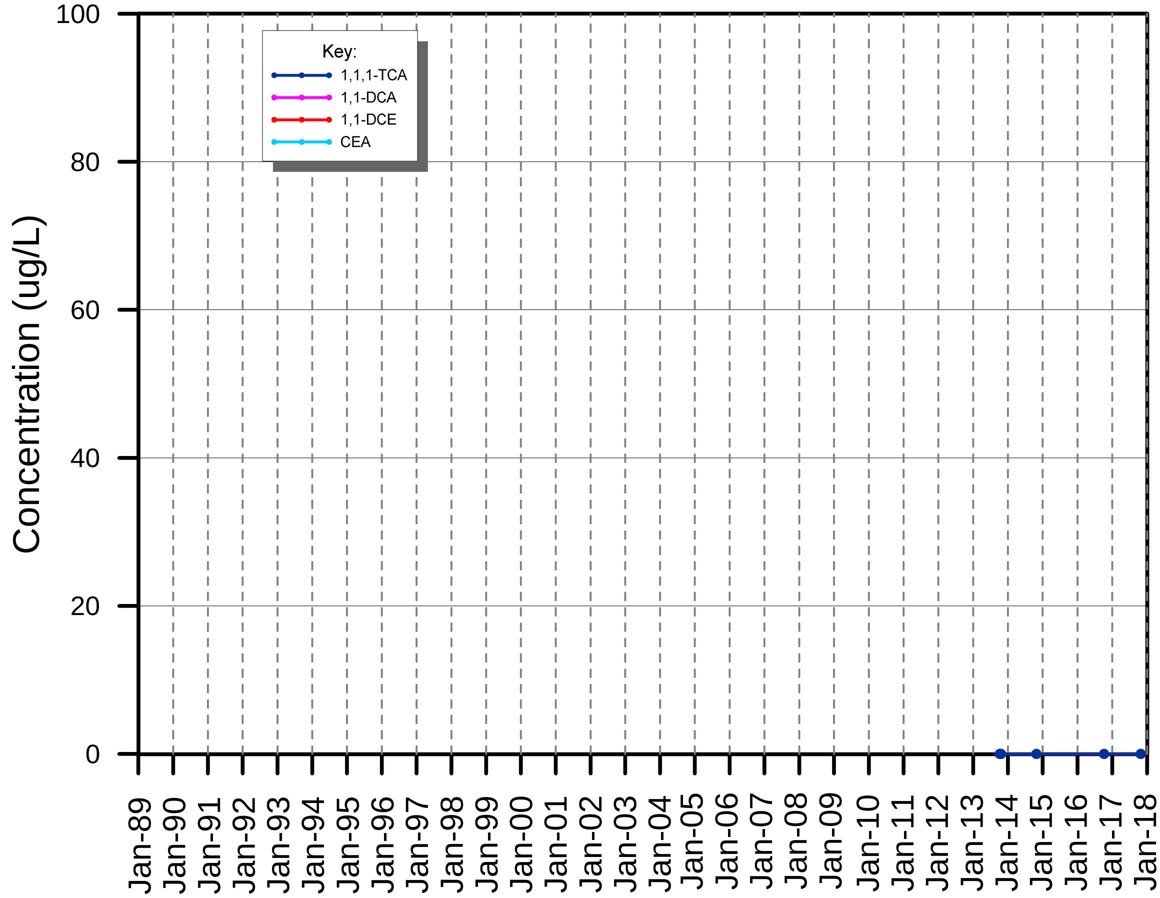
Jan-15
Jan-16
Jan-17
Jan-18

MW-151



Concentration (ug/L)
100
80
60
40
20
0
Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
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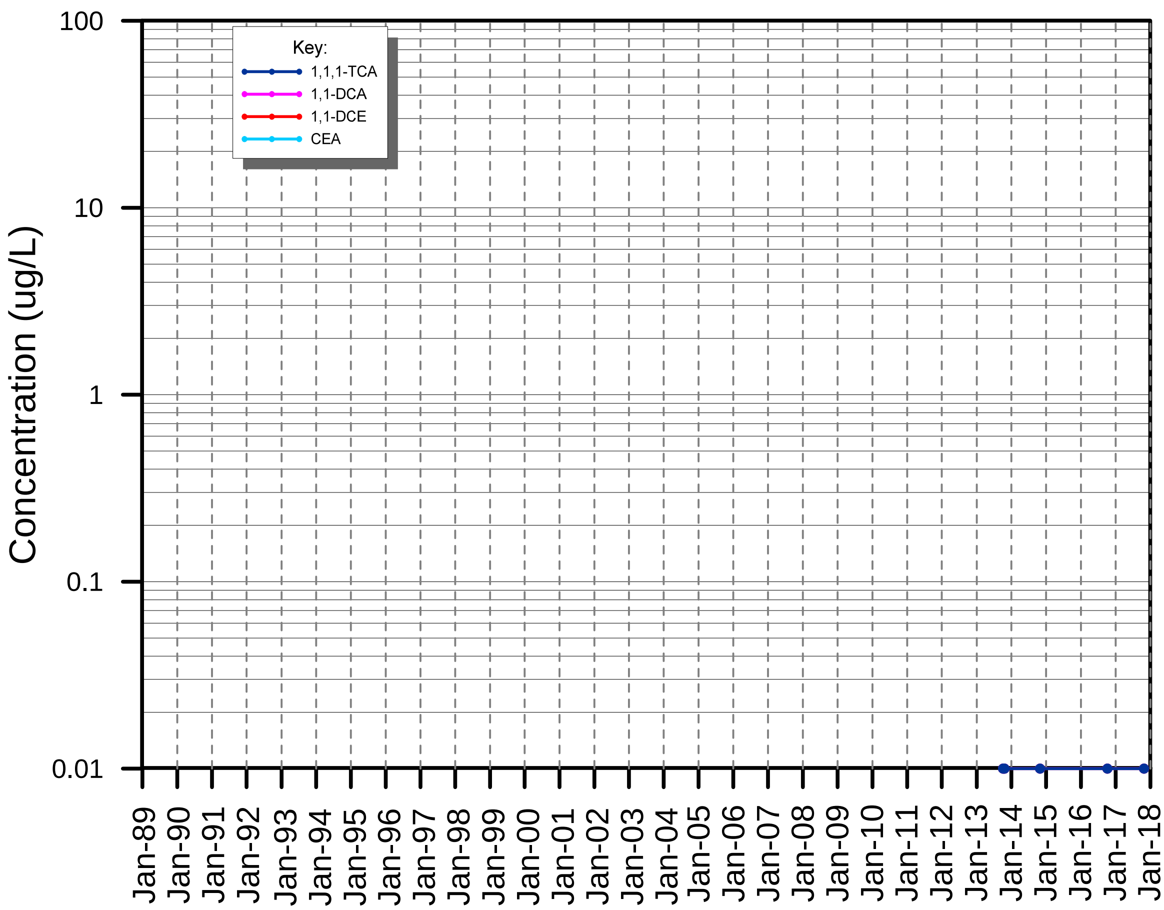
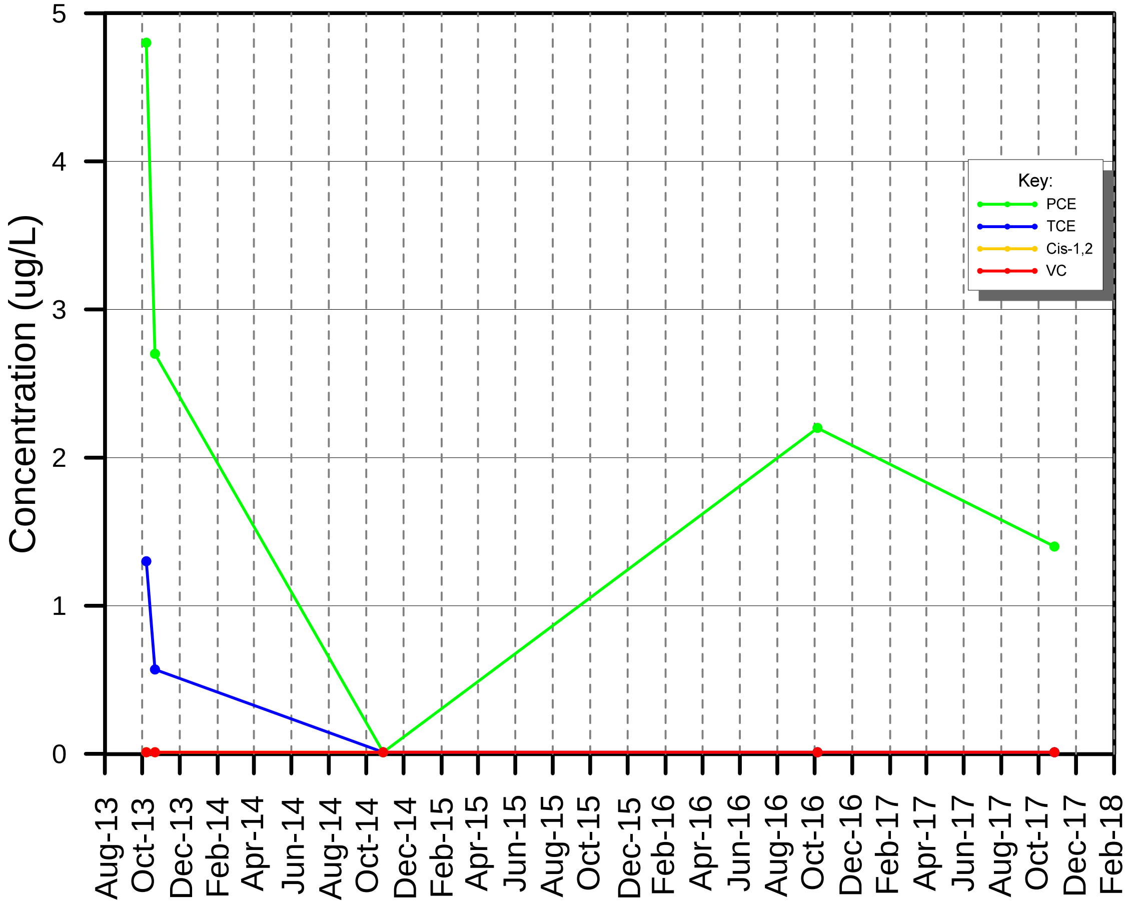
Jan-16
Jan-17
Jan-18

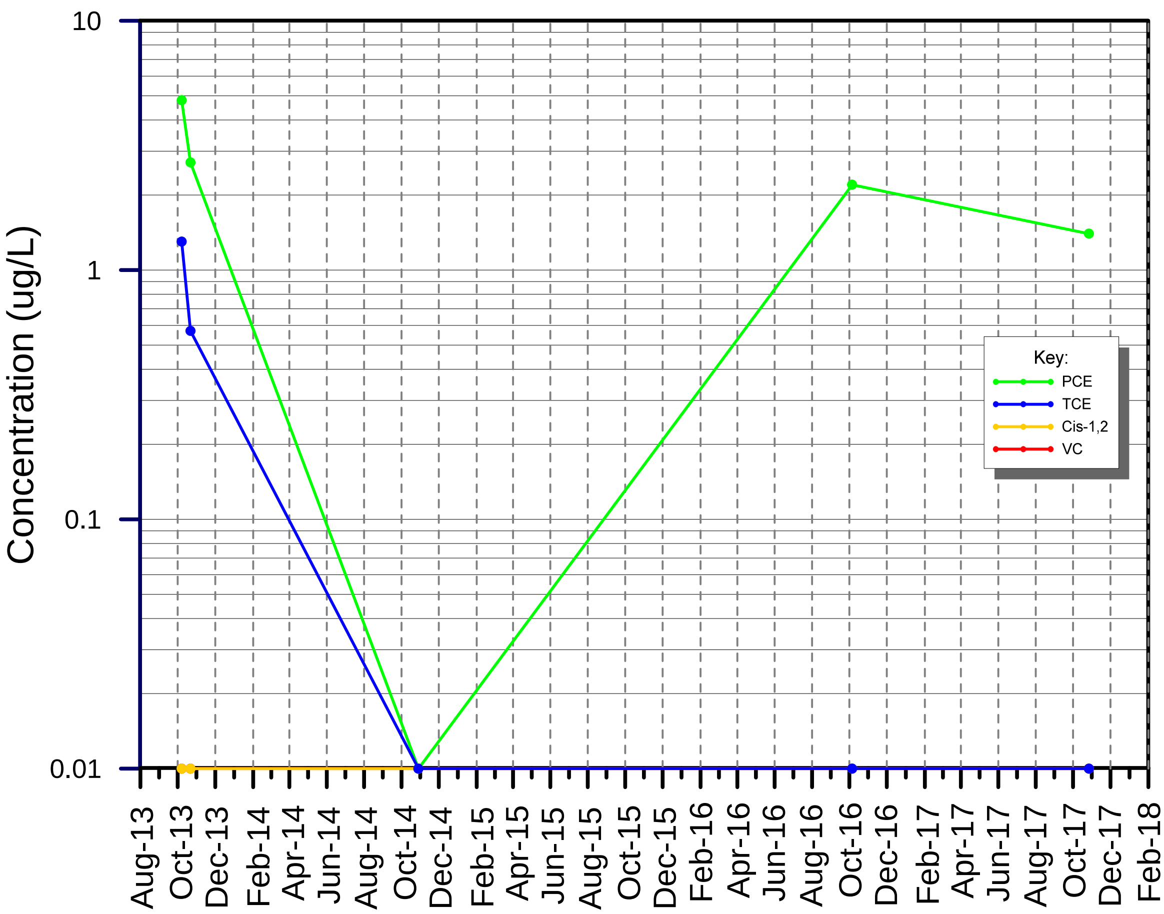


Concentration (ug/L)
100
10
1
0.1
0.01
Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18

MW-151

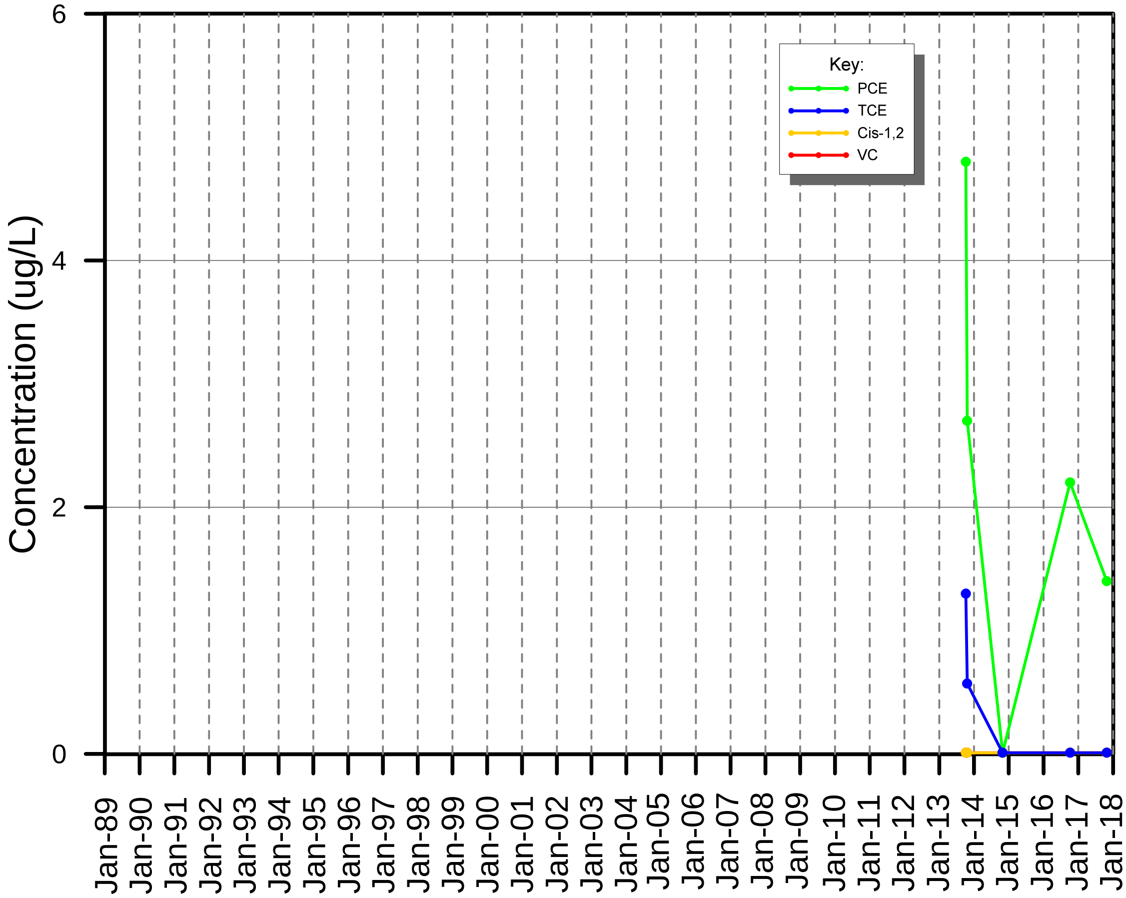


Concentration (ug/L)
5
4
3
2
1
0
Key:
PCE
TCE
Cis-1,2
VC
Aug-13
Oct-13
Dec-13
Feb-14
Apr-14
Jun-14
Aug-14
Oct-14
Dec-14
Feb-15
Apr-15
Jun-15
Aug-15
Oct-15
Dec-15
Feb-16
Apr-16
Jun-16
Aug-16
Oct-16
Dec-16
Feb-17
Apr-17
Jun-17
Aug-17
Oct-17
Dec-17
Feb-18

