2009 Annual Status Report
for the Boomsnub/Airco Superfund Site
Hazel Dell, Washington

Prepared for

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April 2010
Revision 0
Project No. 14495.05.2010.0030

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LIST OF ACRONYMS AND ABBREVIATIONS

AFCEE	Air Force Center for Environmental Excellence
Boomsnub	Boomsnub Corporation
CAS	Columbia Analytical Services
CD	Consent Decree
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
cis-1,2-DCE	*cis*-1,2-dichloroethene
City	City of Vancouver
CFC-11	trichlorofluoromethane
COV	Coefficient of variation
CPU	Clark Public Utilities
1,1-DCE	1,1-dichloroethene
DO	Dissolved oxygen
EA	EA Engineering, Science, and Technology, Inc.
Ecology	Washington State Department of Ecology
EPA	U.S. Environmental Protection Agency
ft	Feet
GAC	Granular activated carbon
IWS	In-Well Stripping
LTMP	Long-Term Monitoring Plan
Linde	Linde, LLC (formally known as BOC Gases)
MAROS	Monitoring and Remediation Optimization System
MDL	Method Detection Limit
MRL	Method Reporting Limit
N/C	Not conducted
O&M	Operation and Maintenance
OU	Operable Unit
PDB	Passive diffusion bag samplers
PCE	tetrachloroethene

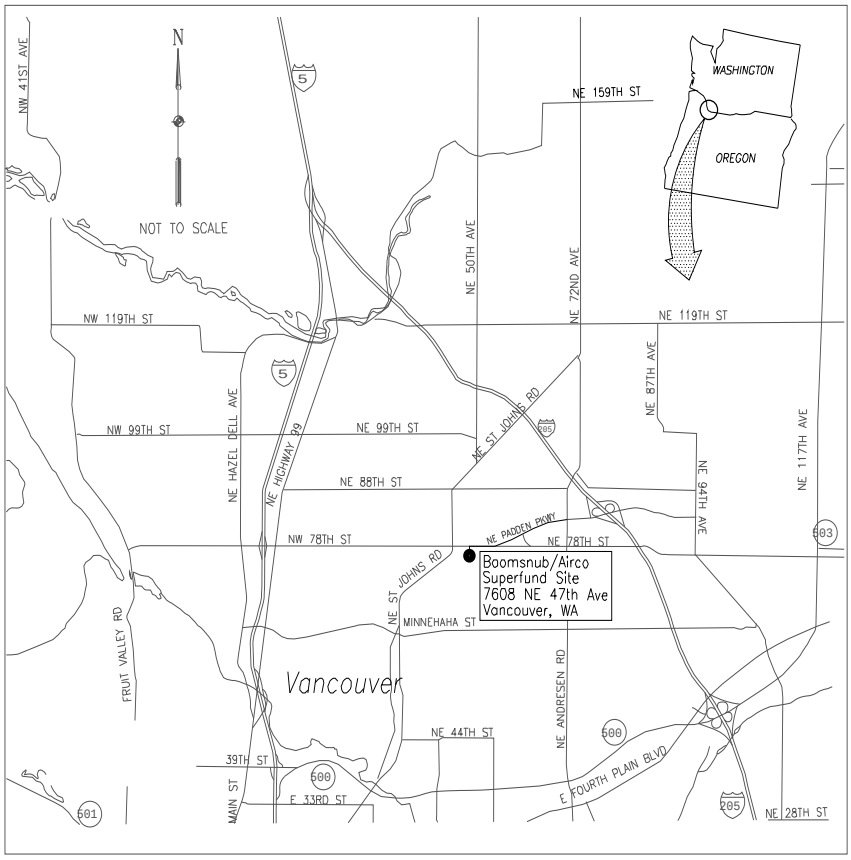
QASP	Quality Assurance and Sampling Plan
ROD	Record of Decision
SCADA	Supervisory Control and Data Acquisition
Site	Boomsnub/Airco Superfund Site
SVE	Soil Vapor Extraction
SWCAA	Southwest Clean Air Authority
1,1,1-TCA	1,1,1-trichloroethane
TCE	Trichloroethene
TOC	Total Organic Carbon
TOPPS	Toe-of-Plume Pilot Study
µg/L	Micrograms per liter
URS	URS Group, Inc.
VOC	Volatile organic compound
WAC	Washington Administrative Code

EXECUTIVE SUMMARY

Introduction

This Annual Status Report summarizes information on activities that took place during calendar year 2009 at the Boomsnub/Airco Superfund Site (Site) in Hazel Dell, Washington. EA Engineering, Science, and Technology, Inc. (EA), under contract to Linde, Inc. (Linde), is currently operating and maintaining a site-wide groundwater extraction and treatment system (Operable Unit [OU]-3) and volatile organic compound (VOC) source removal system (OU-2) at the Site. Regulatory oversight is conducted by the U.S. Environmental Protection Agency (EPA).

Work at the Site is currently conducted under a Consent Decree (CD) between the EPA and Linde which was entered by the court on 29 June 2007. Work performed under the CD is equivalent to work performed under the previous Administrative Orders on Consent.



SITE LOCATION MAP

Site Background and Operating Objectives

In 1987, the Washington State Department of Ecology (Ecology) determined that a plume of chromium-contaminated groundwater was emanating from the Boomsnub Corporation (Boomsnub) manufacturing facility. In 1991, during cleanup activities at the Boomsnub facility, a second plume containing VOCs was detected and believed to be coming from the Linde property, located east of the Boomsnub facility.

OU-2 VOC Source Removal Systems

Linde owns and operates an industrial gas production facility adjacent to the Boomsnub property. The Linde plant manufactures compressed and liquefied gas products including nitrogen, oxygen, and argon. The plant also stores and distributes other specialty gases such as hydrogen and helium. The facility was built by Air Liquide America Corporation in 1963 and has been in operation since 1964.

Since the identification of the VOC plume in 1991, Linde has undertaken a number of steps to identify the extent of the VOC plume, mitigate the plume, and to control plume migration. The primary VOC of concern is trichloroethene (TCE), which serves as an indicator of VOC presence at the Site. Linde has conducted numerous site investigations, performed groundwater treatment, and conducted a removal action on their property at OU-2. The removal action involved constructing *in-situ* soil and groundwater treatment systems to address the VOC source area. The OU-2 systems are composed of the following components:

- An in-well stripping (IWS) system that vaporizes and partitions the VOCs in groundwater from the dissolved phase to the vapor phase.

- A soil vapor extraction (SVE) system that removes air (soil vapor) containing VOCs from the soil pore space.

- A granular activated carbon (GAC) adsorption system that treats the off-gas stream from the SVE and IWS systems prior to release to the atmosphere.

- Eleven groundwater monitoring wells installed to monitor the TCE source area remediation project. An additional 14 wells that were installed as part of the OU-3 monitoring system are also used to monitor the performance of TCE source area remediation.

Construction of the OU-2 IWS/SVE systems started in September 2003, with the systems becoming operational in February 2004. System components and groundwater quality are regularly monitored to assess compliance with cleanup and discharge standards as well as progress in meeting the remedial action objectives. Quarterly groundwater monitoring is conducted to assess the effectiveness of the TCE removal. The SVE System was shut down in March 2008 since the final valid rebound test was completed with a TCE concentration less than the baseline result. SVE system operations are considered complete.

The operating objectives of the OU-2 systems include the following:

- Remove VOCs from the vadose zone that may be acting as the source to groundwater.
- Remove VOCs from groundwater on the western portion of the Linde property.
- Halt the off-property migration of VOCs in groundwater.

OU-3 Site-wide Groundwater Extraction System

The purpose of the OU-3 groundwater extraction and treatment system is to remove hexavalent chromium and VOCs that have been released to groundwater through historical industrial operations at the Boomsnub facility (chromium) and the adjacent Linde production facility (VOCs). There are two distinct contaminant release points, one for TCE and one for chromium. The contaminant plumes overlap and become commingled downgradient of the source areas.

The highest concentrations of site contaminants occur in a shallow groundwater-bearing zone referred to as the alluvial aquifer. The alluvial aquifer is not used as a municipal water supply, although a limited number of private wells pump from this aquifer. TCE and chromium have been detected, although at considerably lower concentrations, in the deeper groundwater-bearing zone, the Troutdale aquifer. The Troutdale aquifer serves as a municipal water supply for the City of Vancouver and Clark County. Municipal water supply wells are not located in areas known to contain elevated concentrations of contaminants detected at the Site.

The groundwater extraction and treatment system has been operational since 1990 and was constructed along the axis of the chromium plume. Since 1990, the system has been modified, upgraded, and expanded several times to handle the VOCs and chromium, to increase pumping and treatment capacity, and to increase removal efficiency. The groundwater extraction and treatment system is composed of the following major elements:

- A groundwater extraction well network that extracts and conveys groundwater to the treatment facility.
- An ion-exchange system that removes chromium from extracted groundwater.
- An air stripper system that removes TCE and other VOCs from extracted groundwater.
- A GAC system that removes VOCs from the air stripper off-gas.
- An infiltration gallery on the Linde property where the treated water is returned to the alluvial aquifer.
- A groundwater monitoring well network to monitor groundwater quality and extraction system effectiveness.

Over 125 groundwater monitoring and extraction wells were installed at the Site to define the nature and extent of groundwater impacts and to monitor Site cleanup. The extraction wells are primarily converted monitoring wells screened in the alluvial aquifer.

The operating objectives of the groundwater extraction and treatment system include the following:

- Reduce further contaminant migration within the alluvial aquifer.
- Continue mass removal activities.
- Reduce contaminant migration into the Troutdale aquifer.

2009 OU-2 Systems Operations

The IWS system is operating within the performance standards established for the Site. Groundwater and vapor sampling and analyses were conducted to monitor the OU-2 systems in accordance with the EPA-approved Site Operations and Maintenance (O&M) Manual.

To date, the IWS system has performed very well. By May 2006, TCE concentrations in groundwater had been reduced by more than 98% as a result of operation of the IWS system, and the average concentration of TCE in OU-2 performance monitoring wells was below the cleanup level. However, it is apparent from recent data trends that the system is no longer removing appreciable TCE mass from the source area groundwater, and TCE removal is offset by dissolution of TCE in the soil matrix.

EA is currently pulse-pumping the IWS system (alternating operating wells) to change groundwater circulation patterns and potentially increase TCE removal rates. Alternating the IWS wells causes the circulation patterns in the groundwater to change. This causes the groundwater to circulate in areas of higher TCE concentrations in the soil. Changes to the IWS operations are made after each groundwater sampling event.

Based on the current site conditions, GAC treatment of the discharge from the IWS system was discontinued in October 2009, with EPA approval. Current concentrations of volatile organics in the discharge do not pose a risk to human health or the environment and are significantly lower than regulatory limits for air releases. The IWS system now vents directly to the atmosphere and vapor samples are no longer collected.

2009 OU-3 System Operations

During 2009, the groundwater extraction and treatment system operated within the performance standards established for the Site. The system had average removal rates of approximately 98 percent for TCE and over 93 percent for chromium.

Treated groundwater from the Site is discharged back into the alluvial aquifer through the infiltration gallery located on the Linde property. All of the treatment system effluent was

discharged to the infiltration gallery during the reporting period. The groundwater treatment system continues to meet the discharge criteria for required constituents.

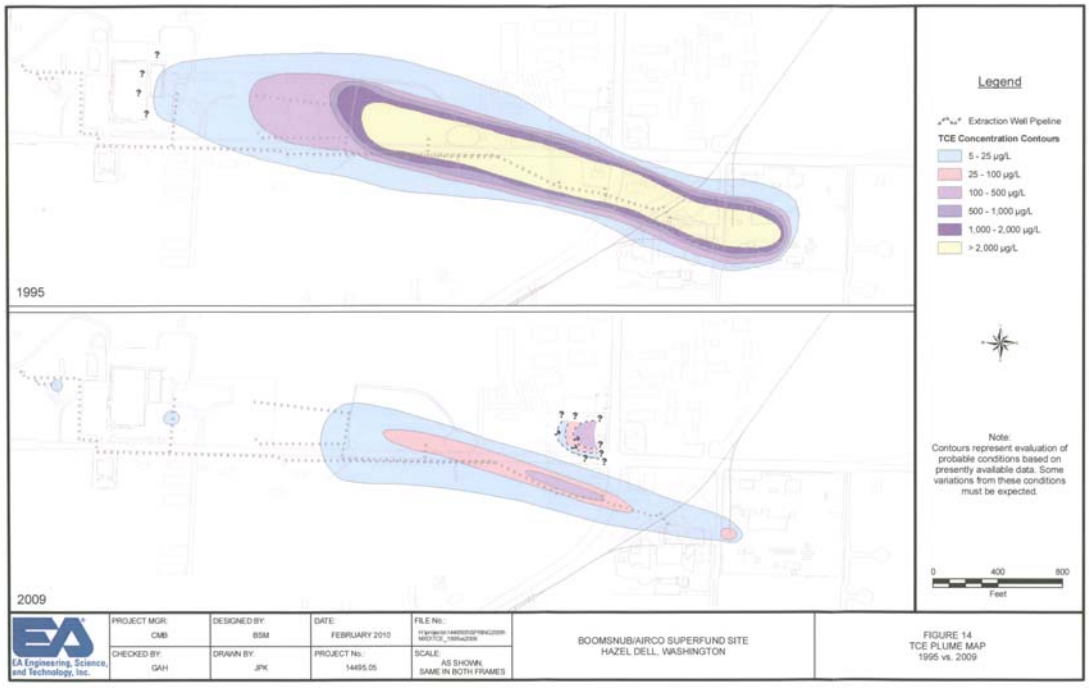
On the basis of measured influent and effluent concentrations and the total monthly groundwater flow, approximately 43 pounds of chromium and 15 pounds of TCE were removed by the groundwater extraction and treatment system during 2009. This brings the cumulative total mass of chromium and TCE removed to approximately 22,190 and 2,149 pounds, respectively, since initiating operations in 1990. The mass of contaminants removed during the reporting period continued to decline compared to the previous reporting period. This is consistent with a continuing downward trend over the past few years and is reflected in the average influent concentrations of chromium and TCE at the Site.

Semiannual site-wide groundwater monitoring was conducted in Spring 2009 and Fall 2009. The Fall event included sampling of wells on a five year sampling schedule. Contaminant concentrations continue on a decreasing trend in Site wells.

During 2007 and early 2008, TCE concentrations increased significantly in well AMW-18, located near the northern boundary of the Site plume. In May 2008, an investigation was performed to evaluate the depth and concentration of TCE in groundwater in the vicinity of AMW-18. Based on the data obtained, it has been concluded that the source is not the same as for the OU-3 plume. This offsite plume is referred to as the Northern Plume. Groundwater samples collected from well AMW-18 in Spring and Fall 2009 indicate that the TCE concentration is decreasing.

The following figures compare chromium and TCE concentrations in groundwater at the Site in 1995 and 2009. These figures show that the groundwater extraction and treatment system has been effective in mass removal and decreasing the footprint of the plume over time.

Chromium Concentrations (µg/L)



Trichloroethene Concentrations (µg/L)

The Toe-of-Plume Pilot Study (TOPPS) *in-situ* remediation was initiated in September 2006 to treat an area of recalcitrant contamination in the original Toe-of-Plume area. Groundwater samples from selected wells in the area were collected during Spring and Fall 2009 to continue performance monitoring. Results from these samples indicate TCE and chromium concentrations continue to be below the cleanup levels in 2009, confirming that the TOPPS is performing as expected. Water level gauging and groundwater monitoring results indicate that hydraulic containment of the plumes has been maintained.

Annual Screening of Groundwater Monitoring Data

The second annual screening of groundwater monitoring data for the Site was conducted in accordance with the revised Closure Plan (EA 2009a). The annual screening evaluates data collected at the Site since 1995 (the year the Site was placed on the National Priorities List) for each alluvial aquifer monitoring and extraction well sampled. The data are used to determine what changes, if any, should be made to system operations and the well sampling schedule, and to determine if cleanup levels have been attained in groundwater.

A combination of quantitative and qualitative evaluations of the Site data was used to derive the recommendations for the Annual Screening. The Air Force Center for Environmental Excellence (AFCEE) Monitoring and Remediation Optimization system (MAROS) version 2.2 was used for the quantitative evaluation. MAROS is a computer program developed to optimize long-term groundwater monitoring, determine when to terminate groundwater treatment, and demonstrate cleanup level attainment using statistics. Using statistical analyses, MAROS is capable of making recommendations on sampling frequencies and is able to determine if groundwater concentrations are statistically below cleanup levels. The qualitative evaluation consisted of professional judgment based on over 17 years of Site experience. The quantitative and qualitative evaluations do not always reach the same conclusions. When this occurs, professional judgment takes priority.

As part of the annual screening, the current sampling frequency for each well in the monitoring program is evaluated and, if appropriate, revised. The following factors were considered when proposing a revised sampling frequency for a well: the MAROS recommended sampling frequency, the use of the well at the Site, and the results from the MAROS evaluation of whether or not contaminants in groundwater are statistically below cleanup levels and the need for data from a well for decision making. Changes in sampling frequencies for 2010 are recommended for wells, based on this evaluation. In most cases, these changes were for less frequent sampling.

Attainment monitoring is performed on a limited number of wells to assess whether post-treatment concentrations remain statistically below cleanup levels. Attainment monitoring is conducted on selected wells that represent different areas of the plume. The MAROS analysis has determined that groundwater samples from the attainment wells for the Sentinel Toe wells group have attained the cleanup goals. This area of the plume is eligible for closure upon approval by EPA.

Based on the results of the 2009 Annual Screening of the groundwater monitoring data, the following conclusions are made:

- The redundancy analysis showed no wells were redundant for both TCE and chromium.
- No modifications to system operations are necessary at this time.
- TCE and/or chromium concentrations in groundwater from numerous wells were found to be statistically below the cleanup level.

Planned 2009 Activities and Summary Status

In order to meet the operating objectives for OU-2 and OU-3 planned activities for 2009 were recommended in the 2008 Annual Status report. The status of these planned activities is summarized below:

- **Continue ongoing operations to meet operational objectives —** The remediation systems continue to meet operational objectives. The extraction system continues to provide containment for both plumes, preventing further migration of constituents of concern within the alluvial aquifer. The groundwater monitoring results continue to show overall downward trends for both TCE and chromium concentrations across the Site. The size of the plumes and contaminant concentrations continue to decrease.
- **Continue operation and optimization of the IWS system in accordance with EPA approved procedures —** System optimization continued to concentrate treatment to the center of the source area and to change groundwater circulation patterns to contact residual VOCs in the soil.
- **Continue to cooperate with EPA on investigation of the TCE plume present in the Northern Plume Area (well AMW-18 area).** Wells AMW-17, AMW-18 and MW-15E were sampled semiannually to monitor TCE in the Northern Plume area. In addition, wells AMW-17 and AMW-18 were sampled in January 2009. EPA has acknowledged that the Northern Plume is not a result of Linde or Boomsnub activities. EPA will prepare an explanation of Significant Difference to incorporate the Northern Plume into the Site.
- **Continue to work on obtaining easements and access agreements — Negotiations continued with numerous property owners t**o obtain easements and access agreements.
- **Sample monitoring wells in accordance with the updated sampling schedule —** Monitoring wells were sampled in accordance with the sampling schedule.

The following additional activities occurred during the 2009 reporting period:

- **Revise the Draft Closure Plan to include use of MAROS for the annual screening and attainment evaluation —** The Closure Plan was revised and submitted to EPA in February 2009 (EA 2009a).

- **Discontinue IWS GAC treatment discharge —** The GAC treatment of the IWS system discharge was discontinued in October 2009 and the IWS system now vents directly to the atmosphere. Current concentrations of VOCs in the vented vapor are significantly lower than regulatory limits for air releases.

- **MW-27 rebound testing due to proposed Church of God sports fields —** Rebound testing is being performed to determine if the extraction system piping to MW-27 can be decommissioned when the proposed sports fields on the Church of God property are developed. The pump in extraction well MW-27D was turned off in November 2009 and the sampling frequency for wells MW-27D and MW-25D was increased to quarterly to monitor for possible contaminant rebound.

Recommendations and Planned Activities for 2010

EA recommends and plans to complete the following activities during the 2010 reporting period:

- **Rebound Testing/System Modifications proposed for Church of God sports fields —** System modifications may be required due to the proposed development plans on the Church of God property. Linde and EA are working with the County, EPA and the Church of God during the planning process to understand how the development of the sports complex will impact the current system.

  Quarterly sampling of MW-27D and downgradient well MW-25D will continue for one year or until the sports field construction begins. At that time, the effectiveness of MW-27D as an extraction well will be re-evaluated to determine if the extraction system piping to this well can be decommissioned when the property is developed.

- **Continue to work on obtaining easements and access agreements.**

- **Replace the pump in well MW-33 prior to the sampling event in Fall 2010.** Repairs to this well may include installing a new protective monument around the well, preferably after filling the surrounding land surface a few inches to prevent ponding in the area. Mechanically clear the biological growth observed in the well to the extent possible. Replace the sampling pump in the well.

- **Sample wells in accordance with the updated sampling schedule.**

- Based on a review of sampling results over the past four years, TOPPS sampling will be limited to collection of groundwater samples annually for wells MW-41 and AMW-63 with analysis for chromium and VOC only. Samples will no longer be analyzed for dissolved iron, total organic carbon or ferrous iron.

1. INTRODUCTION

This Annual Status Report summarizes information on activities that took place during 2009 at the Boomsnub/Airco Superfund Site (Site) in Hazel Dell, Washington. EA Engineering, Science, and Technology, Inc. (EA), under contract to Linde, LLC (Linde; formerly known as BOC Gases), is currently operating and maintaining a Site-wide groundwater extraction and treatment system (Operable Unit [OU]-3) and a volatile organic compound (VOC) source removal system (OU-2). Regulatory oversight is conducted by the U.S. Environmental Protection Agency (EPA). The Annual Status Reports for OU-2 and OU-3 have been combined since 2005 into one report in order to provide a comprehensive report on Site operations. Work at the Site is currently conducted under the Consent Decree (CD) between the EPA and Linde (Docket No. CO7-5163FDB) which was entered by the court on 29 June 2007 (EPA 2007a).

1.1 Background

The Site is located in Hazel Dell, Washington, just north of the city limits of Vancouver, Washington and includes two adjacent facilities, the former Boomsnub Corporation (Boomsnub) chrome plating facility and the Linde facility. Linde owns and operates an industrial gas production facility adjacent to the Boomsnub property. The Linde plant manufactures compressed and liquefied gas products including nitrogen, oxygen, and argon. The plant also stores and distributes other specialty gases such as hydrogen and helium. The facility was built by Air Liquide America Corporation in 1963 and has been in operation since 1964.

The Site is divided into three operable units to manage cleanup activities: OU-1 (Boomsnub Soil); OU-2 (Linde Soil); and OU-3 (Site-wide Groundwater). A Site location map is presented as Figure 1 and a Site overview map as Figure 2.

In 1987, the Washington State Department of Ecology (Ecology) determined that a plume of chromium-contaminated groundwater was emanating from the Boomsnub facility. While cleanup activities were being conducted at the Boomsnub facility, VOCs were detected in groundwater samples and were suspected to be coming from the Linde property. Linde began investigating the nature and extent of VOCs in 1991. In June 1994, EPA took over the role of lead regulatory agency from Ecology and in April 1995 the Site was placed on the National Priorities List. There are two distinct contaminant release points, one for VOCs and one for chromium. The groundwater contaminant plumes overlap and are commingled down gradient of the source areas. The plumes were found to extend approximately 4,400 feet (ft) in a west-northwest direction from the sources.

The primary VOC of concern is trichloroethene (TCE), which serves as an indicator of VOC presence at the Site. Linde has conducted numerous site investigations, performed groundwater treatment, and conducted a removal action on their property at OU-2. Additionally, EPA conducted soil removal actions at OU-1 in 1994 and 2001 to remove the majority of the hexavalent chromium-contaminated soils serving as a source for groundwater contamination.

The highest concentrations of site contaminants have occurred in a shallow groundwater-bearing zone referred to as the alluvial aquifer. The alluvial aquifer is not used as a municipal water supply, although a limited number of private wells pump from this aquifer. TCE and chromium have been detected, although at considerably lower concentrations, in the deeper groundwater-bearing zone, the Troutdale aquifer. The Troutdale aquifer serves as a municipal water supply for the City of Vancouver (City) and Clark County. Municipal water supply wells are not located in areas known to contain elevated concentrations of chemicals detected at the Site.

A groundwater extraction and treatment system is used to capture and treat Site groundwater. On the basis of monitoring data collected since 1995, the constituents of concern have not migrated past the current monitoring well network. The monitoring and extraction well network for the Site is presented on Figure 3. The groundwater extraction and treatment system has been operational since 1990 and was constructed along the axis of the chromium plume. Since 1990, the system has been modified, upgraded, and expanded several times to handle the VOCs and chromium, to increase pumping and treatment capacity, and to increase removal efficiency.

Chromium is removed from the extracted groundwater using an ion-exchange system. VOCs are removed from the extracted groundwater using air stripping with granular activated carbon (GAC) treatment of the off-gases. The treatment facility is located on the Boomsnub property and the treated groundwater is discharged to an infiltration gallery located on the Linde property. The infiltration gallery was constructed during September and October 2005 and began receiving water in February 2006 (EA 2006). Prior to the construction of the infiltration gallery, the treated groundwater was discharged to the City sanitary sewer system.

The Record of Decision (ROD; EPA 2000) for OU-1 and OU-3, dated February 2000, identified the remedy for the Site as continued groundwater extraction and treatment until groundwater cleanup levels are achieved throughout the groundwater plume. The remediation goals include the reduction of total chromium in groundwater to 80 micrograms per liter (μg/L) and the reduction of TCE to 5 μg/L.

An Action Memorandum, dated September 2001 (EPA 2001), was issued by EPA identifying the requirements for remediation activities for OU-2. On 18 September 2002, Linde and EPA entered into an Administrative Order on Consent, EPA Docket Number Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)-10-2001-0114 (EPA 2002), addressing the specific design, construction, and operational requirements for a Non-Time-Critical Removal Action for OU-2 to implement the requirements of the Action Memorandum.

On 1 April 2002, Linde assumed interim responsibility for the operation and maintenance (O&M) of the groundwater extraction and treatment system.

In October 2002, URS Group, Inc. (URS), working under contract to EPA and in cooperation with representatives from the EPA Environmental Services Assistance Team, conducted additional soil characterization activities on Boomsnub property around the groundwater extraction and treatment system building. The purpose of the work was to identify areas in the

shallow soils (15 ft or less deep) with concentrations of chromium above the cleanup levels specified in the ROD. The results of the soil characterization activities were presented in the *Soil Characterization: Groundwater Treatment System Compound* report, finalized in April 2003 (URS 2003).

In September 2003, Linde began construction of the Non-Time Critical Removal Action at the Linde facility to address the VOC source area (OU-2). The selected remedial action was a combination of in-well stripping (IWS) and soil vapor extraction (SVE) systems to remove VOCs from both the soil and groundwater. The systems became operational in February 2004. A SVE system was operated from 2004 to 2008 to treat the vadose zone soil in OU-2. This system was turned off in 2008 with EPA approval.

The Toe-of-Plume Pilot Study (TOPPS), an *in-situ* treatment program, was performed in 2006 to treat an area of recalcitrant contamination.

In 2008, an investigation identified a new plume north of the Boomsnub/Airco Plume, in the area of well AMW-18 (EA 2008). This plume is referred to as the Northern Plume. The source of this plume is unknown, but it has been concluded that it is not the result of activities on the Boomsnub or Linde properties. The EPA is leading the effort to characterize and remediate this plume.

1.2 Purpose

The purpose of this report is to provide an overview of the activities for OU-2 and OU-3 at the Site. The reporting period is 1 January through 31 December 2009.

1.3 Operating Objectives

The operating objectives for OU-2, identified in the 2001 Action Memorandum (EPA 2001), include the following:

- Remove VOCs from the vadose zone that may be acting as the source to groundwater.
- Remove VOCs from groundwater on the western portion of the Linde property.
- Halt off-property migration of VOCs in groundwater.

The operating objectives for OU-3, as defined in the ROD (EPA 2000), include the following:

- Reduce further contaminant migration within the alluvial aquifer (expansion of the plumes).

- Continue mass removal activities.

- Reduce contaminant migration into the Troutdale aquifer.

The overall operating objectives for the OU-3 system are to limit the potential for impacted groundwater to migrate beyond current limits and to maximize mass removal while meeting operational objectives of the treatment system. Activities at the Site are designed to meet these overall objectives.

1.4 Organization of this Document

This report is divided into 8 sections and 2 appendices:

- Section 1 provides the background, purpose, and operating objectives.
- Sections 2 and 3 present summaries of the system operations for OU-2 and OU-3, respectively.
- Section 4 discusses groundwater monitoring and trends.
- Section 5 summarizes additional site activities conducted during the reporting period.
- Section 6 discusses the annual screening of groundwater monitoring data to determine what changes, if any, should be made to current system operations and/or the well sampling schedule.
- Section 7 summarizes conclusions and presents recommendations and planned activities for 2010.
- Section 8 lists the references cited in this document.

Information on chromium and TCE concentrations in groundwater is presented in Appendices A and B, respectively. The information is presented both by well groupings and by individual wells. The appendices are organized in sections, as follows:

- Tables reporting chromium and TCE groundwater concentrations for the last four semiannual sampling events are provided in Appendices A-1 and B-1, respectively. The historical maximum concentration detected in each well sampled is also provided. Only wells sampled during the reporting period are included.
- Graphs showing chromium and TCE concentration trends by well grouping are presented in Appendices A-2 and B-2, respectively. These graphs allow a comparison of trends within geographical or hydrogeological groupings. They also allow immediate comparison of concentrations between wells in a grouping and the ability to identify potential outliers.
- Graphs showing chromium and TCE concentrations over time for individual wells are presented in Appendices A-3 and B-3, respectively. Additional information obtained

as part of the annual screening of groundwater monitoring data is included with each graph for alluvial aquifer wells. Data provided in the graphs have been consolidated and are presented as the geometric mean for each year.

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2. OU-2 SYSTEMS OPERATIONS

This section provides a summary of the OU-2 IWS system operations and monitoring conducted between 1 January and 31 December 2009. Groundwater and vapor sampling and analyses were conducted to monitor the OU-2 systems in accordance with the procedures in EA's EPA-approved *Operations and Maintenance Manual, Combined In-Well Stripping and Soil Vapor Extraction System* (EA 2004a). Locations of the OU-2 treatment and monitoring wells are shown on Figure 4.

2.1 Systems Operations

The IWS system is operating within the performance standards established for the Site. System operations were manually checked by the Site operator weekly to confirm that the IWS system was operating within the design parameters. In addition, the operator remotely checked the IWS operations periodically using the Supervisory Control and Data Acquisition (SCADA) system to verify operations. The SCADA system is programmed to notify the operator of system malfunctions. Information specific to the system is presented in the Progress Reports (EA 2009e and EA 2009j) which are submitted on a semiannual basis.

2.1.1 IWS System

Since startup, the system has been running 24 hours per day, with the exception of downtime to perform routine maintenance activities. The system was in operation over 99 percent of the reporting period, exceeding the 90 percent availability specified in the CD. Minimal periods of down time were due to maintenance, power outages, and system alarms. Modifications and/or repairs that were made to the system during the reporting period are presented in Table 1.

Based on the current site conditions, the GAC treatment of the discharge from the IWS system was discontinued in October 2009, with EPA approval. Current concentrations of volatile organics in the discharge do not pose a risk to human health or the environment and are significantly lower than regulatory limits for air releases. The IWS system now vents directly to the atmosphere and vapor samples are no longer collected.

2.1.2 Off-Gas Treatment System

The off-gas treatment system was operational whenever the IWS system was in operation until October 2009, when its use was discontinued, with EPA approval.

2.2 IWS System Monitoring and Termination

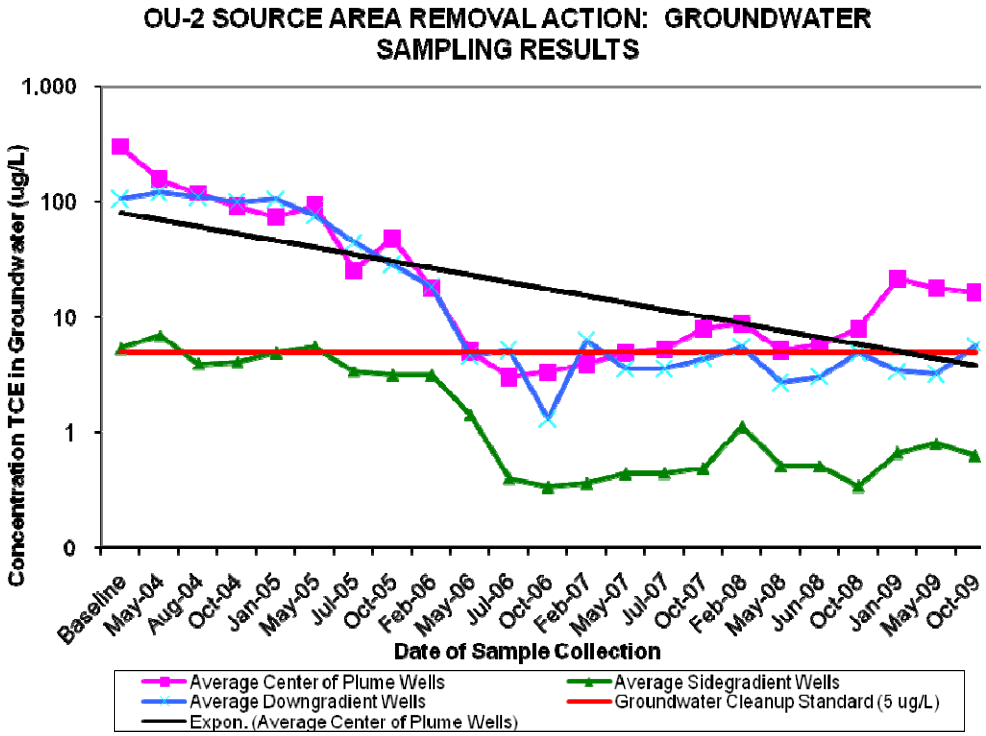
2.2.1 IWS System Monitoring

To monitor the IWS System performance, groundwater samples were collected from OU-2 monitoring wells in January, May and October 2009. The samples were submitted to Columbia

Analytical Services (CAS) of Kelso, Washington and analyzed for VOCs using EPA Method 8260B. The analytical results for the samples collected from these wells are presented on Table 2. Based on the annual screening and optimization of groundwater monitoring data conducted in accordance with the revised Closure Plan (EA 2009a) and presented in the 2008 Annual Report (EA 2009d) quarterly sampling was discontinued and samples were not collected in July. OU-2 samples will continue to be collected twice annually, concurrently with the samples collected for the semiannual sampling events in Spring and Fall.

The following figure shows the average concentration of TCE in each of three OU-2 well groupings: "center of plume", "sidegradient", and "downgradient". The "center of plume" wells are most representative of the source area. A steep decline in the average TCE concentration in the "center of plume" wells has occurred since the start of system operations; however, this trend has slowed since the majority of the contaminant mass has been removed from the aquifer. The most recent groundwater results (October 2009) indicate that the average TCE concentrations in the groundwater have decreased over 95 percent in the "center of plume" wells since system startup.

Over the last six quarters there has been an increase in the average TCE concentrations in the "center of plume". This increase is driven by an increase in TCE groundwater concentrations in well AMW-2A, from 18 µg/L in October 2008 to 55 µg/L in January 2009; 89 µg/L in May 2009, and a decrease to 60 µg/L in October 2009. Overall the TCE concentrations in AMW-2A continue on an overall decreasing trend.



Based on measured groundwater concentrations, the IWS System has removed more than 95% of the mass of TCE in groundwater since startup. As a result of the low TCE concentrations in groundwater, the system is not reducing the concentration of TCE as quickly as in previous years. The concentration of TCE in groundwater was measured at the upper screens from wells operating within the radius of influence of IWS wells IWS-3, IWS-4, IWS-5 and IWS-6. The following table presents these four IWS wells and associated wells within the radius of influence. This information is also shown on Figure 4.

IWS Wells	Associated Compliance Monitoring Wells Within Radius of Influence
IWS-3	AMW-56A & AMW-56C
IWS-4	**AMW-12A**, AMW-56A & AMW-56C
IWS-5	AMW-19A & AMW-19B
IWS-6	**AMW-1A**, AMW-1B, AMW-1C, **AMW-2A**, AMW-2B & RAMW-2C
Note: **Highlighted** wells had TCE concentrations above the cleanup level of 5 µg/L in 2009.	

2.2.2 IWS System Rebound Testing

EA is currently pulse-pumping the IWS system (alternating operating wells) to change groundwater circulation patterns and potentially increase TCE removal rates. Alternating the IWS wells causes the circulation patterns in the groundwater to change. This causes the groundwater to circulate in areas of higher TCE concentrations in the soil. Changes to the IWS operations are made after each groundwater sampling event. IWS wells operating during the 2009 reporting period are presented on the following table:

IWS Wells and Months of Operation

	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
IWS-3	■				■	■	■	■	■	■		
IWS-4	■	■	■	■	■	■	■	■	■	■		
IWS-5	■				■	■	■	■	■	■	■	■
IWS-6	■	■	■	■	■	■	■	■	■	■	■	■

Termination of the IWS system, as described in the revised Closure Plan (EA 2009a), continues and wells IWS-1, IWS-2, IWS-7, IWS-8 and IWS-9 are no longer in use. Rebound testing is being conducted to see if TCE concentrations increase/rebound in the areas where IWS wells have been shutdown. Rebound testing will continue through 2010 and TCE concentrations will be observed.

2.3 Air Quality Monitoring

Treatment of the off-gas from the IWS system was designed to meet the discharge limits of the Southwest Clean Air Authority (SWCAA), SWCAA 400, and Ecology requirements under

Washington Administration Code (WAC) 173-460. One of the goals of system monitoring was to measure effluent concentrations to ensure that they did not exceed these standards.

EA collected vapor samples from the IWS GAC (sample port G1) on 14 January, 12 March and 15 April 2009 to monitor for emissions. The vapor samples were sent to CAS in Simi Valley, California and, as required by the Site Quality Assurance and Sampling Plan (QASP), were analyzed for the nine primary chemicals of concern in the vapor at the site. Summary data sheets from the analytical laboratory can be found in Appendix B.2 of the Progress Reports (EA 2009e and EA 2009j). Detected results did not exceed regulatory discharge limits.

Trichlorofluoromethane is the only compound detected monthly and concentrations are well below the regulatory limit of 43,748 pounds per year. 1,4-dioxane was detected at a trace concentration in January only.

With EPA approval, the IWS system began venting directly to the atmosphere in October 2009 when the GAC treatment of the discharge from the IWS system was discontinued. Vapor sampling is no longer needed and has been discontinued (EA2009f and EA 2009i).

3. OU-3 SYSTEM OPERATIONS

This section provides a summary of OU-3 system operations, system performance, and plume monitoring conducted from 1 January to 31 December 2009. In addition, the TOPPS *in-situ* remediation, initiated in 2006 to address recalcitrant contaminants in the Toe-of-Plume area, is also briefly discussed.

Groundwater sampling and analyses were conducted in accordance with the procedures in the EPA-approved Site QASP (EA 2004b).

3.1 System Operations

Routine system operation details are presented in the Progress Reports (EA 2009e and EA 2009j) submitted to EPA twice a year. Significant modifications and/or repairs that were made to the system during the reporting period are presented in Table 1.

3.1.1 Groundwater Extraction System

The groundwater extraction and treatment system operated within the performance standards established for the Site. The extraction well pumping rates were recorded once a month during the reporting period. The recorded pumping rates are shown in Table 3.

3.1.2 Groundwater Treatment System

Routine monitoring of the treatment system influent and effluent was conducted throughout the year. Monitoring included analysis of TCE, chromium, and pH.

Treatment system components are briefly described in the following sections.

3.1.2.1 Ion Exchange and Air Stripper Systems

During the reporting period the ion exchange system had an average chromium removal rate of over 93 percent and the air stripper system averaged a TCE removal rate of approximately 98 percent.

3.1.2.2 Linde Infiltration Gallery

Treated groundwater from the Site treatment system is discharged back into the alluvial aquifer through the infiltration gallery. The gallery is located in the southeast corner of the Linde property and is designed to accept treated water at 160 gallons per minute. No modifications or significant repairs were made to the infiltration gallery during the reporting period.

As discussed in the October 2008 – March 2009 Progress Report (EA 2009e), the Site groundwater treatment system continues to meet the discharge criteria established by EPA. The

infiltration gallery initial discharge standards were 3 µg/L for TCE and 24 µg/L for total chromium. As of February 2009, the discharge standards were revised to reflect a new resin cycle (EA 2009b). The revised maximum allowable effluent concentrations have been established as 1.9 µg /L for TCE and 19.2 µg /L for chromium. Effluent discharged to the infiltration gallery during 2009 met all of these criteria.

The infiltration gallery wells have been monitored for chromium and TCE on a semiannual basis. Results have all been near background concentrations and are well below the discharge standards.

3.2 System Performance

3.2.1 Water Treated

During the reporting period, 79,544,652 gallons of groundwater were treated and discharged to the Linde infiltration gallery. All of the treatment system effluent was discharged to the infiltration gallery. One discharge of 270 gallons of treated TOPPS well purge water was made to the City sanitary sewer system in July 2009.

3.2.2 System Availability

The treatment system was operational for approximately 8,674 hours or approximately 99 percent of the reporting period. The availability ranged from 93 percent in September to 100 percent in February, July, August, and October. The percent availability includes actual minutes of operation and scheduled down time.

3.2.3 Mass Removal

On the basis of measured influent and effluent concentrations and the total monthly groundwater flow, approximately 43 pounds of chromium and 15 pounds of TCE were removed by the groundwater extraction and treatment system during 2009. This brings the cumulative total mass of chromium and TCE removed to approximately 22,190 and 2,149 pounds, respectively, since initiating operations in 1990. The mass of contaminants removed during the reporting period continued to decline compared to the previous reporting period. This is consistent with a continuing downward trend over the past few years and is reflected in the average influent concentrations of chromium and TCE at the Site. Figure 5 shows the cumulative removal amounts for total chromium and TCE since June 1999.

Figure 6 depicts the total chromium and TCE concentrations in the treatment system influent and effluent. Figure 7 provides a monthly comparison of influent chromium and TCE concentrations over the past nine years.

3.3 Plume Monitoring

3.3.1 Semiannual Site-wide Groundwater Monitoring

Semiannual Site-wide groundwater monitoring was conducted in Spring 2009 and Fall 2009, following the EPA approval of associated QASP addenda (EA 2009c and EA 2009g). The Fall sampling event included wells on a five year sampling schedule. Samples were analyzed for chromium using EPA Method 200.7 and/or VOCs using EPA Method 8260B. When well purge water did not meet turbidity standards, a dissolved chromium sample was collected in addition to the total chromium sample.

The samples were submitted to CAS of Kelso, Washington for analysis. One sample delivery group from the Fall sampling event, including chromium and VOC data, was validated by EA personnel.

In general, the semiannual sampling events were conducted as planned and no significant issues or problems were encountered. However, a number of changes were made to well sampling frequencies during 2009. These changes are listed in Table 4, along with the EPA approval date and justification for each.

3.3.2 Water Level Gauging Program

Depth-to-groundwater measurements were collected from monitoring and extraction wells at the Site during the Spring and Fall semiannual sampling events. Groundwater level data is collected to determine the groundwater flow direction and gradient. During both semiannual events in 2009, the measurements were made while the groundwater treatment system was actively pumping to assess groundwater flow under drawdown conditions.

The horizontal gradients for the alluvial and Troutdale aquifers were determined using data from the Fall 2009 water level gauging event. For the alluvial aquifer, the gradient across the Linde property was approximately 0.009 ft/ft. This area is impacted by the infiltration gallery. Downgradient, within the plume area, (using an average from just west of the Boomsnub property to the Toe-of-Plume) the gradient was approximately 0.004 ft/ft. The flow direction for both areas of the plume (Linde and downgradient) is generally to the west-northwest.

For the Troutdale aquifer, the average hydraulic gradient across the Site area was approximately 0.007 ft/ft. The flow direction in this aquifer is generally to the west-southwest.

Because the groundwater extraction system was actively pumping during water level gauging, the vertical gradient could not be determined accurately. Generalized groundwater elevation contour maps for the alluvial and Troutdale aquifers for the Fall 2009 water level gauging event are presented in Figures 8 and 9, respectively. The flow direction and horizontal gradient in both aquifers were similar to those observed previously.

Water level gauging and groundwater monitoring results indicate that hydraulic containment of the plumes has been maintained.

3.4 Toe-of-Plume Pilot Study *In-Situ* Remediation

Since 1995, the groundwater extraction and treatment system at the Site has made significant progress in reducing plume size and contaminant concentrations in groundwater. As of 2006, contamination in the area referred to as the original Toe-of-Plume had been reduced to a single "hot spot" immediately upgradient of extraction well MW-41. The hot spot area was believed to be located in the low permeability silt layer, at a depth of approximately 80 to 90 ft below ground surface. Experience with other extraction wells at the Site has demonstrated that contaminants in the silt layer are not effectively removed by pumping. Therefore, the TOPPS *in-situ* remediation was initiated in September 2006 in an effort to remediate the hot spot in the Toe-of-Plume area. Groundwater samples from selected Toe-of-Plume wells were collected during Spring and Fall 2009 sampling events to continue performance monitoring.

Groundwater samples collected from TOPPS wells MW-41 and AMW-63 during the Spring and Fall 2009 sampling events were analyzed for several parameters in addition to chromium and VOCs. These parameters are used to evaluate the continued performance of the EHC-M™ *in-situ* treatment. Additional monitored parameters included total organic carbon (TOC), dissolved iron, ferrous iron and dissolved oxygen (DO).

Results from the 2009 sampling events are provided in the following table and on Table 5. Concentrations on the following table, both TOC and dissolved iron, are close to the baseline concentrations, and indicate reduced influence from the EHC-M™. For future monitoring events only TCE and chromium concentrations will be monitored to test for rebound.

Concentration of Dissolved Iron and TOC in TOPPS Groundwater Samples

	Dissolved Iron (µg/L)		TOC (µg/L)	
	AMW-63*	**MW-41**	**AMW-63***	**MW-41**
September 2006[1]	*	3.6 B	*	0.47 J
January 2007	56.3	1150	0.49 J	1.5
May 2007	46.8	491	0.37 J	0.6
July 2007	111	1820	0.35 J	0.6
October 2007	13.2 B	842	0.5	1.3
May 2008	64.4	282	0.32	0.7
October 2008	19.7 B	206	0.6	0.8
May 2009	9.0	54.1	0.6	1.0
October 2009	18.5 J	24.8	0.57	0.63

NOTES:
µg/L = Micrograms per liter.
* = No data, new well installed in November 2006.
[1] = Pre-injection data.
J = Estimated concentration that is less than the method reporting limit (MRL) but greater than or equal to the method detection limit (MDL).
B = The analyte was found in the associated method blank at a level that is significant relative to the sample result.

3.5 Infiltration Gallery Monitoring

The Linde infiltration gallery was constructed on the Linde property in Fall 2005 to discharge treated groundwater from the OU-3 treatment system into the alluvial aquifer. In February 2006, the Linde infiltration gallery became operational and discharges to the City sanitary sewer were discontinued.

Groundwater samples are collected from four monitoring wells as part of the infiltration gallery monitoring program. The four wells are AMW-6A, AMW-7A, AMW-10A, and AMW-11A. Baseline sampling of these wells was conducted in October 2005, prior to the startup of the infiltration gallery. TCE was not detected in these monitoring wells and chromium was detected at concentrations well below the cleanup level. Following start-up, the wells were sampled on a quarterly basis for six quarters. The wells are currently sampled semiannually and analyzed for VOCs and chromium. The monitoring results are provided in Table 6.

Effluent discharged to the Linde infiltration gallery has continued to have concentrations below the infiltration gallery discharge standards of 1.9 µg/L for TCE and 19.2 µg/L for total chromium. TCE and chromium concentrations in groundwater from the infiltration gallery monitoring wells remain well below the cleanup levels.

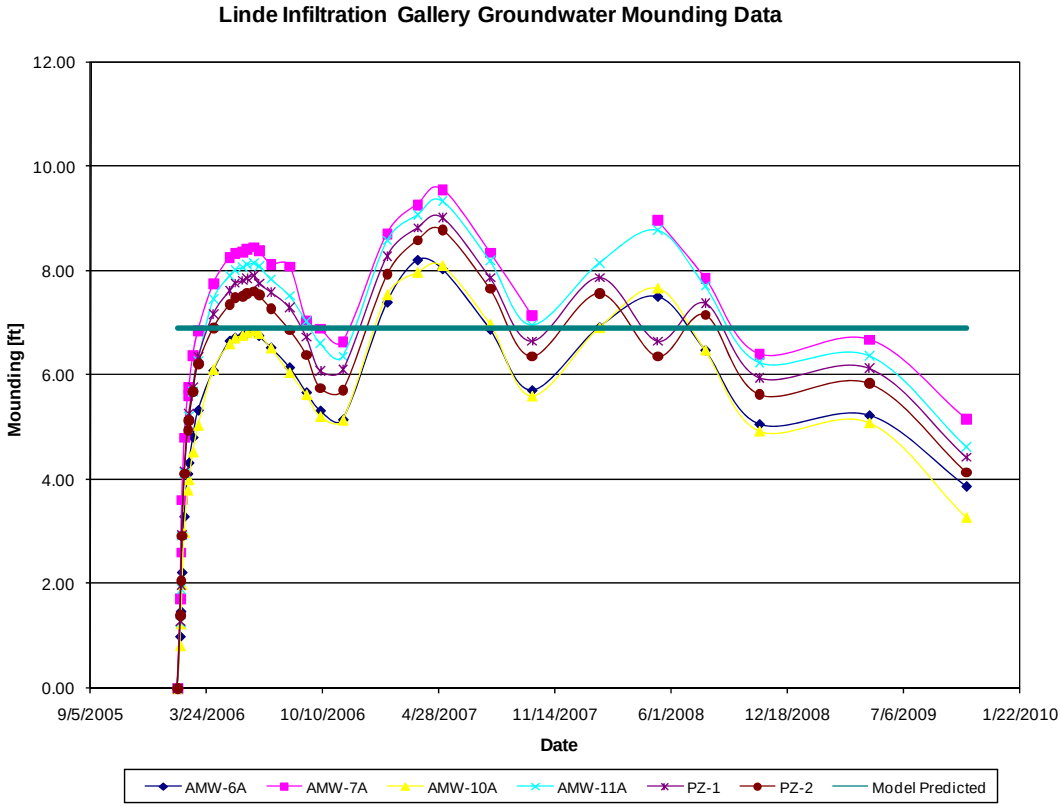
Since startup of the infiltration gallery, groundwater elevations have been monitored periodically to assess the impact on the water table near the gallery. The water table directly under the infiltration gallery is approximately 7 ft above the natural water table. The following table shows depth to water in the infiltration gallery monitoring wells during the reporting period.

Water Level Measurements

Date	AMW-6A	AMW-7A	AMW-10A	AMW-11A	PZ-1	PZ-2
May 2009	24.24	22.78	24.40	22.24	22.93	25.3
October 2009	25.60	24.30	26.21	23.98	24.63	27.00

NOTE:
Water levels are measured as depth to water from the top of well casing in feet.

The following figure shows the water table fluctuations in the infiltration gallery area since startup in February 2006 compared to the maximum mounding predicted during the design of the infiltration gallery using the groundwater model developed for the Site. The difference between the actual and predicted change in water levels can be attributed to seasonal fluctuations in the water table. During the last reporting period water level data for May and July 2008 appeared to have inconsistent fluctuations. Water level observations during the 2009 reporting period did not indicate any inconsistencies. No changes to the infiltration gallery were made during the reporting period.



3.6 Systems Under Review

The following areas of the system may require future modifications:

- **Rebound Testing/System Modifications in proposed sports fields areas —** Clark County and the Church of God are in the planning process of building sports fields on the Clark County property in the 3700 block on the north side of 78th St. and the Church of God property bordering the County property to the west. System modifications may be required due to the proposed development plans, and EA is working with the County, the Church of God and EPA during the planning process to understand how the development of the sports complex will impact the current system. As discussed in a September 2009 letter to EPA (EA 2009h), extraction well MW-21D will have to be raised 15 to 20 feet to accommodate the sports field development. The pipeline between MW-21D and MW-22D will have to be reconfigured so a low point or trap is not created in the secondary containment pipe.

  Rebound testing is being conducted to determine if extraction well MW-27D can be used for monitoring only. The pump in well MW-27D was turned off on 3 November 2009 and wells MW-27D and MW-25D are being sampled on a quarterly frequency for VOCs and chromium to document any changes to contaminant concentrations. Quarterly sampling of these two wells will continue for one year or until the sports field construction begins, at which time the effectiveness of MW-27D as an extraction well will be re-evaluated (EA 2009h).

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4. GROUNDWATER MONITORING AND TRENDS

This section presents the concentration trends observed in groundwater since 1995, when EPA assumed regulatory responsibility for the Site, with a focus on data collected during 2009. Groundwater sampling and analyses were conducted to monitor the groundwater quality in extraction and monitoring wells in accordance with the procedures in the Site QASP (EA 2004b). Groundwater sampling and analysis of the OU-2 monitoring wells on the Linde property was conducted in accordance with the OU-2 O&M Manual (EA 2004a).

Task-specific QASP addenda are prepared for each semiannual sampling event to be compliant with the schedule established in the Long-Term Monitoring Plan (LTMP; EA 2007) and updates. The sampling schedule is reviewed and updated annually. The sampling schedule for 2009 was presented in the 2008 Annual Status Report (EA 2009d). Additional changes made during 2009 are presented in Table 4.

The Monitoring and Remediation Optimization System (MAROS) software was used to perform an annual screening of groundwater monitoring data for the Site, as described in Section 6. Data used for the review were those collected from 1995 through the end of 2009. Results from this screening were used in conjunction with professional judgment to evaluate the need for changes to the well sampling frequencies for 2010.

Table 7 presents the 2009 well sampling frequencies along with the recommended changes for 2010. Also included in Table 7 are well construction details, historical maximum concentrations of TCE and chromium in each well, and the most recent concentrations of TCE and chromium in each well.

4.1 Well Groupings

To facilitate analysis of contaminant concentrations across the Site, sampling data are grouped by aquifer and geographical location as follows:

- Alluvial aquifer wells
  - Upgradient wells
  - TCE Source wells (includes OU-2 monitoring wells)
  - Proximal wells
  - Intermediate wells
  - Church of God wells
  - Toe-of-Plume wells (including Sentinel and Other toe wells)
- Troutdale aquifer wells.

The aquifer and geographic well groupings are presented on Figure 10. All wells except those identified as Troutdale aquifer wells are screened within or slightly below the alluvial aquifer.

4.2 Groundwater Trends

4.2.1 Overview

Groundwater monitoring results indicate that the current pumping scheme is maintaining control of the plume and that overall concentrations for both chromium and TCE are on decreasing trends.

The highest concentration of chromium during the 2009 reporting period was detected in the sample collected from well MW-4B (634 µg/L) during the Fall 2009 sampling event. The highest concentration of TCE was detected in the sample collected from well AMW-18 (320 µg/L) during the Spring 2009 event. The elevated TCE concentrations detected in well AMW-18 are from the Northern Plume (see Section 4.2.2.4) and do not relate to the OU-3 TCE plume. The highest concentration of TCE in groundwater within the Site plume was detected in the sample from well MW-18E (160 µg/L) during the Fall 2009 event. Wells for which the groundwater sampling results for 2009 exceeded the site cleanup levels for chromium and TCE are highlighted on Figures 11 and 12, respectively.

For this report, tables, figures, and graphs were used to assist in evaluating groundwater trends across the Site.

The extent of impacted groundwater, as determined from well sampling results obtained in 1995 and Fall 2009 is presented on Figure 13 for chromium and on Figure 14 for TCE. These figures illustrate that groundwater remedial actions have been effective in mass removal and in reducing the footprints of both the chromium and TCE plumes.

Chromium and TCE concentration trends are presented in Appendices A and B, respectively. The information is presented both by well groupings and by individual wells. Data provided for the individual wells have been consolidated and are presented as the geometric mean for each year.

Concentration trend charts for individual alluvial aquifer wells include additional statistical information obtained from the MAROS evaluation. This is discussed further in Section 6.

Specific information on trends observed in the well groupings within the monitoring network is discussed in the following sections. Concentration summary tables used in preparing these sections, including wells sampled and analytical results, are presented in Appendices A-1 (chromium) and B-1 (TCE).

4.2.2 Alluvial Aquifer

4.2.2.1 Upgradient Wells

The Upgradient wells are located on the eastern half of the Linde property, east (upgradient) of the TCE source area (Figure 10). Four infiltration gallery wells are also included in this area.

Groundwater samples from the wells were analyzed for chromium and TCE and concentrations detected were well below the cleanup levels during both sampling events.

4.2.2.2 TCE Source Wells

The TCE Source wells are located on the western half of the Linde property (Figure 10), in the vicinity of the TCE-impacted soil. These wells are typically sampled for TCE only, as part of the OU-2 monitoring program.

The OU-2 quarterly analytical results for the 2009 reporting period are presented in Table 2. For comparison, results of baseline sampling (samples collected prior to system start-up) are also presented on the table. Quarterly sampling of OU-2 wells was discontinued as of the July 2009 sampling event, as agreed by EPA. Sampling of the OU-2 wells will continue to coincide with the Semiannual sampling of OU-3 wells.

	January 2009	**Spring 2009**	**Fall 2009**
No. of Wells Sampled	16	16	27
No. of Wells with TCE Above Cleanup	3	3	5

Of the 16 TCE Source area wells sampled during the January quarterly and Spring 2009 events, only three groundwater samples had TCE concentrations above the cleanup level of 5 μg/L: AMW-2A, AMW-12A, and MW-1A. Of the 27 wells sampled during the Fall 2009 event, only five groundwater samples had TCE concentrations above the cleanup level of 5 μg/L: AMW-1A, AMW-2A, AMW-12A, AMW-53A, and MW-1A. These wells are all "A" level wells. "A" level wells are the shallowest wells of the well cluster. TCE did not exceed the cleanup level in samples from any of the deeper "B" or "C" level wells.

TCE concentrations in groundwater from wells AMW-1A and AMW-53A continue to fluctuate. TCE concentrations in groundwater from wells AMW-2A, AMW-12A and MW-1A remained consistently above the cleanup level during the reporting period.

4.2.2.3 Proximal Wells

The Proximal wells are located west of the maintenance building (former machine shop) on the Boomsnub property and east of NE St. Johns Road (Figure 10). These wells are proximal to the chromium source. During the Fall sampling event samples were collected from wells scheduled to be sampled on a five year basis, in addition to those sampled on a semi-annual basis. Analytical results are presented in Appendices A-1 (chromium) and B-1 (TCE).

	Spring 2009	Fall 2009
No. of Wells Sampled for Chromium	4	21
No. of Wells with Chromium Above Cleanup	1	7
No. of Wells Sampled for TCE	4	18
No. of Wells with TCE Above Cleanup	4	6

Chromium

All four extraction wells in this group (MW-6B, MW-10B, MW-10C, and PW-1B) were actively pumping and were sampled during the Spring and Fall 2009 sampling events. One of the four extraction wells sampled, MW-10C, had chromium concentrations above the 80 µg/L cleanup level; 183 µg/L in Spring and 94.5 µg/L in Fall. Historically, chromium concentrations in groundwater from wells in this area have fluctuated, with an overall decreasing trend. The remaining three wells sampled in the Spring had chromium concentrations below the cleanup level.

During the Fall 2009 sampling event chromium concentrations were above the 80 µg/L cleanup level in groundwater samples collected from 7 of the 21 wells sampled: MW-10C, MW-2A, MW-3A, MW-4A, MW-4B, MW-4BShed, and MW-6A. Groundwater samples from well MW-4B, near the chromium source, continue to contain some of the highest concentrations of chromium in groundwater at the Site.

Chromium concentrations increased significantly in groundwater samples from two wells. In well MW-2A, the chromium concentration increased from 66 µg/L (detected in Fall 2008) to 343 µg/L; however, such large fluctuations are typical for this well. In well MW-6A, the chromium concentration increased from below the detection limit (the last time the well was sampled, in 1997) to 167 µg/L. Although well MW-6A has not been sampled in many years, this well has a history of large fluctuations in chromium concentrations. Chromium concentrations in groundwater from three other wells increased somewhat. In well MW-3A, chromium increased from 132 µg/L in Fall 2008 to 187 µg/L; such fluctuations are not uncommon for this well. In well MW-9C chromium increased from 12.8 µg/L in Fall 2004 to 65.4 µg/L; the Fall 2009 concentration is approaching the cleanup level. Historically, chromium concentrations in groundwater from wells in this area have fluctuated, with an overall decreasing trend.

TCE

During the Spring event all four extraction wells in this area were sampled while actively pumping (MW-6B, MW-10B, MW-10C, and PW-1B). Groundwater from all four wells sampled during the Spring event had TCE concentrations above the cleanup level of 5 µg/L. During the Fall event concentrations in two of these extraction wells, PW-1B and MW-10C, dropped below the cleanup level. Notably; the TCE concentration in MW-10C dropped below the cleanup level for the first time.

In addition to the four extraction wells sampled, 14 additional wells were sampled for TCE during the Fall event. TCE concentrations exceeded the cleanup level in six of these wells: MW-4A, MW-6B, MW-7B, MW-10B, MW-12C, and MW-13C. Twelve of the wells sampled in this area are on a five year sampling frequency. Most of these infrequently sampled wells are part of well clusters and only the well with the optimal screen depth (i.e., highest contaminant concentrations) is sampled frequently. TCE concentrations in groundwater samples from wells that have not been sampled in five or more years were similar to the previous results or lower. TCE concentrations in the remainder of the wells in this group have decreased since the last time they were sampled, with one exception; in well MW-13C, TCE increased slightly from 2.1 µg/L in Fall 2008 to a concentration slightly above the cleanup level in Fall 2009 (5.6 µg/L). TCE concentrations in groundwater from this area continue on an overall decreasing trend.

4.2.2.4 Intermediate Wells

The Intermediate wells are located west of NE St. Johns Road, north and south of NE 78th Street (Figure 10). The number of wells sampled is shown on the following table. Wells sampled also include AMW-60 and PZ-39. Well AMW-60 is on a five-year sampling schedule and was last sampled in Spring 2005. Analytical results are presented in Appendices A-1 (chromium) and B-1 (TCE). Piezometer PZ-39 was sampled for the first time because it is being considered as a replacement monitoring well for nearby well MW-40. PZ-39 is screened at a lower elevation than MW-40, closer to the zone of maximum TCE groundwater concentrations. Additionally, well MW-40 may need to be decommissioned during development of the proposed sports fields on the Clark County property in this portion of the Site. In general, chromium and TCE concentrations have been on a decreasing trend in groundwater samples collected from these wells since 1995, although the concentrations are still above the cleanup level in a number of wells.

	Spring 2009	**Fall 2009**
No. of Wells Sampled for Chromium	5	13
No. of Wells with Chromium Above Cleanup	4	4
No. of Wells Sampled for TCE	8	15
No. of Wells with TCE Above Cleanup	7	11

Chromium

All five extraction wells in this area were actively pumping and were sampled during both the Spring and Fall sampling events. Groundwater from four of the five extraction wells sampled in this group had chromium concentrations above the cleanup level of 80 µg/L (MW-14C, MW-18D, MW-19D, and MW-20D) during both sampling events. Chromium concentrations in groundwater samples from these wells generally fluctuate with an overall decreasing trend. In addition to the five extraction wells sampled, eight other wells were sampled during the Fall event and chromium concentrations from these additional wells were all below the 80 µg/L

chromium cleanup level. Chromium concentrations in groundwater in this area continue on a decreasing trend.

TCE

Groundwater sampling of the Intermediate Wells for TCE included wells within the Boomsnub/Airco Plume area and three monitoring wells (AMW-17, AMW-18, and MW-15E) which also monitor the Northern Plume area. During the reporting period, TCE concentrations in samples collected from the Boomsnub/Airco Plume ranged from below the detection limit in AMW-60 to 160 µg/L in MW-18E. TCE concentrations in samples collected from the Northern Plume area ranged from 1.2 µg/L in AMW-17 to 320 µg/L (Spring 2009) in AMW-18.

Groundwater samples from seven intermediate wells had TCE concentrations that remained above the cleanup level of 5 µg/L during both the Spring and Fall sampling events. Five of the seven wells with TCE exceedances monitor the Boomsnub/Airco Plume and include MW-14C, MW-14E, MW-18D, MW-19D, and MW-20D; and two of the wells with TCE exceedances monitor the Northern Plume, AMW-18 and MW-15E. During the Fall event, four additional wells had TCE concentrations above the cleanup level: AMW-59, CPU-14, MW-18E and PZ-39.

TCE concentrations in well AMW-18, increased during 2006 and 2007, but have been decreasing since 2008 (EA 2010). TCE concentrations in well AMW-59 (a silt well) have been fluctuating but appear to be on a downward trend. TCE concentrations in well CPU-14 have remained relatively constant since Spring 2007. TCE concentrations in groundwater samples from the remaining wells have been on a decreasing trend.

4.2.2.5 Church of God Wells

The Church of God wells are located between the west side of the gravel roadway in the vacant field north of NE 78th Street and the western Church of God property line (Figure 10). The number of wells sampled is shown on the following table. In general, chromium and TCE concentrations in groundwater samples collected from wells in this area have been on a decreasing trend since 1995 although the concentrations are still above cleanup levels in several wells.

	Spring 2009	**Fall 2009**
No. of Wells Sampled	8	11
No. of Wells with Chromium Above Cleanup	1	1
No. of Wells with TCE Above Cleanup	3	3

Chromium

Wells AMW-14 and AMW-27 were the only wells with chromium concentrations above the cleanup level during the reporting period. Well AMW-14 had a chromium concentration slightly above the 80 µg/L cleanup level during the Fall event (83.8 µg/L); however, it was not sampled during the Spring event. Groundwater from well AMW-27 had a chromium concentration

slightly above the 80 µg/L cleanup level during the Spring event (87.3 µg/L) but dropped below the cleanup level of for the first time during the Fall event. This well is screened in the silt layer (low permeability) below the alluvial aquifer. Other wells in this group are screened in sand (higher permeability) above this silt layer and typically exhibit lower chromium concentrations.

TCE
Groundwater samples collected from three wells had TCE concentrations above the 5 µg/L cleanup level during both the Spring and Fall sampling events: AMW-27, MW-21D and MW-22D. Concentrations in these wells continue on a decreasing trend.

4.2.2.6 Toe-of-Plume Wells

The Toe-of Plume wells are located west of the Church of God building (Figure 10). These wells are divided into two groups for discussion purposes: Sentinel wells and Other Toe wells. Linde initiated the TOPPS *in-situ* remediation program in September 2006 in order to achieve cleanup levels for TCE and chromium in the toe-of-plume area. The number of wells sampled during the 2009 sampling events is shown on the following table.

	Spring 2009	**Fall 2009**
No. of Wells Sampled	5	8
No. of Wells with Chromium Above Cleanup	0	0
No. of Wells with TCE Above Cleanup	1	1

Sentinel Wells: The Sentinel wells are monitoring wells located at or beyond the historical leading edge of the chromium plume. One Sentinel well was sampled during the reporting period. Chromium concentrations in groundwater samples collected from this well have remained consistently below the cleanup level. TCE has never been detected in groundwater samples from the Sentinel wells.

Other Toe Wells: Other Toe wells are located west of the Church of God property and east of the Sentinel wells. Four Other Toe Wells were sampled during Spring 2009 and seven were sampled during Fall 2009.

With one exception, chromium and TCE concentrations in groundwater samples collected from the Other Toe Wells were below the cleanup levels in 2009. TCE concentrations in well MW-35 were slightly above the 5 µg/L TCE cleanup level for both the Spring (5.5 µg/L) and Fall (6.8 µg/L) sampling events. TCE concentrations in groundwater from well MW-35 have been fluctuating above and below the cleanup level since 2004.

4.2.3 Troutdale Aquifer Wells

One Troutdale aquifer well was sampled in Spring 2009 for chromium and TCE. In Fall 2009, four Troutdale wells were sampled for chromium and TCE. The number of samples collected is shown on the following table.

	Spring 2009	Fall 2009
No. of Wells Sampled	1	4
No. of Wells with Chromium Above Cleanup	0	0
No. of Wells with TCE Above Cleanup	1	3

Chromium
Chromium was not detected above the 80 µg/L cleanup level in any of the groundwater samples collected during the reporting period from Troutdale aquifer wells.

TCE
During the Spring 2009 sampling event TCE was detected above the 5 µg/L cleanup level in groundwater collected from the private well (9.5 µg/L) on the Bennett property (Parcel No. 149147-000), and remained above the cleanup level during the Fall 2009 event (10 µg/L). TCE was also detected above the cleanup level in groundwater collected from wells AMW-24 (13 µg/L) and MW-33 (12 µg/L) during the Fall 2009 event. These concentrations are similar to those reported for the past several years.

4.2.4 TCE as a VOC Indicator

In addition to chromium and TCE, groundwater samples were also analyzed for additional VOCs as listed in the ROD (EPA 2000). Of these additional parameters only tetrachloroethene (also known as perchloroethylene, PCE) and 1,1-dichloroethene (1,1-DCE) exceeded cleanup levels during the reporting period.

TCE analytical results are used as a surrogate for the other VOCs in order to streamline data reporting. TCE continues to be an effective indicator of VOCs. In wells where TCE is below the cleanup level the associated VOCs are also below the cleanup level. The selected VOCs with concentrations above the cleanup level were only found in wells where TCE was also detected above the cleanup level. For comparison purposes, the following table presents TCE and VOCs that exceeded the cleanup level at least once during 2009. Wells where TCE concentrations exceeded the cleanup level but had no associated selected VOCs above the cleanup level were not included on the table.

Well Group	Well	TCE	PCE	1,1-DCE
January 2009				
Intermediate	AMW-18	300		1.3
Spring 2009				
Intermediate	AMW-18	320		1.1
	MW-14E	100	6.1	6.5
	MW-18D	97		1.6
	MW-19D	53		2.5
	MW-20D	53		4.9
Church of God	AMW-27	23	5.4	1.3
	MW-21D	11		2.1
Troutdale	Bennett	9.5		2
Fall 2009				
Intermediate	AMW-59	130		34
	MW-14E	87		4.1 J
	MW-18D	86		1.3 J
	MW-18E	160		24
	MW-19D	44		2.1 J
	MW-20D	42		3.8 J
	PZ-39	99		15
Church of God	AMW-27	19		1.1 J
	MW-21D	11		2.1 J
Troutdale	AMW-24	13		2.0
	Bennett	10		1.9
	MW-33	12		1.7
Cleanup or Guidance Level		5	5	1

Notes: Results reported in micrograms per liter (µg/L).
J = The result is an estimated concentration that is less than the Method Reporting Limit (MRL) but greater than or equal to the Method Detection Limit (MDL).

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5. OTHER ACTIVITIES

During the reporting period, the following additional activities were performed.

5.1 Access Agreements and Easements

Per the CD, EA continued pursuing access agreements and easements for non-Linde owned properties with the purpose of gaining access to conduct activities related to the CD. These agreements will comply with the requirements of Sections 25 and 26 of the CD (EPA 2007a). EA has recorded agreements or amendments from eleven property owners. Negotiations are underway with the remaining designated property owners. EA has requested help from, and continues to work with EPA, to gain complete access agreements from property owners.

5.2 Sustainability Practices

Linde and EA have a commitment to sustainable practices at the Site. In the office and in the field, attempts are made to reduce, reuse and recycle materials/waste whenever possible. The following is a list of sustainability practices at the Site:

- Recycling cans, cardboard, paper, and plastic.
- Use of chlorine free, wood free, or recycled paper products for reports.
- Phasing out old plastic report covers and replacing them with plastic covers made out of recycled milk jugs.
- Submitting the majority of reports electronically.
- Re-using the back side of used paper to print draft documents and printing final documents double-sided.
- Receiving and storing a large portion of laboratory data electronically.
- Using passive diffusion bag samplers (PDB) for groundwater sampling in select wells where there is no dedicated pump, eliminating the use of disposable tubing.
- Using dedicated pumps in many wells, eliminating the use of disposable tubing.
- Using the infiltration gallery to discharge treated groundwater from the OU-3 treatment system back into the alluvial aquifer instead of the sanitary sewer, eliminating the processing of hundreds of thousands of gallons of clean water through the sewage treatment plant.

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6. ANNUAL SCREENING OF GROUNDWATER MONITORING DATA

This section summarizes the second annual screening of groundwater monitoring data for the Site. The screening was conducted in accordance with the revised Closure Plan (EA 2009a). The annual screening evaluates data collected at the Site since 1995 (the year the Site was placed on the National Priorities List) for each alluvial aquifer monitoring and extraction well currently sampled. The data are used to determine what changes, if any, should be made to current system operations and the well sampling schedule, and to determine if cleanup levels have been attained in groundwater.

A combination of quantitative and qualitative evaluations of the Site data was used to derive the recommendations for the annual screening. The Air Force Center for Environmental Excellence (AFCEE) MAROS version 2.2 was used for the quantitative evaluation. MAROS is a computer program developed to optimize long-term groundwater monitoring, determine when to terminate groundwater treatment, and demonstrate cleanup level attainment using statistics (AFCEE 2006). Using statistical analyses, MAROS is capable of making recommendations on sampling frequencies and is able to determine if groundwater concentrations are statistically below cleanup levels. The qualitative evaluation consisted of professional judgment based on over 15 years of Site experience. The quantitative and qualitative evaluations do not always reach the same conclusions. When this occurs, professional judgment takes priority.

Annual screening recommendations fall into five categories:

- Redundancy: Determines if a well provides duplicate data or unique data on a constituent (TCE and/or chromium) that cannot be seen in other wells.

- System Operations: Determines if modifications to operations are necessary to achieve concentrations below cleanup levels.

- Termination: Determines whether constituents detected in groundwater samples from wells are statistically below cleanup levels. Aids in the decision to terminate treatment and/or discontinue monitoring.

- Sampling Frequency: Determines sampling frequencies for wells that require continued monitoring.

- Attainment: Used in the analysis of attainment wells as identified in the Closure Plan (EA 2009a). Attainment wells are considered “attained” if contaminant concentrations in post-treatment samples from the well are statistically below cleanup levels. Aids in the decision to close down an area of concern and leads to site closure.

Factors used in the quantitative evaluation are presented in the 2009 MAROS Results Summary Table (Table 8). In the table, wells are presented by well groupings (as presented in Section 4.1)

to demonstrate what is happening in specific areas of the plume. Note that wells designated for no further sampling in the 2008 Annual Report are not included in this evaluation.

6.1 Redundancy

Monitoring of a well may be discontinued based on the redundancy analysis in MAROS. This analysis evaluates whether or not a well provides unique information and recommends elimination of wells that do not provide unique information. If MAROS indicates a well is statistically redundant for both TCE and chromium, it may be eliminated from future monitoring because there will be no statistically significant loss of information.

The MAROS redundancy analysis is based on the Delaunay method. "The well redundancy analysis using the Delaunay method is designed to select the minimum number of sampling locations based on the spatial analysis of the relative importance of each sampling location in the monitoring network. The approach allows elimination of sampling locations that have little impact on the historical characterization of a contaminant plume" (EPA 2007b).

No wells were found to be redundant for TCE or chromium during the 2009 evaluation (Table 8).

6.2 System Operations

If contaminant concentration trends in a well are increasing or fluctuating above and below cleanup levels, modifications to the extraction system operations may be necessary. Trend analysis was conducted using MAROS and graphs of contaminant concentrations. Professional judgment was used to determine if continued operations would bring the well into compliance with cleanup levels or if modifications to system operations are necessary.

MAROS uses the Mann-Kendall nonparametric evaluation to determine the concentration trend (Mann-Kendall trend) for each well. The Mann-Kendall evaluation is considered to be one of the best ways to evaluate concentration trends because it handles data variation well and it does not assume the data fits into a specific distribution (EPA 2007b). Some wells will not have sufficient data for the Mann-Kendall evaluation to output a trend and MAROS will indicate that the well concentration has no trend.

In some cases where the Mann-Kendall trend indicates an increasing or a possibly increasing concentration trend, the trend is due to data outliers or different detection limits and may not be a true representation of the trend. For these wells, a qualitative evaluation of the trend graphs was used to determine if any action needed to be taken.

The Mann-Kendall trends for TCE and chromium are presented in Table 8. For wells with Mann-Kendall trends that were increasing or possibly increasing, graphs of the data were reviewed. In a number of cases, the increasing or possibly increasing trends were due to recently reported "J" flagged (estimated) concentrations, between the method detection limit (MDL) and the method reporting limit (MRL). MAROS interprets these results as higher than "U" flagged

concentrations, or concentrations reported below the MRL. For example, MAROS would interpret a result of 0.32 J (estimated) µg/L as higher than 0.5 U (not detected) µg/L. In a few cases, contaminant concentrations have fluctuated somewhat over time, or have increased somewhat but remain below the cleanup level.

Although an increasing trend is indicated for well AMW-18, TCE concentrations in this well are currently on a decreasing trend. TCE concentrations increased in well AMW-18 in 2006 and 2007, but have been decreasing since 2008. TCE contamination in the AMW-18 area was investigated and reported in the AMW-18 Area Investigation Report in 2008 (EA 2008). It has been concluded that the elevated TCE concentrations in this area are related to a separate plume (Northern Plume) north of the Site TCE plume. No system modifications are recommended based on the presence of this offsite plume.

6.3 Termination

"Termination", in this annual screening process, refers to the termination (shutdown) of an extraction well or the discontinuation of monitoring of a well. The MAROS Data Sufficiency module uses the sequential T-test to determine if contaminants in groundwater are statistically below cleanup levels (AFCEE 2006). This aids in the decision to terminate treatment and/or discontinue monitoring.

The sequential T-test outputs two "cleanup statuses" per well, one for data with a normal distribution and one for a lognormal distribution. The coefficient of variation (COV) was used to determine which distribution best represents the data collected from each well. The COV is a measure of the variation of data points from the mean. If the COV was less than 1.00, the data showed little scatter and the normal distribution results were used. If the COV was greater than 1.00, the lognormal distribution results were used.

The sequential T-test classifies wells as Attained, Continue Sampling, or Not Conducted (N/C). *"Attained indicates the mean concentration is significantly below the cleanup goal, and has achieved the TargetLevel"* (AFCEE 2006). The *TargetLevel* default value is 0.8 times the cleanup goal. MAROS recommends continuing sampling for wells that need more data to be considered attained and statistically below cleanup levels. The sequential T-test was not conducted on wells with a cleanup status N/C due to their small sample sizes (less than four samples).

The cleanup status, shown on Table 8, was used to determine if the contaminant concentration was statistically below cleanup levels. Only wells that were classified as attained were considered statistically below cleanup levels based on the MAROS definition.

With the exception of the TCE Source wells, only wells that are statistically below cleanup levels for TCE and chromium will be considered clean. TCE Source wells only need to be statistically below cleanup levels for TCE since the area is upgradient of the chromium plume and not monitored for chromium.

For extraction wells that are actively pumping when MAROS indicates cleanup has been achieved for TCE and chromium, pumping may be terminated. Monitoring will continue at these wells to ensure that cleanup levels are maintained as the well returns to equilibrium.

For a number of monitoring wells, the MAROS evaluation concluded that TCE and/or chromium concentrations are statistically below the cleanup level and no further sampling is required. These wells are indicated on Table 7.

6.4 Sampling Frequency

As part of the Annual Screening, the current sampling frequency for each well is evaluated and, if appropriate, revised. When proposing a revised sampling frequency for a well, the following factors were considered: the current sampling frequency, the MAROS recommended sampling frequency, the use of the well at the Site, and whether the constituents of concern are statistically below the cleanup levels. These factors are presented in the Wells and Recommended Sampling Frequencies Table (Table 7).

For wells with groundwater concentrations statistically below cleanup levels for TCE and/or chromium, sampling will be discontinued for TCE and/or chromium unless the qualitative analysis identifies a need for data from the well. For wells that are not identified for discontinuing sampling, MAROS uses a Modified Cost Effective Sampling method to propose sampling frequencies for individual wells (AFCEE 2006). The resulting frequencies are "based on the magnitude, direction, and uncertainty of its concentration trends" (EPA 2007b). The recommendations made by MAROS are considered preliminary since they are the lowest frequencies needed to provide the adequate amount of data to reach statistical cleanup and may not correspond with the monitoring objectives of that well. For example, if MAROS recommends annual sampling, but the well is used to monitor treatment system performance, sampling may be conducted more frequently until the treatment is complete. Alternatively, for wells not designated as an attainment well, MAROS may recommend more sampling than is necessary.

Table 7 shows the current (2009) sampling frequency for each well, along with the MAROS recommended sampling frequency. These were evaluated for each well and sampling frequency recommendations for 2010 were determined using professional judgment. Recommended changes to the sampling frequencies (2010 recommendations) are included in Table 7 and summarized in Table 9. More detailed descriptions of the reasoning behind the recommended changes are provided in Table 10.