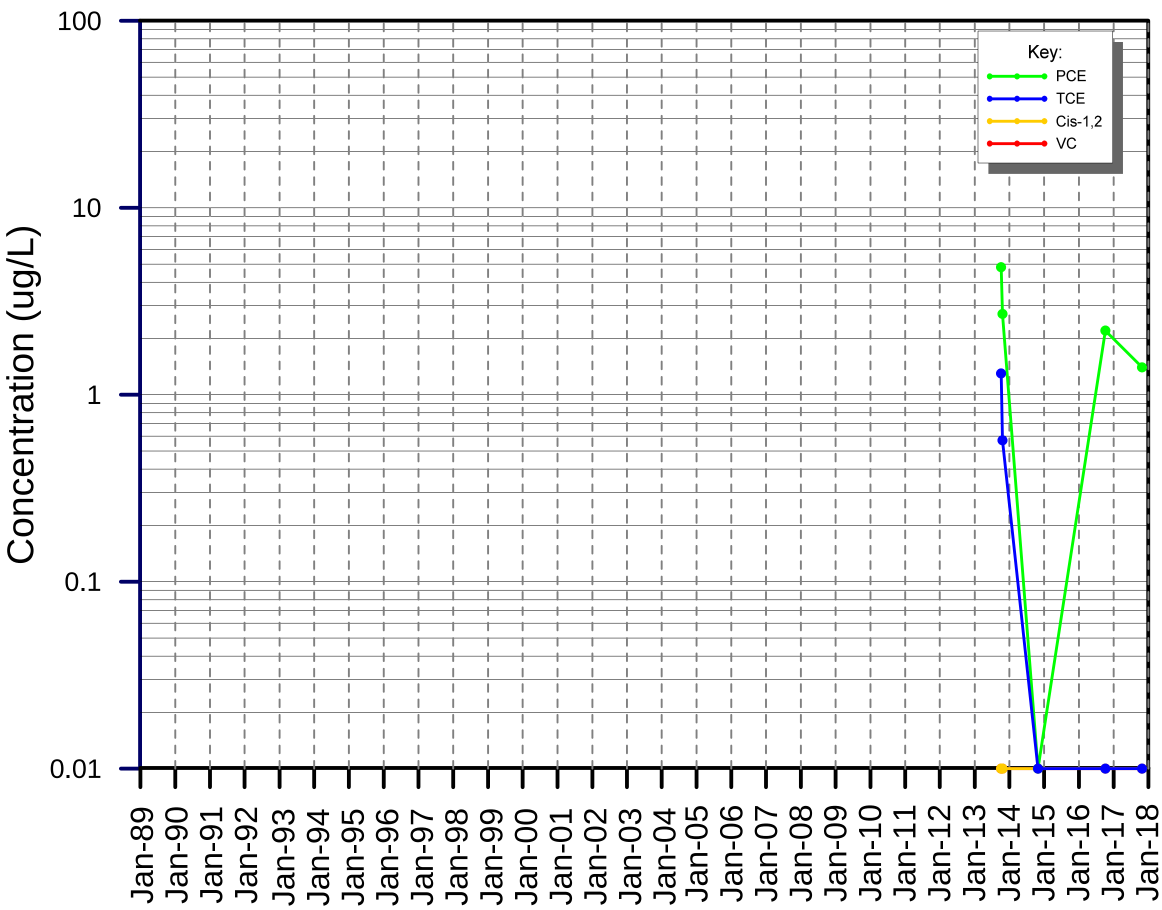


Concentration (ug/L)
10
1
0.1
0.01
Key:
PCE
TCE
Cis-1,2
VC
Aug-13
Oct-13
Dec-13
Feb-14
Apr-14
Jun-14
Aug-14
Oct-14
Dec-14
Feb-15
Apr-15
Jun-15
Aug-15
Oct-15
Dec-15
Feb-16
Apr-16
Jun-16
Aug-16
Oct-16
Dec-16
Feb-17
Apr-17
Jun-17
Aug-17
Oct-17
Dec-17
Feb-18

MW-151

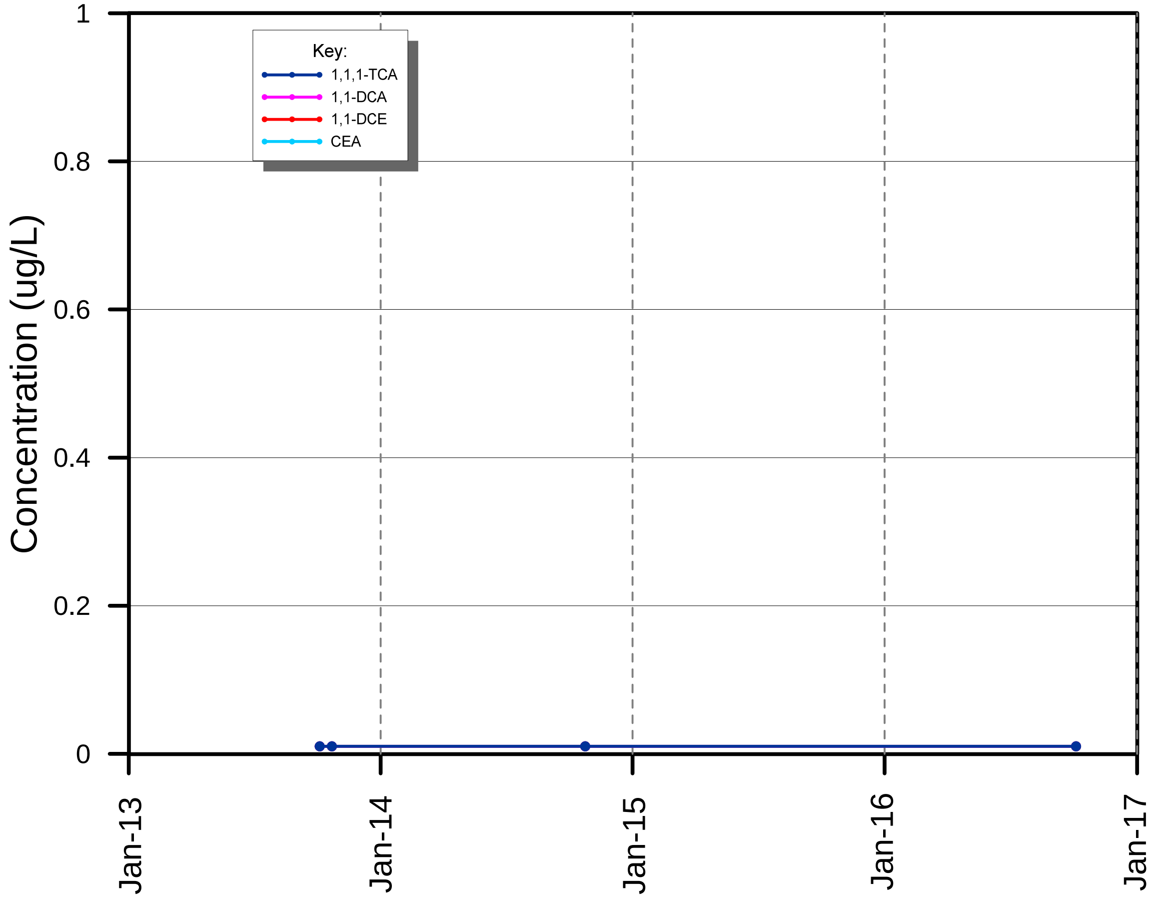


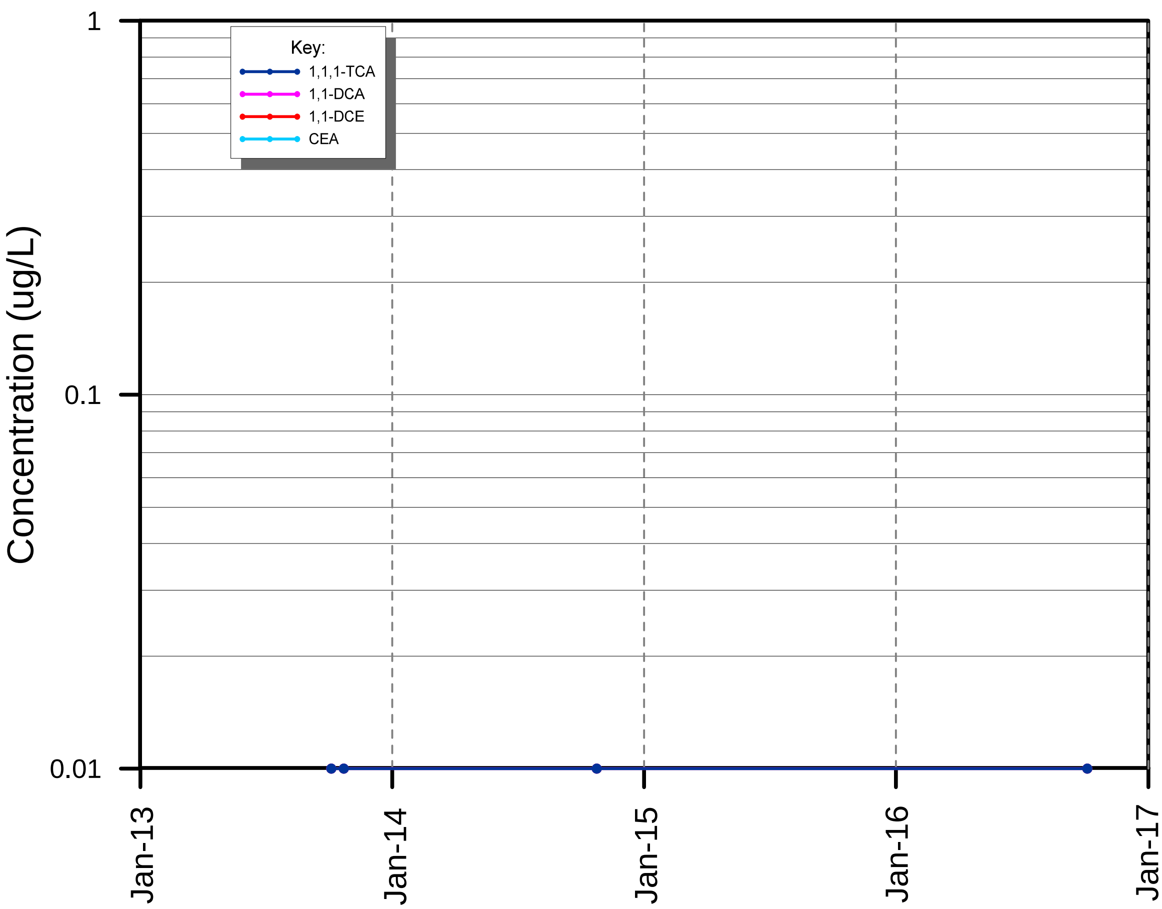
Concentration (ug/L)
6
4
2
0
Key:
PCE
TCE
Cis-1,2
VC
Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09 Jan-10 Jan-11 Jan-12 Jan-13 Jan-14 Jan-15 Jan-16 Jan-17 Jan-18



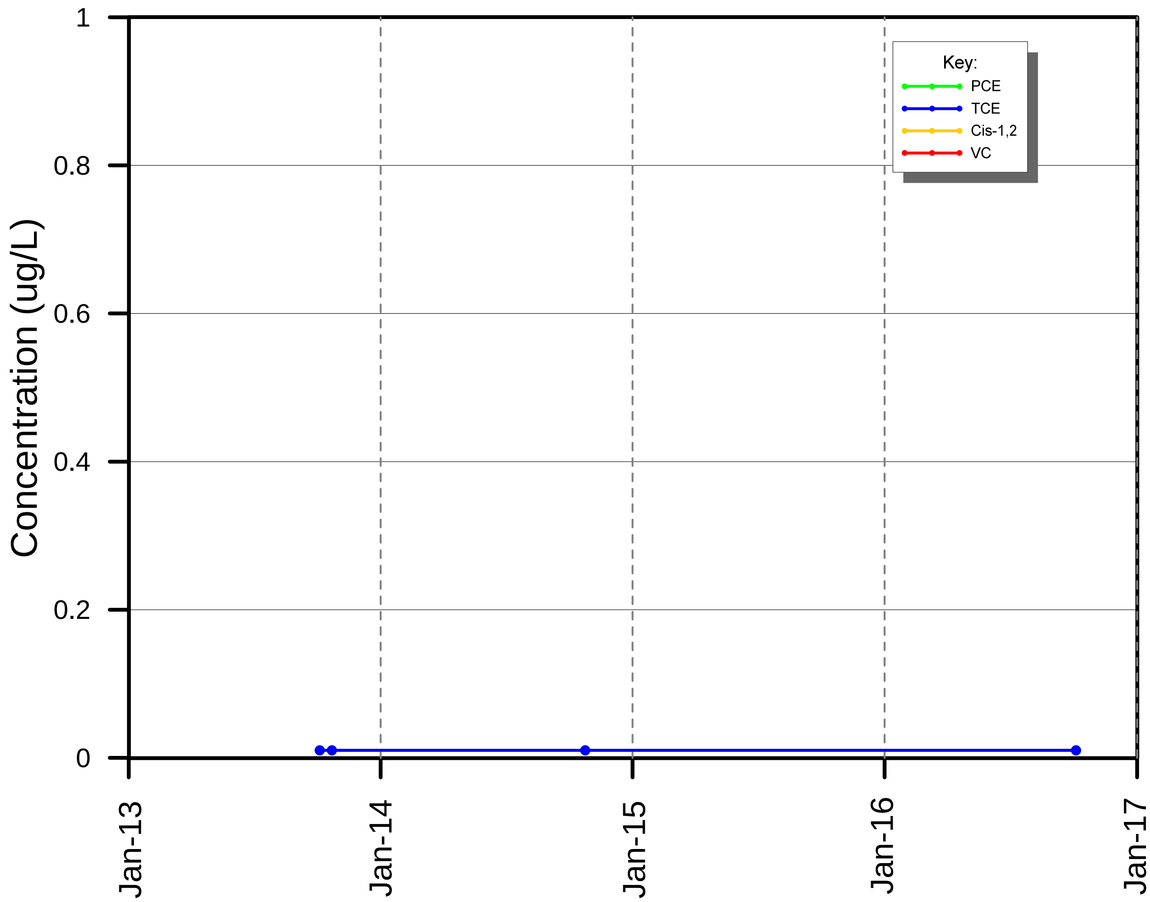
Concentration (ug/L)
100
10
1
0.1
0.01
Key:
PCE
TCE
Cis-1,2
VC
Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09 Jan-10 Jan-11 Jan-12 Jan-13 Jan-14 Jan-15 Jan-16 Jan-17 Jan-18

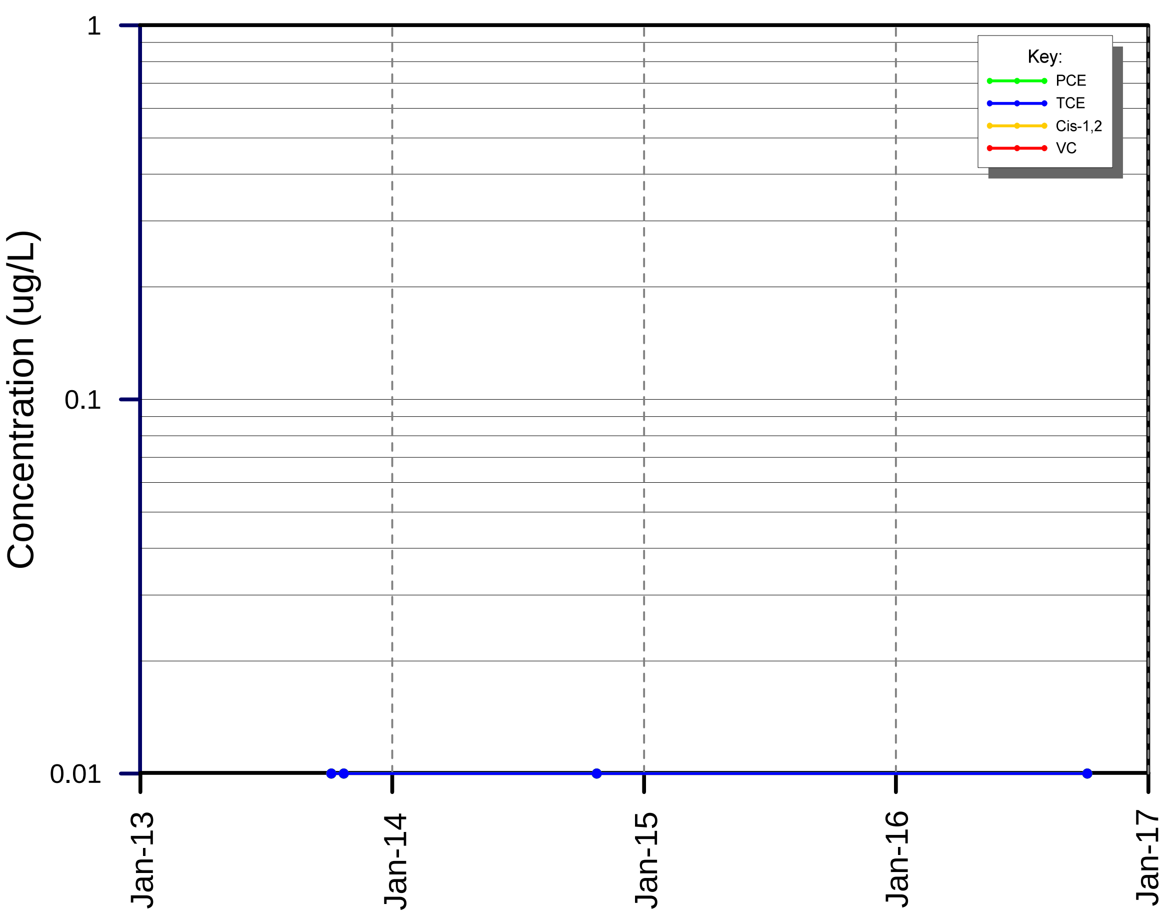
MW-152(137.5-138)