The qualitative evaluation included a review of wells that are part of a well cluster. Well clusters may include wells with designations of A, B, C, D, and E. These alphabetical designations represent different well screen depths. In each well cluster, typically the most impacted well is sampled the most frequently. In some well clusters, this means that chromium is sampled more frequently in one well while TCE is sampled more frequently in another well. In a few cases, one of the wells in a cluster is an extraction well and is sampled according to the schedule for extraction wells. Following many years of sampling of well cluster wells, the most impacted

wells have typically remained the same. Sampling of wells screened at less than optimal depths in a cluster does not provide any additional data of use in site decision making, therefore, those less than optimal wells may be recommended for no further sampling. Recommended changes to the sampling frequencies based on the well cluster review are summarized in Table 10.

Several sampling frequency changes are recommended for well types described in the LTMP. These include the following:

- **Infiltration gallery wells** – The sampling frequency for infiltration gallery wells is being changed from semiannual to biennial. These wells have been used to monitor the infiltration gallery since just before it started operation in early 2006. Baseline monitoring started on a quarterly frequency and was later changed to semiannual. TCE and chromium concentrations, when detected, have all been well below the cleanup level and the discharge standards. The treated water is monitored monthly for chromium and VOCs, before discharge to the infiltration gallery.

- **Plume boundary wells** – In general, the sampling frequency for plume boundary wells is being changed from annual to biennial. Concentrations in these wells continue to decrease and the plumes continue to shrink in size. Biennial data will be sufficient to monitor the minor changes to the outer boundaries of the plumes. However, well CPU-12 will continue to be monitored on an annual basis until the TCE concentrations drop further below the cleanup level since this well is important in delineating the downgradient edge of the TCE plume.

- **Inactive extraction wells** – The sampling frequency for inactive extraction wells is being changed from annual to varying, based on the use of the well. Several inactive extraction wells located in the toe-of-plume area have not been pumped since at least 2006 and contaminant concentrations have remained below the cleanup levels; these wells will not be used as extraction wells in the future and annual sampling is not necessary. However, as active extraction wells are turned off (for example well MW-27D), rebound testing may be performed, requiring more frequent sampling.

Since the OU-3 groundwater pump and treat system treats the alluvial aquifer and not the Troutdale aquifer, the MAROS analysis was not used on Troutdale wells. A qualitative analysis was completed to re-evaluate the sampling frequencies for the Troutdale wells. No changes in sampling frequency were recommended for these wells. General information for Troutdale aquifer wells is provided in Table 7.

Wells designated for no further sampling in the 2008 Annual Report have been removed from the MAROS evaluation tables and sampling frequency tables. These wells, along with a brief description of the basis for their removal from sampling, are listed in Table 11.

Wells recommended for no further sampling in this report are included in the MAROS evaluation tables and sample frequency tables, and are further described in Table 11. Wells for

which one of the parameters (chromium or VOCs) is being sampled but the other has been discontinued, are also listed in Table 11 as well as in the other tables.

Significant changes to the monitoring well sampling frequencies are being recommended, following completion of the first 5-year sampling event. TCE and chromium concentrations continue to decrease at the site. The most important data continues to be that in the active remediation areas, including the OU-3 extraction wells and the OU-2 source removal area. This data is critical to decision making at the site. The remainder of the data is used to document the gradual reduction in contaminant concentrations and plume sizes. Frequent sampling of wells with no detectable TCE or chromium, or with TCE and chromium concentrations consistently below the cleanup levels, is not necessary. If increases in contaminant concentrations are noted in a sampled well, additional samples may be collected from nearby wells. No wells are currently proposed to be decommissioned; the wells will still be available for future sampling, if needed.

6.5 Attainment

Attainment monitoring is performed on a limited number of wells to assess whether post-treatment concentrations remain statistically below cleanup levels. Attainment monitoring is conducted on a subset of wells that represent different areas of the plume. The guidelines for handling the analytical results from attainment monitoring are presented in the Closure Plan (EA 2009a). The following areas of the plume (as defined in the LTMP [EA 2007]) were selected for attainment monitoring:

- TCE Source Area
- Proximal Area
- Intermediate Area
- Church of God Area
- Other Toe of Plume Area
- Sentinel Toe of Plume Area.

The MAROS Data Sufficiency module uses the sequential T-test to classify wells as attained. With the exception of the TCE Source wells, only wells that have reached attainment for both constituents (TCE and chromium) will be considered attained. Table 12 presents the complete analysis of the attainment wells. A summary is presented below.

Attainment Well Name	Wells Statistically "Attained" Cleanup Goals
TCE Source Wells	
AMW-12A	No
MW-1A	No
Proximal Wells	
MW-6B	No
MW-10C	No
PW-1B	No
Intermediate Wells	
MW-14E	No
MW-18D	No
MW-19D	No
MW-20D	No
Church of God Wells	
MW-21D	No
MW-26D	No
MW-27D	No
Other Toe Wells	
MW-31	No
MW-41	No
Sentinel Toe Wells	
AMW-45	Yes
MW-47	Yes

Wells in the Sentinel Toe well grouping are monitoring wells located at or beyond the historical leading edge of the chromium plume and are a part of the Toe-of-Plume wells. Chromium concentrations in groundwater samples collected from the Sentinel Toe well grouping have remained consistently below the cleanup level. TCE has never been detected in the Sentinel Toe well grouping. The 2008 MAROS analysis determined that the groundwater samples from the attainment wells for the Sentinel Toe wells group attained the cleanup goals. This area of the plume is eligible for closure upon approval by EPA.

6.6 Annual Well Screening Conclusions and Recommendations

Based on the results of the 2009 annual screening of the groundwater monitoring data, the following conclusions are made:

- The redundancy analysis showed no wells were redundant for both TCE and chromium.
- No modifications to system operations are necessary at this time.

- TCE and/or chromium concentrations in groundwater from numerous wells were found to be statistically below the cleanup level.

- Changes to sampling frequencies are recommended for a number of wells, based on the results of the MAROS evaluation and on the qualitative review. Further description of the reason for the changes is provided in Table 10. Well sampling frequency recommendations for 2010 are provided in Table 9.

- As presented in the 2008 Annual Report, groundwater concentrations in the Sentinel Toe of Plume area have attained the cleanup goals and the area is eligible for closure. With the closure of the Sentinel Toe of Plume area, the Other Toe of Plume area becomes the most downgradient plume area being monitored.

7. CONCLUSIONS, RECOMMENDATIONS, AND PLANNED ACTIVITIES

The following sections summarize the conclusions regarding the 2009 reporting period, as well as recommendations and planned activities for 2010.

7.1 Conclusions

In order to meet the operating objectives for OU-2 and OU-3, planned activities for 2009 were recommended in the 2008 Annual Status report. The status of these planned activities is summarized below:

- **Continue ongoing operations to meet operational objectives —** The remediation systems continue to meet operational objectives. The extraction system continues to provide containment for both plumes, preventing further migration of constituents of concern within the alluvial aquifer. The groundwater monitoring results continue to show overall downward trends for both TCE and chromium concentrations across the Site. The size of the plumes and contaminant concentrations continue to decrease.

- **Continue operation and optimization of the IWS system in accordance with EPA approved procedures —** System optimization continued to concentrate treatment to the center of the source area.

- **Continue to cooperate with EPA on investigation of the TCE plume present in the Northern Plume Area (well AMW-18 area) —** Wells AMW-17, AMW-18 and MW-15E were sampled semiannually to monitor TCE in the Northern Plume area. In addition, wells AMW-17 and AMW-18 were sampled in January 2009. EPA has acknowledged that the Northern Plume is not a result of Linde or Boomsnub activities. EPA will prepare an Explanation of Significant Difference to incorporate the Northern Plume into the Site.

- **Continue to work on obtaining easements and access agreements — Negotiations continued with numerous property owners to** obtain easements and access agreements.

- **Sample monitoring wells in accordance with the updated sampling schedule included on Tables 7 and 8 —** Monitoring wells were sampled in accordance with the sampling schedule presented in the 2008 Annual Report (EA 2009d), or as subsequent EPA approved changes during 2009.

The following additional activities occurred during the 2009 reporting period:

- **Revise the Draft Closure Plan to include use of MAROS for the annual screening and attainment evaluation —** The Closure Plan was revised and submitted to EPA in February 2009 (EA 2009a).

- **Discontinue IWS GAC treatment discharge —** The GAC treatment of the IWS system discharge was discontinued in October 2009 and the IWS system now vents directly to the atmosphere. Current concentrations of VOCs in the vented vapor are significantly lower than regulatory limits for air releases.

- **MW-27 rebound testing due to proposed Church of God sports fields —** Rebound testing is being performed to determine if the extraction system piping to MW-27 can be decommissioned when the proposed sports fields on the Church of God property are developed. The pump in extraction well MW-27D was turned off in November 2009 and the sampling frequency for wells MW-27D and MW-25D was increased to quarterly to monitor for possible contaminant rebound.

7.2 Recommendations and Planned Activities for 2010

EA recommends and plans to complete the following activities during the 2010 reporting period:

- **Rebound Testing/System Modifications proposed for Church of God sports fields —** System modifications may be required due to the proposed development plans on the church of God property, and Linde and EA are working with the County, EPA and the Church of God during the planning process to understand how the development of the sports complex will impact the current system.

  Quarterly sampling of MW-27D and downgradient well MW-25D will continue for one year or until the sports field construction begins. At that time, the effectiveness of MW-27D as an extraction well will be re-evaluated to determine if the extraction system piping to this well can be decommissioned when the property is developed.

- **Continue to work on obtaining easements and access agreements.**

- **Replace the pump in well MW-33 prior to the sampling event in Fall 2010.** Repairs to this well may include installing a new protective monument around the well, preferably after filling the surrounding land surface a few inches to prevent ponding in the area. Mechanically clear the biological growth observed in the well to the extent possible. Replace the sampling pump in the well.

- Sample wells in accordance with the updated sampling schedule.

- Based on a review of sampling results over the past four years, TOPPS sampling will be limited to collection of groundwater samples annually for wells MW-41 and AMW-63 with analysis for chromium and VOC only. Samples will no longer be analyzed for dissolved iron, total organic carbon or ferrous iron.

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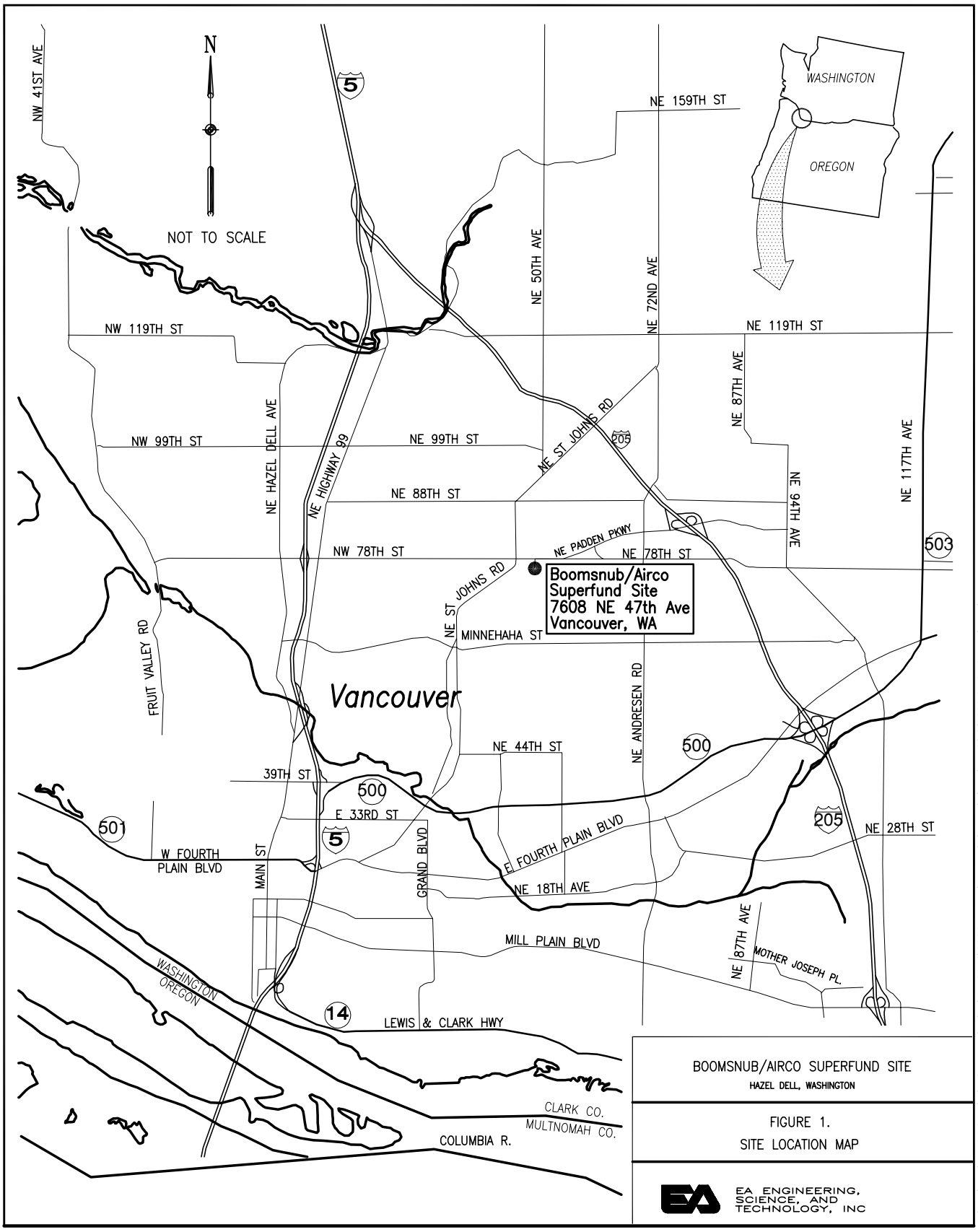
FIGURES



BOOMSNUB/AIRCO SUPERFUND SITE
HAZEL DELL, WASHINGTON

FIGURE 1.
SITE LOCATION MAP

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC

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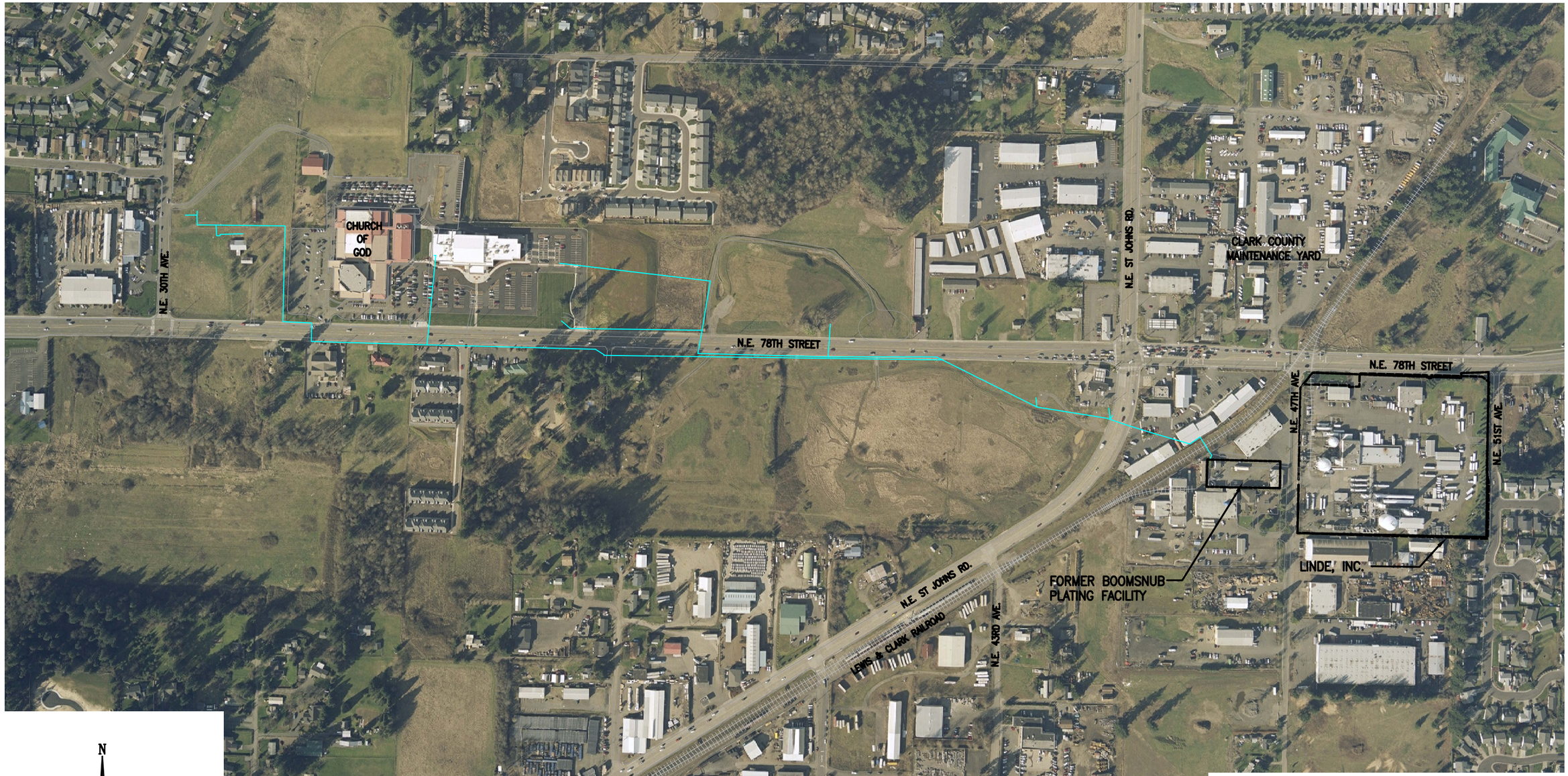

N

200 100 0 200 400

GRAPHIC SCALE IN FEET

EXTRACTION SYSTEM FORCEMAIN

BOOMSNUB/AIRCO SUPERFUND SITE

HAZEL DELL, WASHINGTON

FIGURE 2.

SITE OVERVIEW MAP

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC

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NE 25th Ave.
WELL CPU-4S, 4D
Located Approx. 3/10 mile
North of NE 78th Street

NE 25th Ave.

N.E. 82ND STREET

N.E. 78TH STREET

N.E. 30TH AVE.

N.E. ST JOHNS RD.

N.E. 47TH AVE.

N.E. 51ST AVE.

N.E. 37TH AVE.

N.E. 40TH AVE.

N.E. 43RD AVE.

LEWIS & CLARK RAILROAD

CHURCH OF GOD

CLARK COUNTY MAINTENANCE YARD

FORMER BOOMSNUB PLATING FACILITY

LINDE INC.

AMW-23 AMW-62 AMW-51 AMW-24 AMW-22 AMW-16 AMW-15 AMW-14 AMW-17 AMW-18 AMW-59 AMW-61 AMW-60 AMW-43 AMW-44 AMW-45 AMW-63 AMW-42 AMW-47 AMW-29 AMW-28 AMW-48 AMW-46 AMW-41 AMW-30 AMW-36 AMW-35 AMW-31 AMW-32 AMW-37 AMW-49 AMW-27 AMW-26D AMW-25D MW-24D MW-23D MW-27D MW-21D MW-22D MW-20D MW-40/PZ-40 MW-39/PZ-39 MW-38 MW-19D MW-15E MW-18D MW-18E MW-14C MW-14E MW-17E MW-16E MW-12C MW-9C MW-9B MW-10B MW-6D MW-10C MW-6C MW-6B MW-6A MW-8B MW-13C MW-34 MW-7C MW-7B MW-1B MW-4A,4B,4C MW-3A,3B,3C MW-1A,1B,1C MW-11A MW-11B MW-2A,2B,2C MW-33 MW-5 MW-1 MW-3 MW-2 MW-4

AMW-52A AMW-52C AMW-53A AMW-53B AMW-53C AMW-58 AMW-50 AMW-54A AMW-54C AMW-55C AMW-55A AMW-56A AMW-3A AMW-4A AMW-9A AMW-25 AMW-5A AMW-8A AMW-13A AMW-1A AMW-26 AMW-1C AMW-2B AMW-2C AMW-2A AMW-12A AMW-19A AMW-19B AMW-20 AMW-21 AMW-6A AMW-10A PZ-2 AMW-11A PZ-1 AMW-7A AMW-57

CPU-3S,3D CPU-16 CPU-7 CPU-15 CPU-12 CPU-13 CPU-1S, 1D CPU-10 CPU-14 CPU-2

CV-24 CV-21 CV-20 CV-23 CV-19 CV-22 CV-18 CV-17 CV-16 CV-14 CV-14A CV-15 CV-13 CV-12 CV-11 CV-10 CV-9 CV-8 CV-7 CV-6 CV-5 CV-4 CV-3 CV-2 CV-1

FERGUSON HORN GARRISON GRIMM ZENT BENNETT CROCKFORD COLF FITZGERALD COLUMBIA VET PERMALUME EC-1

LEGEND

- EC1 — DEPARTMENT OF ECOLOGY WELL LOCATION
- AMW-51 — WELLS SCREENED IN THE TROUTDALE AQUIFER
- GWSW-1 — GROUNDWATER SUPPLY WELL
- MW-17E — GROUNDWATER MONITORING WELL
- MW-10A — GROUNDWATER EXTRACTION WELL
- MW-3A, 3B — MULTIPLE WELLS IN PROXIMITY OR COMPLETED AS NESTED SETS
- MW-27D — ABANDONED MONITORING WELL
- CV-9 — CONTAINMENT VAULT
- EXTRACTION SYSTEM FORCEMAIN

N

200 100 0 200 400
GRAPHIC SCALE IN FEET

NOTE: MONITORING WELL LOCATIONS ARE APPROXIMATE.

BOOMSNUB/AIRCO SUPERFUND SITE
HAZEL DELL, WASHINGTON

FIGURE 3.
MONITORING AND EXTRACTION WELL NETWORK

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC

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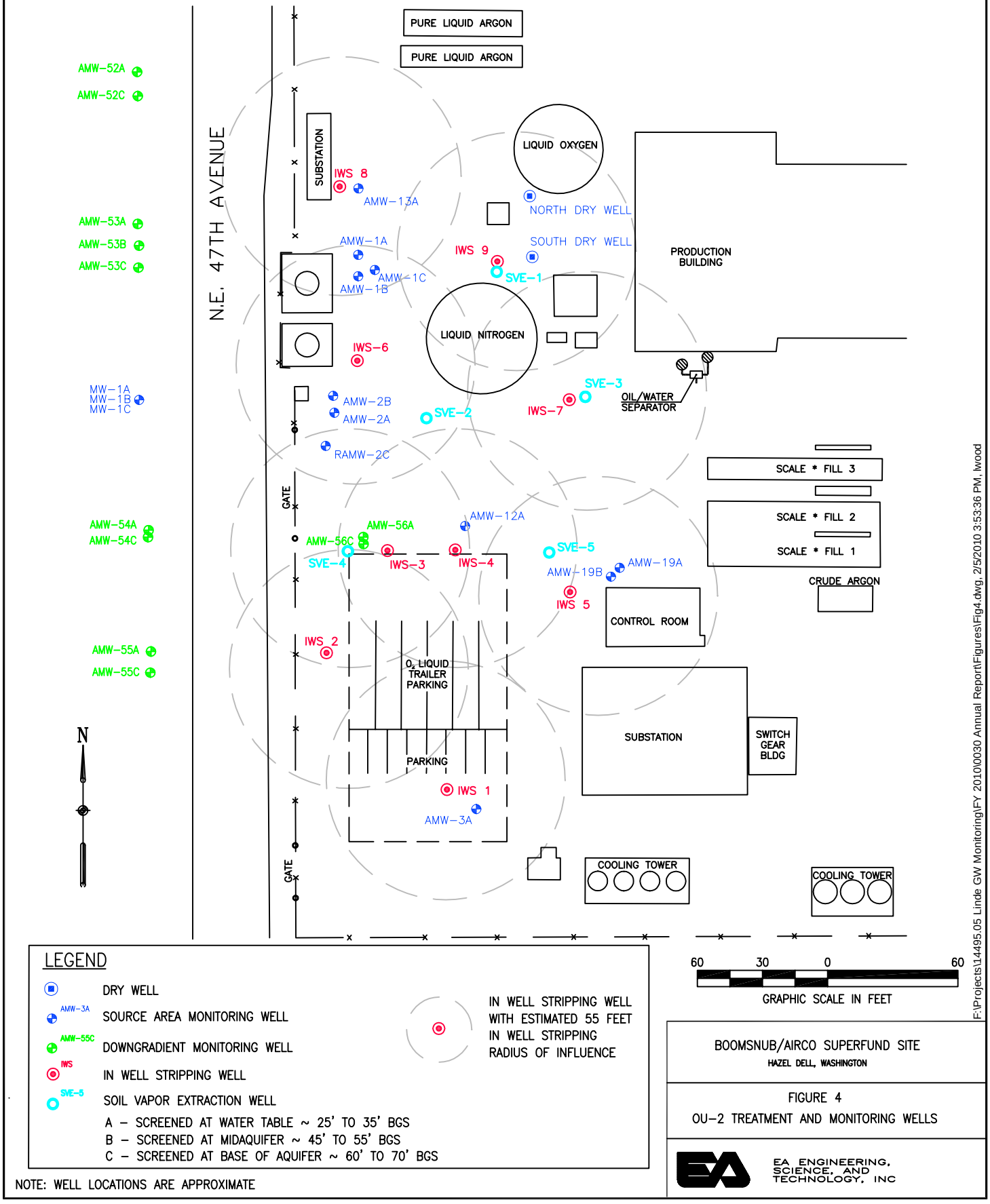

BOOMSNUB/AIRCO SUPERFUND SITE
HAZEL DELL, WASHINGTON

FIGURE 4
OU-2 TREATMENT AND MONITORING WELLS

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC

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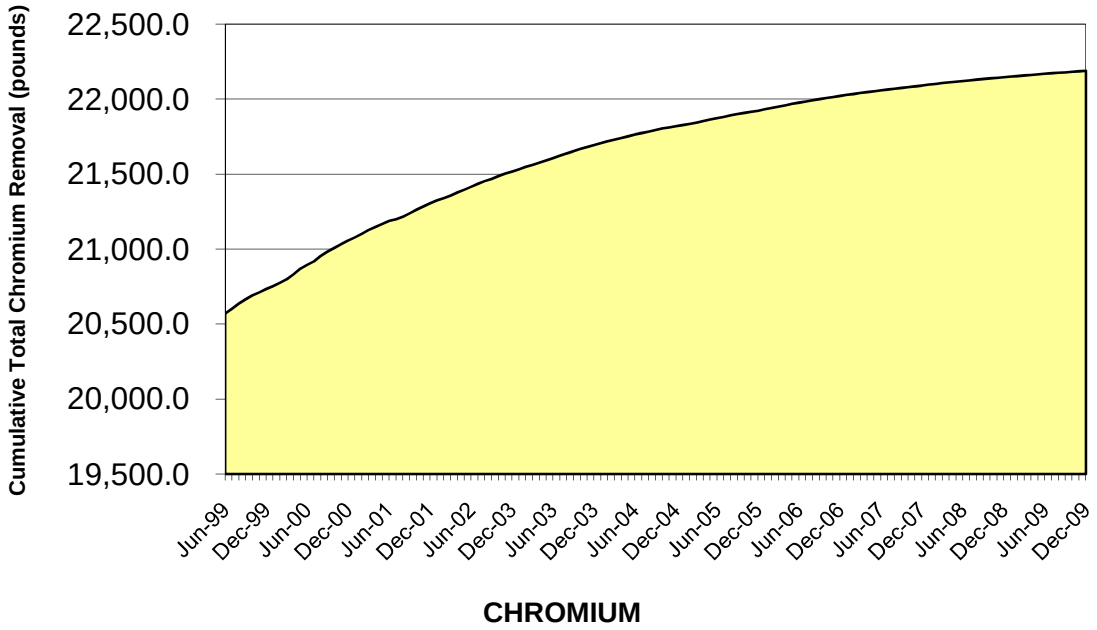
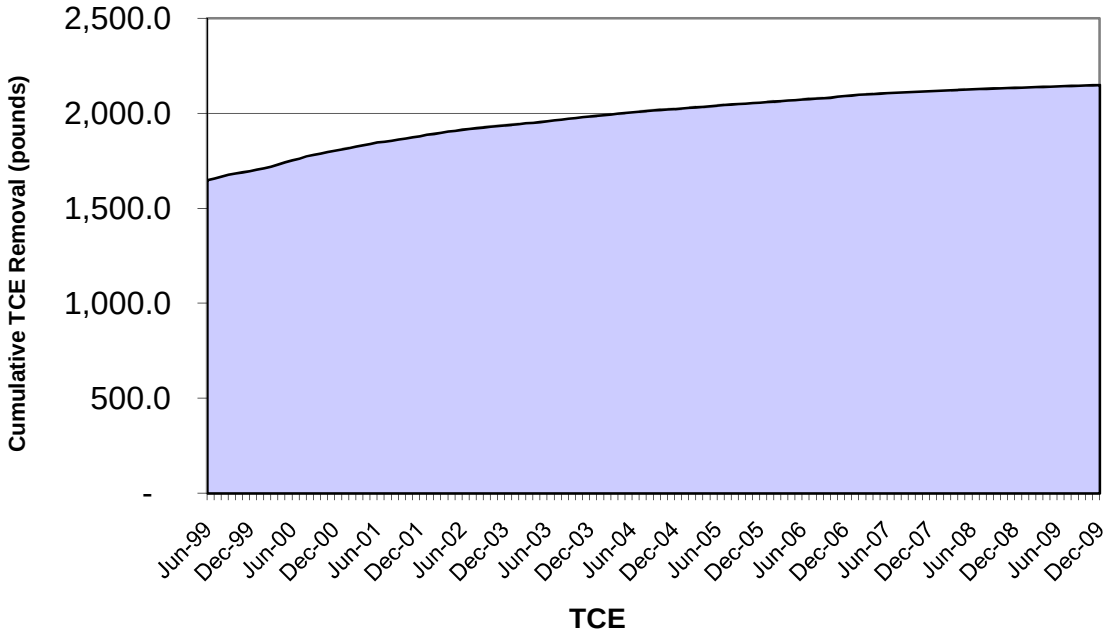
FIGURE 5. CUMULATIVE REMOVAL OVER TIME

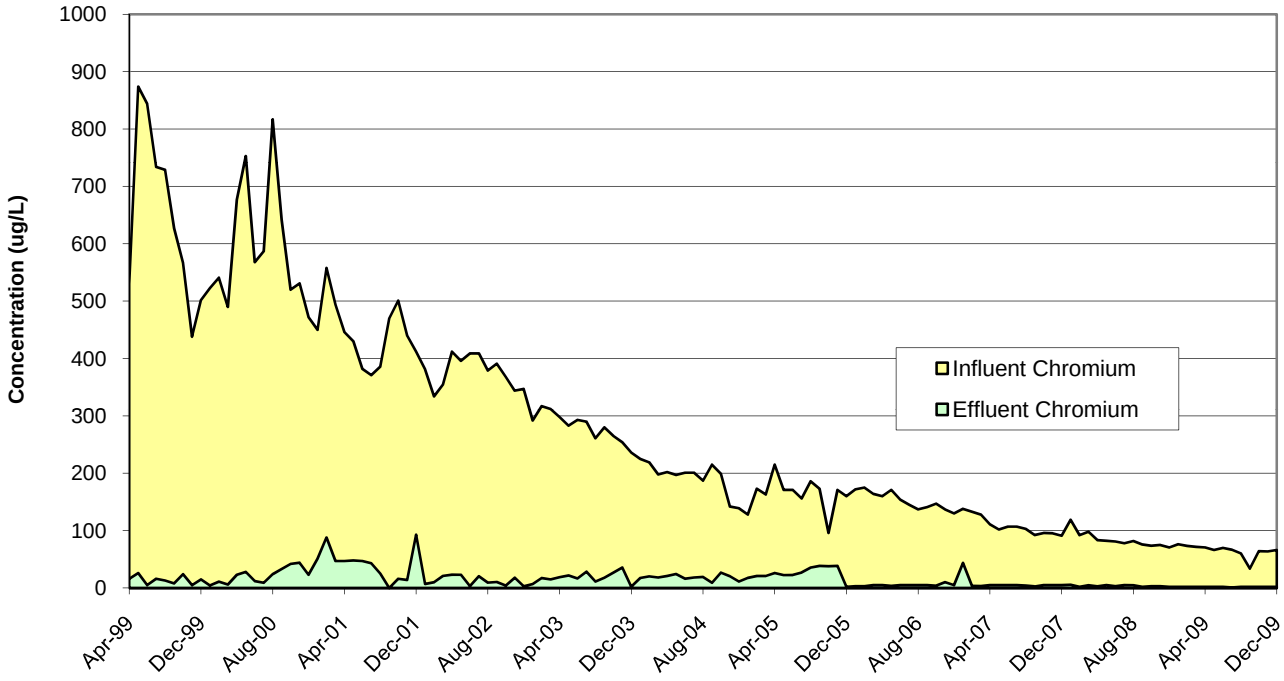


CHROMIUM

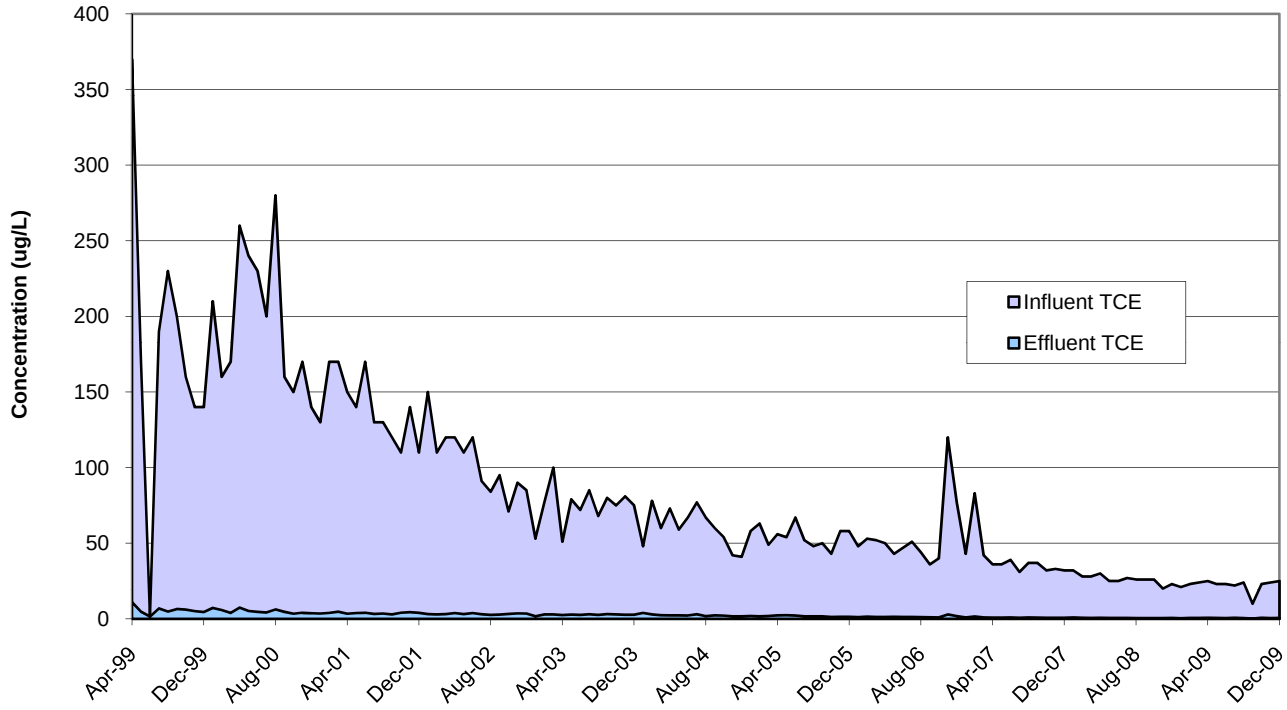


TCE

FIGURE 6. INFLUENT AND EFFLUENT CONCENTRATIONS VERSUS TIME

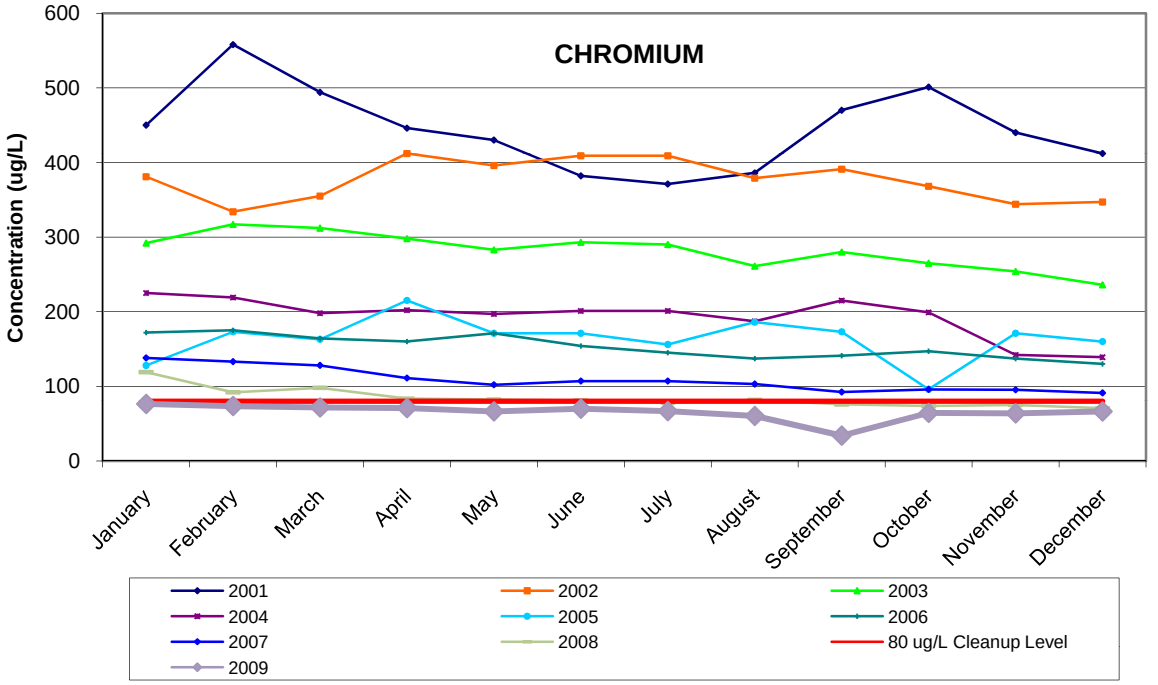


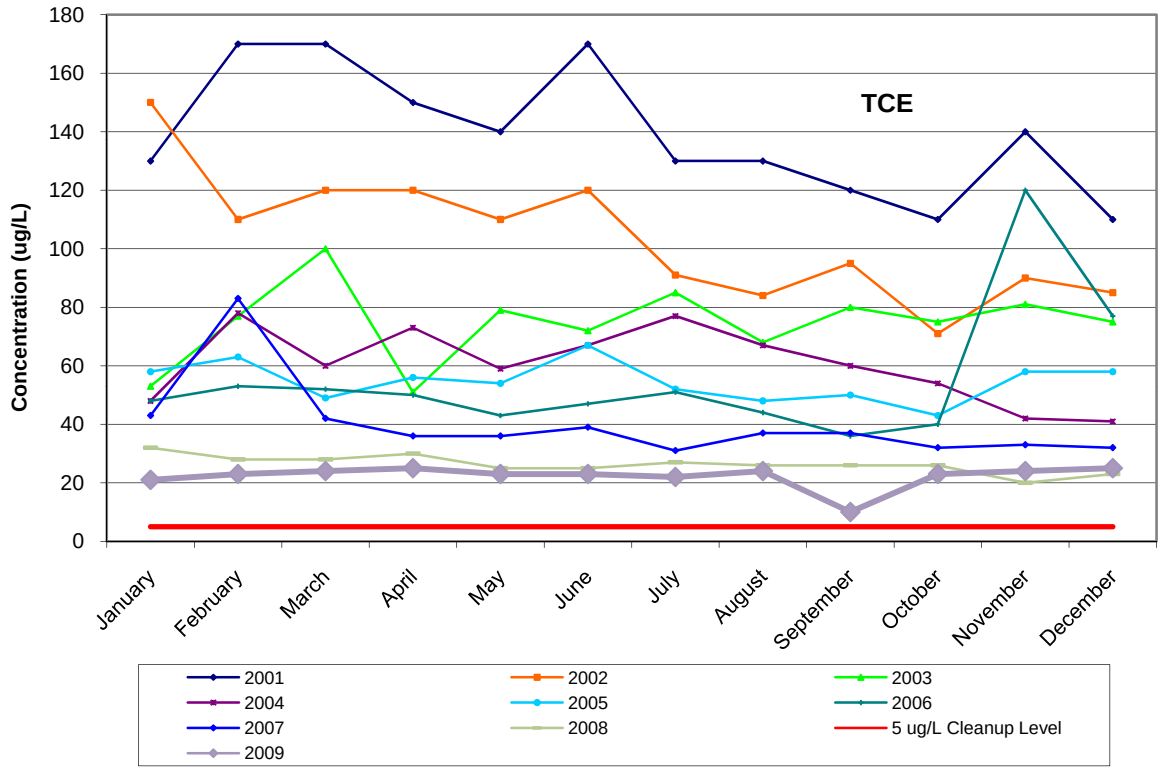
CHROMIUM

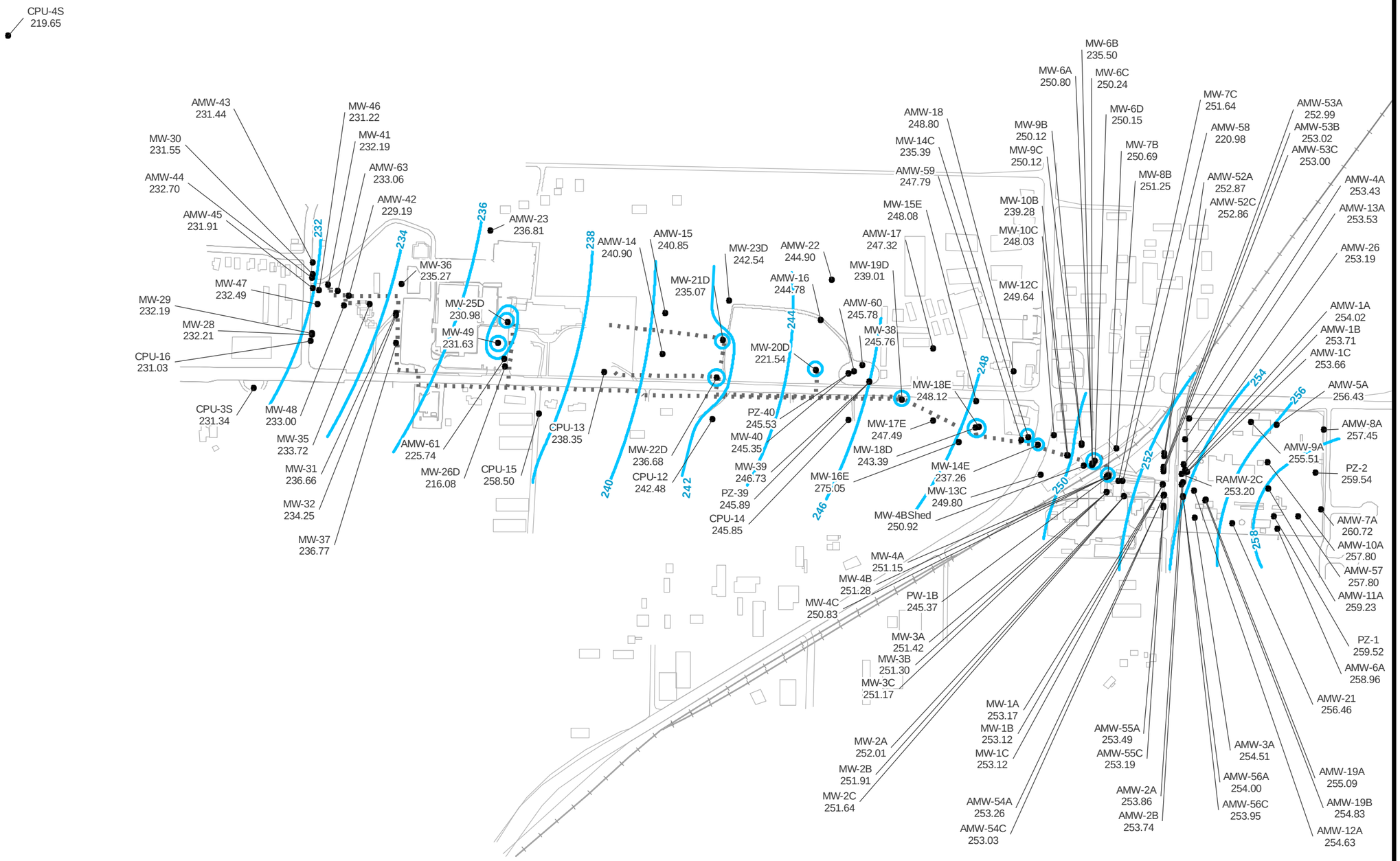


TCE

FIGURE 7. INFLUENT CONCENTRATIONS OVER TIME







Legend

Monitoring Well Location with Water Elevation (ft. MSL)
AMW-1A
254.02

Extraction Well Pipeline

Groundwater Elevation Contours

N
W E
S

Notes:
1) Groundwater extraction system was in operation at the time of water level gauging.
2) Contours represent evaluation of probable conditions based on presently available data. Some variation from these conditions must be expected.
3) Well locations are approximate.

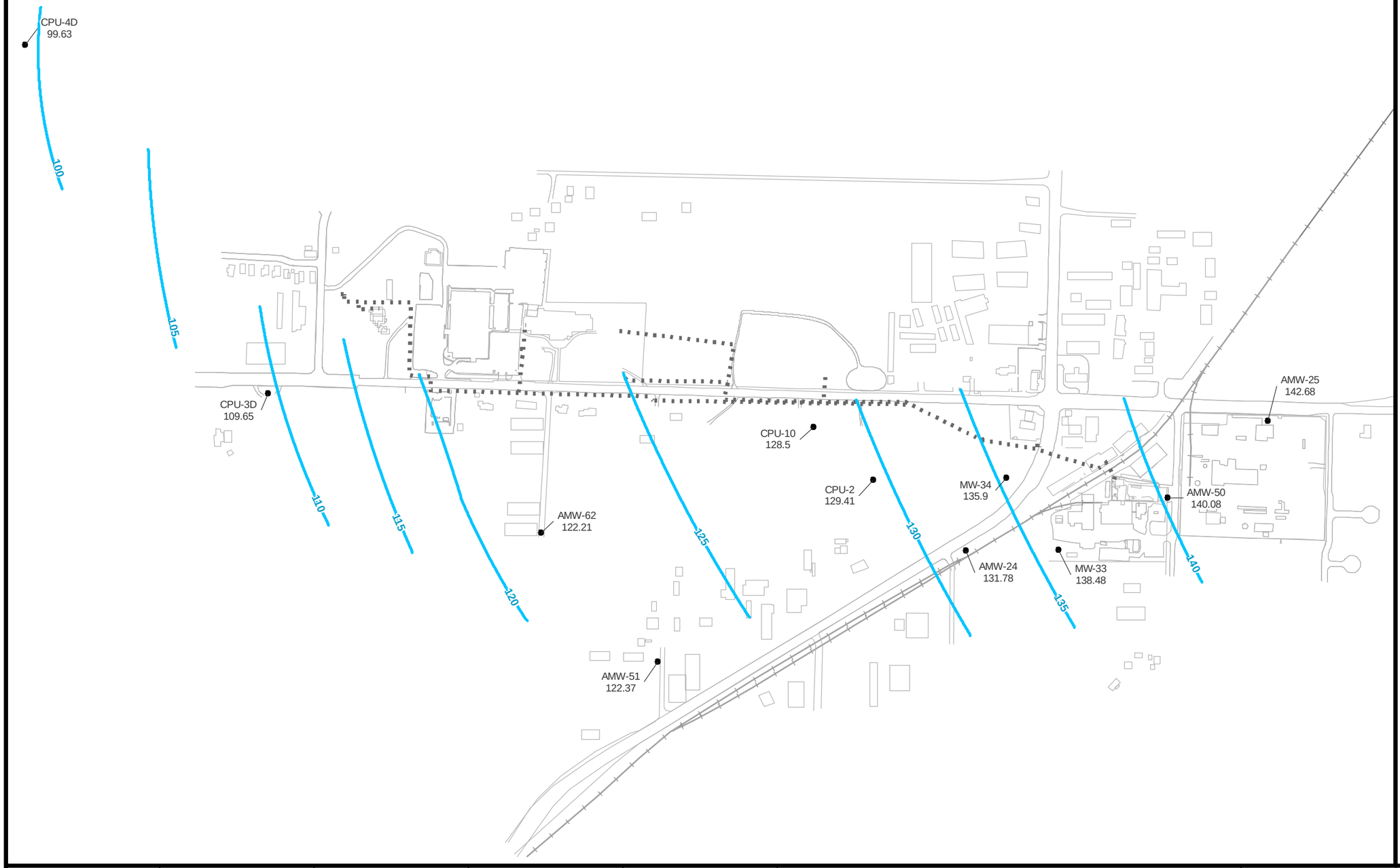
0 500 1,000
Feet

EA Engineering, Science, and Technology, Inc.

PROJECT MGR:	DESIGNED BY:	DATE:	FILE No.:
CMB	BSM	FEBRUARY 2010	H:\projects\1449505\FALL2009\MXD\AnnualReport\GW_Alluvial_FALL09
CHECKED BY:	DRAWN BY:	PROJECT No.:	SCALE:
GAH	JPK	14495.05	AS SHOWN

BOOMSNUB/AIRCO SUPERFUND SITE
HAZEL DELL, WASHINGTON

FIGURE 8
ALLUVIAL AQUIFER GROUNDWATER CONTOURS
FALL 2009



Legend

Monitoring Well Location
with Water Elevation (ft. MSL)
AMW-50
140.08

Extraction Well Pipeline

Groundwater Elevation Contours

N
W
E
S

Notes:
1) Groundwater extraction system was in operation at the time of water level gauging.
2) Contours represent evaluation of probable conditions based on presently available data. Some variation from these conditions must be expected.
3) Well locations are approximate.

0 500 1,000
Feet

EA Engineering, Science, and Technology, Inc.

PROJECT MGR:	DESIGNED BY:	DATE:	FILE No.:
CMB	BSM	FEBRUARY 2010	H:\projects\1449505\FALL2009\MXD\AnnualReport\GW_Troutdale_FALL09
CHECKED BY:	DRAWN BY:	PROJECT No.:	SCALE:
GAH	JPK	14495.05	AS SHOWN

BOOMSNUB/AIRCO SUPERFUND SITE
HAZEL DELL, WASHINGTON

FIGURE 9
TROUTDALE AQUIFER GROUNDWATER CONTOURS
FALL 2009

NE 25th Ave.
WELL CPU-4S, 4D
Located Approx. 3/10 mile
North of NE 78th Street

N.E. 82ND STREET
N.E. 78TH STREET
N.E. 30TH AVE.
N.E. ST JOHNS RD.
N.E. 47TH AVE.
N.E. 51ST AVE.
N.E. 37TH AVE.
N.E. 40TH AVE.
N.E. 43RD AVE.
LEWIS & CLARK RAILROAD
CHURCH OF GOD
CLARK COUNTY MAINTENANCE YARD
FORMER BOOMSNUB PLATING FACILITY
LINDE, INC.
BENNETT

AMW-23, AMW-43, AMW-30, AMW-44, AMW-45, AMW-46, AMW-47, AMW-41, AMW-63, AMW-42, MW-36, MW-35, MW-31, MW-48, MW-32, MW-29, MW-28, CPU-16, MW-37, MW-24D, MW-25D, MW-27D, AMW-15, MW-23D, AMW-14, MW-49, AMW-27, AMW-61, MW-26D, CPU-13, MW-21D, MW-22D, AMW-22, AMW-16, AMW-20D, MW-38, AMW-60, MW-39/PZ-39, MW-40/PZ-40, AMW-17, MW-19D, MW-15E, MW-18D, MW-18E, MW-17E, MW-16E, AMW-18, MW-14C, AMW-59, MW-14E, MW-12C, MW-9C, MW-9B, MW-10B, MW-6D, MW-6C, MW-6A, MW-8B, MW-8A, MW-7B, MW-7C, MW-4A,4B,4C, MW-3A,3B,3C, MW-2A,2B,2C, MW-13C, MW-10C, MW-1A,1B,1C, MW-5, MW-1, MW-3, MW-2, MW-4, AMW-62, AMW-51, AMW-24, MW-33, MW-34, CPU-3D, CPU-15, CPU-12, CPU-10, CPU-14, CPU-1S, 1D, CPU-2, EC-1, AMW-25, AMW-4A, AMW-9A, AMW-5A, AMW-8A, AMW-13A, AMW-10A, PZ-2, AMW-1A, AMW-1C, AMW-2B, AMW-2A, AMW-12A, AMW-11A, AMW-19A, AMW-19B, AMW-20, PZ-1, AMW-7A, AMW-57, AMW-3A, AMW-21, AMW-6A, AMW-52A, AMW-52C, AMW-53A, AMW-53B, AMW-53C, AMW-58, AMW-54A, AMW-54C, AMW-55C, AMW-55A, IWS-8S,D, AMW-26, AMW-2C, AMW-56C, AMW-56A, IWS-2S

CV-1, CV-2, CV-3, CV-4, CV-5, CV-6, CV-7, CV-8, CV-9, CV-10, CV-11, CV-12, CV-13, CV-14, CV-14A, CV-15, CV-16, CV-17, CV-18, CV-19, CV-20, CV-21, CV-22, CV-23, CV-24

LEGEND

- SENTINEL "TOE" WELLS
- OTHER "TOE" WELLS
- CHURCH OF GOD WELLS
- INTERMEDIATE WELLS
- PROXIMAL WELLS
- SOURCE WELLS
- UPGRADIENT WELLS
- AMW-51 — WELLS SCREENED IN THE TROUTDALE AQUIFER
- AMW-18 — ALLUVIAL AQUIFER MONITORING WELLS
- MW-10A — ALLUVIAL AQUIFER EXTRACTION WELLS
- CONTAINMENT VAULT
- EXTRACTION SYSTEM FORCEMAIN

NOTE: MONITORING WELL LOCATIONS ARE APPROXIMATE.

N

200 100 0 200 400
GRAPHIC SCALE IN FEET

BOOMSNUB/AIRCO SUPERFUND SITE
HAZEL DELL, WASHINGTON

FIGURE 10.

EXTRACTION AND MONITORING WELL GROUPINGS

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC

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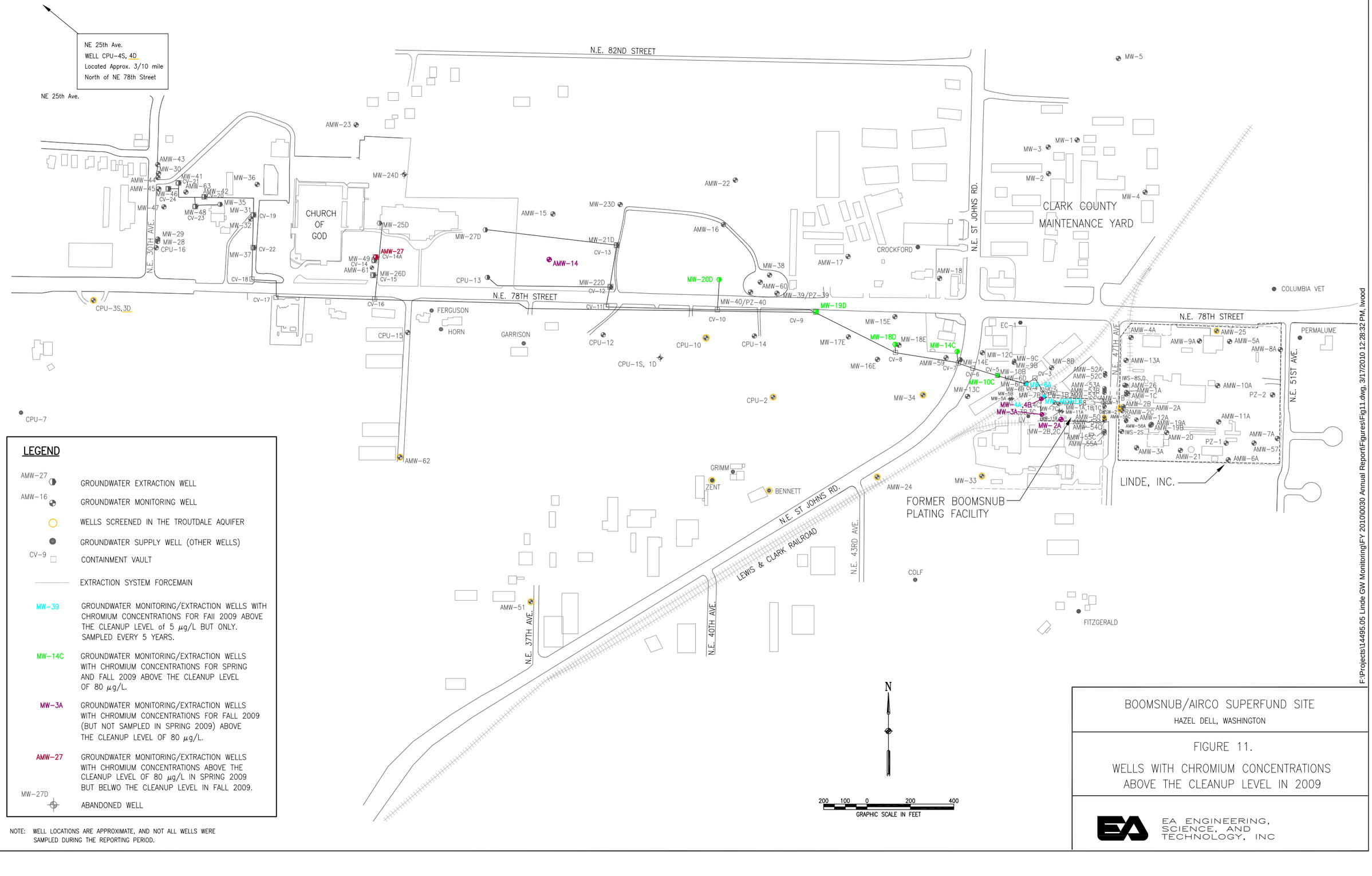

LEGEND

AMW-27	GROUNDWATER EXTRACTION WELL
AMW-16	GROUNDWATER MONITORING WELL
	WELLS SCREENED IN THE TROUTDALE AQUIFER
	GROUNDWATER SUPPLY WELL (OTHER WELLS)
CV-9	CONTAINMENT VAULT
	EXTRACTION SYSTEM FORCEMAIN
MW-39	GROUNDWATER MONITORING/EXTRACTION WELLS WITH CHROMIUM CONCENTRATIONS FOR FAll 2009 ABOVE THE CLEANUP LEVEL of 5 $\mu g/L$ BUT ONLY. SAMPLED EVERY 5 YEARS.
MW-14C	GROUNDWATER MONITORING/EXTRACTION WELLS WITH CHROMIUM CONCENTRATIONS FOR SPRING AND FALL 2009 ABOVE THE CLEANUP LEVEL OF 80 $\mu g/L$.
MW-3A	GROUNDWATER MONITORING/EXTRACTION WELLS WITH CHROMIUM CONCENTRATIONS FOR FALL 2009 (BUT NOT SAMPLED IN SPRING 2009) ABOVE THE CLEANUP LEVEL OF 80 $\mu g/L$.
AMW-27	GROUNDWATER MONITORING/EXTRACTION WELLS WITH CHROMIUM CONCENTRATIONS ABOVE THE CLEANUP LEVEL OF 80 $\mu g/L$ IN SPRING 2009 BUT BELWO THE CLEANUP LEVEL IN FALL 2009.
MW-27D	ABANDONED WELL

NOTE: WELL LOCATIONS ARE APPROXIMATE, AND NOT ALL WELLS WERE SAMPLED DURING THE REPORTING PERIOD.

BOOMSNUB/AIRCO SUPERFUND SITE

HAZEL DELL, WASHINGTON

FIGURE 11.

WELLS WITH CHROMIUM CONCENTRATIONS ABOVE THE CLEANUP LEVEL IN 2009

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC

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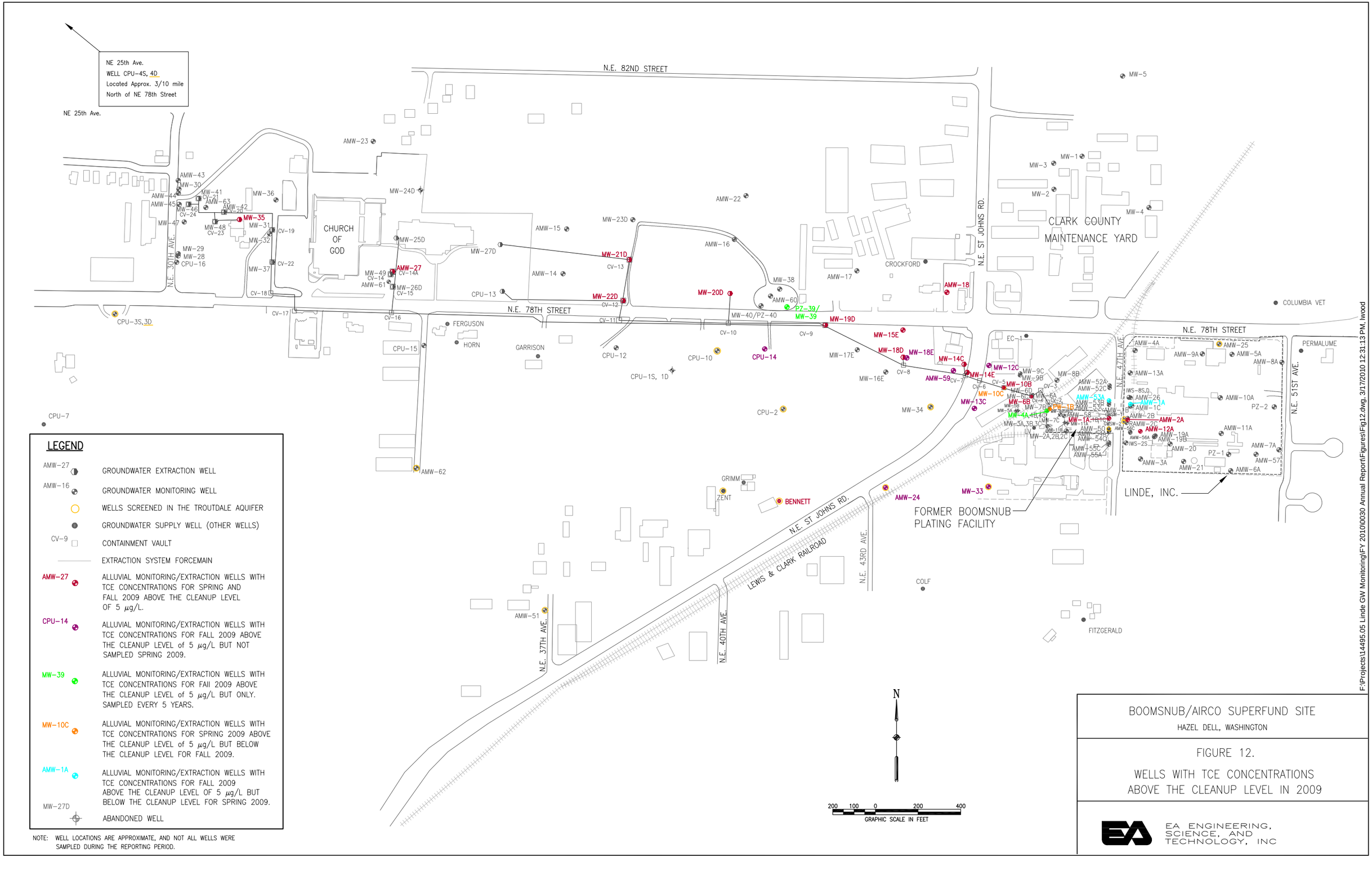

LEGEND

AMW-27 ◐	GROUNDWATER EXTRACTION WELL
AMW-16 ●	GROUNDWATER MONITORING WELL
○	WELLS SCREENED IN THE TROUTDALE AQUIFER
●	GROUNDWATER SUPPLY WELL (OTHER WELLS)
CV-9 □	CONTAINMENT VAULT
──	EXTRACTION SYSTEM FORCEMAIN
AMW-27 ●	ALLUVIAL MONITORING/EXTRACTION WELLS WITH TCE CONCENTRATIONS FOR SPRING AND FALL 2009 ABOVE THE CLEANUP LEVEL OF 5 μg/L.
CPU-14 ●	ALLUVIAL MONITORING/EXTRACTION WELLS WITH TCE CONCENTRATIONS FOR FALL 2009 ABOVE THE CLEANUP LEVEL of 5 μg/L BUT NOT SAMPLED SPRING 2009.
MW-39 ●	ALLUVIAL MONITORING/EXTRACTION WELLS WITH TCE CONCENTRATIONS FOR FAll 2009 ABOVE THE CLEANUP LEVEL of 5 μg/L BUT ONLY. SAMPLED EVERY 5 YEARS.
MW-10C ●	ALLUVIAL MONITORING/EXTRACTION WELLS WITH TCE CONCENTRATIONS FOR SPRING 2009 ABOVE THE CLEANUP LEVEL of 5 μg/L BUT BELOW THE CLEANUP LEVEL FOR FALL 2009.
AMW-1A ●	ALLUVIAL MONITORING/EXTRACTION WELLS WITH TCE CONCENTRATIONS FOR FALL 2009 ABOVE THE CLEANUP LEVEL OF 5 μg/L BUT BELOW THE CLEANUP LEVEL FOR SPRING 2009.
MW-27D ⌖	ABANDONED WELL

NOTE: WELL LOCATIONS ARE APPROXIMATE, AND NOT ALL WELLS WERE SAMPLED DURING THE REPORTING PERIOD.

BOOMSNUB/AIRCO SUPERFUND SITE
HAZEL DELL, WASHINGTON

FIGURE 12.

WELLS WITH TCE CONCENTRATIONS
ABOVE THE CLEANUP LEVEL IN 2009

EA ENGINEERING,
SCIENCE, AND
TECHNOLOGY, INC

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1995

2009

Legend

Extraction Well Pipeline

Chromium Concentration Contours

- 80 - 250 µg/L
- 250 - 500 µg/L
- 500 - 1,500 µg/L
- 1,500 - 5,000 µg/L
- 5,000 - 10,000 µg/L
- 10,000 - 20,000 µg/L
- >20,000 µg/L

Note:
Contours represent evaluation of probable conditions based on presently available data. Some variations from these conditions must be expected.

0 400 800
Feet

EA Engineering, Science, and Technology, Inc.

PROJECT MGR:	DESIGNED BY:	DATE:	FILE No.:
CMB	BSM	FEBRUARY 2010	H:\projects\1449505\SPRING2009\MXD\CHROMIUM_1995vs2009
CHECKED BY:	DRAWN BY:	PROJECT No.:	SCALE:
GAH	JPK	14495.05	AS SHOWN, SAME IN BOTH FRAMES

BOOMSNUB/AIRCO SUPERFUND SITE
HAZEL DELL, WASHINGTON

FIGURE 13
CHROMIUM PLUME MAP
1995 vs. 2009

Legend

Extraction Well Pipeline

TCE Concentration Contours

- 5 - 25 µg/L
- 25 - 100 µg/L
- 100 - 500 µg/L
- 500 - 1,000 µg/L
- 1,000 - 2,000 µg/L
- > 2,000 µg/L

N
W E
S

Note:
Contours represent evaluation of probable conditions based on presently available data. Some variations from these conditions must be expected.

0 400 800
Feet

EA Engineering, Science, and Technology, Inc.

PROJECT MGR: CMB	DESIGNED BY: BSM	DATE: FEBRUARY 2010	FILE No.: H:\projects\1449505\SPRING2009\MXD\TCE_1995vs2009
CHECKED BY: GAH	DRAWN BY: JPK	PROJECT No.: 14495.05	SCALE: AS SHOWN, SAME IN BOTH FRAMES

BOOMSNUB/AIRCO SUPERFUND SITE
HAZEL DELL, WASHINGTON

FIGURE 14
TCE PLUME MAP
1995 vs. 2009

TABLES

TABLE 1. SYSTEM MODIFICATIONS AND REPAIRS IN 2009

Date	Wells	Well Group/System	Modification/Repair
January	--	OU-3	A new transducer was installed for the ion exchange tank.
February	--	OU-3	Installed two-pole double-throw relays in CV-3, CV-9, and CV-18 so that a single float would shut down the system and turn on the sump pumps simultaneously.
April	--	OU-3	Vacuum removal of spent resin from ion exchange vessel #2.
May	--	OU-3	Re-filled ion exchange canister #2 with new resin.
July	--	OU-3	Pumped purge water from TOPPS area sampling into sewer. Pumped 270 gallons from the segregation/settling tank at a rate of 6gpm.
August	MW-4A, MW-4BShed, MW-4C, MW-7B, MW-7C, MW-3B, MW-2B, MW-2C, MW-9C, MW-6A, MW-6C, MW-6D, PZ-39, & AMW-14	OU-3	Well development prior to the Fall sampling event.
September	--	OU-2	Replaced the blower, drive belts and intake filters on the IWS system.
October	MW-33	OU-3	Repaired a pipe and sump pump connection in CV-13 and installed an isolation valve in CV-12. Installed isolation valve in CV-12 in anticipation of future modifications to CV-13 and MW-21. Pulled dedicated pump out of MW-33 for repairs.
	--	OU-2	Based on the current site conditions, the GAC treatment of the discharge from the IWS system was discontinued with EPA approval. The IWS system now vents directly to the atmosphere and vapor samples are no longer collected.
November	MW-6B MW-10C	OU-3	A system shutoff bypass switch was installed in the sheep shed in anticipation of flooding in CV-13 at in the low part of the field between the proposed Hazel Dell sport fields and COG field. Replaced temporary pump setup in air stripper pad sump with a pump taken from CV-24. Replaced contactor for MW-10C and timer for MW-6B. Installed bypass control switch in sheep shed for CV-13.
	--	OU-2	Shut down IWS-3 and IWS-4.
December	MW-14C	OU-3	Replaced breaker in proximal well panel due to MW-14C not starting upon system reset.

Notes:
CV = Control vault.
IWS = In-well stripping

TABLE 2. OU-2 TCE SOURCE WELL 2009 SAMPLING RESULTS

Well ID	Baseline*	January	May	October
Center of Plume Wells				
AMW-1A	**220**	0.37 J	0.32 J	**12**
AMW-1B	0.73	0.50 J	0.49 J	0.51
AMW-1C	0.5 U	--	--	0.5 U
AMW-2A	**1,000**	**55**	**83**	**60**
AMW-2B	0.40 J	0.69	0.65	0.53
RAMW-2C	0.17 J	--	--	0.34 J
AMW-12A	**1,200**	**29**	**21**	**24**
AMW-19A	**290**	1.5	1.9	1.7
AMW-19B	--	--	--	0.54
AMW-26	**34**	0.2 J	0.33 J	2.3
AMW-56A	**610**	0.83	0.47 J	0.41 J
AMW-56C	0.19 J	0.44 J	0.4 J	0.4 J
Sidegradient Wells				
AMW-3A	**8.0**	0.54	0.66	0.68
AMW-4A	0.5 U	--	--	0.23 J
AMW-13A	2.7	0.80	0.94	0.58
Downgradient Wells				
AMW-52A	0.53	0.10 J	0.08 J	0.5 U
AMW-52C	0.5 U	--	--	0.5 U
AMW-53A	**240**	4.2	3.1	**14**
AMW-53B	2	--	--	0.56
AMW-53C	0.5 U	--	--	0.21 J
AMW-54A	**120**	2.5	2.2	2.5
AMW-54C	0.5 U	--	--	0.36 J
AMW-55A	**22**	0.95	0.82	0.97
AMW-55C	0.5 U	--	--	0.39 J
MW-1A	**880**	**9.3**	**10**	**10**
MW-1B	0.14 J	--	--	0.28 J
MW-1C	0.5 U	--	--	0.5 U

NOTES:

J = The result is an estimated concentration that is less than the Method Reporting Limit but greater than the Method Detection Limit.

-- = Not Sampled.

U = The analyte was not detected above the specified reporting limit.

* = Baseline samples for wells installed as part of the removal action were collected in December 2003. Baseline data from existing wells was collected during the October 2003 semiannual sampling event.

When duplicate samples are collected, the maximum of the two results is reported.
Results in **red** indicate the concentration exceeds the cleanup level of 5.0 µg/L.
Monitoring wells shown in **red** had concentrations above the cleanup level of 5.0 µg/L during the reporting period. All results reported in micrograms per liter (µg/L).

TABLE 3. 2009 EXTRACTION WELL PUMPING RATES

Flow Rates (gpm)												
Well ID	**January**	**February**	**March**	**April**	**May**	**June**	**July**	**August**	**September**	**October**	**November**	**December**
AMW-27	1	1	1	1	1	1	1	1	1	1	1	1
AMW-42	0	0	0	0	0	0	0	0	0	0	0	0
MW-6B	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.5	8	8	8
MW-10B	7.2	7.3	8.7	8.7	8.7	8	7.5	7.5	7.2	7.2	8	8
MW-10C	9	9	9	8.7	8.7	9	9	9	9	9	8.8	9
MW-14C	12	12	12	12	12	12	12	12	12	12	12	0
MW-14E	8	8	8	8	8	8	8	8	7	7	7	7
MW-18D	7.4	7.4	7.6	7.6	7.6	7.6	7.5	7.5	7.4	7.5	7.6	8
MW-19D	8	8	8	8	8	8	8	0	12.7	12.7	12.7	13.2
MW-20D	15	15	16.5	16.3	15.3	15.2	15.2	15.1	15.3	15.3	18.7	15.7
MW-21D	6.8	6.9	6.9	6.8	6.8	6.8	7.4	7.4	6.7	6.9	7.2	0
MW-22D	11.5	11.5	11.9	11.5	11.5	11.4	13.5	12.7	11.2	10.5	11	12.9
MW-25D	11	11	11.3	11	11	11	11.4	12	11.2	11.2	11.3	11.9
MW-26D	12.3	12.3	12.8	12.8	12.8	12.7	12.6	14	12.2	12.3	12.9	14.5
MW-27D	3.7	3.7	3.7	3.7	3.7	3.7	3.5	3.5	3.7	3.7	0	0
MW-31	0	0	0	0	0	0	0	0	0	0	0	0
MW-37	0	0	0	0	0	0	0	0	0	0	0	0
MW-48	0	0	0	0	0	0	0	0	0	0	0	0
MW-49	10	10	10	10	10	10	10	11	9.2	9	9	11.6
PW-1B	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.2	9.2
CPU-13	13.1	13.2	13.2	13.1	13	13	13.2	13.3	13.5	12	13.3	13.5
Total	**152.7**	**153**	**157.2**	**155.9**	**154.8**	**154.1**	**156.5**	**150.7**	**156.3**	**154.8**	**157.7**	**143.5**

Note: gpm = gallons per minute

TABLE 4. EPA APPROVED CHANGES TO WELL SAMPLING FREQUENCY DURING 2009

Well Group	Well ID	Sampling Frequency		EPA Approval Date	Reason for Change
		From	To		
Troutdale	Bennett	Annual	Semiannual	12/2/2009	This change was requested by Clark Public Utilities and agreed to by EPA.
TCE Source	AMW-1A, AMW-2A, AMW-3A, AMW-12A, AMW-13A, AMW-19A, AMW-52A, AMW-53A, AMW-54A, AMW-55A, AMW-56A, MW-1A	Quarterly	Semiannual	5/1/2009	Quarterly sampling was changed to semiannual sampling for OU-2 wells. TCE concentrations in these wells have decreased significantly and the concentration variability does not warrant such frequent sampling.
Intermediate	MW-40	Biennial	NFS	9/2/2009*	PZ-39 will be sampled in place of well MW-40. The screened interval for PZ-39 is at a better depth for monitoring contamination in this area. Also, MW-40 will likely need to be decommissioned due to planned development in this area (EA 2010).
	PZ-39	Not sampled	Biennial		
Church of God	AMW-14	Biennial	Semiannual	9/2/2009	More frequent sampling will be performed to monitor this well downgradient of extraction wells MW-21D and MW-22D, as directed by EPA. These extraction wells in the future may become the new toe of plume area.
	MW-27D MW-25D	Semiannual	Quarterly	12/14/2009	The pump in extraction well MW-27D has been turned off. The well will be sampled on a quarterly frequency to monitor for possible contaminant rebound. MW-25D, an active extraction well located downgradient of MW-27D, will be sampled quarterly during the rebound monitoring of well MW-27D.

NOTES:

* = EPA provided tentative approval, with final approval to be based on the results of samples collected in Fall 2009.
Cr = Chromium.
EPA = U.S. Environmental Protection Commission
TCE = Trichloroethene.

TABLE 5. CONCENTRATIONS OF TCE, CHROMIUM, DISSOLVED OXYGEN AND FERROUS IRON IN TOPPS GROUNDWATER SAMPLES

Sampling Date	AMW-43	AMW-44	AMW-45	AMW-63*	MW-30	MW-41	MW-46
TCE (µg/L)							
April 2006[1]	0.5 U	0.5 U	0.5 U	--*	0.5 U	6.2	0.5 U
October 2006[2]	0.5 U	0.5 U	0.5 U	--*	0.5 U	0.5 U	0.5 U
January 2007	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
May 2007	0.5 U	0.5 U	0.5 U	0.17 J	0.5 U	0.5 U	0.5 U
July 2007	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
October 2007	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
May 2008	0.5 U	0.5 U	0.5 U	0.08 J	0.5 U	0.5 U	0.5 U
October 2008	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
May 2009	0.5 U	--	--	0.10 J	--	0.5 U	0.5 U
October 2009	0.5 U	--	--	0.17 J	--	0.5 U	0.5 U
Chromium (µg/L)							
April 2006[1]	5.5 UJ	5.8 UJ	8.8 UJ	--*	5.0 U	165	11.8 UJ
October 2006[2]	5.0 U	5.0 U	7.3	--*	5.0 U	10.8 UJ	6.7 UJ
January 2007	2.8 B	3.1 B	3.9 B	9.5	5.0 U	5.0 U	8.5
May 2007	5.0 U	5.0 U	5.0 U	9.5	5.0	5.0 U	5.0 U
July 2007	5.0 U	5.0 U	5.0 U	10.6	5.0 U	5.0 U	3.8 B
October 2007	3.3 B	5.0 U	7.0	6.3	3.1 B	5.0 U	5.0 U
May 2008	6.8	5.0 U	8.0	19.5**	3.0 B	4.4 B	3.5 B
October 2008	19.7 B	4.9 B	9.8	8.2	5.0 U	0.9 U	5.2
May 2009	4.6 B	--	--	9.1	--	0.9 U	5.6
October 2009	3.6 J	--	--	12.4	--	5.0 U	5.1
Dissolved Oxygen (mg/L)							
April 2006[1]	5.67	3.46	1.92	--*	6.44	3.38	4.08
October 2006[2]	5.71	4.80	1.89	--*	5.06	3.62	3.86
January 2007	5.67	2.53	4.27	0.81	5.71	0.09	3.46
May 2007	5.71	1.56	6.00	4.07	2.74	0.10	0.09
July 2007	5.09	0.79	4.99	1.60	2.80	0.24	0.58
October 2007	4.58	0.11	6.03	0.85	2.96	0.08	0.21
May 2008	5.6	0.17	5.81	2.9	3.52	0.1	0.15

TABLE 5. CONCENTRATIONS OF TCE, CHROMIUM, DISSOLVED OXYGEN AND FERROUS IRON IN TOPPS GROUNDWATER SAMPLES

MW-30	AMW-43	AMW-44	AMW-45	AMW-63*	MW-30	MW-41	MW-46
October 2008	4.45	3.53	6.21	1.42	0.06	0	0.95
May 2009	4.39	--	--	2.4	--	0.06	1.31
October 2009	3.02	--	--	2.3	--	0	1.32
Ferrous Iron (mg/L)							
October 2009	--	--	--	0	--	0	--

NOTES:

*	New well installed in November 2006.
**	The total chromium result of 19.5 µg/L for AMW-63 may be a false positive based on contamination of the associated rinsate blank.
1	Pre-injection data (April 26, 2006).
2	Post-injection data (October 4, 2006).
µg/L	Micrograms per Liter.
mg/L	Milligrams per Liter.
TCE	Trichloroethene.
TOPPS	Toe-of-Plume Pilot Study.
U	Not detected above the method reporting limit or method detection limit.
UJ	The analyte was not detected, but the associated limit of quantitation is estimated due to discrepancies in quality control criteria.
B or J	Estimated concentration that is less than the method reporting limit but greater than or equal to the method detection limit.