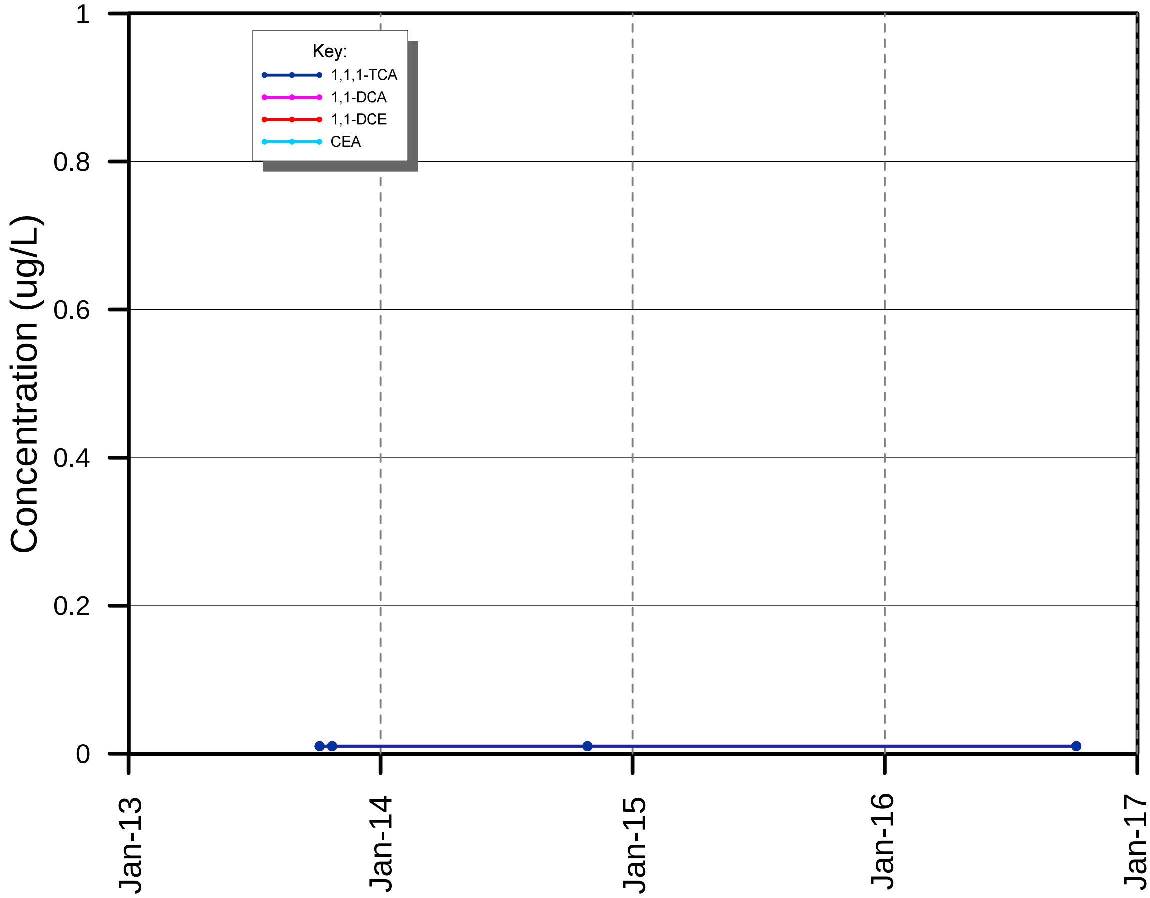


MW-152(137.5-138)

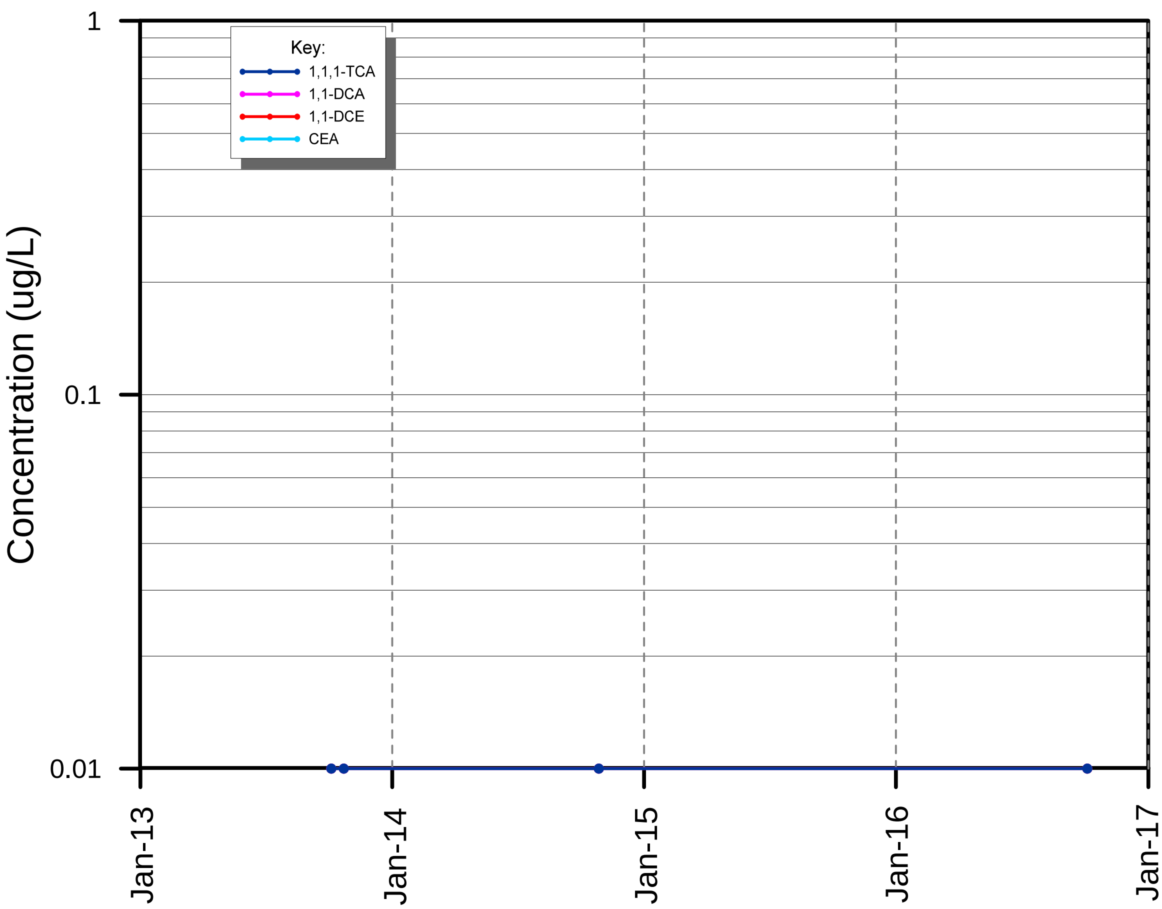




MW-152(23-23.5)

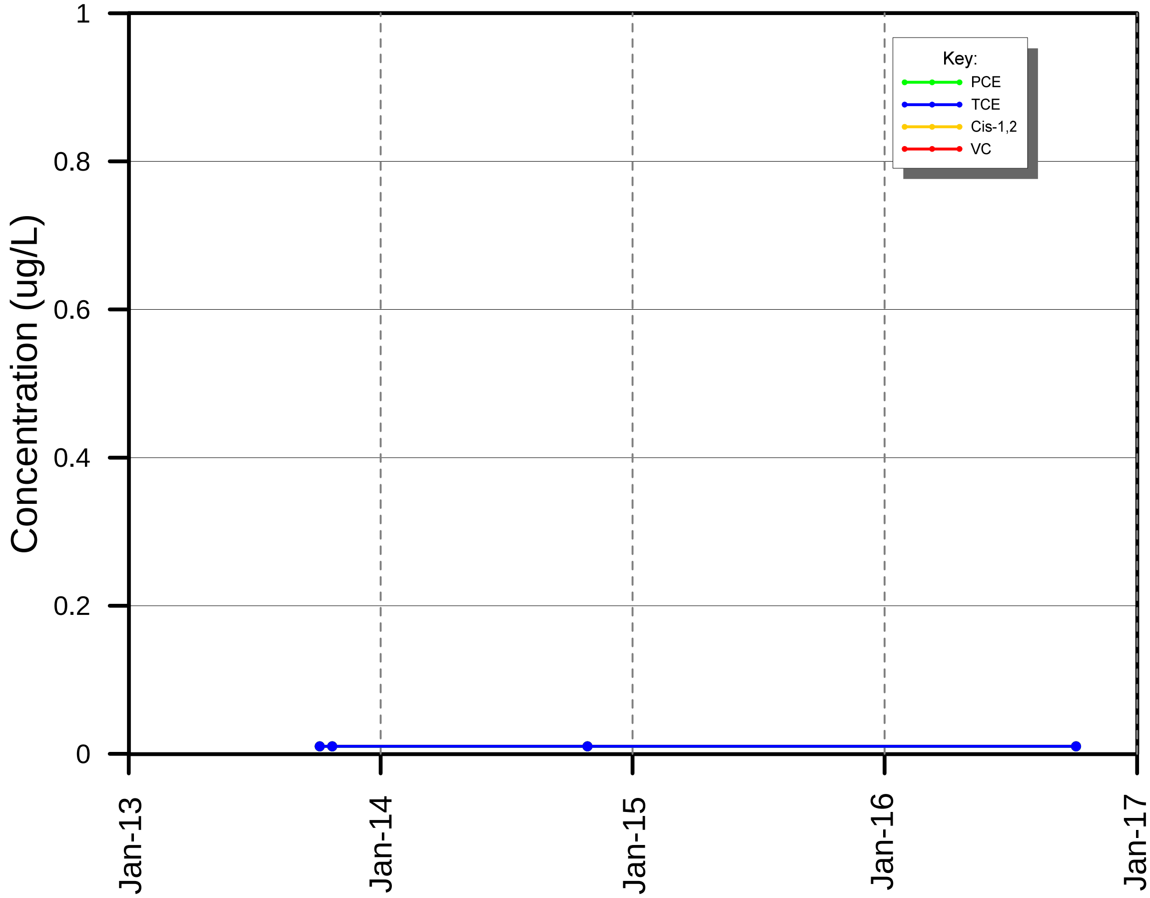


Concentration (ug/L)
1
0.8
0.6
0.4
0.2
0
Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17

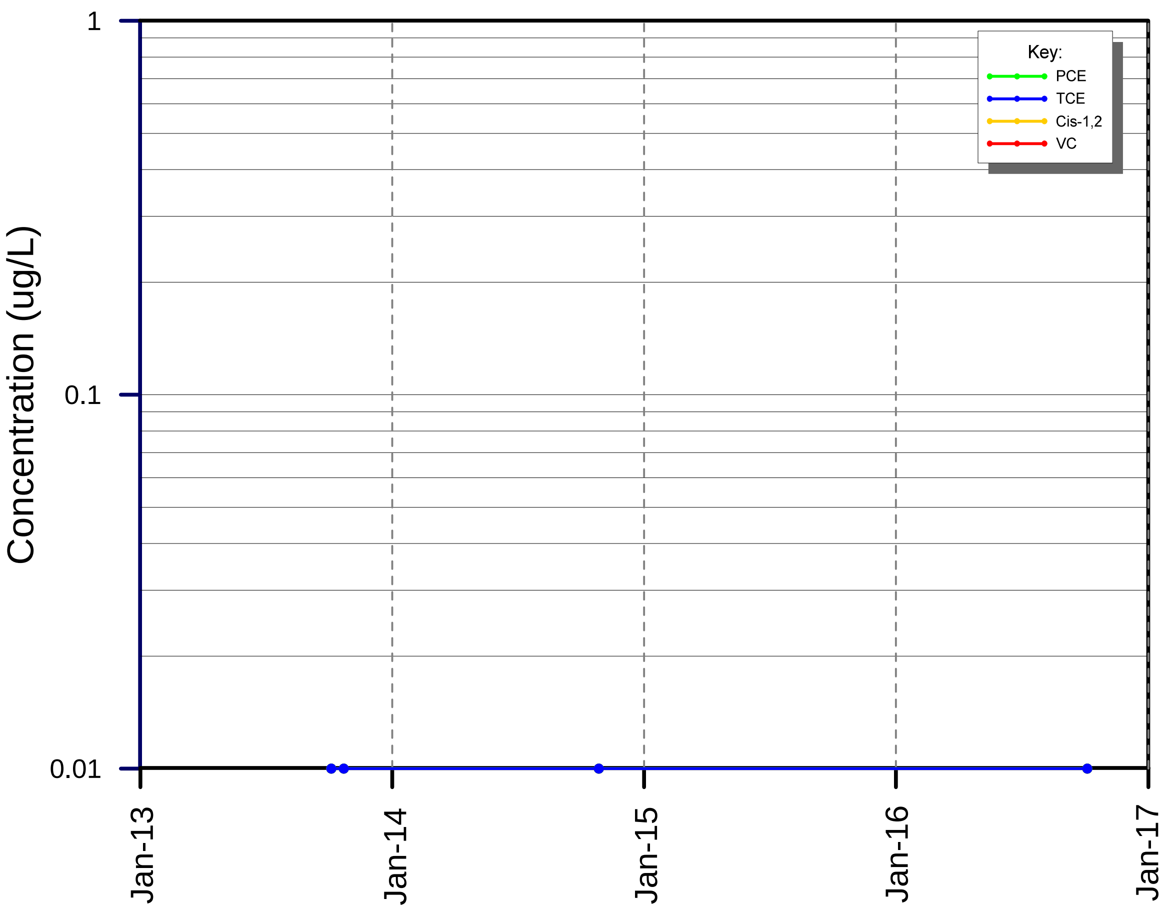


Concentration (ug/L)
1
0.1
0.01
Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17

MW-152(23-23.5)

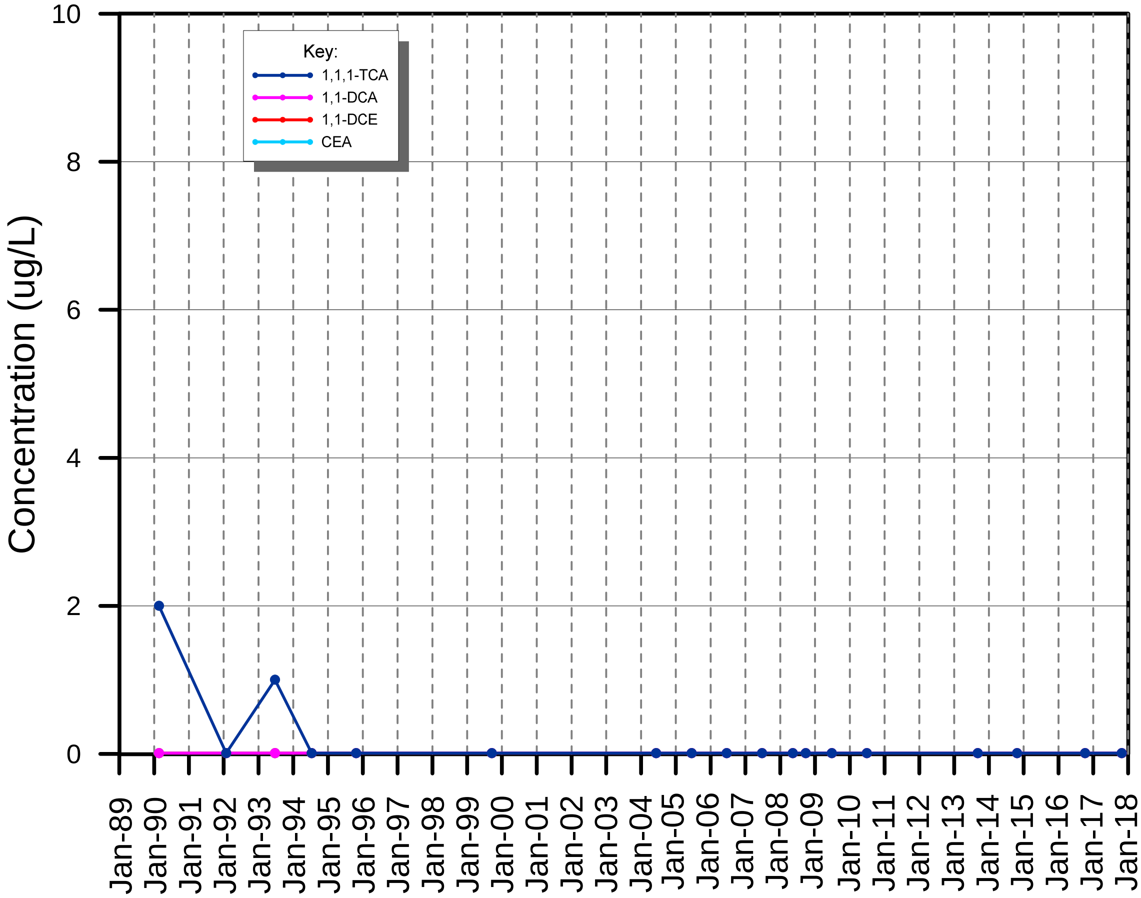


Key:
PCE
TCE
Cis-1,2
VC
Concentration (ug/L)
1
0.8
0.6
0.4
0.2
0
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17

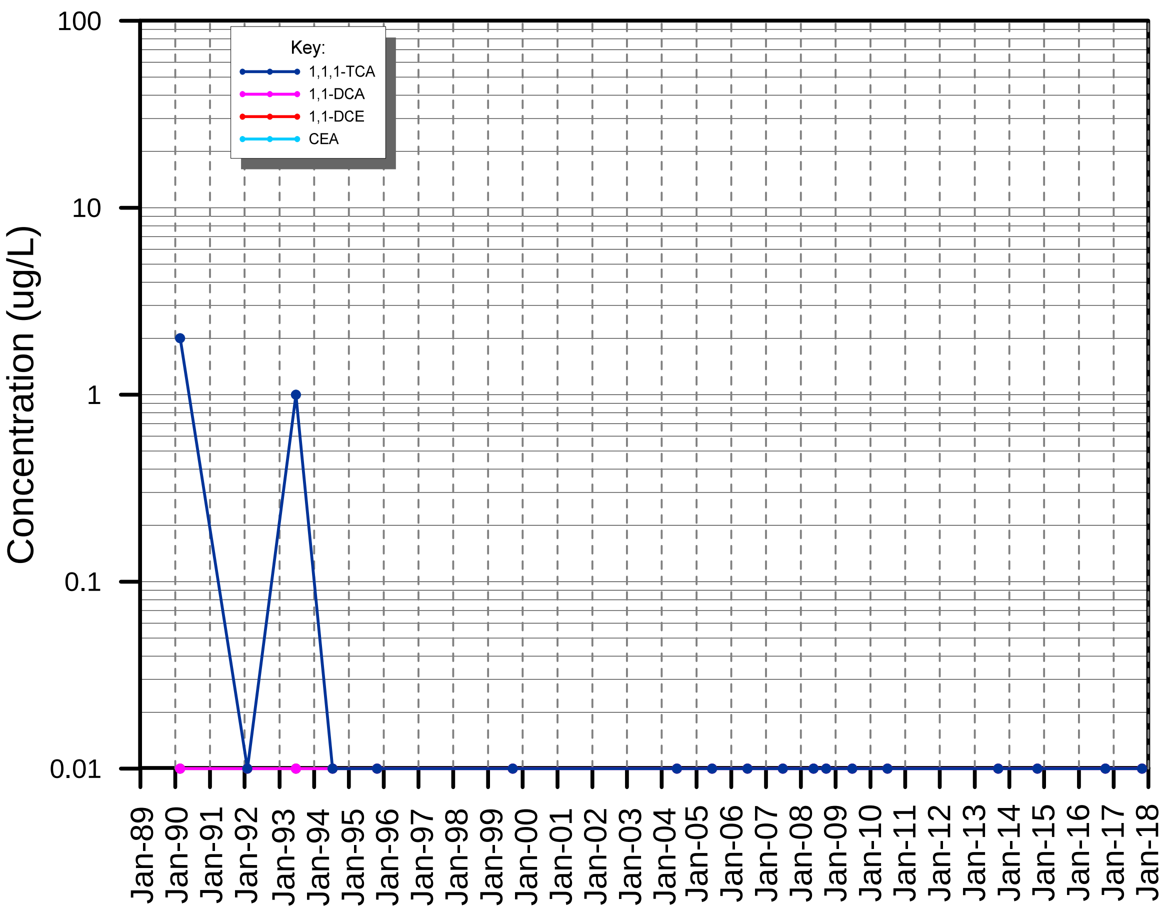


Key:
PCE
TCE
Cis-1,2
VC
Concentration (ug/L)
1
0.1
0.01
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17

MW-43D

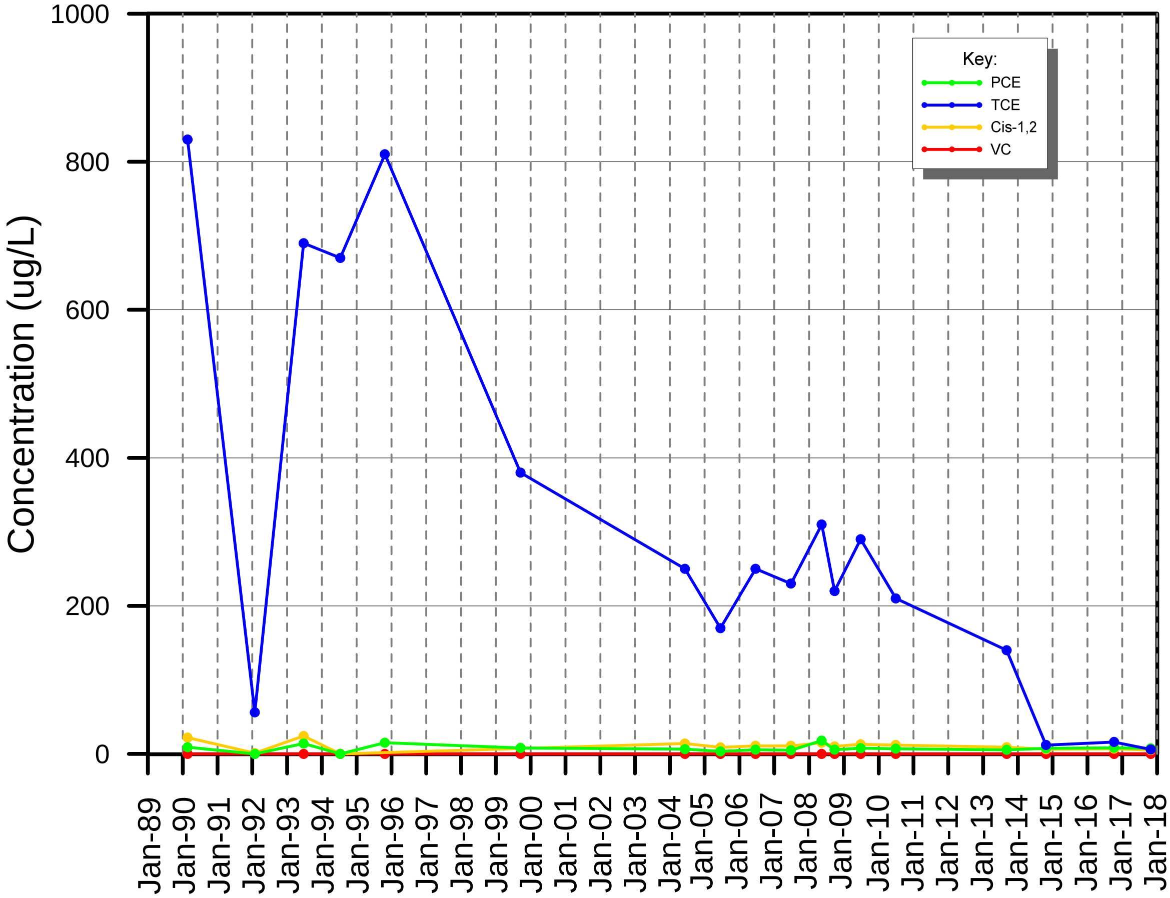


Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
Concentration (ug/L)
0
2
4
6
8
10
Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09 Jan-10 Jan-11 Jan-12 Jan-13 Jan-14 Jan-15 Jan-16 Jan-17 Jan-18

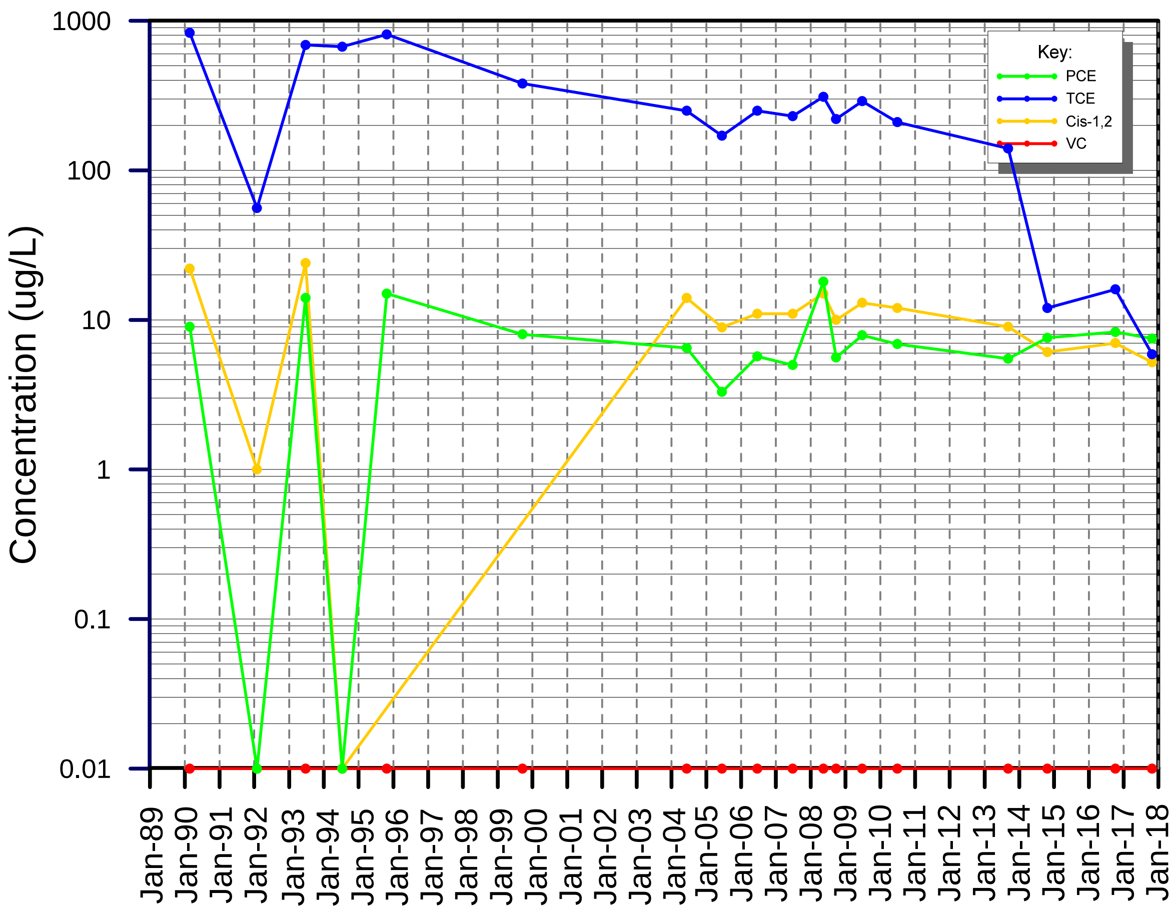


Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
Concentration (ug/L)
0.01
0.1
1
10
100
Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09 Jan-10 Jan-11 Jan-12 Jan-13 Jan-14 Jan-15 Jan-16 Jan-17 Jan-18

MW-43D



Concentration (ug/L)
1000
800
600
400
200
0
Key:
PCE
TCE
Cis-1,2
VC
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18



Concentration (ug/L)
1000
100
10
1
0.1
0.01
Key:
PCE
TCE
Cis-1,2
VC
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
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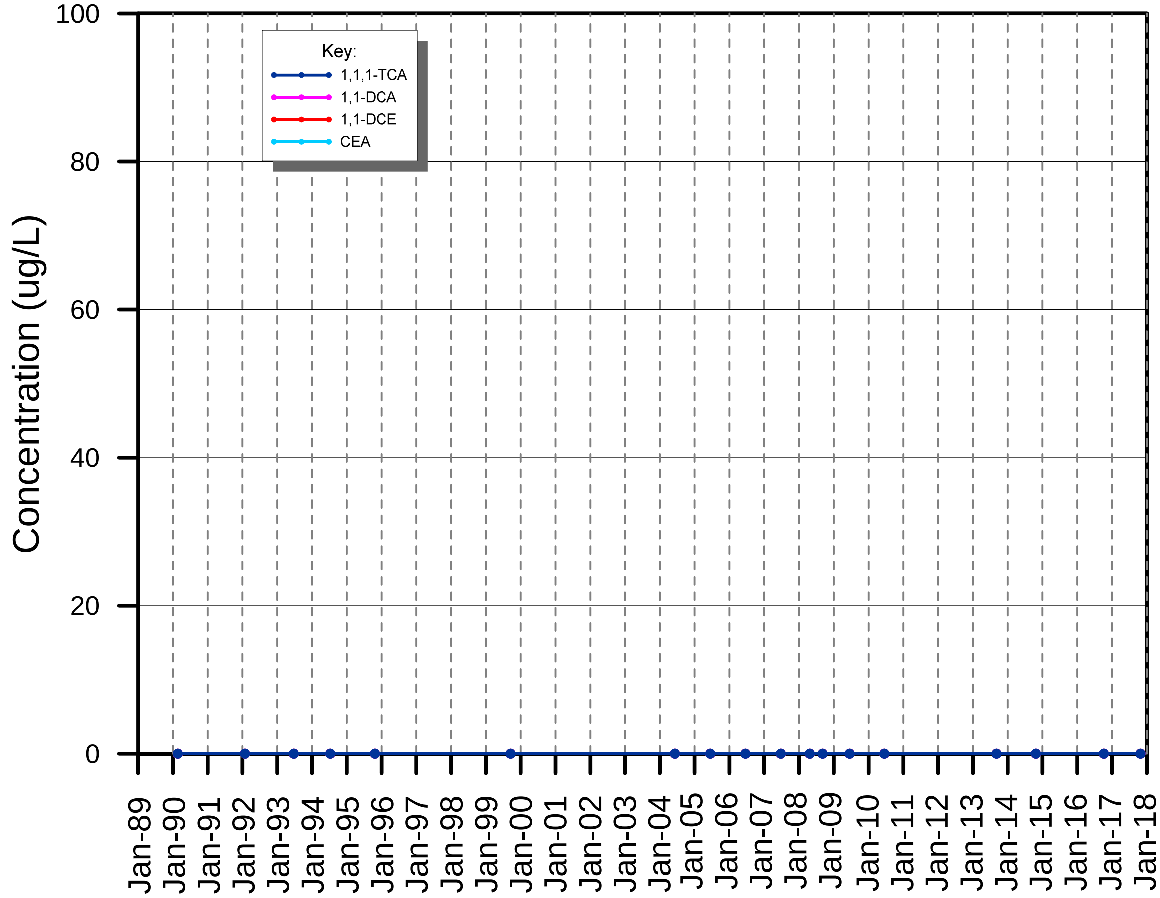
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18

MW-43S



Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
Concentration (ug/L)
100
80
60
40
20
0
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
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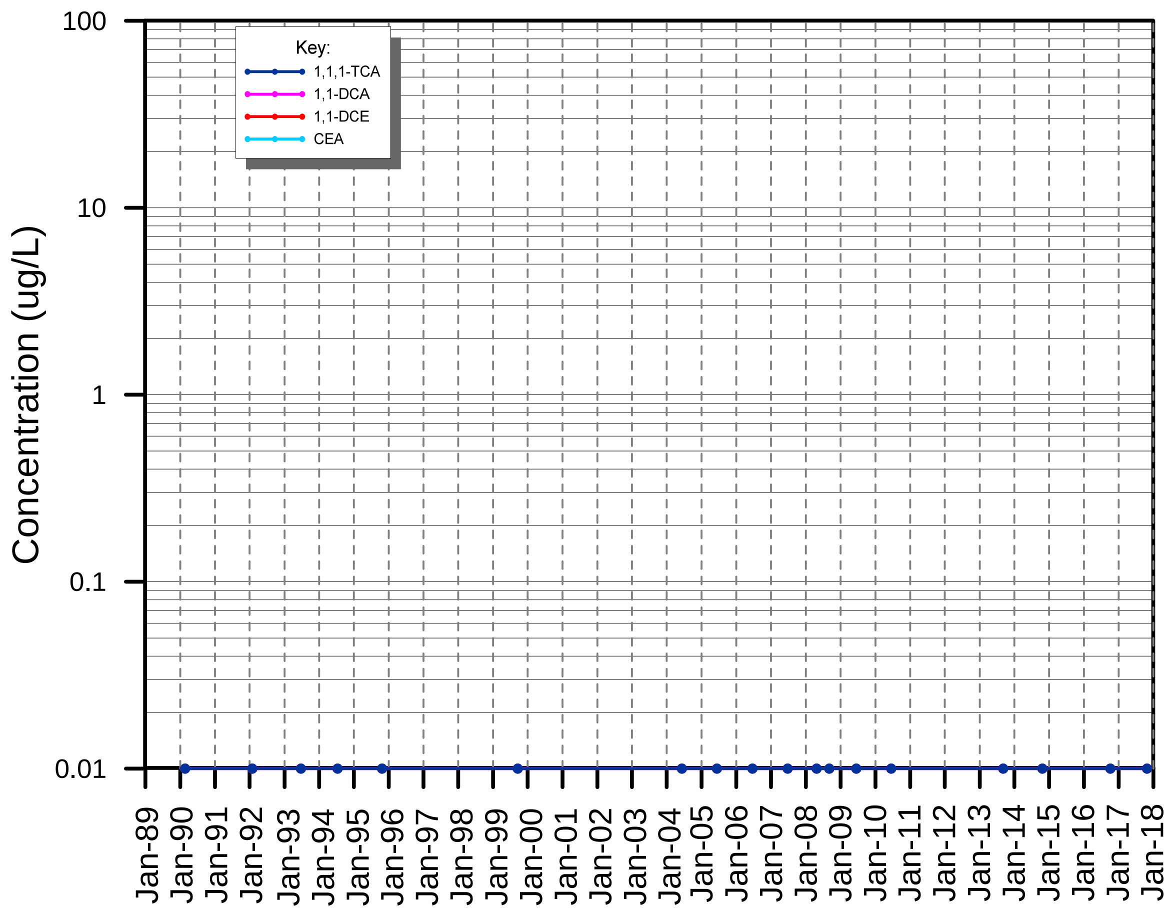
Jan-16
Jan-17
Jan-18



Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
Concentration (ug/L)
100
10
1
0.1
0.01
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
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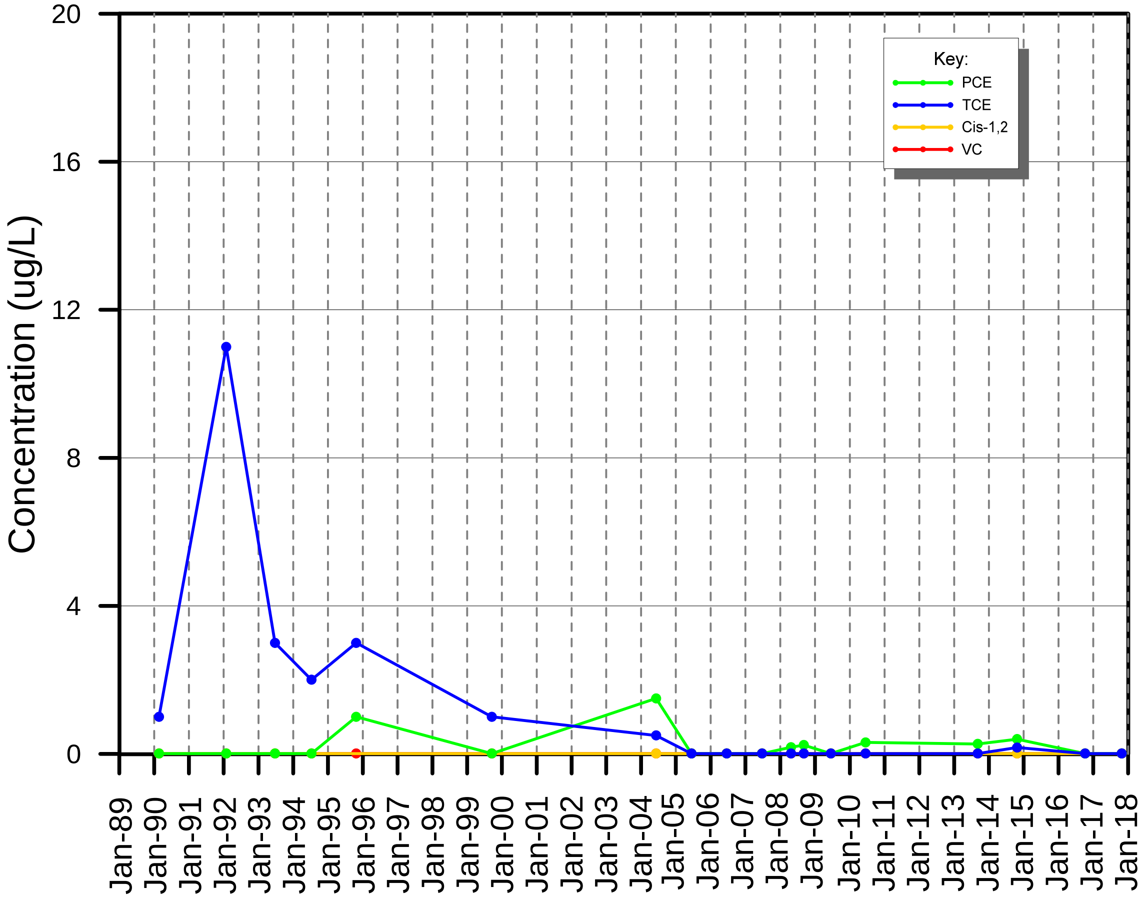
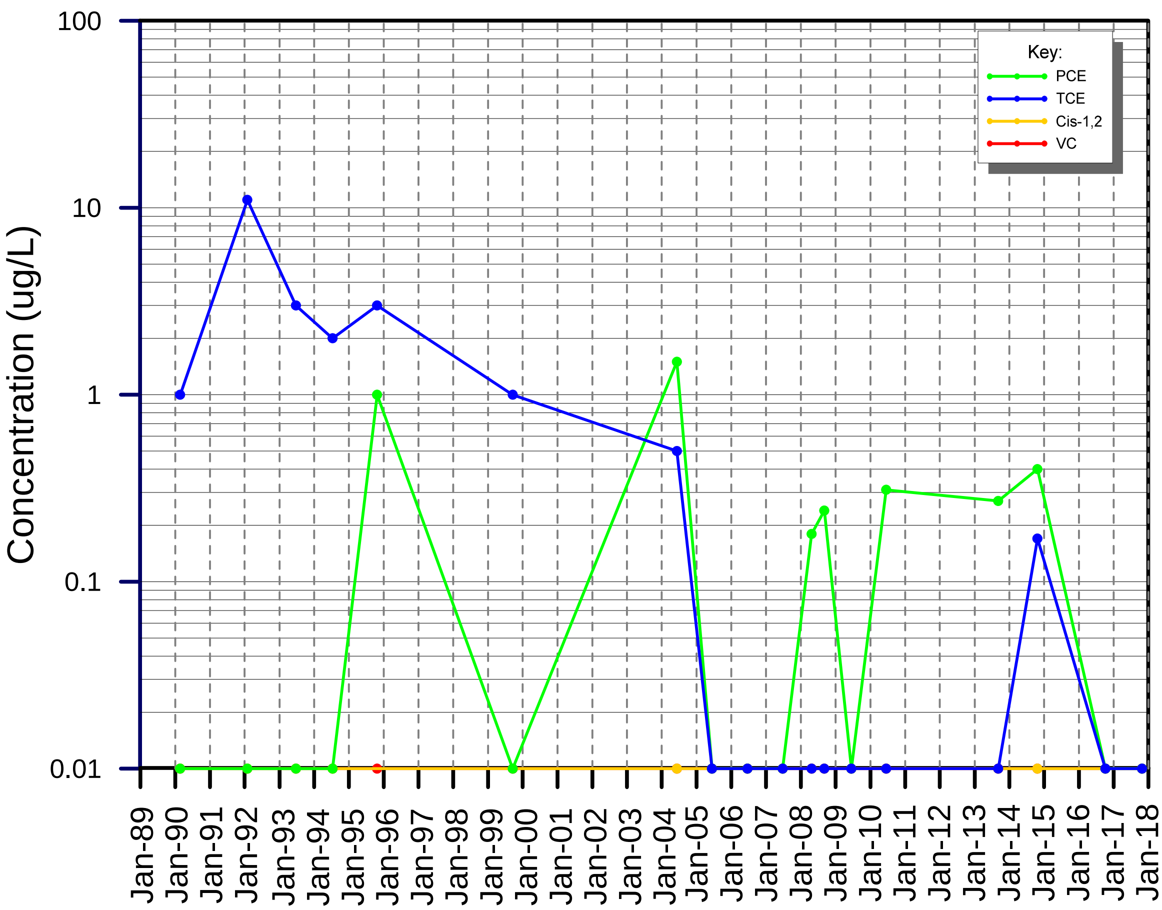
Jan-15
Jan-16
Jan-17
Jan-18

MW-43S

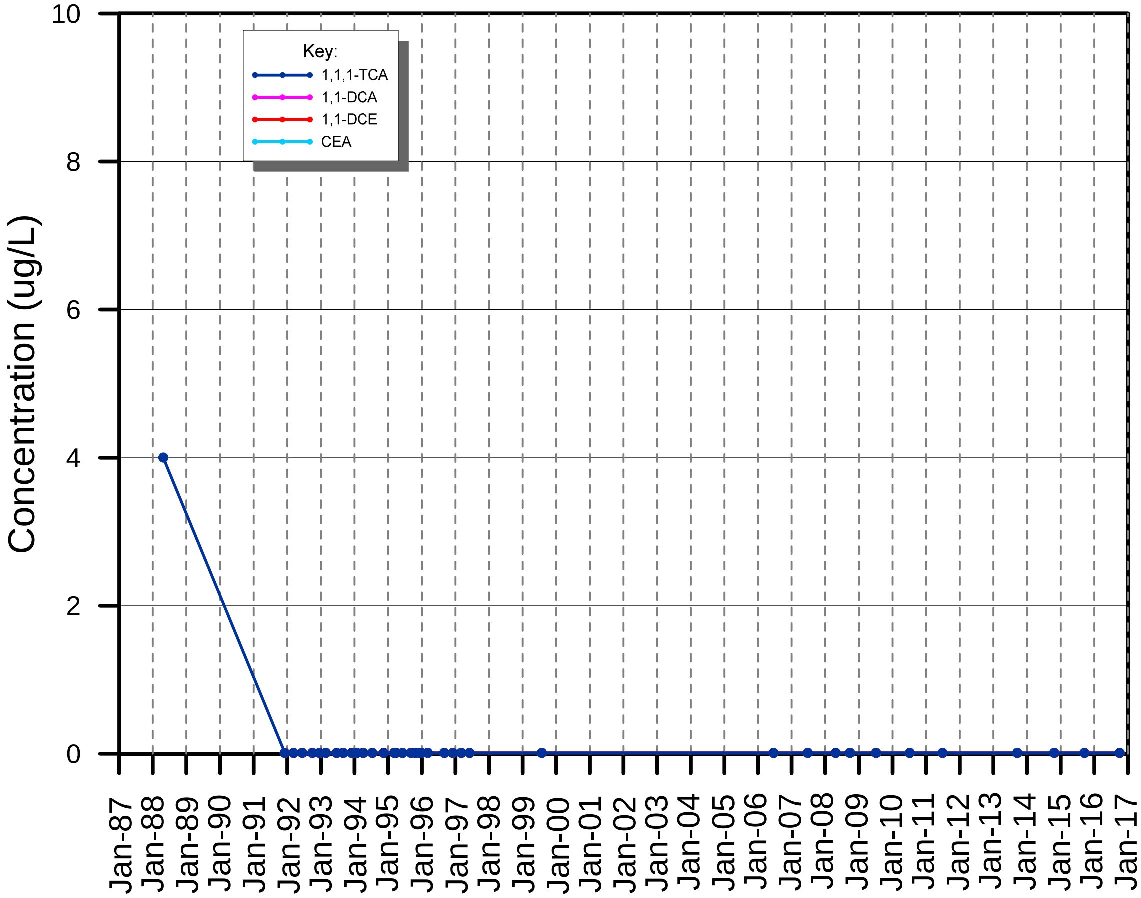


Concentration (ug/L)
0
4
8
12
16
20
Key:
PCE
TCE
Cis-1,2
VC
Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09 Jan-10 Jan-11 Jan-12 Jan-13 Jan-14 Jan-15 Jan-16 Jan-17 Jan-18



Concentration (ug/L)
0.01
0.1
1
10
100
Key:
PCE
TCE
Cis-1,2
VC
Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09 Jan-10 Jan-11 Jan-12 Jan-13 Jan-14 Jan-15 Jan-16 Jan-17 Jan-18

RW-5



Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
Concentration (ug/L)
10
8
6
4
2
0
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
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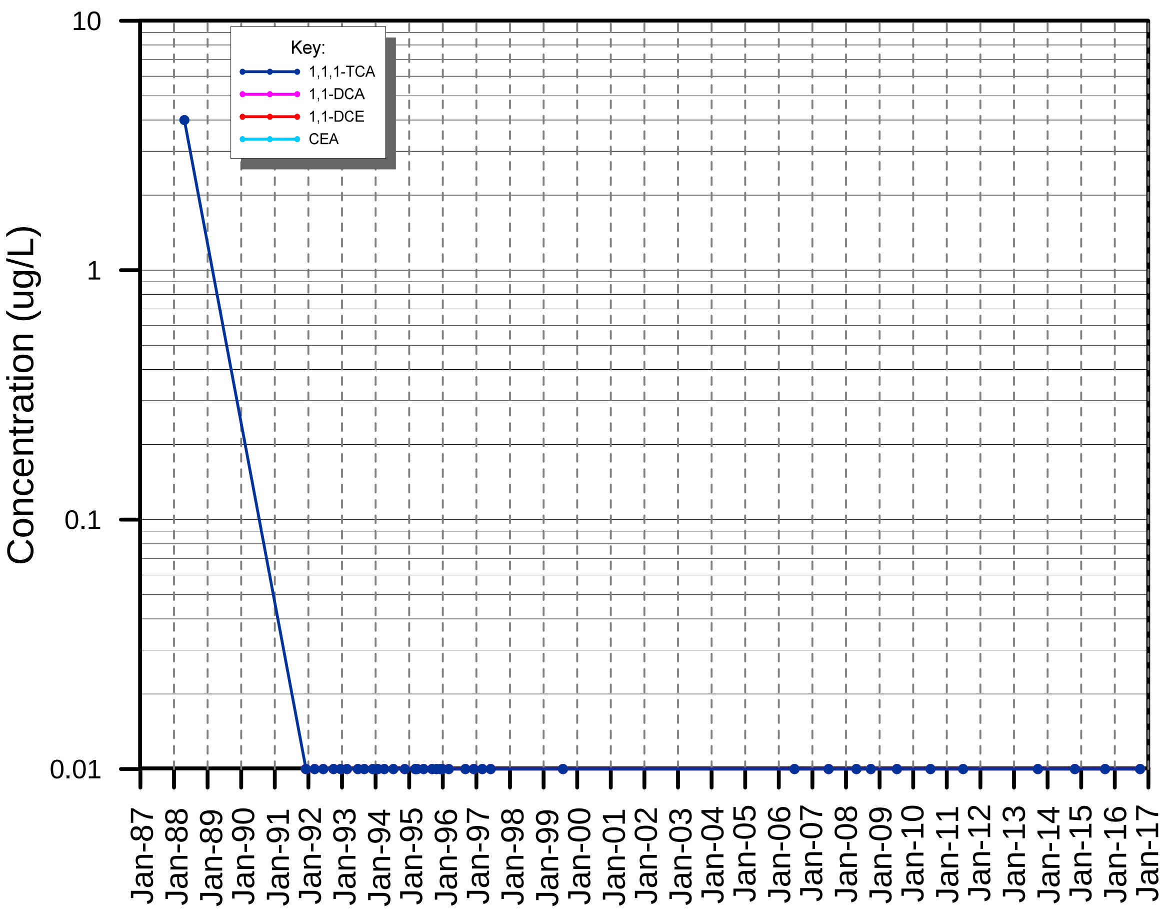
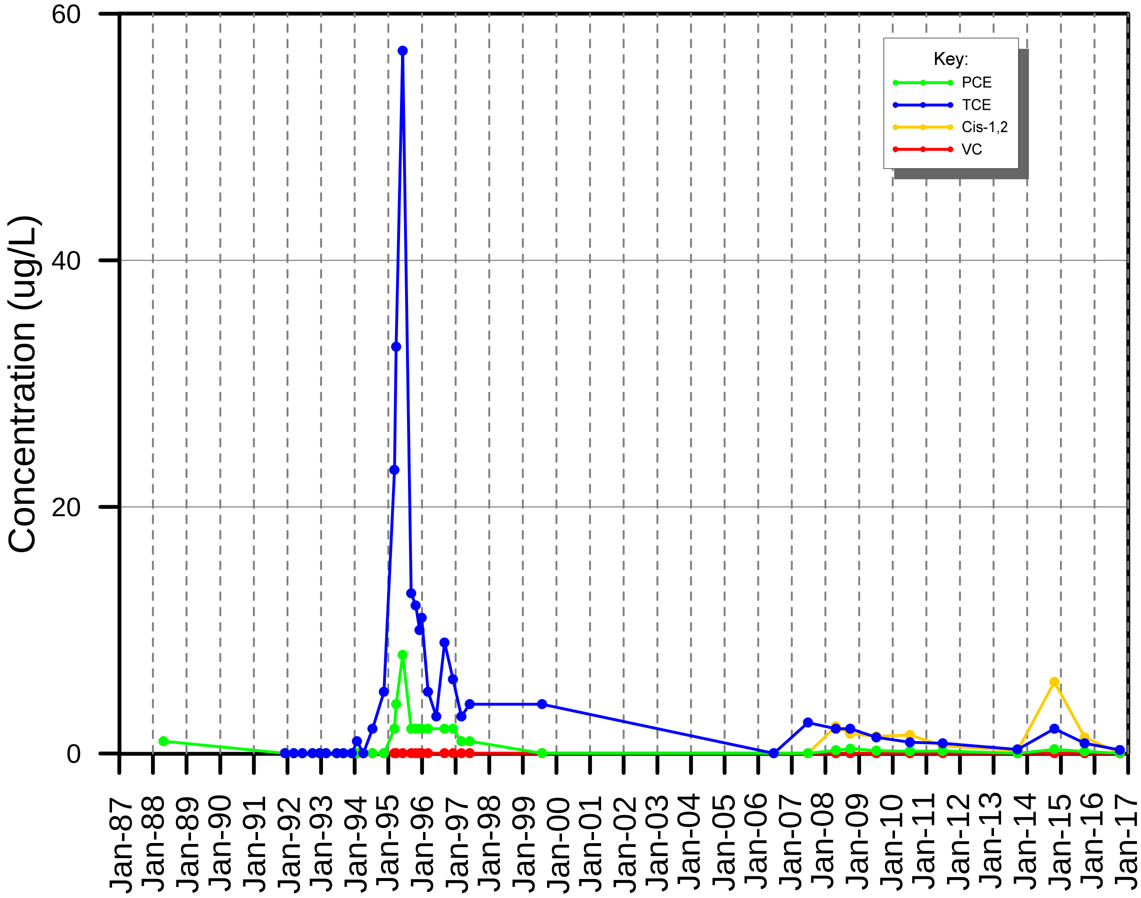
Jan-15
Jan-16
Jan-17



Key:
1,1,1-TCA
1,1-DCA
1,1-DCE
CEA
Concentration (ug/L)
10
1
0.1
0.01
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17

RW-5


60
40
20
0
Concentration (ug/L)
Key:
PCE
TCE
Cis-1,2
VC
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
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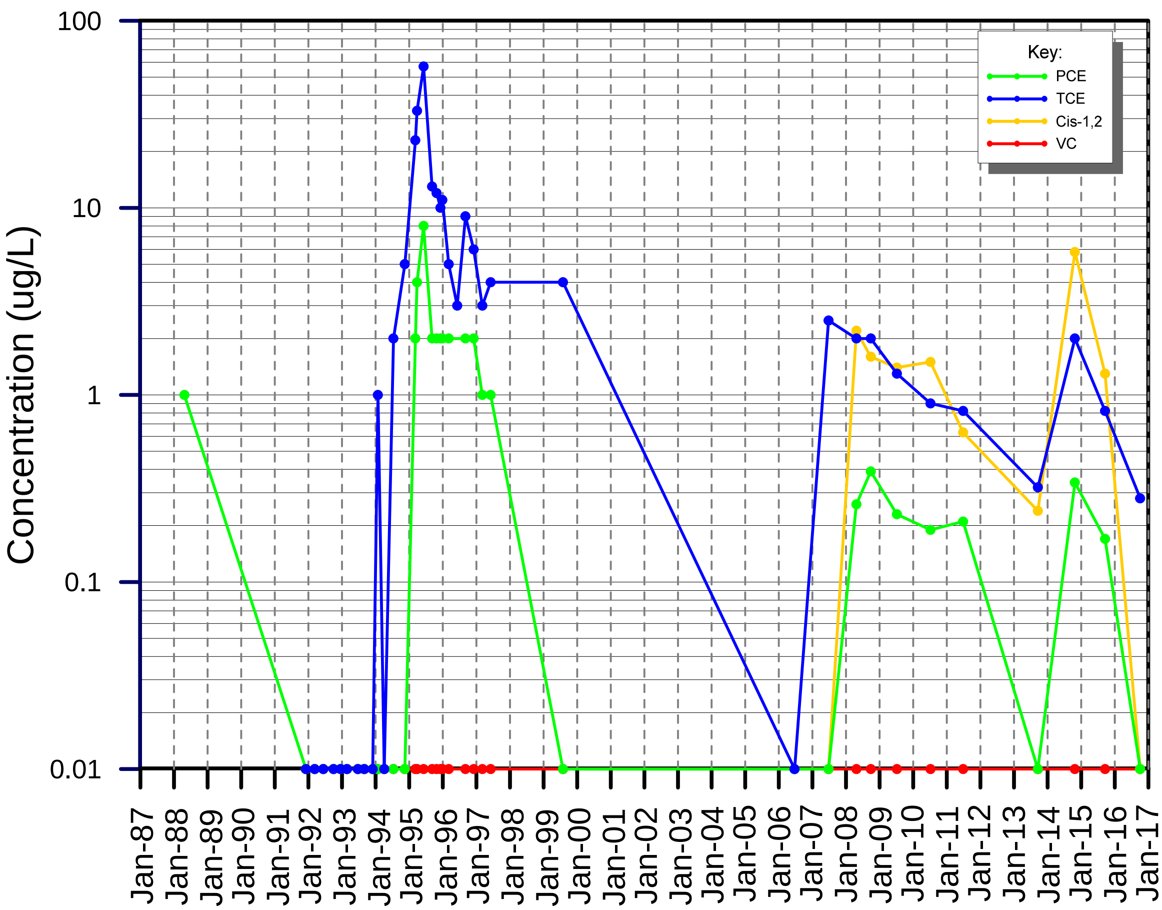
Jan-15
Jan-16
Jan-17