TABLE 6. CONCENTRATIONS OF TCE AND CHROMIUM IN INFILTRATION GALLERY GROUNDWATER SAMPLES

TCE (µg/L)				
Sampling Date	**AMW-6A**	**AMW-7A**	**AMW-10A**	**AMW-11A**
October 2005 (Baseline)	0.5 U	0.5 U	NS	0.5 U
February 2006	0.5 U	0.5 U	0.5 U	0.5 U
April 2006	0.57	0.5	0.5 U	0.98
July 2006	0.91	0.61	0.5 U	0.95
October 2006	0.69	0.65	0.5 U	0.81
January 2007	0.89	1.0	0.5 U	1.5
April 2007	0.93	0.72	0.67	0.94
October 2007	0.66	0.57	0.55	0.66
May 2008	0.65	0.52	0.39 J	0.66
October 2008	0.51	0.46 J	0.42 J	0.46 J
May 2009	0.58	0.58	0.51	0.49 J
October 2009	0.38 J	0.45 J	0.27 J	0.48 J
Chromium (µg/L)				
October 2005 (Baseline)	4.8*	4.7* B	NS	5 U
February 2006	17.7	5 B	5.4	3.4 B
April 2006	16.5	4 B	6.6	4.5 B
July 2006	6.4	2 B	2.8 B	6.2
October 2006	8.6	4.4 B	0.5 U	9.4
January 2007	10.4	5 U	3.4 B	5 U
April 2007	7.3	5.2	5 U	6.1
October 2007	17.7	3 B	4.2 B	5 U
May 2008	5 U	5 U	12.5	4.1 B
October 2008	5.2	4 B	5.9	5.9
May 2009	11.5	0.9 U	3.4 B	5.7
October 2009	7.7	3.3 J	8.1	2.4 J

NOTES:
U =Not detected at or above the method reporting limit.
B or J =The result is an estimated concentration that is less than the Method Reporting Limit but greater than or equal to the Method Detection Limit.
NS =Not Sampled.
* =Sampled December 2005, October 2005 data rejected and well was re-sampled.
µg/L =Micrograms per liter.
TCE =trichloroethene.

TABLE 7. WELLS AND RECOMMENDED SAMPLING FREQUENCIES

Well Name	Well Type	GW Model Layer	Top of Screen		Bottom of Screen		TCE						Chromium						2009 Sampling Frequency [1]		MAROS Recommended Sampling Frequency		2010 Recommendations		Rationale for Frequency [2]
			Depth	Elevation	Depth	Elevation	Min. Conc. (ug/L)	Max. Conc. (ug/L)	Most Recent Conc. (ug/L)	Most Recent Data Qualifiers	Most Recent Sample Date	Conc. Statistically Below Cleanup Levels	Min. Conc. (ug/L)	Max. Conc. (ug/L)	Most Recent Conc. (ug/L)	Most Recent Data Qualifiers	Most Recent Sample Date	Conc. Statistically Below Cleanup Levels	TCE	Chromium	TCE	Chromium	TCE	Chromium	
Troutdale Wells																									
AMW-24	M/D	6	190	74.72	200	64.72	9.00	25.0	13.0		10/14/2009	NA	U	6.20	U	U	10/14/2009	NA	Annual	Annual	NA	NA	NC	NC	Troutdale well - TCE impacted
AMW-25	M/D	6	215	67.94	225	57.94	U	U	U	U	10/22/2008	NA	U	4.10	U	U	10/22/2008	NA	Biennial	Biennial	NA	NA	NC	NC	Troutdale well - unimpacted; upgradient well
AMW-50	M/D	6	185.19	97.59	195.19	87.59	U	0.16	U	U	10/22/2008	NA	U	37.7	2.30	B	10/22/2008	NA	Biennial	Biennial	NA	NA	NC	NC	Troutdale well - unimpacted
AMW-51	M/D	6	185.7	72.74	195.7	62.74	U	0.32	0.11	J	10/23/2008	NA	U	10.1	6.20		10/23/2008	NA	Biennial	Biennial	NA	NA	NC	NC	Troutdale well - unimpacted
AMW-62	M/D	6	185.73	72.93	195.73	62.93	U	U	U	U	10/15/2009	NA	U	U	U	U	10/15/2009	NA	Annual	Annual	NA	NA	Biennial	Biennial	Troutdale well - unimpacted
CPU-2	M	6	186.13	73.4	196.13	63.4	U	U	U	U	10/27/2008	NA	U	14.0	U	U	10/27/2008	NA	Biennial	Biennial	NA	NA	NC	NC	Troutdale well - unimpacted
CPU-3D	M/D	6	212.38	34.39	217.38	29.39	U	U	U	U	10/23/2008	NA	U	11.0	2.10	B	10/23/2008	NA	Biennial	Biennial	NA	NA	NC	NC	Troutdale well - unimpacted
CPU-10	M	6	186.9	74.34	196.9	64.34	U	U	U	U	10/27/2008	NA	U	13.2	2.20	B	10/27/2008	NA	Biennial	Biennial	NA	NA	NC	NC	Troutdale well - unimpacted
MW-33	M/D	6	205	67.55	215	57.55	6.40	19.0	12.0		10/22/2009	NA	U	40.5	40.5		10/22/2009	NA	Annual	Annual	NA	NA	NC	NC	Troutdale well - TCE impacted
MW-34	M/D	6	195	72.33	205	62.33	U	U	U	U	10/23/2008	NA	U	25.4	2.70	B	10/23/2008	NA	Biennial	Biennial	NA	NA	NC	NC	Troutdale well - unimpacted
BENNETT	Other	N/A	N/A	N/A	180	N/A	5.10	10.0	10.0		10/15/2009	NA	U	U	U	U	10/15/2009	NA	Semiannual	Semiannual	NA	NA	NC	NC	Troutdale well - TCE impacted -CPU request for semiannual sampling
Upgradient Wells																									
AMW-6A	M/D	1	24	260.56	34	250.56	U	0.93	0.38	J	10/13/2009	Yes	U	17.7	7.70		10/13/2009	Yes	Semiannual	Semiannual	NFS	NFS	Biennial	Biennial	Infiltration gallery well
AMW-7A	M/D	1	24.25	260.77	34.25	250.77	U	1.00	0.45	J	10/13/2009	Yes	U	5.20	3.30	J	10/13/2009	Yes	Semiannual	Semiannual	NFS	NFS	Biennial	Biennial	Infiltration gallery well
AMW-8A	M	1	24.5	260.99	34.5	250.99	0.91	692	1.00		10/14/2009	No							Semiannual		Annual	NFS	Annual		Upgradient well (furthest upgradient) - check for possible offsite TCE impacts
AMW-10A	M/D	1	21.5	262.51	31.5	252.51	U	0.79	0.27	J	10/13/2009	Yes	U	12.5	8.10		10/13/2009	Yes	Semiannual	Semiannual	NFS	NFS	Biennial	Biennial	Infiltration gallery well
AMW-11A	M/D	1	24	259.21	34	249.21	U	1.50	0.48	J	10/13/2009	Yes	U	9.40	2.40	J	10/13/2009	Yes	Semiannual	Semiannual	NFS	NFS	Biennial	Biennial	Infiltration gallery well
TCE Source Wells																									
AMW-1A	M	1	24.24	259.85	34.24	249.85	U	1290	12.0		10/13/2009	No							Semiannual		Annual		NC		OU2 monitoring plan; well cluster - most impacted (TCE above cleanup level)
AMW-1B	M	1	46.49	237.62	56.49	227.62	U	82.2	0.51		10/13/2009	No							Annual		Annual		Biennial		OU2 monitoring plan; well cluster - less frequent sampling
AMW-1C	M	2	69	215.06	79	205.06	U	73.9	U	U	10/13/2009	No							Annual		Annual		NFS		TCE has been BDL since 1997
AMW-2A	M	1	24.2	259.83	34.2	249.83	1.1	5350	60.0		10/13/2009	No							Semiannual		Annual		NC		OU2 monitoring plan; well cluster - most impacted (TCE above cleanup level)
AMW-2B	M	1/2	47	237.11	57	227.11	U	30.8	0.53		10/13/2009	No							Annual		Annual		Biennial		OU2 monitoring plan; well cluster - less frequent sampling
RAMW-2C	M	2	60.55	222.68	70.55	212.68	U	0.90	0.34	J	10/13/2009	Yes							Every 5 years		NFS		NFS		TCE statistically below the cleanup level (well cluster)
AMW-3A	M	1	24.5	259.42	34.5	249.42	0.16	34.0	0.68		10/14/2009	No							Semiannual		Annual		Annual		OU2 monitoring plan
AMW-4A	M	1	23.9	259.84	33.9	249.84	U	0.40	0.23	J	10/13/2009	Yes							Every 5 years		NFS		NFS		TCE statistically below the cleanup level
AMW-12A	**M**	**1**	**24.05**	**259.69**	**34.05**	**249.69**	**19.0**	**19300**	**24**		**10/13/2009**	**No**							**Semi-annual**		**Annual**		**NC**		**OU2 monitoring plan; more frequent sampling (TCE above cleanup level)**
AMW-13A	M	1	23.8	260.08	33.8	250.08	U	74.8	0.58		10/13/2009	No							Semiannual		Annual		Annual		OU2 monitoring plan
AMW-19A	M	1	25	258.94	35	248.94	1.50	490	1.70		10/14/2009	No							Semiannual		Annual		Annual		OU2 monitoring plan; well cluster - most impacted
AMW-19B	M	1/2	44.5	239.47	54.5	229.47	U	0.77	0.54		10/14/2009	Yes							Every 5 years		NFS		NFS		TCE statistically below the cleanup level (well cluster)
AMW-26	M	1	24.2	258.82	34.2	248.82	U	100	2.30		10/13/2009	No							Semiannual		Annual		Annual		TCE source area with TCE below the cleanup level
AMW-52A	M	1	24.55	255.85	34.55	245.85	U	29.0	U	U	10/13/2009	No							Semiannual		Annual		Annual		OU2 monitoring plan; well cluster - most impacted
AMW-52C	M	1/2	63.63	216.75	73.63	206.75	U	U	U	U	10/13/2009	Yes							Every 5 years		NFS		NFS		TCE statistically below the cleanup level (well cluster)
AMW-53A	M	1	22.2	258.85	32.2	248.85	1.20	240	14.0		10/13/2009	No							Semiannual		Annual		NC		OU2 monitoring plan; well cluster - most impacted (TCE above cleanup level)
AMW-53B	M	1	44.55	236.65	54.55	226.65	0.43	2.70	0.56		10/13/2009	Yes							Every 5 years		NFS		NFS		TCE statistically below the cleanup level (well cluster)
AMW-53C	M	2	64.21	217.2	74.21	207.2	U	0.21	0.21	J	10/13/2009	Yes							Every 5 years		NFS		NFS		TCE statistically below the cleanup level (well cluster)
AMW-54A	M	1	24.3	259.01	34.3	249.01	0.53	190	2.50		10/13/2009	No							Semiannual		Annual		Annual		OU2 monitoring plan; well cluster - most impacted
AMW-54C	M	2	64.74	218.38	74.74	208.38	U	0.36	0.36	J	10/13/2009	Yes							Every 5 years		NFS		NFS		TCE statistically below the cleanup level (well cluster)
AMW-55A	M	1	20.83	261.28	30.83	251.28	0.40	39.0	0.97		10/13/2009	No							Semiannual		Annual		Annual		OU2 monitoring plan; well cluster - most impacted

TABLE 7. WELLS AND RECOMMENDED SAMPLING FREQUENCIES

Well Name	Well Type	GW Model Layer	Top of Screen		Bottom of Screen		TCE						Chromium						2009 Sampling Frequency [1]		MAROS Recommended Sampling Frequency		2010 Recommendations		Rationale for Frequency [2]
			Depth	Elevation	Depth	Elevation	Min. Conc. (ug/L)	Max. Conc. (ug/L)	Most Recent Conc. (ug/L)	Most Recent Data Qualifiers	Most Recent Sample Date	Conc. Statistically Below Cleanup Levels	Min. Conc. (ug/L)	Max. Conc. (ug/L)	Most Recent Conc. (ug/L)	Most Recent Data Qualifiers	Most Recent Sample Date	Conc. Statistically Below Cleanup Levels	TCE	Chromium	TCE	Chromium	TCE	Chromium	
AMW-55C	M	2	58.45	224.26	68.45	214.26	U	0.39	0.39	J	10/13/2009	Yes							Every 5 years		NFS		NFS		TCE statistically below the cleanup level (well cluster)
AMW-56A	M	1	25.24	258.43	35.24	248.43	0.38	610	0.41	J	10/13/2009	No							Semiannual		Annual		Annual		OU2 monitoring plan; well cluster - most impacted
AMW-56C	M	2	57.4	226.27	67.4	216.27	U	0.44	0.40	J	10/13/2009	Yes							Every 5 years		NFS		NFS		TCE statistically below the cleanup level (well cluster)
MW-1A	**M**	**1**	**28.36**	**257.13**	**38.26**	**247.23**	**7.40**	**3900**	**10.0**		**10/13/2009**	**No**	**U**	**162.0**	**12.5**		**10/23/2008**	**No**	**Semi-annual**	**Biennial**	**Annual**	**Annual**	**NC**	**NC**	**OU2 monitoring plan; well cluster - most impacted (TCE above cleanup level) also Cr background well**
MW-1B	M	2	54.49	230.98	59.49	225.98	U	400	0.28	J	10/13/2009	No							Annual		Annual		NFS		TCE has been below reporting limit since 2000.
MW-1C	M	3	72.14	213.31	77.14	208.31	U	92.0	U	U	10/13/2009	Yes	U	10.0	6.5		10/14/2003	Yes	Annual		NFS	NFS	NFS	NFS	TCE and Cr are statistically below the cleanup level (well cluster)
Proximal Wells																									
AMW-58	M	4	109.43	170.65	114.43	165.65	0.89	9.20	0.89		10/29/2008	No	U	34.7	3.30	J	10/29/2008	No	Biennial	Biennial	Quarterly	Annual	NC	NC	Plume area; not included in any other category - impacted (silt well)
MW-2A	M	1	32.09	250.48	37.09	245.48	2.50	24.7	4.70		10/28/2008	No	29.2	2660	343		10/20/2009	No	Biennial	Annual	Annual	Annual	NC	NC	Well cluster - most impacted and Cr hotspot
MW-2B	M	1	52.64	229.85	57.64	224.85	2.40	29.0	2.40		10/16/2009	No	U	26.4	9.60		10/16/2009	Yes	Every 5 years	Every 5 years	Annual	NFS	NC	NFS	Well cluster - less frequent sampling; Cr statistically below cleanup level
MW-2C	M	3	81.64	200.79	86.64	195.79	0.36	40.5	0.36	J	10/19/2009	No	U	21.4	21.4	UJ	10/19/2009	Yes	Every 5 years	Every 5 years	Annual	NFS	NFS	NFS	Well cluster - less frequent sampling; TCE below cleanup level since 2002, Cr statistically below cleanup level
MW-3A	M	1	22.34	257.87	32.34	247.87	U	2.40	0.23	J	10/29/2008	Yes	132	1820	187		10/20/2009	No	Biennial	Biennial	NFS	Annual	NFS	NC	Well cluster - most Cr impacted; TCE statistically below cleanup level
MW-3B	M	1	51.39	228.94	56.39	223.94	2.30	32.0	2.30		10/19/2009	No	5.20	23.3	15.3	UJ	10/19/2009	Yes	Every 5 years	Every 5 years	Annual	NFS	Biennial	NFS	Well cluster - most TCE impacted; Cr statistically below cleanup level
MW-4A	M	1	26.81	253.49	36.81	243.49	0.80	210	5.50		10/20/2009	No	363	5320	363		10/20/2009	No	Every 5 years	Every 5 years	Annual	Annual	NC	NC	Well cluster - less frequent sampling
MW-4B	M	1	39.7	240.45	44.7	235.45	0.94	600	7.20		10/29/2008	No	353	15500	634		10/20/2009	No	Biennial	Annual	Annual	Annual	NC	NC	Well cluster - most impacted and Cr hotspot
MW-4BShed	M	1	52.9	227.57	57.9	222.57	4.10	198	4.10		10/20/2009	No	85.9	8580	85.9		10/20/2009	No	Every 5 years	Every 5 years	Annual	Annual	NC	NC	Well cluster - less frequent sampling
MW-4C	M	3	74.7	205.21	79.7	200.21	3.80	40.0	3.80		10/20/2009	No	61.0	248	61.0		10/20/2009	No	Every 5 years	Every 5 years	Annual	Annual	NFS	NFS	Well cluster - less frequent sampling; TCE and Cr below cleanup level
MW-6A	M	1	18.25	260.52	28.25	250.52	U	38.1	U	U	10/15/2009	No	U	167	167		10/15/2009	No	Every 5 years	Every 5 years	Quarterly	Quarterly	NFS	NC	Well cluster - less frequent sampling; TCE below cleanup level since 1995.
MW-6B	**E**	**1**	**45.75**	**227.57**	**55.75**	**217.57**	**5.70**	**1230**	**6.40**		**10/12/2009**	**No**	**10.9**	**13000**	**20.8**		**10/12/2009**	**No**	**Semi-annual**	**Semi-annual**	**Annual**	**Annual**	**NC**	**NC**	**Extraction well - active (also well cluster)**
MW-6C	M	2	71.55	207.1	81.55	197.1	0.54	66.7	0.54		10/19/2009	No	8.63	400	12.3	UJ	10/19/2009	No	Every 5 years	Every 5 years	Annual	Annual	NC	NFS	Well cluster - less frequent sampling; Cr below cleanup level since 1995
MW-6D	M	3/4	100.45	178.45	110.45	168.45	4.30	63.5	4.30		10/19/2009	No	U	29.8	29.8		10/19/2009	Yes	Every 5 years	Every 5 years	Annual	NFS	NC	NFS	Well cluster - less frequent sampling; Chromium statistically below cleanup level
MW-7B	M	1	47	233.02	57	223.02	7.30	984	7.30		10/19/2009	No	9.80	932	9.80	UJ	10/19/2009	No	Every 5 years	Every 5 years	Annual	Annual	NC	NFS	Well cluster - adjacent to MW-4 cluster, less frequent sampling; Cr below cleanup level since 1998
MW-7C	M	2/3	69	210.94	79	200.94	0.18	26.5	0.18	J	10/16/2009	No	U	174	12.3		10/16/2009	No	Every 5 years	Every 5 years	Annual	Annual	NFS	NFS	Well cluster - TCE below cleanup level since 1997, Cr below cleanup level since 1995
MW-8B	M	1	46.9	233.8	56.9	223.8	6.00	3070	6.00		10/29/2008	No	U	13.0	7.30		10/29/2008	Yes	Biennial	Biennial	Annual	NFS	NC	NFS	Plume area - not included in any other category - impacted; Cr statistically below cleanup level
MW-9B	M	1	44.9	230.52	54.9	220.52	9.30	2100	9.30		10/29/2008	No	U	429	3.60	J	10/29/2008	No	Biennial	Biennial	Annual	Annual	NC	NFS	Well cluster - most TCE impacted; Cr below cleanup level since 1997
MW-9C	M	1	65	210.44	75	200.44	3.80	2280	3.80		10/19/2009	No	U	65.4	65.4		10/19/2009	No	Every 5 years	Every 5 years	Annual	Annual	NC	NC	Well cluster - less frequent sampling
MW-10B	E	1	48	225.24	58	215.24	5.20	1300	21.0		10/12/2009	No	31.0	3600	45.7		10/12/2009	No	Semiannual	Semiannual	Annual	Annual	NC	NC	Extraction well - active (also well cluster)

TABLE 7. WELLS AND RECOMMENDED SAMPLING FREQUENCIES

Well Name	Well Type	GW Model Layer	Top of Screen		Bottom of Screen		TCE						Chromium						2009 Sampling Frequency [1]		MAROS Recommended Sampling Frequency		2010 Recommendations		Rationale for Frequency [2]
			Depth	Elevation	Depth	Elevation	Min. Conc. (ug/L)	Max. Conc. (ug/L)	Most Recent Conc. (ug/L)	Most Recent Data Qualifiers	Most Recent Sample Date	Conc. Statistically Below Cleanup Levels	Min. Conc. (ug/L)	Max. Conc. (ug/L)	Most Recent Conc. (ug/L)	Most Recent Data Qualifiers	Most Recent Sample Date	Conc. Statistically Below Cleanup Levels	TCE	Chromium	TCE	Chromium	TCE	Chromium	
MW-10C	**E**	**1**	**70**	**203.25**	**80**	**193.25**	**4.90**	**1500**	**4.90**		**10/12/2009**	**No**	**94.5**	**6400**	**94.5**		**10/12/2009**	**No**	**Semi-annual**	**Semi-annual**	**Annual**	**Annual**	**NC**	**NC**	**Extraction well - active (also well cluster)**
MW-12C	M	1	71.2	203.11	81.2	193.11	7.40	9430	11.0		10/16/2009	No	U	19.0	4.50	J	10/16/2009	Yes	Annual	Annual	Annual	NFS	Biennial	Biennial	Plume boundary
MW-13C	M	1	65.03	206.94	75.03	196.94	2.10	35.0	5.60		10/19/2009	No	32.1	122	32.7		10/19/2009	Yes	Annual	Annual	Annual	NFS	Biennial	Biennial	Plume boundary
PW-1B	**E**	**1**	**48**	**228.56**	**58**	**218.56**	**3.60**	**900**	**3.60**		**10/12/2009**	**No**	40.8	13000	43.4		**10/12/2009**	**No**	**Semi-annual**	**Semi-annual**	**Annual**	**Annual**	**NC**	**NC**	**Extraction well - active**
Intermediate Wells																									
AMW-16	M	2	76.83	185.15	86.83	175.15	2.20	87.0	2.20		10/15/2009	No	U	3.00	U	U	10/15/2009	Yes	Annual	Annual	Annual	NFS	Biennial	Biennial	Plume boundary
AMW-17	M/D	1	81	180.87	91	170.87	1.10	66.9	1.20		10/14/2009	No	U	4.60	U	U	10/14/2009	Yes	Semiannual	NFS (2008)	Annual	NFS	NC	NC	Northern Plume investigation area; Cr statistically below the cleanup level
AMW-18	M	1	92.69	186.15	102.69	176.15	U	460	210		10/14/2009	No	U	2.40	U	U	10/10/2007	Yes	Semiannual	NFS (2008)	Quarterly	NFS	NC	NC	Northern Plume investigation area; Cr statistically below the cleanup level
AMW-59	M/D	3	134.74	134.6295	139.74	129.6295	91.0	310	130		10/14/2009	No	U	7.90	U	U	10/14/2009	Yes	Annual	Annual	Annual	NFS	NC	NFS	Plume area - hotspot (silt well); Cr statistically below the cleanup level
AMW-60	M	3	103.5	162.25	108.5	157.25	U	0.94	U	U	10/15/2009	No	U	8.90	2.10	J	10/15/2009	No	Every 5 years	Every 5 years	Annual	Annual	NFS	NFS	Silt well - TCE and Cr have never exceeded the cleanup level
CPU-14	M	2	60.43	197.13	70.43	187.13	9.80	63.0	10.0		10/20/2009	No	31.9	957	76.2		10/20/2009	No	Annual	Annual	Annual	Annual	Biennial	Biennial	Plume boundary
MW-14C	E	1	70	201.22	80	191.22	20.0	2500	22.0		10/12/2009	No	94.4	20000	98.8		10/12/2009	No	Semiannual	Semiannual	Annual	Annual	NC	NC	Extraction well - active (also well cluster)
MW-14E	**E**	**2**	**115**	**153.95**	**125**	**143.95**	**87.0**	**6540**	**87.0**		**10/12/2009**	**No**	**51.5**	**21200**	**51.5**		**10/12/2009**	**No**	**Semi-annual**	**Semi-annual**	**Annual**	**Annual**	**NC**	**NC**	**Extraction well - active (also well cluster)**
MW-15E	M	3	95.7	168.97	105.7	158.97	7.50	1100	7.50		10/14/2009	No	U	18.0	3.30	J	10/29/2008	Yes	Semiannual	NFS (2008)	Annual	NFS	NC	NC	Northern Plume investigation area; Cr statistically below the cleanup level
MW-16E	M	2	111.1	147.25	121.1	137.35	U	5.70	2.80		10/20/2009	No	U	16.1	2.50	UJ	10/20/2009	No	Annual	Annual	Annual	Biennial	Biennial	Biennial	Plume boundary
MW-18D	**E**	**1**	**73.4**	**189.34**	**93.4**	**169.34**	**66.0**	**7800**	**86.0**		**10/12/2009**	**No**	**168**	**23100**	**173**		**10/12/2009**	**No**	**Semi-annual**	**Semi-annual**	**Annual**	**Annual**	**NC**	**NC**	**Extraction well - active (also well cluster)**
MW-18E	M/D	3	112.57	149.1965	122.57	139.1965	160	2700	160		10/14/2009	No	U	729	12.5		10/14/2009	No	Annual	Annual	Annual	Annual	NC	NC	Plume area - hotspot
MW-19D	**E**	**1**	**76.2**	**181.78**	**91.2**	**166.78**	**12.0**	**6300**	**44.0**		**10/12/2009**	**No**	190	**23000**	**190**		**10/12/2009**	**No**	**Semi-annual**	**Semi-annual**	**Annual**	**Annual**	**NC**	**NC**	**Extraction well - active**
MW-20D	**E**	**2**	**79.7**	**193.45**	**89.7**	**183.45**	**42.0**	**4100**	**42.0**		**10/12/2009**	**No**	**88.1**	**51000**	**88.1**		**10/12/2009**	**No**	**Semi-annual**	**Semi-annual**	**Annual**	**Annual**	**NC**	**NC**	**Extraction well - active**
MW-40	M	1	60.93	205.35	65.93	200.35	1.20	36.0	1.20		10/29/2008	No	97.6	443	126		10/29/2008	No	NFS	NFS	Annual	Annual	NC	NC	Replaced with PZ-39
PZ-39	M	2	88	176.37	90	174.37	99.0	2,100 J	99.0		10/20/2009	No	6.70	11.0	6.70	UJ	10/20/2009	No	Biennial	Biennial	NA	NA	NC	NC	Plume area - not included in any other category - impacted (Replacing well MW-40)
Church of God Wells																									
AMW-14	M	2	58.19	215.7089	68.19	205.7089	0.88	506	0.88		10/20/2009	No	83.3	8300	83.3		10/20/2009	No	Semiannual	Semiannual	Annual	Annual	NC	NC	Plume area - not included in any other category - impacted (EPA request for more frequent sampling)
AMW-27	E	3	78	194.6	88	184.6	18.0	83.0	19.0		10/13/2009	No	70.7	7630	70.7		10/13/2009	No	Semiannual	Semiannual	Annual	Annual	NC	NC	Extraction well - active
AMW-61	M	3	91.86	181.92	96.86	176.92	6.50	43.0	6.50		10/29/2008	No	17.3	1410	17.3		10/29/2008	No	Biennial	Biennial	Quarterly	Quarterly	NC	NC	Plume area - not included in any other category - impacted (silt well)
CPU-12	M	2	61.12	214.11	71.12	204.11	U	13.0	4.90		10/16/2009	No	6.60	245	8.00		10/16/2009	No	Annual	Annual	Annual	Annual	NC	Biennial	Plume boundary - at tail end of TCE plume
CPU-13	E	3	80	198.9898	90	188.9898	1.90	110	1.90		10/12/2009	No	19.7	5000	19.7		10/12/2009	No	Semiannual	Semiannual	Annual	Annual	NC	NC	Extraction well - active
MW-21D	**E**	**2**	**56**	**201.56**	**66**	**191.56**	**11.0**	**3000**	**11.0**		**10/12/2009**	**No**	16.0	35000	16.0		10/12/2009	No	**Semi-annual**	**Semi-annual**	**Annual**	**Annual**	**NC**	**NC**	**Extraction well - active**
MW-22D	E	3	54	215.02	64	205.02	10.0	390	10.0		10/12/2009	No	50.0	11000	50.0		10/12/2009	No	Semiannual	Semiannual	Annual	Annual	NC	NC	Extraction well - active
MW-23D	M	3	75.86	191.7004	90.86	176.7004	U	67.0	2.50		10/16/2009	No	U	6.70	2.70	J	10/16/2009	Yes	Annual	Annual	Annual	NFS	Biennial	Biennial	Plume boundary
MW-25D	E	2	70	202.13	80	192.13	1.40	200	1.40		10/12/2009	No	U	16000	2.50	J	10/12/2009	No	Quarterly	Quarterly	Annual	Annual	NC	NC	Extraction well - active; also monitoring possible rebound in MW-27D area
MW-26D	**E**	**3**	**83**	**189.86**	**93**	**179.86**	**U**	**52**	**1.3**		**10/12/2009**	**No**	**15.4**	**4800**	**15.4**		**10/12/2009**	**No**	**Semi-annual**	**Semi-annual**	**Annual**	**Annual**	**NC**	**NC**	**Extraction well - active**
MW-27D	**E**	**2**	**61.1**	**208.147**	**71.1**	**198.147**	**U**	**280**	**0.46**	**J**	**10/13/2009**	**No**	**3.90**	**6940**	**4.30**	J	**10/13/2009**	**No**	**Quarterly**	**Quarterly**	**Annual**	**Annual**	**NC**	**NC**	**Extraction well - inactive; pump turned off, monitoring for rebound**
MW-49	E	2	71.2	200.48	81.2	190.48	U	340	**2.9**		10/12/2009	No	14.1	1160	23.1		10/12/2009	No	Semiannual	Semiannual	Annual	Annual	NC	NC	Extraction well - active
Other Toe Wells																									

TABLE 7. WELLS AND RECOMMENDED SAMPLING FREQUENCIES

Well Name	Well Type	GW Model Layer	Top of Screen		Bottom of Screen		TCE						Chromium						2009 Sampling Frequency [1]		MAROS Recommended Sampling Frequency		2010 Recommendations		Rationale for Frequency [2]
			Depth	Elevation	Depth	Elevation	Min. Conc. (ug/L)	Max. Conc. (ug/L)	Most Recent Conc. (ug/L)	Most Recent Data Qualifiers	Most Recent Sample Date	Conc. Statistically Below Cleanup Levels	Min. Conc. (ug/L)	Max. Conc. (ug/L)	Most Recent Conc. (ug/L)	Most Recent Data Qualifiers	Most Recent Sample Date	Conc. Statistically Below Cleanup Levels	TCE	Chromium	TCE	Chromium	TCE	Chromium	
AMW-42	E	3	87	168.8803	102	153.8803	U	73.0	1.30		10/12/2009	No	U	2280	19.5		10/12/2009	No	Annual	Annual	Annual	Annual	Biennial	Biennial	Plume area - not included in any other category - not impacted
AMW-63	M	2	76.13	181.29	86.13	171.29	U	0.17	0.17	J	10/15/2009	No	U	12.4	12.4		10/15/2009	No	Semiannual	Semiannual	Annual	Annual	Annual	Annual	TOPPS monitoring
MW-31	**E**	**2**	**75**	**187.88**	**85**	**177.88**	**0.30**	**32**	**0.30**	**J**	**10/12/2009**	**No**	**U**	**535**	**8.40**		**10/12/2009**	**No**	**Annual**	**Annual**	**Annual**	**Annual**	**Biennial**	**Biennial**	**Attainment well**
MW-35	E/M	2	79.5	176.2018	89.5	166.2018	U	110	6.80		10/15/2009	No	U	8050	25.7		10/15/2009	No	Semiannual	Semiannual	Annual	Annual	Annual	Annual	Extraction well - inactive - also local TCE hot spot
MW-41	**E/M**	**2**	**74**	**179.085**	**84**	**169.085**	**U**	**8.3**	**U**	U	**10/14/2009**	**No**	**U**	**216**	**U**	U	**10/14/2009**	**No**	**Semi-annual**	**Semi-annual**	**Annual**	**Annual**	**Annual**	**Annual**	**TOPPS monitoring and attainment well**
MW-46	E/M	2	74.45	173.3389	84.45	163.3389	U	U	U	U	10/14/2009	Yes	U	28.0	5.10		10/14/2009	No	Semiannual	Semiannual	NFS	Biennial	NFS	NFS	TCE statistically below the cleanup level. Cr has never exceeded the cleanup level.
MW-48	E	2	76.2	172.62	86.2	162.62	U	U	U	U	10/15/2009	Yes	U	37.8	35.0		10/15/2009	No	Annual	Annual	NFS	Annual	NFS	NFS	TCE statistically below the cleanup level. Cr has never exceeded the cleanup level.
Sentinel Toe Wells																									
AMW-43	M/D	2	72	175.71	85	162.71	U	U	U	U	10/14/2009	Yes	U	7.80	3.60	J	10/14/2009	Yes	Semiannual	Semiannual	NFS	NFS	NFS	NFS	TCE and Cr statistically below cleanup levels.

NOTES:

[1] The 2009 sampling frequencies shown are those approved by EPA as of 12/31/09.

[2] For wells with 2010 recommendations for a change in sampling frequency, additional explanation is provided in Table 10.

Bolded well = attainment well
Cr = chromium
E = extraction well
E/M = extraction well with pump pulled; now sampled as a monitoring well
GW = groundwater
M = monitoring well
MAROS = Monitoring and Remediation Optimization System
M/D = monitoring well with dedicated pump installed
NA = not applicable
NFS = no further sampling (dates in parentheses indicate the Annual Report in which this recommendation was first made)
NC = no change to the current sampling frequency
TCE = trichloroethene
TOPPS = toe of plume pilot study
U = undetected
µg/L = micrograms per liter

Data used for the Annual Screening are from 1995 to the present.
Biennial sampling - these wells will be sampled next in Fall 2010.
Every 5 years - these wells will be sampled next in Fall 2014.
Wells designated NFS in previous Annual Reports have been deleted from this table and are included in Table 11.

TABLE 8. 2009 MAROS RESULTS SUMMARY

Well Name	TCE								Chromium								MAROS Recommended Sampling Frequency	
	Sample Size	MK Trend	Coefficient of Variation (COV)	Sequential T-Test Result		Cleanup Status	Conc. Statistically Below Cleanup Levels	MAROS Statistically Redundant	Sample Size	MK Trend	Coefficient of Variation (COV)	Sequential T-Test Result		Cleanup Status	Conc. Statistically Below Cleanup Levels	MAROS Statistically Redundant	TCE	Chromium
				Normal Distribution	Lognormal Distribution							Normal Distribution	Lognormal Distribution					
Upgradient Wells																		
AMW-6A	7	NT	0.46	Attained	Cont Sampling	Attained	Yes		5	S	0.46	Attained	Cont Sampling	Attained	Yes		NFS	NFS
AMW-7A	12	I	0.59	Attained	Cont Sampling	Attained	Yes		7	D	0.21	Attained	Attained	Attained	Yes		NFS	NFS
AMW-8A	14	D	1.61	Cont Sampling	Cont Sampling	Cont Sampling	No		1	N/A	0.00	N/C	N/C	N/C	0		Annual	NFS
AMW-10A	6	S	0.44	Attained	Cont Sampling	Attained	Yes		5	S	0.38	Attained	Cont Sampling	Attained	Yes		NFS	NFS
AMW-11A	7	NT	0.57	Attained	Cont Sampling	Attained	Yes		6	NT	0.32	Attained	Cont Sampling	Attained	Yes		NFS	NFS
TCE Source Wells																		
AMW-1A	15	D	1.52	Cont Sampling	Cont Sampling	Cont Sampling	No										Annual	
AMW-1B	11	D	2.72	Cont Sampling	Cont Sampling	Cont Sampling	No										Annual	
AMW-1C	10	NT	1.72	Attained	Cont Sampling	Cont Sampling	No										Annual	
AMW-2A	15	D	1.10	Cont Sampling	Cont Sampling	Cont Sampling	No										Annual	
AMW-2B	11	NT	1.84	Cont Sampling	Cont Sampling	Cont Sampling	No										Annual	
RAMW-2C	9	NT	0.67	Attained	Attained	Attained	Yes										NFS	
AMW-3A	15	D	0.91	Cont Sampling	Cont Sampling	Cont Sampling	No										Annual	
AMW-4A	7	D	0.35	Attained	Cont Sampling	Attained	Yes										NFS	
AMW-12A	**15**	**D**	**1.41**	**Cont Sampling**	**Cont Sampling**	**Cont Sampling**	**No**										**Annual**	
AMW-13A	15	NT	1.89	Cont Sampling	Cont Sampling	Cont Sampling	No										Annual	
AMW-19A	13	D	1.27	Cont Sampling	Cont Sampling	Cont Sampling	No										Annual	
AMW-19B	8	NT	0.59	Attained	Cont Sampling	Attained	Yes										NFS	
AMW-26	13	D	1.33	Cont Sampling	Cont Sampling	Cont Sampling	No										Annual	
AMW-52A	7	D	0.76	Cont Sampling	Cont Sampling	Cont Sampling	No										Annual	
AMW-52C	7	S	0.00	Attained	Attained	Attained	Yes										NFS	
AMW-53A	7	D	1.66	Cont Sampling	Cont Sampling	Cont Sampling	No										Annual	
AMW-53B	7	D	0.65	Attained	Cont Sampling	Attained	Yes										NFS	
AMW-53C	7	S	0.06	Attained	Attained	Attained	Yes										NFS	
AMW-54A	7	PD	1.23	Cont Sampling	Cont Sampling	Cont Sampling	No										Annual	
AMW-54C	7	NT	0.15	Attained	Attained	Attained	Yes										NFS	
AMW-55A	6	NT	1.44	Cont Sampling	Cont Sampling	Cont Sampling	No										Annual	
AMW-55C	7	S	0.20	Attained	Attained	Attained	Yes										NFS	
AMW-56A	7	D	2.26	Cont Sampling	Cont Sampling	Cont Sampling	No										Annual	
AMW-56C	7	I	0.27	Attained	Cont Sampling	Attained	Yes										NFS	
MW-1A	**15**	**D**	**0.83**	**Cont Sampling**	**Cont Sampling**	**Cont Sampling**	**No**		11	NT	1.92	Attained	Cont Sampling	Cont Sampling	No		**Annual**	Annual
MW-1B	12	NT	2.30	Cont Sampling	Cont Sampling	Cont Sampling	No										Annual	
MW-1C	11	NT	0.97	Attained	Cont Sampling	Attained	Yes		0	0	0.00	Attained	Cont Sampling	Attained	Yes		NFS	NFS
Proximal Wells																		
AMW-58	3	N/A	0.00	N/C	N/C	N/C	No		3	N/A	0.00	N/C	N/C	N/C	No		Quarterly	Annual
MW-2A	12	PD	0.54	Cont Sampling	Not Attained	Cont Sampling	No		14	NT	1.03	Cont Sampling	Cont Sampling	Cont Sampling	No		Annual	Annual
MW-2B	10	D	0.67	Cont Sampling	Not Attained	Cont Sampling	No		10	NT	0.71	Attained	Cont Sampling	Attained	Yes		Annual	NFS
MW-2C	7	D	1.23	Cont Sampling	Cont Sampling	Cont Sampling	No		7	NT	0.74	Attained	Cont Sampling	Attained	Yes		Annual	NFS
MW-3A	11	S	0.65	Attained	Cont Sampling	Attained	Yes		12	D	0.59	Cont Sampling	Not Attained	Cont Sampling	No		NFS	Annual
MW-3B	8	D	0.83	Cont Sampling	Cont Sampling	Cont Sampling	No		8	S	0.36	Attained	Attained	Attained	Yes		Annual	NFS
MW-4A	10	NT	2.00	Cont Sampling	Cont Sampling	Cont Sampling	No		10	S	0.83	Cont Sampling	Not Attained	Cont Sampling	No		Annual	Annual
MW-4B	7	NT	2.23	Cont Sampling	Cont Sampling	Cont Sampling	No		8	PD	0.77	Cont Sampling	Cont Sampling	Cont Sampling	No		Annual	Annual
MW-4BShed	8	D	1.43	Cont Sampling	Cont Sampling	Cont Sampling	No		9	D	1.45	Cont Sampling	Cont Sampling	Cont Sampling	No		Annual	Annual
MW-4C	5	S	0.66	Cont Sampling	Cont Sampling	Cont Sampling	No		5	S	0.47	Cont Sampling	Cont Sampling	Cont Sampling	No		Annual	Annual
MW-6A	3	N/A	0.00	N/C	N/C	N/C	No		3	N/A	0.00	N/C	N/C	N/C	No		Quarterly	Quarterly

TABLE 8. 2009 MAROS RESULTS SUMMARY

Well Name	TCE								Chromium								MAROS Recommended Sampling Frequency	
	Sample Size	MK Trend	Coefficient of Variation (COV)	Sequential T-Test Result		Cleanup Status	Conc. Statistically Below Cleanup Levels	MAROS Statistically Redundant	Sample Size	MK Trend	Coefficient of Variation (COV)	Sequential T-Test Result		Cleanup Status	Conc. Statistically Below Cleanup Levels	MAROS Statistically Redundant		
				Normal Distribution	Lognormal Distribution							Normal Distribution	Lognormal Distribution				TCE	Chromium
MW-6B	**15**	**D**	**1.27**	**Cont Sampling**	**Cont Sampling**	**Cont Sampling**	**No**		**15**	**D**	**1.90**	**Cont Sampling**	**Cont Sampling**	**Cont Sampling**	**No**		**Annual**	**Annual**
MW-6C	9	PD	0.63	Cont Sampling	Cont Sampling	Cont Sampling	No		9	NT	1.39	Cont Sampling	Cont Sampling	Cont Sampling	No		Annual	Annual
MW-6D	6	D	0.63	Cont Sampling	Cont Sampling	Cont Sampling	No		6	NT	0.80	Attained	Cont Sampling	Attained	Yes		Annual	NFS
MW-7B	5	D	0.97	Cont Sampling	Cont Sampling	Cont Sampling	No		5	D	1.78	Cont Sampling	Cont Sampling	Cont Sampling	No		Annual	Annual
MW-7C	5	D	1.64	Cont Sampling	Cont Sampling	Cont Sampling	No		5	S	0.45	Cont Sampling	Cont Sampling	Cont Sampling	No		Annual	Annual
MW-8B	7	D	1.63	Cont Sampling	Cont Sampling	Cont Sampling	No		7	NT	0.65	Attained	Cont Sampling	Attained	Yes		Annual	NFS
MW-9B	8	D	1.32	Cont Sampling	Cont Sampling	Cont Sampling	No		8	D	1.62	Cont Sampling	Cont Sampling	Cont Sampling	No		Annual	Annual
MW-9C	6	D	1.53	Cont Sampling	Cont Sampling	Cont Sampling	No		6	I	1.65	Cont Sampling	Cont Sampling	Cont Sampling	No		Annual	Annual
MW-10B	15	NT	1.55	Cont Sampling	Not Attained	Not Attained	No		15	D	0.82	Cont Sampling	Not Attained	Cont Sampling	No		Annual	Annual
MW-10C	**15**	**D**	**1.56**	**Cont Sampling**	**Cont Sampling**	**Cont Sampling**	**No**		**15**	**D**	**1.86**	**Cont Sampling**	**Not Attained**	**Not Attained**	**No**		**Annual**	**Annual**
MW-12C	15	D	2.44	Cont Sampling	Cont Sampling	Cont Sampling	No		15	S	0.56	Attained	Attained	Attained	Yes		Annual	NFS
MW-13C	15	D	0.78	Cont Sampling	Not Attained	Cont Sampling	No		15	D	0.49	Attained	Cont Sampling	Attained	Yes		Annual	NFS
PW-1B	**15**	**D**	**1.12**	**Cont Sampling**	**Cont Sampling**	**Cont Sampling**	**No**		**15**	**D**	**1.50**	**Cont Sampling**	**Cont Sampling**	**Cont Sampling**	**No**		**Annual**	**Annual**
Intermediate Wells																		
AMW-16	14	D	1.17	Cont Sampling	Cont Sampling	Cont Sampling	No		14	NT	0.54	Attained	Cont Sampling	Attained	Yes		Annual	NFS
AMW-17	14	D	1.67	Cont Sampling	Cont Sampling	Cont Sampling	No		14	PI	0.52	Attained	Cont Sampling	Attained	Yes		Annual	NFS
AMW-18	13	I	1.92	Cont Sampling	Cont Sampling	Cont Sampling	No		11	NT	0.43	Attained	Cont Sampling	Attained	Yes		Quarterly	NFS
AMW-59	5	S	0.34	Cont Sampling	Not Attained	Cont Sampling	No		5	S	0.34	Attained	Cont Sampling	Attained	Yes		Annual	NFS
AMW-60	2	N/A	0.00	N/C	N/C	N/C	No		2	N/A	0.00	N/C	N/C	N/C	No		Annual	Annual
CPU-14	15	D	0.58	Cont Sampling	Not Attained	Cont Sampling	No		15	D	0.82	Cont Sampling	Not Attained	Cont Sampling	No		Annual	Annual
MW-14C	15	D	1.55	Cont Sampling	Cont Sampling	Cont Sampling	No		15	D	1.37	Cont Sampling	Not Attained	Not Attained	No		Annual	Annual
MW-14E	**15**	**D**	**1.56**	**Cont Sampling**	**Cont Sampling**	**Cont Sampling**	**No**		**15**	**D**	**1.98**	**Cont Sampling**	**Cont Sampling**	**Cont Sampling**	**No**		**Annual**	**Annual**
MW-15E	10	D	1.77	Cont Sampling	Cont Sampling	Cont Sampling	No		9	PI	0.44	Attained	Cont Sampling	Attained	Yes		Annual	NFS
MW-16E	10	I	0.74	Cont Sampling	Cont Sampling	Cont Sampling	No		10	NT	1.03	Attained	Cont Sampling	Cont Sampling	No		Annual	Biennial
MW-18D	**15**	**D**	**1.39**	**Cont Sampling**	**Cont Sampling**	**Cont Sampling**	**No**		**15**	**D**	**1.58**	**Cont Sampling**	**Cont Sampling**	**Cont Sampling**	**No**		**Annual**	**Annual**
MW-18E	14	D	0.99	Cont Sampling	Not Attained	Cont Sampling	No		14	I	1.03	Cont Sampling	Cont Sampling	Cont Sampling	No		Annual	Annual
MW-19D	**15**	**D**	**1.51**	**Cont Sampling**	**Cont Sampling**	**Cont Sampling**	**No**		**15**	**D**	**1.77**	**Cont Sampling**	**Cont Sampling**	**Cont Sampling**	**No**		**Annual**	**Annual**
MW-20D	**15**	**D**	**1.27**	**Cont Sampling**	**Cont Sampling**	Cont Sampling	**No**		**15**	**D**	**1.74**	**Cont Sampling**	**Cont Sampling**	**Cont Sampling**	**No**		**Annual**	**Annual**
MW-40	6	D	1.40	Cont Sampling	Cont Sampling	Cont Sampling	No		6	S	0.50	Cont Sampling	Cont Sampling	Cont Sampling	No		Annual	Annual
PZ-39	2	NA	NA	NA	NA	NA	NA	NA	2	NA	NA	NA	NA	NA	NA	NA	NA	NA
Church of God Wells																		
AMW-14	11	D	2.48	Cont Sampling	Cont Sampling	Cont Sampling	No		11	D	2.27	Cont Sampling	Cont Sampling	Cont Sampling	No		Annual	Annual
AMW-27	12	D	0.32	Cont Sampling	Not Attained	Cont Sampling	No		12	D	0.94	Cont Sampling	Cont Sampling	Cont Sampling	No		Annual	Annual
AMW-61	3	N/A	0.00	N/C	N/C	N/C	No		3	N/A	0.00	N/C	N/C	N/C	No		Quarterly	Quarterly
CPU-12	15	NT	0.50	Cont Sampling	Cont Sampling	Cont Sampling	No		15	D	1.28	Cont Sampling	Cont Sampling	Cont Sampling	No		Annual	Annual
CPU-13	15	D	1.38	Cont Sampling	Cont Sampling	Cont Sampling	No		15	D	1.43	Cont Sampling	Cont Sampling	Cont Sampling	No		Annual	Annual
MW-21D	**15**	**D**	**1.79**	**Cont Sampling**	**Cont Sampling**	**Cont Sampling**	**No**		**15**	**D**	**2.22**	**Cont Sampling**	**Cont Sampling**	**Cont Sampling**	**No**		**Annual**	**Annual**
MW-22D	15	D	0.97	Cont Sampling	Not Attained	Cont Sampling	No		15	D	1.45	Cont Sampling	Cont Sampling	Cont Sampling	No		Annual	Annual
MW-23D	15	D	1.00	Cont Sampling	Not Attained	Not Attained	No		15	I	0.61	Attained	Cont Sampling	Attained	Yes		Annual	NFS
MW-25D	15	D	1.45	Cont Sampling	Cont Sampling	Cont Sampling	No		15	D	2.45	Cont Sampling	Cont Sampling	Cont Sampling	No		Annual	Annual
MW-26D	**15**	**D**	**1.04**	**Cont Sampling**	**Cont Sampling**	**Cont Sampling**	**No**		**15**	**D**	**1.19**	**Cont Sampling**	**Cont Sampling**	**Cont Sampling**	**No**		**Annual**	**Annual**
MW-27D	**15**	**D**	**1.46**	**Cont Sampling**	**Cont Sampling**	**Cont Sampling**	**No**		**15**	**D**	**1.86**	**Cont Sampling**	**Cont Sampling**	**Cont Sampling**	**No**		**Annual**	**Annual**
MW-49	10	S	0.86	Cont Sampling	Cont Sampling	Cont Sampling	No		9	D	0.86	Cont Sampling	Cont Sampling	Cont Sampling	No		Annual	Annual
Other Toe Wells																		
AMW-42	11	D	1.54	Cont Sampling	Cont Sampling	Cont Sampling	No		11	D	1.44	Cont Sampling	Cont Sampling	Cont Sampling	No		Annual	Annual

TABLE 8. 2009 MAROS RESULTS SUMMARY

Well Name	TCE								Chromium								MAROS Recommended Sampling Frequency	
	Sample Size	MK Trend	Coefficient of Variation (COV)	Sequential T-Test Result		Cleanup Status	Conc. Statistically Below Cleanup Levels	MAROS Statistically Redundant	Sample Size	MK Trend	Coefficient of Variation (COV)	Sequential T-Test Result		Cleanup Status	Conc. Statistically Below Cleanup Levels	MAROS Statistically Redundant		
				Normal Distribution	Lognormal Distribution							Normal Distribution	Lognormal Distribution				TCE	Chromium
AMW-63	3	N/A	0.00	N/C	N/C	N/C	No		3	N/A	0.00	N/C	N/C	N/C	No		Annual	Annual
MW-31	**12**	**D**	**1.96**	**Cont Sampling**	**Cont Sampling**	**Cont Sampling**	**No**		**12**	**D**	**2.31**	**Cont Sampling**	**Cont Sampling**	**Cont Sampling**	**No**		**Annual**	**Annual**
MW-35	11	D	1.57	Cont Sampling	Cont Sampling	Cont Sampling	No		11	D	2.96	Cont Sampling	Cont Sampling	Cont Sampling	No		Annual	Annual
MW-41	**11**	**I**	**1.13**	**Cont Sampling**	**Cont Sampling**	**Cont Sampling**	**No**		**11**	**NT**	**1.09**	**Attained**	**Cont Sampling**	**Cont Sampling**	**No**		**Annual**	**Annual**
MW-46	11	NT	0.62	Attained	Cont Sampling	Attained	Yes		11	NT	1.07	Attained	Cont Sampling	Cont Sampling	No		NFS	Biennial
MW-48	11	I	0.67	Attained	Cont Sampling	Attained	Yes		11	NT	1.53	Attained	Cont Sampling	Cont Sampling	No		NFS	Annual
Sentinel Toe Wells																		
AMW-43	11	PI	0.61	Attained	Cont Sampling	Attained	Yes		11	I	0.65	Attained	Cont Sampling	Attained	Yes		NFS	NFS

NOTES:

Bolded well = attainment well
D = decreasing
I = increasing
MAROS = Monitoring and Remediation Optimization System
MK = Mann-Kendall
N/A = not applicable
N/C = not conducted due to small sample size (<4 samples)
NT = no trend
PD = probably decreasing
PI = probably increasing
S = stable
TCE = trichloroethene

TABLE 9. SUMMARY OF WELL SAMPLING FREQUENCIES

Well Name	Recommendation							Rationale for Recommendation
	Well Type	Quarterly	Semi-annual	Annual	Biennial	Every 5 Years	No Further Sampling	
Troutdale wells								
AMW-24	M/D			X				Troutdale well - TCE impacted
AMW-25	M/D				X			Troutdale well - unimpacted; upgradient well
AMW-50	M/D				X			Troutdale well - unimpacted
AMW-51	M/D				X			Troutdale well - unimpacted
AMW-62	M/D				X			Troutdale well - unimpacted
CPU-2	M				X			Troutdale well - unimpacted
CPU-3D	M/D				X			Troutdale well - unimpacted
CPU-10	M				X			Troutdale well - unimpacted
MW-33	M/D			X				Troutdale well - TCE impacted
MW-34	M/D				X			Troutdale well - unimpacted
BENNETT	Other		X					Troutdale well - TCE impacted -CPU request for semiannual sampling
Upgradient Wells								
AMW-6A	M/D				X			Infiltration gallery well
AMW-7A	M/D				X			Infiltration gallery well
AMW-8A	M			TCE				Upgradient well (furthest upgradient) - check for possible offsite TCE impacts
AMW-10A	M/D				X			Infiltration gallery well
AMW-11A	M/D				X			Infiltration gallery well
TCE Source Wells								
AMW-1A	M		TCE					OU2 monitoring plan; well cluster - most impacted (TCE above cleanup level)
AMW-1B	M				TCE			OU2 monitoring plan; well cluster - less frequent sampling
AMW-1C	M						X	TCE has been BDL since 1997
AMW-2A	M		TCE					OU2 monitoring plan; well cluster - most impacted (TCE above cleanup level)
AMW-2B	M				TCE			OU2 monitoring plan; well cluster - less frequent sampling
RAMW-2C	M						X	TCE statistically below the cleanup level (well cluster)
AMW-3A	M			TCE				OU2 monitoring plan
AMW-4A	M						X	TCE statistically below the cleanup level
AMW-12A	M		TCE					OU2 monitoring plan; more frequent sampling (TCE above cleanup level)
AMW-13A	M			TCE				OU2 monitoring plan
AMW-19A	M			TCE				OU2 monitoring plan; well cluster - most impacted
AMW-19B	M						X	TCE statistically below the cleanup level (well cluster)
AMW-26	M			TCE				TCE source area with TCE below the cleanup level
AMW-52A	M			TCE				OU2 monitoring plan; well cluster - most impacted
AMW-52C	M						X	TCE statistically below the cleanup level (well cluster)
AMW-53A	M		TCE					OU2 monitoring plan; well cluster - most impacted (TCE above cleanup level)
AMW-53B	M						X	TCE statistically below the cleanup level (well cluster)
AMW-53C	M						X	TCE statistically below the cleanup level (well cluster)
AMW-54A	M			TCE				OU2 monitoring plan; well cluster - most impacted
AMW-54C	M						X	TCE statistically below the cleanup level (well cluster)
AMW-55A	M			TCE				OU2 monitoring plan; well cluster - most impacted
AMW-55C	M						X	TCE statistically below the cleanup level (well cluster)
AMW-56A	M			TCE				OU2 monitoring plan; well cluster - most impacted
AMW-56C	M						X	TCE statistically below the cleanup level (well cluster)
MW-1A	M		TCE		Cr			OU2 monitoring plan; well cluster - most impacted (TCE above cleanup level) also Cr background well
MW-1B	M						X	TCE has been below reporting limit since 2000.
MW-1C	M						X	TCE and Cr are statistically below the cleanup level (well cluster)

TABLE 9. SUMMARY OF WELL SAMPLING FREQUENCIES

Well Name	Recommendation							Rationale for Recommendation
	Well Type	Quarterly	Semi-annual	Annual	Biennial	Every 5 Years	No Further Sampling	
Proximal Wells								
AMW-58	M				X			Plume area; not included in any other category - impacted (silt well)
MW-2A	M			Cr	TCE			Well cluster - most impacted and Cr hotspot
MW-2B	M					TCE	Cr	Well cluster - less frequent sampling; Cr statistically below cleanup level
MW-2C	M						X	Well cluster - less frequent sampling; TCE below cleanup level since 2002, Cr statistically below cleanup level
MW-3A	M				Cr		TCE	Well cluster - most Cr impacted; TCE statistically below cleanup level
MW-3B	M				TCE		Cr	Well cluster - most TCE impacted; Cr statistically below cleanup level
MW-4A	M					X		Well cluster - less frequent sampling
MW-4B	M			Cr	TCE			Well cluster - most impacted and Cr hotspot
MW-4BShed	M					X		Well cluster - less frequent sampling
MW-4C	M						X	Well cluster - less frequent sampling; TCE and Cr below cleanup level
MW-6A	M					Cr	TCE	Well cluster - less frequent sampling; TCE below cleanup level since 1995.
MW-6B	E		X					Extraction well - active (also well cluster)
MW-6C	M					TCE	Cr	Well cluster - less frequent sampling; Cr below cleanup level since 1995
MW-6D	M					TCE	Cr	Well cluster - less frequent sampling; Chromium statistically below cleanup level
MW-7B	M					TCE	Cr	Well cluster - adjacent to MW-4 cluster, less frequent sampling; Cr below cleanup level since 1998
MW-7C	M						X	Well cluster - TCE below cleanup level since 1997, Cr below cleanup level since 1995
MW-8B	M				TCE		Cr	Plume area - not included in any other category - impacted; Cr statistically below cleanup level
MW-9B	M				TCE		Cr	Well cluster - most TCE impacted; Cr below cleanup level since 1997
MW-9C	M					X		Well cluster - less frequent sampling
MW-10B	E		X					Extraction well - active (also well cluster)
MW-10C	E		X					Extraction well - active (also well cluster)
MW-12C	M				X			Plume boundary
MW-13C	M				X			Plume boundary
PW-1B	E		X					Extraction well - active
Intermediate Wells								
AMW-16	M				X			Plume boundary
AMW-17	M/D		TCE				Cr	Northern Plume investigation area; Cr statistically below the cleanup level
AMW-18	M		TCE				Cr	Northern Plume investigation area; Cr statistically below the cleanup level
AMW-59	M/D(E)			TCE			Cr	Plume area - hotspot (silt well); Cr statistically below the cleanup level
AMW-60	M						X	Silt well - TCE and Cr have never exceeded the cleanup level
CPU-14	M				X			Plume boundary
MW-14C	E		X					Extraction well - active (also well cluster)
MW-14E	E		X					Extraction well - active (also well cluster)
MW-15E	M		TCE				Cr	Northern Plume investigation area; Cr statistically below the cleanup level
MW-16E	M				X			Plume boundary
MW-18D	E		X					Extraction well - active (also well cluster)
MW-18E	M			X				Plume area - hotspot

TABLE 9. SUMMARY OF WELL SAMPLING FREQUENCIES

Well Name	Recommendation							Rationale for Recommendation
	Well Type	Quarterly	Semi-annual	Annual	Biennial	Every 5 Years	No Further Sampling	
MW-19D	E		X					Extraction well - active
MW-20D	E		X					Extraction well - active
MW-40	M						X	Replaced with PZ-39
PZ-39	M				X			Plume area - not included in any other category - impacted (Replacing well MW-40)
Church of God Wells								
AMW-14	M		X					Plume area - not included in any other category - impacted (EPA request for more frequent sampling)
AMW-27	E		X					Extraction well - active
AMW-61	M				X			Plume area - not included in any other category - impacted (silt well)
CPU-12	M			TCE	Cr			Plume boundary - at tail end of TCE plume
CPU-13	E		X					Extraction well - active
MW-21D	E		X					Extraction well - active
MW-22D	E		X					Extraction well - active
MW-23D	M				X			Plume boundary
MW-25D	E	X						Extraction well - active; also monitoring possible rebound in MW-27D area
MW-26D	E		X					Extraction well - active
MW-27D	E	X						Extraction well - inactive; pump turned off, monitoring for rebound
MW-49	E		X					Extraction well - active
Other Toe Wells								
AMW-42	E				X			Plume area - not included in any other category - not impacted
AMW-63	M			X				TOPPS monitoring
MW-31	E				X			Attainment well
MW-35	E/M			X				Extraction well - inactive - also local TCE hot spot
MW-41	E/M			X				TOPPS monitoring and attainment well
MW-46	E/M						X	TCE statistically below the cleanup level. Cr has never exceeded the cleanup level.
MW-48	E						X	TCE statistically below the cleanup level. Cr has never exceeded the cleanup level.
Sentinel Toe Wells								
AMW-43	M/D						X	TCE and Cr statistically below cleanup levels.
Total Wells:		2	25	19	33	8	33	**Total** 120 Actual total wells = 103 (17 wells are in 2 categories; i.e., TCE and Cr are on different sampling schedules)

NOTES:

Wells designated NFS in previous Annual Reports have been deleted from this table and are included in Table 11.

Cr = Chromium

TCE = Trichloroethene

X = TCE and Chromium

TABLE 10. CHANGES TO RECOMMENDED WELL SAMPLING FREQUENCY FOR 2010

Well Group	Well ID	Sampling Frequency		Reason for Change
		From	To	
Troutdale	AMW-62	Annual	Biennial	All results (TCE and chromium) have been below the detection limit.
Upgradient	AMW-6A, AMW-7A, AMW-10A, AMW-11A	Semiannual	Biennial	These wells have been used to monitor the treated water infiltration gallery since just before it started operation in early 2006. Baseline monitoring started on a quarterly frequency and was later changed to semiannual. TCE and chromium concentrations, when detected, have all been well below the cleanup level and the discharge standards. Effluent from the treatment system is monitored monthly before discharge to the infiltration gallery.
	AMW-8A	Semiannual	Annual	The upgradient, offsite TCE source appears to be decreasing. TCE concentrations in this well have been below the cleanup level since 2006 and continue to decrease. (This well is sampled for TCE only.)
TCE Source (Cr not monitored)	AMW-1B, AMW-2B	Annual	Biennial	All results have been below the cleanup level since 1997, and close to the detection limit since at least 2003.
	MW-1B	Annual	NFS	All results have been below the cleanup level and the MRL since 2000.
	AMW-1C	Annual	NFS	All results have been below the detection limit since 1997.
	MW-1C	Annual	NFS	TCE concentrations are statistically below the cleanup level and MAROS recommends NFS for TCE.
	AMW-3A, AMW-13A	Semiannual	Annual	TCE concentrations have been below the cleanup level since at least 2006. MAROS recommends annual sampling.
	AMW-4A, AMW-19B, AMW-52C, AMW-53B, AMW-53C, AMW-54C, AMW-55C, AMW-56C, RAMW-2C	Every 5 years	NFS	TCE concentrations are statistically below the cleanup level and MAROS recommends NFS for TCE.
	AMW-19A, AMW-26, AMW-52A, AMW-54A, AMW-55A, AMW-56A	Semiannual	Annual	These wells are the most impacted in a well cluster; however, TCE concentrations have been below the cleanup level since at least 2006. MAROS recommends annual sampling.
Proximal	MW-2B, MW-6D	Every 5 years	NC for TCE, NFS for Cr	These wells are part of well clusters but are not the most impacted well in the cluster (i.e., not screened at the optimal depth), and therefore provide data of limited usefulness. Chromium concentrations are statistically below the cleanup level and MAROS recommends NFS for chromium.
	MW-2C	Every 5 years	NFS	This well is part of a well cluster but is not the most impacted well in the cluster and therefore provides data of limited usefulness. Chromium concentrations are statistically below the cleanup level and MAROS recommends NFS for chromium. TCE has been below the cleanup level since 2002.

TABLE 10. CHANGES TO RECOMMENDED WELL SAMPLING FREQUENCY FOR 2010

Well Group	Well ID	Sampling Frequency		Reason for Change
		From	To	
Proximal	MW-3A	Biennial	NFS for TCE, NC for Cr	TCE concentrations are statistically below the cleanup level and MAROS recommends NFS for TCE.
	MW-3B	Every 5 years	Biennial for TCE, NFS for Cr	This well is the most TCE-impacted in a well cluster (replacing well MW-3A). Chromium concentrations are statistically below the cleanup level and MAROS recommends NFS for chromium.
	MW-4C	Every 5 years	NFS	This well is part of a well cluster but is not the most impacted well in the cluster and therefore provides data of limited usefulness. TCE and chromium are both currently below the cleanup level.
	MW-6A	Every 5 years	NFS for TCE, NC for Cr	This well is part of a well cluster but is not the most TCE impacted well in the cluster and therefore provides data of limited usefulness for TCE. TCE has been below the cleanup level since 1995 and below the detection limit since 1997.
	MW-6C	Every 5 years	NC for TCE, NFS for Cr	This well is part of a well cluster but is not the most chromium impacted well in the cluster and therefore provides data of limited usefulness for chromium. Chromium has been below the cleanup level since 1995.
	MW-6D	Every 5 years	NC for TCE, NFS for Cr	Chromium concentrations are statistically below the cleanup level and MAROS recommends NFS for chromium.
	MW-7B	Every 5 years	NC for TCE, NFS for Cr	This well is part of a well cluster (adjacent to the MW-4 cluster) but is not the most chromium impacted well in the cluster and therefore provides data of limited usefulness for chromium. Cr has been below the cleanup level since 1997.
	MW-7C	Every 5 years	NFS	This well is part of a well cluster (adjacent to the MW-4 cluster) but is not the most impacted well in the cluster and therefore provides data of limited usefulness. TCE has been below the cleanup level since 1997. Chromium has been below the cleanup level since 1995.
	MW-8B	Biennial	NC for TCE, NFS for Cr	Chromium concentrations are statistically below the cleanup level and MAROS recommends NFS for chromium.
	MW-9B	Biennial	NC for TCE, NFS for Cr	Chromium has been below the cleanup level since 1997.
	MW-12C	Annual	Biennial	Plume boundary well - TCE is slightly above the cleanup level (11 ug/L). Cr has not exceeded the cleanup level.
	MW-13C	Annual	Biennial	Plume boundary well - TCE is just above the cleanup level (5.6 ug/L). Cr has been below the cleanup level since 2000.
Intermediate	AMW-16	Annual	Biennial	Plume boundary well - TCE has been below the cleanup level since 2005. Cr has been at or below detection limit.
	AMW-59	Annual	NC for TCE, NFS for Cr	Chromium concentrations are statistically below the cleanup level and MAROS recommends NFS for chromium.
	AMW-60	Every 5 years	NFS	Neither TCE nor chromium has ever exceeded the cleanup level or approached it.
	CPU-14	Annual	Biennial	Plume boundary well - TCE is above the cleanup level (10 ug/L) but on decreasing trend. Cr has been below the cleanup level since 2006.
	MW-16E	Annual	Biennial	Plume boundary well - TCE has been below the cleanup level except for two samples in 2007 and 2008. Cr has never exceeded the cleanup level.

TABLE 10. CHANGES TO RECOMMENDED WELL SAMPLING FREQUENCY FOR 2010

Well Group	Well ID	Sampling Frequency		Reason for Change
		From	To	
Church of God	CPU-12	Annual	NC for TCE, Biennial for Cr	Plume boundary well - TCE has been below the cleanup level since 2003, but remains close to it. Cr has been below the cleanup level since 2002. This is an important well for delineating the downgradient end of the TCE plume; therefore, TCE will continue to be sampled annually.
	MW-23D	Annual	Biennial	Plume boundary well - TCE has been below the cleanup level since 2006. Cr has been below the cleanup level and typically below the detection limit since 1995.
Other Toe	AMW-42	Annual	Biennial	This well is no longer needed as an extraction well (was inactive). TCE has been below the cleanup level since 2001. Cr has been below the cleanup level since 2003.
	AMW-63	Semiannual	Annual	This is a TOPPS monitoring well. TCE and chromium concentrations have never exceeded the cleanup criteria.
	MW-31	Annual	Biennial	This is an attainment well. TCE has been below the cleanup level since 2000. Cr has been below the cleanup level since 1999. According to MAROS, neither constituent has reached attainment.
	MW-35	Semiannual	Annual	Inactive extraction well and local TCE hotspot. TCE has been fluctuating above and below the cleanup level since 2004. Cr has been below the cleanup level since 2002.
	MW-41	Semiannual	Annual	This is a TOPPS monitoring well and an attainment well. Results for TCE and chromium have been below the detection limit since early 2007.
	MW-46	Semiannual	NFS	This well is no longer needed as a TOPPS well or an extraction well. TCE is statistically below the cleanup level and MAROS recommends NFS. Cr has never exceeded the cleanup level and has always been well below it.
	MW-48	Annual	NFS	This well is no longer needed as an extraction well (was inactive). TCE has been below the detection limit in all samples except one outlier in 2001. MAROS recommends NFS for TCE. Cr has never exceeded the cleanup level and has been well below it.
Sentinal Toe	AMW-43	Semiannual	NFS	This well is no longer needed as a TOPPS well. TCE and chromium concentrations are statistically below the cleanup level and MAROS recommends NFS.

NOTES:
Cr = Chromium.
MAROS = Monitoring and Remediation Optimization System.
MRL = Method reporting limit
NFS = No further sampling.
NC = No change.
TCE = Trichloroethene.
TOPPS = Toe of Plume Pilot Study.

TABLE 11. SUMMARY OF WELLS REQUIRING NO FURTHER SAMPLING FOR TCE AND/OR CHROMIUM

Well Name	TCE					Chromium				
	Min	Max	No. of Samples	NFS Year[1]	NFS Rationale	Min	Max	No. of Samples	NFS Year[1]	NFS Rationale
TCE Source Wells										
RAMW-2C	U	0.90	23	2009	All results except the first sample have been below the cleanup level and MRL. TCE is statistically below the cleanup level according to the MAROS evaluation.				NA	Not sampled for chromium. Well is upgradient of the chromium plume.
AMW-1C	U	73.9	24	2009	All results since 1997 (22 samples) have been below the cleanup level and MRL.				NA	Not sampled for chromium. Well is upgradient of the chromium plume.
AMW-4A	U	0.40	12	2009	All results have been below the cleanup level and MRL. TCE is statistically below the cleanup level according to the MAROS evaluation.				NA	Not sampled for chromium. Well is upgradient of the chromium plume.
AMW-19B	U	0.77	17	2009	All results have been below the cleanup level and <1 ug/L. TCE is statistically below the cleanup level according to the MAROS evaluation.				NA	Not sampled for chromium. Well is upgradient of the chromium plume.
AMW-52C	U	U	15	2009	All results have been below the cleanup level and MRL. TCE is statistically below the cleanup level according to the MAROS evaluation.				NA	Not sampled for chromium. Well is upgradient of the chromium plume.
AMW-53B	0.43 J	2.70	15	2009	All results have been below the cleanup level. TCE is statistically below the cleanup level according to the MAROS evaluation.				NA	Not sampled for chromium. Well is upgradient of the chromium plume.
AMW-53C	U	0.21 J	15	2009	All results have been below the cleanup level and MRL. TCE is statistically below the cleanup level according to the MAROS evaluation.				NA	Not sampled for chromium. Well is upgradient of the chromium plume.
AMW-54C	U	0.36 J	15	2009	All results have been below the cleanup level and MRL. TCE is statistically below the cleanup level according to the MAROS evaluation.				NA	Not sampled for chromium. Well is upgradient of the chromium plume.
AMW-55C	U	0.39 J	15	2009	All results have been below the cleanup level and MRL. TCE is statistically below the cleanup level according to the MAROS evaluation.				NA	Not sampled for chromium. Well is upgradient of the chromium plume.
AMW-56C	U	0.44 J	23	2009	All results have been below the cleanup level and MRL. TCE is statistically below the cleanup level according to the MAROS evaluation.				NA	Not sampled for chromium. Well is upgradient of the chromium plume.
MW-1B	U	400	28	2009	All results have been below the cleanup level and MRL since 2000 (22 samples).				NA	Not sampled for chromium. Well is upgradient of the chromium plume.
MW-1C	U	92.0	20	2009	All results except the first sample have been below the cleanup level. Since 1997, all results have been below the MRL. TCE is statistically below the cleanup level according to the MAROS evaluation.	U	10	6	2009	All results have been below the cleanup level. Chromium is statistically below the cleanup level according to the MAROS evaluation.
Proximal Wells										
MW-2B				NA	NA (still sampling)	U	26.4	14	2009	All results have been below the cleanup level. Chromium is statistically below the cleanup level according to the MAROS evaluation.
MW-2C	0.36 J	40.5	8	2009	This well is part of a well cluster but is not the most impacted well in the cluster and therefore provides data of limited usefulness. TCE has been below the cleanup level since 2002 (4 samples).	U	21.4	8	2009	All results have been below the cleanup level. Chromium is statistically below the cleanup level according to the MAROS evaluation.
MW-3A	U	2.40	19	2009	All results have been below the cleanup level. TCE is statistically below the cleanup level according to the MAROS evaluation.				NA	NA (still sampling)
MW-3B				NA	NA (still sampling)	5.20	23.3	11	2009	All results have been below the cleanup level. Chromium is statistically below the cleanup level according to the MAROS evaluation.

TABLE 11. SUMMARY OF WELLS REQUIRING NO FURTHER SAMPLING FOR TCE AND/OR CHROMIUM

Well Name	TCE					Chromium				
	Min	Max	No. of Samples	NFS Year[1]	NFS Rationale	Min	Max	No. of Samples	NFS Year[1]	NFS Rationale
MW-3C	3.80	20.4	7	2008	This well is redundant for TCE, according to the MAROS evaluation.	U	9.30	7	2008	All results have been below the cleanup level. Chromium is statistically below the cleanup level according to the MAROS evaluation.
MW-4C	3.80	40.0	8	2009	This well is part of a well cluster but is not the most impacted well in the cluster and therefore provides data of limited usefulness. TCE has been on a decreasing trend and is currently below the cleanup level (1 sample).	61.0	248	47	2009	This well is part of a well cluster but is not the most impacted well in the cluster and therefore provides data of limited usefulness. Chromium has been on a decreasing trend and is currently below the cleanup level (1 sample).
MW-6A	U	38.1	5	2009	This well is part of a well cluster but is not the most impacted well in the cluster and therefore provides data of limited usefulness. TCE has been below the cleanup level since 1995 (4 samples) and below the detection limit since 1997.				NA	NA (still sampling)
MW-6C				NA	NA (still sampling)	8.63	400	10	2009	This well is part of a well cluster but is not the most impacted well in the cluster and therefore provides data of limited usefulness. Chromium has been below the cleanup level since 1995 (9 samples).
MW-6D				NA	NA (still sampling)	U	29.8	8	2009	All results have been below the cleanup level. Chromium is statistically below the cleanup level according to the MAROS evaluation.
MW-7B				NA	NA (still sampling)	9.80	932	6	2009	This well is part of a well cluster but is not the most impacted well in the cluster and therefore provides data of limited usefulness. Chromium has been below the cleanup level since 1997 (4 samples).
MW-7C	0.18 J	26.5	6	2009	This well is part of a well cluster (adjacent to the MW-4 cluster) but is not the most impacted well in the cluster and therefore provides data of limited usefulness. TCE has been below the cleanup level since 1997 (4 samples).	U	174	8	2009	This well is part of a well cluster but is not the most impacted well in the cluster and therefore provides data of limited usefulness. Chromium has been below the cleanup level since 1995 (7 samples).
MW-8B				NA	NA (still sampling)	U	13.0	11	2009	All results have been below the cleanup level. Chromium is statistically below the cleanup level according to the MAROS evaluation.
MW-9B				NA	NA (still sampling)	U	429	16	2009	Chromium has been below the cleanup level since 1997 (12 samples).
Intermediate Wells										
AMW-17				NA	NA (still sampling)	U	4.60	19	2008	All results have been below the cleanup level and all have been below the MRL except one. Chromium is statistically below the cleanup level according to the MAROS evaluation.
AMW-18				NA	NA (still sampling)	U	2.40	14	2008	Allresults have been below the cleanup level and all have been below the MRL except one. Chromium is statistically below the cleanup level according to the MAROS evaluation.
AMW-59				NA	NA (still sampling)	U	7.90	8	2009	All results have been below the cleanup level and all but one have been below the MRL. Chromium is statistically below the cleanup level according to the MAROS evaluation.
AMW-60	U	0.94	3	2009	All results have been below the cleanup level and near or below the MRL. This is a silt well.	U	8.90	3	2009	All results have been below the cleanup level and near or below the MRL. This is a silt well.
MW-15E				NA	NA (still sampling)	U	18.0	13	2008	All results have been below the cleanup level. Chromium is statistically below the cleanup level according to the MAROS evaluation.

TABLE 11. SUMMARY OF WELLS REQUIRING NO FURTHER SAMPLING FOR TCE AND/OR CHROMIUM

Well Name	TCE					Chromium				
	Min	Max	No. of Samples	NFS Year[1]	NFS Rationale	Min	Max	No. of Samples	NFS Year[1]	NFS Rationale
MW-17E	U	0.85 J	5	2008	All results have been below the cleanup level and MRL. TCE is statistically below the cleanup level according to the MAROS evaluation.	U	U	5	2008	All results have been below the cleanup level and the MRL. Chromium is statistically below the cleanup level according to the MAROS evaluation.
Other Toe Wells										
MW-37	U	U	28	2008	All results have been below the cleanup level and MRL. TCE is statistically below the cleanup level according to the MAROS evaluation.	U	18.0	28	2008	All results have been below the cleanup level. Chromium is statistically below the cleanup level according to the MAROS evaluation.
MW-46	U	U	41	2009	All results have been below the cleanup level and MRL. TCE is statistically below the cleanup level according to the MAROS evaluation.	U	28.0	42	2009	All results have been below the cleanup level.
MW-48	U	U	38	2009	All results have been below the cleanup level and MRL except one outlier in 2001. TCE is statistically below the cleanup level according to the MAROS evaluation (outlier excluded).	U	37.8	39	2009	All results have been below the cleanup level.
Sentinel Toe Wells										
AMW-43	U	U	38	2009	All results have been below the cleanup level and MRL. TCE is statistically below the cleanup level according to the MAROS evaluation.	U	7.80	39	2009	All results have been below the cleanup level. Chromium is statistically below the cleanup level according to the MAROS evaluation.
AMW-44	U	U	40	2008	All results have been below the cleanup level and MRL. TCE is statistically below the cleanup level according to the MAROS evaluation.	U	57.8	41	2008	All results have been below the cleanup level. Chromium is statistically below the cleanup level according to the MAROS evaluation.
AMW-45	U	U	44	2008	All results have been below the cleanup level and MRL. TCE is statistically below the cleanup level according to the MAROS evaluation.	U	30.8	47	2008	All results have been below the cleanup level. Chromium is statistically below the cleanup level according to the MAROS evaluation.
MW-30	U	U	21	2008	All results have been below the cleanup level and MRL. TCE is statistically below the cleanup level according to the MAROS evaluation.	U	5.80	24	2008	All results have been below the cleanup level. Chromium is statistically below the cleanup level according to the MAROS evaluation.
MW-47	U	U	32	2008	All results have been below the cleanup level and MRL. TCE is statistically below the cleanup level according to the MAROS evaluation.	U	17.0	34	2008	All results have been below the cleanup level. Chromium is statistically below the cleanup level according to the MAROS evaluation.

Notes:
[1] Year = the Annual Report in which this recommendation was made.
Data used are from 1995 to the present.
MAROS = Monitoring and Remediation Optimization Software.
MRL = Method reporting limit.
NA = Not applicable.
NFS = No further sampling.
TCE = Trichloroethene.
U = Undetected (below the MRL).

TABLE 12. ATTAINMENT WELLS

Well Name	TCE					Chromium				
	Min. Conc. (ug/L)	Max. Conc. (ug/L)	Most Recent Conc. (ug/L)	Date of Most Recent Sample	Concentrations Statistically Below Cleanup Levels/Attained	Min. Conc. (ug/L)	Max. Conc. (ug/L)	Most Recent Conc. (ug/L)	Date of Most Recent Sample	Concentrations Statistically Below Cleanup Levels/Attained
TCE Source Wells										
AMW-12A	19.00	19300	24.00	10/13/2009	No	NA	NA	NA	NA	NA
MW-1A	7.40	3900	10.00	10/13/2009	No	NA	NA	NA	NA	NA
Proximal Wells										
MW-6B	5.70	1230	6.40	10/12/2009	No	10.90	13000	20.80	10/12/2009	No
MW-10C	4.90	1500	4.90	10/12/2009	No	94.50	6400	94.50	10/12/2009	No
PW-1B	3.60	900	3.60	10/12/2009	No	40.80	13000	43.40	10/12/2009	No
Intermediate Wells										
MW-14E	87.00	6540	87.00	10/12/2009	No	51.50	21200	51.50	10/12/2009	No
MW-18D	66.00	7800	86.00	10/12/2009	No	168.00	23100	173.00	10/12/2009	No
MW-19D	12.00	6300	44.00	10/12/2009	No	190.00	23000	190.00	10/12/2009	No
MW-20D	42.00	4100	42.00	10/12/2009	No	88.10	51000	88.10	10/12/2009	No
Church of God Wells										
MW-21D	11.00	3000	11.00	10/12/2009	No	16.00	35000	16.00	10/12/2009	No
MW-26D	U	52	1.30	10/12/2009	No	15.40	4800	15.40	10/12/2009	No
MW-27D	U	280	0.46	10/13/2009	No	3.90	6940	4.30	10/13/2009	No
Other Toe Wells										
MW-31	0.30	32	0.30	10/12/2009	No	U	535	8.40	10/12/2009	No
MW-41	U	8.3	U	10/14/2009	No	U	216	U	10/14/2009	No
Sentinel Wells										
AMW-45	U	U	U	10/21/2008	Yes	U	31	9.80	10/21/2008	Yes
MW-47	U	U	U	10/21/2008	Yes	U	17	3.20	10/21/2008	Yes

NOTES:

Blue highlight = attainment wells with groundwater concentrations statistically below the cleanup goals (for both TCE and Cr)
Cr = chromium
TCE = trichloroethene
µg/L = micrograms per liter
U = undetected

APPENDIX A

CHROMIUM CONCENTRATIONS IN GROUNDWATER

APPENDIX A-1

CHROMIUM CONCENTRATIONS – SUMMARY TABLES

UPGRADIENT WELLS
CHROMIUM CONCENTRATION SUMMARY

Wells	Historical Maximum		Spring 2008	Fall 2008	Spring 2009	Fall 2009
	Date	Result				
AMW-6A	10/8/07	17.7	3.6 B	5.2	11.5	7.7
AMW-7A	5/2/07	5.2	5 U	4 B	5 U	3.3 J
AMW-10A	5/7/08	12.5	12.5	5.9	3.4 B	8.1
AMW-11A	10/5/2006	9.4	4.1 B	5.9	5.7	2.4 J

NOTE: B/J = The result is an estimated concentration that is less than the Method Reporting Limit but greater than or equal to the Method Detection Limit.
U = Analyte not detected above the specified reporting limit.
-- = Well not sampled during this monitoring event.
Results are in micrograms per liter (μg/L).

PROXIMAL WELLS
CHROMIUM CONCENTRATION SUMMARY

Wells	Historical Maximum		Spring 2008	Fall 2008	Spring 2009	Fall 2009
	Date	Result				
MW-2A	12/14/1992	**18,000**	--	66	--	**343**
MW-2B	5/17/1994	**470**	--	--	--	9.6
MW-2C	3/15/1988	45	--	--	--	21.4
MW-3A	4/15/1987	**9,980**	--	**132**	--	**187**
MW-3B	4/15/1987	**960**	--	--	--	15.3
MW-4A	1/4/1990	**26,000**	--	--	--	**363**
MW-4B	11/15/1993	**20,000**	--	**606**	--	**634**
MW-4BShed	3/10/1992	**930,000**	--	--	--	**85.9**
MW-4C	5/71991	**175,000**	--	--	--	61.0
MW-6A	5/17/1994	**1100**	--	--	--	**167**
MW-6B	3/6/1991	**146,000**	47	23.6	33	21.1
MW-6C	3/30/1992	**11,000**	--	--	--	12.3
MW-6D	5/17/1994	**180**	--	--	--	29.8
MW-7B	2/14/1991	**140,000**	--	--	--	9.8
MW-7C	11/15/1993	**200**	--	--	--	12.3
MW-9C	10/19/2009	65.4	--	--	--	65.4
MW-10B	11/25/1991	**86,500**	67.6	49.4	50.2	45.7
MW-10C	6/23/1992	**65,000**	**189**	**108**	**183**	**94.5**
MW-12C	4/21/1993	**4,400**	--	3.7 UJ	--	4.5 J
MW-13C	11/13/1992	**450**	--	32.1	--	32.7
PW-1B	1/11/1991	**368,000**	59.5	69.7	40.8	43.4

NOTES: -- = Well not sampled during this monitoring event.
U = Analyte not detected above the specified reporting limit.
UJ = The analyte was not detected, but the associated limit of quantitation is estimated.
Results are in micrograms per liter (µg/L).
Results shown in **red** are above the cleanup level of 80 µg/L.
Wells shown in **red** were above the cleanup level of 80 µg/L for the 2009 reporting period.

INTERMEDIATE WELLS
CHROMIUM CONCENTRATION SUMMARY

Wells	Historical Maximum		Spring 2008	Fall 2008	Spring 2009	Fall 2009
	Date	Result				
AMW-16	10/9/2002	3 B	--	5 U	--	5 U
AMW-17	9/30/1998	4.6	--	2.6 B	--	5 U
AMW-59	4/28/2005	7.9	--	2.6 B	--	5U
AMW-60	4/28/2005	8.9	--	--	--	2.1 J
CPU-14	11/11/1994	**1,700**	--	31.9	--	77.4
MW-14C	6/23/1992	**170,000**	**116**	**104**	**94.4**	**98.8**
MW-14E	11/13/1992	**150,000**	69.9	52.6	55.8	51.5
MW-16E	4/21/1993	35	--	5 U	--	2.5 J
MW-18D	4/21/1993	**71,000**	**224**	**168**	**172**	**173**
MW-18E	5/25/1993	**34,000**	--	2.4 J	--	12.5
MW-19D	4/21/1993	**89,000**	**279**	**217**	**217**	**190**
MW-20D	9/21/1993	**85,000**	**143**	**130**	**99.9**	**88.1**
PZ-39	10/12/1999	11	--	--	--	6.7 UJ

NOTES: B/J = The result is an estimated concentration that is less than the Method Reporting Limit but greater than or equal to the Method Detection Limit.
-- = Well not sampled during this monitoring event.
U = Analyte not detected above the specified reporting limit.
UJ = The analyte was not detected, but the associated limit of quantitation is estimated.
Results are in micrograms per liter (µg/L).
Results shown in **red** are above the cleanup level of 80 µg/L.
Wells shown in **red** were above the cleanup level of 80 µg/L for the 2009 reporting period.

CHURCH OF GOD WELLS
CHROMIUM CONCENTRATION SUMMARY

Wells	Historical Maximum		Spring 2008	Fall 2008	Spring 2009	Fall 2009
	Date	Result				
AMW-14	4/20/1995	**8,300**	--	72.4*	--	**83.3**
AMW-27	6/2/1999	**7,630**	**230**	**157**	**87.3**	70.7
CPU-12	10/23/2000	**245**	--	7.6	--	8.0
CPU-13	8/15/1994	**8,800**	34.7	26.6	21.7	19.7
MW-21D	8/18/1993	**44,000**	19.2	18	17.3	16.0
MW-22D	7/15/1993	**36,000**	68.2	57.4	55.7	50.0
MW-23D	9/21/1993	**8,500**	--	1.6 UJ	--	2.7 J
MW-25D	5/23/1995	**16,000**	4.3 J	3 B	2.6 B	2.5 J
MW-26D	1/17/1996	**4,800**	24.6	23.5	18.1	15.4
MW-27D	5/16/1996	**6,940**	7.6	6.4	3.9 B	4.3 J
MW-49	12/21/2000	**36,800**	55.6	41.7	26.5	23.1

NOTES:
B/J = The result is an estimated concentration that is less than the Method Reporting Limit but greater than or equal to the Method Detection Limit.
-- = Well not sampled during this monitoring event.
U = Analyte not detected above the specified reporting limit.
UJ = The analyte was not detected, but the associated limit of quantitation is estimated.
* = Well AMW-14 had an elevated turbidity; therefore, the results for dissolved chromium were used. The total chromium concentration was 87.4 µg/L.

Results are in micrograms per liter (µg/L).
Results shown in **red** are above the cleanup level of 80 µg/L.
Wells shown in **red** were above the cleanup level of 80 µg/L for the 2009 reporting period.

TOE OF PLUME WELLS
CHROMIUM CONCENTRATION SUMMARY

Wells	Historical Maximum		Spring 2008	Fall 2008	Spring 2009	Fall 2009
	Date	Result				
Sentinel:						
AMW-43	10/4/2001	7.8	6.8	3.7 B	4.6 B	3.6 J
Other:					--	
AMW-42	5/10/1999	**2,280**	--	23.7	--	19.5
AMW-63	10/15/09	12.4	19.5 UJ	8.2 UJ	9.1 UJ	12.4
MW-31	10/2/1998	**535**	--	12.9	--	8.4
MW-35	9/14/1999	**8,050**	39.6 UJ	36.1	32.4	25.7
MW-41	10/19/2004	**216**	4.4 UJ	5 U	5 U	5 U
MW-46	6/23/1999	28	3.5 UJ	5.2 UJ	5.6 UJ	5.1
MW-48	1/12/2000	37.8	--	4.0 B	--	35

NOTES: B/J = The result is an estimated concentration that is less than the Method Reporting Limit but greater than or equal to the Method Detection Limit.
-- = Well not sampled during this monitoring event.
U = Analyte not detected above the specified reporting limit.
UJ = The analyte was not detected, but the associated limit of quantitation is estimated.
Results are in micrograms per liter (µg/L).
Results shown in **red** are above the cleanup level of 80 µg/L.

TROUTDALE WELLS
CHROMIUM CONCENTRATION SUMMARY

Wells	Historical Maximum		Spring 2008	Fall 2008	Spring 2009	Fall 2009
	Date	Result				
AMW-24	10/2/2006	6.2	--	2.9 B	--	5 U
AMW-62	10/15/09	5 U	5 U	5 U	--	5 U
MW-33	10/22/09	40.5	--	2.1 B	--	40.5
PRIVATE (BENNETT)	10/15/09	5 U	--	5 U	5U	5 U

NOTES:
B = The result is an estimated concentration that is less than the Method Reporting Limit but greater than or equal to the Method Detection Limit.
-- = Well not sampled during this monitoring event.
U = Analyte not detected above the specified reporting limit.
UJ = The analyte was not detected, but the associated limit of quantitation is estimated.
Results are in micrograms per liter (µg/L).

WELLS SAMPLED EVERY FIVE YEARS
CHROMIUM CONCENTRATION SUMMARY

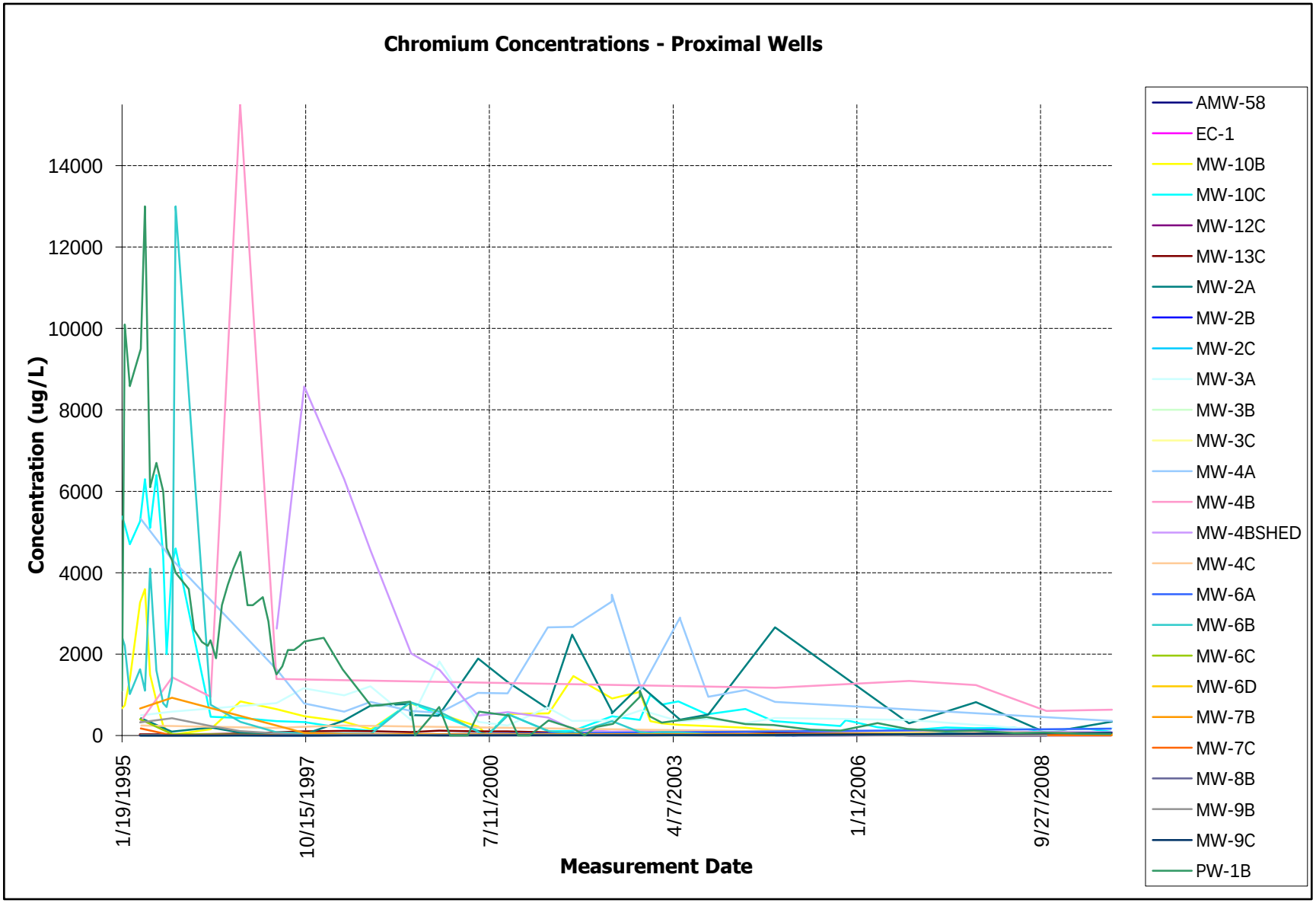
Well Grouping	Wells	Historical Maximum		Last Sampling		Fall 2009
		Date	Result	Date	Result	
Proximal Source Wells	MW-2B	5/17/94	**470**	10/8/04	5 U	9.6
	MW-2C	3/15/88	45	10/8/04	3.8 B	21.4 UJ
	MW-3B	4/15/87	**960**	10/11/04	6.8	15.3 UJ
	MW-4A	1/4/90	**26,000**	10/12/04	**832**	**363**
	MW-4B Shed	3/10/92	**930,000**	10/12/04	**101**	**85.9**
	MW-4C	5/7/91	**175,000**	10/8/04	**126**	61.0
	MW-6A	5/17/94	**1100**	10/3/97	5 U	**167**
	MW-6C	3/30/92	**11,000**	10/8/04	18.9	12.3 UJ
	MW-6D	5/17/94	**180**	10/11/04	6.1	29.8
	MW-7B	2/14/91	**140,000**	10/11/04	35.4	9.8 UJ
	MW-7C	11/15/93	**200**	10/11/04	8.5	12.3
	MW-9C	10/19/2009	65.4	10/13/04	12.8	65.4
Intermediate Wells	AMW-60	4/28/05	8.9	4/28/05	8.9	2.1 J

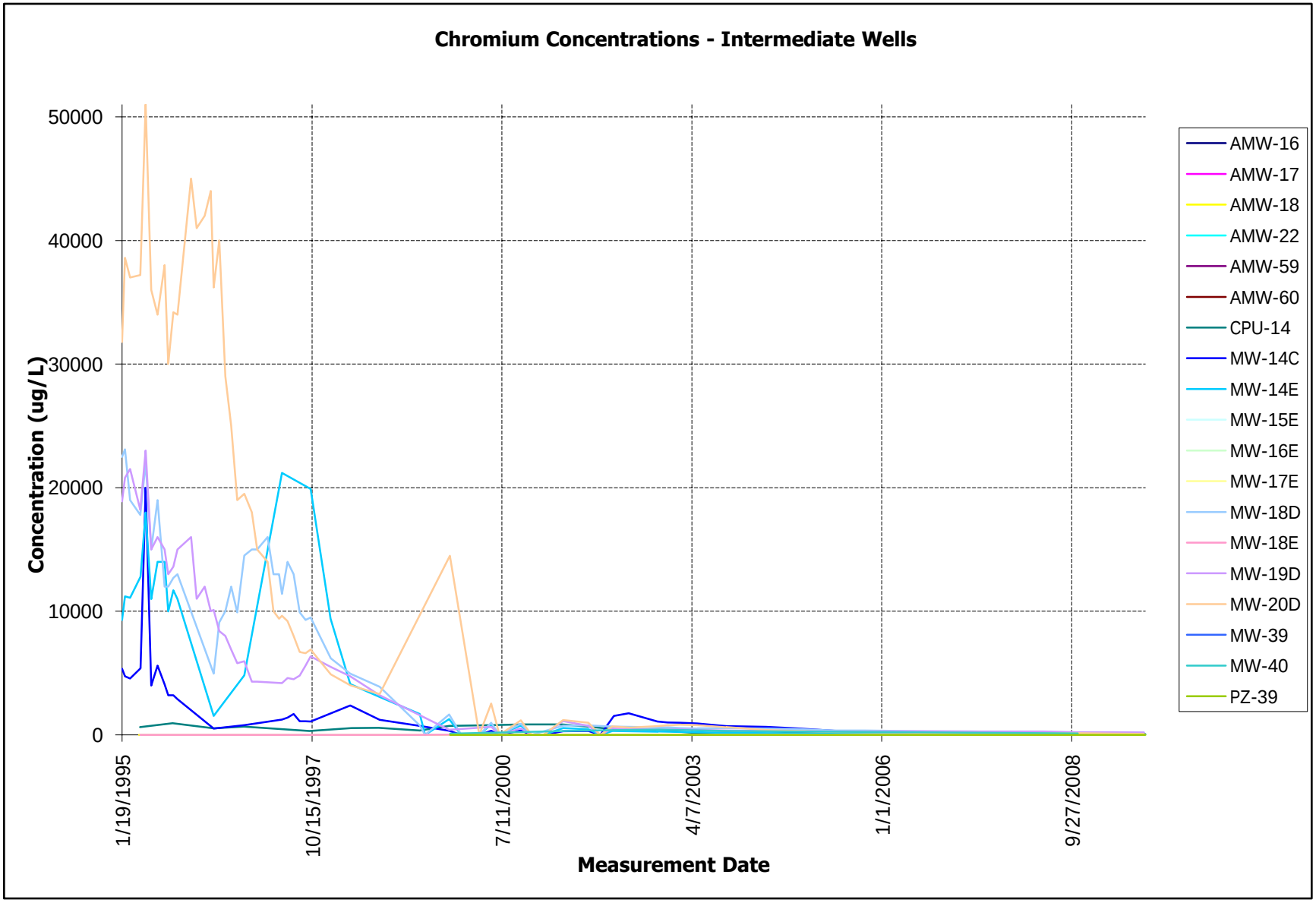
NOTES
D = Reported result is from a dilution.
J = The result is an estimated concentration that is less than the Method Reporting Limit but greater than or equal to the Method Detection Limit.
U = Analyte not detected above the specified reporting limit.
-- = Well not sampled during this monitoring event.
* = This well had an elevated turbidity; therefore, the results for dissolved chromium were used.

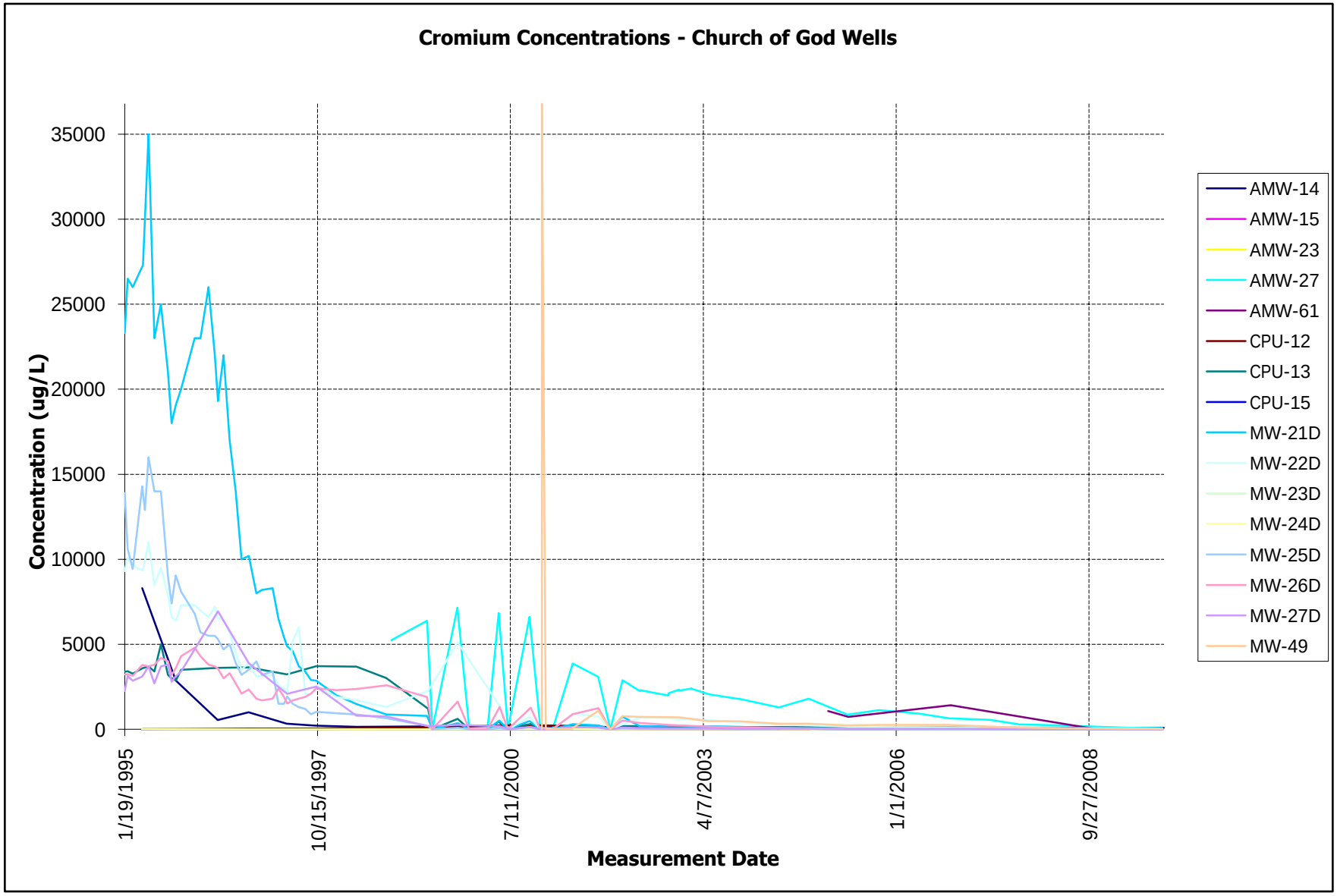
Results are in micrograms per liter (µg/L).
Results shown in **red** are above the cleanup level of 80 µg/L.
Wells shown in **red** were above the cleanup level of 80 µg/L for the reporting period.

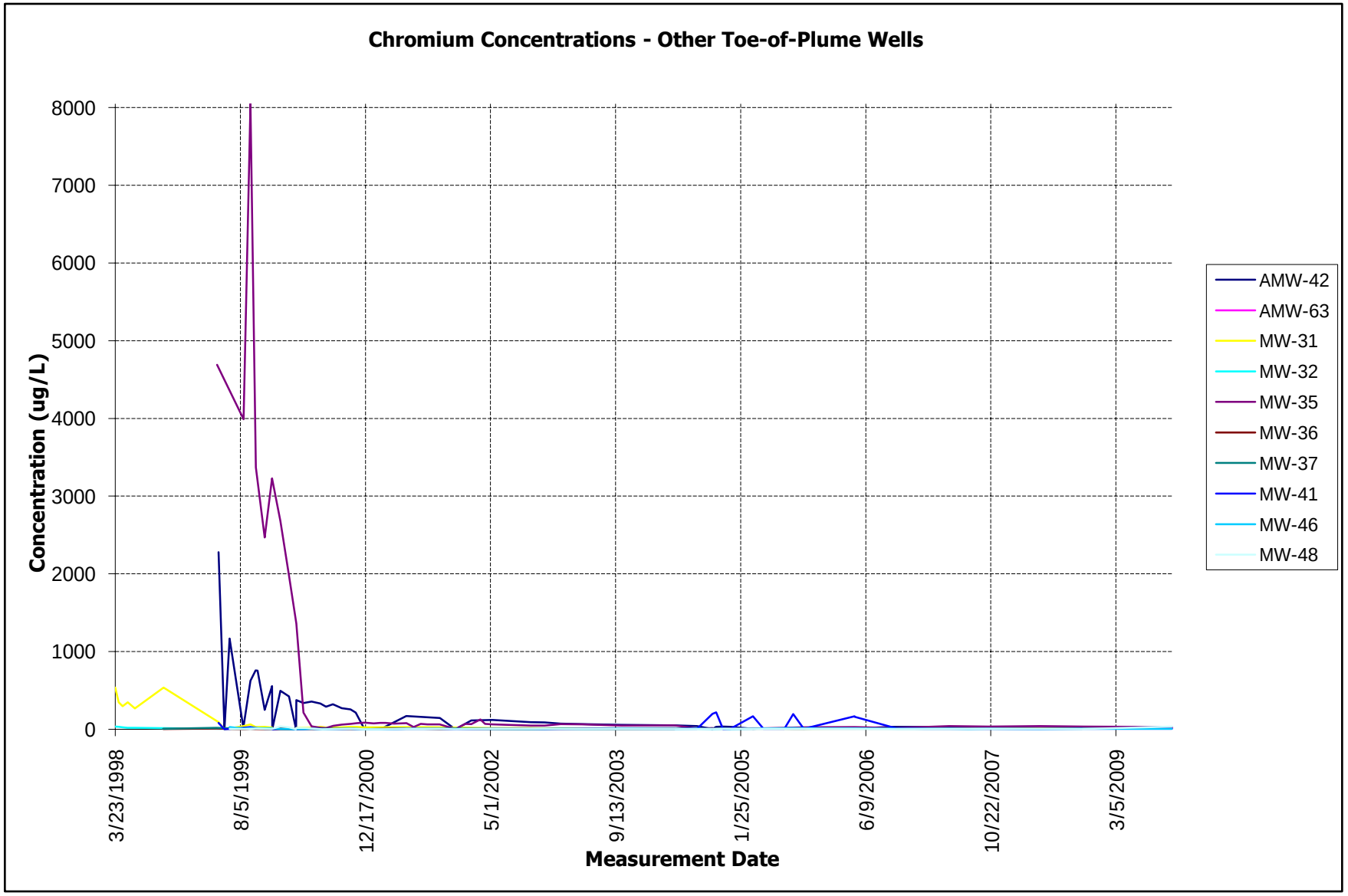
APPENDIX A-2

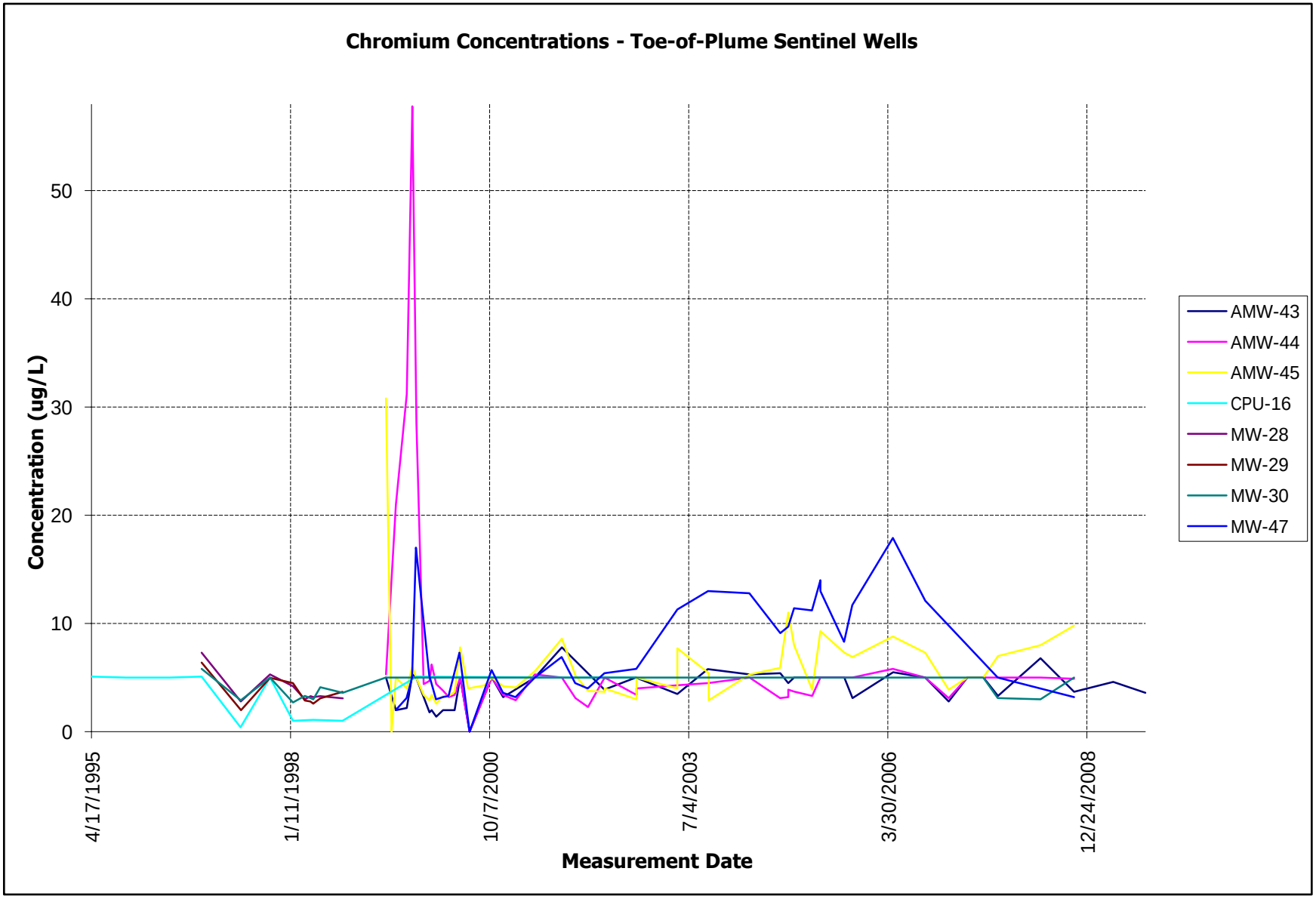
CHROMIUM CONCENTRATIONS – BY WELL GROUPING

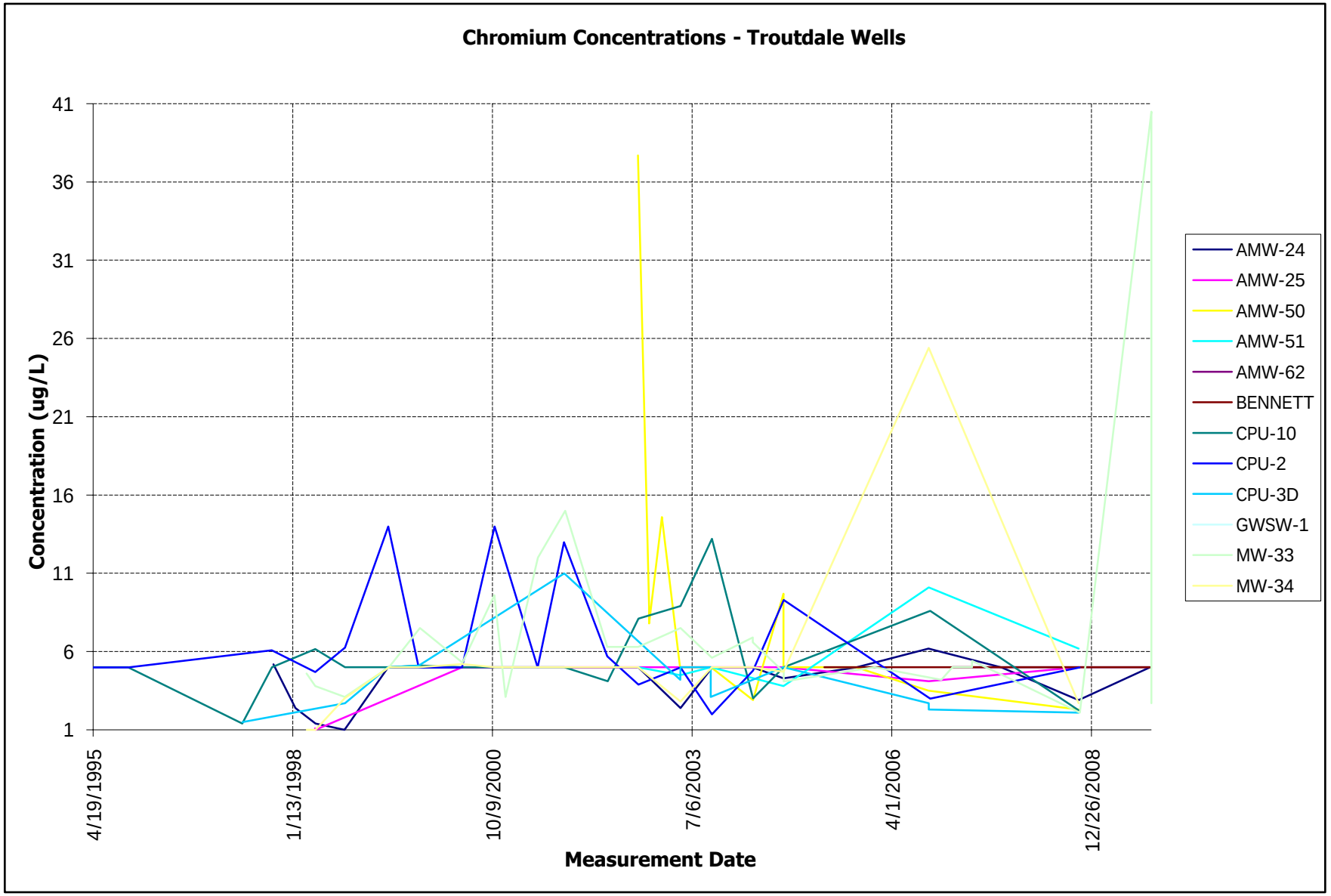

Chromium Concentrations - Proximal Wells
Concentration (ug/L)
14000
12000
10000
8000
6000
4000
2000
0
1/19/1995
10/15/1997
7/11/2000
4/7/2003
1/1/2006
9/27/2008
Measurement Date
AMW-58
EC-1
MW-10B
MW-10C
MW-12C
MW-13C
MW-2A
MW-2B
MW-2C
MW-3A
MW-3B
MW-3C
MW-4A
MW-4B
MW-4BSHED
MW-4C
MW-6A
MW-6B
MW-6C
MW-6D
MW-7B
MW-7C
MW-8B
MW-9B
MW-9C
PW-1B


Chromium Concentrations - Intermediate Wells
Concentration (ug/L)
50000
40000
30000
20000
10000
0
1/19/1995
10/15/1997
7/11/2000
4/7/2003
1/1/2006
9/27/2008
Measurement Date
AMW-16
AMW-17
AMW-18
AMW-22
AMW-59
AMW-60
CPU-14
MW-14C
MW-14E
MW-15E
MW-16E
MW-17E
MW-18D
MW-18E
MW-19D
MW-20D
MW-39
MW-40
PZ-39


Cromium Concentrations - Church of God Wells
Concentration (ug/L)
35000
30000
25000
20000
15000
10000
5000
0
1/19/1995
10/15/1997
7/11/2000
4/7/2003
1/1/2006
9/27/2008
Measurement Date
AMW-14
AMW-15
AMW-23
AMW-27
AMW-61
CPU-12
CPU-13
CPU-15
MW-21D
MW-22D
MW-23D
MW-24D
MW-25D
MW-26D
MW-27D
MW-49


Chromium Concentrations - Other Toe-of-Plume Wells
Concentration (ug/L)
8000
7000
6000
5000
4000
3000
2000
1000
0
3/23/1998
8/5/1999
12/17/2000
5/1/2002
9/13/2003
1/25/2005
6/9/2006
10/22/2007
3/5/2009
Measurement Date
AMW-42
AMW-63
MW-31
MW-32
MW-35
MW-36
MW-37
MW-41
MW-46
MW-48


Chromium Concentrations - Toe-of-Plume Sentinel Wells
Concentration (ug/L)
0
10
20
30
40
50
4/17/1995
1/11/1998
10/7/2000
7/4/2003
3/30/2006
12/24/2008
Measurement Date
AMW-43
AMW-44
AMW-45
CPU-16
MW-28
MW-29
MW-30
MW-47


Chromium Concentrations - Troutdale Wells
Concentration (ug/L)
41
36
31
26
21
16
11
6
1
4/19/1995
1/13/1998
10/9/2000
7/6/2003
4/1/2006
12/26/2008
Measurement Date
AMW-24
AMW-25
AMW-50
AMW-51
AMW-62
BENNETT
CPU-10
CPU-2
CPU-3D
GWSW-1
MW-33
MW-34

APPENDIX A-3

CHROMIUM CONCENTRATIONS – INDIVIDUAL WELLS

APPENDIX A-3
TABLE OF CONTENTS

Church of God Wells

Toe of Plume – Other Toe Wells

Toe of Plume – Sentinel Wells

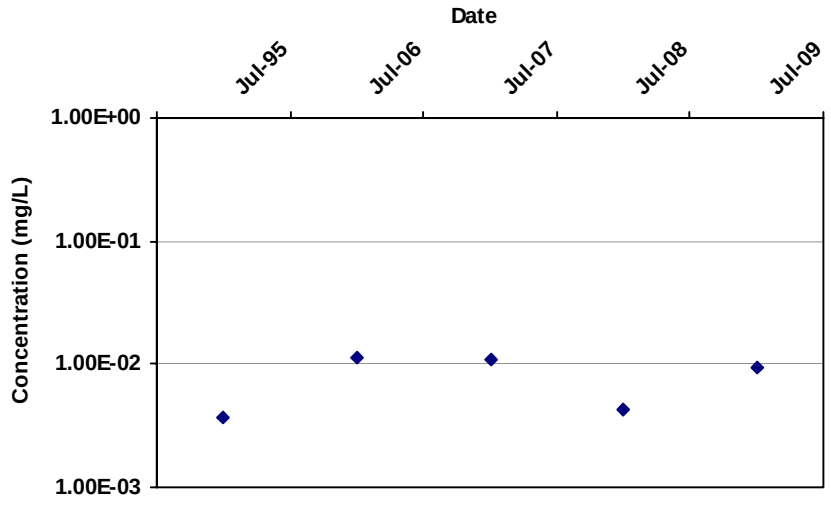
Troutdale Wells

UPGRADIENT WELLS

MAROS Mann-Kendall Statistics Summary

Well: AMW-6A
Well Type: T
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: 0

Confidence in Trend: 40.8%

Coefficient of Variation: 0.46

Mann Kendall Concentration Trend: (See Note) S

Data Table:

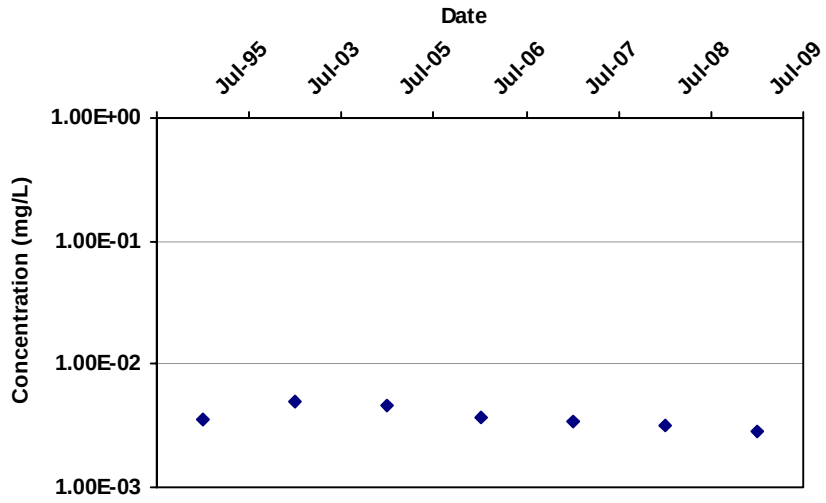
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
AMW-6A	T	7/1/1995	CHROMIUM, HEXAVALENT	3.7E-03		2	1
AMW-6A	T	7/1/2006	CHROMIUM, HEXAVALENT	1.1E-02		4	4
AMW-6A	T	7/1/2007	CHROMIUM, HEXAVALENT	1.1E-02		3	3
AMW-6A	T	7/1/2008	CHROMIUM, HEXAVALENT	4.3E-03		2	2
AMW-6A	T	7/1/2009	CHROMIUM, HEXAVALENT	9.4E-03		2	2

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: AMW-7A
Well Type: T
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -15

Confidence in Trend: 98.5%

Coefficient of Variation: 0.21

Mann Kendall Concentration Trend: (See Note) D

Data Table:

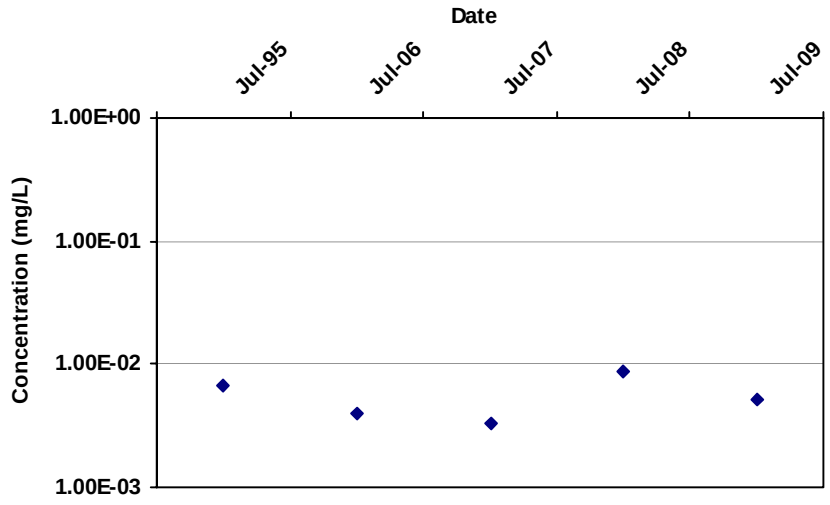
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
AMW-7A	T	7/1/1995	CHROMIUM, HEXAVALENT	3.5E-03		2	1
AMW-7A	T	7/1/2003	CHROMIUM, HEXAVALENT	5.0E-03	ND	1	0
AMW-7A	T	7/1/2005	CHROMIUM, HEXAVALENT	4.7E-03		1	1
AMW-7A	T	7/1/2006	CHROMIUM, HEXAVALENT	3.6E-03		4	4
AMW-7A	T	7/1/2007	CHROMIUM, HEXAVALENT	3.4E-03		3	2
AMW-7A	T	7/1/2008	CHROMIUM, HEXAVALENT	3.2E-03		2	1
AMW-7A	T	7/1/2009	CHROMIUM, HEXAVALENT	2.9E-03		2	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: AMW-10A
Well Type: T
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: 0

Confidence in Trend: 40.8%

Coefficient of Variation: 0.38

Mann Kendall Concentration Trend: (See Note) S

Data Table:

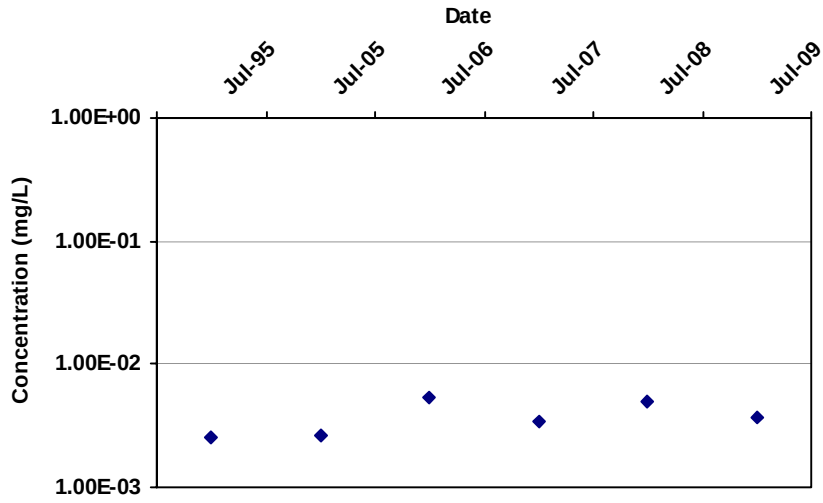
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
AMW-10A	T	7/1/1995	CHROMIUM, HEXAVALENT	6.6E-03		2	2
AMW-10A	T	7/1/2006	CHROMIUM, HEXAVALENT	4.0E-03		4	3
AMW-10A	T	7/1/2007	CHROMIUM, HEXAVALENT	3.3E-03		3	2
AMW-10A	T	7/1/2008	CHROMIUM, HEXAVALENT	8.6E-03		2	2
AMW-10A	T	7/1/2009	CHROMIUM, HEXAVALENT	5.2E-03		2	2

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: AMW-11A
Well Type: T
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: 7

Confidence in Trend: 86.4%

Coefficient of Variation: 0.32

Mann Kendall Concentration Trend: (See Note) NT

Data Table:

Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
AMW-11A	T	7/1/1995	CHROMIUM, HEXAVALENT	2.5E-03	ND	2	0
AMW-11A	T	7/1/2005	CHROMIUM, HEXAVALENT	2.6E-03		1	1
AMW-11A	T	7/1/2006	CHROMIUM, HEXAVALENT	5.5E-03		4	4
AMW-11A	T	7/1/2007	CHROMIUM, HEXAVALENT	3.4E-03		3	1
AMW-11A	T	7/1/2008	CHROMIUM, HEXAVALENT	4.9E-03		2	2
AMW-11A	T	7/1/2009	CHROMIUM, HEXAVALENT	3.7E-03		2	2

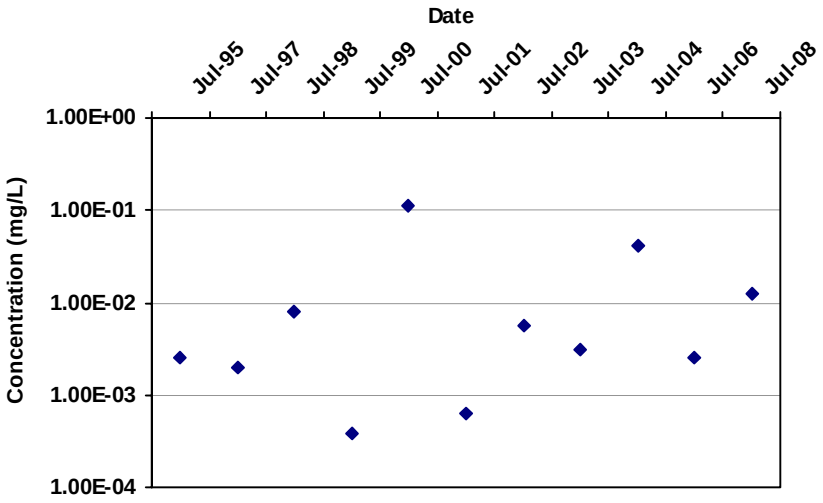
Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

TCE SOURCE WELLS

MAROS Mann-Kendall Statistics Summary

Well: MW-1A
Well Type: T
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: 12

Confidence in Trend: 79.9%

Coefficient of Variation: 1.92

Mann Kendall Concentration Trend: (See Note) NT

Data Table:

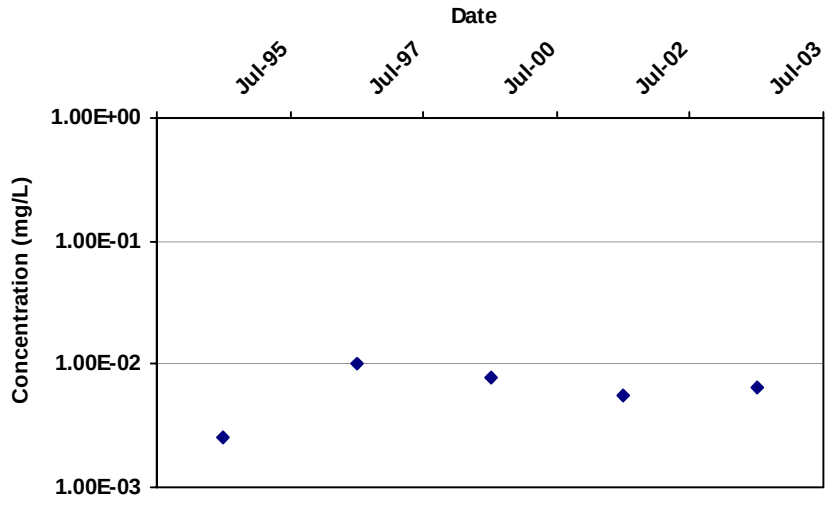
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-1A	T	7/1/1995	CHROMIUM, HEXAVALENT	2.5E-03	ND	2	0
MW-1A	T	7/1/1997	CHROMIUM, HEXAVALENT	2.0E-03	ND	2	0
MW-1A	T	7/1/1998	CHROMIUM, HEXAVALENT	8.2E-03		2	2
MW-1A	T	7/1/1999	CHROMIUM, HEXAVALENT	3.8E-04		2	1
MW-1A	T	7/1/2000	CHROMIUM, HEXAVALENT	1.1E-01		2	2
MW-1A	T	7/1/2001	CHROMIUM, HEXAVALENT	6.2E-04		2	1
MW-1A	T	7/1/2002	CHROMIUM, HEXAVALENT	5.6E-03		2	1
MW-1A	T	7/1/2003	CHROMIUM, HEXAVALENT	3.1E-03		2	2
MW-1A	T	7/1/2004	CHROMIUM, HEXAVALENT	4.2E-02		1	1
MW-1A	T	7/1/2006	CHROMIUM, HEXAVALENT	2.5E-03	ND	1	0
MW-1A	T	7/1/2008	CHROMIUM, HEXAVALENT	1.3E-02		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-1C
Well Type: T
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: 0

Confidence in Trend: 40.8%

Coefficient of Variation: 0.43

Mann Kendall Concentration Trend: (See Note) S

Data Table:

Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-1C	T	7/1/1995	CHROMIUM, HEXAVALENT	2.5E-03	ND	2	0
MW-1C	T	7/1/1997	CHROMIUM, HEXAVALENT	1.0E-02		1	1
MW-1C	T	7/1/2000	CHROMIUM, HEXAVALENT	7.7E-03		1	1
MW-1C	T	7/1/2002	CHROMIUM, HEXAVALENT	5.6E-03		1	1
MW-1C	T	7/1/2003	CHROMIUM, HEXAVALENT	6.5E-03		1	1

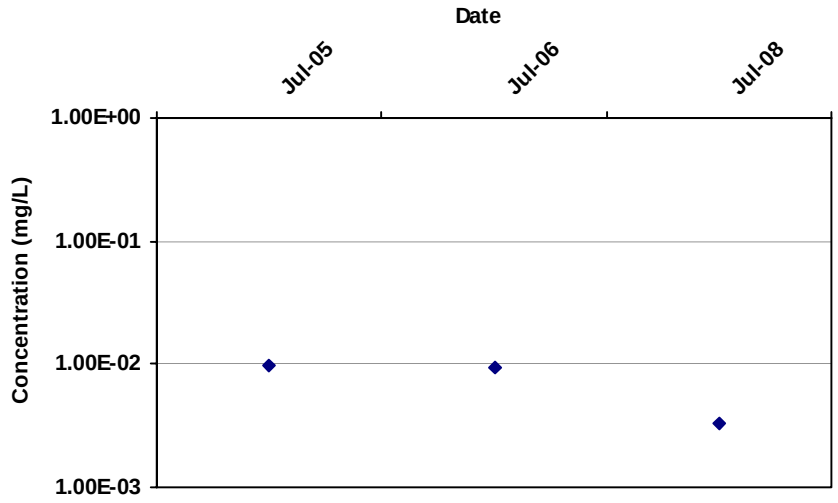
Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

PROXIMAL WELLS

MAROS Mann-Kendall Statistics Summary

Well: AMW-58
Well Type: S
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: 0

Confidence in Trend: 0.0%

Coefficient of Variation: 0.00

Mann Kendall Concentration Trend: (See Note) N/A

Data Table:

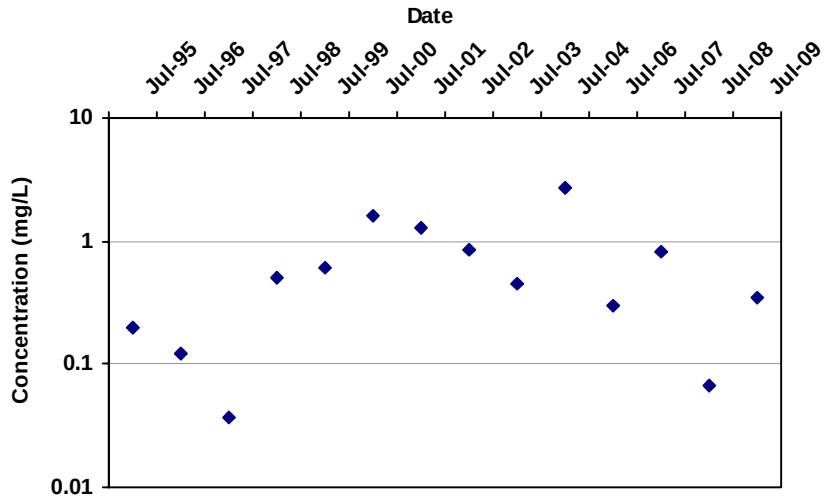
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
AMW-58	S	7/1/2005	CHROMIUM, HEXAVALENT	9.6E-03		3	2
AMW-58	S	7/1/2006	CHROMIUM, HEXAVALENT	9.5E-03		2	2
AMW-58	S	7/1/2008	CHROMIUM, HEXAVALENT	3.3E-03		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-2A
Well Type: S
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: 9

Confidence in Trend: 66.6%

Coefficient of Variation: 1.03

Mann Kendall Concentration Trend: (See Note) NT

Data Table:

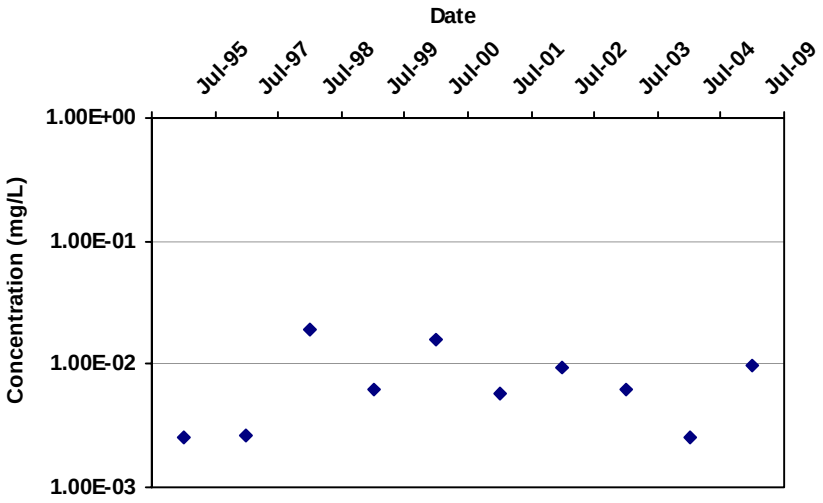
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-2A	S	7/1/1995	CHROMIUM, HEXAVALENT	2.0E-01		2	2
MW-2A	S	7/1/1996	CHROMIUM, HEXAVALENT	1.2E-01		2	2
MW-2A	S	7/1/1997	CHROMIUM, HEXAVALENT	3.7E-02		2	2
MW-2A	S	7/1/1998	CHROMIUM, HEXAVALENT	5.1E-01		2	2
MW-2A	S	7/1/1999	CHROMIUM, HEXAVALENT	6.2E-01		2	2
MW-2A	S	7/1/2000	CHROMIUM, HEXAVALENT	1.6E+00		2	2
MW-2A	S	7/1/2001	CHROMIUM, HEXAVALENT	1.3E+00		2	2
MW-2A	S	7/1/2002	CHROMIUM, HEXAVALENT	8.6E-01		2	2
MW-2A	S	7/1/2003	CHROMIUM, HEXAVALENT	4.5E-01		2	2
MW-2A	S	7/1/2004	CHROMIUM, HEXAVALENT	2.7E+00		1	1
MW-2A	S	7/1/2006	CHROMIUM, HEXAVALENT	3.0E-01		1	1
MW-2A	S	7/1/2007	CHROMIUM, HEXAVALENT	8.2E-01		1	1
MW-2A	S	7/1/2008	CHROMIUM, HEXAVALENT	6.6E-02		1	1
MW-2A	S	7/1/2009	CHROMIUM, HEXAVALENT	3.4E-01		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-2B
Well Type: S
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: 6

Confidence in Trend: 66.8%

Coefficient of Variation: 0.71

Mann Kendall Concentration Trend: (See Note) NT

Data Table:

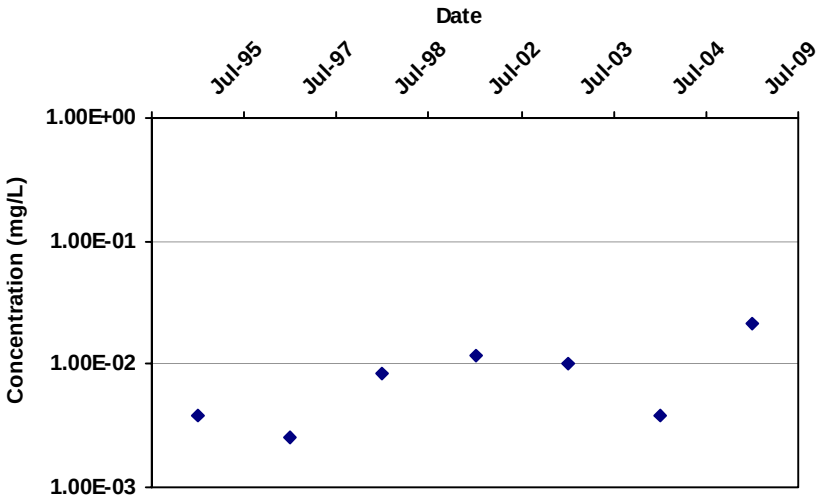
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-2B	S	7/1/1995	CHROMIUM, HEXAVALENT	2.5E-03	ND	2	0
MW-2B	S	7/1/1997	CHROMIUM, HEXAVALENT	2.7E-03	ND	1	0
MW-2B	S	7/1/1998	CHROMIUM, HEXAVALENT	1.9E-02		2	2
MW-2B	S	7/1/1999	CHROMIUM, HEXAVALENT	6.3E-03		2	2
MW-2B	S	7/1/2000	CHROMIUM, HEXAVALENT	1.6E-02		2	2
MW-2B	S	7/1/2001	CHROMIUM, HEXAVALENT	5.7E-03		1	1
MW-2B	S	7/1/2002	CHROMIUM, HEXAVALENT	9.4E-03		1	1
MW-2B	S	7/1/2003	CHROMIUM, HEXAVALENT	6.3E-03		1	1
MW-2B	S	7/1/2004	CHROMIUM, HEXAVALENT	2.5E-03	ND	1	0
MW-2B	S	7/1/2009	CHROMIUM, HEXAVALENT	9.6E-03		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-2C
Well Type: S
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: 9

Confidence in Trend: 88.1%

Coefficient of Variation: 0.74

Mann Kendall Concentration Trend: (See Note) NT

Data Table:

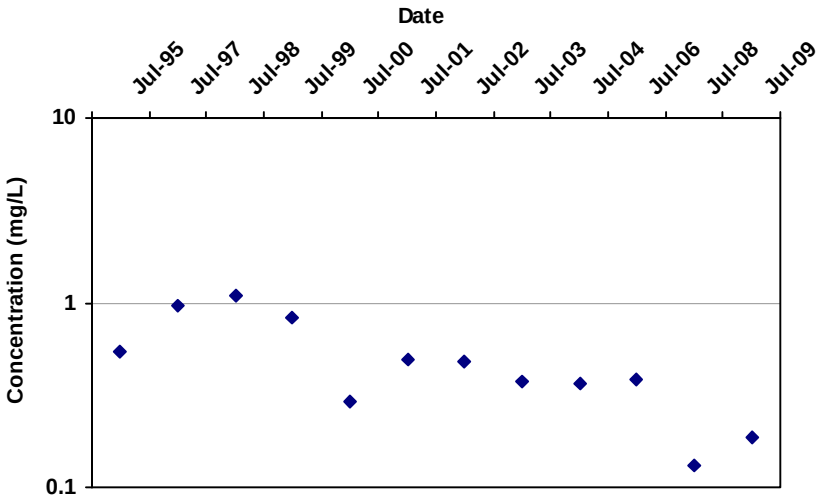
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-2C	S	7/1/1995	CHROMIUM, HEXAVALENT	3.9E-03		2	1
MW-2C	S	7/1/1997	CHROMIUM, HEXAVALENT	2.5E-03	ND	1	0
MW-2C	S	7/1/1998	CHROMIUM, HEXAVALENT	8.4E-03		1	1
MW-2C	S	7/1/2002	CHROMIUM, HEXAVALENT	1.2E-02		1	1
MW-2C	S	7/1/2003	CHROMIUM, HEXAVALENT	1.0E-02		1	1
MW-2C	S	7/1/2004	CHROMIUM, HEXAVALENT	3.8E-03		1	1
MW-2C	S	7/1/2009	CHROMIUM, HEXAVALENT	2.1E-02		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-3A
Well Type: S
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -42

Confidence in Trend: 99.8%

Coefficient of Variation: 0.59

Mann Kendall Concentration Trend: (See Note) D

Data Table:

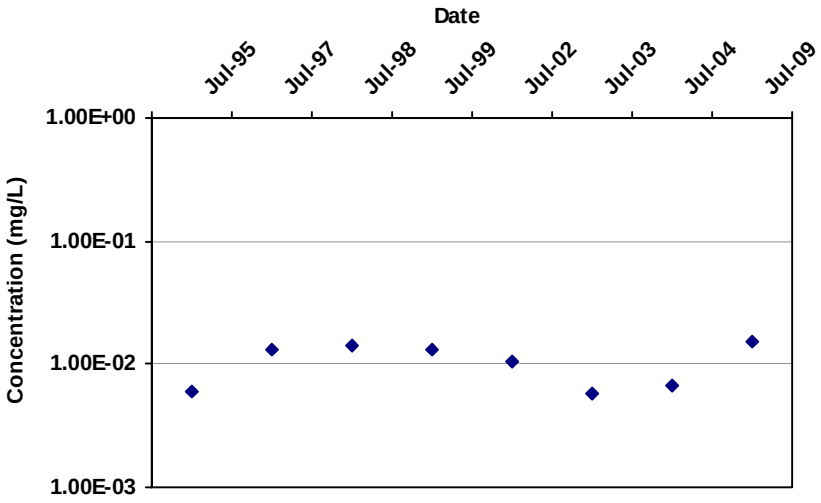
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-3A	S	7/1/1995	CHROMIUM, HEXAVALENT	5.4E-01		2	2
MW-3A	S	7/1/1997	CHROMIUM, HEXAVALENT	9.6E-01		2	2
MW-3A	S	7/1/1998	CHROMIUM, HEXAVALENT	1.1E+00		2	2
MW-3A	S	7/1/1999	CHROMIUM, HEXAVALENT	8.4E-01		2	2
MW-3A	S	7/1/2000	CHROMIUM, HEXAVALENT	2.9E-01		2	2
MW-3A	S	7/1/2001	CHROMIUM, HEXAVALENT	5.0E-01		2	2
MW-3A	S	7/1/2002	CHROMIUM, HEXAVALENT	4.8E-01		2	2
MW-3A	S	7/1/2003	CHROMIUM, HEXAVALENT	3.8E-01		2	2
MW-3A	S	7/1/2004	CHROMIUM, HEXAVALENT	3.6E-01		2	2
MW-3A	S	7/1/2006	CHROMIUM, HEXAVALENT	3.9E-01		1	1
MW-3A	S	7/1/2008	CHROMIUM, HEXAVALENT	1.3E-01		1	1
MW-3A	S	7/1/2009	CHROMIUM, HEXAVALENT	1.9E-01		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-3B
Well Type: S
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: 0

Confidence in Trend: 45.2%

Coefficient of Variation: 0.36

Mann Kendall Concentration Trend: (See Note) S

Data Table:

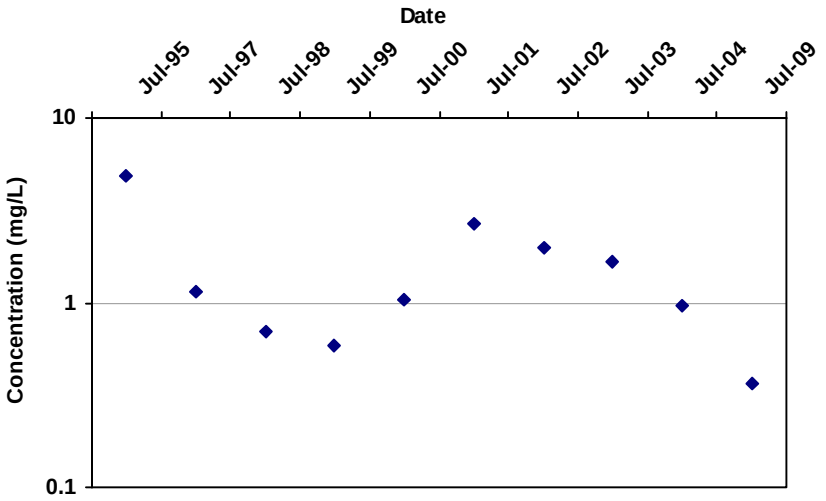
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-3B	S	7/1/1995	CHROMIUM, HEXAVALENT	6.0E-03		2	2
MW-3B	S	7/1/1997	CHROMIUM, HEXAVALENT	1.3E-02		1	1
MW-3B	S	7/1/1998	CHROMIUM, HEXAVALENT	1.4E-02		2	2
MW-3B	S	7/1/1999	CHROMIUM, HEXAVALENT	1.3E-02		2	2
MW-3B	S	7/1/2002	CHROMIUM, HEXAVALENT	1.0E-02		1	1
MW-3B	S	7/1/2003	CHROMIUM, HEXAVALENT	5.8E-03		1	1
MW-3B	S	7/1/2004	CHROMIUM, HEXAVALENT	6.8E-03		1	1
MW-3B	S	7/1/2009	CHROMIUM, HEXAVALENT	1.5E-02		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-4A
Well Type: S
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -13

Confidence in Trend: 85.4%

Coefficient of Variation: 0.83

Mann Kendall Concentration Trend: (See Note) S

Data Table:

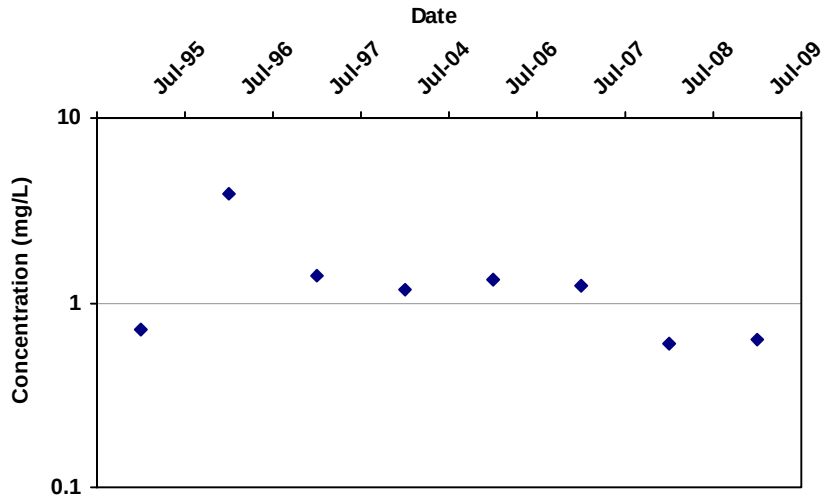
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-4A	S	7/1/1995	CHROMIUM, HEXAVALENT	4.8E+00		2	2
MW-4A	S	7/1/1997	CHROMIUM, HEXAVALENT	1.1E+00		2	2
MW-4A	S	7/1/1998	CHROMIUM, HEXAVALENT	7.0E-01		2	2
MW-4A	S	7/1/1999	CHROMIUM, HEXAVALENT	5.8E-01		2	2
MW-4A	S	7/1/2000	CHROMIUM, HEXAVALENT	1.0E+00		2	2
MW-4A	S	7/1/2001	CHROMIUM, HEXAVALENT	2.7E+00		2	2
MW-4A	S	7/1/2002	CHROMIUM, HEXAVALENT	2.0E+00		2	2
MW-4A	S	7/1/2003	CHROMIUM, HEXAVALENT	1.7E+00		2	2
MW-4A	S	7/1/2004	CHROMIUM, HEXAVALENT	9.7E-01		2	2
MW-4A	S	7/1/2009	CHROMIUM, HEXAVALENT	3.6E-01		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-4B
Well Type: S
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -12

Confidence in Trend: 91.1%

Coefficient of Variation: 0.77

Mann Kendall Concentration Trend: (See Note) PD

Data Table:

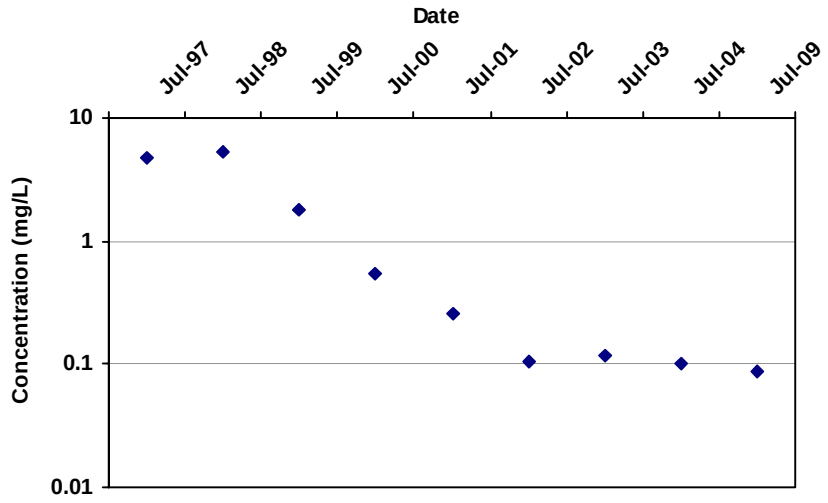
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-4B	S	7/1/1995	CHROMIUM, HEXAVALENT	7.1E-01		2	2
MW-4B	S	7/1/1996	CHROMIUM, HEXAVALENT	3.8E+00		2	2
MW-4B	S	7/1/1997	CHROMIUM, HEXAVALENT	1.4E+00		1	1
MW-4B	S	7/1/2004	CHROMIUM, HEXAVALENT	1.2E+00		1	1
MW-4B	S	7/1/2006	CHROMIUM, HEXAVALENT	1.3E+00		1	1
MW-4B	S	7/1/2007	CHROMIUM, HEXAVALENT	1.2E+00		1	1
MW-4B	S	7/1/2008	CHROMIUM, HEXAVALENT	6.1E-01		1	1
MW-4B	S	7/1/2009	CHROMIUM, HEXAVALENT	6.3E-01		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-4BSHE
Well Type: S
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -32

Confidence in Trend: 100.0%

Coefficient of Variation: 1.45

Mann Kendall Concentration Trend: (See Note) D

Data Table:

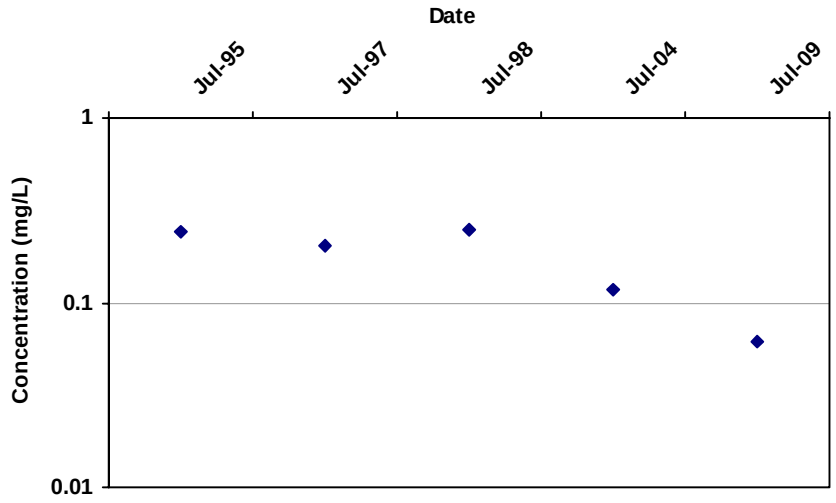
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-4BSHED	S	7/1/1997	CHROMIUM, HEXAVALENT	4.8E+00		2	2
MW-4BSHED	S	7/1/1998	CHROMIUM, HEXAVALENT	5.4E+00		2	2
MW-4BSHED	S	7/1/1999	CHROMIUM, HEXAVALENT	1.8E+00		2	2
MW-4BSHED	S	7/1/2000	CHROMIUM, HEXAVALENT	5.3E-01		2	2
MW-4BSHED	S	7/1/2001	CHROMIUM, HEXAVALENT	2.6E-01		2	2
MW-4BSHED	S	7/1/2002	CHROMIUM, HEXAVALENT	1.1E-01		2	2
MW-4BSHED	S	7/1/2003	CHROMIUM, HEXAVALENT	1.2E-01		2	2
MW-4BSHED	S	7/1/2004	CHROMIUM, HEXAVALENT	1.0E-01		1	1
MW-4BSHED	S	7/1/2009	CHROMIUM, HEXAVALENT	8.6E-02		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-4C
Well Type: S
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -6

Confidence in Trend: 88.3%

Coefficient of Variation: 0.47

Mann Kendall Concentration Trend: (See Note) S

Data Table:

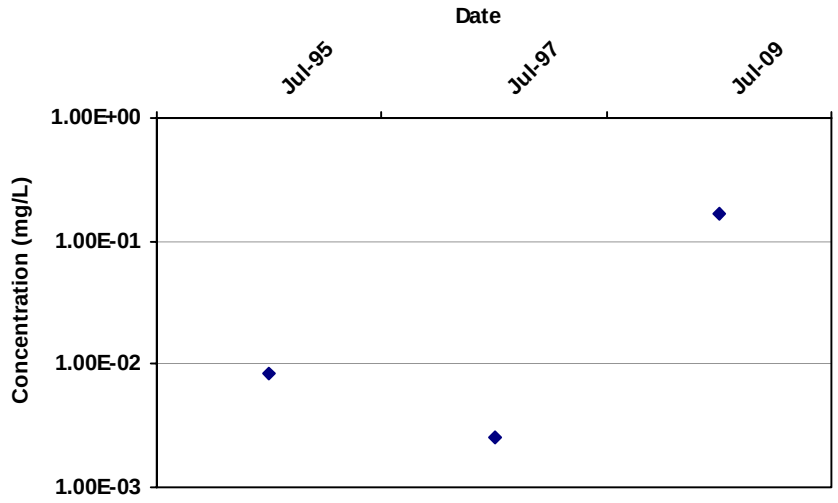
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-4C	S	7/1/1995	CHROMIUM, HEXAVALENT	2.4E-01		2	2
MW-4C	S	7/1/1997	CHROMIUM, HEXAVALENT	2.0E-01		2	2
MW-4C	S	7/1/1998	CHROMIUM, HEXAVALENT	2.5E-01		1	1
MW-4C	S	7/1/2004	CHROMIUM, HEXAVALENT	1.2E-01		2	2
MW-4C	S	7/1/2009	CHROMIUM, HEXAVALENT	6.1E-02		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-6A
Well Type: S
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: 0

Confidence in Trend: 0.0%

Coefficient of Variation: 0.00

Mann Kendall Concentration Trend: (See Note) N/A

Data Table:

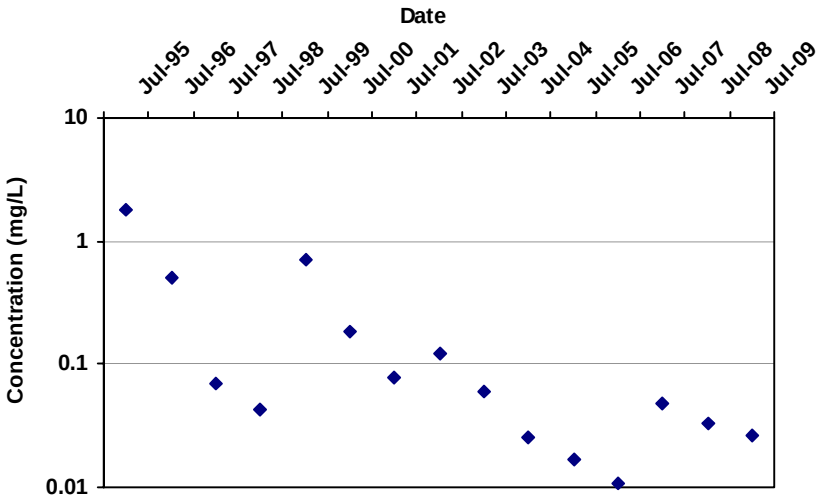
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-6A	S	7/1/1995	CHROMIUM, HEXAVALENT	8.3E-03		2	1
MW-6A	S	7/1/1997	CHROMIUM, HEXAVALENT	2.5E-03	ND	1	0
MW-6A	S	7/1/2009	CHROMIUM, HEXAVALENT	1.7E-01		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-6B
Well Type: S
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -63

Confidence in Trend: 99.9%

Coefficient of Variation: 1.90

Mann Kendall Concentration Trend: (See Note) D

Data Table:

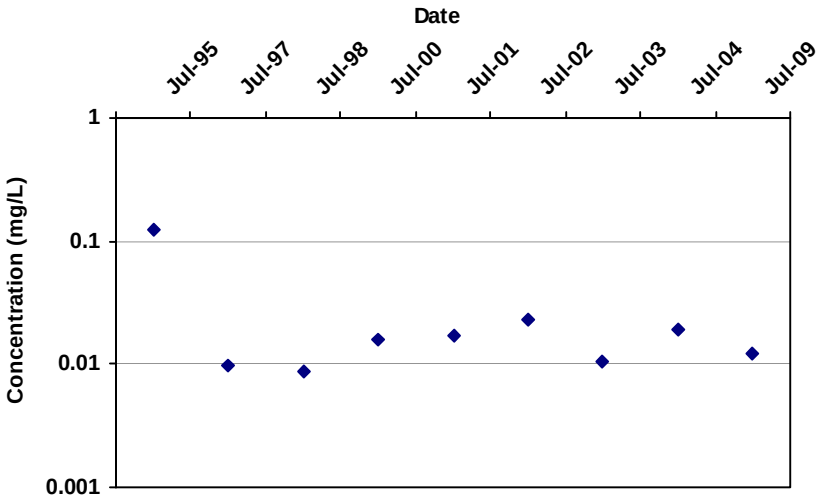
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-6B	S	7/1/1995	CHROMIUM, HEXAVALENT	1.8E+00		11	11
MW-6B	S	7/1/1996	CHROMIUM, HEXAVALENT	5.0E-01		2	2
MW-6B	S	7/1/1997	CHROMIUM, HEXAVALENT	7.0E-02		2	2
MW-6B	S	7/1/1998	CHROMIUM, HEXAVALENT	4.4E-02		2	2
MW-6B	S	7/1/1999	CHROMIUM, HEXAVALENT	7.0E-01		2	2
MW-6B	S	7/1/2000	CHROMIUM, HEXAVALENT	1.9E-01		3	3
MW-6B	S	7/1/2001	CHROMIUM, HEXAVALENT	7.7E-02		2	2
MW-6B	S	7/1/2002	CHROMIUM, HEXAVALENT	1.2E-01		3	3
MW-6B	S	7/1/2003	CHROMIUM, HEXAVALENT	6.1E-02		3	3
MW-6B	S	7/1/2004	CHROMIUM, HEXAVALENT	2.5E-02		2	2
MW-6B	S	7/1/2005	CHROMIUM, HEXAVALENT	1.7E-02		1	1
MW-6B	S	7/1/2006	CHROMIUM, HEXAVALENT	1.1E-02		1	1
MW-6B	S	7/1/2007	CHROMIUM, HEXAVALENT	4.9E-02		2	2
MW-6B	S	7/1/2008	CHROMIUM, HEXAVALENT	3.3E-02		2	2
MW-6B	S	7/1/2009	CHROMIUM, HEXAVALENT	2.6E-02		2	2

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-6C
Well Type: S
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: 2

Confidence in Trend: 54.0%

Coefficient of Variation: 1.39

Mann Kendall Concentration Trend: (See Note) NT

Data Table:

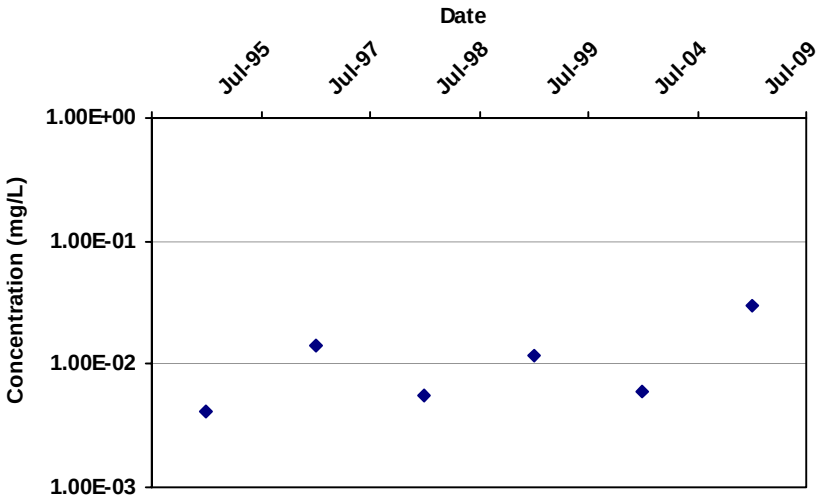
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-6C	S	7/1/1995	CHROMIUM, HEXAVALENT	1.3E-01		2	2
MW-6C	S	7/1/1997	CHROMIUM, HEXAVALENT	9.6E-03		1	1
MW-6C	S	7/1/1998	CHROMIUM, HEXAVALENT	8.6E-03		1	1
MW-6C	S	7/1/2000	CHROMIUM, HEXAVALENT	1.6E-02		1	1
MW-6C	S	7/1/2001	CHROMIUM, HEXAVALENT	1.7E-02		1	1
MW-6C	S	7/1/2002	CHROMIUM, HEXAVALENT	2.3E-02		1	1
MW-6C	S	7/1/2003	CHROMIUM, HEXAVALENT	1.1E-02		1	1
MW-6C	S	7/1/2004	CHROMIUM, HEXAVALENT	1.9E-02		1	1
MW-6C	S	7/1/2009	CHROMIUM, HEXAVALENT	1.2E-02		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-6D
Well Type: S
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: 7