100
10
1
0.1
0.01
Concentration (ug/L)
Key:
PCE
TCE
Cis-1,2
VC
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
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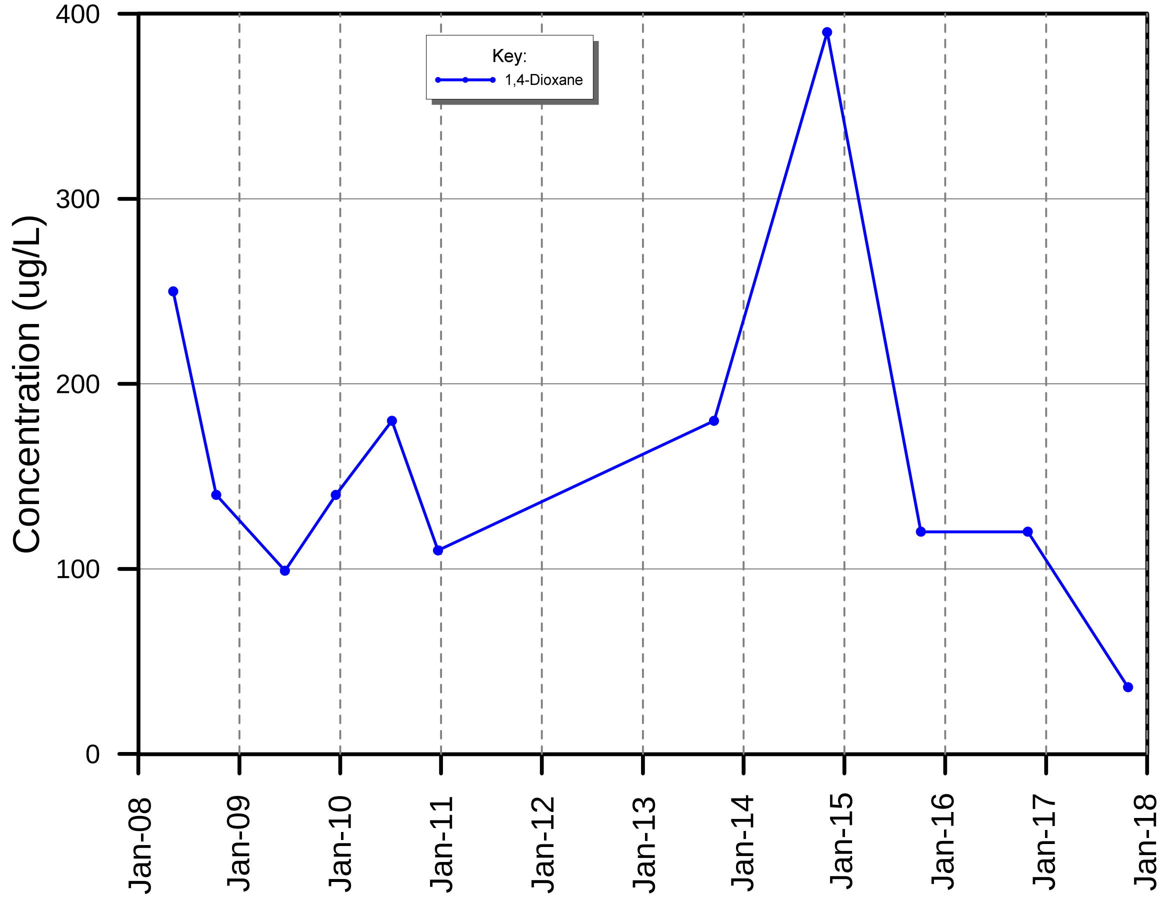
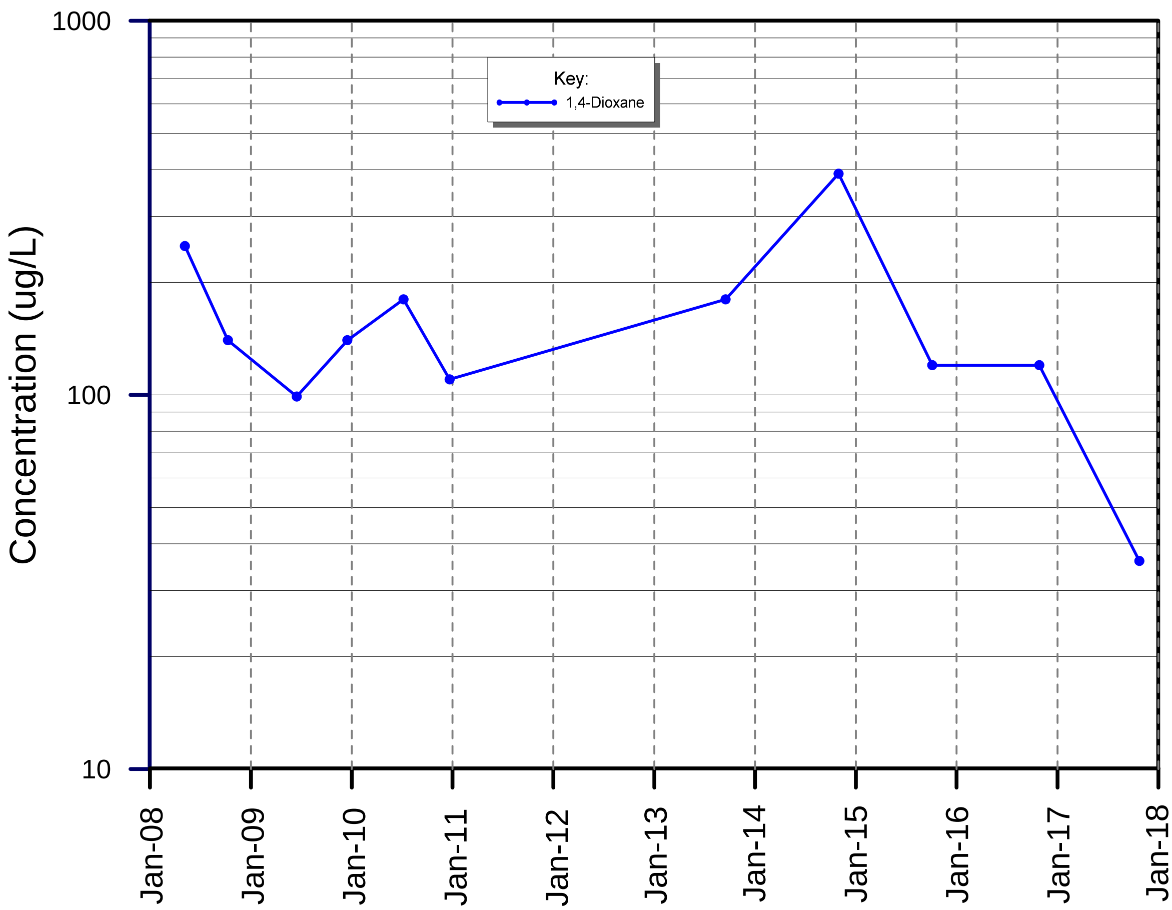
Jan-14
Jan-15
Jan-16
Jan-17

Appendix G-6

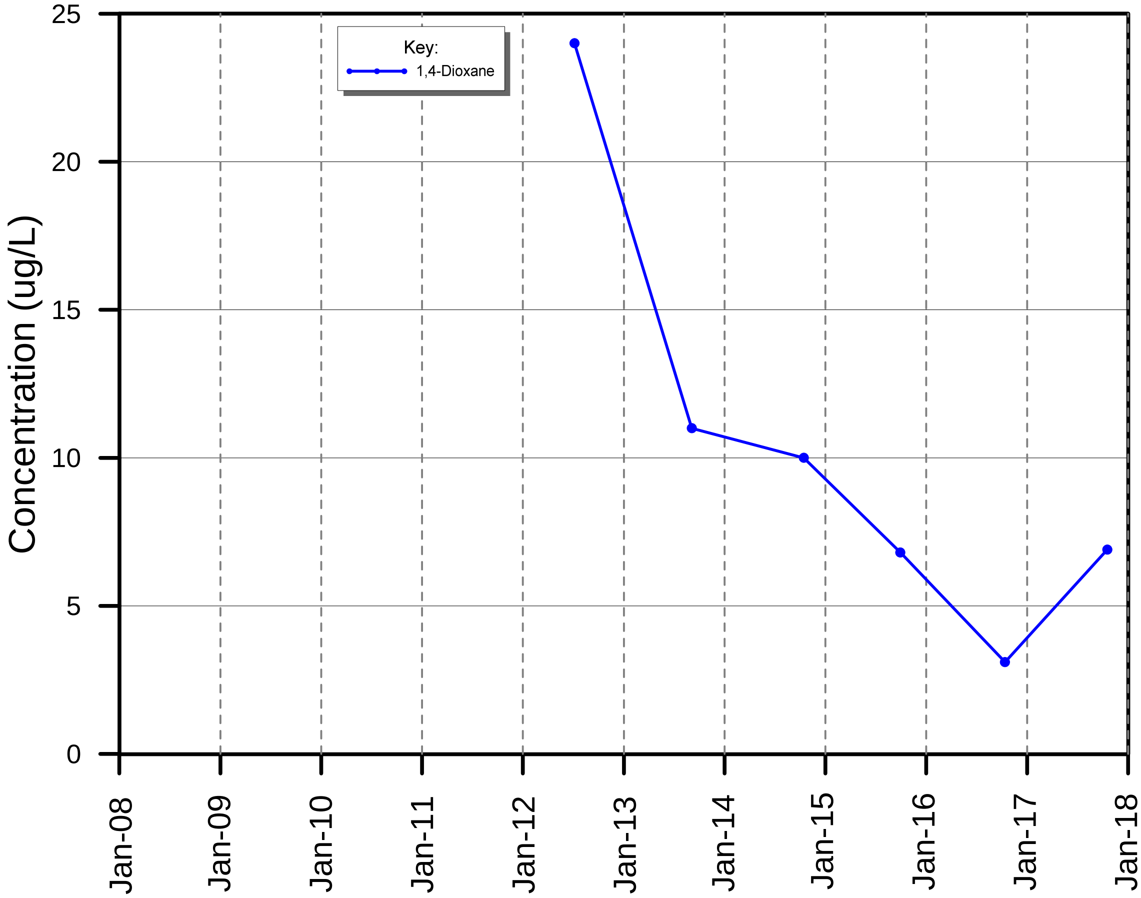
1,4-Dioxane Graphs

CW-15A

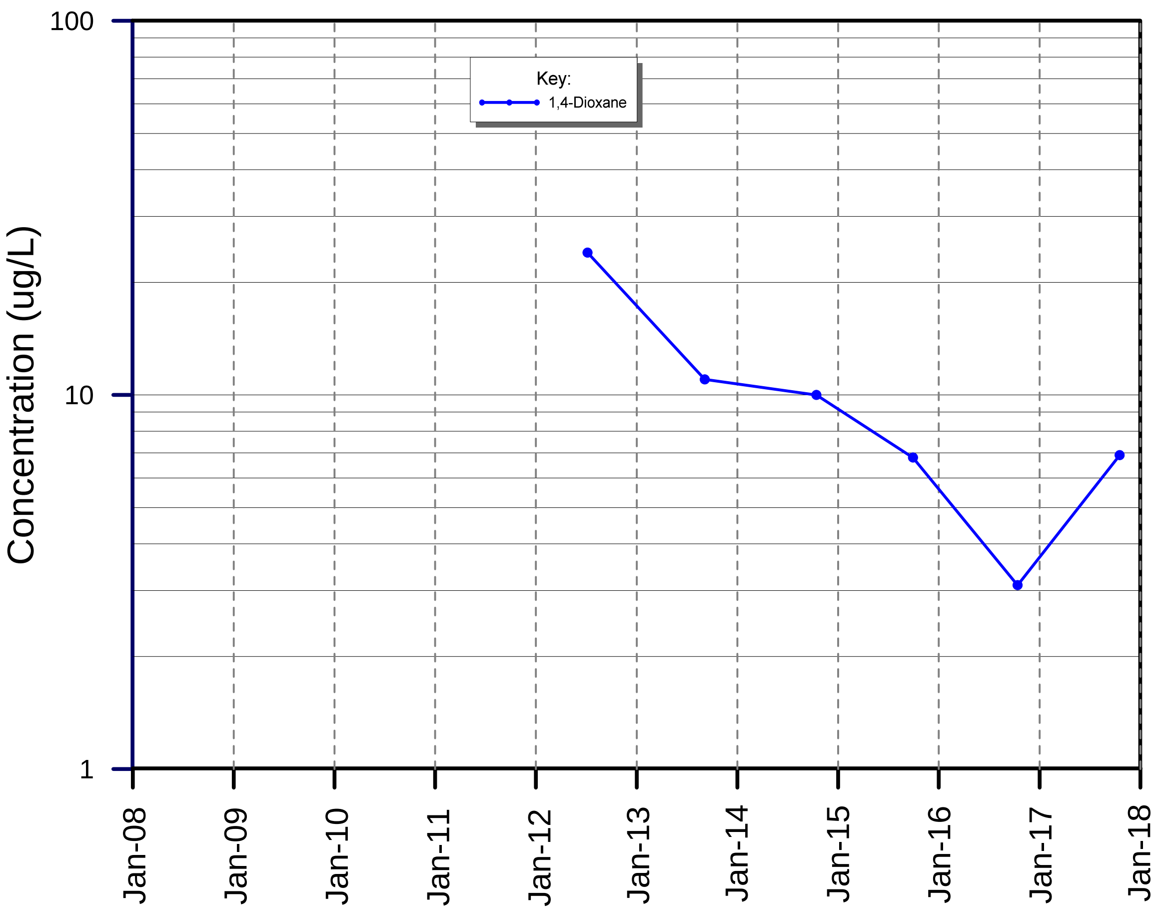

Key:
1,4-Dioxane
Concentration (ug/L)
400
300
200
100
0
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18


Key:
1,4-Dioxane
Concentration (ug/L)
1000
100
10
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18

MW-127

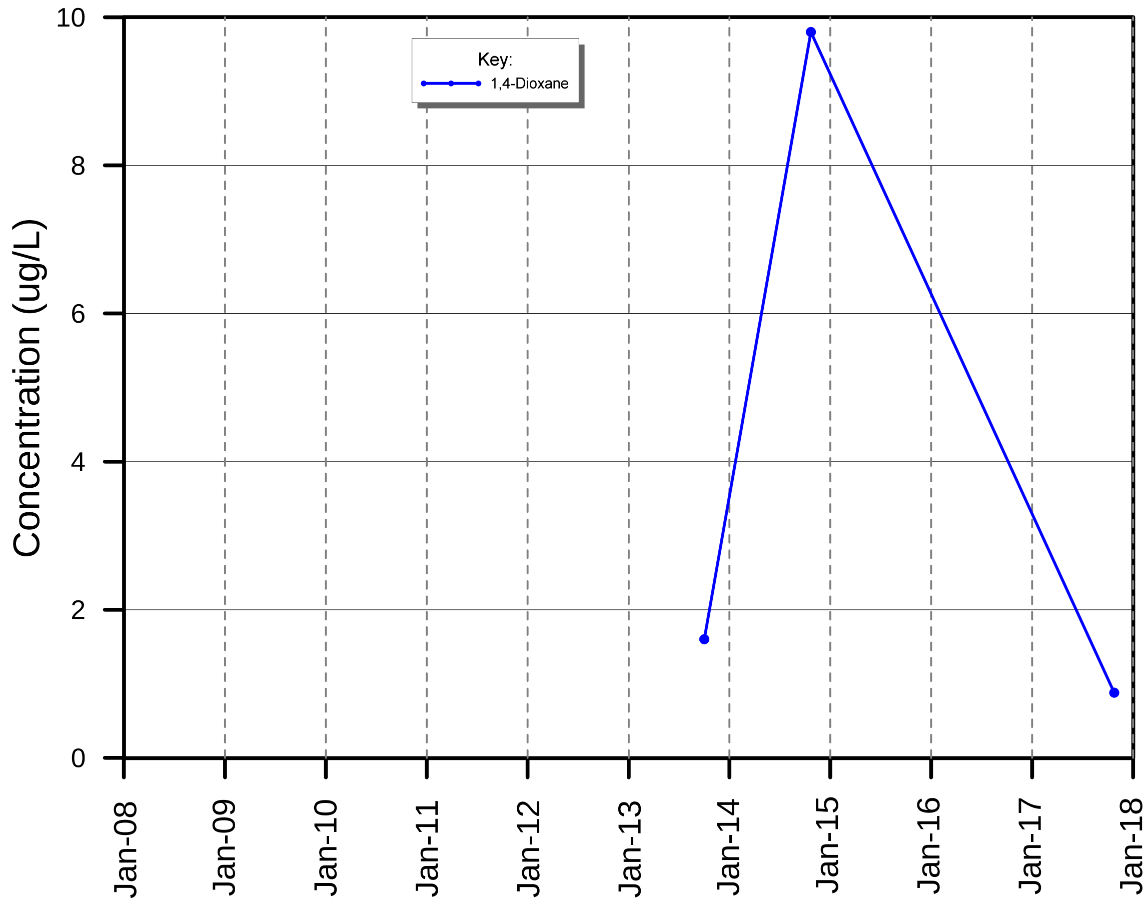


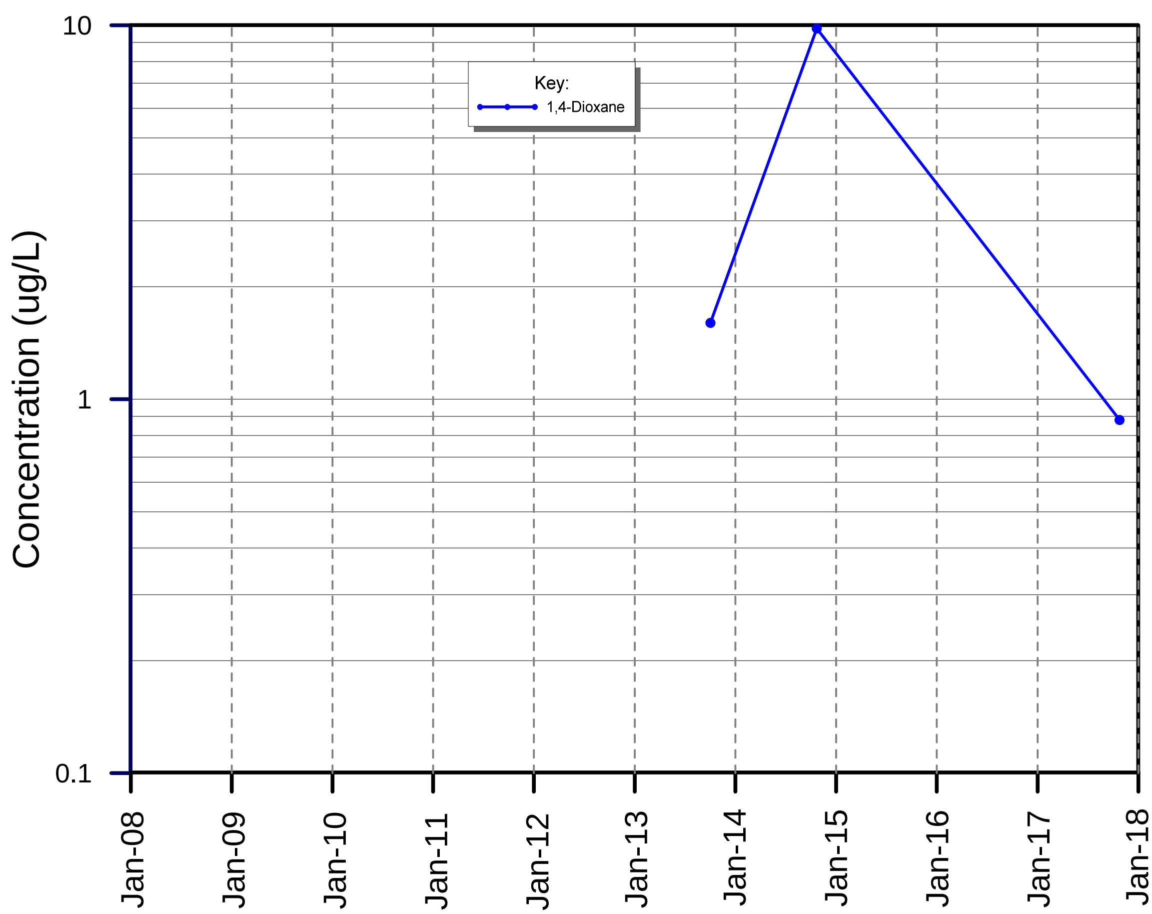
Key:
1,4-Dioxane
Concentration (ug/L)
25
20
15
10
5
0
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18



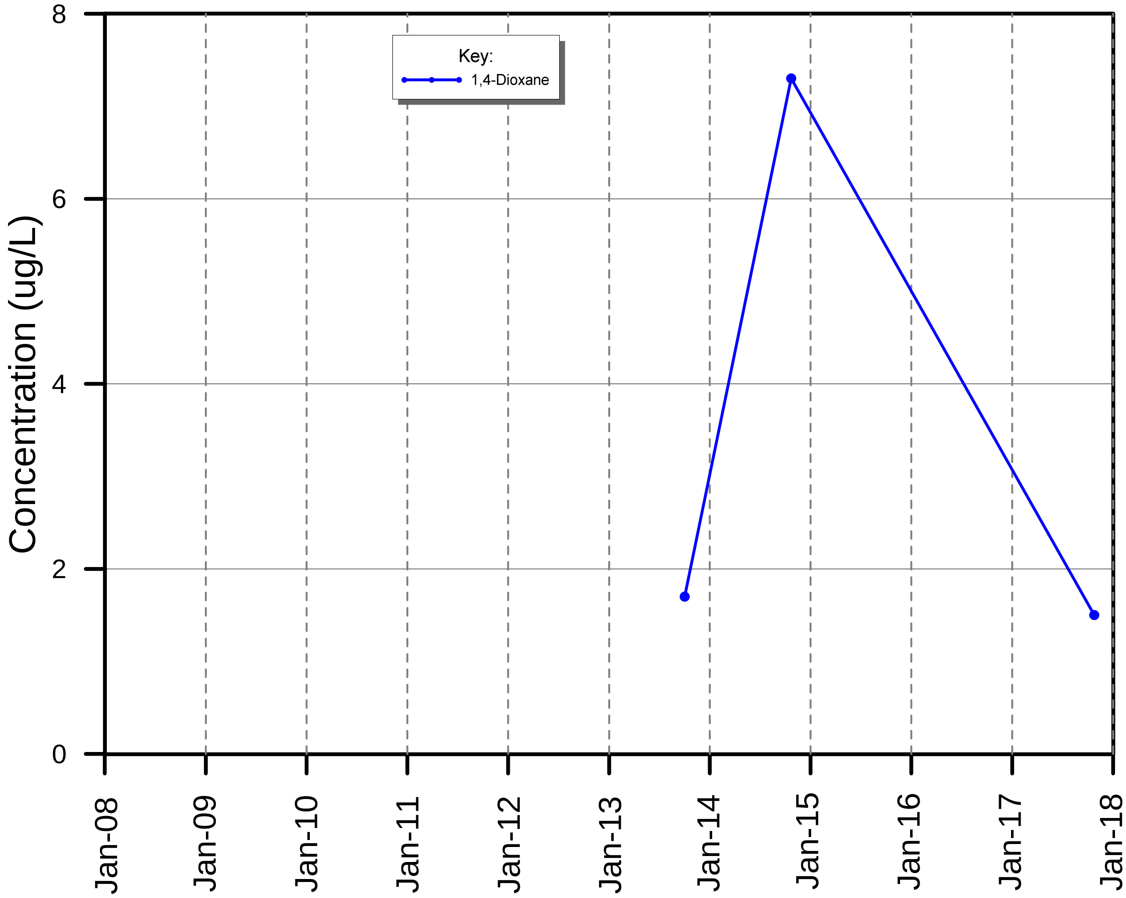
Key:
1,4-Dioxane
Concentration (ug/L)
100
10
1
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18

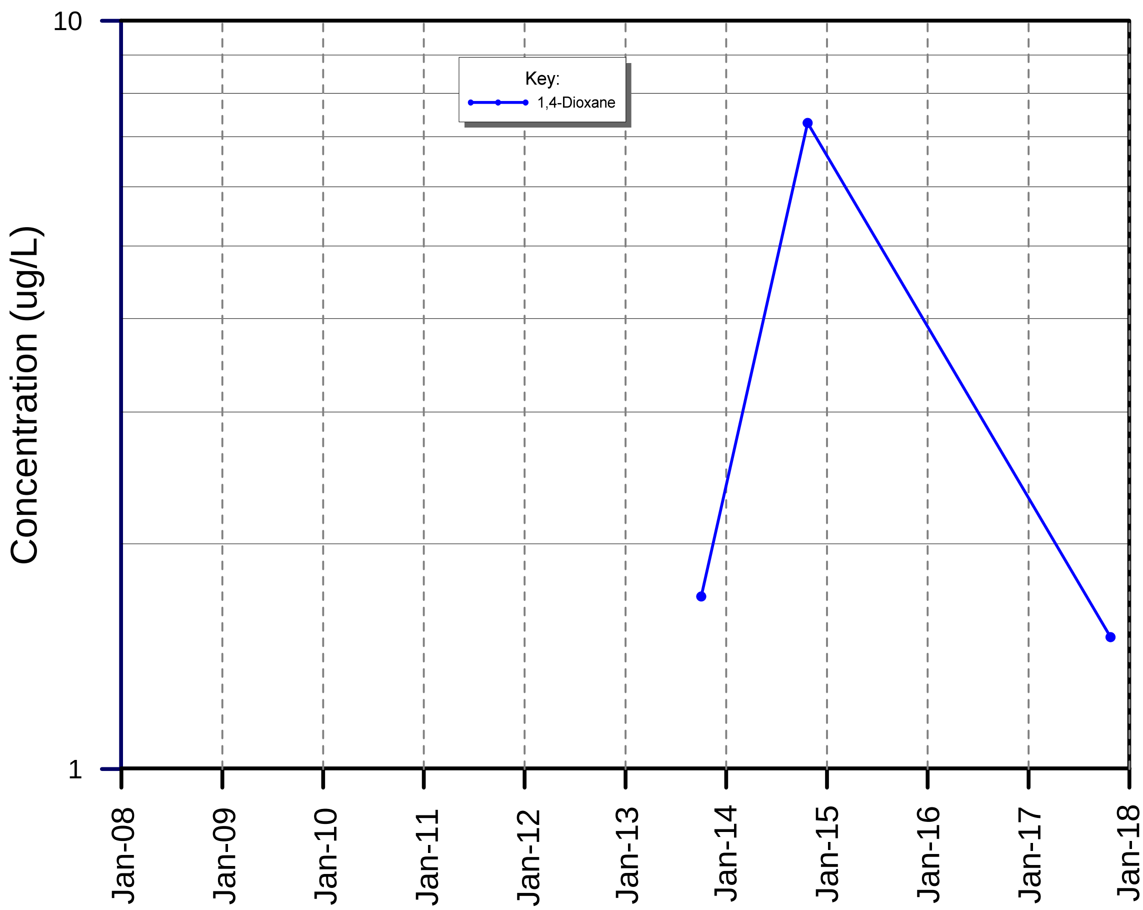
MW-136A-356/356.5-0



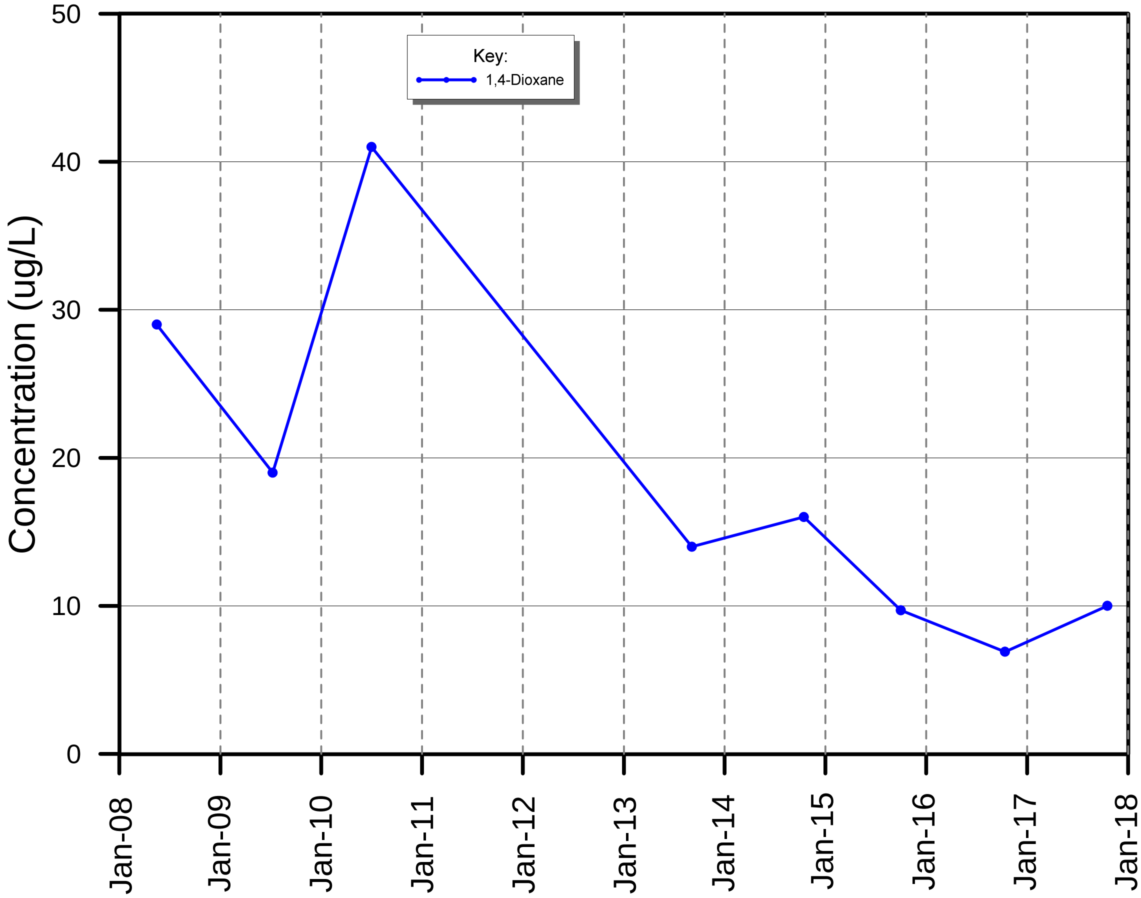


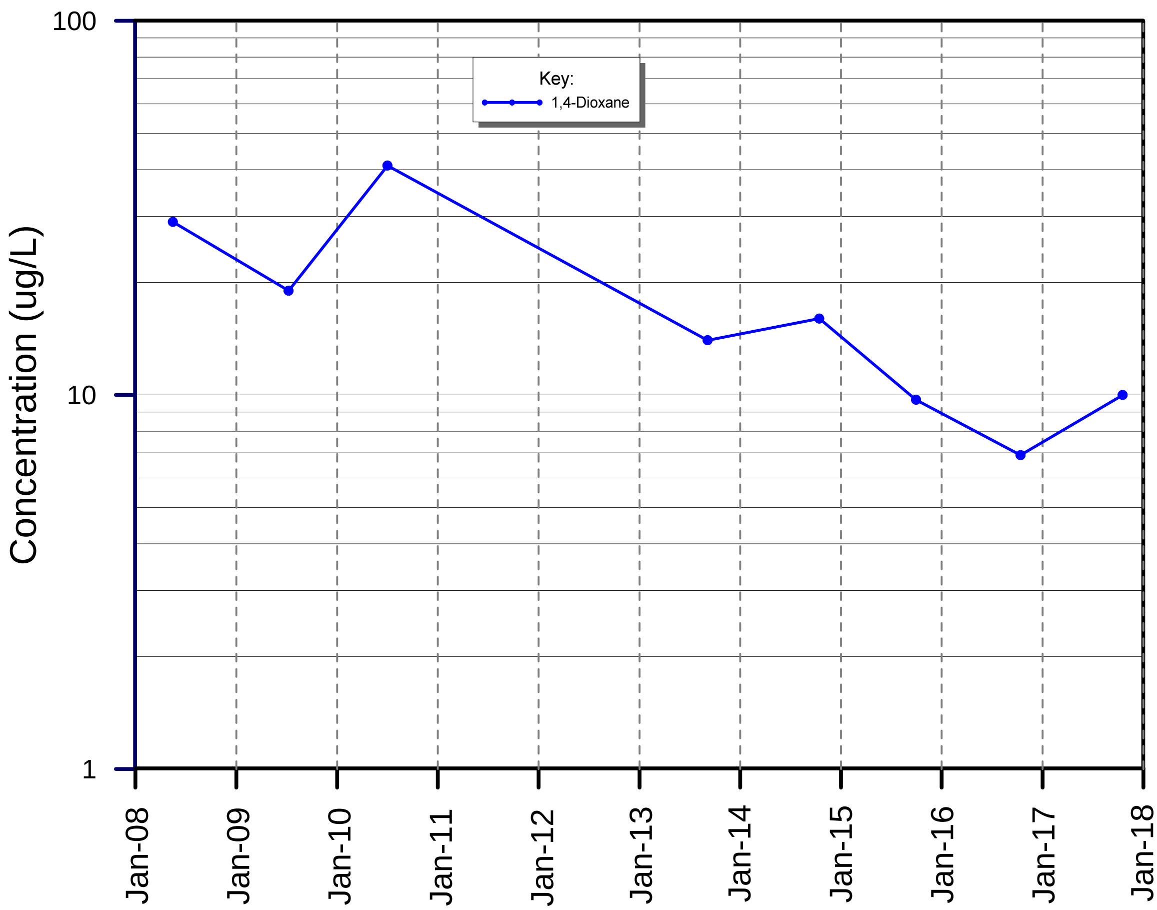
MW-136A-372.5/373-0





MW-87

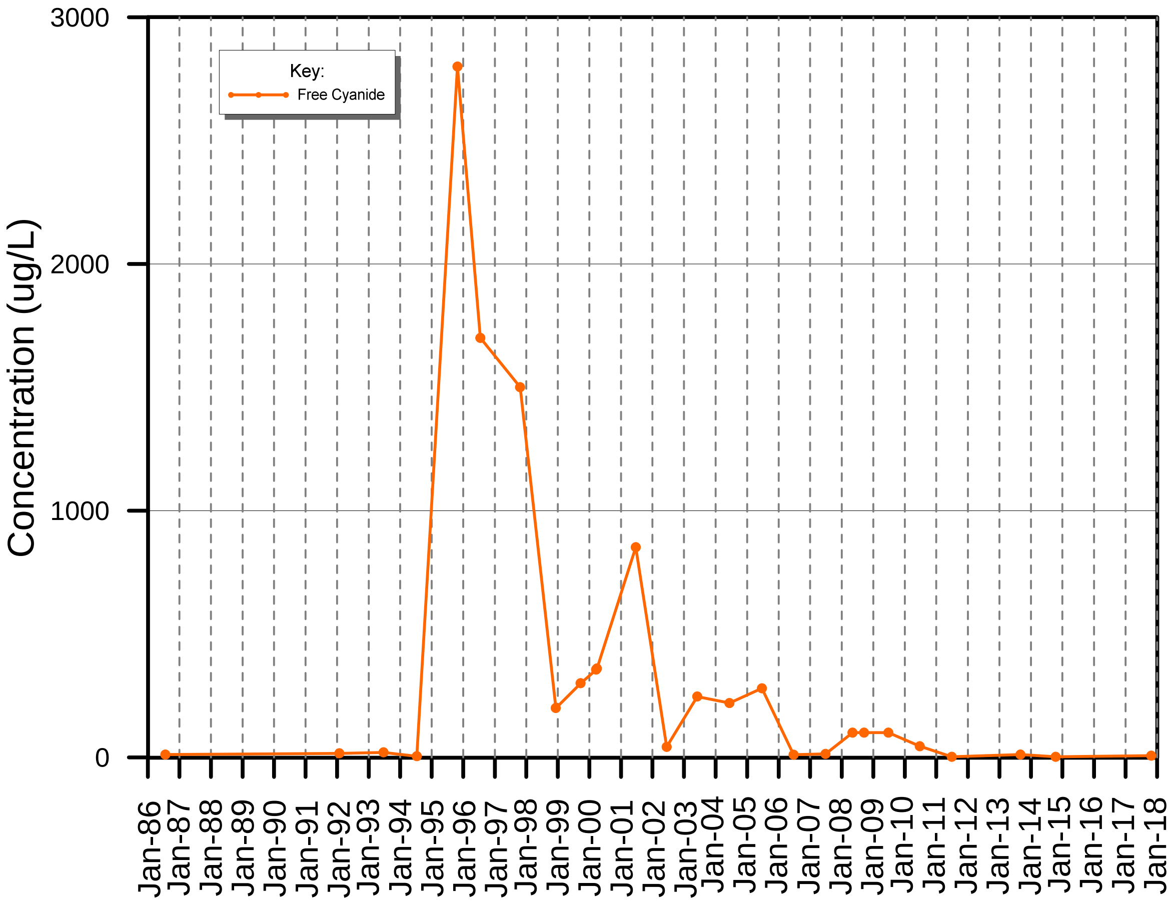

Key:
1,4-Dioxane
Concentration (ug/L)
0
10
20
30
40
50
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18