Confidence in Trend: 86.4%

Coefficient of Variation: 0.80

Mann Kendall Concentration Trend: (See Note) NT

Data Table:

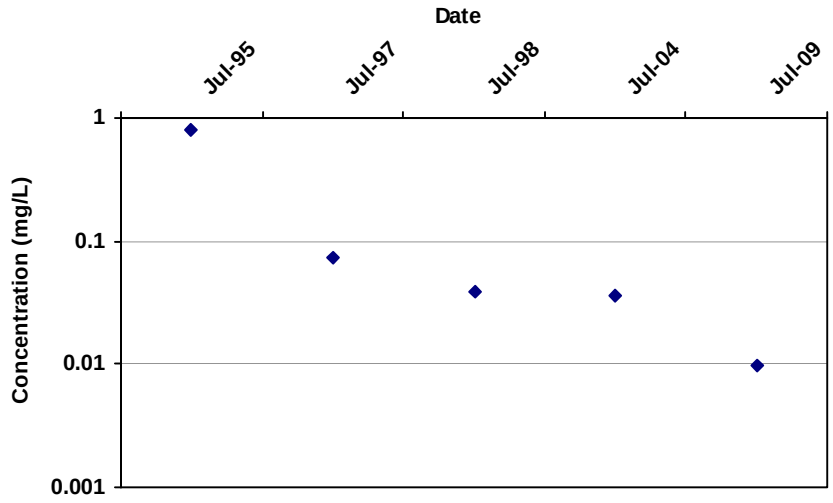
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-6D	S	7/1/1995	CHROMIUM, HEXAVALENT	4.2E-03		2	1
MW-6D	S	7/1/1997	CHROMIUM, HEXAVALENT	1.4E-02		1	1
MW-6D	S	7/1/1998	CHROMIUM, HEXAVALENT	5.6E-03		1	1
MW-6D	S	7/1/1999	CHROMIUM, HEXAVALENT	1.2E-02		2	2
MW-6D	S	7/1/2004	CHROMIUM, HEXAVALENT	6.1E-03		1	1
MW-6D	S	7/1/2009	CHROMIUM, HEXAVALENT	3.0E-02		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-7B
Well Type: S
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -10

Confidence in Trend: 99.2%

Coefficient of Variation: 1.78

Mann Kendall Concentration Trend: (See Note) D

Data Table:

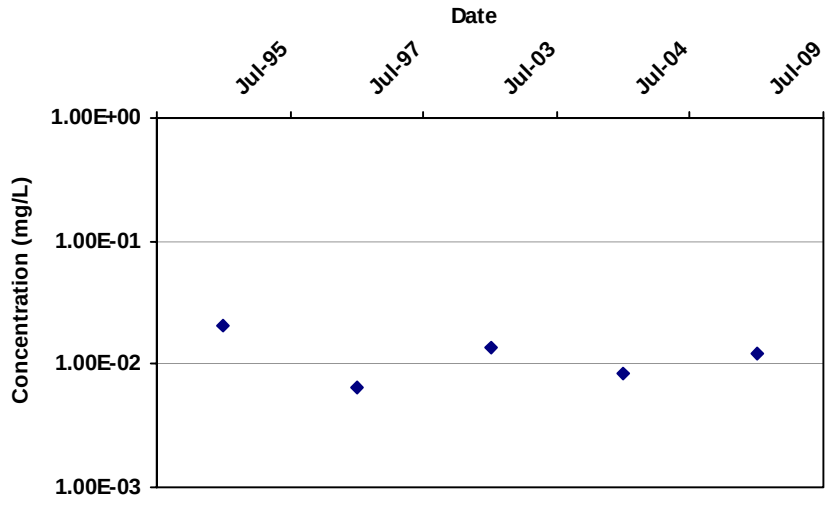
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-7B	S	7/1/1995	CHROMIUM, HEXAVALENT	7.9E-01		2	2
MW-7B	S	7/1/1997	CHROMIUM, HEXAVALENT	7.3E-02		1	1
MW-7B	S	7/1/1998	CHROMIUM, HEXAVALENT	3.9E-02		1	1
MW-7B	S	7/1/2004	CHROMIUM, HEXAVALENT	3.5E-02		1	1
MW-7B	S	7/1/2009	CHROMIUM, HEXAVALENT	9.8E-03		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-7C
Well Type: S
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -2

Confidence in Trend: 59.2%

Coefficient of Variation: 0.45

Mann Kendall Concentration Trend: (See Note) S

Data Table:

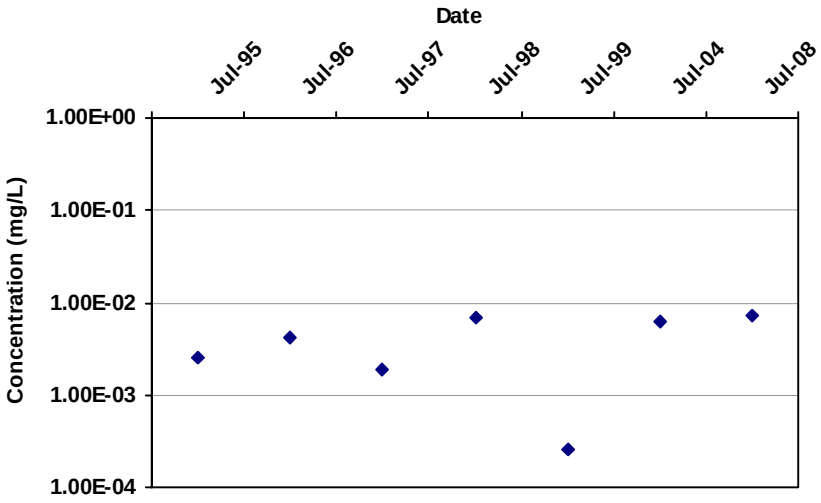
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-7C	S	7/1/1995	CHROMIUM, HEXAVALENT	2.1E-02		2	1
MW-7C	S	7/1/1997	CHROMIUM, HEXAVALENT	6.5E-03		1	1
MW-7C	S	7/1/2003	CHROMIUM, HEXAVALENT	1.4E-02		1	1
MW-7C	S	7/1/2004	CHROMIUM, HEXAVALENT	8.5E-03		1	1
MW-7C	S	7/1/2009	CHROMIUM, HEXAVALENT	1.2E-02		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-8B
Well Type: T
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: 7

Confidence in Trend: 80.9%

Coefficient of Variation: 0.65

Mann Kendall Concentration Trend: (See Note) NT

Data Table:

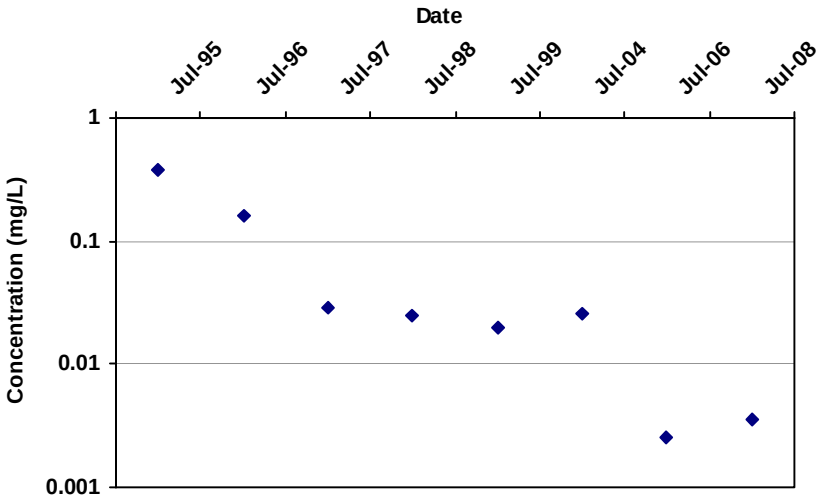
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-8B	T	7/1/1995	CHROMIUM, HEXAVALENT	2.5E-03	ND	2	0
MW-8B	T	7/1/1996	CHROMIUM, HEXAVALENT	4.1E-03		2	1
MW-8B	T	7/1/1997	CHROMIUM, HEXAVALENT	1.9E-03	ND	2	0
MW-8B	T	7/1/1998	CHROMIUM, HEXAVALENT	6.8E-03		1	1
MW-8B	T	7/1/1999	CHROMIUM, HEXAVALENT	2.5E-04		2	1
MW-8B	T	7/1/2004	CHROMIUM, HEXAVALENT	6.3E-03		1	1
MW-8B	T	7/1/2008	CHROMIUM, HEXAVALENT	7.3E-03		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-9B
Well Type: T
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -22

Confidence in Trend: 99.8%

Coefficient of Variation: 1.62

Mann Kendall Concentration Trend: (See Note) D

Data Table:

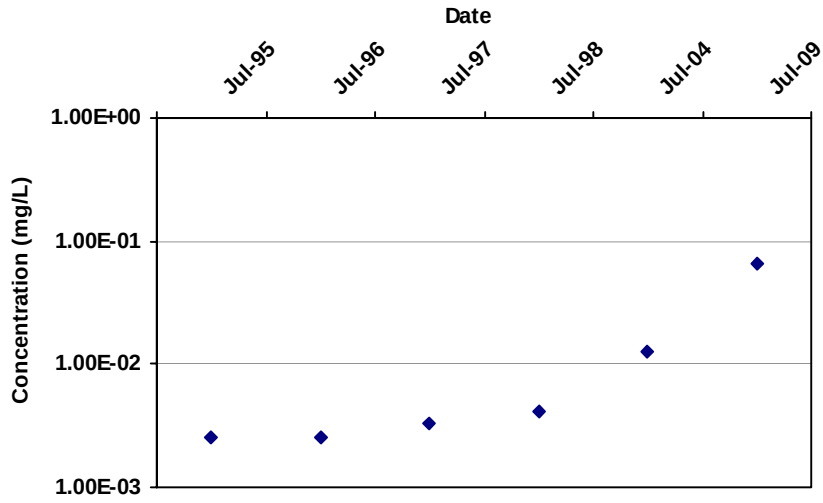
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-9B	T	7/1/1995	CHROMIUM, HEXAVALENT	3.8E-01		2	2
MW-9B	T	7/1/1996	CHROMIUM, HEXAVALENT	1.6E-01		2	2
MW-9B	T	7/1/1997	CHROMIUM, HEXAVALENT	2.8E-02		2	2
MW-9B	T	7/1/1998	CHROMIUM, HEXAVALENT	2.4E-02		2	2
MW-9B	T	7/1/1999	CHROMIUM, HEXAVALENT	2.0E-02		2	2
MW-9B	T	7/1/2004	CHROMIUM, HEXAVALENT	2.5E-02		1	1
MW-9B	T	7/1/2006	CHROMIUM, HEXAVALENT	2.5E-03	ND	1	0
MW-9B	T	7/1/2008	CHROMIUM, HEXAVALENT	3.6E-03		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-9C
Well Type: T
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: 14

Confidence in Trend: 99.6%

Coefficient of Variation: 1.65

Mann Kendall Concentration Trend: (See Note) I

Data Table:

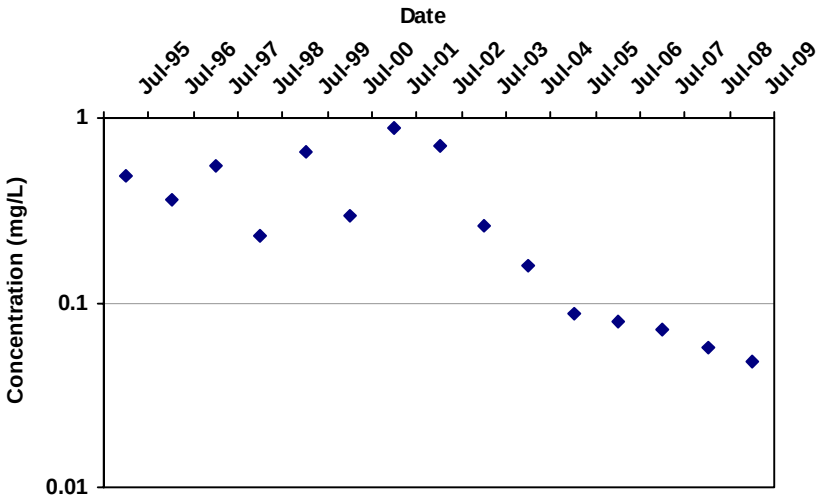
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-9C	T	7/1/1995	CHROMIUM, HEXAVALENT	2.5E-03	ND	2	0
MW-9C	T	7/1/1996	CHROMIUM, HEXAVALENT	2.5E-03	ND	2	0
MW-9C	T	7/1/1997	CHROMIUM, HEXAVALENT	3.3E-03		2	1
MW-9C	T	7/1/1998	CHROMIUM, HEXAVALENT	4.1E-03		1	1
MW-9C	T	7/1/2004	CHROMIUM, HEXAVALENT	1.3E-02		1	1
MW-9C	T	7/1/2009	CHROMIUM, HEXAVALENT	6.5E-02		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-10B
Well Type: T
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -65

Confidence in Trend: 100.0%

Coefficient of Variation: 0.82

Mann Kendall Concentration Trend: (See Note) D

Data Table:

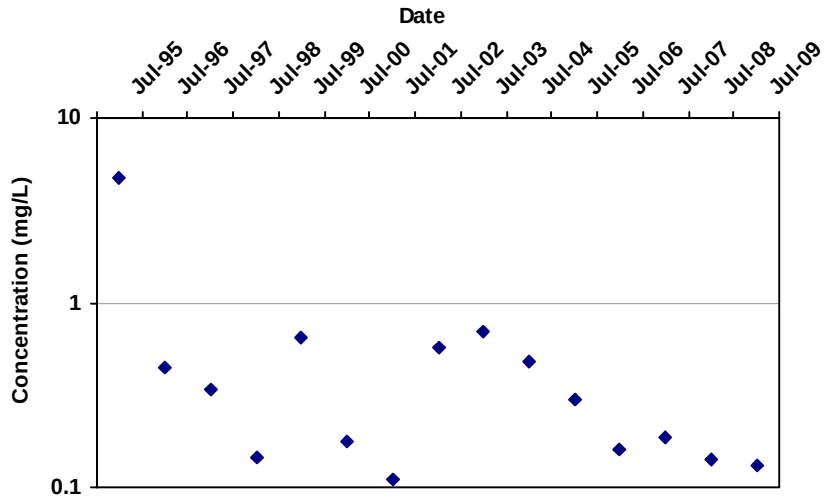
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-10B	T	7/1/1995	CHROMIUM, HEXAVALENT	4.9E-01		11	11
MW-10B	T	7/1/1996	CHROMIUM, HEXAVALENT	3.6E-01		2	2
MW-10B	T	7/1/1997	CHROMIUM, HEXAVALENT	5.5E-01		2	2
MW-10B	T	7/1/1998	CHROMIUM, HEXAVALENT	2.3E-01		2	2
MW-10B	T	7/1/1999	CHROMIUM, HEXAVALENT	6.6E-01		2	2
MW-10B	T	7/1/2000	CHROMIUM, HEXAVALENT	2.9E-01		3	3
MW-10B	T	7/1/2001	CHROMIUM, HEXAVALENT	8.9E-01		2	2
MW-10B	T	7/1/2002	CHROMIUM, HEXAVALENT	7.0E-01		3	3
MW-10B	T	7/1/2003	CHROMIUM, HEXAVALENT	2.6E-01		3	3
MW-10B	T	7/1/2004	CHROMIUM, HEXAVALENT	1.6E-01		2	2
MW-10B	T	7/1/2005	CHROMIUM, HEXAVALENT	8.7E-02		1	1
MW-10B	T	7/1/2006	CHROMIUM, HEXAVALENT	7.9E-02		1	1
MW-10B	T	7/1/2007	CHROMIUM, HEXAVALENT	7.2E-02		2	2
MW-10B	T	7/1/2008	CHROMIUM, HEXAVALENT	5.8E-02		2	2
MW-10B	T	7/1/2009	CHROMIUM, HEXAVALENT	4.8E-02		2	2

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-10C
Well Type: T
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -41

Confidence in Trend: 97.7%

Coefficient of Variation: 1.86

Mann Kendall Concentration Trend: (See Note) D

Data Table:

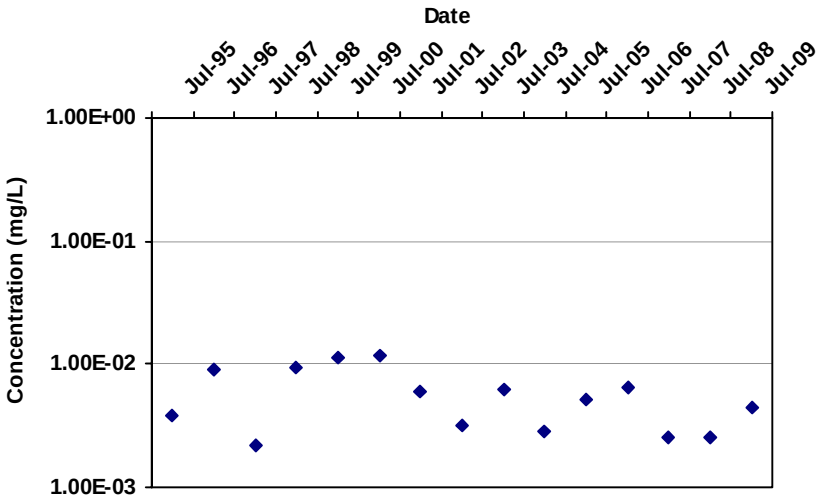
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-10C	T	7/1/1995	CHROMIUM, HEXAVALENT	4.7E+00		11	11
MW-10C	T	7/1/1996	CHROMIUM, HEXAVALENT	4.5E-01		2	2
MW-10C	T	7/1/1997	CHROMIUM, HEXAVALENT	3.4E-01		2	2
MW-10C	T	7/1/1998	CHROMIUM, HEXAVALENT	1.5E-01		2	2
MW-10C	T	7/1/1999	CHROMIUM, HEXAVALENT	6.5E-01		2	2
MW-10C	T	7/1/2000	CHROMIUM, HEXAVALENT	1.8E-01		3	3
MW-10C	T	7/1/2001	CHROMIUM, HEXAVALENT	1.1E-01		2	2
MW-10C	T	7/1/2002	CHROMIUM, HEXAVALENT	5.7E-01		3	3
MW-10C	T	7/1/2003	CHROMIUM, HEXAVALENT	6.9E-01		3	3
MW-10C	T	7/1/2004	CHROMIUM, HEXAVALENT	4.8E-01		2	2
MW-10C	T	7/1/2005	CHROMIUM, HEXAVALENT	3.0E-01		2	2
MW-10C	T	7/1/2006	CHROMIUM, HEXAVALENT	1.6E-01		2	2
MW-10C	T	7/1/2007	CHROMIUM, HEXAVALENT	1.9E-01		2	2
MW-10C	T	7/1/2008	CHROMIUM, HEXAVALENT	1.4E-01		2	2
MW-10C	T	7/1/2009	CHROMIUM, HEXAVALENT	1.3E-01		2	2

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-12C
Well Type: T
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -24

Confidence in Trend: 87.0%

Coefficient of Variation: 0.56

Mann Kendall Concentration Trend: (See Note) S

Data Table:

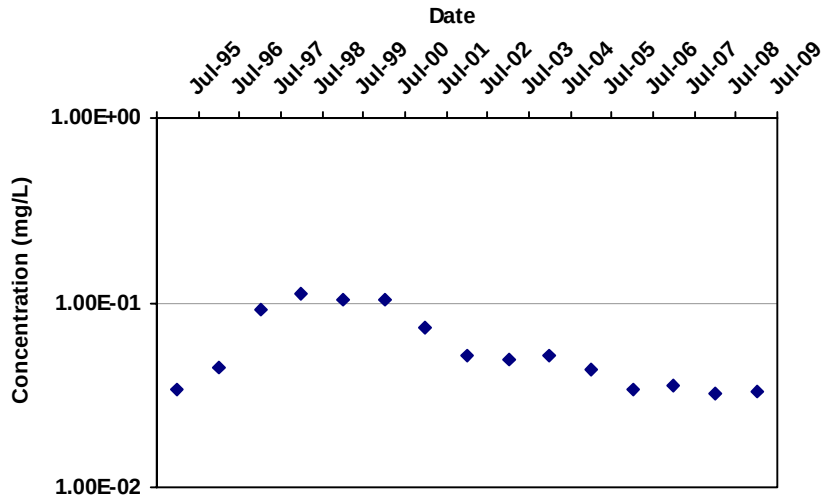
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-12C	T	7/1/1995	CHROMIUM, HEXAVALENT	3.9E-03		2	1
MW-12C	T	7/1/1996	CHROMIUM, HEXAVALENT	9.0E-03		2	2
MW-12C	T	7/1/1997	CHROMIUM, HEXAVALENT	2.2E-03	ND	2	0
MW-12C	T	7/1/1998	CHROMIUM, HEXAVALENT	9.4E-03		2	2
MW-12C	T	7/1/1999	CHROMIUM, HEXAVALENT	1.1E-02		2	2
MW-12C	T	7/1/2000	CHROMIUM, HEXAVALENT	1.2E-02		2	2
MW-12C	T	7/1/2001	CHROMIUM, HEXAVALENT	6.1E-03		1	1
MW-12C	T	7/1/2002	CHROMIUM, HEXAVALENT	3.2E-03		1	1
MW-12C	T	7/1/2003	CHROMIUM, HEXAVALENT	6.3E-03		2	2
MW-12C	T	7/1/2004	CHROMIUM, HEXAVALENT	2.9E-03		2	1
MW-12C	T	7/1/2005	CHROMIUM, HEXAVALENT	5.2E-03		1	1
MW-12C	T	7/1/2006	CHROMIUM, HEXAVALENT	6.5E-03		1	1
MW-12C	T	7/1/2007	CHROMIUM, HEXAVALENT	2.5E-03	ND	1	0
MW-12C	T	7/1/2008	CHROMIUM, HEXAVALENT	2.5E-03	ND	1	0
MW-12C	T	7/1/2009	CHROMIUM, HEXAVALENT	4.5E-03		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-13C
Well Type: T
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -51

Confidence in Trend: 99.4%

Coefficient of Variation: 0.49

Mann Kendall Concentration Trend: (See Note) D

Data Table:

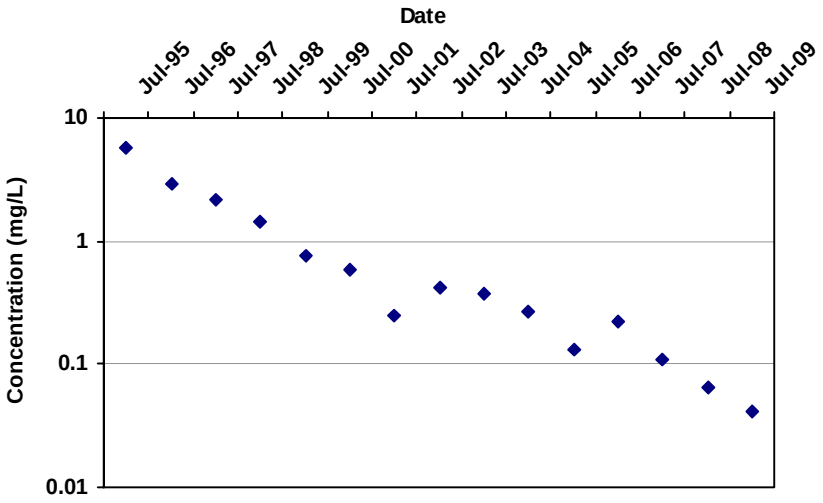
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-13C	T	7/1/1995	CHROMIUM, HEXAVALENT	3.4E-02		2	2
MW-13C	T	7/1/1996	CHROMIUM, HEXAVALENT	4.5E-02		2	2
MW-13C	T	7/1/1997	CHROMIUM, HEXAVALENT	9.1E-02		2	2
MW-13C	T	7/1/1998	CHROMIUM, HEXAVALENT	1.1E-01		2	2
MW-13C	T	7/1/1999	CHROMIUM, HEXAVALENT	1.0E-01		2	2
MW-13C	T	7/1/2000	CHROMIUM, HEXAVALENT	1.0E-01		2	2
MW-13C	T	7/1/2001	CHROMIUM, HEXAVALENT	7.3E-02		2	2
MW-13C	T	7/1/2002	CHROMIUM, HEXAVALENT	5.2E-02		2	2
MW-13C	T	7/1/2003	CHROMIUM, HEXAVALENT	5.0E-02		2	2
MW-13C	T	7/1/2004	CHROMIUM, HEXAVALENT	5.2E-02		2	2
MW-13C	T	7/1/2005	CHROMIUM, HEXAVALENT	4.4E-02		1	1
MW-13C	T	7/1/2006	CHROMIUM, HEXAVALENT	3.4E-02		1	1
MW-13C	T	7/1/2007	CHROMIUM, HEXAVALENT	3.5E-02		1	1
MW-13C	T	7/1/2008	CHROMIUM, HEXAVALENT	3.2E-02		1	1
MW-13C	T	7/1/2009	CHROMIUM, HEXAVALENT	3.3E-02		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: PW-1B
Well Type: S
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -97

Confidence in Trend: 100.0%

Coefficient of Variation: 1.50

Mann Kendall Concentration Trend: (See Note) D

Data Table:

Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
PW-1B	S	7/1/1995	CHROMIUM, HEXAVALENT	5.8E+00		11	11
PW-1B	S	7/1/1996	CHROMIUM, HEXAVALENT	3.0E+00		12	12
PW-1B	S	7/1/1997	CHROMIUM, HEXAVALENT	2.1E+00		9	9
PW-1B	S	7/1/1998	CHROMIUM, HEXAVALENT	1.4E+00		3	3
PW-1B	S	7/1/1999	CHROMIUM, HEXAVALENT	7.7E-01		4	4
PW-1B	S	7/1/2000	CHROMIUM, HEXAVALENT	5.9E-01		4	4
PW-1B	S	7/1/2001	CHROMIUM, HEXAVALENT	2.5E-01		4	4
PW-1B	S	7/1/2002	CHROMIUM, HEXAVALENT	4.2E-01		4	4
PW-1B	S	7/1/2003	CHROMIUM, HEXAVALENT	3.8E-01		3	3
PW-1B	S	7/1/2004	CHROMIUM, HEXAVALENT	2.7E-01		2	2
PW-1B	S	7/1/2005	CHROMIUM, HEXAVALENT	1.3E-01		2	2
PW-1B	S	7/1/2006	CHROMIUM, HEXAVALENT	2.2E-01		2	2
PW-1B	S	7/1/2007	CHROMIUM, HEXAVALENT	1.1E-01		2	2
PW-1B	S	7/1/2008	CHROMIUM, HEXAVALENT	6.4E-02		2	2
PW-1B	S	7/1/2009	CHROMIUM, HEXAVALENT	4.2E-02		2	2

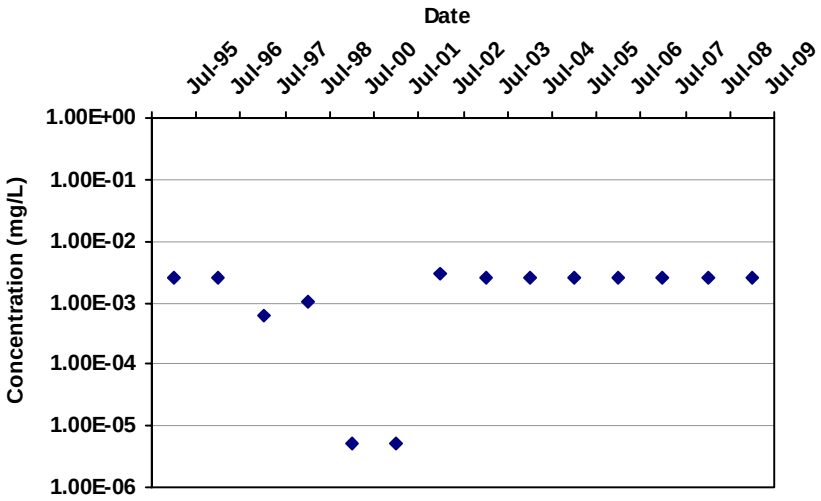
Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

INTERMEDIATE WELLS

MAROS Mann-Kendall Statistics Summary

Well: AMW-16
Well Type: T
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: 16

Confidence in Trend: 79.1%

Coefficient of Variation: 0.54

Mann Kendall Concentration Trend: (See Note) NT

Data Table:

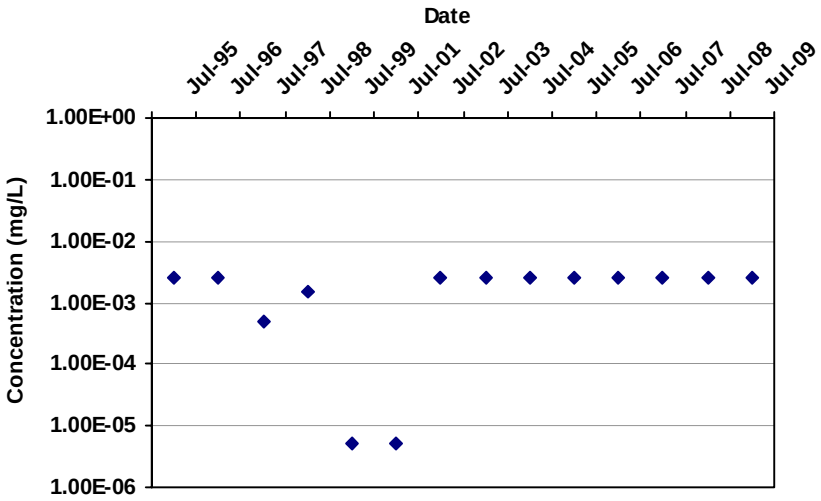
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
AMW-16	T	7/1/1995	CHROMIUM, HEXAVALENT	2.5E-03	ND	2	0
AMW-16	T	7/1/1996	CHROMIUM, HEXAVALENT	2.5E-03	ND	2	0
AMW-16	T	7/1/1997	CHROMIUM, HEXAVALENT	6.1E-04	ND	2	0
AMW-16	T	7/1/1998	CHROMIUM, HEXAVALENT	1.0E-03		2	1
AMW-16	T	7/1/2000	CHROMIUM, HEXAVALENT	5.0E-06	ND	2	0
AMW-16	T	7/1/2001	CHROMIUM, HEXAVALENT	5.0E-06	ND	1	0
AMW-16	T	7/1/2002	CHROMIUM, HEXAVALENT	3.0E-03		1	1
AMW-16	T	7/1/2003	CHROMIUM, HEXAVALENT	2.5E-03	ND	1	0
AMW-16	T	7/1/2004	CHROMIUM, HEXAVALENT	2.5E-03	ND	1	0
AMW-16	T	7/1/2005	CHROMIUM, HEXAVALENT	2.5E-03	ND	1	0
AMW-16	T	7/1/2006	CHROMIUM, HEXAVALENT	2.5E-03	ND	1	0
AMW-16	T	7/1/2007	CHROMIUM, HEXAVALENT	2.5E-03	ND	1	0
AMW-16	T	7/1/2008	CHROMIUM, HEXAVALENT	2.5E-03	ND	1	0
AMW-16	T	7/1/2009	CHROMIUM, HEXAVALENT	2.5E-03	ND	1	0

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: AMW-17
Well Type: T
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: 28

Confidence in Trend: 92.9%

Coefficient of Variation: 0.52

Mann Kendall Concentration Trend: (See Note) PI

Data Table:

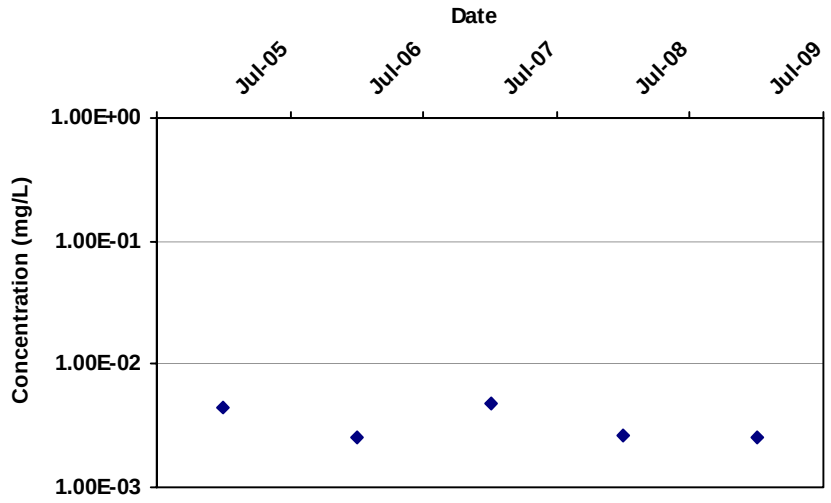
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
AMW-17	T	7/1/1995	CHROMIUM, HEXAVALENT	2.5E-03	ND	2	0
AMW-17	T	7/1/1996	CHROMIUM, HEXAVALENT	2.5E-03	ND	2	0
AMW-17	T	7/1/1997	CHROMIUM, HEXAVALENT	5.0E-04	ND	2	0
AMW-17	T	7/1/1998	CHROMIUM, HEXAVALENT	1.5E-03		2	1
AMW-17	T	7/1/1999	CHROMIUM, HEXAVALENT	5.0E-06	ND	2	0
AMW-17	T	7/1/2001	CHROMIUM, HEXAVALENT	5.0E-06	ND	1	0
AMW-17	T	7/1/2002	CHROMIUM, HEXAVALENT	2.5E-03	ND	1	0
AMW-17	T	7/1/2003	CHROMIUM, HEXAVALENT	2.5E-03	ND	1	0
AMW-17	T	7/1/2004	CHROMIUM, HEXAVALENT	2.5E-03	ND	1	0
AMW-17	T	7/1/2005	CHROMIUM, HEXAVALENT	2.5E-03	ND	1	0
AMW-17	T	7/1/2006	CHROMIUM, HEXAVALENT	2.5E-03	ND	1	0
AMW-17	T	7/1/2007	CHROMIUM, HEXAVALENT	2.5E-03	ND	1	0
AMW-17	T	7/1/2008	CHROMIUM, HEXAVALENT	2.6E-03		1	1
AMW-17	T	7/1/2009	CHROMIUM, HEXAVALENT	2.5E-03	ND	1	0

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: AMW-59
Well Type: T
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -3

Confidence in Trend: 67.5%

Coefficient of Variation: 0.34

Mann Kendall Concentration Trend: (See Note) S

Data Table:

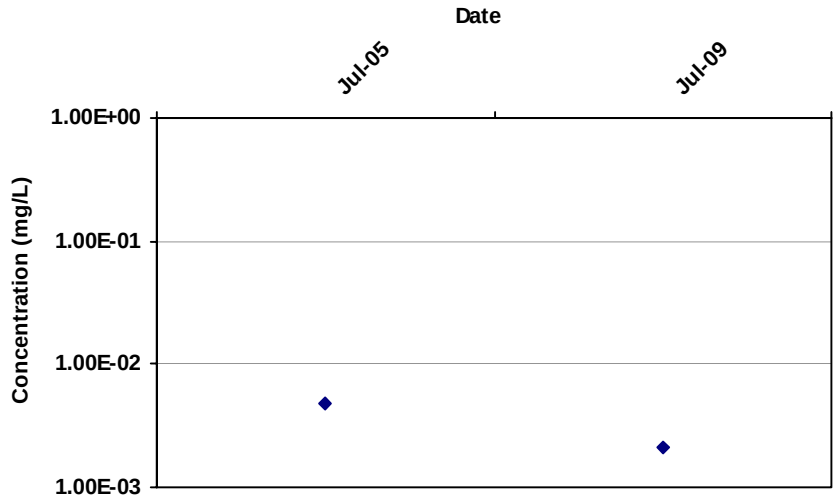
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
AMW-59	T	7/1/2005	CHROMIUM, HEXAVALENT	4.4E-03		3	2
AMW-59	T	7/1/2006	CHROMIUM, HEXAVALENT	2.5E-03	ND	2	0
AMW-59	T	7/1/2007	CHROMIUM, HEXAVALENT	4.8E-03		1	1
AMW-59	T	7/1/2008	CHROMIUM, HEXAVALENT	2.6E-03		1	1
AMW-59	T	7/1/2009	CHROMIUM, HEXAVALENT	2.5E-03	ND	1	0

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: AMW-60
Well Type: T
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: 0

Confidence in Trend: 0.0%

Coefficient of Variation: 0.00

Mann Kendall Concentration Trend: (See Note) N/A

Data Table:

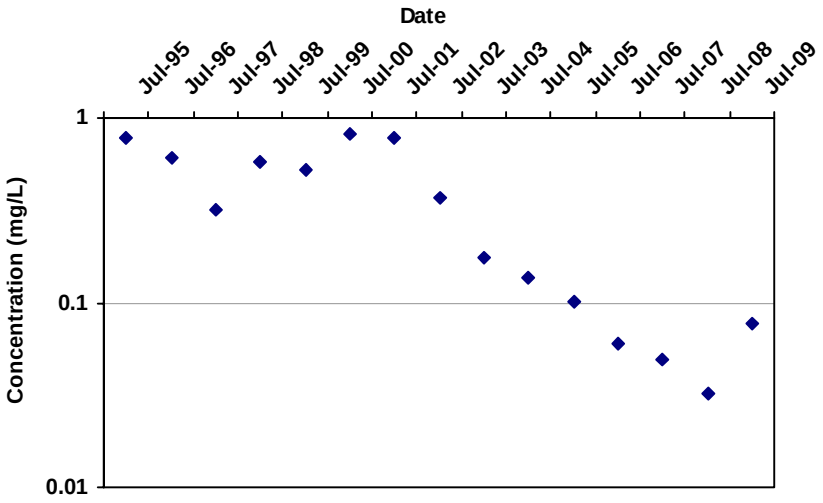
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
AMW-60	T	7/1/2005	CHROMIUM, HEXAVALENT	4.7E-03		2	1
AMW-60	T	7/1/2009	CHROMIUM, HEXAVALENT	2.1E-03		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: CPU-14
Well Type: T
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -75

Confidence in Trend: 100.0%

Coefficient of Variation: 0.82

Mann Kendall Concentration Trend: (See Note) D

Data Table:

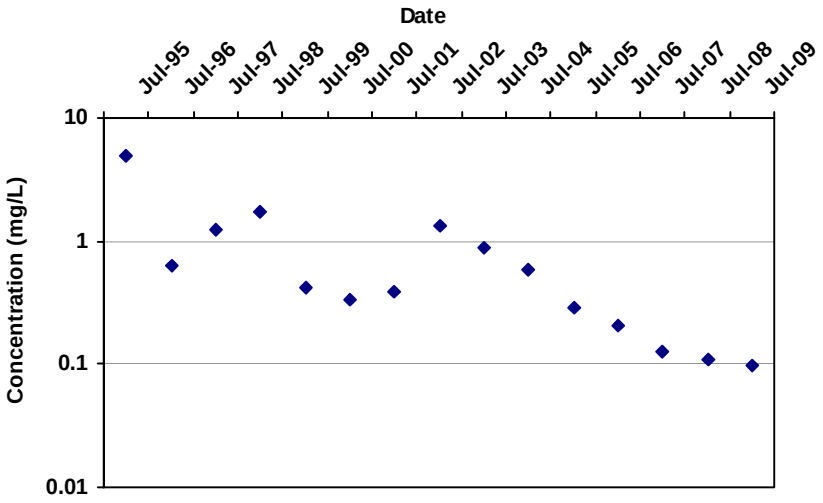
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
CPU-14	T	7/1/1995	CHROMIUM, HEXAVALENT	7.8E-01		2	2
CPU-14	T	7/1/1996	CHROMIUM, HEXAVALENT	6.0E-01		2	2
CPU-14	T	7/1/1997	CHROMIUM, HEXAVALENT	3.2E-01		1	1
CPU-14	T	7/1/1998	CHROMIUM, HEXAVALENT	5.8E-01		2	2
CPU-14	T	7/1/1999	CHROMIUM, HEXAVALENT	5.2E-01		2	2
CPU-14	T	7/1/2000	CHROMIUM, HEXAVALENT	8.3E-01		2	2
CPU-14	T	7/1/2001	CHROMIUM, HEXAVALENT	7.7E-01		2	2
CPU-14	T	7/1/2002	CHROMIUM, HEXAVALENT	3.7E-01		2	2
CPU-14	T	7/1/2003	CHROMIUM, HEXAVALENT	1.8E-01		2	2
CPU-14	T	7/1/2004	CHROMIUM, HEXAVALENT	1.4E-01		2	2
CPU-14	T	7/1/2005	CHROMIUM, HEXAVALENT	1.0E-01		2	2
CPU-14	T	7/1/2006	CHROMIUM, HEXAVALENT	6.1E-02		1	1
CPU-14	T	7/1/2007	CHROMIUM, HEXAVALENT	5.0E-02		1	1
CPU-14	T	7/1/2008	CHROMIUM, HEXAVALENT	3.2E-02		1	1
CPU-14	T	7/1/2009	CHROMIUM, HEXAVALENT	7.6E-02		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-14C
Well Type: T
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -73

Confidence in Trend: 100.0%

Coefficient of Variation: 1.37

Mann Kendall Concentration Trend: (See Note) D

Data Table:

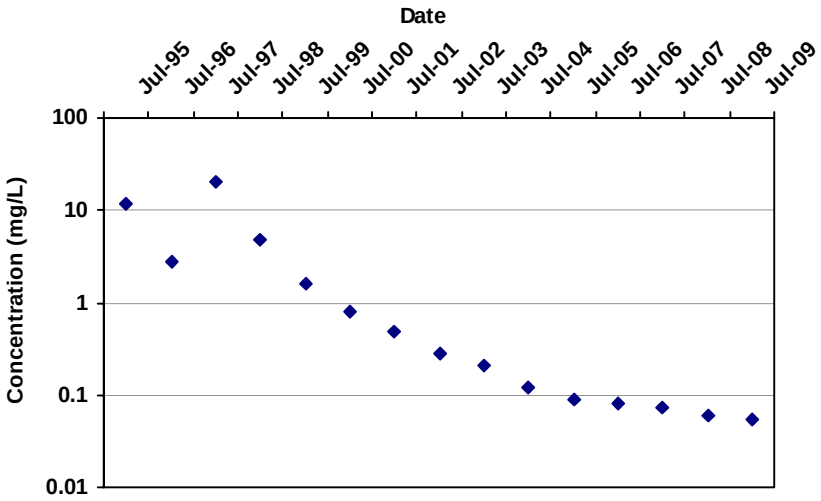
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-14C	T	7/1/1995	CHROMIUM, HEXAVALENT	4.8E+00		11	11
MW-14C	T	7/1/1996	CHROMIUM, HEXAVALENT	6.4E-01		2	2
MW-14C	T	7/1/1997	CHROMIUM, HEXAVALENT	1.3E+00		6	6
MW-14C	T	7/1/1998	CHROMIUM, HEXAVALENT	1.7E+00		2	2
MW-14C	T	7/1/1999	CHROMIUM, HEXAVALENT	4.1E-01		3	3
MW-14C	T	7/1/2000	CHROMIUM, HEXAVALENT	3.4E-01		5	5
MW-14C	T	7/1/2001	CHROMIUM, HEXAVALENT	3.8E-01		4	4
MW-14C	T	7/1/2002	CHROMIUM, HEXAVALENT	1.3E+00		4	4
MW-14C	T	7/1/2003	CHROMIUM, HEXAVALENT	8.7E-01		3	3
MW-14C	T	7/1/2004	CHROMIUM, HEXAVALENT	5.9E-01		2	2
MW-14C	T	7/1/2005	CHROMIUM, HEXAVALENT	2.9E-01		2	2
MW-14C	T	7/1/2006	CHROMIUM, HEXAVALENT	2.1E-01		2	2
MW-14C	T	7/1/2007	CHROMIUM, HEXAVALENT	1.3E-01		2	2
MW-14C	T	7/1/2008	CHROMIUM, HEXAVALENT	1.1E-01		2	2
MW-14C	T	7/1/2009	CHROMIUM, HEXAVALENT	9.7E-02		2	2

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-14E
Well Type: T
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -99

Confidence in Trend: 100.0%

Coefficient of Variation: 1.98

Mann Kendall Concentration Trend: (See Note) D

Data Table:

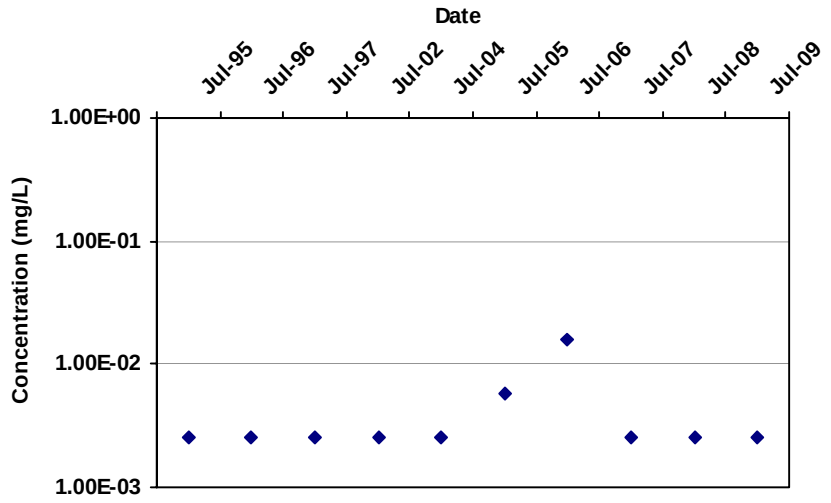
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-14E	T	7/1/1995	CHROMIUM, HEXAVALENT	1.2E+01		11	11
MW-14E	T	7/1/1996	CHROMIUM, HEXAVALENT	2.7E+00		2	2
MW-14E	T	7/1/1997	CHROMIUM, HEXAVALENT	2.1E+01		2	2
MW-14E	T	7/1/1998	CHROMIUM, HEXAVALENT	4.9E+00		3	3
MW-14E	T	7/1/1999	CHROMIUM, HEXAVALENT	1.6E+00		4	4
MW-14E	T	7/1/2000	CHROMIUM, HEXAVALENT	8.0E-01		5	5
MW-14E	T	7/1/2001	CHROMIUM, HEXAVALENT	4.8E-01		4	4
MW-14E	T	7/1/2002	CHROMIUM, HEXAVALENT	2.8E-01		4	4
MW-14E	T	7/1/2003	CHROMIUM, HEXAVALENT	2.1E-01		3	3
MW-14E	T	7/1/2004	CHROMIUM, HEXAVALENT	1.2E-01		2	2
MW-14E	T	7/1/2005	CHROMIUM, HEXAVALENT	9.0E-02		2	2
MW-14E	T	7/1/2006	CHROMIUM, HEXAVALENT	8.1E-02		2	2
MW-14E	T	7/1/2007	CHROMIUM, HEXAVALENT	7.3E-02		2	2
MW-14E	T	7/1/2008	CHROMIUM, HEXAVALENT	6.1E-02		2	2
MW-14E	T	7/1/2009	CHROMIUM, HEXAVALENT	5.4E-02		2	2

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-16E
Well Type: T
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: 12

Confidence in Trend: 83.2%

Coefficient of Variation: 1.03

Mann Kendall Concentration Trend: (See Note) NT

Data Table:

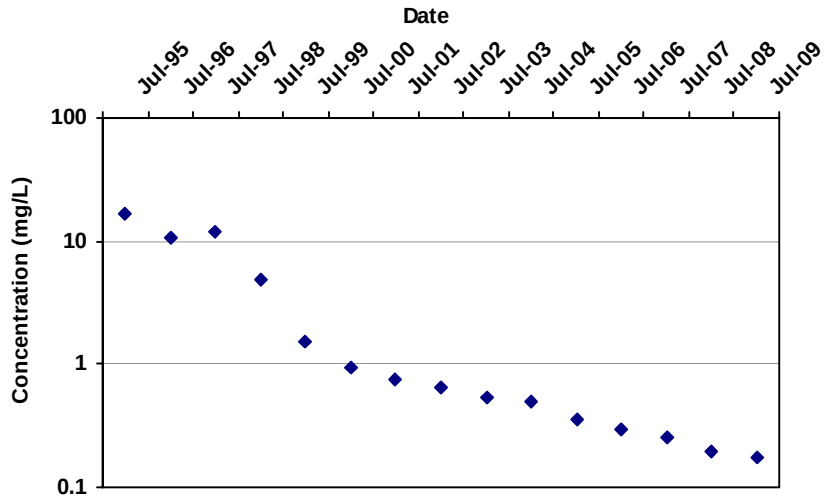
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-16E	T	7/1/1995	CHROMIUM, HEXAVALENT	2.5E-03	ND	2	0
MW-16E	T	7/1/1996	CHROMIUM, HEXAVALENT	2.5E-03	ND	2	0
MW-16E	T	7/1/1997	CHROMIUM, HEXAVALENT	2.5E-03	ND	1	0
MW-16E	T	7/1/2002	CHROMIUM, HEXAVALENT	2.5E-03	ND	1	0
MW-16E	T	7/1/2004	CHROMIUM, HEXAVALENT	2.5E-03	ND	1	0
MW-16E	T	7/1/2005	CHROMIUM, HEXAVALENT	5.8E-03		1	1
MW-16E	T	7/1/2006	CHROMIUM, HEXAVALENT	1.6E-02		1	1
MW-16E	T	7/1/2007	CHROMIUM, HEXAVALENT	2.5E-03	ND	1	0
MW-16E	T	7/1/2008	CHROMIUM, HEXAVALENT	2.5E-03	ND	1	0
MW-16E	T	7/1/2009	CHROMIUM, HEXAVALENT	2.5E-03		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-18D
Well Type: T
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -103

Confidence in Trend: 100.0%

Coefficient of Variation: 1.58

Mann Kendall Concentration Trend: (See Note) D

Data Table:

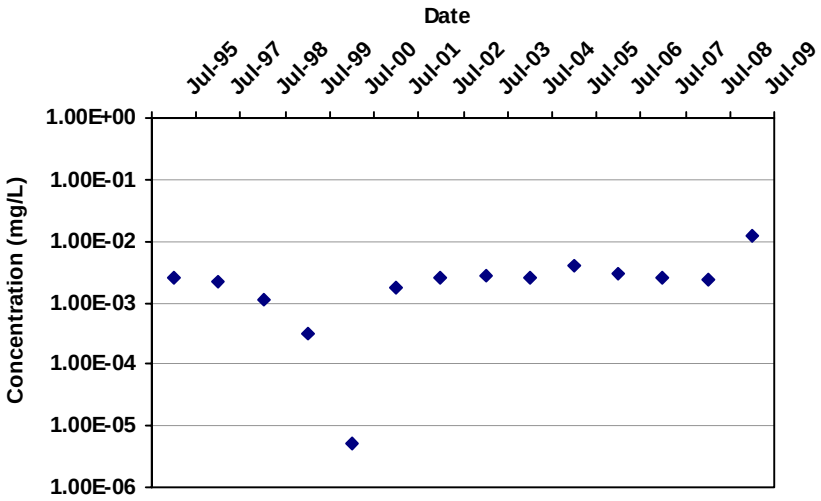
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-18D	T	7/1/1995	CHROMIUM, HEXAVALENT	1.7E+01		11	11
MW-18D	T	7/1/1996	CHROMIUM, HEXAVALENT	1.1E+01		8	8
MW-18D	T	7/1/1997	CHROMIUM, HEXAVALENT	1.2E+01		9	9
MW-18D	T	7/1/1998	CHROMIUM, HEXAVALENT	4.9E+00		3	3
MW-18D	T	7/1/1999	CHROMIUM, HEXAVALENT	1.5E+00		4	4
MW-18D	T	7/1/2000	CHROMIUM, HEXAVALENT	9.4E-01		5	5
MW-18D	T	7/1/2001	CHROMIUM, HEXAVALENT	7.6E-01		2	2
MW-18D	T	7/1/2002	CHROMIUM, HEXAVALENT	6.4E-01		4	4
MW-18D	T	7/1/2003	CHROMIUM, HEXAVALENT	5.5E-01		3	3
MW-18D	T	7/1/2004	CHROMIUM, HEXAVALENT	5.0E-01		2	2
MW-18D	T	7/1/2005	CHROMIUM, HEXAVALENT	3.6E-01		2	2
MW-18D	T	7/1/2006	CHROMIUM, HEXAVALENT	3.0E-01		2	2
MW-18D	T	7/1/2007	CHROMIUM, HEXAVALENT	2.6E-01		2	2
MW-18D	T	7/1/2008	CHROMIUM, HEXAVALENT	1.9E-01		2	2
MW-18D	T	7/1/2009	CHROMIUM, HEXAVALENT	1.7E-01		2	2

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-18E
Well Type: T
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: 37

Confidence in Trend: 97.6%

Coefficient of Variation: 1.03

Mann Kendall Concentration Trend: (See Note) I

Data Table:

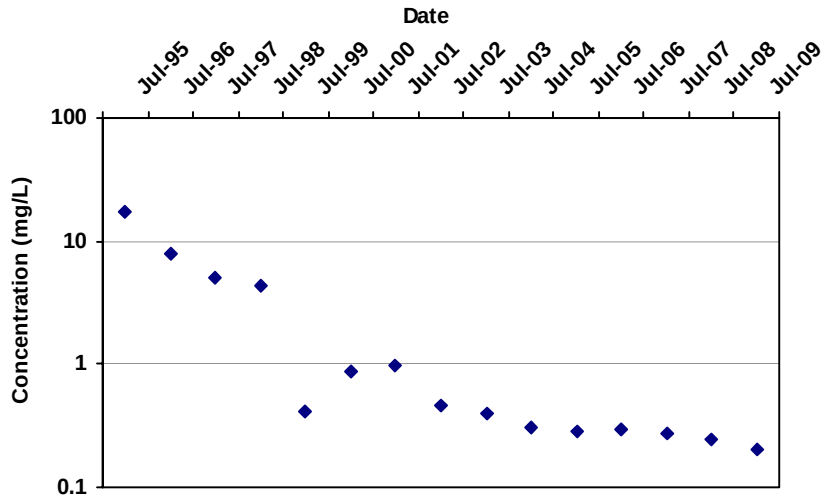
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-18E	T	7/1/1995	CHROMIUM, HEXAVALENT	2.5E-03	ND	2	0
MW-18E	T	7/1/1997	CHROMIUM, HEXAVALENT	2.2E-03	ND	2	0
MW-18E	T	7/1/1998	CHROMIUM, HEXAVALENT	1.1E-03		2	2
MW-18E	T	7/1/1999	CHROMIUM, HEXAVALENT	3.1E-04		2	1
MW-18E	T	7/1/2000	CHROMIUM, HEXAVALENT	5.0E-06	ND	2	0
MW-18E	T	7/1/2001	CHROMIUM, HEXAVALENT	1.8E-03		4	2
MW-18E	T	7/1/2002	CHROMIUM, HEXAVALENT	2.5E-03	ND	2	0
MW-18E	T	7/1/2003	CHROMIUM, HEXAVALENT	2.6E-03		2	1
MW-18E	T	7/1/2004	CHROMIUM, HEXAVALENT	2.5E-03	ND	2	0
MW-18E	T	7/1/2005	CHROMIUM, HEXAVALENT	4.1E-03		1	1
MW-18E	T	7/1/2006	CHROMIUM, HEXAVALENT	3.0E-03		2	1
MW-18E	T	7/1/2007	CHROMIUM, HEXAVALENT	2.5E-03	ND	1	0
MW-18E	T	7/1/2008	CHROMIUM, HEXAVALENT	2.4E-03		1	1
MW-18E	T	7/1/2009	CHROMIUM, HEXAVALENT	1.3E-02		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-19D
Well Type: T
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -95

Confidence in Trend: 100.0%

Coefficient of Variation: 1.77

Mann Kendall Concentration Trend: (See Note) D

Data Table:

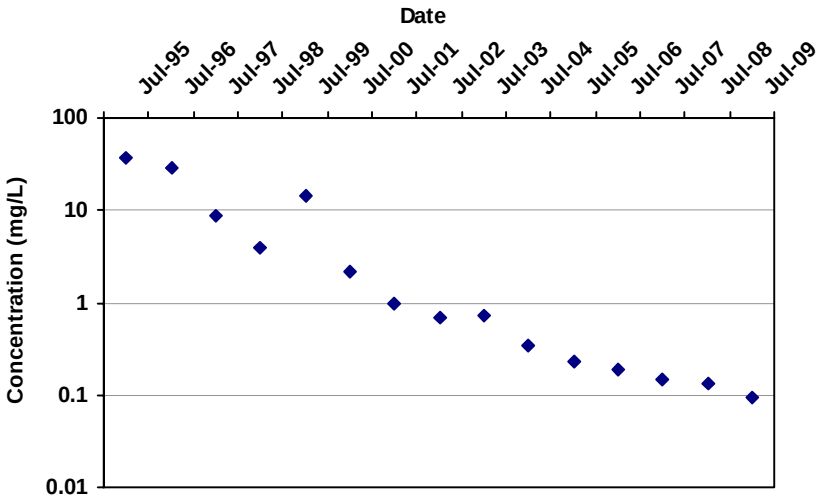
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-19D	T	7/1/1995	CHROMIUM, HEXAVALENT	1.7E+01		11	11
MW-19D	T	7/1/1996	CHROMIUM, HEXAVALENT	7.9E+00		12	12
MW-19D	T	7/1/1997	CHROMIUM, HEXAVALENT	5.0E+00		6	6
MW-19D	T	7/1/1998	CHROMIUM, HEXAVALENT	4.4E+00		3	3
MW-19D	T	7/1/1999	CHROMIUM, HEXAVALENT	4.1E-01		1	1
MW-19D	T	7/1/2000	CHROMIUM, HEXAVALENT	8.8E-01		4	4
MW-19D	T	7/1/2001	CHROMIUM, HEXAVALENT	9.8E-01		4	4
MW-19D	T	7/1/2002	CHROMIUM, HEXAVALENT	4.6E-01		4	4
MW-19D	T	7/1/2003	CHROMIUM, HEXAVALENT	4.0E-01		3	3
MW-19D	T	7/1/2004	CHROMIUM, HEXAVALENT	3.0E-01		2	2
MW-19D	T	7/1/2005	CHROMIUM, HEXAVALENT	2.8E-01		2	2
MW-19D	T	7/1/2006	CHROMIUM, HEXAVALENT	2.9E-01		2	2
MW-19D	T	7/1/2007	CHROMIUM, HEXAVALENT	2.7E-01		2	2
MW-19D	T	7/1/2008	CHROMIUM, HEXAVALENT	2.5E-01		2	2
MW-19D	T	7/1/2009	CHROMIUM, HEXAVALENT	2.0E-01		2	2

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-20D
Well Type: T
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -99

Confidence in Trend: 100.0%

Coefficient of Variation: 1.74

Mann Kendall Concentration Trend: (See Note) D

Data Table:

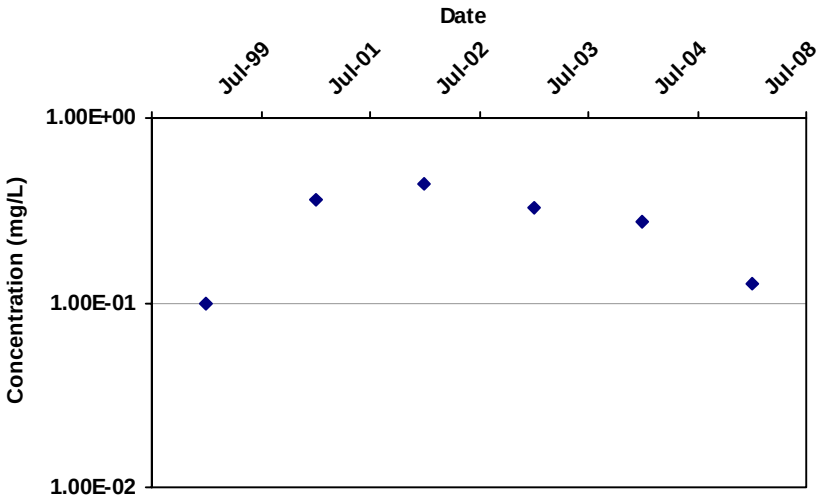
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-20D	T	7/1/1995	CHROMIUM, HEXAVALENT	3.6E+01		11	11
MW-20D	T	7/1/1996	CHROMIUM, HEXAVALENT	2.9E+01		12	12
MW-20D	T	7/1/1997	CHROMIUM, HEXAVALENT	8.7E+00		9	9
MW-20D	T	7/1/1998	CHROMIUM, HEXAVALENT	4.0E+00		3	3
MW-20D	T	7/1/1999	CHROMIUM, HEXAVALENT	1.5E+01		1	1
MW-20D	T	7/1/2000	CHROMIUM, HEXAVALENT	2.2E+00		5	5
MW-20D	T	7/1/2001	CHROMIUM, HEXAVALENT	9.9E-01		4	4
MW-20D	T	7/1/2002	CHROMIUM, HEXAVALENT	6.9E-01		4	4
MW-20D	T	7/1/2003	CHROMIUM, HEXAVALENT	7.4E-01		3	3
MW-20D	T	7/1/2004	CHROMIUM, HEXAVALENT	3.5E-01		2	2
MW-20D	T	7/1/2005	CHROMIUM, HEXAVALENT	2.3E-01		2	2
MW-20D	T	7/1/2006	CHROMIUM, HEXAVALENT	1.8E-01		2	2
MW-20D	T	7/1/2007	CHROMIUM, HEXAVALENT	1.5E-01		2	2
MW-20D	T	7/1/2008	CHROMIUM, HEXAVALENT	1.4E-01		2	2
MW-20D	T	7/1/2009	CHROMIUM, HEXAVALENT	9.4E-02		2	2

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-40
Well Type: T
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -3

Confidence in Trend: 64.0%

Coefficient of Variation: 0.50

Mann Kendall Concentration Trend: (See Note) S

Data Table:

Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-40	T	7/1/1999	CHROMIUM, HEXAVALENT	9.8E-02		1	1
MW-40	T	7/1/2001	CHROMIUM, HEXAVALENT	3.6E-01		1	1
MW-40	T	7/1/2002	CHROMIUM, HEXAVALENT	4.4E-01		1	1
MW-40	T	7/1/2003	CHROMIUM, HEXAVALENT	3.3E-01		1	1
MW-40	T	7/1/2004	CHROMIUM, HEXAVALENT	2.7E-01		1	1
MW-40	T	7/1/2008	CHROMIUM, HEXAVALENT	1.3E-01		1	1

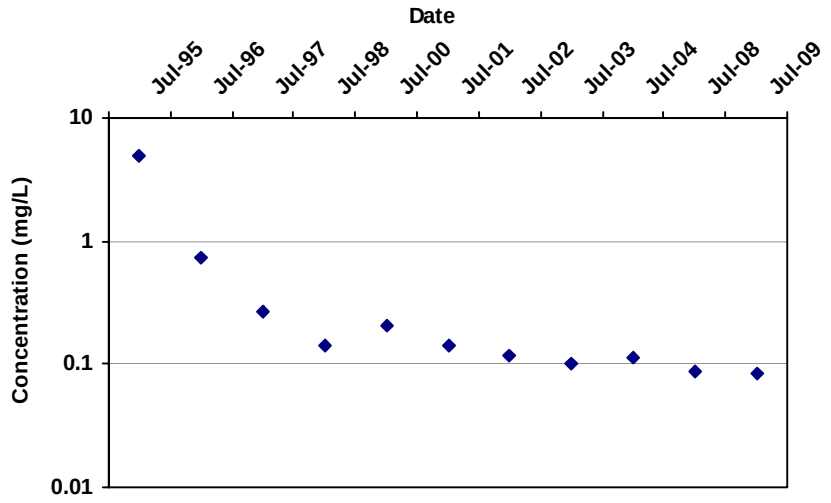
Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

CHURCH OF GOD WELLS

MAROS Mann-Kendall Statistics Summary

Well: AMW-14
Well Type: T
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -49

Confidence in Trend: 100.0%

Coefficient of Variation: 2.27

Mann Kendall Concentration Trend: (See Note) D

Data Table:

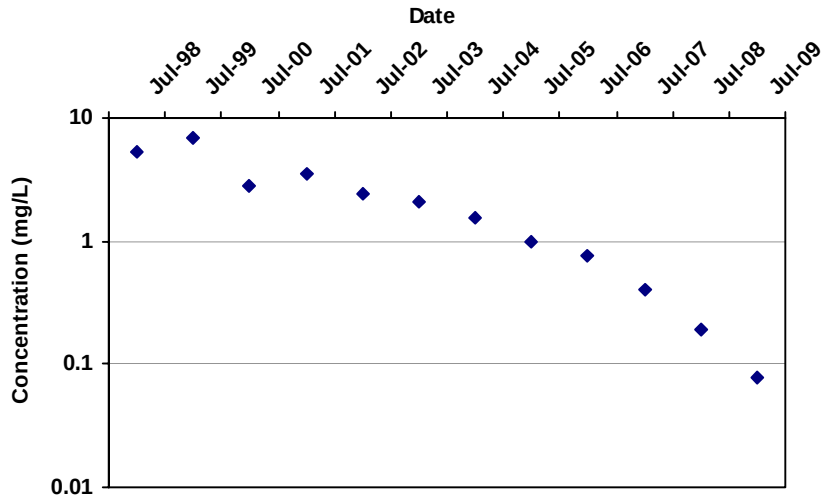
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
AMW-14	T	7/1/1995	CHROMIUM, HEXAVALENT	4.9E+00		2	2
AMW-14	T	7/1/1996	CHROMIUM, HEXAVALENT	7.4E-01		2	2
AMW-14	T	7/1/1997	CHROMIUM, HEXAVALENT	2.7E-01		2	2
AMW-14	T	7/1/1998	CHROMIUM, HEXAVALENT	1.4E-01		1	1
AMW-14	T	7/1/2000	CHROMIUM, HEXAVALENT	2.1E-01		1	1
AMW-14	T	7/1/2001	CHROMIUM, HEXAVALENT	1.4E-01		2	2
AMW-14	T	7/1/2002	CHROMIUM, HEXAVALENT	1.2E-01		2	2
AMW-14	T	7/1/2003	CHROMIUM, HEXAVALENT	1.0E-01		2	2
AMW-14	T	7/1/2004	CHROMIUM, HEXAVALENT	1.1E-01		1	1
AMW-14	T	7/1/2008	CHROMIUM, HEXAVALENT	8.7E-02		1	1
AMW-14	T	7/1/2009	CHROMIUM, HEXAVALENT	8.3E-02		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: AMW-27
Well Type: T
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -62

Confidence in Trend: 100.0%

Coefficient of Variation: 0.94

Mann Kendall Concentration Trend: (See Note) D

Data Table:

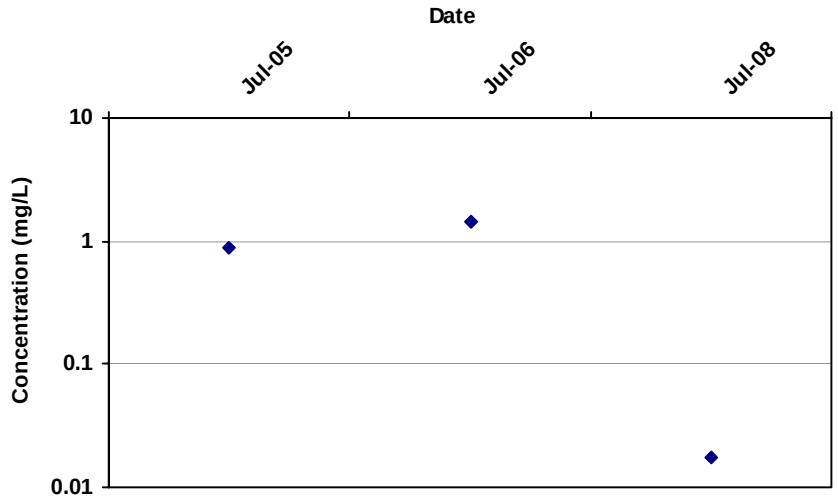
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
AMW-27	T	7/1/1998	CHROMIUM, HEXAVALENT	5.3E+00		1	1
AMW-27	T	7/1/1999	CHROMIUM, HEXAVALENT	6.8E+00		4	4
AMW-27	T	7/1/2000	CHROMIUM, HEXAVALENT	2.8E+00		5	5
AMW-27	T	7/1/2001	CHROMIUM, HEXAVALENT	3.5E+00		4	4
AMW-27	T	7/1/2002	CHROMIUM, HEXAVALENT	2.4E+00		4	4
AMW-27	T	7/1/2003	CHROMIUM, HEXAVALENT	2.1E+00		3	3
AMW-27	T	7/1/2004	CHROMIUM, HEXAVALENT	1.5E+00		2	2
AMW-27	T	7/1/2005	CHROMIUM, HEXAVALENT	9.8E-01		2	2
AMW-27	T	7/1/2006	CHROMIUM, HEXAVALENT	7.7E-01		2	2
AMW-27	T	7/1/2007	CHROMIUM, HEXAVALENT	4.0E-01		2	2
AMW-27	T	7/1/2008	CHROMIUM, HEXAVALENT	1.9E-01		2	2
AMW-27	T	7/1/2009	CHROMIUM, HEXAVALENT	7.9E-02		2	2

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: AMW-61
Well Type: T
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: 0

Confidence in Trend: 0.0%

Coefficient of Variation: 0.00

Mann Kendall Concentration Trend: (See Note) N/A

Data Table:

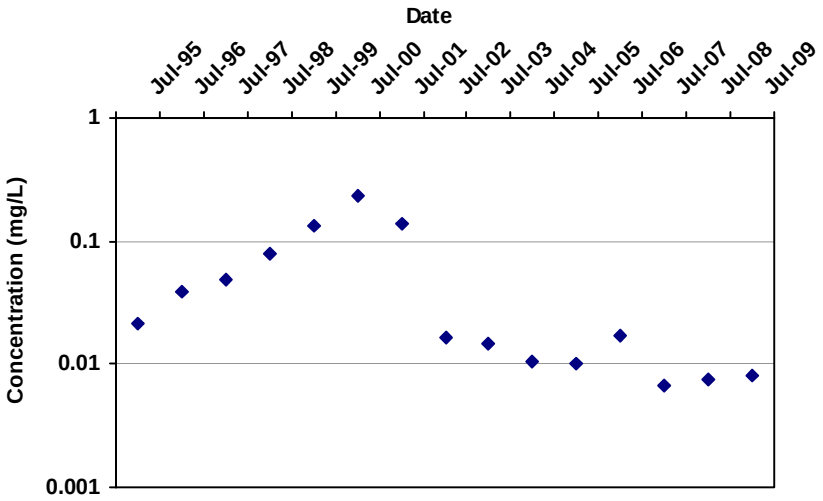
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
AMW-61	T	7/1/2005	CHROMIUM, HEXAVALENT	8.8E-01		2	2
AMW-61	T	7/1/2006	CHROMIUM, HEXAVALENT	1.4E+00		1	1
AMW-61	T	7/1/2008	CHROMIUM, HEXAVALENT	1.7E-02		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: CPU-12
Well Type: T
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -51

Confidence in Trend: 99.4%

Coefficient of Variation: 1.28

Mann Kendall Concentration Trend: (See Note) D

Data Table:

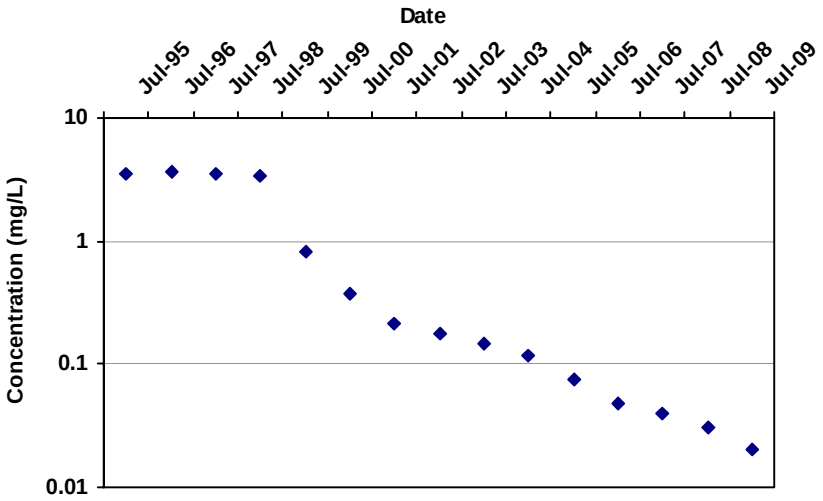
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
CPU-12	T	7/1/1995	CHROMIUM, HEXAVALENT	2.1E-02		2	2
CPU-12	T	7/1/1996	CHROMIUM, HEXAVALENT	3.8E-02		2	2
CPU-12	T	7/1/1997	CHROMIUM, HEXAVALENT	4.9E-02		2	2
CPU-12	T	7/1/1998	CHROMIUM, HEXAVALENT	8.0E-02		2	2
CPU-12	T	7/1/1999	CHROMIUM, HEXAVALENT	1.3E-01		2	2
CPU-12	T	7/1/2000	CHROMIUM, HEXAVALENT	2.3E-01		2	2
CPU-12	T	7/1/2001	CHROMIUM, HEXAVALENT	1.4E-01		2	2
CPU-12	T	7/1/2002	CHROMIUM, HEXAVALENT	1.7E-02		2	2
CPU-12	T	7/1/2003	CHROMIUM, HEXAVALENT	1.5E-02		2	2
CPU-12	T	7/1/2004	CHROMIUM, HEXAVALENT	1.0E-02		2	2
CPU-12	T	7/1/2005	CHROMIUM, HEXAVALENT	1.0E-02		2	2
CPU-12	T	7/1/2006	CHROMIUM, HEXAVALENT	1.7E-02		1	1
CPU-12	T	7/1/2007	CHROMIUM, HEXAVALENT	6.6E-03		1	1
CPU-12	T	7/1/2008	CHROMIUM, HEXAVALENT	7.6E-03		1	1
CPU-12	T	7/1/2009	CHROMIUM, HEXAVALENT	8.0E-03		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: CPU-13
Well Type: T
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -101

Confidence in Trend: 100.0%

Coefficient of Variation: 1.43

Mann Kendall Concentration Trend: (See Note) D

Data Table:

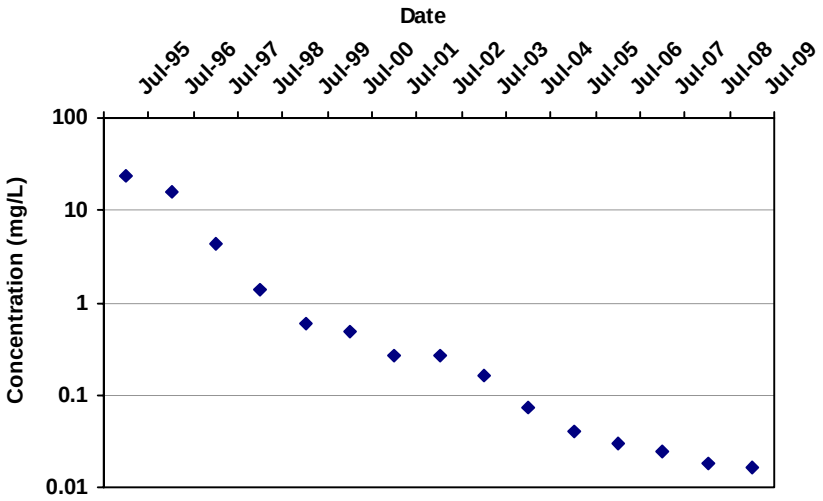
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
CPU-13	T	7/1/1995	CHROMIUM, HEXAVALENT	3.5E+00		11	11
CPU-13	T	7/1/1996	CHROMIUM, HEXAVALENT	3.6E+00		2	2
CPU-13	T	7/1/1997	CHROMIUM, HEXAVALENT	3.5E+00		2	2
CPU-13	T	7/1/1998	CHROMIUM, HEXAVALENT	3.3E+00		2	2
CPU-13	T	7/1/1999	CHROMIUM, HEXAVALENT	8.3E-01		4	4
CPU-13	T	7/1/2000	CHROMIUM, HEXAVALENT	3.8E-01		5	5
CPU-13	T	7/1/2001	CHROMIUM, HEXAVALENT	2.1E-01		4	4
CPU-13	T	7/1/2002	CHROMIUM, HEXAVALENT	1.8E-01		4	4
CPU-13	T	7/1/2003	CHROMIUM, HEXAVALENT	1.5E-01		3	3
CPU-13	T	7/1/2004	CHROMIUM, HEXAVALENT	1.2E-01		2	2
CPU-13	T	7/1/2005	CHROMIUM, HEXAVALENT	7.4E-02		2	2
CPU-13	T	7/1/2006	CHROMIUM, HEXAVALENT	4.9E-02		2	2
CPU-13	T	7/1/2007	CHROMIUM, HEXAVALENT	4.0E-02		2	2
CPU-13	T	7/1/2008	CHROMIUM, HEXAVALENT	3.0E-02		2	2
CPU-13	T	7/1/2009	CHROMIUM, HEXAVALENT	2.1E-02		2	2

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-21D
Well Type: T
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -105

Confidence in Trend: 100.0%

Coefficient of Variation: 2.22

Mann Kendall Concentration Trend: (See Note) D

Data Table:

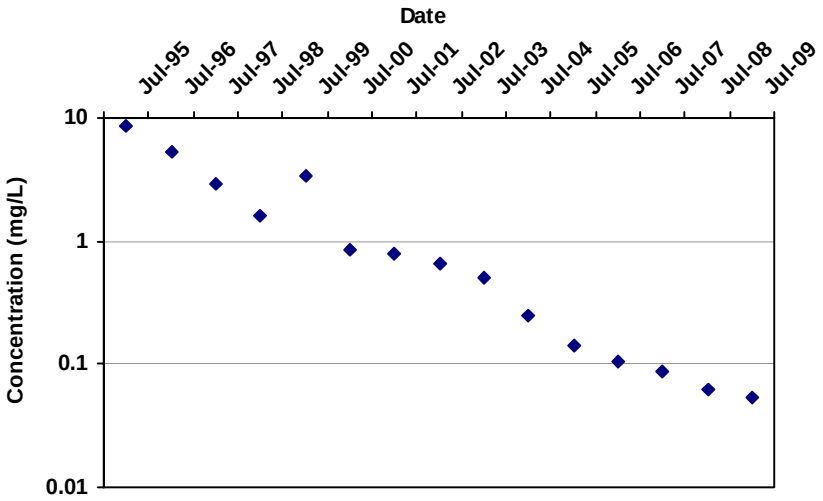
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-21D	T	7/1/1995	CHROMIUM, HEXAVALENT	2.4E+01		11	11
MW-21D	T	7/1/1996	CHROMIUM, HEXAVALENT	1.6E+01		12	12
MW-21D	T	7/1/1997	CHROMIUM, HEXAVALENT	4.4E+00		9	9
MW-21D	T	7/1/1998	CHROMIUM, HEXAVALENT	1.4E+00		3	3
MW-21D	T	7/1/1999	CHROMIUM, HEXAVALENT	5.8E-01		4	4
MW-21D	T	7/1/2000	CHROMIUM, HEXAVALENT	4.8E-01		5	5
MW-21D	T	7/1/2001	CHROMIUM, HEXAVALENT	2.6E-01		4	4
MW-21D	T	7/1/2002	CHROMIUM, HEXAVALENT	2.6E-01		4	4
MW-21D	T	7/1/2003	CHROMIUM, HEXAVALENT	1.6E-01		3	3
MW-21D	T	7/1/2004	CHROMIUM, HEXAVALENT	7.2E-02		2	2
MW-21D	T	7/1/2005	CHROMIUM, HEXAVALENT	4.0E-02		2	2
MW-21D	T	7/1/2006	CHROMIUM, HEXAVALENT	3.0E-02		2	2
MW-21D	T	7/1/2007	CHROMIUM, HEXAVALENT	2.5E-02		2	2
MW-21D	T	7/1/2008	CHROMIUM, HEXAVALENT	1.9E-02		2	2
MW-21D	T	7/1/2009	CHROMIUM, HEXAVALENT	1.7E-02		2	2

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-22D
Well Type: T
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -101

Confidence in Trend: 100.0%

Coefficient of Variation: 1.45

Mann Kendall Concentration Trend: (See Note) D

Data Table:

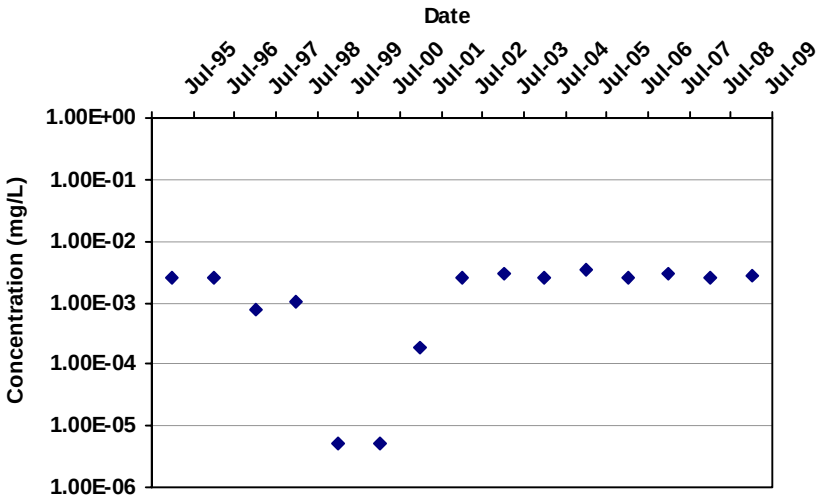
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-22D	T	7/1/1995	CHROMIUM, HEXAVALENT	8.6E+00		11	11
MW-22D	T	7/1/1996	CHROMIUM, HEXAVALENT	5.4E+00		11	11
MW-22D	T	7/1/1997	CHROMIUM, HEXAVALENT	2.9E+00		9	9
MW-22D	T	7/1/1998	CHROMIUM, HEXAVALENT	1.6E+00		3	3
MW-22D	T	7/1/1999	CHROMIUM, HEXAVALENT	3.4E+00		2	2
MW-22D	T	7/1/2000	CHROMIUM, HEXAVALENT	8.6E-01		4	4
MW-22D	T	7/1/2001	CHROMIUM, HEXAVALENT	8.0E-01		4	4
MW-22D	T	7/1/2002	CHROMIUM, HEXAVALENT	6.5E-01		3	3
MW-22D	T	7/1/2003	CHROMIUM, HEXAVALENT	5.0E-01		3	3
MW-22D	T	7/1/2004	CHROMIUM, HEXAVALENT	2.5E-01		2	2
MW-22D	T	7/1/2005	CHROMIUM, HEXAVALENT	1.4E-01		2	2
MW-22D	T	7/1/2006	CHROMIUM, HEXAVALENT	1.0E-01		2	2
MW-22D	T	7/1/2007	CHROMIUM, HEXAVALENT	8.7E-02		2	2
MW-22D	T	7/1/2008	CHROMIUM, HEXAVALENT	6.3E-02		2	2
MW-22D	T	7/1/2009	CHROMIUM, HEXAVALENT	5.3E-02		2	2

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-23D
Well Type: T
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: 35

Confidence in Trend: 95.4%

Coefficient of Variation: 0.61

Mann Kendall Concentration Trend: (See Note) I

Data Table:

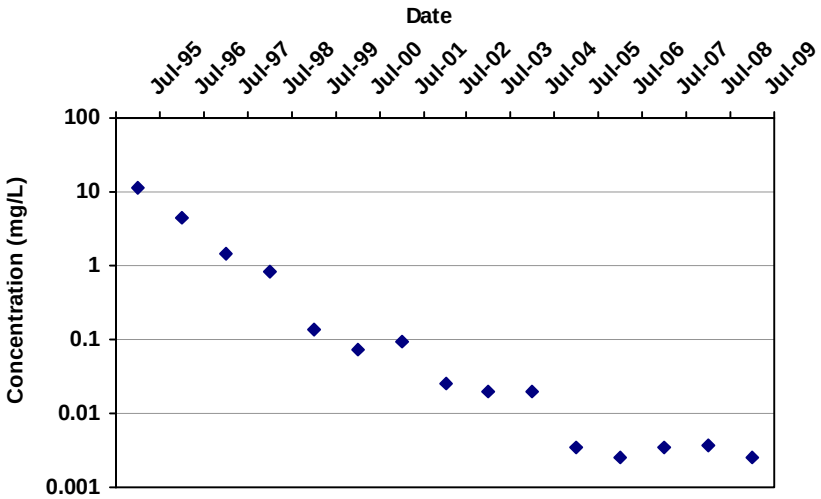
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-23D	T	7/1/1995	CHROMIUM, HEXAVALENT	2.5E-03	ND	2	0
MW-23D	T	7/1/1996	CHROMIUM, HEXAVALENT	2.5E-03	ND	2	0
MW-23D	T	7/1/1997	CHROMIUM, HEXAVALENT	7.9E-04	ND	2	0
MW-23D	T	7/1/1998	CHROMIUM, HEXAVALENT	1.0E-03		2	1
MW-23D	T	7/1/1999	CHROMIUM, HEXAVALENT	5.0E-06	ND	2	0
MW-23D	T	7/1/2000	CHROMIUM, HEXAVALENT	5.0E-06	ND	2	0
MW-23D	T	7/1/2001	CHROMIUM, HEXAVALENT	1.8E-04		2	1
MW-23D	T	7/1/2002	CHROMIUM, HEXAVALENT	2.5E-03	ND	2	0
MW-23D	T	7/1/2003	CHROMIUM, HEXAVALENT	3.0E-03		2	1
MW-23D	T	7/1/2004	CHROMIUM, HEXAVALENT	2.5E-03	ND	2	0
MW-23D	T	7/1/2005	CHROMIUM, HEXAVALENT	3.5E-03		2	1
MW-23D	T	7/1/2006	CHROMIUM, HEXAVALENT	2.5E-03	ND	1	0
MW-23D	T	7/1/2007	CHROMIUM, HEXAVALENT	3.0E-03		1	1
MW-23D	T	7/1/2008	CHROMIUM, HEXAVALENT	2.5E-03	ND	1	0
MW-23D	T	7/1/2009	CHROMIUM, HEXAVALENT	2.7E-03		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-25D
Well Type: T
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -91

Confidence in Trend: 100.0%

Coefficient of Variation: 2.45

Mann Kendall Concentration Trend: (See Note) D

Data Table:

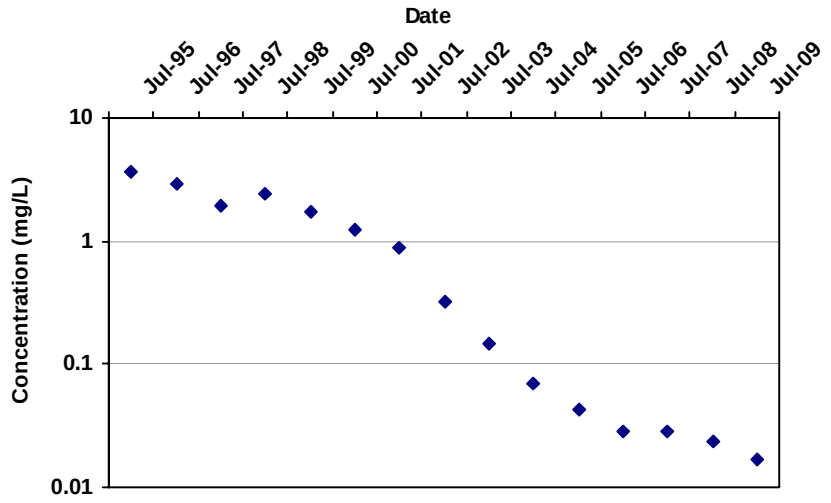
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-25D	T	7/1/1995	CHROMIUM, HEXAVALENT	1.1E+01		12	12
MW-25D	T	7/1/1996	CHROMIUM, HEXAVALENT	4.6E+00		12	12
MW-25D	T	7/1/1997	CHROMIUM, HEXAVALENT	1.5E+00		9	9
MW-25D	T	7/1/1998	CHROMIUM, HEXAVALENT	8.1E-01		3	3
MW-25D	T	7/1/1999	CHROMIUM, HEXAVALENT	1.4E-01		4	4
MW-25D	T	7/1/2000	CHROMIUM, HEXAVALENT	7.5E-02		5	5
MW-25D	T	7/1/2001	CHROMIUM, HEXAVALENT	9.2E-02		4	4
MW-25D	T	7/1/2002	CHROMIUM, HEXAVALENT	2.6E-02		4	4
MW-25D	T	7/1/2003	CHROMIUM, HEXAVALENT	2.0E-02		3	3
MW-25D	T	7/1/2004	CHROMIUM, HEXAVALENT	2.0E-02		2	2
MW-25D	T	7/1/2005	CHROMIUM, HEXAVALENT	3.4E-03		1	1
MW-25D	T	7/1/2006	CHROMIUM, HEXAVALENT	2.5E-03	ND	1	0
MW-25D	T	7/1/2007	CHROMIUM, HEXAVALENT	3.5E-03		2	1
MW-25D	T	7/1/2008	CHROMIUM, HEXAVALENT	3.6E-03		2	2
MW-25D	T	7/1/2009	CHROMIUM, HEXAVALENT	2.5E-03		2	2

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-26D
Well Type: T
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -101

Confidence in Trend: 100.0%

Coefficient of Variation: 1.19

Mann Kendall Concentration Trend: (See Note) D

Data Table:

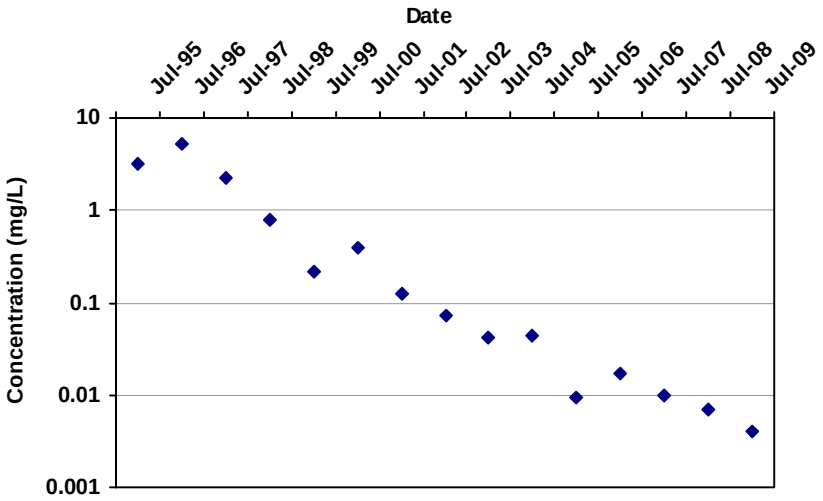
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-26D	T	7/1/1995	CHROMIUM, HEXAVALENT	3.6E+00		11	11
MW-26D	T	7/1/1996	CHROMIUM, HEXAVALENT	2.9E+00		12	12
MW-26D	T	7/1/1997	CHROMIUM, HEXAVALENT	1.9E+00		9	9
MW-26D	T	7/1/1998	CHROMIUM, HEXAVALENT	2.4E+00		3	3
MW-26D	T	7/1/1999	CHROMIUM, HEXAVALENT	1.7E+00		4	4
MW-26D	T	7/1/2000	CHROMIUM, HEXAVALENT	1.3E+00		5	5
MW-26D	T	7/1/2001	CHROMIUM, HEXAVALENT	8.8E-01		4	4
MW-26D	T	7/1/2002	CHROMIUM, HEXAVALENT	3.3E-01		4	4
MW-26D	T	7/1/2003	CHROMIUM, HEXAVALENT	1.5E-01		3	3
MW-26D	T	7/1/2004	CHROMIUM, HEXAVALENT	6.9E-02		2	2
MW-26D	T	7/1/2005	CHROMIUM, HEXAVALENT	4.4E-02		2	2
MW-26D	T	7/1/2006	CHROMIUM, HEXAVALENT	2.8E-02		2	2
MW-26D	T	7/1/2007	CHROMIUM, HEXAVALENT	2.9E-02		2	2
MW-26D	T	7/1/2008	CHROMIUM, HEXAVALENT	2.4E-02		2	2
MW-26D	T	7/1/2009	CHROMIUM, HEXAVALENT	1.7E-02		2	2

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-27D
Well Type: T
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -95

Confidence in Trend: 100.0%

Coefficient of Variation: 1.86

Mann Kendall Concentration Trend: (See Note) D

Data Table:

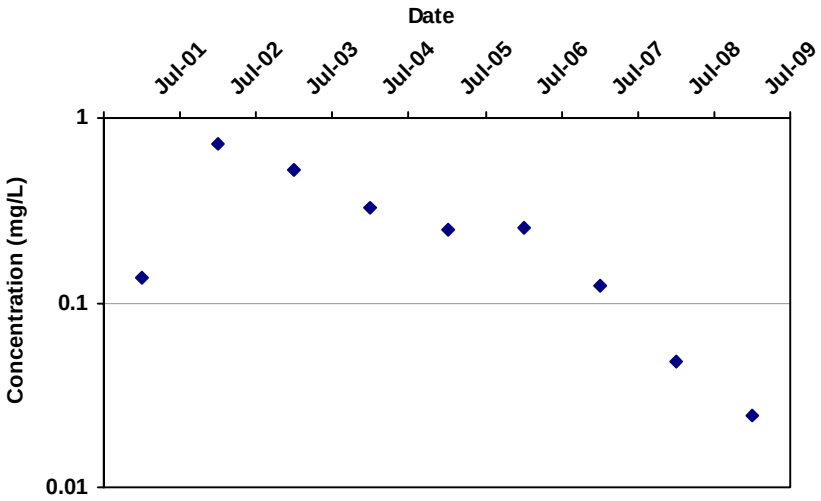
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-27D	T	7/1/1995	CHROMIUM, HEXAVALENT	3.1E+00		11	11
MW-27D	T	7/1/1996	CHROMIUM, HEXAVALENT	5.2E+00		2	2
MW-27D	T	7/1/1997	CHROMIUM, HEXAVALENT	2.3E+00		2	2
MW-27D	T	7/1/1998	CHROMIUM, HEXAVALENT	7.8E-01		2	2
MW-27D	T	7/1/1999	CHROMIUM, HEXAVALENT	2.2E-01		2	2
MW-27D	T	7/1/2000	CHROMIUM, HEXAVALENT	3.9E-01		4	4
MW-27D	T	7/1/2001	CHROMIUM, HEXAVALENT	1.2E-01		4	4
MW-27D	T	7/1/2002	CHROMIUM, HEXAVALENT	7.2E-02		4	4
MW-27D	T	7/1/2003	CHROMIUM, HEXAVALENT	4.2E-02		3	3
MW-27D	T	7/1/2004	CHROMIUM, HEXAVALENT	4.4E-02		2	2
MW-27D	T	7/1/2005	CHROMIUM, HEXAVALENT	9.6E-03		1	1
MW-27D	T	7/1/2006	CHROMIUM, HEXAVALENT	1.8E-02		1	1
MW-27D	T	7/1/2007	CHROMIUM, HEXAVALENT	9.8E-03		1	1
MW-27D	T	7/1/2008	CHROMIUM, HEXAVALENT	7.0E-03		2	2
MW-27D	T	7/1/2009	CHROMIUM, HEXAVALENT	4.1E-03		2	2

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-49
Well Type: T
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -24

Confidence in Trend: 99.4%

Coefficient of Variation: 0.86

Mann Kendall Concentration Trend: (See Note) D

Data Table:

Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-49	T	7/1/2001	CHROMIUM, HEXAVALENT	1.4E-01		4	4
MW-49	T	7/1/2002	CHROMIUM, HEXAVALENT	7.3E-01		4	4
MW-49	T	7/1/2003	CHROMIUM, HEXAVALENT	5.2E-01		3	3
MW-49	T	7/1/2004	CHROMIUM, HEXAVALENT	3.3E-01		2	2
MW-49	T	7/1/2005	CHROMIUM, HEXAVALENT	2.5E-01		2	2
MW-49	T	7/1/2006	CHROMIUM, HEXAVALENT	2.6E-01		2	2
MW-49	T	7/1/2007	CHROMIUM, HEXAVALENT	1.3E-01		2	2
MW-49	T	7/1/2008	CHROMIUM, HEXAVALENT	4.8E-02		2	2
MW-49	T	7/1/2009	CHROMIUM, HEXAVALENT	2.5E-02		2	2

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

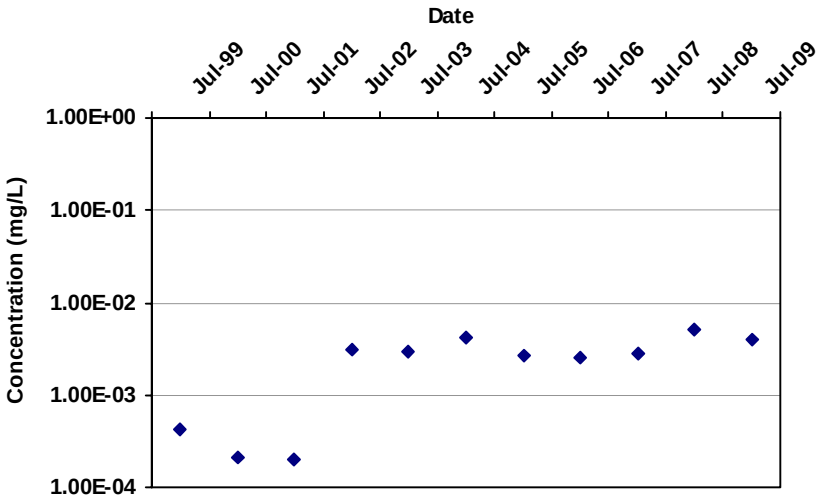
TOE OF PLUME

Sentinel Wells

MAROS Mann-Kendall Statistics Summary

Well: AMW-43
Well Type: T
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: 23

Confidence in Trend: 95.7%

Coefficient of Variation: 0.65

Mann Kendall Concentration Trend: (See Note) I

Data Table:

Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
AMW-43	T	7/1/1999	CHROMIUM, HEXAVALENT	4.1E-04		7	5
AMW-43	T	7/1/2000	CHROMIUM, HEXAVALENT	2.1E-04		8	5
AMW-43	T	7/1/2001	CHROMIUM, HEXAVALENT	2.0E-04		2	1
AMW-43	T	7/1/2002	CHROMIUM, HEXAVALENT	3.1E-03		2	1
AMW-43	T	7/1/2003	CHROMIUM, HEXAVALENT	3.0E-03		2	1
AMW-43	T	7/1/2004	CHROMIUM, HEXAVALENT	4.2E-03		4	3
AMW-43	T	7/1/2005	CHROMIUM, HEXAVALENT	2.6E-03		4	1
AMW-43	T	7/1/2006	CHROMIUM, HEXAVALENT	2.5E-03	ND	2	0
AMW-43	T	7/1/2007	CHROMIUM, HEXAVALENT	2.8E-03		4	2
AMW-43	T	7/1/2008	CHROMIUM, HEXAVALENT	5.0E-03		2	2
AMW-43	T	7/1/2009	CHROMIUM, HEXAVALENT	4.1E-03		2	2

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

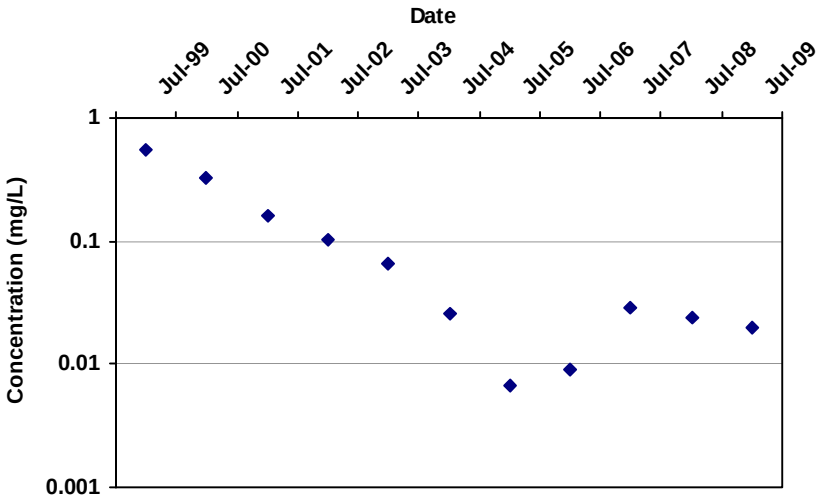
TOE OF PLUME

Other Toe Wells

MAROS Mann-Kendall Statistics Summary

Well: AMW-42
Well Type: T
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -39

Confidence in Trend: 99.9%

Coefficient of Variation: 1.44

Mann Kendall Concentration Trend: (See Note) D

Data Table:

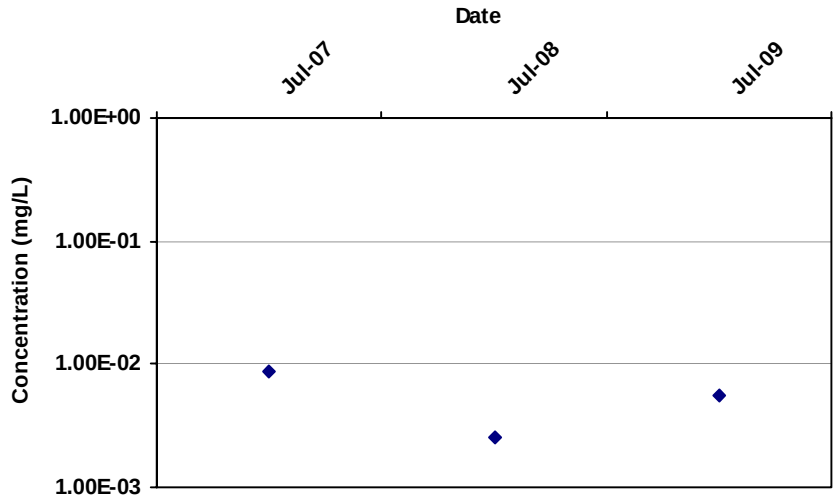
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
AMW-42	T	7/1/1999	CHROMIUM, HEXAVALENT	5.5E-01		10	10
AMW-42	T	7/1/2000	CHROMIUM, HEXAVALENT	3.2E-01		13	13
AMW-42	T	7/1/2001	CHROMIUM, HEXAVALENT	1.6E-01		4	4
AMW-42	T	7/1/2002	CHROMIUM, HEXAVALENT	1.0E-01		4	4
AMW-42	T	7/1/2003	CHROMIUM, HEXAVALENT	6.4E-02		3	3
AMW-42	T	7/1/2004	CHROMIUM, HEXAVALENT	2.6E-02		6	6
AMW-42	T	7/1/2005	CHROMIUM, HEXAVALENT	6.6E-03		4	4
AMW-42	T	7/1/2006	CHROMIUM, HEXAVALENT	9.0E-03		2	1
AMW-42	T	7/1/2007	CHROMIUM, HEXAVALENT	2.9E-02		2	2
AMW-42	T	7/1/2008	CHROMIUM, HEXAVALENT	2.4E-02		1	1
AMW-42	T	7/1/2009	CHROMIUM, HEXAVALENT	2.0E-02		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: AMW-63
Well Type: T
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: 0

Confidence in Trend: 0.0%

Coefficient of Variation: 0.00

Mann Kendall Concentration Trend: (See Note) N/A

Data Table:

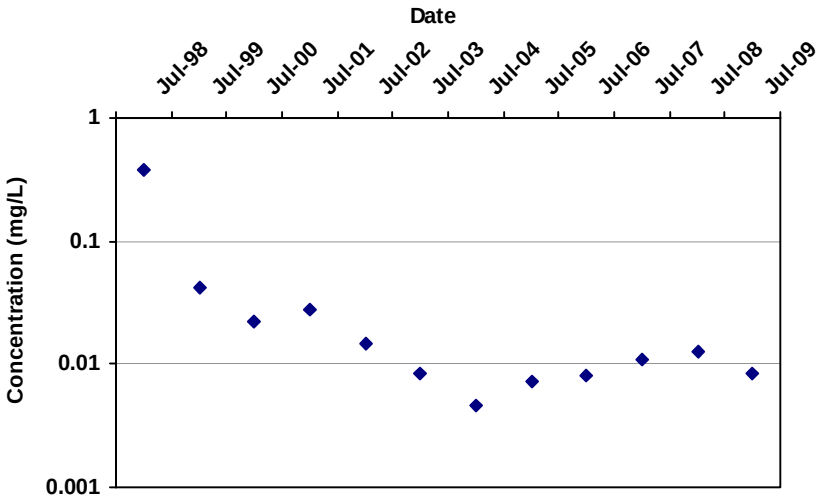
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
AMW-63	T	7/1/2007	CHROMIUM, HEXAVALENT	8.8E-03		4	4
AMW-63	T	7/1/2008	CHROMIUM, HEXAVALENT	2.5E-03	ND	2	0
AMW-63	T	7/1/2009	CHROMIUM, HEXAVALENT	5.6E-03		2	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-31
Well Type: T
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -32

Confidence in Trend: 98.4%

Coefficient of Variation: 2.31

Mann Kendall Concentration Trend: (See Note) D

Data Table:

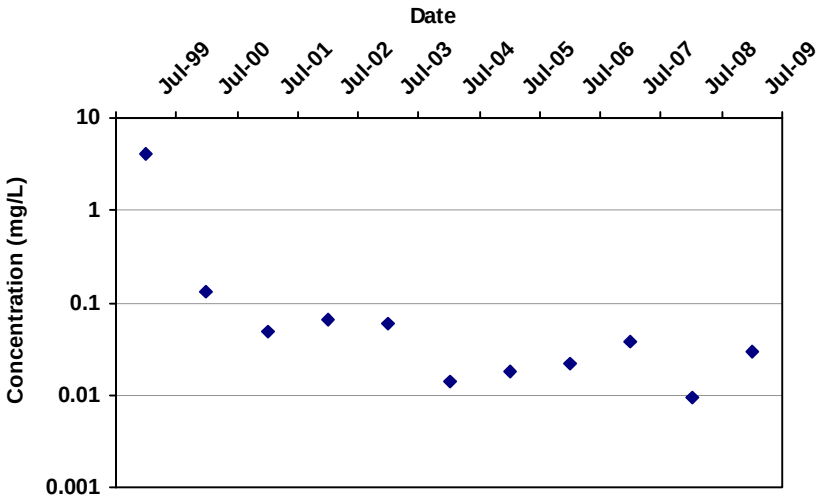
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-31	T	7/1/1998	CHROMIUM, HEXAVALENT	3.7E-01		6	6
MW-31	T	7/1/1999	CHROMIUM, HEXAVALENT	4.2E-02		8	8
MW-31	T	7/1/2000	CHROMIUM, HEXAVALENT	2.2E-02		13	13
MW-31	T	7/1/2001	CHROMIUM, HEXAVALENT	2.7E-02		2	2
MW-31	T	7/1/2002	CHROMIUM, HEXAVALENT	1.5E-02		3	3
MW-31	T	7/1/2003	CHROMIUM, HEXAVALENT	8.3E-03		3	3
MW-31	T	7/1/2004	CHROMIUM, HEXAVALENT	4.7E-03		2	1
MW-31	T	7/1/2005	CHROMIUM, HEXAVALENT	7.3E-03		1	1
MW-31	T	7/1/2006	CHROMIUM, HEXAVALENT	8.1E-03		1	1
MW-31	T	7/1/2007	CHROMIUM, HEXAVALENT	1.1E-02		1	1
MW-31	T	7/1/2008	CHROMIUM, HEXAVALENT	1.3E-02		1	1
MW-31	T	7/1/2009	CHROMIUM, HEXAVALENT	8.4E-03		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-35
Well Type: T
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -31

Confidence in Trend: 99.2%

Coefficient of Variation: 2.96

Mann Kendall Concentration Trend: (See Note) D

Data Table:

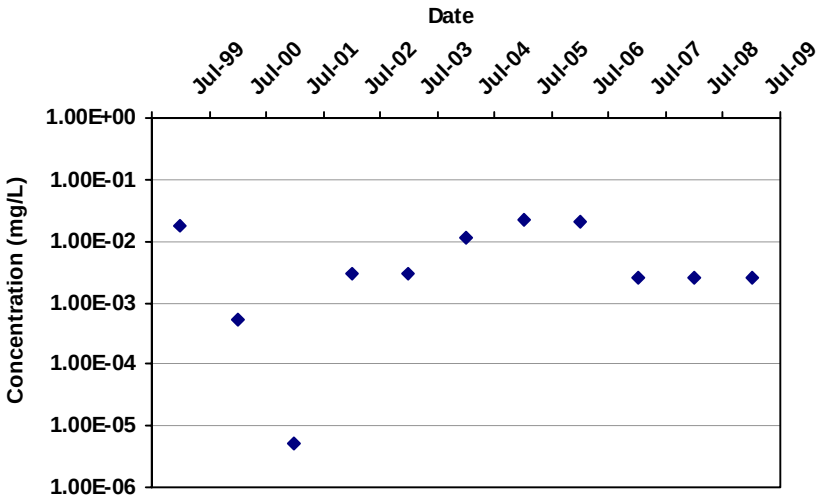
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-35	T	7/1/1999	CHROMIUM, HEXAVALENT	4.0E+00		6	6
MW-35	T	7/1/2000	CHROMIUM, HEXAVALENT	1.3E-01		12	12
MW-35	T	7/1/2001	CHROMIUM, HEXAVALENT	4.8E-02		10	10
MW-35	T	7/1/2002	CHROMIUM, HEXAVALENT	6.6E-02		7	7
MW-35	T	7/1/2003	CHROMIUM, HEXAVALENT	5.8E-02		3	3
MW-35	T	7/1/2004	CHROMIUM, HEXAVALENT	1.4E-02		5	5
MW-35	T	7/1/2005	CHROMIUM, HEXAVALENT	1.8E-02		4	4
MW-35	T	7/1/2006	CHROMIUM, HEXAVALENT	2.2E-02		2	2
MW-35	T	7/1/2007	CHROMIUM, HEXAVALENT	3.7E-02		2	2
MW-35	T	7/1/2008	CHROMIUM, HEXAVALENT	9.5E-03		2	1
MW-35	T	7/1/2009	CHROMIUM, HEXAVALENT	2.9E-02		2	2

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-41
Well Type: T
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: 0

Confidence in Trend: 46.9%

Coefficient of Variation: 1.09

Mann Kendall Concentration Trend: (See Note) NT

Data Table:

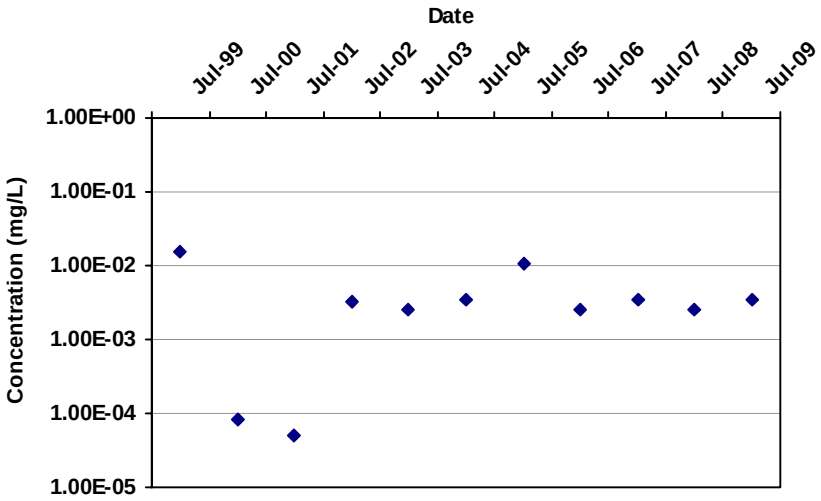
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-41	T	7/1/1999	CHROMIUM, HEXAVALENT	1.8E-02		8	8
MW-41	T	7/1/2000	CHROMIUM, HEXAVALENT	5.3E-04		13	9
MW-41	T	7/1/2001	CHROMIUM, HEXAVALENT	5.0E-06	ND	4	0
MW-41	T	7/1/2002	CHROMIUM, HEXAVALENT	3.0E-03		4	2
MW-41	T	7/1/2003	CHROMIUM, HEXAVALENT	2.9E-03		3	1
MW-41	T	7/1/2004	CHROMIUM, HEXAVALENT	1.1E-02		6	3
MW-41	T	7/1/2005	CHROMIUM, HEXAVALENT	2.2E-02		5	4
MW-41	T	7/1/2006	CHROMIUM, HEXAVALENT	2.0E-02		2	1
MW-41	T	7/1/2007	CHROMIUM, HEXAVALENT	2.5E-03	ND	4	0
MW-41	T	7/1/2008	CHROMIUM, HEXAVALENT	2.5E-03	ND	2	0
MW-41	T	7/1/2009	CHROMIUM, HEXAVALENT	2.5E-03	ND	2	0

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-46
Well Type: T
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: 10

Confidence in Trend: 75.3%

Coefficient of Variation: 1.07

Mann Kendall Concentration Trend: (See Note) NT

Data Table:

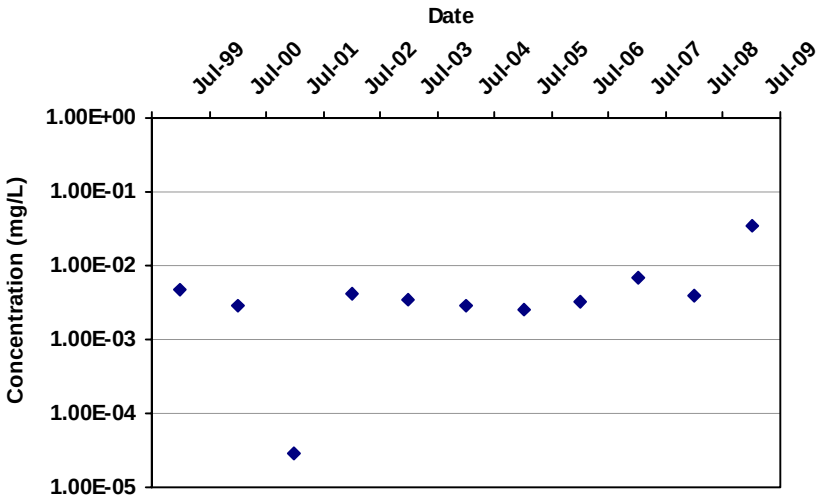
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-46	T	7/1/1999	CHROMIUM, HEXAVALENT	1.6E-02		5	5
MW-46	T	7/1/2000	CHROMIUM, HEXAVALENT	8.5E-05		9	4
MW-46	T	7/1/2001	CHROMIUM, HEXAVALENT	5.2E-05		3	1
MW-46	T	7/1/2002	CHROMIUM, HEXAVALENT	3.4E-03		3	2
MW-46	T	7/1/2003	CHROMIUM, HEXAVALENT	2.5E-03		3	1
MW-46	T	7/1/2004	CHROMIUM, HEXAVALENT	3.6E-03		5	3
MW-46	T	7/1/2005	CHROMIUM, HEXAVALENT	1.0E-02		4	4
MW-46	T	7/1/2006	CHROMIUM, HEXAVALENT	2.5E-03	ND	2	0
MW-46	T	7/1/2007	CHROMIUM, HEXAVALENT	3.4E-03		4	2
MW-46	T	7/1/2008	CHROMIUM, HEXAVALENT	2.5E-03	ND	2	0
MW-46	T	7/1/2009	CHROMIUM, HEXAVALENT	3.6E-03		2	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-48
Well Type: T
COC: CHROMIUM, HEXAVALENT

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: 15

Confidence in Trend: 85.9%

Coefficient of Variation: 1.53

Mann Kendall Concentration Trend: (See Note) NT

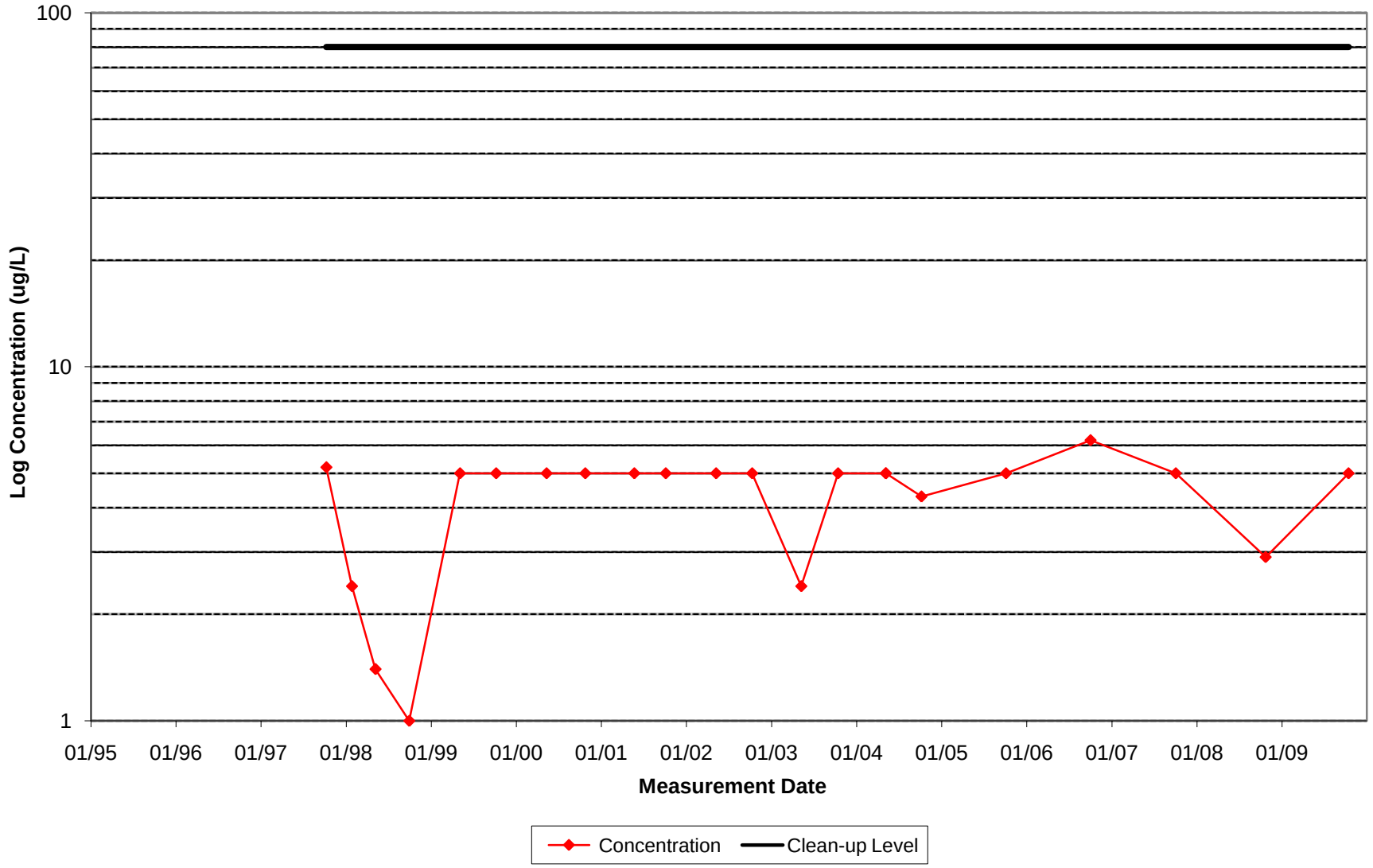
Data Table:

Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-48	T	7/1/1999	CHROMIUM, HEXAVALENT	4.7E-03		5	5
MW-48	T	7/1/2000	CHROMIUM, HEXAVALENT	2.8E-03		9	7
MW-48	T	7/1/2001	CHROMIUM, HEXAVALENT	2.9E-05		4	1
MW-48	T	7/1/2002	CHROMIUM, HEXAVALENT	4.3E-03		4	3
MW-48	T	7/1/2003	CHROMIUM, HEXAVALENT	3.5E-03		3	3
MW-48	T	7/1/2004	CHROMIUM, HEXAVALENT	2.9E-03		5	2
MW-48	T	7/1/2005	CHROMIUM, HEXAVALENT	2.5E-03	ND	4	0
MW-48	T	7/1/2006	CHROMIUM, HEXAVALENT	3.2E-03		2	1
MW-48	T	7/1/2007	CHROMIUM, HEXAVALENT	6.7E-03		1	1
MW-48	T	7/1/2008	CHROMIUM, HEXAVALENT	4.0E-03		1	1
MW-48	T	7/1/2009	CHROMIUM, HEXAVALENT	3.5E-02		1	1

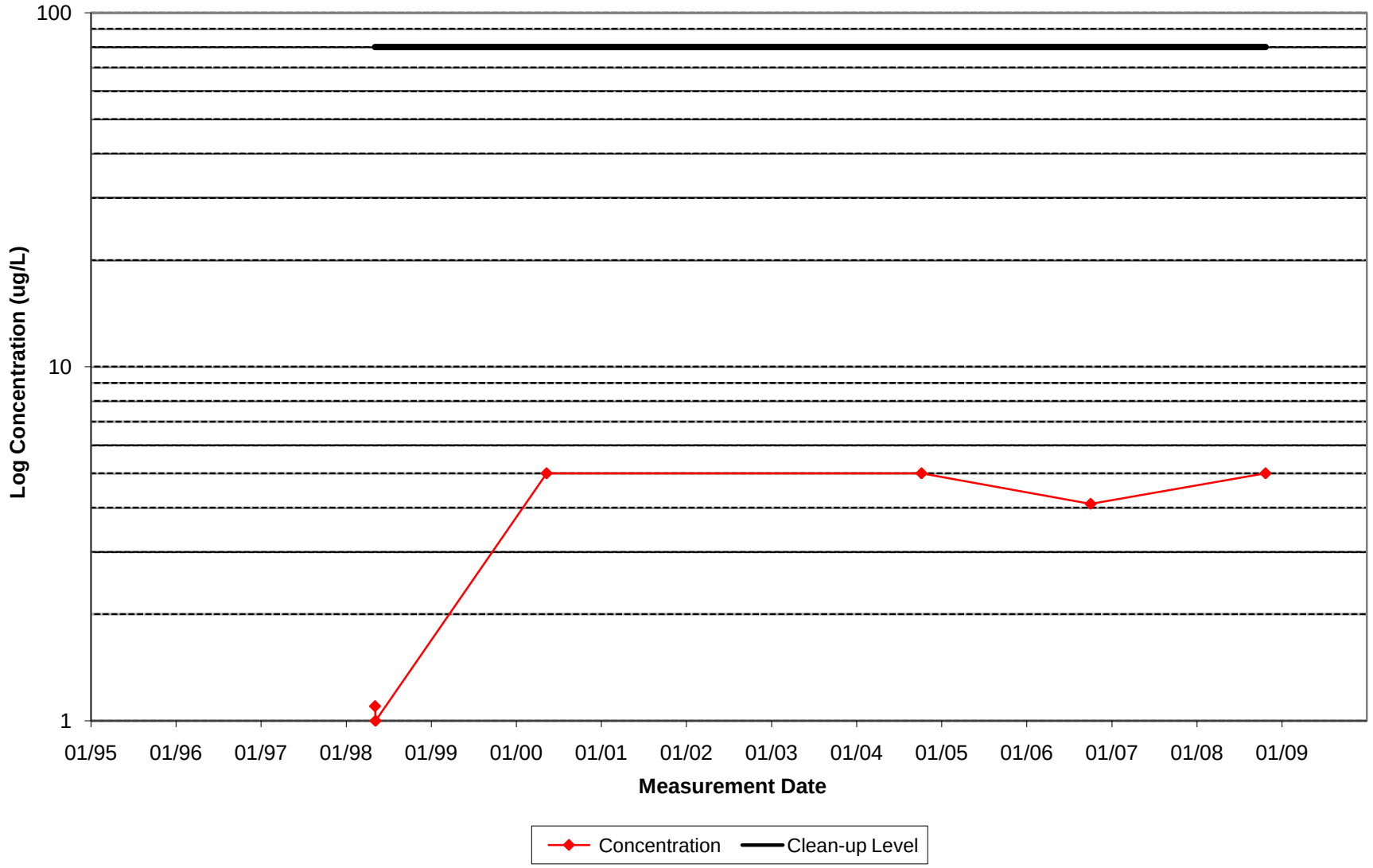
Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

TROUTDALE WELLS

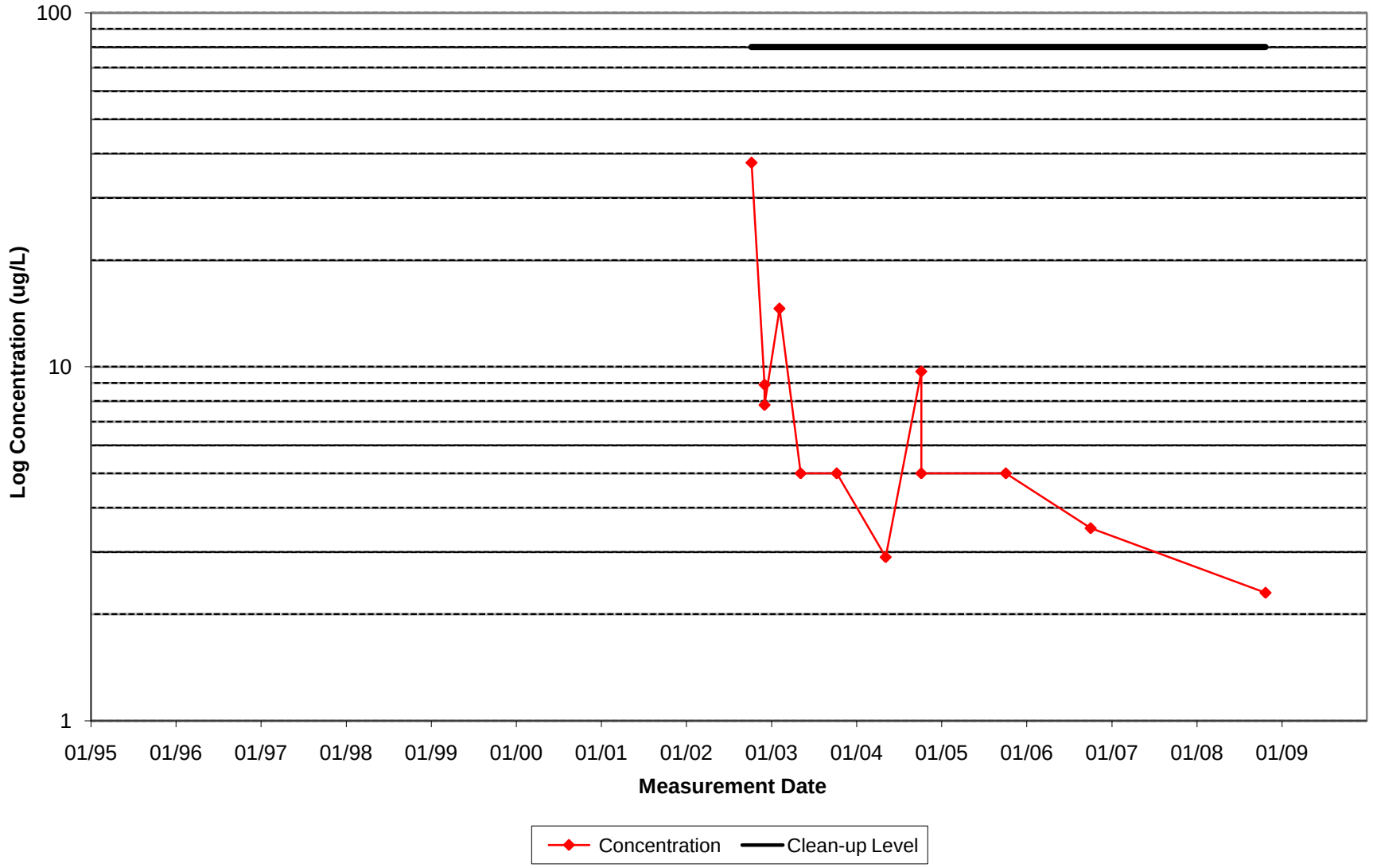
AMW-24 - Cr (ug/L)


100
10
1
Log Concentration (ug/L)
01/95
01/96
01/97
01/98
01/99
01/00
01/01
01/02
01/03
01/04
01/05
01/06
01/07
01/08
01/09
Measurement Date
Concentration
Clean-up Level

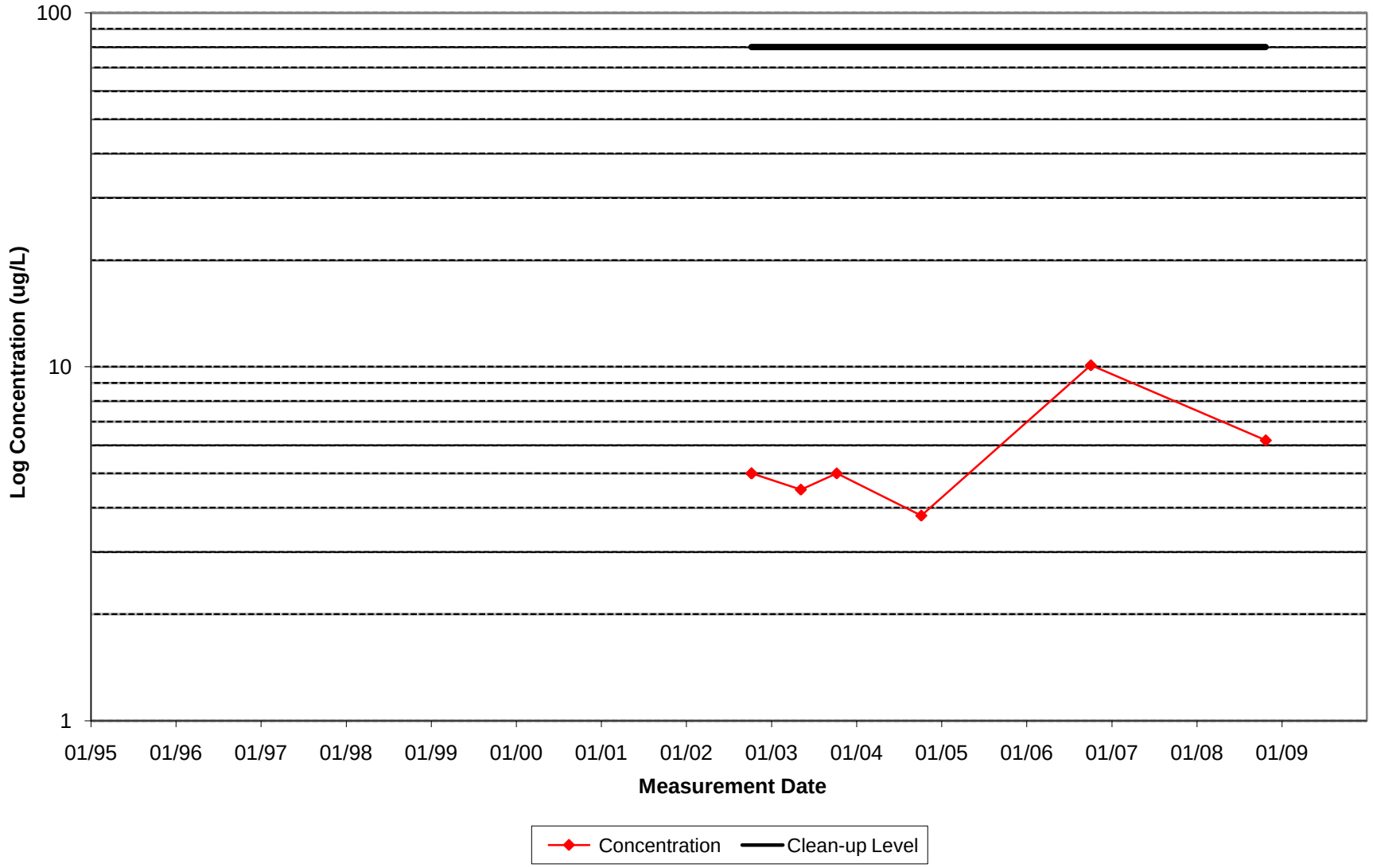
AMW-25 - Cr (ug/L)


100
10
1
Log Concentration (ug/L)
01/95
01/96
01/97
01/98
01/99
01/00
01/01
01/02
01/03
01/04
01/05
01/06
01/07
01/08
01/09
Measurement Date
Concentration
Clean-up Level

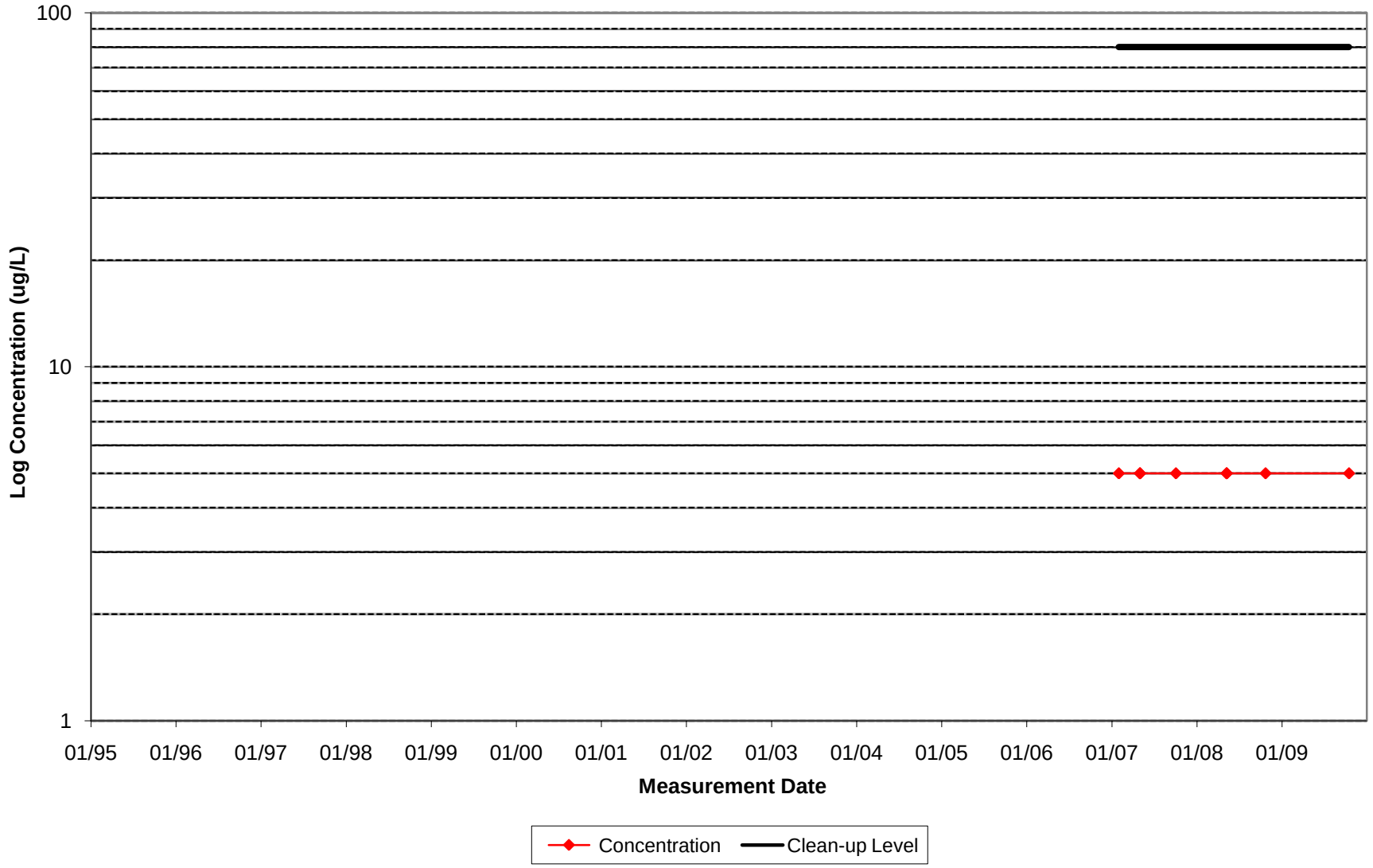
AMW-50 - Cr (ug/L)


100
10
1
Log Concentration (ug/L)
01/95
01/96
01/97
01/98
01/99
01/00
01/01
01/02
01/03
01/04
01/05
01/06
01/07
01/08
01/09
Measurement Date
Concentration
Clean-up Level

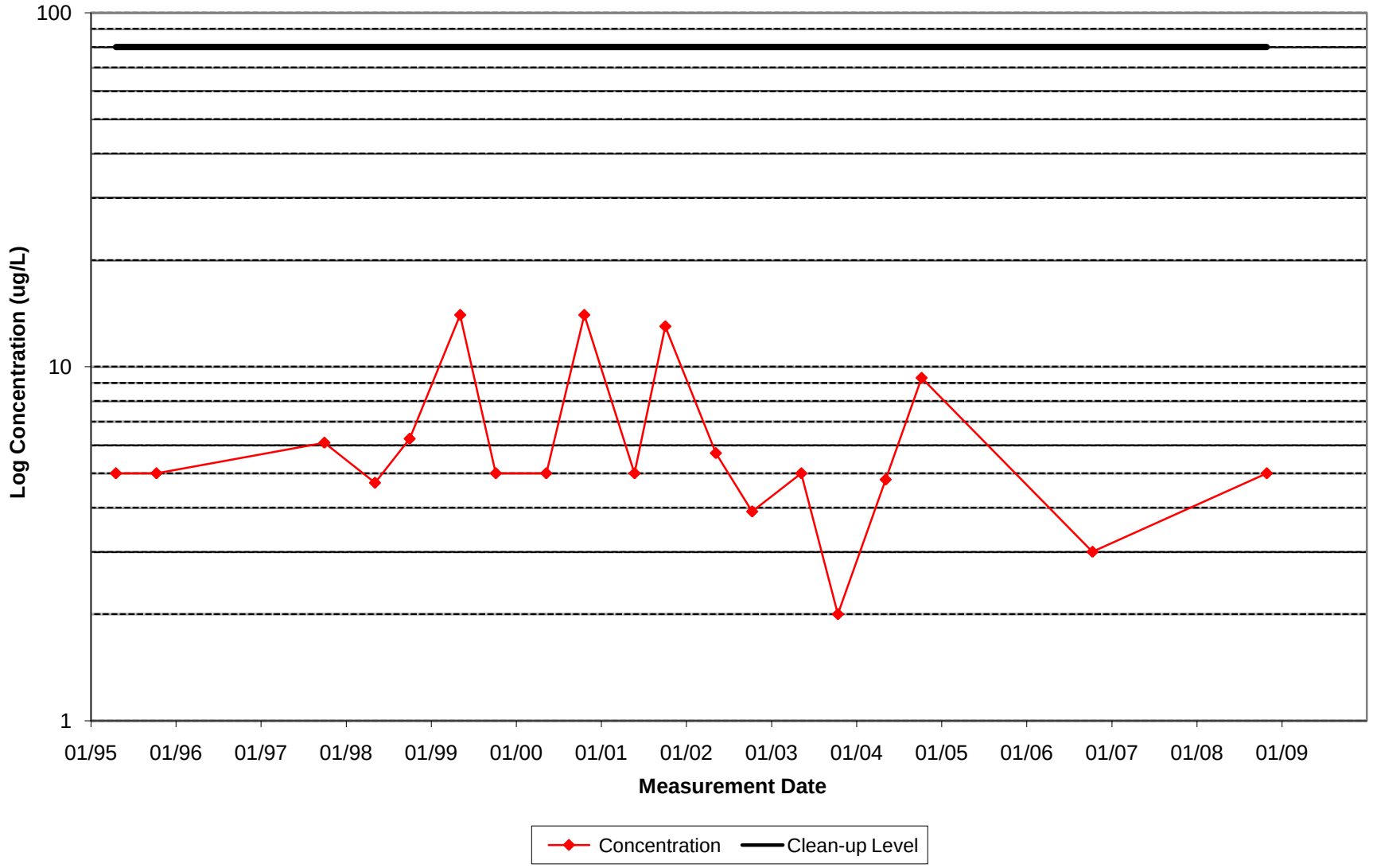
AMW-51 - Cr (ug/L)


100
10
1
Log Concentration (ug/L)
01/95
01/96
01/97
01/98
01/99
01/00
01/01
01/02
01/03
01/04
01/05
01/06
01/07
01/08
01/09
Measurement Date
Concentration
Clean-up Level

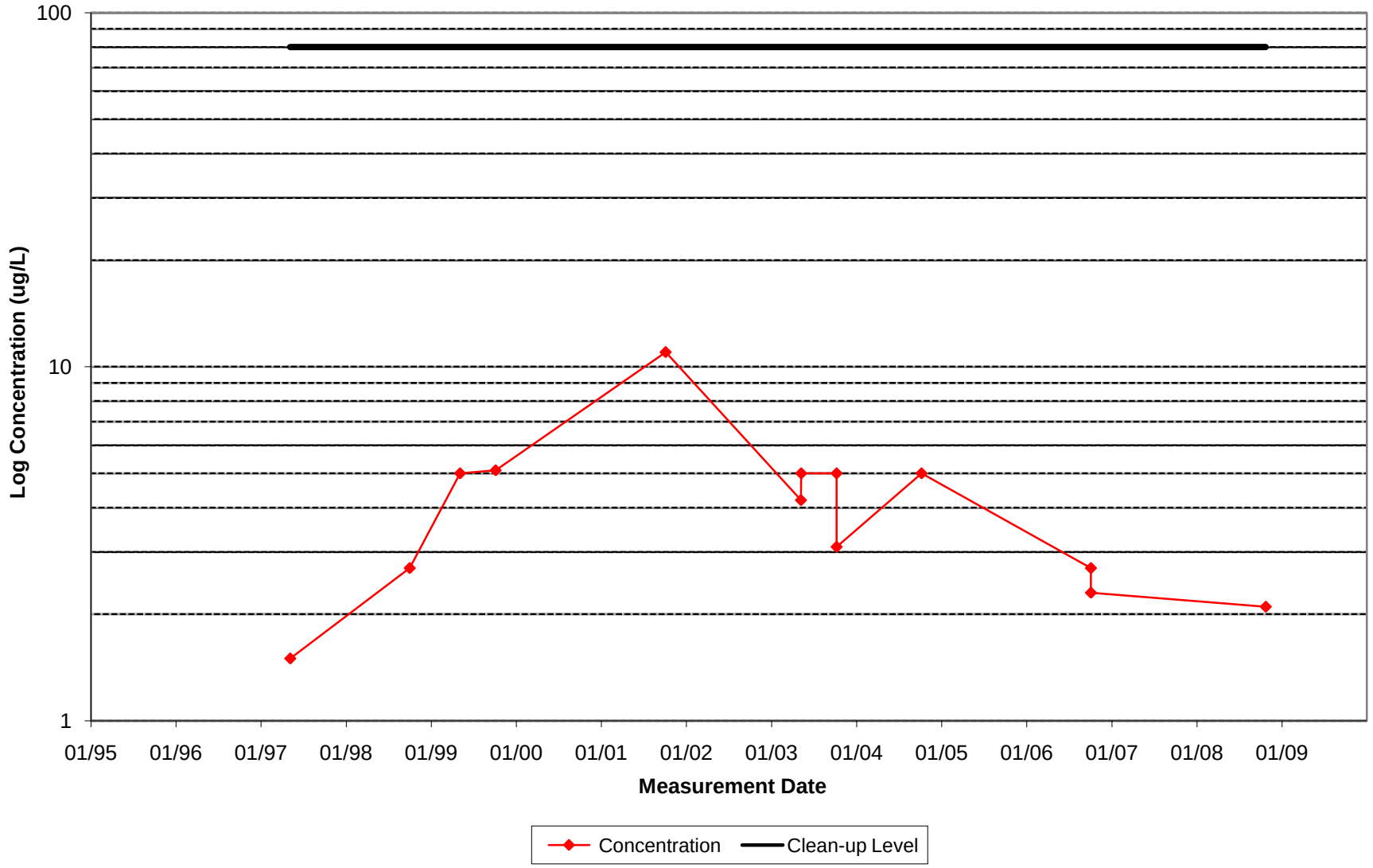
AMW-62 - Cr (ug/L)


100
10
1
Log Concentration (ug/L)
01/95
01/96
01/97
01/98
01/99
01/00
01/01
01/02
01/03
01/04
01/05
01/06
01/07
01/08
01/09
Measurement Date
Concentration
Clean-up Level

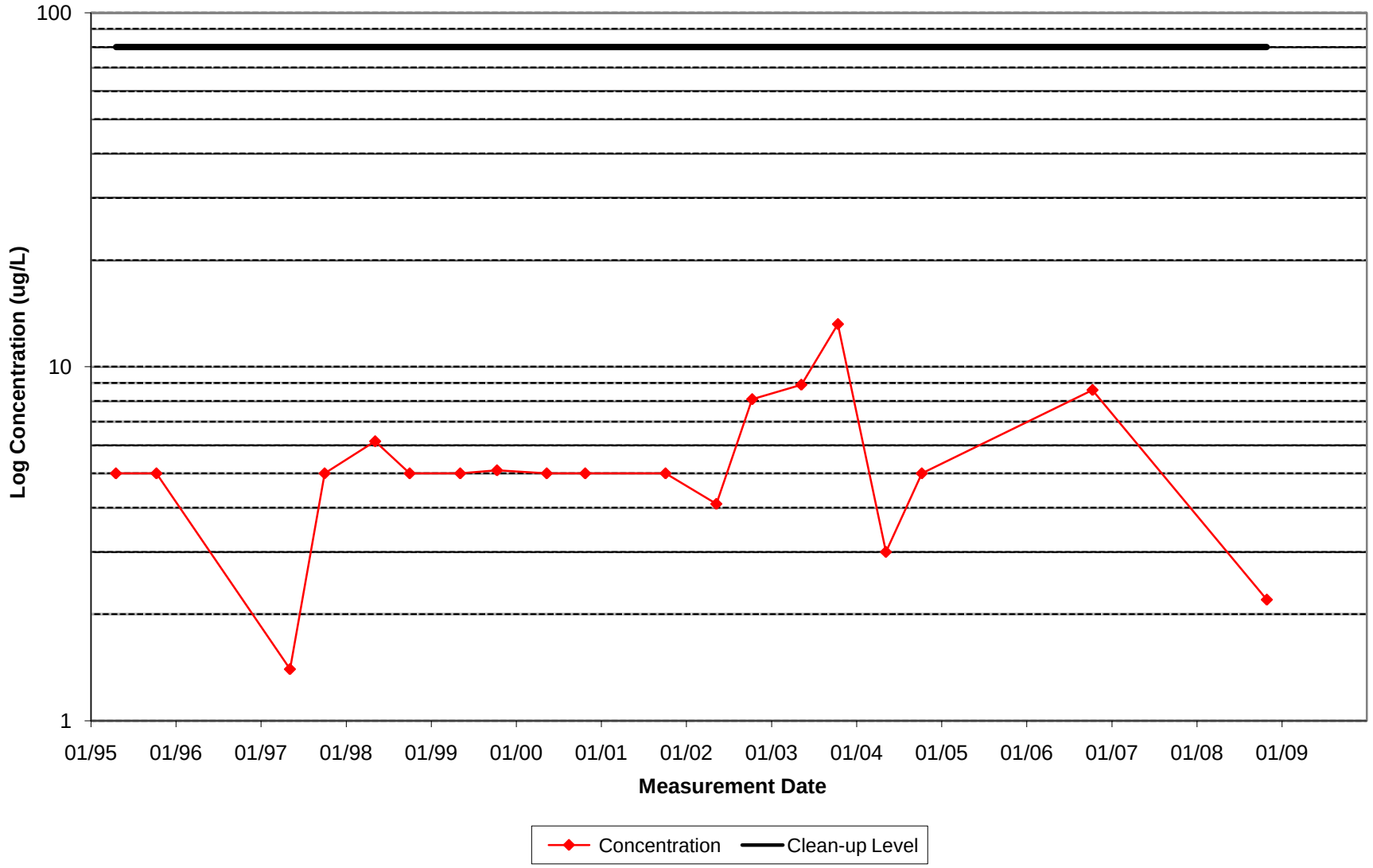
CPU-2 - Cr (ug/L)


100
10
1
Log Concentration (ug/L)
01/95
01/96
01/97
01/98
01/99
01/00
01/01
01/02
01/03
01/04
01/05
01/06
01/07
01/08
01/09
Measurement Date
Concentration
Clean-up Level

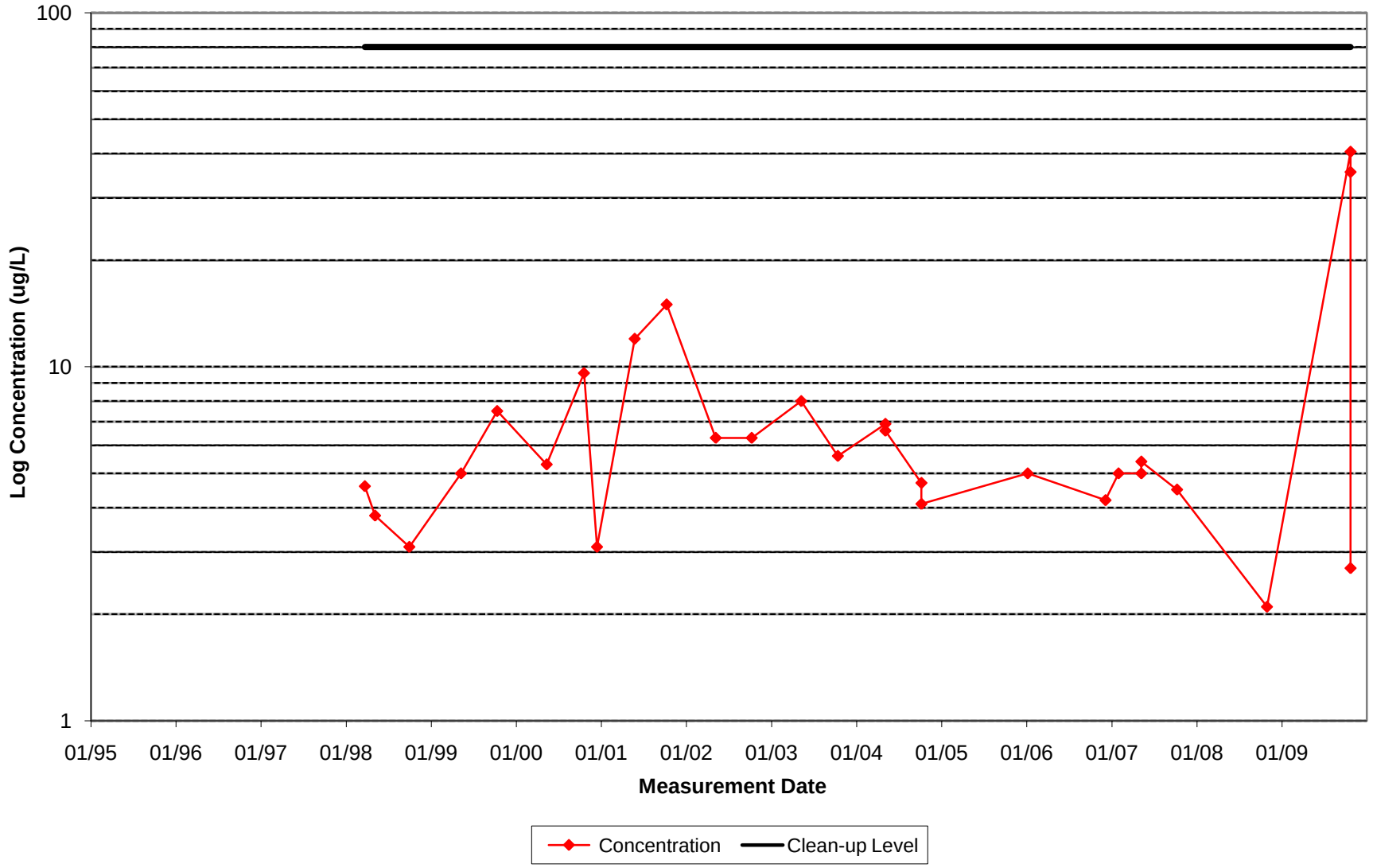
CPU-3D - Cr (ug/L)


100
10
1
Log Concentration (ug/L)
01/95
01/96
01/97
01/98
01/99
01/00
01/01
01/02
01/03
01/04
01/05
01/06
01/07
01/08
01/09
Measurement Date
Concentration
Clean-up Level

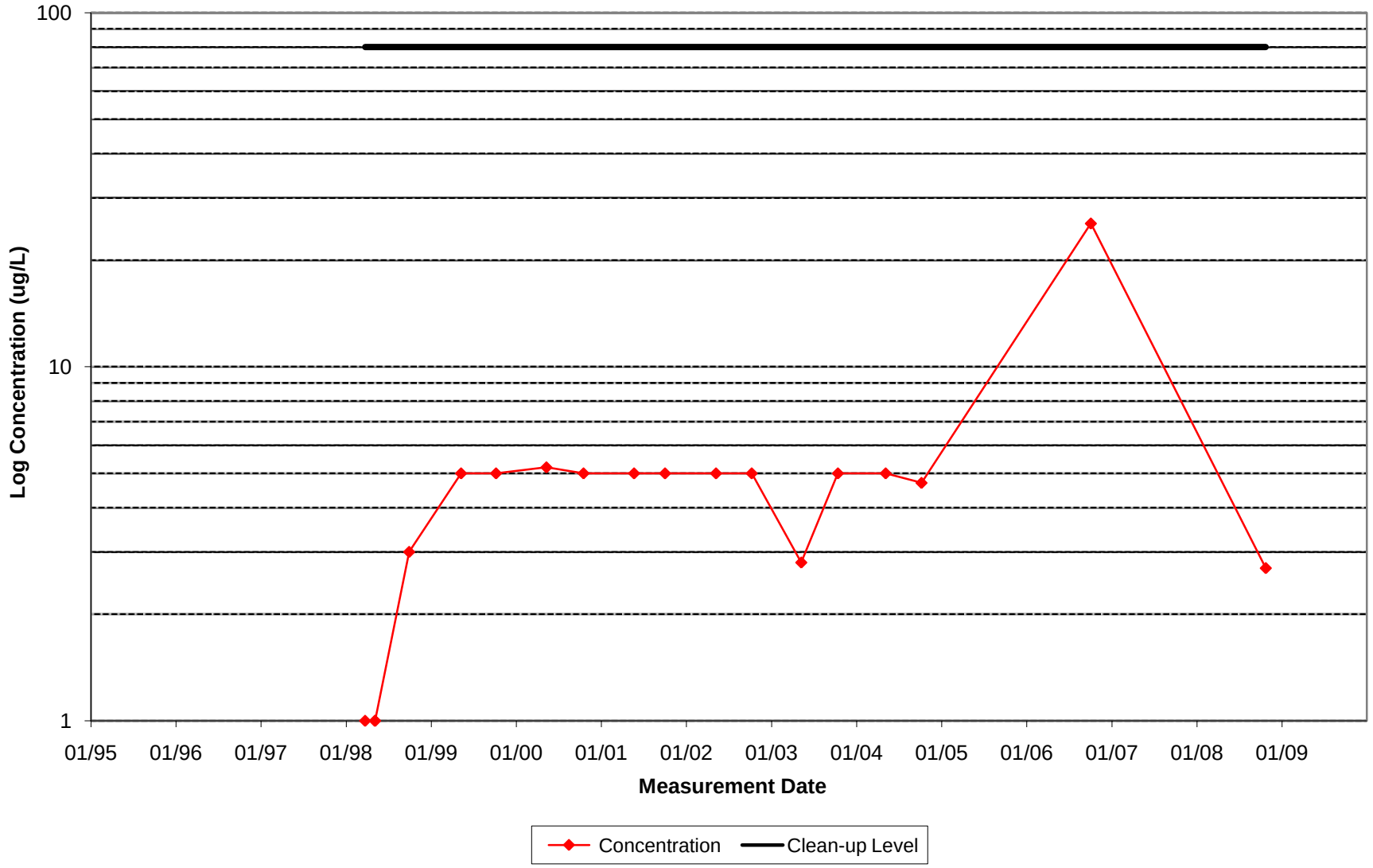
CPU-10 - Cr (ug/L)


100
10
1
Log Concentration (ug/L)
01/95
01/96
01/97
01/98
01/99
01/00
01/01
01/02
01/03
01/04
01/05
01/06
01/07
01/08
01/09
Measurement Date
Concentration
Clean-up Level

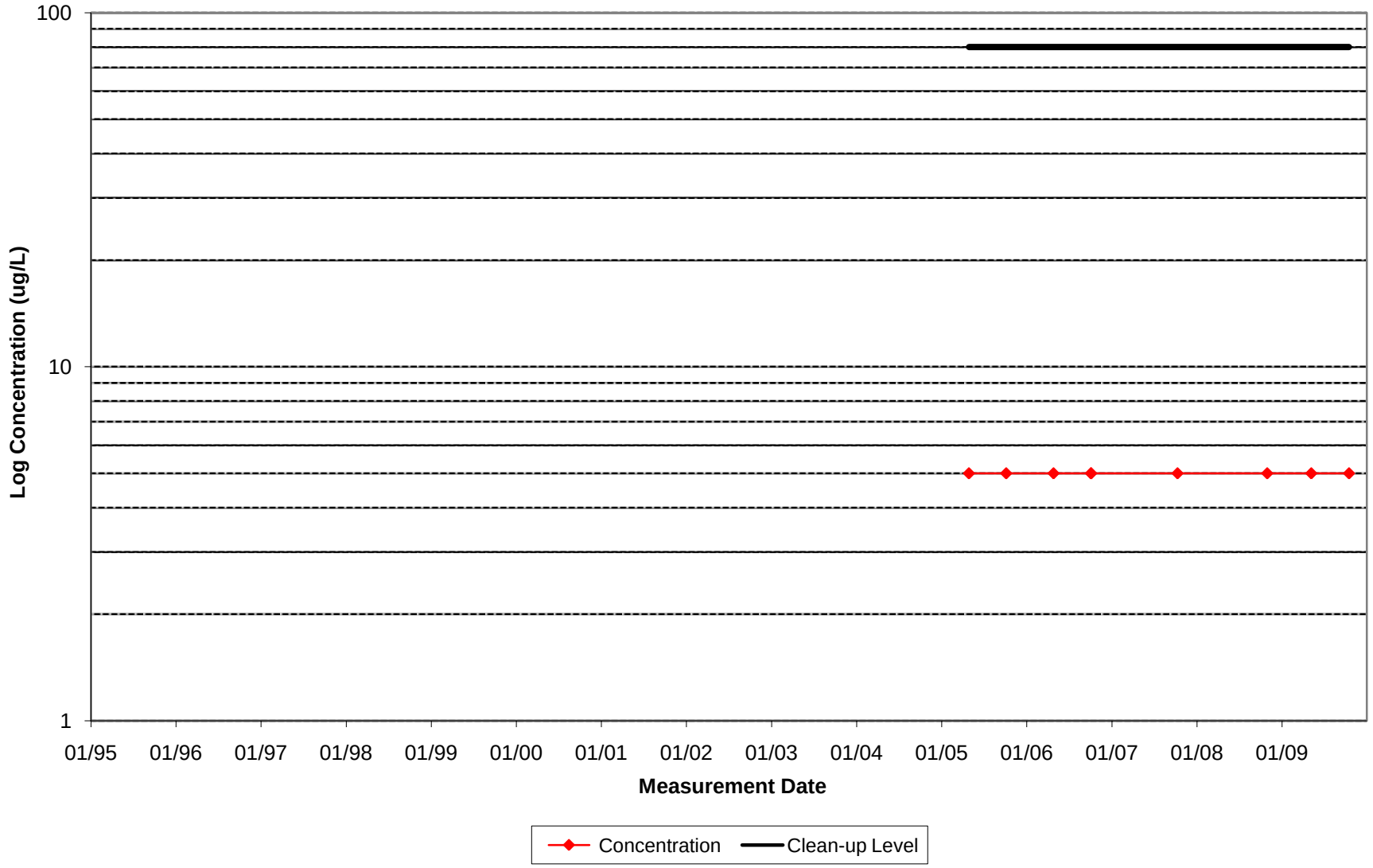
MW-33 - Cr (ug/L)


100
10
1
Log Concentration (ug/L)
01/95
01/96
01/97
01/98
01/99
01/00
01/01
01/02
01/03
01/04
01/05
01/06
01/07
01/08
01/09
Measurement Date
Concentration
Clean-up Level

MW-34 - Cr (ug/L)


100
10
1
Log Concentration (ug/L)
01/95
01/96
01/97
01/98
01/99
01/00
01/01
01/02
01/03
01/04
01/05
01/06
01/07
01/08
01/09
Measurement Date
Concentration
Clean-up Level

BENNETT - Cr (ug/L)



APPENDIX B

TCE CONCENTRATIONS IN GROUNDWATER

APPENDIX B-1

TCE CONCENTRATIONS – SUMMARY TABLES

UPGRADIENT WELLS
TCE CONCENTRATION SUMMARY

Wells	Historical Maximum		Spring 2008	Fall 2008	Spring 2009	Fall 2009
	Date	Result				
AMW-6A	5/2/2007	0.93	0.65	0.51	0.58	0.38 J
AMW-7A	1/29/2007	1.0	0.52	0.46 J	0.58	0.45 J
AMW-8A	4/25/1995	**692**	1.4	0.91	1.1	1.0
AMW-10A	4/19/1995	0.79 J	0.39 J	0.42 J	0.51	0.27 J
AMW-11A	1/29/2007	1.5	0.66	0.46 J	0.49 J	0.48 J

NOTES: J = The result is an estimated concentration that is less than the Method Reporting Limit but greater than or equal to the Method Detection Limit.
U = Analyte not detected above the specified reporting limit.
-- = Well not sampled during this monitoring event.
Results are in micrograms per liter (µg/L).
Results shown in **red** are above the cleanup level of 5 µg/L.