Key:
1,4-Dioxane
Concentration (ug/L)
1
10
100
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18

Appendix G-7

Cyanide Graphs

MW-2



Key:
Free Cyanide
Concentration (ug/L)
3000
2000
1000
0
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
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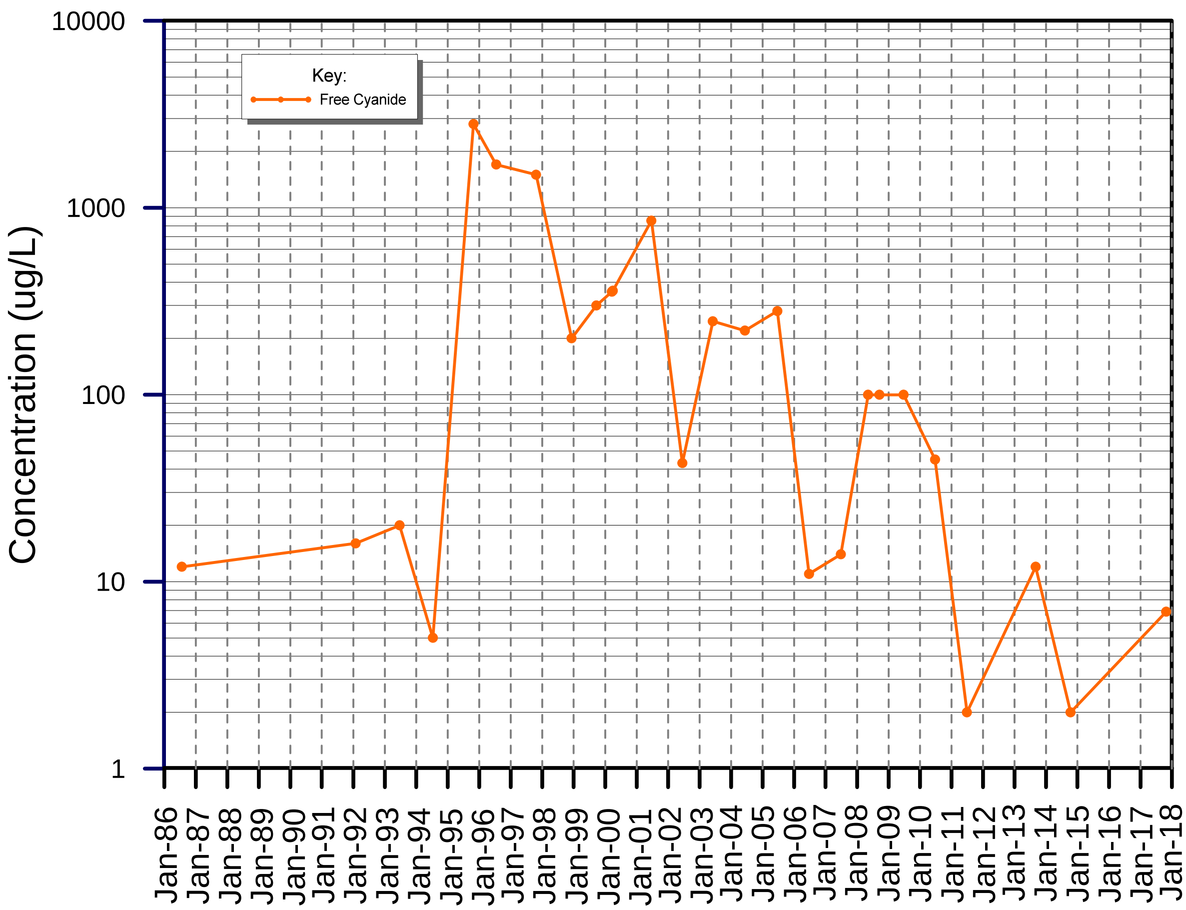
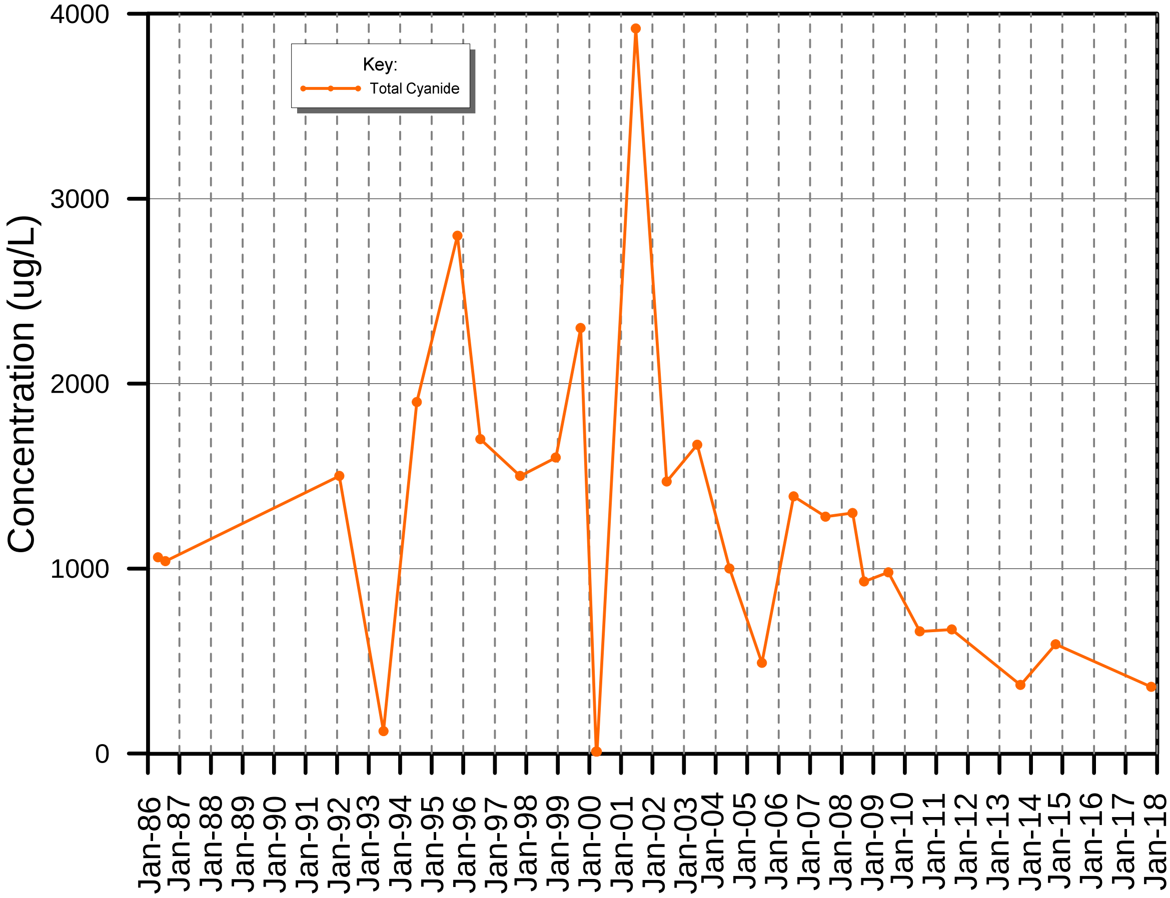
Jan-15
Jan-16
Jan-17
Jan-18

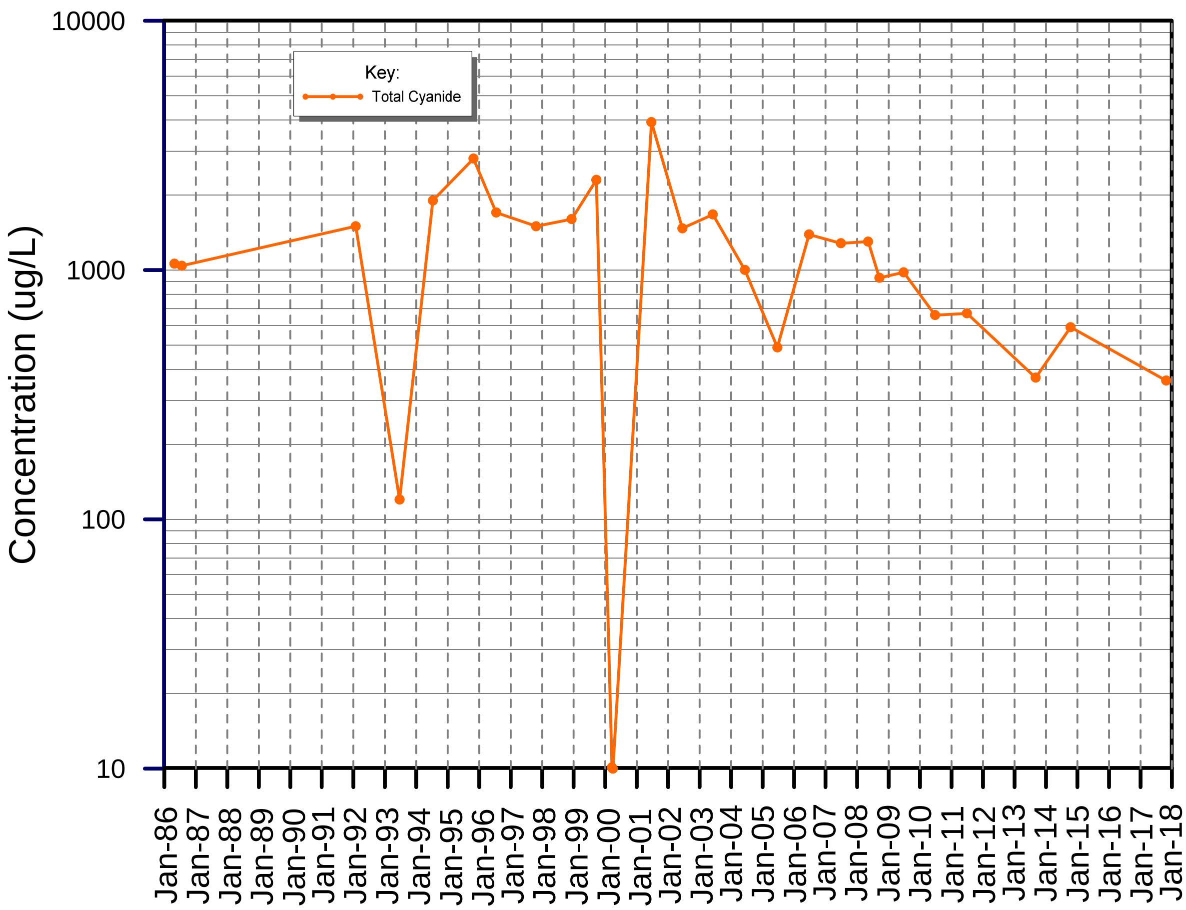


Key:
Free Cyanide
Concentration (ug/L)
10000
1000
100
10
1
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18

MW-2



Key:
Total Cyanide
Concentration (ug/L)
0
1000
2000
3000
4000
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18



Key:
Total Cyanide
Concentration (ug/L)
10
100
1000
10000
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18

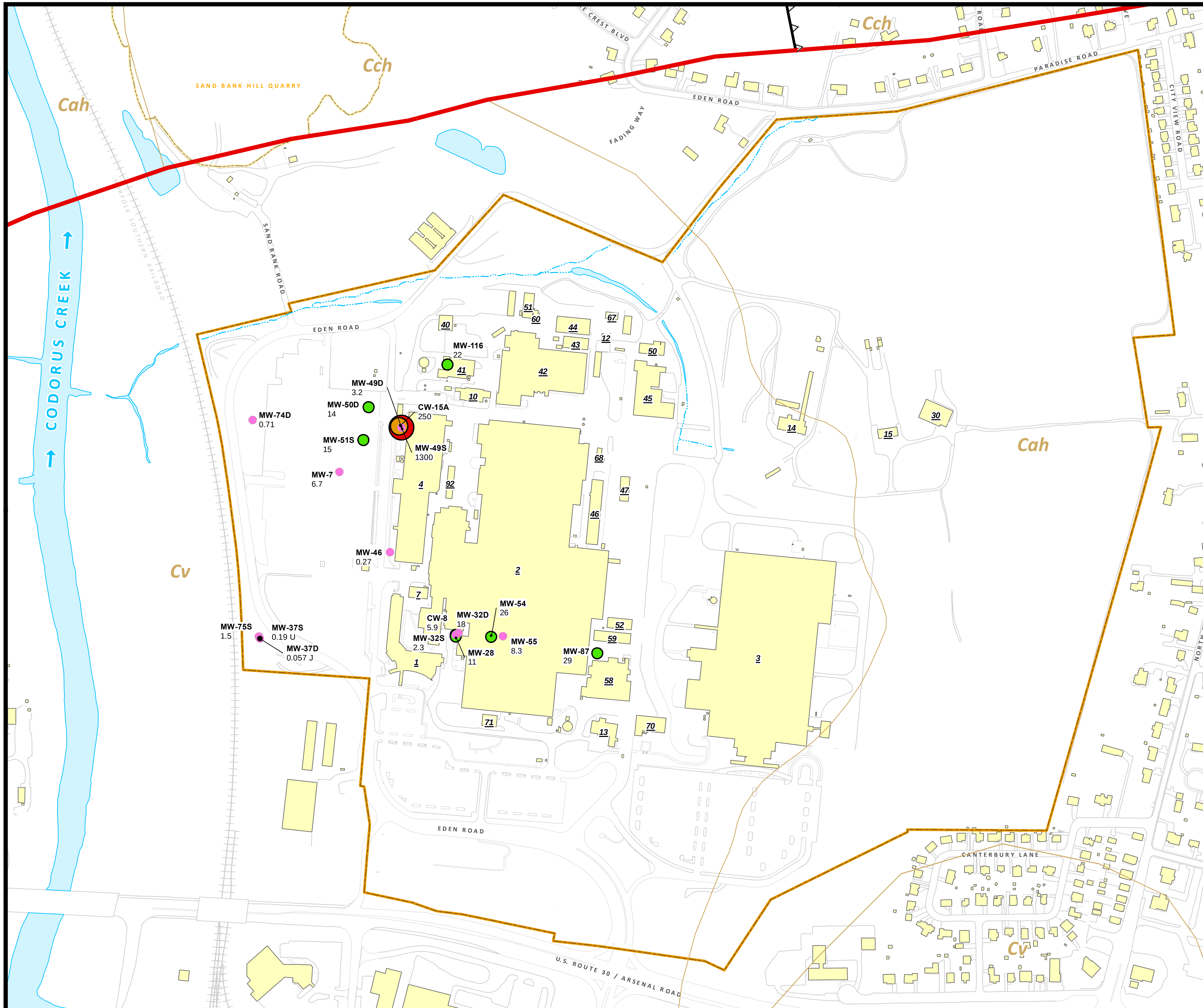
Appendix H

Data Validation Reports*

** - in portable document format (PDF) on the USB Drive attached to this report.*

Appendix I

1,4-Dioxane, 2008 SUP RI Round 1 MAP



N
W E
S

LEGEND

1,4-Dioxane (µg/l)

- Not Detected Above Laboratory Detection Limit
- < 10
- 10 < 50
- 50 < 100
- 100 < 500
- > 500
- Contact
- Block Fault
- Thrust Fault
- Cch Chickies Formation
- Cah Antietam & Harpers Formation, undiv.
- Cv Vintage Formation
- Ck Kinzers Formation
- Cl Ledger Formation
- Harley-Davidson Property Boundary
- Buildings
- Railroad (2006)
- Roads and Curb Boundary (2006)

Geologic mapping from Pennsylvania DCNR geologic map (1980).

Scale (feet)
0 100 200 400

Figure 4.1-11

Former York Naval Ordnance Plant

1425 Eden Road, York, PA 17402

1,4-Dioxane
2008 Sup RI Round 1

DRAWN BY: JPB	CHECKED AND APPROVED BY: SMS	DATE: 8/9/2011

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GROUNDWATER SCIENCES CORPORATION

Appendix J

Data Validation Narrative*

** - in portable document format (PDF) on the USB Drive attached to this report.*