TCE SOURCE WELLS
TCE CONCENTRATION SUMMARY

Wells	Historical Maximum		Spring 2008	Fall 2008	Spring 2009	Fall 2009
	Date	Result				
AMW-1A	10/12/1995	**1,290**	0.26 J	0.39 J	0.32 J	**12**
AMW-1B	4/26/1995	**82.2**	0.41 J	0.50	0.49 J	0.51
AMW-1C	4/25/1995	**73.9**	--	0.50 U	--	0.5 U
AMW-2A	10/13/1995	**5,350**	1.1	**18**	**83**	**60**
AMW-2B	4/26/1995	**30.8 J**	0.64	0.61	0.65	0.53
RAMW-2C	10/7/1997	0.9	--	0.27 J	--	0.34 J
AMW-3A	5/15/1996	**34**	0.52	0.48 J	0.66	0.68
AMW-4A	4/18/1995	0.4 J	--	--	--	0.23 J
AMW-12A	5/9/1997	**19,300 J**	**27**	**26**	**21**	**24**
AMW-13A	10/12/1995	**74.8**	0.50 U	0.21 J	0.94	0.58
AMW-19A	5/14/2002	**490 D**	1.6	1.9	1.9	1.7
AMW-19B	10/3/2007	0.77	--	0.72	--	0.54
AMW-26	10/2/2001	**100 D**	0.20 J	0.24 J	0.33 J	2.3
AMW-52A	2/1/2006	**29**	0.10 J	0.07 J	0.08 J	0.5 U
AMW-52C	10/13/2009	0.50 U	--	0.50 U	--	0.5 U
AMW-53A	12/9/2003	**240 D**	4.4	**8.9**	3.1	**14**
AMW-53B	8/3/2004	2.7	--	0.53	--	0.56
AMW-53C	10/13/2009	0.21 J	--	0.50 U	--	0.21 J
AMW-54A	10/12/2004	**190 D**	0.84	1.9	2.2	2.5
AMW-54C	10/13/2009	0.36 J	--	0.26 J	--	0.36 J
AMW-55A	8/3/2004	**39**	0.72	0.65	0.82	0.97
AMW-55C	10/13/2009	0.39 J	--	0.23 J	--	0.39 J
AMW-56A	12/9/2003	**610 D**	0.75	0.97	0.47 J	0.41 J

TCE SOURCE WELLS
TCE CONCENTRATIONS SUMMARY Continued

Wells	Historical Maximum		Spring 2008	Fall 2008	Spring 2009	Fall 2009
	Date	Result				
AMW-56C	1/20/2009	0.44 J	0.30 J	0.39 J	0.4 J	0.4 J
MW-1A	5/10/1999	**3,900 D**	**7.6**	**13**	**10**	**10**
MW-1B	6/28/2000	**400**	--	0.50 U	--	0.28 J
MW-1C	4/27/1995	**92**	--	0.50 U	--	0.5 U

NOTES
J = The result is an estimated concentration that is less than the Method Reporting Limit but greater than or equal to the Method Detection Limit.
U = Analyte not detected above the specified reporting limit.
-- = Well not sampled during this monitoring event.
Results are in micrograms per liter (µg/L).
Results shown in **red** are above the cleanup level of 5 µg/L.
Wells shown in **red** were above the cleanup level of 5 µg/L during the 2009 reporting period.

PROXIMAL WELLS
TCE CONCENTRATION SUMMARY

Wells	Historical Maximum		Spring 2008	Fall 2008	Spring 2009	Fall 2009
	Date	Result				
MW-2B	9/30/1998	**29**	--	--	--	2.4
MW-2C	5/2/1995	**40.5**	--	--	--	0.36 J
MW-3B	10/13/1999	**32**	--	--	--	2.3
MW-4A	5/24/2001	**210**	--	--	--	**5.5**
MW-4BShed	5/10/2000	**198**	--	--	--	4.1
MW-4C	5/12/1998	**40**	--	--	--	3.8
MW-6A	5/1/1995	**38.1**	--	--	--	0.5 U
MW-6B	5/10/1997	**1,230**	**10**	**5.7**	**7.3**	**6.4**
MW-6C	4/27/1995	**66.7**	--	--	--	0.54
MW-6D	4/27/1995	**63.5**	--	--	--	4.3
MW-7B	4/27/1995	**984**	--	--	--	**7.3**
MW-7C	5/1/1995	**26.5**	--	--	--	0.18 J
MW-9C	10/17/1995	**2,280**	--	--	--	3.8
MW-10B	10/8/1997	**1,300**	**28**	**25**	**28**	**21**
MW-10C	10/6/1998	**1,500 J**	**7.9**	**6.0**	**7.3**	4.9
MW-12C	4/26/1995	**9,430**	--	**15**	--	**11**
MW-13C	5/15/1996	**35**	--	2.1	--	**5.6**
PW-1B	5/5/1999	**900 D**	**6.2**	4.5	**5.2**	3.6

NOTES:
J = The result is an estimated concentration that is less than the Method Reporting Limit but greater than or equal to the Method Detection Limit.
-- = Well not sampled during this monitoring event.
Results are in micrograms per liter (µg/L).
Results shown in **red** are above the cleanup level of 5 µg/L.
Wells shown in **red** were above the cleanup level of 5 µg/L during the 2009 reporting period.

INTERMEDIATE PLUME WELLS
TCE CONCENTRATION SUMMARY

Wells	Historical Maximum		Spring 2008	Fall 2008	Spring 2009	Fall 2009
	Date	Result				
AMW-16	4/25/1995	**87**	--	2.7	--	2.2
AMW-17	4/24/1995	**66.9**	--	1.2	1.3	1.2
AMW-18	5/7/2008	**460 D**	**460**	**390**	**320**	**210**
AMW-59	10/4/2006	**310 D**	--	**95**	--	**130**
AMW-60	4/28/2005	0.94	--	--	--	0.5 U
CPU-14	10/23/2000	**63**	--	**9.8**	--	**10**
MW-14C	5/4/1998	**2,500**	**28**	**20**	**23**	**22**
MW-14E	5/10/1997	**6,540**	**100**	**95**	**100**	**87**
MW-15E	5/8/1997	**1,100**	--	**9.9**	**8.4**	**7.5**
MW-16E	10/9/2007	**5.7**	--	**5.1**	--	2.8
MW-18D	1/19/1995	**7,800 J**	**120**	**95**	**97**	**86**
MW-18E	5/12/1998	**2,700**	--	**250**	--	**160**
MW-19D	2/3/1995	**6,300 J**	**47**	**48**	**53**	**44**
MW-20D	10/11/1999	**4,100 J**	**58**	**48**	**53**	**42**
PZ-39*	12/20/2009	**2,100 J**	--	--	--	**99**

NOTES: D = Reported result is from a dilution.
J = The result is an estimated concentration that is less than the Method Reporting Limit but greater than or equal to the Method Detection Limit.
U = Analyte not detected above the specified reporting limit.
-- = Well not sampled during this monitoring event.
* = Sampled for the first time during the Fall 2009 monitoring event.
Results are in micrograms per liter (µg/L).
Results shown in **red** are above the cleanup level of 5 µg/L.
Wells shown in **red** were above the cleanup level of 5 µg/L during the 2009 reporting period.

CHURCH OF GOD WELLS
TCE CONCENTRATION SUMMARY

Wells	Historical Maximum		Spring 2008	Fall 2008	Spring 2009	Fall 2009
	Date	Result				
AMW-14	4/20/1995	**506**	--	1.0	--	0.88
AMW-27	6/2/1999	**83**	**29**	**23**	**23**	**19**
CPU-12	5/7/2002	**13**	--	4.0	--	4.9
CPU-13	10/8/1997	**110**	2.6	2.2	2.2	1.9
MW-21D	2/3/1995	**3,000 J**	**14**	**11**	**11**	**11**
MW-22D	6/9/1997	**390**	**14**	**11**	**12**	**10**
MW-23D	10/1/1998	**67**	--	2.6	--	2.5
MW-25D	1/19/1995	**200 J**	1.9	1.9	1.9	1.4
MW-26D	10/10/2001	**52**	1.8	1.9	1.5	1.3
MW-27D	10/8/1997	**280**	0.76	0.62	0.72	0.46 J
MW-49	12/21/2000	**340 D**	**5.0**	4.9	3.4	2.9

NOTES:
J = The result is an estimated concentration that is less than the Method Reporting Limit but greater than or equal to the Method Detection Limit.
-- = Well not sampled during this monitoring event.
Results are in micrograms per liter (µg/L).
Results shown in **red** are above the cleanup level of 5 µg/L.
Wells shown in **red** were above the cleanup level of 5 µg/L during the 2009 reporting period.

TOE OF PLUME WELLS
TCE CONCENTRATION SUMMARY

Wells	Historical Maximum		Spring 2008	Fall 2008	Spring 2009	Fall 2009
	Date	Result				
Sentinel:						
AMW-43	10/14/2009	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Other:						
AMW-42	5/10/1999	**73**	--	1.2	--	1.3
AMW-63	10/15/2009	0.17 J	0.08 UJ	0.5 U	0.1 J	0.17 J
MW-31	5/12/1998	**32**	--	0.36 J	--	0.3 J
MW-35	9/14/1999	**110 D**	**5.9**	4.9	**5.5**	**6.8**
MW-41	10/19/2004	**8.3**	0.5 U	0.5 U	0.5 U	0.5 U
MW-46	10/14/2009	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-48	2/14/2001	**20**	--	0.5 U	--	0.5 U

NOTES: D = Reported result is from a dilution.
J = The result is an estimated concentration that is less than the Method Reporting Limit but greater than or equal to the Method Detection Limit.
U = Analyte not detected above the specified reporting limit.
-- = Well not sampled during this monitoring event.
Results are in micrograms per liter (µg/L).
Results shown in **red** are above the cleanup level of 5 µg/L.
Wells shown in **red** were above the cleanup level of 5 µg/L during the 2009 reporting period.

TROUTDALE WELLS
TCE CONCENTRATION SUMMARY

Wells	Historical Maximum		Spring 2008	Fall 2008	Spring 2009	Fall 2009
	Date	Result				
AMW-24	10/7/1999	**25**	--	**14**	--	**13**
AMW-62	10/15/2009	0.50 U	0.50 U	0.50 U	--	0.5 U
MW-33	10/8/2001	**19**	--	**7.7**	--	**12**
PRIVATE (BENNETT)	10/15/2009	**10**	--	**9.0**	**9.5**	**10**

NOTES: U = Analyte not detected above the specified reporting limit.
J = The result is an estimated concentration that is less than the Method Reporting Limit but greater than or equal to the Method Detection Limit.
-- = Well not sampled during this monitoring event.
Results are in micrograms per liter (µg/L).
Results shown in **red** are above the cleanup level of 5 µg/L.
Wells shown in **red** were above the cleanup level of 5 µg/L during the 2009 reporting period.

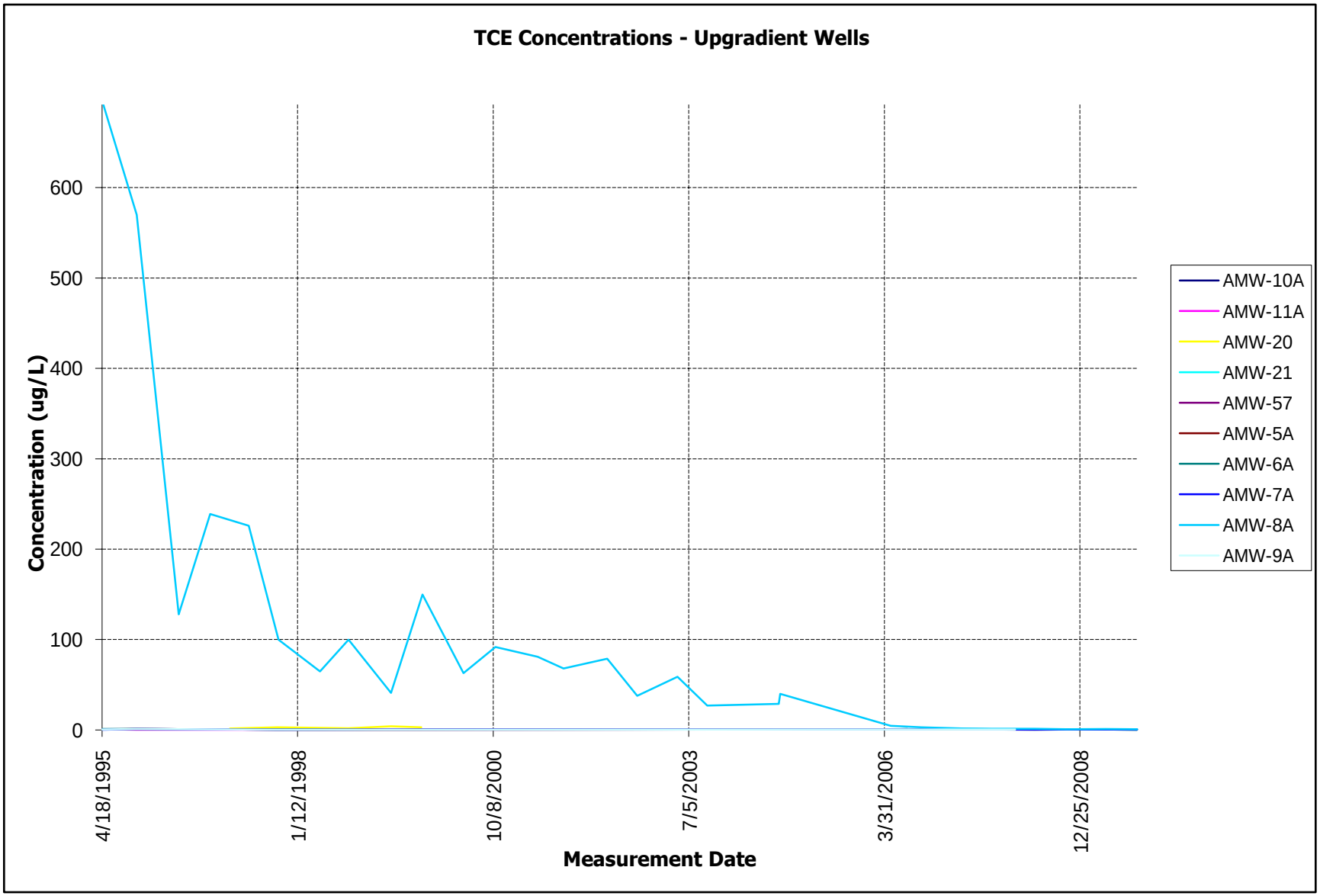
WELLS SAMPLED EVERY FIVE YEARS
TCE CONCENTRATION SUMMARY

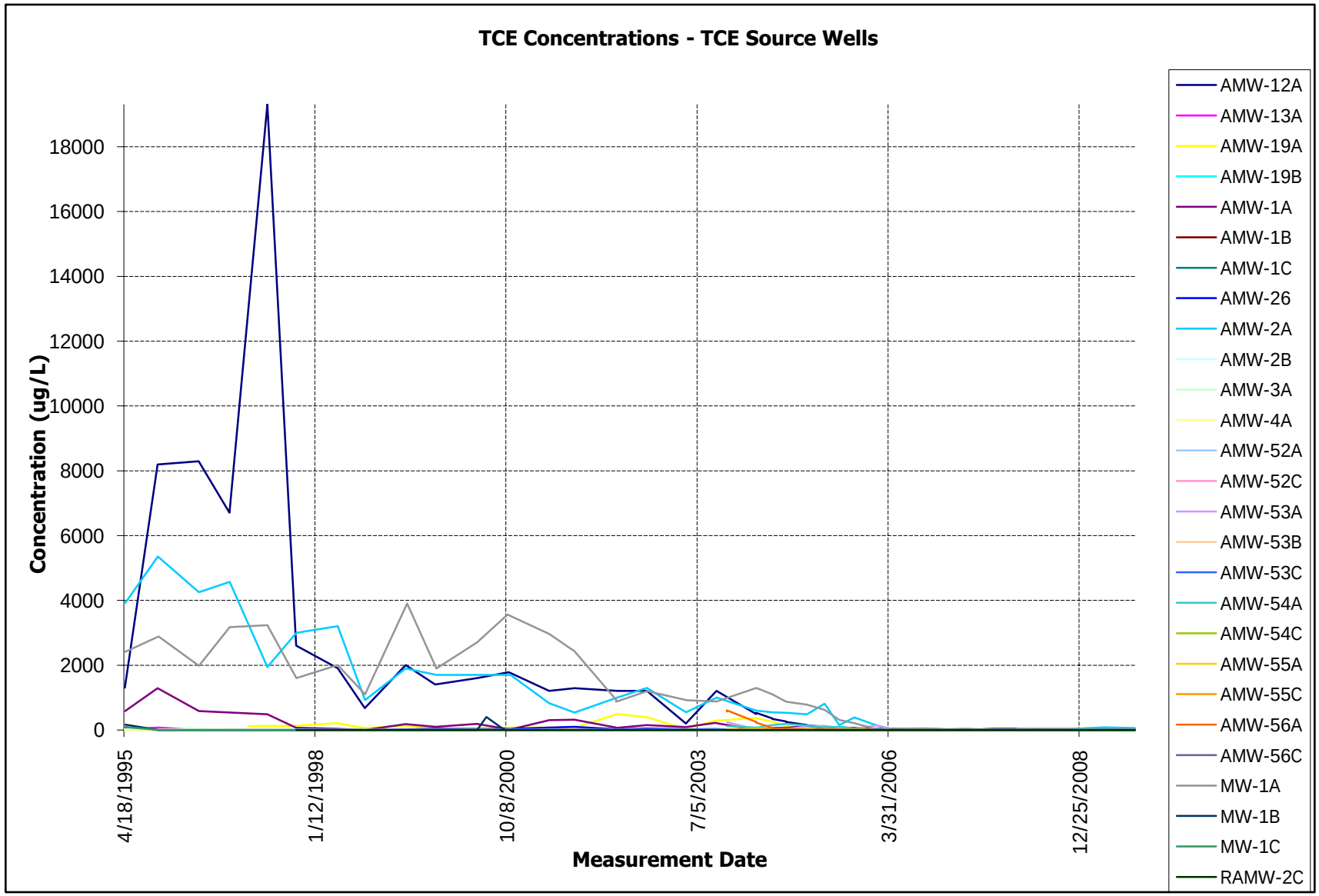
Well Grouping	Wells	Historical Maximum		Last Sampling		Fall 2009
		Date	Result	Date	Result	
Proximal Source Wells	MW-2B	9/30/1998	**29**	10/8/2004	**6.5**	2.4
	MW-2C	5/2/1995	**40.5**	10/8/2004	2.1	0.36 J
	MW-3B	10/13/1999	**32**	10/11/2004	3.9	2.3
	MW-4A	5/24/2001	**210**	10/12/2004	3.5	**5.5**
	MW-4BShed	5/10/2000	**198**	10/12/2004	**5.2**	4.1
	MW-4C	5/12/1998	**40**	10/8/2004	**11**	3.8
	MW-6A	5/1/1995	**38.1**	10/3/1997	0.3 U	0.5 U
	MW-6C	4/27/1995	**66.7**	10/8/2004	**9.7**	0.54
	MW-6D	4/27/1995	**63.5**	10/11/2004	**6.7**	4.3
	MW-7B	4/27/1995	**984**	10/11/2004	**110**	**7.3**
	MW-7C	5/1/1995	**26.5**	10/11/2004	0.74	0.18 J
	MW-9C	10/17/1995	**2280**	10/13/2004	**10**	3.8
Intermediate Wells	AMW-60	4/28/2005	0.94	4/28/2005	0.94	0.5 U

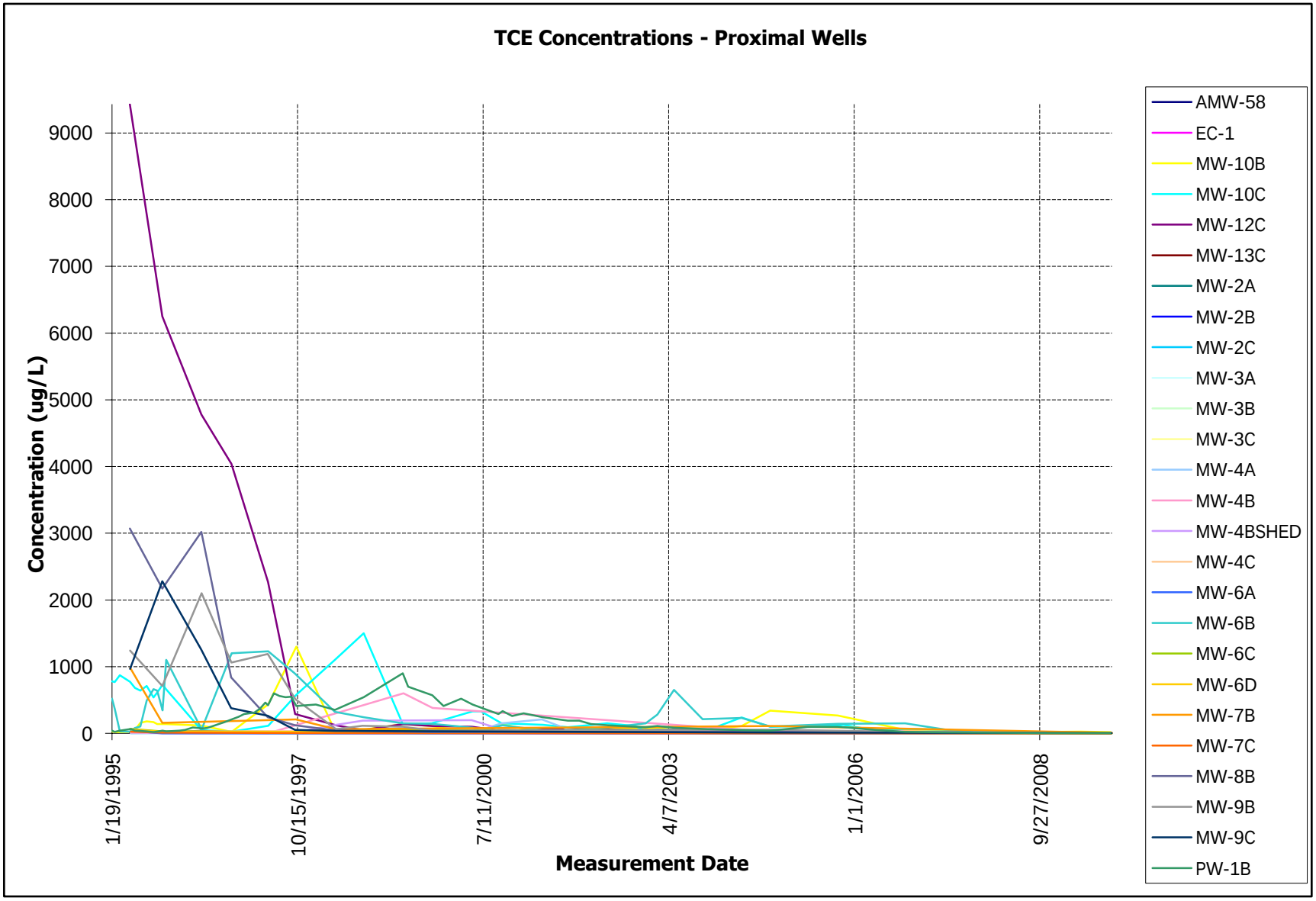
NOTES D = Reported result is from a dilution.
J = The result is an estimated concentration that is less than the Method Reporting Limit but greater than or equal to the Method Detection Limit.
U = Analyte not detected above the specified reporting limit.
-- = Well not sampled during this monitoring event.
Results are in micrograms per liter (µg/L).
Results shown in **red** are above the cleanup level of 5 µg/L.
Wells shown in **red** were above the cleanup level of 5 µg/L during the 2008 reporting period.

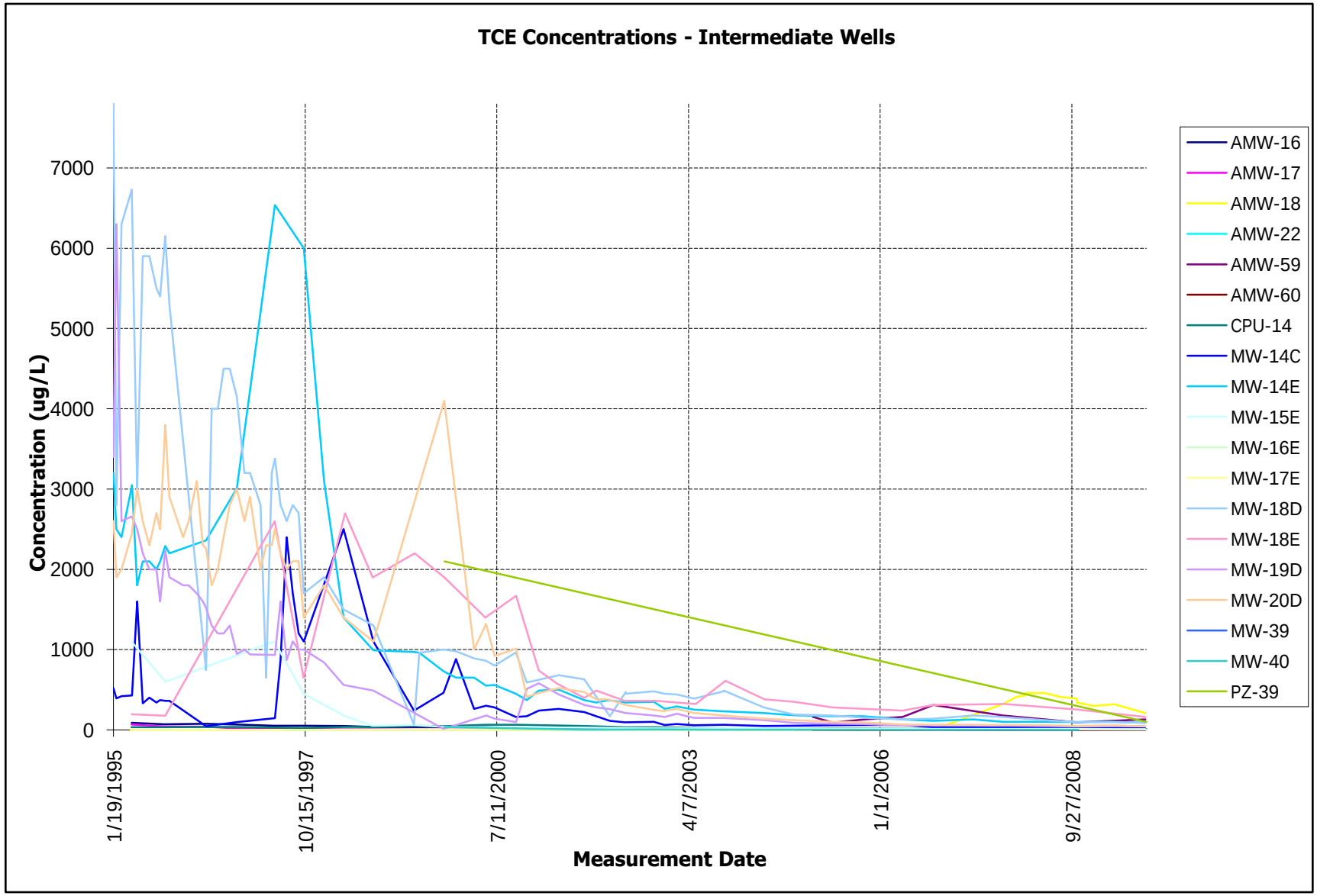
APPENDIX B-2

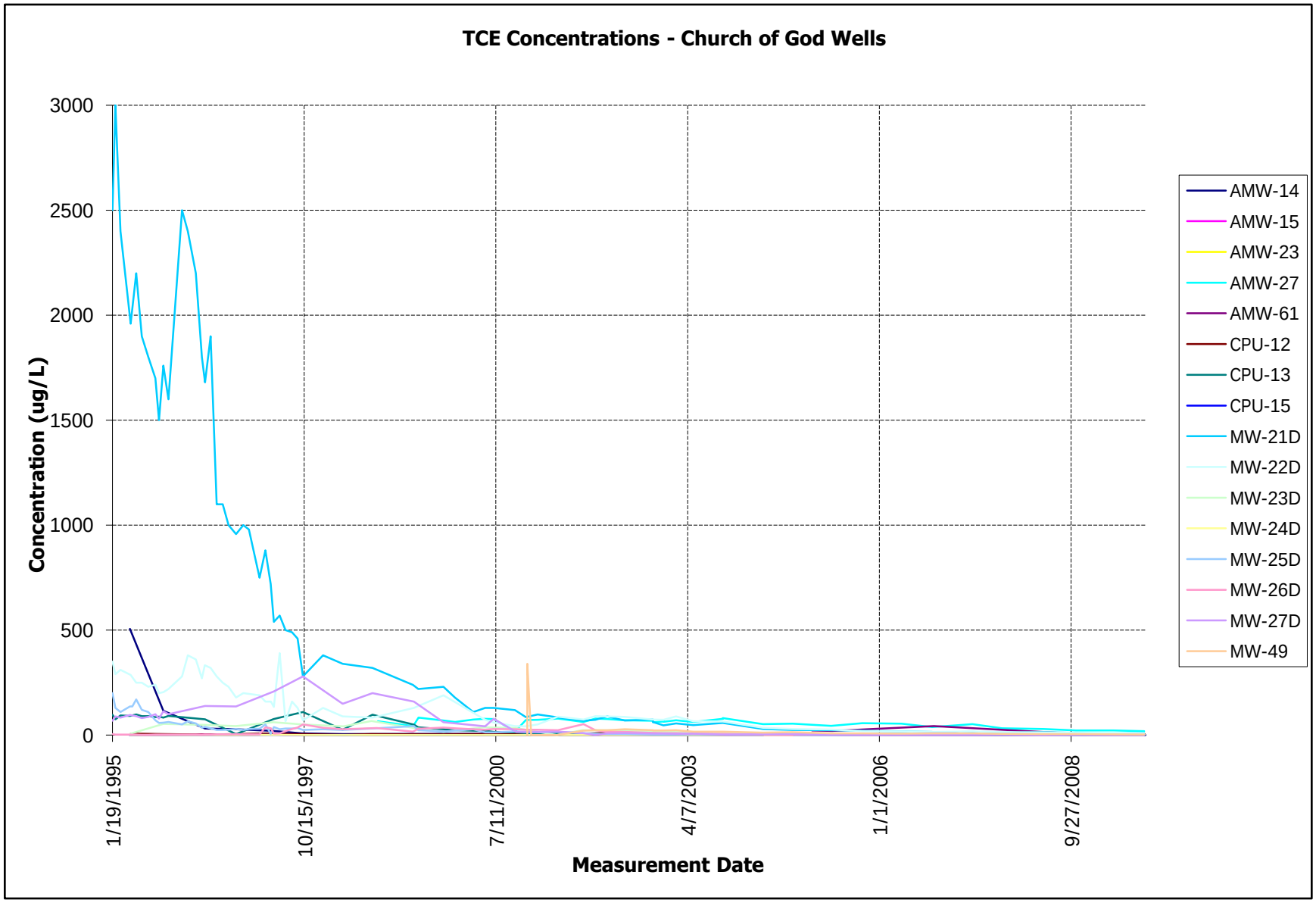
TCE CONCENTRATIONS –
BY WELL GROUPING

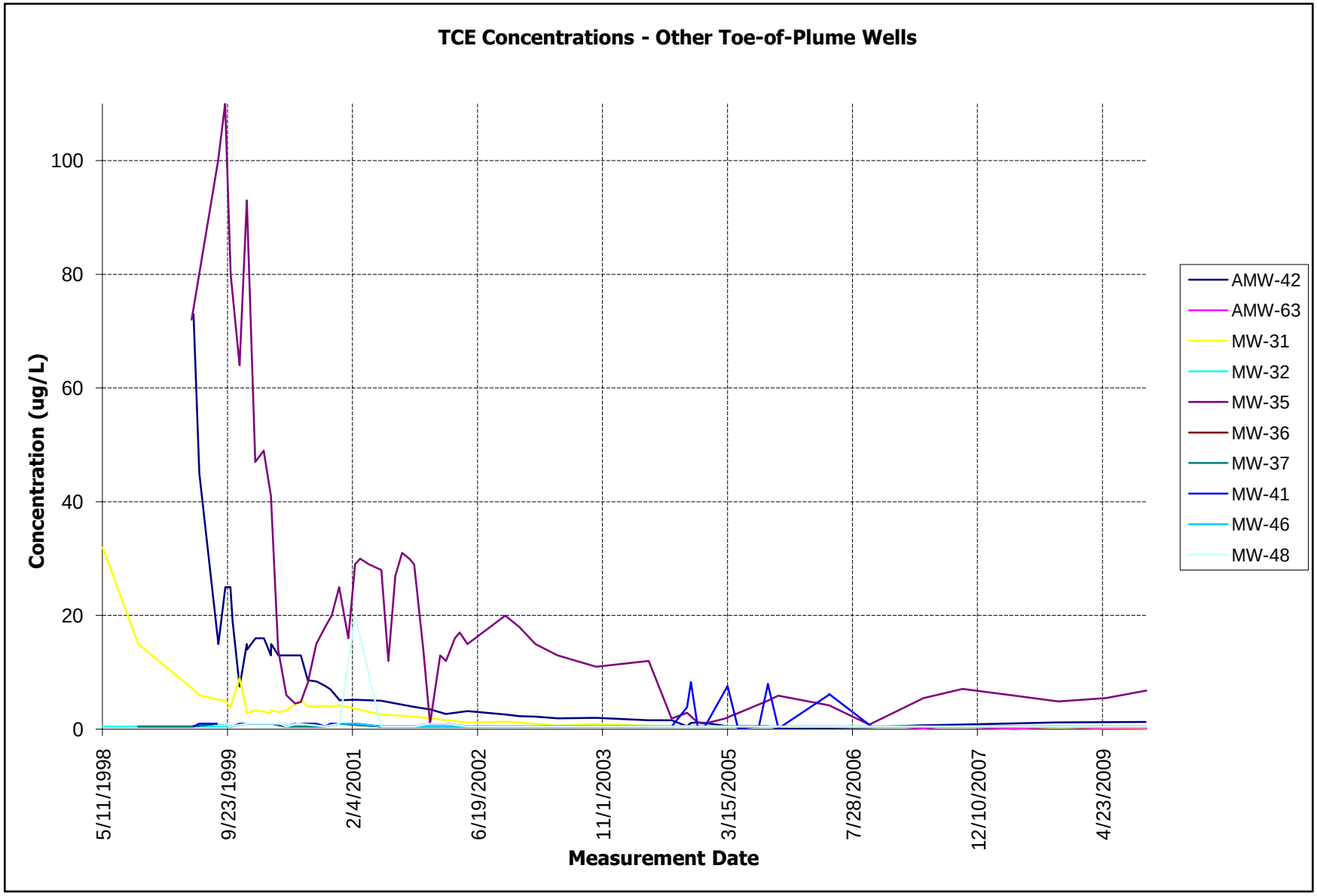

TCE Concentrations - Upgradient Wells
Concentration (ug/L)
0
100
200
300
400
500
600
4/18/1995
1/12/1998
10/8/2000
7/5/2003
3/31/2006
12/25/2008
Measurement Date
AMW-10A
AMW-11A
AMW-20
AMW-21
AMW-57
AMW-5A
AMW-6A
AMW-7A
AMW-8A
AMW-9A

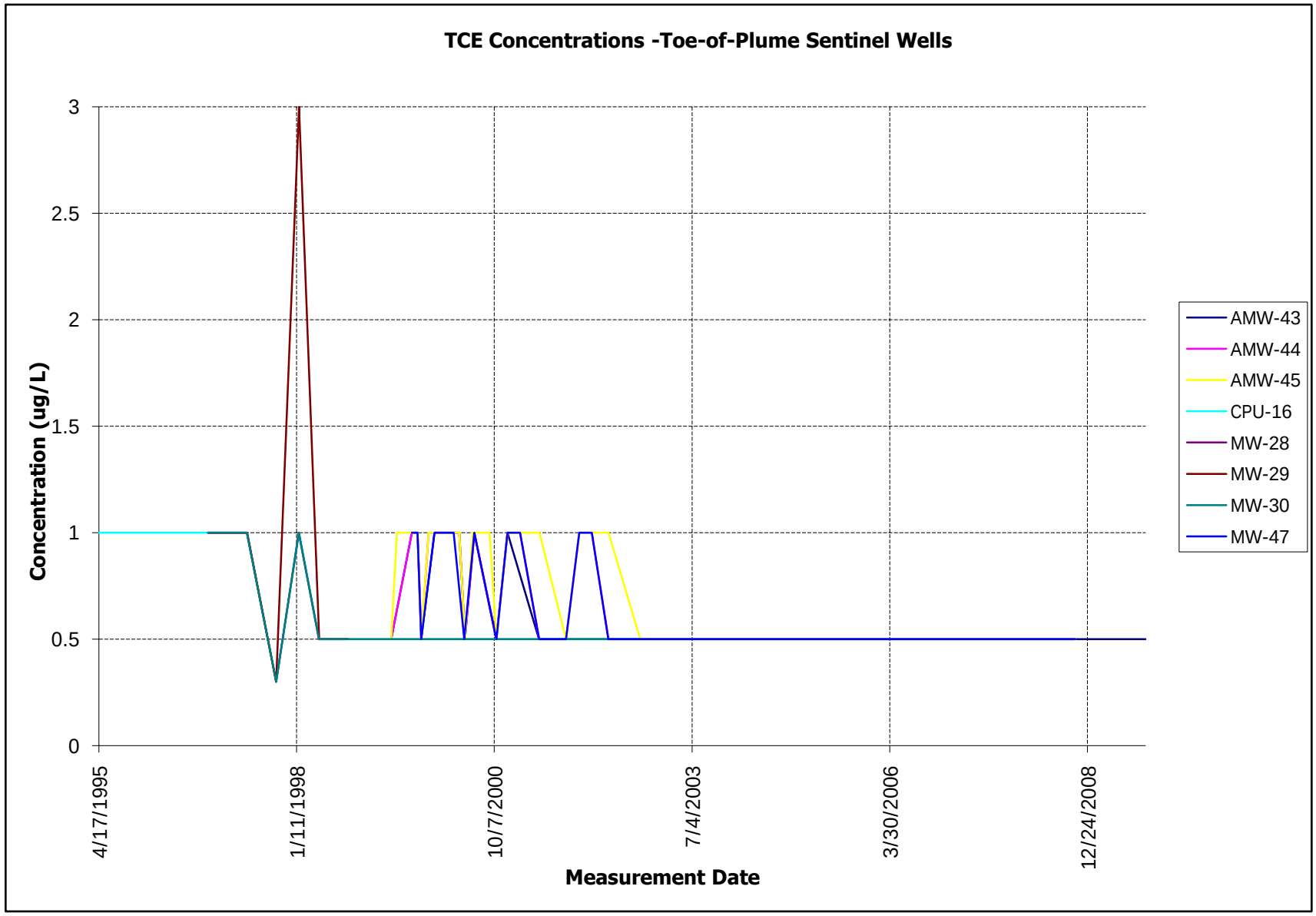

TCE Concentrations - TCE Source Wells
Concentration (ug/L)
18000
16000
14000
12000
10000
8000
6000
4000
2000
0
4/18/1995
1/12/1998
10/8/2000
7/5/2003
3/31/2006
12/25/2008
Measurement Date
AMW-12A
AMW-13A
AMW-19A
AMW-19B
AMW-1A
AMW-1B
AMW-1C
AMW-26
AMW-2A
AMW-2B
AMW-3A
AMW-4A
AMW-52A
AMW-52C
AMW-53A
AMW-53B
AMW-53C
AMW-54A
AMW-54C
AMW-55A
AMW-55C
AMW-56A
AMW-56C
MW-1A
MW-1B
MW-1C
RAMW-2C

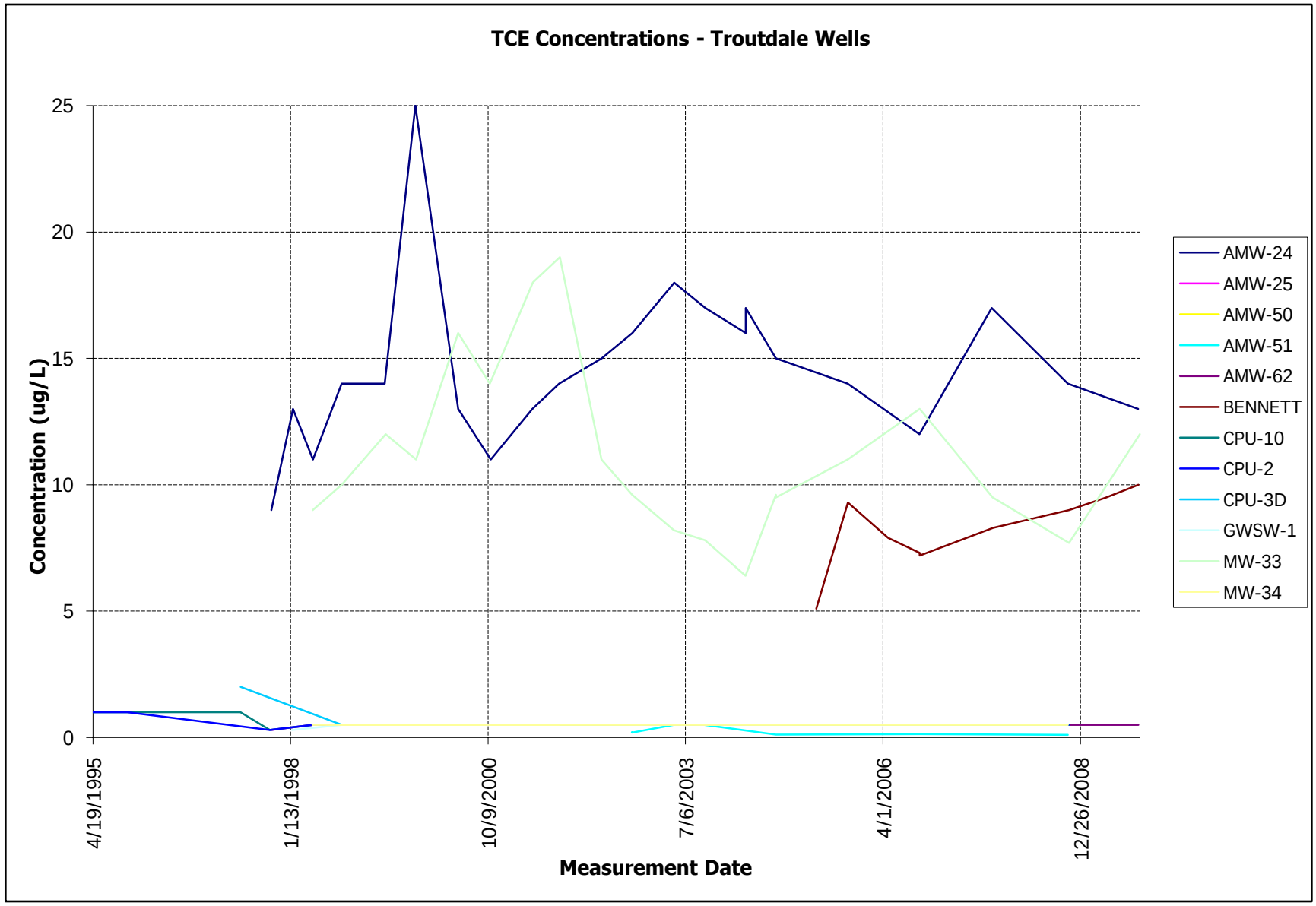

TCE Concentrations - Proximal Wells
Concentration (ug/L)
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
1/19/1995
10/15/1997
7/11/2000
4/7/2003
1/1/2006
9/27/2008
Measurement Date
AMW-58
EC-1
MW-10B
MW-10C
MW-12C
MW-13C
MW-2A
MW-2B
MW-2C
MW-3A
MW-3B
MW-3C
MW-4A
MW-4B
MW-4BSHED
MW-4C
MW-6A
MW-6B
MW-6C
MW-6D
MW-7B
MW-7C
MW-8B
MW-9B
MW-9C
PW-1B


TCE Concentrations - Intermediate Wells
Concentration (ug/L)
7000
6000
5000
4000
3000
2000
1000
0
1/19/1995
10/15/1997
7/11/2000
4/7/2003
1/1/2006
9/27/2008
Measurement Date
AMW-16
AMW-17
AMW-18
AMW-22
AMW-59
AMW-60
CPU-14
MW-14C
MW-14E
MW-15E
MW-16E
MW-17E
MW-18D
MW-18E
MW-19D
MW-20D
MW-39
MW-40
PZ-39


TCE Concentrations - Church of God Wells
Concentration (ug/L)
3000
2500
2000
1500
1000
500
0
1/19/1995
10/15/1997
7/11/2000
4/7/2003
1/1/2006
9/27/2008
Measurement Date
AMW-14
AMW-15
AMW-23
AMW-27
AMW-61
CPU-12
CPU-13
CPU-15
MW-21D
MW-22D
MW-23D
MW-24D
MW-25D
MW-26D
MW-27D
MW-49


TCE Concentrations - Other Toe-of-Plume Wells
Concentration (ug/L)
100
80
60
40
20
0
5/11/1998
9/23/1999
2/4/2001
6/19/2002
11/1/2003
3/15/2005
7/28/2006
12/10/2007
4/23/2009
Measurement Date
AMW-42
AMW-63
MW-31
MW-32
MW-35
MW-36
MW-37
MW-41
MW-46
MW-48


TCE Concentrations -Toe-of-Plume Sentinel Wells
Concentration (ug/L)
3
2.5
2
1.5
1
0.5
0
4/17/1995
1/11/1998
10/7/2000
7/4/2003
3/30/2006
12/24/2008
Measurement Date
AMW-43
AMW-44
AMW-45
CPU-16
MW-28
MW-29
MW-30
MW-47


TCE Concentrations - Troutdale Wells
Concentration (ug/L)
25
20
15
10
5
0
4/19/1995
1/13/1998
10/9/2000
7/6/2003
4/1/2006
12/26/2008
Measurement Date
AMW-24
AMW-25
AMW-50
AMW-51
AMW-62
BENNETT
CPU-10
CPU-2
CPU-3D
GWSW-1
MW-33
MW-34

APPENDIX B-3

TCE CONCENTRATIONS – INDIVIDUAL WELLS

APPENDIX B-3
TABLE OF CONTENTS

Intermediate Wells

Church of God Wells

Toe of Plume – Other Toe Wells

Toe of Plume – Sentinel Wells

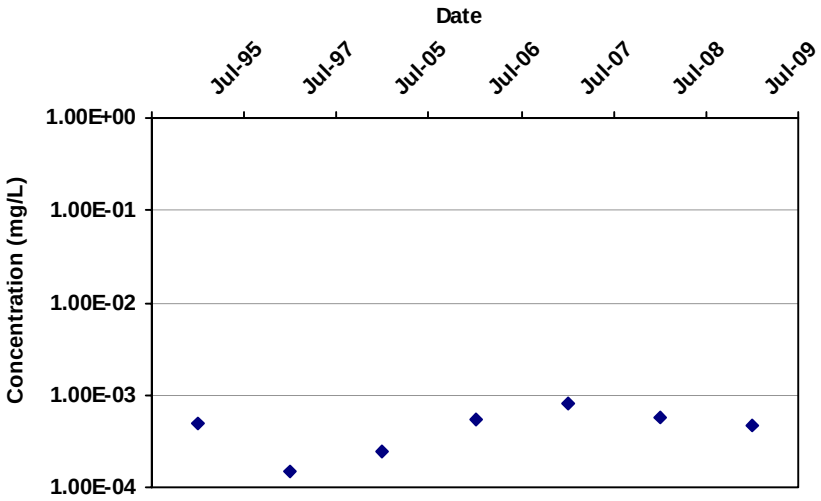
Troutdale Wells

UPGRADIENT WELLS

MAROS Mann-Kendall Statistics Summary

Well: AMW-6A
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: 7

Confidence in Trend: 80.9%

Coefficient of Variation: 0.46

Mann Kendall Concentration Trend: (See Note) NT

Data Table:

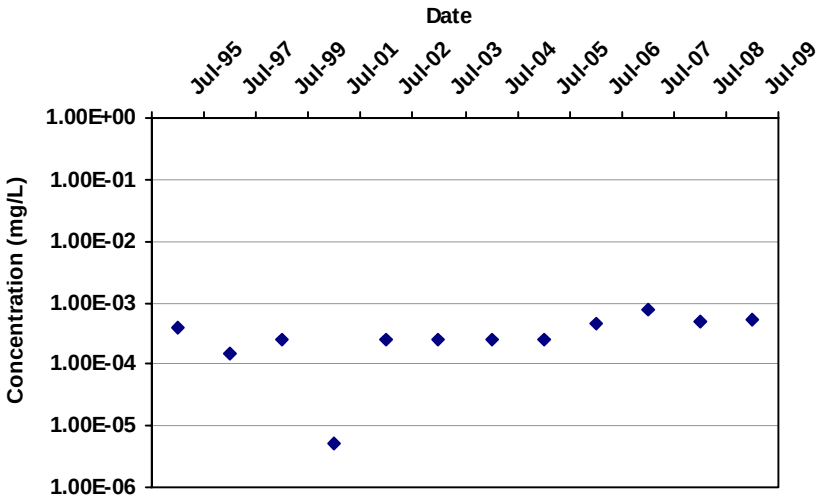
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
AMW-6A	T	7/1/1995	TRICHLOROETHYLENE (TCE)	5.0E-04	ND	2	0
AMW-6A	T	7/1/1997	TRICHLOROETHYLENE (TCE)	1.5E-04	ND	1	0
AMW-6A	T	7/1/2005	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	1	0
AMW-6A	T	7/1/2006	TRICHLOROETHYLENE (TCE)	5.5E-04		4	3
AMW-6A	T	7/1/2007	TRICHLOROETHYLENE (TCE)	8.2E-04		3	3
AMW-6A	T	7/1/2008	TRICHLOROETHYLENE (TCE)	5.8E-04		2	2
AMW-6A	T	7/1/2009	TRICHLOROETHYLENE (TCE)	4.7E-04		2	2

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: AMW-7A
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: 34

Confidence in Trend: 99.0%

Coefficient of Variation: 0.59

Mann Kendall Concentration Trend: (See Note) I

Data Table:

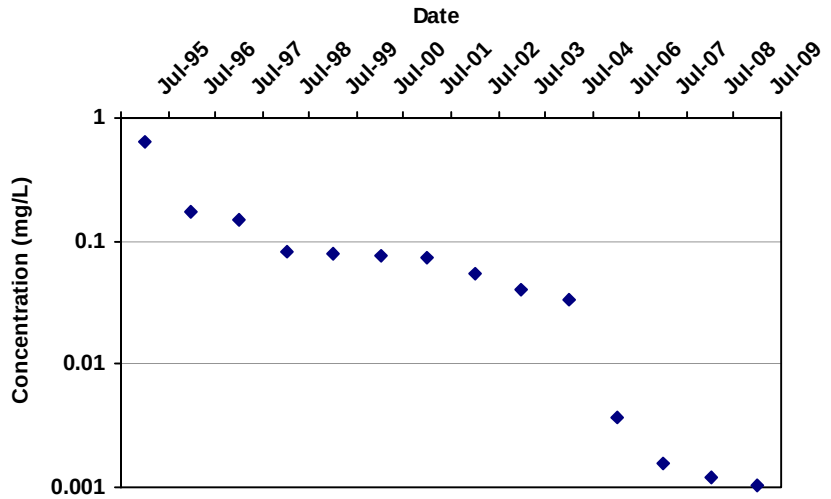
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
AMW-7A	T	7/1/1995	TRICHLOROETHYLENE (TCE)	4.0E-04		2	1
AMW-7A	T	7/1/1997	TRICHLOROETHYLENE (TCE)	1.5E-04	ND	1	0
AMW-7A	T	7/1/1999	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	1	0
AMW-7A	T	7/1/2001	TRICHLOROETHYLENE (TCE)	5.0E-06	ND	2	0
AMW-7A	T	7/1/2002	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	2	0
AMW-7A	T	7/1/2003	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	2	0
AMW-7A	T	7/1/2004	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	2	0
AMW-7A	T	7/1/2005	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	1	0
AMW-7A	T	7/1/2006	TRICHLOROETHYLENE (TCE)	4.7E-04		4	3
AMW-7A	T	7/1/2007	TRICHLOROETHYLENE (TCE)	7.4E-04		3	3
AMW-7A	T	7/1/2008	TRICHLOROETHYLENE (TCE)	4.9E-04		2	2
AMW-7A	T	7/1/2009	TRICHLOROETHYLENE (TCE)	5.1E-04		2	2

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: AMW-8A
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -91

Confidence in Trend: 100.0%

Coefficient of Variation: 1.61

Mann Kendall Concentration Trend: (See Note) D

Data Table:

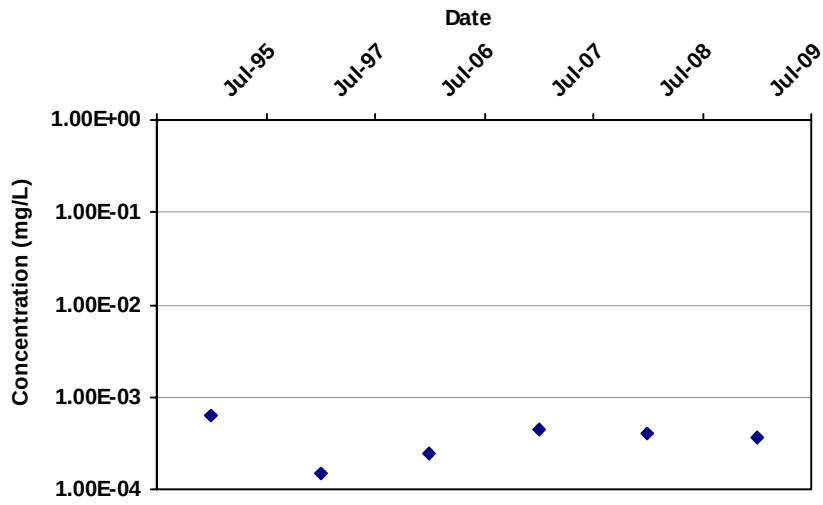
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
AMW-8A	T	7/1/1995	TRICHLOROETHYLENE (TCE)	6.3E-01		2	2
AMW-8A	T	7/1/1996	TRICHLOROETHYLENE (TCE)	1.7E-01		2	2
AMW-8A	T	7/1/1997	TRICHLOROETHYLENE (TCE)	1.5E-01		2	2
AMW-8A	T	7/1/1998	TRICHLOROETHYLENE (TCE)	8.1E-02		2	2
AMW-8A	T	7/1/1999	TRICHLOROETHYLENE (TCE)	7.8E-02		2	2
AMW-8A	T	7/1/2000	TRICHLOROETHYLENE (TCE)	7.6E-02		2	2
AMW-8A	T	7/1/2001	TRICHLOROETHYLENE (TCE)	7.4E-02		2	2
AMW-8A	T	7/1/2002	TRICHLOROETHYLENE (TCE)	5.5E-02		2	2
AMW-8A	T	7/1/2003	TRICHLOROETHYLENE (TCE)	4.0E-02		2	2
AMW-8A	T	7/1/2004	TRICHLOROETHYLENE (TCE)	3.4E-02		2	2
AMW-8A	T	7/1/2006	TRICHLOROETHYLENE (TCE)	3.8E-03		2	2
AMW-8A	T	7/1/2007	TRICHLOROETHYLENE (TCE)	1.5E-03		2	2
AMW-8A	T	7/1/2008	TRICHLOROETHYLENE (TCE)	1.2E-03		3	3
AMW-8A	T	7/1/2009	TRICHLOROETHYLENE (TCE)	1.0E-03		2	2

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: AMW-10A
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -1

Confidence in Trend: 50.0%

Coefficient of Variation: 0.44

Mann Kendall Concentration Trend: (See Note) S

Data Table:

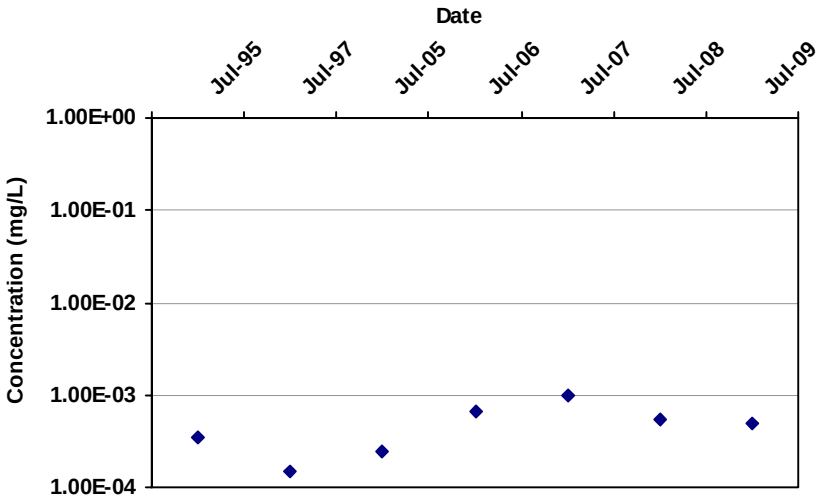
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
AMW-10A	T	7/1/1995	TRICHLOROETHYLENE (TCE)	6.3E-04		2	1
AMW-10A	T	7/1/1997	TRICHLOROETHYLENE (TCE)	1.5E-04	ND	1	0
AMW-10A	T	7/1/2006	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	4	0
AMW-10A	T	7/1/2007	TRICHLOROETHYLENE (TCE)	4.5E-04		3	2
AMW-10A	T	7/1/2008	TRICHLOROETHYLENE (TCE)	4.0E-04		2	2
AMW-10A	T	7/1/2009	TRICHLOROETHYLENE (TCE)	3.7E-04		2	2

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: AMW-11A
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: 7

Confidence in Trend: 80.9%

Coefficient of Variation: 0.57

Mann Kendall Concentration Trend: (See Note) NT

Data Table:

Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
AMW-11A	T	7/1/1995	TRICHLOROETHYLENE (TCE)	3.4E-04		2	1
AMW-11A	T	7/1/1997	TRICHLOROETHYLENE (TCE)	1.5E-04	ND	1	0
AMW-11A	T	7/1/2005	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	1	0
AMW-11A	T	7/1/2006	TRICHLOROETHYLENE (TCE)	6.6E-04		4	3
AMW-11A	T	7/1/2007	TRICHLOROETHYLENE (TCE)	9.8E-04		3	3
AMW-11A	T	7/1/2008	TRICHLOROETHYLENE (TCE)	5.5E-04		2	2
AMW-11A	T	7/1/2009	TRICHLOROETHYLENE (TCE)	4.8E-04		2	2

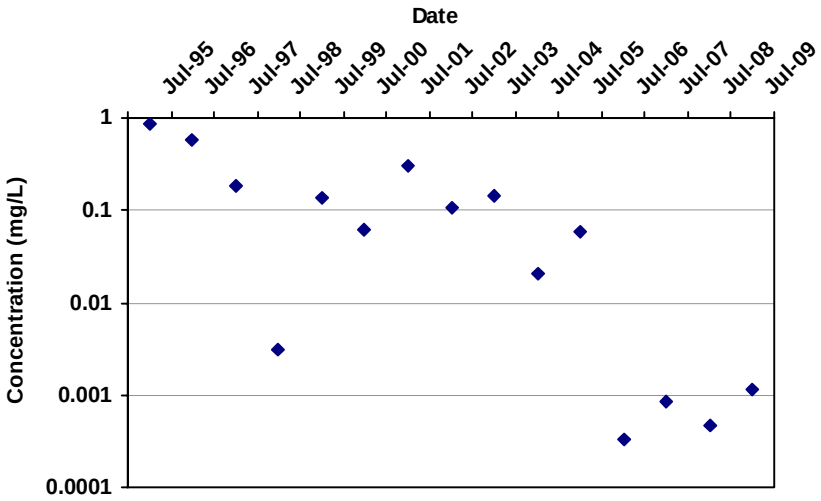
Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

TCE SOURCE WELLS

MAROS Mann-Kendall Statistics Summary

Well: AMW-1A
Well Type: S
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -65

Confidence in Trend: 100.0%

Coefficient of Variation: 1.52

Mann Kendall Concentration Trend: (See Note) D

Data Table:

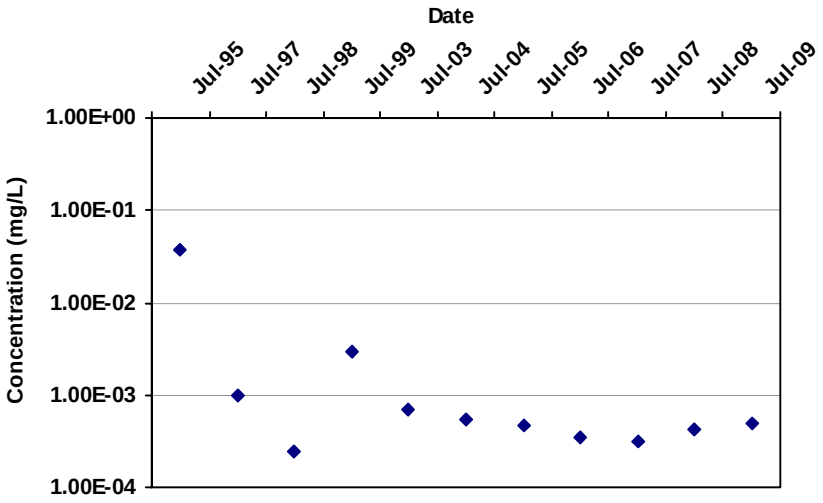
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
AMW-1A	S	7/1/1995	TRICHLOROETHYLENE (TCE)	8.7E-01		2	2
AMW-1A	S	7/1/1996	TRICHLOROETHYLENE (TCE)	5.9E-01		1	1
AMW-1A	S	7/1/1997	TRICHLOROETHYLENE (TCE)	1.8E-01		2	2
AMW-1A	S	7/1/1998	TRICHLOROETHYLENE (TCE)	3.1E-03		2	1
AMW-1A	S	7/1/1999	TRICHLOROETHYLENE (TCE)	1.3E-01		2	2
AMW-1A	S	7/1/2000	TRICHLOROETHYLENE (TCE)	6.0E-02		2	2
AMW-1A	S	7/1/2001	TRICHLOROETHYLENE (TCE)	3.1E-01		2	2
AMW-1A	S	7/1/2002	TRICHLOROETHYLENE (TCE)	1.0E-01		2	2
AMW-1A	S	7/1/2003	TRICHLOROETHYLENE (TCE)	1.4E-01		2	2
AMW-1A	S	7/1/2004	TRICHLOROETHYLENE (TCE)	2.0E-02		3	3
AMW-1A	S	7/1/2005	TRICHLOROETHYLENE (TCE)	5.9E-02		4	4
AMW-1A	S	7/1/2006	TRICHLOROETHYLENE (TCE)	3.2E-04		4	4
AMW-1A	S	7/1/2007	TRICHLOROETHYLENE (TCE)	8.5E-04		4	4
AMW-1A	S	7/1/2008	TRICHLOROETHYLENE (TCE)	4.7E-04		4	4
AMW-1A	S	7/1/2009	TRICHLOROETHYLENE (TCE)	1.1E-03		3	3

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: AMW-1B
Well Type: S
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -25

Confidence in Trend: 97.0%

Coefficient of Variation: 2.72

Mann Kendall Concentration Trend: (See Note) D

Data Table:

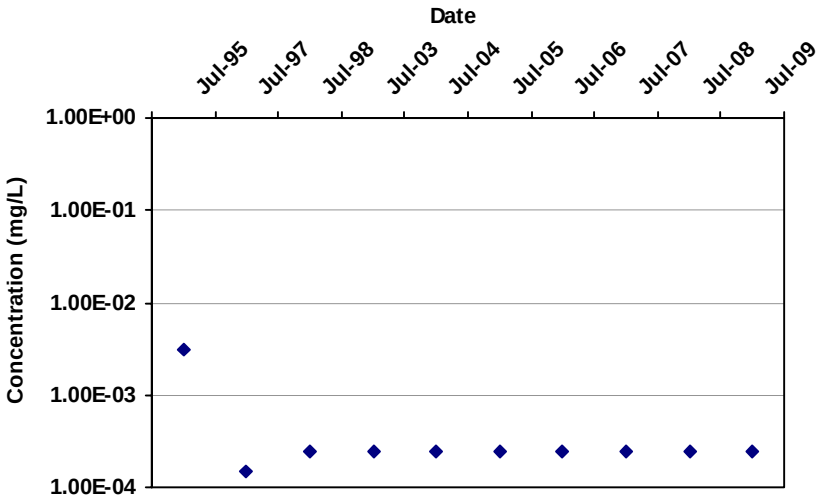
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
AMW-1B	S	7/1/1995	TRICHLOROETHYLENE (TCE)	3.8E-02		2	2
AMW-1B	S	7/1/1997	TRICHLOROETHYLENE (TCE)	1.0E-03		1	1
AMW-1B	S	7/1/1998	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	1	0
AMW-1B	S	7/1/1999	TRICHLOROETHYLENE (TCE)	3.0E-03		2	2
AMW-1B	S	7/1/2003	TRICHLOROETHYLENE (TCE)	6.9E-04		2	2
AMW-1B	S	7/1/2004	TRICHLOROETHYLENE (TCE)	5.5E-04		3	3
AMW-1B	S	7/1/2005	TRICHLOROETHYLENE (TCE)	4.7E-04		4	4
AMW-1B	S	7/1/2006	TRICHLOROETHYLENE (TCE)	3.5E-04		4	4
AMW-1B	S	7/1/2007	TRICHLOROETHYLENE (TCE)	3.2E-04		4	4
AMW-1B	S	7/1/2008	TRICHLOROETHYLENE (TCE)	4.1E-04		4	4
AMW-1B	S	7/1/2009	TRICHLOROETHYLENE (TCE)	5.0E-04		3	3

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: AMW-1C
Well Type: S
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -4

Confidence in Trend: 60.3%

Coefficient of Variation: 1.72

Mann Kendall Concentration Trend: (See Note) NT

Data Table:

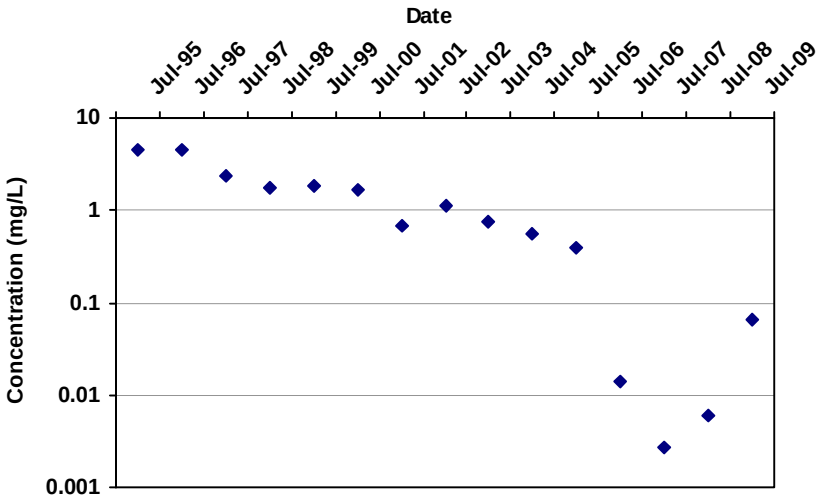
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
AMW-1C	S	7/1/1995	TRICHLOROETHYLENE (TCE)	3.1E-03		1	1
AMW-1C	S	7/1/1997	TRICHLOROETHYLENE (TCE)	1.5E-04	ND	1	0
AMW-1C	S	7/1/1998	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	1	0
AMW-1C	S	7/1/2003	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	2	0
AMW-1C	S	7/1/2004	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	3	0
AMW-1C	S	7/1/2005	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	4	0
AMW-1C	S	7/1/2006	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	4	0
AMW-1C	S	7/1/2007	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	4	0
AMW-1C	S	7/1/2008	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	2	0
AMW-1C	S	7/1/2009	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	1	0

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: AMW-2A
Well Type: S
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -91

Confidence in Trend: 100.0%

Coefficient of Variation: 1.10

Mann Kendall Concentration Trend: (See Note) D

Data Table:

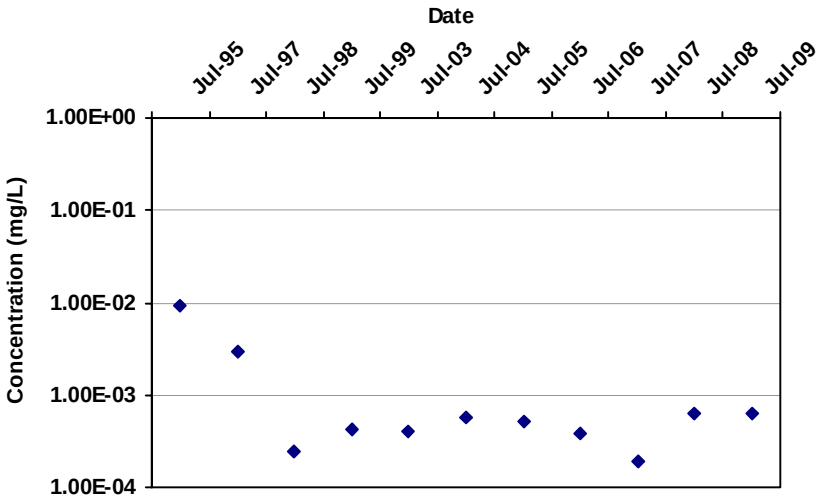
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
AMW-2A	S	7/1/1995	TRICHLOROETHYLENE (TCE)	4.6E+00		2	2
AMW-2A	S	7/1/1996	TRICHLOROETHYLENE (TCE)	4.4E+00		2	2
AMW-2A	S	7/1/1997	TRICHLOROETHYLENE (TCE)	2.4E+00		2	2
AMW-2A	S	7/1/1998	TRICHLOROETHYLENE (TCE)	1.7E+00		2	2
AMW-2A	S	7/1/1999	TRICHLOROETHYLENE (TCE)	1.8E+00		2	2
AMW-2A	S	7/1/2000	TRICHLOROETHYLENE (TCE)	1.7E+00		2	2
AMW-2A	S	7/1/2001	TRICHLOROETHYLENE (TCE)	6.7E-01		2	2
AMW-2A	S	7/1/2002	TRICHLOROETHYLENE (TCE)	1.1E+00		2	2
AMW-2A	S	7/1/2003	TRICHLOROETHYLENE (TCE)	7.4E-01		2	2
AMW-2A	S	7/1/2004	TRICHLOROETHYLENE (TCE)	5.6E-01		3	3
AMW-2A	S	7/1/2005	TRICHLOROETHYLENE (TCE)	3.9E-01		4	4
AMW-2A	S	7/1/2006	TRICHLOROETHYLENE (TCE)	1.4E-02		4	4
AMW-2A	S	7/1/2007	TRICHLOROETHYLENE (TCE)	2.7E-03		4	4
AMW-2A	S	7/1/2008	TRICHLOROETHYLENE (TCE)	6.0E-03		4	4
AMW-2A	S	7/1/2009	TRICHLOROETHYLENE (TCE)	6.5E-02		3	3

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: AMW-2B
Well Type: S
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -9

Confidence in Trend: 72.9%

Coefficient of Variation: 1.84

Mann Kendall Concentration Trend: (See Note) NT

Data Table:

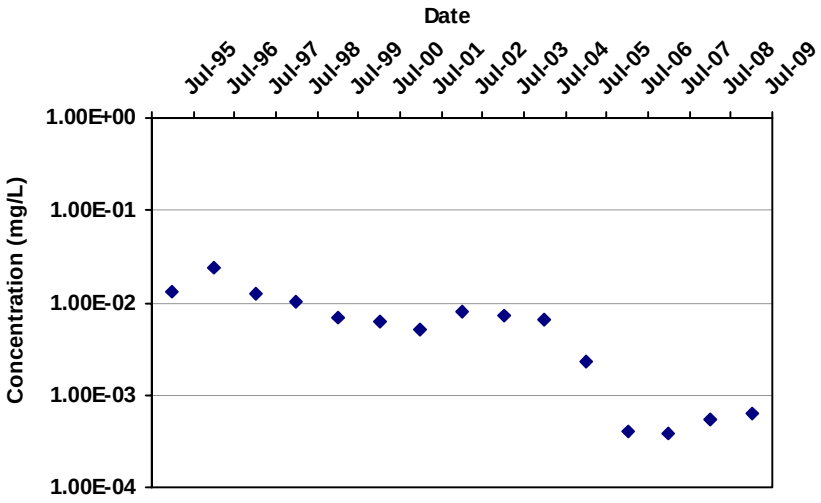
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
AMW-2B	S	7/1/1995	TRICHLOROETHYLENE (TCE)	9.4E-03		2	1
AMW-2B	S	7/1/1997	TRICHLOROETHYLENE (TCE)	3.0E-03		1	1
AMW-2B	S	7/1/1998	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	2	0
AMW-2B	S	7/1/1999	TRICHLOROETHYLENE (TCE)	4.2E-04		2	1
AMW-2B	S	7/1/2003	TRICHLOROETHYLENE (TCE)	4.0E-04		2	2
AMW-2B	S	7/1/2004	TRICHLOROETHYLENE (TCE)	5.8E-04		3	3
AMW-2B	S	7/1/2005	TRICHLOROETHYLENE (TCE)	5.2E-04		4	4
AMW-2B	S	7/1/2006	TRICHLOROETHYLENE (TCE)	3.8E-04		4	4
AMW-2B	S	7/1/2007	TRICHLOROETHYLENE (TCE)	1.9E-04		4	4
AMW-2B	S	7/1/2008	TRICHLOROETHYLENE (TCE)	6.3E-04		4	4
AMW-2B	S	7/1/2009	TRICHLOROETHYLENE (TCE)	6.2E-04		3	3

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: AMW-3A
Well Type: S
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -77

Confidence in Trend: 100.0%

Coefficient of Variation: 0.91

Mann Kendall Concentration Trend: (See Note) D

Data Table:

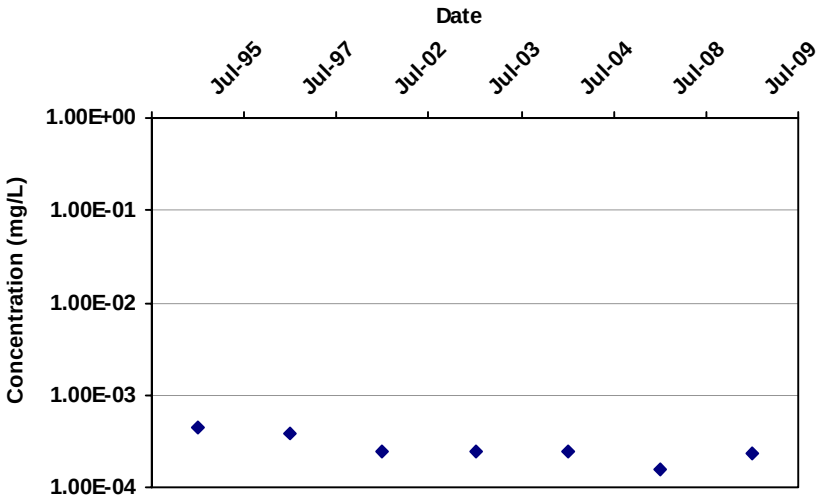
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
AMW-3A	S	7/1/1995	TRICHLOROETHYLENE (TCE)	1.3E-02		2	2
AMW-3A	S	7/1/1996	TRICHLOROETHYLENE (TCE)	2.4E-02		2	2
AMW-3A	S	7/1/1997	TRICHLOROETHYLENE (TCE)	1.2E-02		2	2
AMW-3A	S	7/1/1998	TRICHLOROETHYLENE (TCE)	1.0E-02		2	2
AMW-3A	S	7/1/1999	TRICHLOROETHYLENE (TCE)	6.9E-03		2	2
AMW-3A	S	7/1/2000	TRICHLOROETHYLENE (TCE)	6.2E-03		2	2
AMW-3A	S	7/1/2001	TRICHLOROETHYLENE (TCE)	5.0E-03		1	1
AMW-3A	S	7/1/2002	TRICHLOROETHYLENE (TCE)	7.9E-03		2	2
AMW-3A	S	7/1/2003	TRICHLOROETHYLENE (TCE)	7.3E-03		2	2
AMW-3A	S	7/1/2004	TRICHLOROETHYLENE (TCE)	6.5E-03		3	3
AMW-3A	S	7/1/2005	TRICHLOROETHYLENE (TCE)	2.3E-03		4	4
AMW-3A	S	7/1/2006	TRICHLOROETHYLENE (TCE)	4.1E-04		4	4
AMW-3A	S	7/1/2007	TRICHLOROETHYLENE (TCE)	3.8E-04		4	4
AMW-3A	S	7/1/2008	TRICHLOROETHYLENE (TCE)	5.4E-04		4	4
AMW-3A	S	7/1/2009	TRICHLOROETHYLENE (TCE)	6.2E-04		3	3

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: AMW-4A
Well Type: S
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -16

Confidence in Trend: 99.0%

Coefficient of Variation: 0.35

Mann Kendall Concentration Trend: (See Note) D

Data Table:

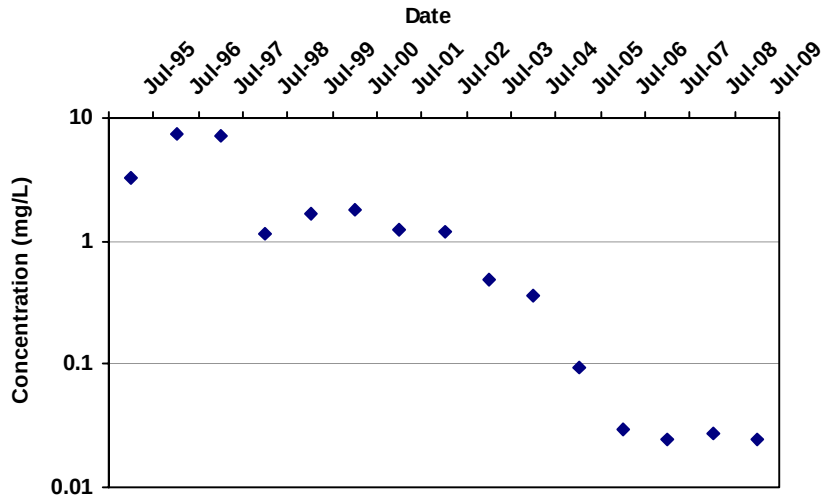
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
AMW-4A	S	7/1/1995	TRICHLOROETHYLENE (TCE)	4.5E-04		2	1
AMW-4A	S	7/1/1997	TRICHLOROETHYLENE (TCE)	3.9E-04	ND	2	0
AMW-4A	S	7/1/2002	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	2	0
AMW-4A	S	7/1/2003	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	2	0
AMW-4A	S	7/1/2004	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	2	0
AMW-4A	S	7/1/2008	TRICHLOROETHYLENE (TCE)	1.6E-04		1	1
AMW-4A	S	7/1/2009	TRICHLOROETHYLENE (TCE)	2.3E-04		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: AMW-12A
Well Type: S
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -87

Confidence in Trend: 100.0%

Coefficient of Variation: 1.41

Mann Kendall Concentration Trend: (See Note) D

Data Table:

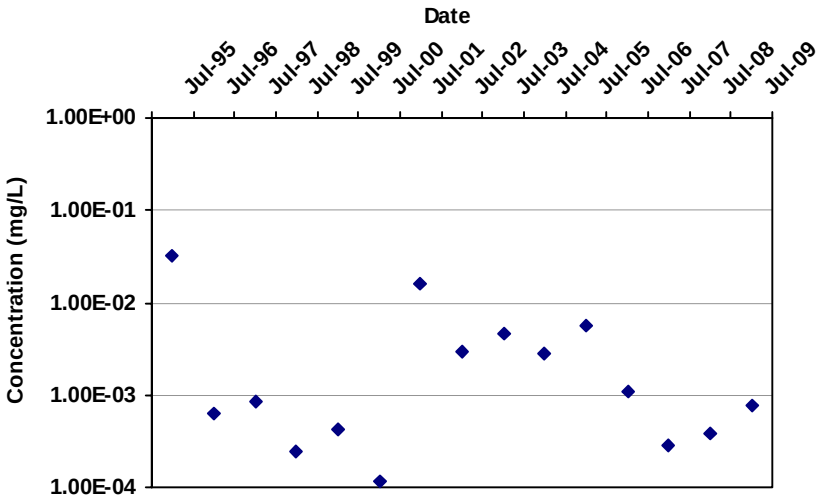
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
AMW-12A	S	7/1/1995	TRICHLOROETHYLENE (TCE)	3.3E+00		2	2
AMW-12A	S	7/1/1996	TRICHLOROETHYLENE (TCE)	7.5E+00		2	2
AMW-12A	S	7/1/1997	TRICHLOROETHYLENE (TCE)	7.1E+00		2	2
AMW-12A	S	7/1/1998	TRICHLOROETHYLENE (TCE)	1.1E+00		2	2
AMW-12A	S	7/1/1999	TRICHLOROETHYLENE (TCE)	1.7E+00		2	2
AMW-12A	S	7/1/2000	TRICHLOROETHYLENE (TCE)	1.8E+00		1	1
AMW-12A	S	7/1/2001	TRICHLOROETHYLENE (TCE)	1.2E+00		2	2
AMW-12A	S	7/1/2002	TRICHLOROETHYLENE (TCE)	1.2E+00		2	2
AMW-12A	S	7/1/2003	TRICHLOROETHYLENE (TCE)	4.9E-01		2	2
AMW-12A	S	7/1/2004	TRICHLOROETHYLENE (TCE)	3.6E-01		3	3
AMW-12A	S	7/1/2005	TRICHLOROETHYLENE (TCE)	9.3E-02		4	4
AMW-12A	S	7/1/2006	TRICHLOROETHYLENE (TCE)	2.9E-02		4	4
AMW-12A	S	7/1/2007	TRICHLOROETHYLENE (TCE)	2.4E-02		4	4
AMW-12A	S	7/1/2008	TRICHLOROETHYLENE (TCE)	2.8E-02		4	4
AMW-12A	S	7/1/2009	TRICHLOROETHYLENE (TCE)	2.4E-02		3	3

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: AMW-13A
Well Type: S
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -11

Confidence in Trend: 68.7%

Coefficient of Variation: 1.89

Mann Kendall Concentration Trend: (See Note) NT

Data Table:

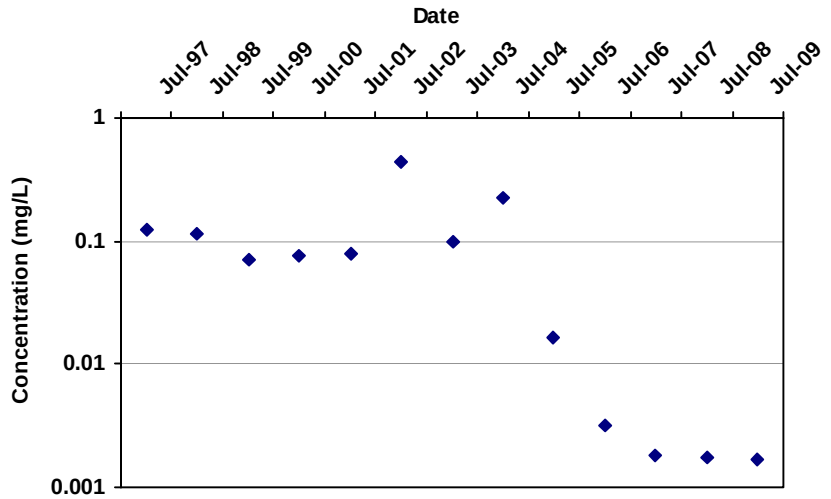
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
AMW-13A	S	7/1/1995	TRICHLOROETHYLENE (TCE)	3.3E-02		2	2
AMW-13A	S	7/1/1996	TRICHLOROETHYLENE (TCE)	6.4E-04		2	1
AMW-13A	S	7/1/1997	TRICHLOROETHYLENE (TCE)	8.4E-04		2	1
AMW-13A	S	7/1/1998	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	2	0
AMW-13A	S	7/1/1999	TRICHLOROETHYLENE (TCE)	4.2E-04		2	1
AMW-13A	S	7/1/2000	TRICHLOROETHYLENE (TCE)	1.2E-04		2	1
AMW-13A	S	7/1/2001	TRICHLOROETHYLENE (TCE)	1.6E-02		1	1
AMW-13A	S	7/1/2002	TRICHLOROETHYLENE (TCE)	2.9E-03		2	2
AMW-13A	S	7/1/2003	TRICHLOROETHYLENE (TCE)	4.7E-03		2	2
AMW-13A	S	7/1/2004	TRICHLOROETHYLENE (TCE)	2.8E-03		3	3
AMW-13A	S	7/1/2005	TRICHLOROETHYLENE (TCE)	5.8E-03		4	4
AMW-13A	S	7/1/2006	TRICHLOROETHYLENE (TCE)	1.1E-03		4	3
AMW-13A	S	7/1/2007	TRICHLOROETHYLENE (TCE)	2.9E-04		4	1
AMW-13A	S	7/1/2008	TRICHLOROETHYLENE (TCE)	3.8E-04		4	2
AMW-13A	S	7/1/2009	TRICHLOROETHYLENE (TCE)	7.6E-04		3	3

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: AMW-19A
Well Type: S
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -44

Confidence in Trend: 99.7%

Coefficient of Variation: 1.27

Mann Kendall Concentration Trend: (See Note) D

Data Table:

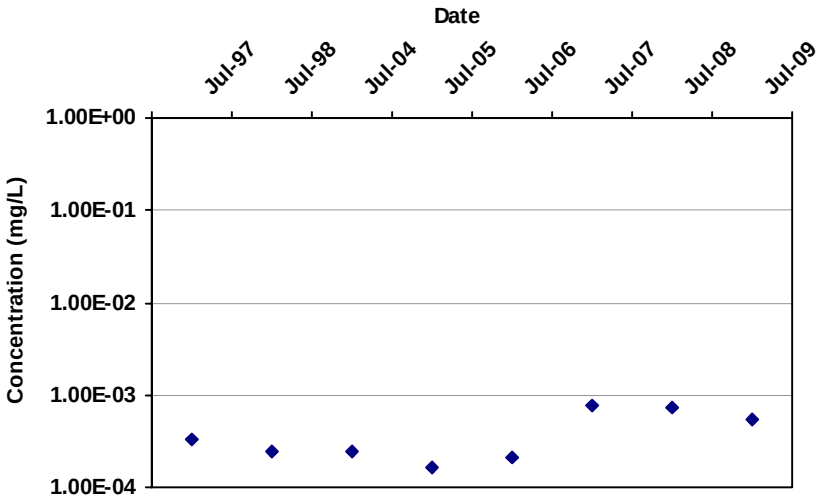
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
AMW-19A	S	7/1/1997	TRICHLOROETHYLENE (TCE)	1.2E-01		2	2
AMW-19A	S	7/1/1998	TRICHLOROETHYLENE (TCE)	1.1E-01		2	2
AMW-19A	S	7/1/1999	TRICHLOROETHYLENE (TCE)	7.0E-02		2	2
AMW-19A	S	7/1/2000	TRICHLOROETHYLENE (TCE)	7.5E-02		1	1
AMW-19A	S	7/1/2001	TRICHLOROETHYLENE (TCE)	7.9E-02		2	2
AMW-19A	S	7/1/2002	TRICHLOROETHYLENE (TCE)	4.4E-01		2	2
AMW-19A	S	7/1/2003	TRICHLOROETHYLENE (TCE)	9.8E-02		2	2
AMW-19A	S	7/1/2004	TRICHLOROETHYLENE (TCE)	2.3E-01		3	3
AMW-19A	S	7/1/2005	TRICHLOROETHYLENE (TCE)	1.6E-02		4	4
AMW-19A	S	7/1/2006	TRICHLOROETHYLENE (TCE)	3.2E-03		4	4
AMW-19A	S	7/1/2007	TRICHLOROETHYLENE (TCE)	1.8E-03		4	4
AMW-19A	S	7/1/2008	TRICHLOROETHYLENE (TCE)	1.7E-03		4	4
AMW-19A	S	7/1/2009	TRICHLOROETHYLENE (TCE)	1.7E-03		3	3

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: AMW-19B
Well Type: S
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: 4

Confidence in Trend: 64.0%

Coefficient of Variation: 0.59

Mann Kendall Concentration Trend: (See Note) NT

Data Table:

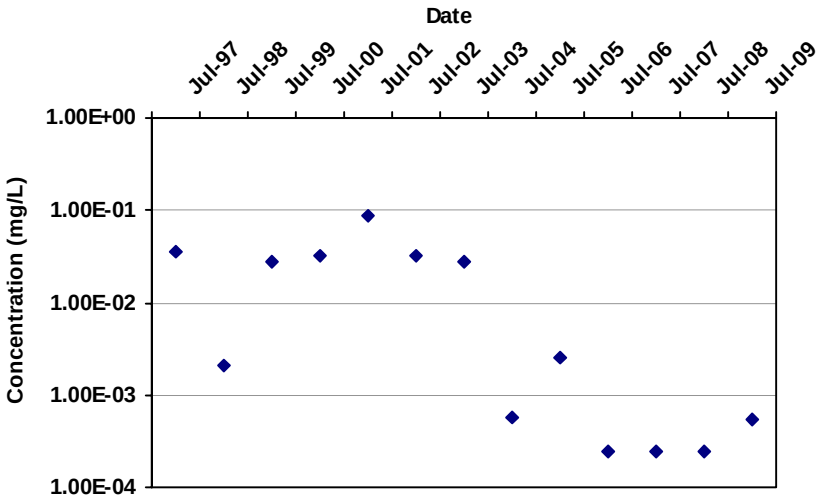
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
AMW-19B	S	7/1/1997	TRICHLOROETHYLENE (TCE)	3.2E-04		2	1
AMW-19B	S	7/1/1998	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	1	0
AMW-19B	S	7/1/2004	TRICHLOROETHYLENE (TCE)	2.4E-04		3	3
AMW-19B	S	7/1/2005	TRICHLOROETHYLENE (TCE)	1.6E-04		4	4
AMW-19B	S	7/1/2006	TRICHLOROETHYLENE (TCE)	2.2E-04		4	1
AMW-19B	S	7/1/2007	TRICHLOROETHYLENE (TCE)	7.7E-04		1	1
AMW-19B	S	7/1/2008	TRICHLOROETHYLENE (TCE)	7.2E-04		1	1
AMW-19B	S	7/1/2009	TRICHLOROETHYLENE (TCE)	5.4E-04		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: AMW-26
Well Type: S
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -47

Confidence in Trend: 99.9%

Coefficient of Variation: 1.33

Mann Kendall Concentration Trend: (See Note) D

Data Table:

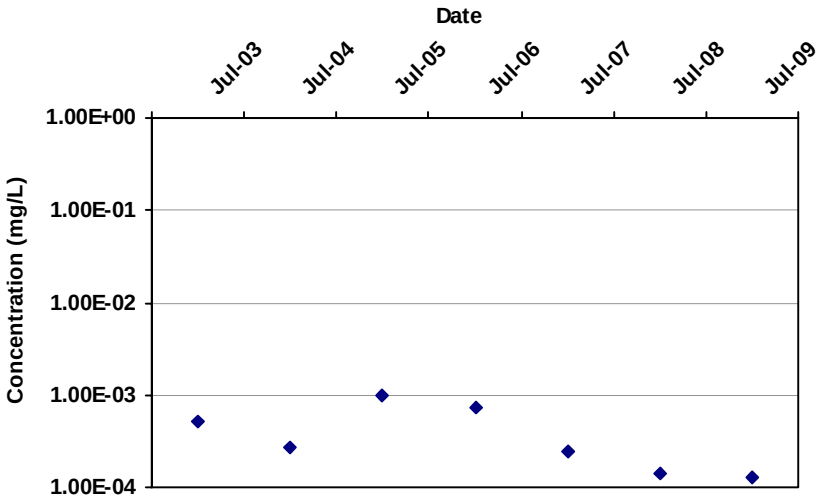
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
AMW-26	S	7/1/1997	TRICHLOROETHYLENE (TCE)	3.6E-02		1	1
AMW-26	S	7/1/1998	TRICHLOROETHYLENE (TCE)	2.1E-03		2	1
AMW-26	S	7/1/1999	TRICHLOROETHYLENE (TCE)	2.8E-02		2	2
AMW-26	S	7/1/2000	TRICHLOROETHYLENE (TCE)	3.3E-02		2	2
AMW-26	S	7/1/2001	TRICHLOROETHYLENE (TCE)	8.8E-02		2	2
AMW-26	S	7/1/2002	TRICHLOROETHYLENE (TCE)	3.2E-02		2	2
AMW-26	S	7/1/2003	TRICHLOROETHYLENE (TCE)	2.7E-02		2	2
AMW-26	S	7/1/2004	TRICHLOROETHYLENE (TCE)	5.6E-04		2	2
AMW-26	S	7/1/2005	TRICHLOROETHYLENE (TCE)	2.6E-03		1	1
AMW-26	S	7/1/2006	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	1	0
AMW-26	S	7/1/2007	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	1	0
AMW-26	S	7/1/2008	TRICHLOROETHYLENE (TCE)	2.4E-04		4	3
AMW-26	S	7/1/2009	TRICHLOROETHYLENE (TCE)	5.3E-04		3	3

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: AMW-52A
Well Type: S
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -13

Confidence in Trend: 96.5%

Coefficient of Variation: 0.76

Mann Kendall Concentration Trend: (See Note) D

Data Table:

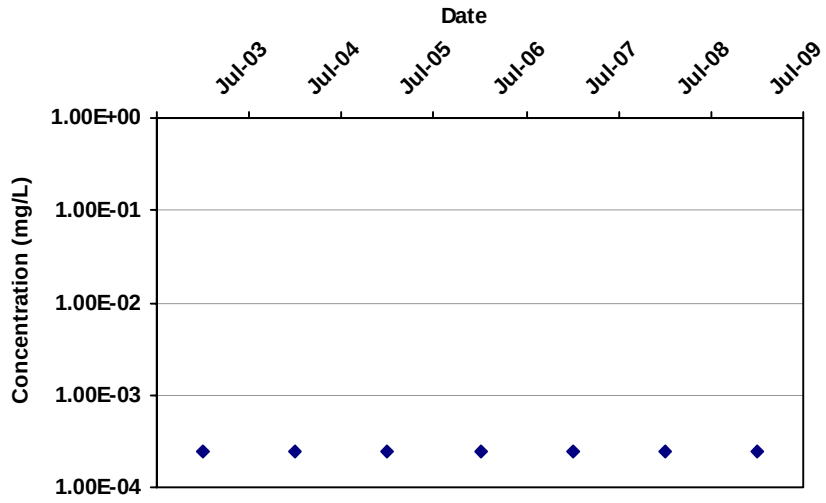
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
AMW-52A	S	7/1/2003	TRICHLOROETHYLENE (TCE)	5.3E-04		1	1
AMW-52A	S	7/1/2004	TRICHLOROETHYLENE (TCE)	2.6E-04		3	3
AMW-52A	S	7/1/2005	TRICHLOROETHYLENE (TCE)	1.0E-03		4	4
AMW-52A	S	7/1/2006	TRICHLOROETHYLENE (TCE)	7.2E-04		4	3
AMW-52A	S	7/1/2007	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	4	0
AMW-52A	S	7/1/2008	TRICHLOROETHYLENE (TCE)	1.4E-04		4	2
AMW-52A	S	7/1/2009	TRICHLOROETHYLENE (TCE)	1.3E-04		3	2

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: AMW-52C
Well Type: S
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -4

Confidence in Trend: 66.7%

Coefficient of Variation: 0.00

Mann Kendall Concentration Trend: (See Note) S

Data Table:

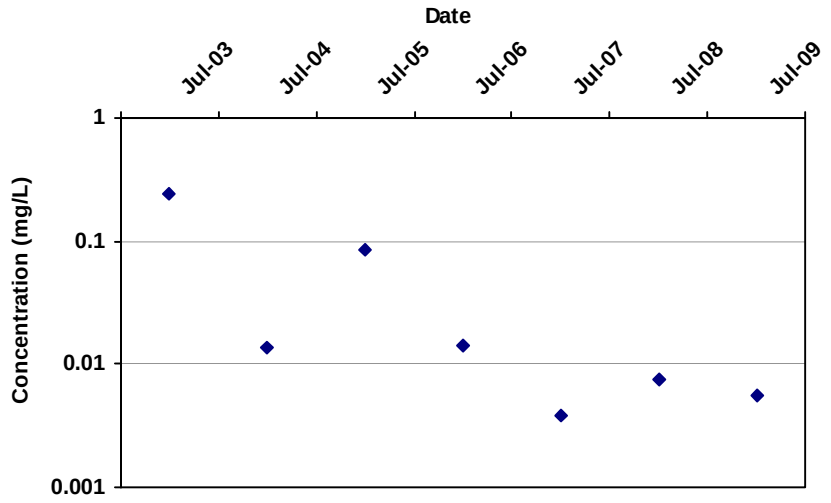
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
AMW-52C	S	7/1/2003	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	1	0
AMW-52C	S	7/1/2004	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	3	0
AMW-52C	S	7/1/2005	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	4	0
AMW-52C	S	7/1/2006	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	4	0
AMW-52C	S	7/1/2007	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	1	0
AMW-52C	S	7/1/2008	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	1	0
AMW-52C	S	7/1/2009	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	1	0

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: AMW-53A
Well Type: S
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -13

Confidence in Trend: 96.5%

Coefficient of Variation: 1.66

Mann Kendall Concentration Trend: (See Note) D

Data Table:

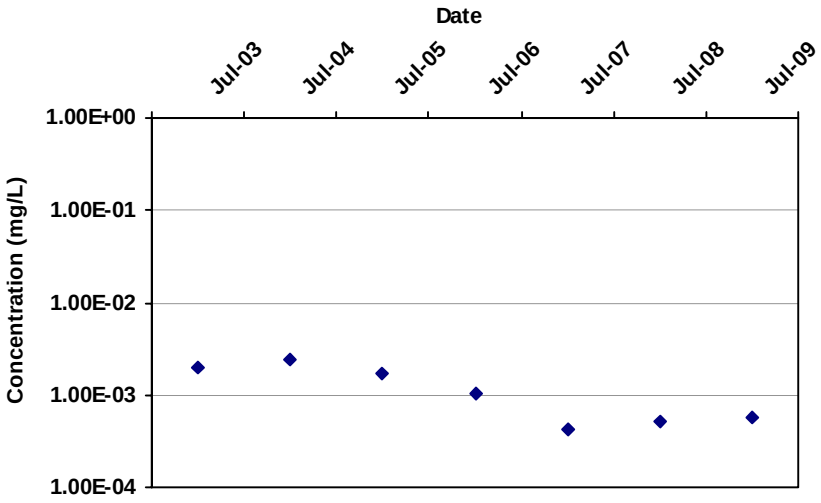
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
AMW-53A	S	7/1/2003	TRICHLOROETHYLENE (TCE)	2.4E-01		1	1
AMW-53A	S	7/1/2004	TRICHLOROETHYLENE (TCE)	1.4E-02		3	3
AMW-53A	S	7/1/2005	TRICHLOROETHYLENE (TCE)	8.4E-02		4	4
AMW-53A	S	7/1/2006	TRICHLOROETHYLENE (TCE)	1.4E-02		4	4
AMW-53A	S	7/1/2007	TRICHLOROETHYLENE (TCE)	3.8E-03		4	4
AMW-53A	S	7/1/2008	TRICHLOROETHYLENE (TCE)	7.4E-03		4	4
AMW-53A	S	7/1/2009	TRICHLOROETHYLENE (TCE)	5.7E-03		3	3

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: AMW-53B
Well Type: S
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -13

Confidence in Trend: 96.5%

Coefficient of Variation: 0.65

Mann Kendall Concentration Trend: (See Note) D

Data Table:

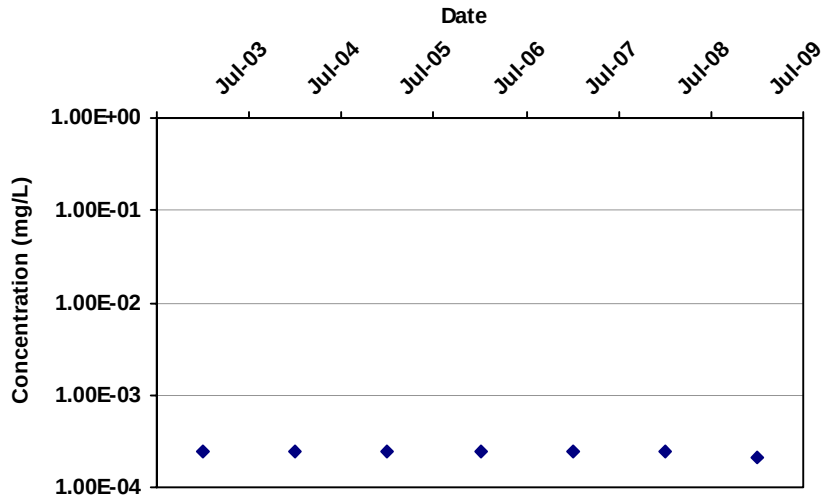
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
AMW-53B	S	7/1/2003	TRICHLOROETHYLENE (TCE)	2.0E-03		1	1
AMW-53B	S	7/1/2004	TRICHLOROETHYLENE (TCE)	2.4E-03		3	3
AMW-53B	S	7/1/2005	TRICHLOROETHYLENE (TCE)	1.7E-03		4	4
AMW-53B	S	7/1/2006	TRICHLOROETHYLENE (TCE)	1.0E-03		4	4
AMW-53B	S	7/1/2007	TRICHLOROETHYLENE (TCE)	4.3E-04		1	1
AMW-53B	S	7/1/2008	TRICHLOROETHYLENE (TCE)	5.3E-04		1	1
AMW-53B	S	7/1/2009	TRICHLOROETHYLENE (TCE)	5.6E-04		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: AMW-53C
Well Type: S
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -9

Confidence in Trend: 88.1%

Coefficient of Variation: 0.06

Mann Kendall Concentration Trend: (See Note) S

Data Table:

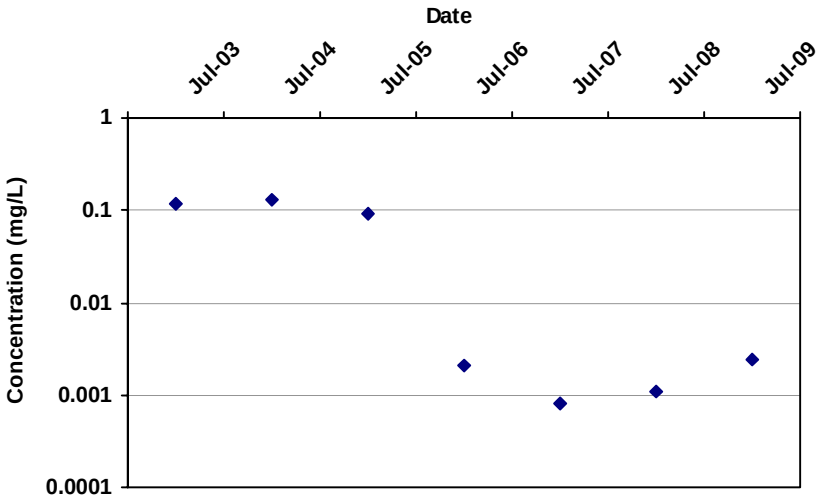
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
AMW-53C	S	7/1/2003	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	1	0
AMW-53C	S	7/1/2004	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	3	0
AMW-53C	S	7/1/2005	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	4	0
AMW-53C	S	7/1/2006	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	4	0
AMW-53C	S	7/1/2007	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	1	0
AMW-53C	S	7/1/2008	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	1	0
AMW-53C	S	7/1/2009	TRICHLOROETHYLENE (TCE)	2.1E-04		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: AMW-54A
Well Type: S
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -11

Confidence in Trend: 93.2%

Coefficient of Variation: 1.23

Mann Kendall Concentration Trend: (See Note) PD

Data Table:

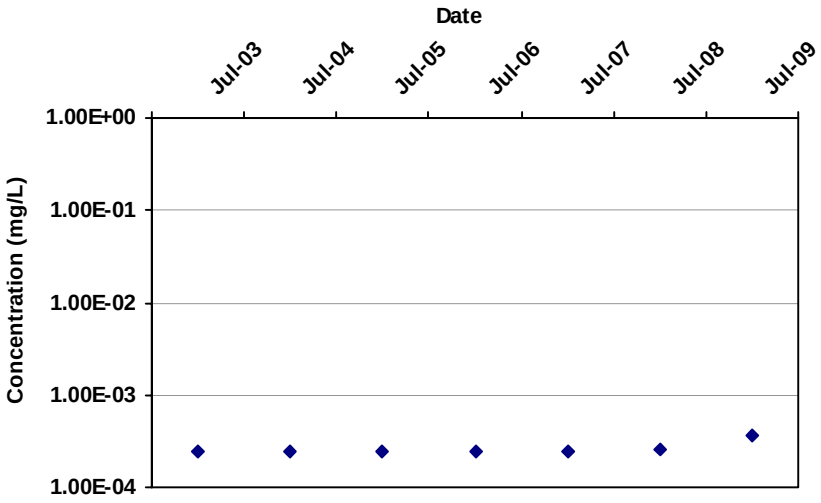
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
AMW-54A	S	7/1/2003	TRICHLOROETHYLENE (TCE)	1.2E-01		1	1
AMW-54A	S	7/1/2004	TRICHLOROETHYLENE (TCE)	1.3E-01		3	3
AMW-54A	S	7/1/2005	TRICHLOROETHYLENE (TCE)	9.0E-02		4	4
AMW-54A	S	7/1/2006	TRICHLOROETHYLENE (TCE)	2.1E-03		4	4
AMW-54A	S	7/1/2007	TRICHLOROETHYLENE (TCE)	8.1E-04		4	4
AMW-54A	S	7/1/2008	TRICHLOROETHYLENE (TCE)	1.1E-03		4	4
AMW-54A	S	7/1/2009	TRICHLOROETHYLENE (TCE)	2.4E-03		3	3

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: AMW-54C
Well Type: S
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: 9

Confidence in Trend: 88.1%

Coefficient of Variation: 0.15

Mann Kendall Concentration Trend: (See Note) NT

Data Table:

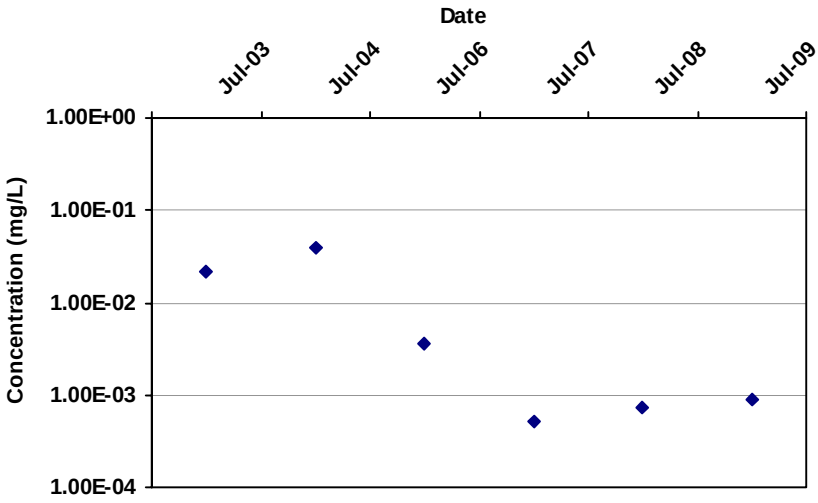
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
AMW-54C	S	7/1/2003	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	1	0
AMW-54C	S	7/1/2004	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	3	0
AMW-54C	S	7/1/2005	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	4	0
AMW-54C	S	7/1/2006	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	4	0
AMW-54C	S	7/1/2007	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	1	0
AMW-54C	S	7/1/2008	TRICHLOROETHYLENE (TCE)	2.6E-04		1	1
AMW-54C	S	7/1/2009	TRICHLOROETHYLENE (TCE)	3.6E-04		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: AMW-55A
Well Type: S
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -7

Confidence in Trend: 86.4%

Coefficient of Variation: 1.44

Mann Kendall Concentration Trend: (See Note) NT

Data Table:

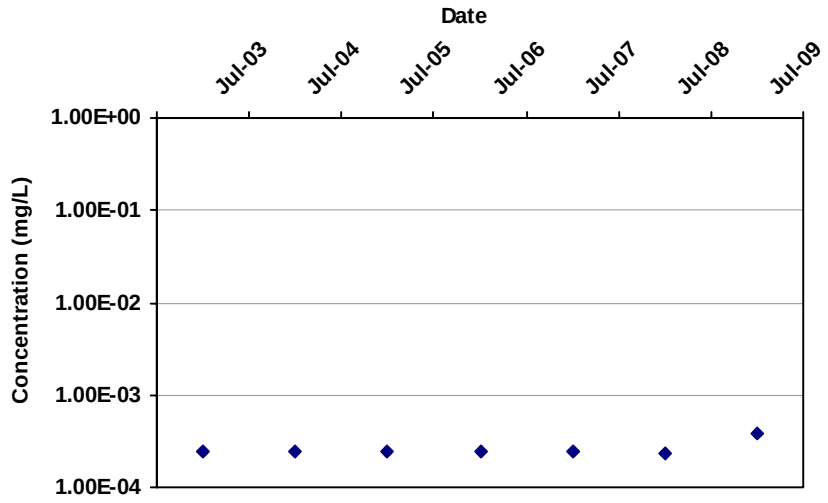
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
AMW-55A	S	7/1/2003	TRICHLOROETHYLENE (TCE)	2.2E-02		1	1
AMW-55A	S	7/1/2004	TRICHLOROETHYLENE (TCE)	3.9E-02		2	2
AMW-55A	S	7/1/2006	TRICHLOROETHYLENE (TCE)	3.5E-03		4	4
AMW-55A	S	7/1/2007	TRICHLOROETHYLENE (TCE)	5.1E-04		4	4
AMW-55A	S	7/1/2008	TRICHLOROETHYLENE (TCE)	7.2E-04		4	4
AMW-55A	S	7/1/2009	TRICHLOROETHYLENE (TCE)	9.1E-04		3	3

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: AMW-55C
Well Type: S
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -1

Confidence in Trend: 50.0%

Coefficient of Variation: 0.20

Mann Kendall Concentration Trend: (See Note) S

Data Table:

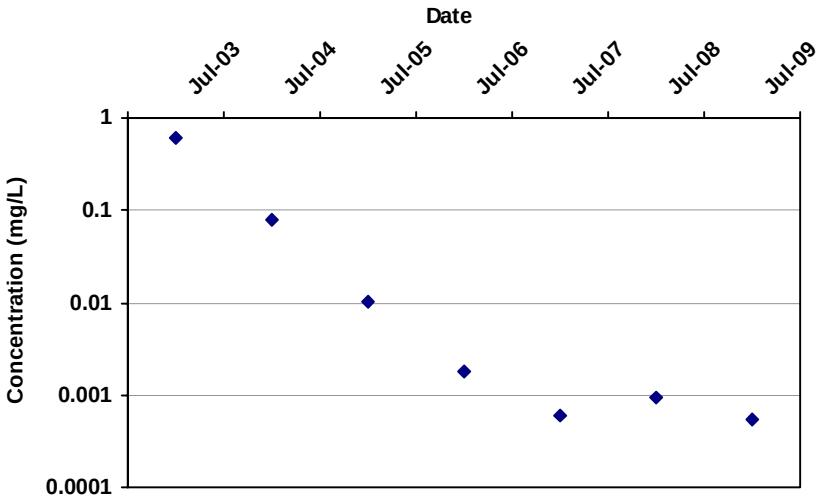
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
AMW-55C	S	7/1/2003	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	1	0
AMW-55C	S	7/1/2004	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	3	0
AMW-55C	S	7/1/2005	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	4	0
AMW-55C	S	7/1/2006	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	4	0
AMW-55C	S	7/1/2007	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	1	0
AMW-55C	S	7/1/2008	TRICHLOROETHYLENE (TCE)	2.3E-04		1	1
AMW-55C	S	7/1/2009	TRICHLOROETHYLENE (TCE)	3.9E-04		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: AMW-56A
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -19

Confidence in Trend: 99.9%

Coefficient of Variation: 2.26

Mann Kendall Concentration Trend: (See Note) D

Data Table:

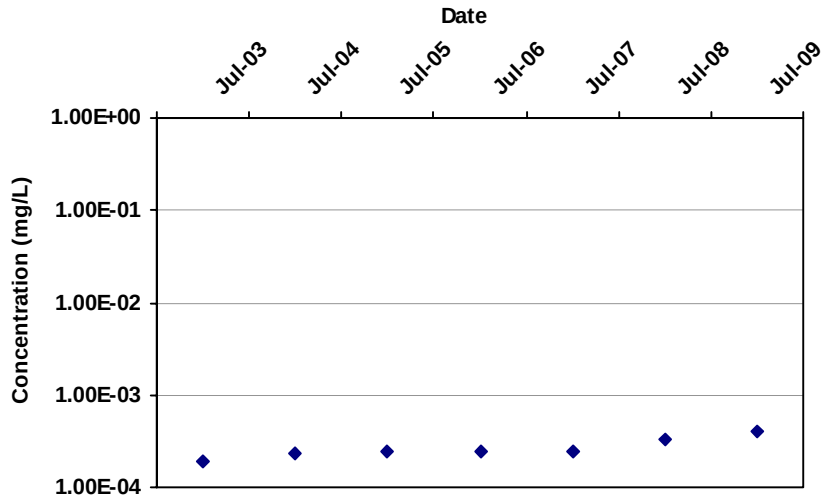
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
AMW-56A	T	7/1/2003	TRICHLOROETHYLENE (TCE)	6.1E-01		1	1
AMW-56A	T	7/1/2004	TRICHLOROETHYLENE (TCE)	7.8E-02		3	3
AMW-56A	T	7/1/2005	TRICHLOROETHYLENE (TCE)	1.0E-02		4	4
AMW-56A	T	7/1/2006	TRICHLOROETHYLENE (TCE)	1.8E-03		4	4
AMW-56A	T	7/1/2007	TRICHLOROETHYLENE (TCE)	6.1E-04		4	4
AMW-56A	T	7/1/2008	TRICHLOROETHYLENE (TCE)	9.4E-04		4	4
AMW-56A	T	7/1/2009	TRICHLOROETHYLENE (TCE)	5.4E-04		3	3

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: AMW-56C
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: 18

Confidence in Trend: 99.7%

Coefficient of Variation: 0.27

Mann Kendall Concentration Trend: (See Note) I

Data Table:

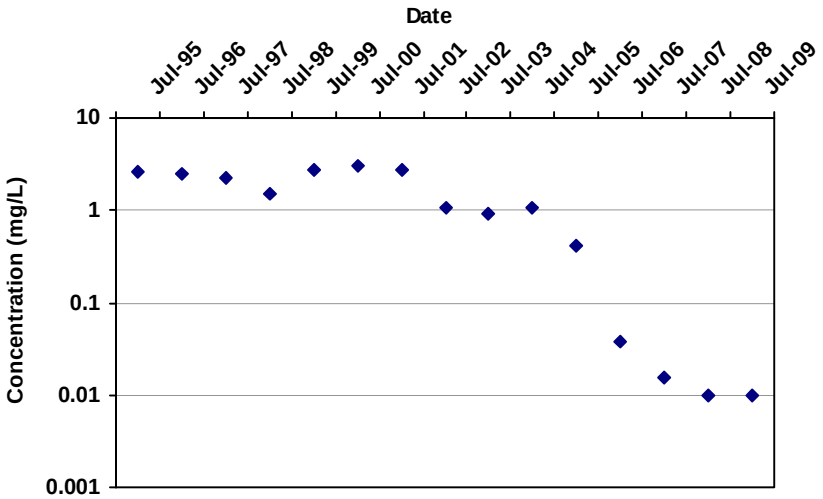
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
AMW-56C	T	7/1/2003	TRICHLOROETHYLENE (TCE)	1.9E-04		1	1
AMW-56C	T	7/1/2004	TRICHLOROETHYLENE (TCE)	2.3E-04		3	1
AMW-56C	T	7/1/2005	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	4	0
AMW-56C	T	7/1/2006	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	4	0
AMW-56C	T	7/1/2007	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	4	0
AMW-56C	T	7/1/2008	TRICHLOROETHYLENE (TCE)	3.3E-04		4	4
AMW-56C	T	7/1/2009	TRICHLOROETHYLENE (TCE)	4.1E-04		3	3

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-1A
Well Type: S
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -73

Confidence in Trend: 100.0%

Coefficient of Variation: 0.83

Mann Kendall Concentration Trend: (See Note) D

Data Table:

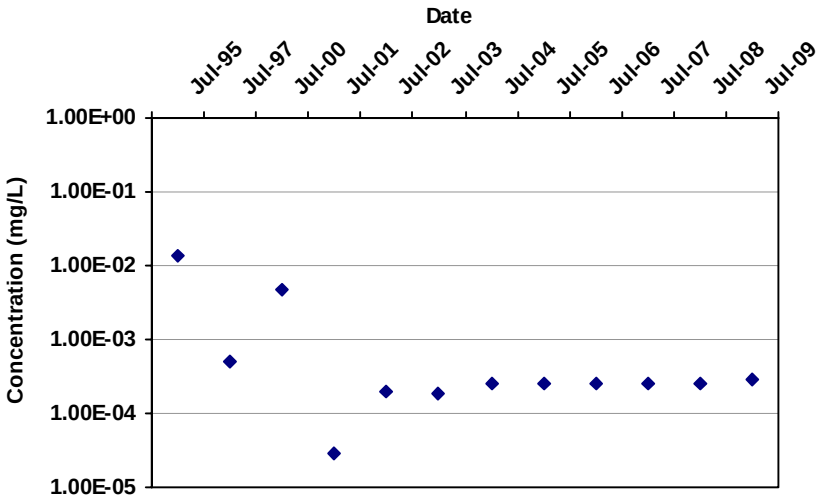
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-1A	S	7/1/1995	TRICHLOROETHYLENE (TCE)	2.6E+00		2	2
MW-1A	S	7/1/1996	TRICHLOROETHYLENE (TCE)	2.5E+00		2	2
MW-1A	S	7/1/1997	TRICHLOROETHYLENE (TCE)	2.3E+00		2	2
MW-1A	S	7/1/1998	TRICHLOROETHYLENE (TCE)	1.5E+00		2	2
MW-1A	S	7/1/1999	TRICHLOROETHYLENE (TCE)	2.7E+00		2	2
MW-1A	S	7/1/2000	TRICHLOROETHYLENE (TCE)	3.1E+00		2	2
MW-1A	S	7/1/2001	TRICHLOROETHYLENE (TCE)	2.7E+00		2	2
MW-1A	S	7/1/2002	TRICHLOROETHYLENE (TCE)	1.1E+00		2	2
MW-1A	S	7/1/2003	TRICHLOROETHYLENE (TCE)	9.0E-01		2	2
MW-1A	S	7/1/2004	TRICHLOROETHYLENE (TCE)	1.1E+00		3	3
MW-1A	S	7/1/2005	TRICHLOROETHYLENE (TCE)	4.2E-01		4	4
MW-1A	S	7/1/2006	TRICHLOROETHYLENE (TCE)	3.8E-02		4	4
MW-1A	S	7/1/2007	TRICHLOROETHYLENE (TCE)	1.5E-02		4	4
MW-1A	S	7/1/2008	TRICHLOROETHYLENE (TCE)	9.7E-03		4	4
MW-1A	S	7/1/2009	TRICHLOROETHYLENE (TCE)	9.8E-03		3	3

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-1B
Well Type: S
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -7

Confidence in Trend: 65.6%

Coefficient of Variation: 2.30

Mann Kendall Concentration Trend: (See Note) NT

Data Table:

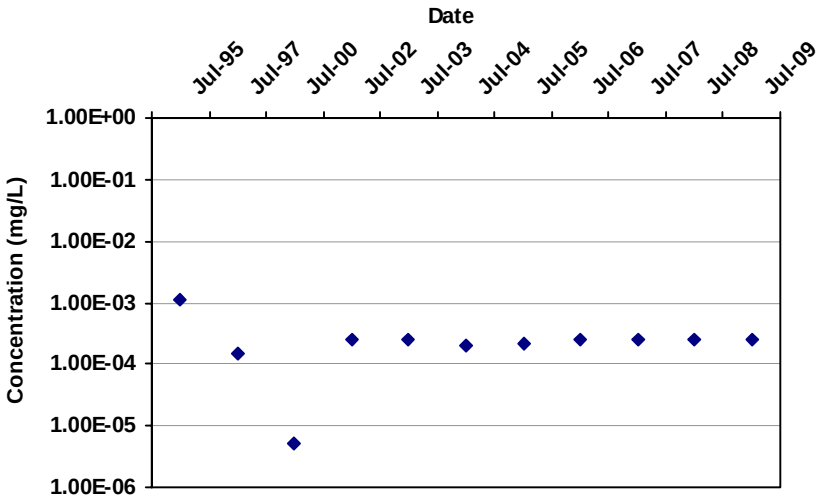
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-1B	S	7/1/1995	TRICHLOROETHYLENE (TCE)	1.4E-02		2	2
MW-1B	S	7/1/1997	TRICHLOROETHYLENE (TCE)	5.0E-04		1	1
MW-1B	S	7/1/2000	TRICHLOROETHYLENE (TCE)	4.8E-03		3	3
MW-1B	S	7/1/2001	TRICHLOROETHYLENE (TCE)	2.9E-05		2	1
MW-1B	S	7/1/2002	TRICHLOROETHYLENE (TCE)	1.9E-04		2	1
MW-1B	S	7/1/2003	TRICHLOROETHYLENE (TCE)	1.9E-04		2	1
MW-1B	S	7/1/2004	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	3	0
MW-1B	S	7/1/2005	TRICHLOROETHYLENE (TCE)	2.6E-04		4	2
MW-1B	S	7/1/2006	TRICHLOROETHYLENE (TCE)	2.6E-04		4	1
MW-1B	S	7/1/2007	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	1	0
MW-1B	S	7/1/2008	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	1	0
MW-1B	S	7/1/2009	TRICHLOROETHYLENE (TCE)	2.8E-04		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-1C
Well Type: S
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: 10

Confidence in Trend: 75.3%

Coefficient of Variation: 0.97

Mann Kendall Concentration Trend: (See Note) NT

Data Table:

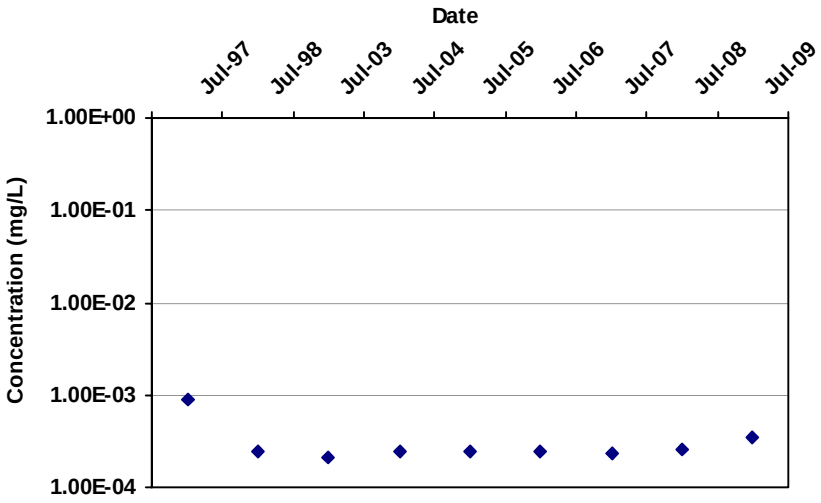
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-1C	S	7/1/1995	TRICHLOROETHYLENE (TCE)	1.1E-03		1	1
MW-1C	S	7/1/1997	TRICHLOROETHYLENE (TCE)	1.5E-04	ND	1	0
MW-1C	S	7/1/2000	TRICHLOROETHYLENE (TCE)	5.0E-06	ND	1	0
MW-1C	S	7/1/2002	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	1	0
MW-1C	S	7/1/2003	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	1	0
MW-1C	S	7/1/2004	TRICHLOROETHYLENE (TCE)	2.1E-04		3	1
MW-1C	S	7/1/2005	TRICHLOROETHYLENE (TCE)	2.2E-04		4	1
MW-1C	S	7/1/2006	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	4	0
MW-1C	S	7/1/2007	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	1	0
MW-1C	S	7/1/2008	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	1	0
MW-1C	S	7/1/2009	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	1	0

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: RAMW-2C
Well Type: S
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: 3

Confidence in Trend: 58.0%

Coefficient of Variation: 0.67

Mann Kendall Concentration Trend: (See Note) NT

Data Table:

Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
RAMW-2C	S	7/1/1997	TRICHLOROETHYLENE (TCE)	9.0E-04		1	1
RAMW-2C	S	7/1/1998	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	1	0
RAMW-2C	S	7/1/2003	TRICHLOROETHYLENE (TCE)	2.1E-04		2	1
RAMW-2C	S	7/1/2004	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	3	0
RAMW-2C	S	7/1/2005	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	4	0
RAMW-2C	S	7/1/2006	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	4	0
RAMW-2C	S	7/1/2007	TRICHLOROETHYLENE (TCE)	2.3E-04		4	1
RAMW-2C	S	7/1/2008	TRICHLOROETHYLENE (TCE)	2.6E-04		2	1
RAMW-2C	S	7/1/2009	TRICHLOROETHYLENE (TCE)	3.4E-04		1	1

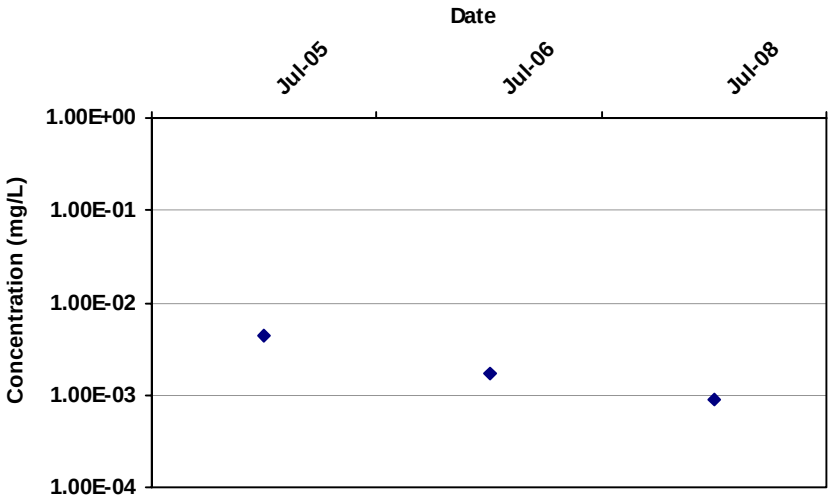
Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

PROXIMAL WELLS

MAROS Mann-Kendall Statistics Summary

Well: AMW-58
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: 0

Confidence in Trend: 0.0%

Coefficient of Variation: 0.00

Mann Kendall Concentration Trend: (See Note) N/A

Data Table:

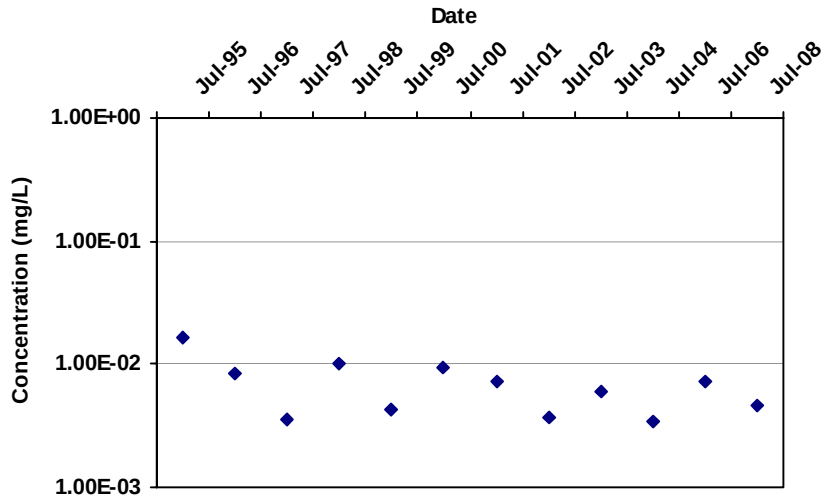
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
AMW-58	T	7/1/2005	TRICHLOROETHYLENE (TCE)	4.4E-03		3	3
AMW-58	T	7/1/2006	TRICHLOROETHYLENE (TCE)	1.7E-03		2	2
AMW-58	T	7/1/2008	TRICHLOROETHYLENE (TCE)	8.9E-04		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-2A
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -24

Confidence in Trend: 94.2%

Coefficient of Variation: 0.54

Mann Kendall Concentration Trend: (See Note) PD

Data Table:

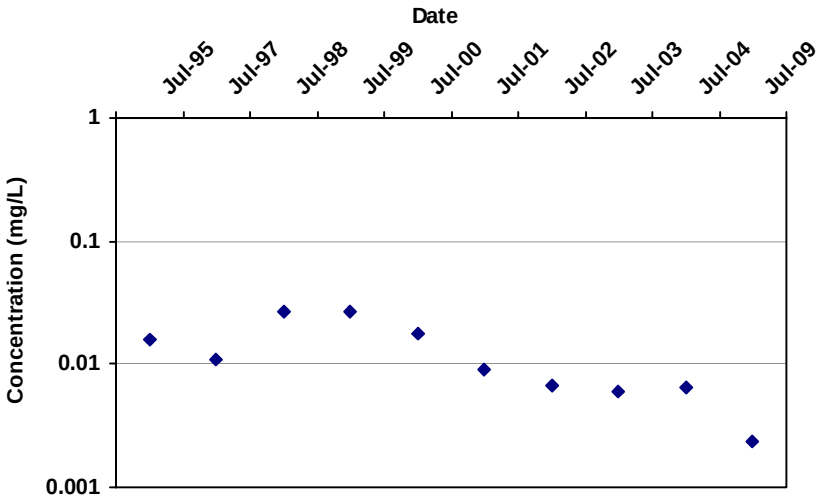
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-2A	T	7/1/1995	TRICHLOROETHYLENE (TCE)	1.6E-02		2	2
MW-2A	T	7/1/1996	TRICHLOROETHYLENE (TCE)	8.4E-03		2	2
MW-2A	T	7/1/1997	TRICHLOROETHYLENE (TCE)	3.5E-03		2	2
MW-2A	T	7/1/1998	TRICHLOROETHYLENE (TCE)	1.0E-02		2	2
MW-2A	T	7/1/1999	TRICHLOROETHYLENE (TCE)	4.3E-03		2	2
MW-2A	T	7/1/2000	TRICHLOROETHYLENE (TCE)	9.4E-03		2	2
MW-2A	T	7/1/2001	TRICHLOROETHYLENE (TCE)	7.3E-03		2	2
MW-2A	T	7/1/2002	TRICHLOROETHYLENE (TCE)	3.7E-03		2	2
MW-2A	T	7/1/2003	TRICHLOROETHYLENE (TCE)	5.9E-03		2	2
MW-2A	T	7/1/2004	TRICHLOROETHYLENE (TCE)	3.4E-03		1	1
MW-2A	T	7/1/2006	TRICHLOROETHYLENE (TCE)	7.3E-03		1	1
MW-2A	T	7/1/2008	TRICHLOROETHYLENE (TCE)	4.7E-03		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-2B
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -31

Confidence in Trend: 99.8%

Coefficient of Variation: 0.67

Mann Kendall Concentration Trend: (See Note) D

Data Table:

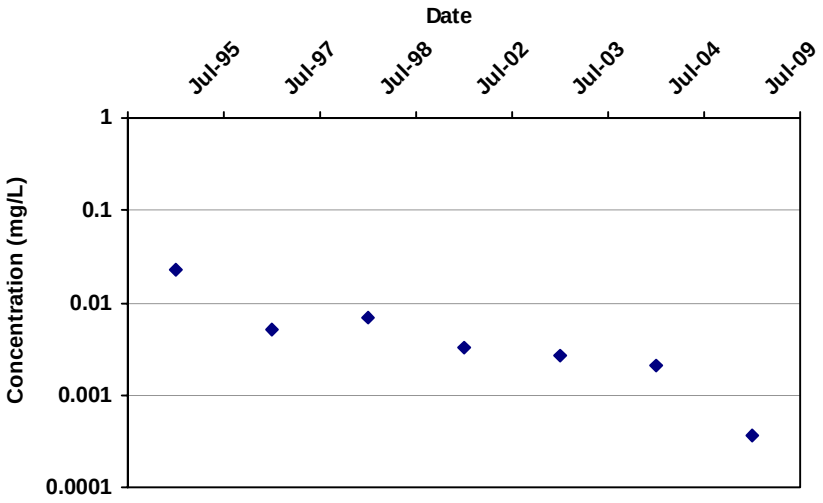
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-2B	T	7/1/1995	TRICHLOROETHYLENE (TCE)	1.6E-02		2	2
MW-2B	T	7/1/1997	TRICHLOROETHYLENE (TCE)	1.1E-02		1	1
MW-2B	T	7/1/1998	TRICHLOROETHYLENE (TCE)	2.7E-02		2	2
MW-2B	T	7/1/1999	TRICHLOROETHYLENE (TCE)	2.6E-02		2	2
MW-2B	T	7/1/2000	TRICHLOROETHYLENE (TCE)	1.8E-02		2	2
MW-2B	T	7/1/2001	TRICHLOROETHYLENE (TCE)	9.0E-03		1	1
MW-2B	T	7/1/2002	TRICHLOROETHYLENE (TCE)	6.8E-03		1	1
MW-2B	T	7/1/2003	TRICHLOROETHYLENE (TCE)	5.9E-03		1	1
MW-2B	T	7/1/2004	TRICHLOROETHYLENE (TCE)	6.5E-03		1	1
MW-2B	T	7/1/2009	TRICHLOROETHYLENE (TCE)	2.4E-03		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-2C
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -19

Confidence in Trend: 99.9%

Coefficient of Variation: 1.23

Mann Kendall Concentration Trend: (See Note) D

Data Table:

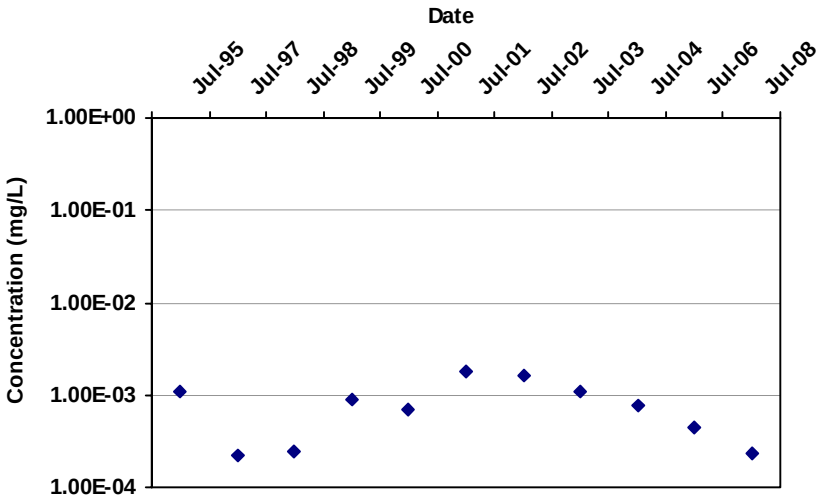
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-2C	T	7/1/1995	TRICHLOROETHYLENE (TCE)	2.3E-02		2	2
MW-2C	T	7/1/1997	TRICHLOROETHYLENE (TCE)	5.0E-03		1	1
MW-2C	T	7/1/1998	TRICHLOROETHYLENE (TCE)	7.0E-03		1	1
MW-2C	T	7/1/2002	TRICHLOROETHYLENE (TCE)	3.3E-03		1	1
MW-2C	T	7/1/2003	TRICHLOROETHYLENE (TCE)	2.7E-03		1	1
MW-2C	T	7/1/2004	TRICHLOROETHYLENE (TCE)	2.1E-03		1	1
MW-2C	T	7/1/2009	TRICHLOROETHYLENE (TCE)	3.6E-04		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-3A
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -3

Confidence in Trend: 56.0%

Coefficient of Variation: 0.65

Mann Kendall Concentration Trend: (See Note) S

Data Table:

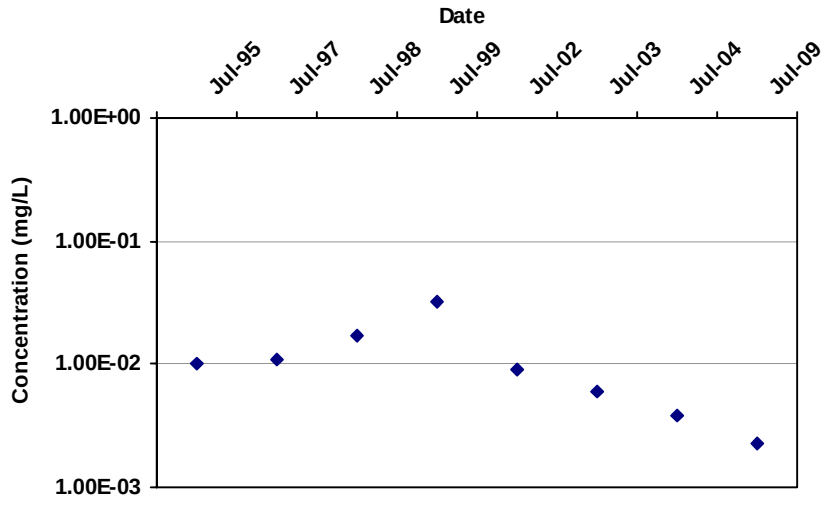
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-3A	T	7/1/1995	TRICHLOROETHYLENE (TCE)	1.1E-03		2	1
MW-3A	T	7/1/1997	TRICHLOROETHYLENE (TCE)	2.2E-04		2	1
MW-3A	T	7/1/1998	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	2	0
MW-3A	T	7/1/1999	TRICHLOROETHYLENE (TCE)	9.0E-04		1	1
MW-3A	T	7/1/2000	TRICHLOROETHYLENE (TCE)	6.9E-04		2	2
MW-3A	T	7/1/2001	TRICHLOROETHYLENE (TCE)	1.8E-03		2	2
MW-3A	T	7/1/2002	TRICHLOROETHYLENE (TCE)	1.6E-03		2	2
MW-3A	T	7/1/2003	TRICHLOROETHYLENE (TCE)	1.1E-03		2	2
MW-3A	T	7/1/2004	TRICHLOROETHYLENE (TCE)	7.7E-04		2	2
MW-3A	T	7/1/2006	TRICHLOROETHYLENE (TCE)	4.4E-04		1	1
MW-3A	T	7/1/2008	TRICHLOROETHYLENE (TCE)	2.3E-04		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-3B
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -16

Confidence in Trend: 96.9%

Coefficient of Variation: 0.83

Mann Kendall Concentration Trend: (See Note) D

Data Table:

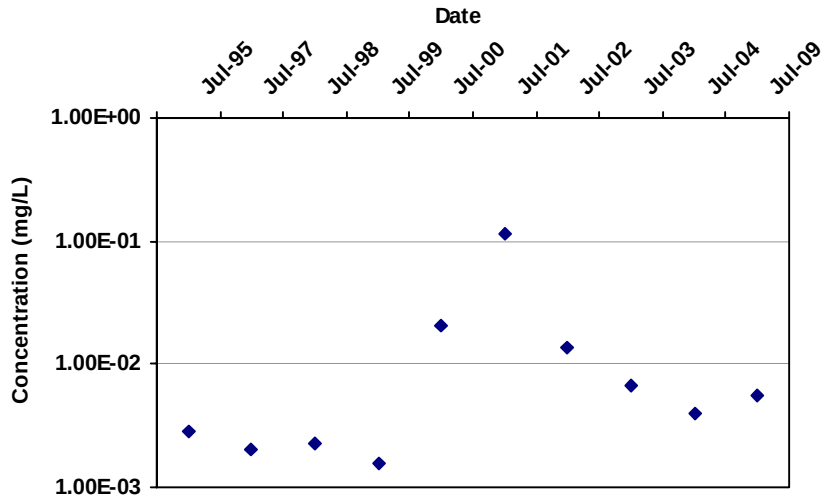
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-3B	T	7/1/1995	TRICHLOROETHYLENE (TCE)	1.0E-02		2	2
MW-3B	T	7/1/1997	TRICHLOROETHYLENE (TCE)	1.1E-02		1	1
MW-3B	T	7/1/1998	TRICHLOROETHYLENE (TCE)	1.7E-02		2	2
MW-3B	T	7/1/1999	TRICHLOROETHYLENE (TCE)	3.2E-02		2	2
MW-3B	T	7/1/2002	TRICHLOROETHYLENE (TCE)	9.2E-03		1	1
MW-3B	T	7/1/2003	TRICHLOROETHYLENE (TCE)	5.9E-03		1	1
MW-3B	T	7/1/2004	TRICHLOROETHYLENE (TCE)	3.9E-03		1	1
MW-3B	T	7/1/2009	TRICHLOROETHYLENE (TCE)	2.3E-03		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-4A
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: 9

Confidence in Trend: 75.8%

Coefficient of Variation: 2.00

Mann Kendall Concentration Trend: (See Note) NT

Data Table:

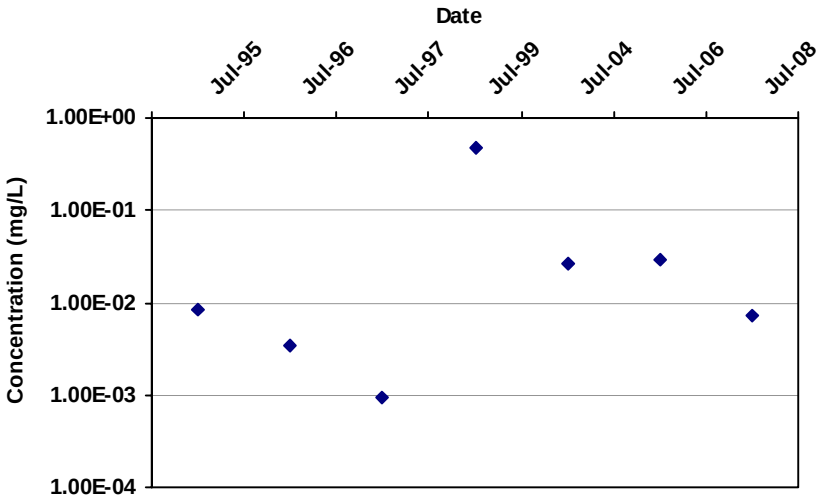
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-4A	T	7/1/1995	TRICHLOROETHYLENE (TCE)	2.9E-03		2	2
MW-4A	T	7/1/1997	TRICHLOROETHYLENE (TCE)	2.0E-03		2	2
MW-4A	T	7/1/1998	TRICHLOROETHYLENE (TCE)	2.2E-03		2	2
MW-4A	T	7/1/1999	TRICHLOROETHYLENE (TCE)	1.5E-03		2	2
MW-4A	T	7/1/2000	TRICHLOROETHYLENE (TCE)	2.1E-02		2	2
MW-4A	T	7/1/2001	TRICHLOROETHYLENE (TCE)	1.2E-01		2	2
MW-4A	T	7/1/2002	TRICHLOROETHYLENE (TCE)	1.3E-02		2	2
MW-4A	T	7/1/2003	TRICHLOROETHYLENE (TCE)	6.6E-03		2	2
MW-4A	T	7/1/2004	TRICHLOROETHYLENE (TCE)	4.1E-03		2	2
MW-4A	T	7/1/2009	TRICHLOROETHYLENE (TCE)	5.5E-03		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-4B
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: 3

Confidence in Trend: 61.4%

Coefficient of Variation: 2.23

Mann Kendall Concentration Trend: (See Note) NT

Data Table:

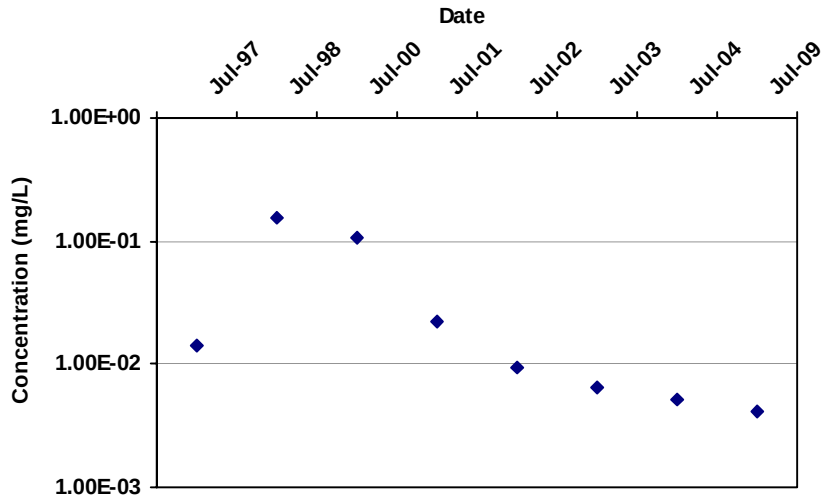
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-4B	T	7/1/1995	TRICHLOROETHYLENE (TCE)	8.2E-03		2	2
MW-4B	T	7/1/1996	TRICHLOROETHYLENE (TCE)	3.5E-03		2	2
MW-4B	T	7/1/1997	TRICHLOROETHYLENE (TCE)	9.4E-04		1	1
MW-4B	T	7/1/1999	TRICHLOROETHYLENE (TCE)	4.8E-01		2	2
MW-4B	T	7/1/2004	TRICHLOROETHYLENE (TCE)	2.6E-02		1	1
MW-4B	T	7/1/2006	TRICHLOROETHYLENE (TCE)	2.9E-02		1	1
MW-4B	T	7/1/2008	TRICHLOROETHYLENE (TCE)	7.2E-03		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-4BSHE
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -22

Confidence in Trend: 99.8%

Coefficient of Variation: 1.43

Mann Kendall Concentration Trend: (See Note) D

Data Table:

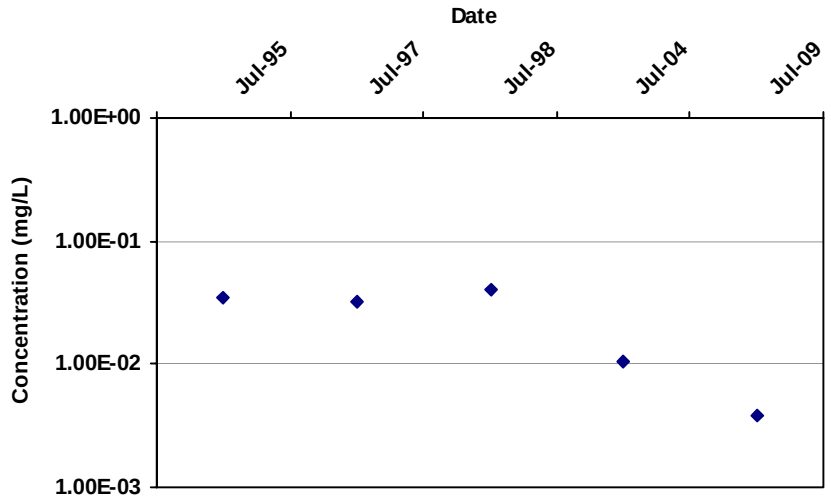
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-4BSHED	T	7/1/1997	TRICHLOROETHYLENE (TCE)	1.4E-02		2	2
MW-4BSHED	T	7/1/1998	TRICHLOROETHYLENE (TCE)	1.6E-01		2	2
MW-4BSHED	T	7/1/2000	TRICHLOROETHYLENE (TCE)	1.1E-01		2	2
MW-4BSHED	T	7/1/2001	TRICHLOROETHYLENE (TCE)	2.2E-02		2	2
MW-4BSHED	T	7/1/2002	TRICHLOROETHYLENE (TCE)	9.5E-03		2	2
MW-4BSHED	T	7/1/2003	TRICHLOROETHYLENE (TCE)	6.5E-03		2	2
MW-4BSHED	T	7/1/2004	TRICHLOROETHYLENE (TCE)	5.2E-03		1	1
MW-4BSHED	T	7/1/2009	TRICHLOROETHYLENE (TCE)	4.1E-03		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-4C
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -6

Confidence in Trend: 88.3%

Coefficient of Variation: 0.66

Mann Kendall Concentration Trend: (See Note) S

Data Table:

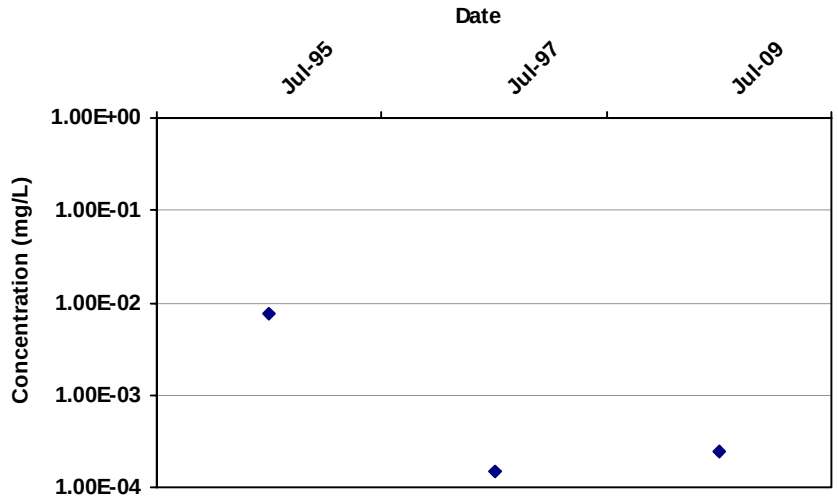
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-4C	T	7/1/1995	TRICHLOROETHYLENE (TCE)	3.4E-02		2	2
MW-4C	T	7/1/1997	TRICHLOROETHYLENE (TCE)	3.2E-02		2	2
MW-4C	T	7/1/1998	TRICHLOROETHYLENE (TCE)	4.0E-02		1	1
MW-4C	T	7/1/2004	TRICHLOROETHYLENE (TCE)	1.0E-02		2	2
MW-4C	T	7/1/2009	TRICHLOROETHYLENE (TCE)	3.8E-03		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-6A
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: 0

Confidence in Trend: 0.0%

Coefficient of Variation: 0.00

Mann Kendall Concentration Trend: (See Note) N/A

Data Table:

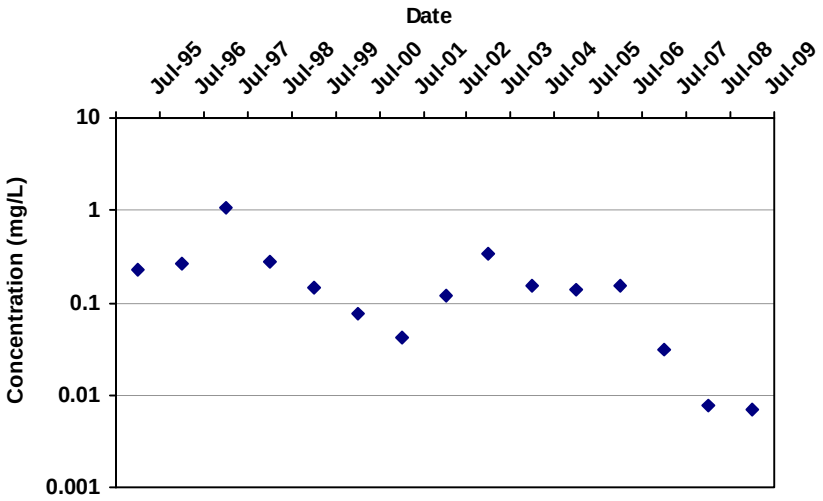
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-6A	T	7/1/1995	TRICHLOROETHYLENE (TCE)	7.6E-03		2	2
MW-6A	T	7/1/1997	TRICHLOROETHYLENE (TCE)	1.5E-04	ND	1	0
MW-6A	T	7/1/2009	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	1	0

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-6B
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -53

Confidence in Trend: 99.6%

Coefficient of Variation: 1.27

Mann Kendall Concentration Trend: (See Note) D

Data Table:

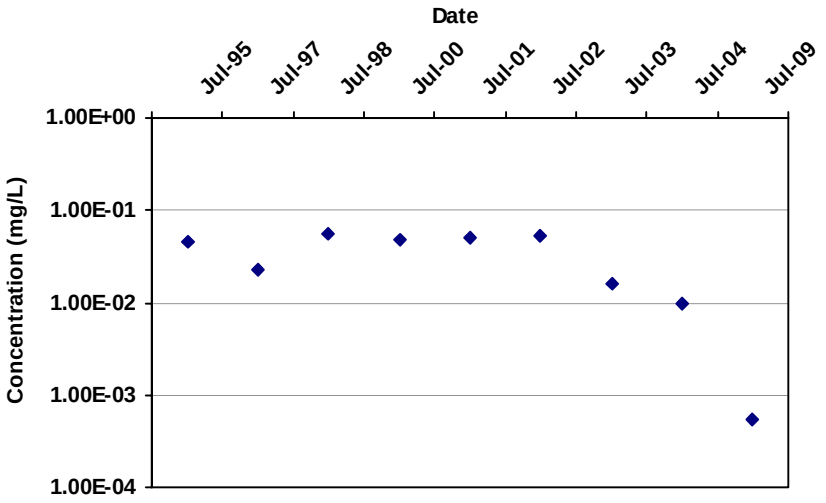
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-6B	T	7/1/1995	TRICHLOROETHYLENE (TCE)	2.3E-01		11	11
MW-6B	T	7/1/1996	TRICHLOROETHYLENE (TCE)	2.6E-01		2	2
MW-6B	T	7/1/1997	TRICHLOROETHYLENE (TCE)	1.1E+00		2	2
MW-6B	T	7/1/1998	TRICHLOROETHYLENE (TCE)	2.8E-01		2	2
MW-6B	T	7/1/1999	TRICHLOROETHYLENE (TCE)	1.4E-01		2	2
MW-6B	T	7/1/2000	TRICHLOROETHYLENE (TCE)	7.6E-02		3	3
MW-6B	T	7/1/2001	TRICHLOROETHYLENE (TCE)	4.2E-02		2	2
MW-6B	T	7/1/2002	TRICHLOROETHYLENE (TCE)	1.2E-01		3	3
MW-6B	T	7/1/2003	TRICHLOROETHYLENE (TCE)	3.4E-01		3	3
MW-6B	T	7/1/2004	TRICHLOROETHYLENE (TCE)	1.5E-01		2	2
MW-6B	T	7/1/2005	TRICHLOROETHYLENE (TCE)	1.4E-01		1	1
MW-6B	T	7/1/2006	TRICHLOROETHYLENE (TCE)	1.5E-01		1	1
MW-6B	T	7/1/2007	TRICHLOROETHYLENE (TCE)	3.2E-02		2	2
MW-6B	T	7/1/2008	TRICHLOROETHYLENE (TCE)	7.5E-03		2	2
MW-6B	T	7/1/2009	TRICHLOROETHYLENE (TCE)	6.8E-03		2	2

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-6C
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -14

Confidence in Trend: 91.0%

Coefficient of Variation: 0.63

Mann Kendall Concentration Trend: (See Note) PD

Data Table:

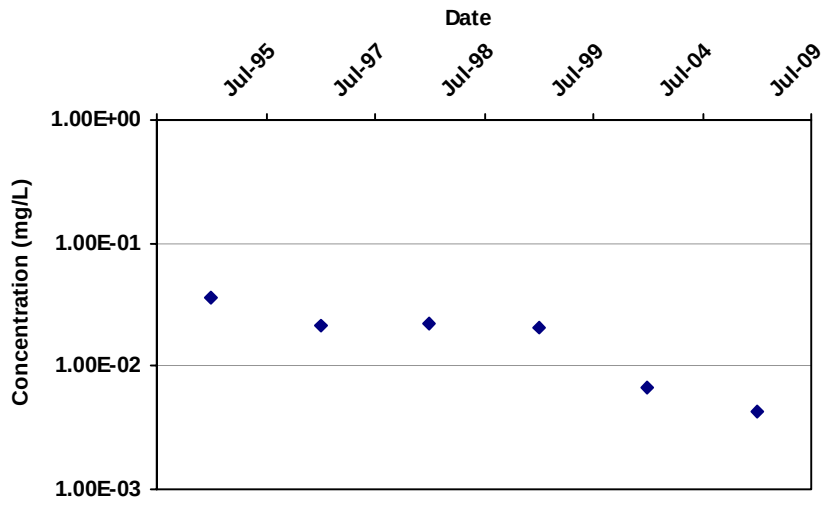
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-6C	T	7/1/1995	TRICHLOROETHYLENE (TCE)	4.5E-02		2	2
MW-6C	T	7/1/1997	TRICHLOROETHYLENE (TCE)	2.3E-02		1	1
MW-6C	T	7/1/1998	TRICHLOROETHYLENE (TCE)	5.7E-02		1	1
MW-6C	T	7/1/2000	TRICHLOROETHYLENE (TCE)	4.8E-02		1	1
MW-6C	T	7/1/2001	TRICHLOROETHYLENE (TCE)	5.0E-02		1	1
MW-6C	T	7/1/2002	TRICHLOROETHYLENE (TCE)	5.2E-02		1	1
MW-6C	T	7/1/2003	TRICHLOROETHYLENE (TCE)	1.6E-02		1	1
MW-6C	T	7/1/2004	TRICHLOROETHYLENE (TCE)	9.7E-03		1	1
MW-6C	T	7/1/2009	TRICHLOROETHYLENE (TCE)	5.4E-04		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-6D
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -13

Confidence in Trend: 99.2%

Coefficient of Variation: 0.63

Mann Kendall Concentration Trend: (See Note) D

Data Table:

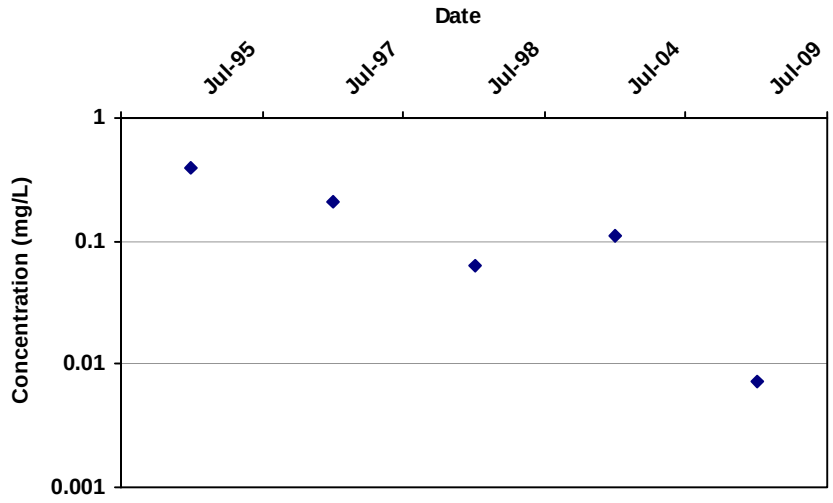
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-6D	T	7/1/1995	TRICHLOROETHYLENE (TCE)	3.7E-02		2	2
MW-6D	T	7/1/1997	TRICHLOROETHYLENE (TCE)	2.1E-02		1	1
MW-6D	T	7/1/1998	TRICHLOROETHYLENE (TCE)	2.2E-02		1	1
MW-6D	T	7/1/1999	TRICHLOROETHYLENE (TCE)	2.1E-02		2	2
MW-6D	T	7/1/2004	TRICHLOROETHYLENE (TCE)	6.7E-03		1	1
MW-6D	T	7/1/2009	TRICHLOROETHYLENE (TCE)	4.3E-03		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-7B
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -8

Confidence in Trend: 95.8%

Coefficient of Variation: 0.97

Mann Kendall Concentration Trend: (See Note) D

Data Table:

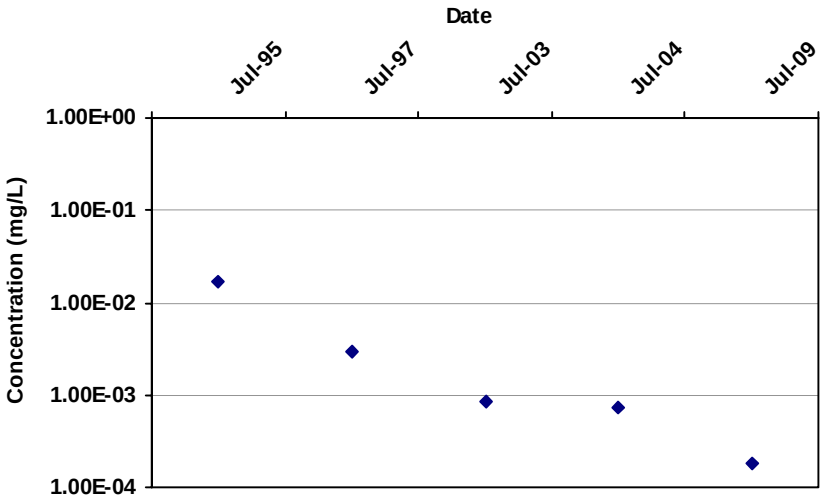
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-7B	T	7/1/1995	TRICHLOROETHYLENE (TCE)	3.9E-01		2	2
MW-7B	T	7/1/1997	TRICHLOROETHYLENE (TCE)	2.1E-01		1	1
MW-7B	T	7/1/1998	TRICHLOROETHYLENE (TCE)	6.2E-02		1	1
MW-7B	T	7/1/2004	TRICHLOROETHYLENE (TCE)	1.1E-01		1	1
MW-7B	T	7/1/2009	TRICHLOROETHYLENE (TCE)	7.3E-03		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-7C
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -10

Confidence in Trend: 99.2%

Coefficient of Variation: 1.64

Mann Kendall Concentration Trend: (See Note) D

Data Table:

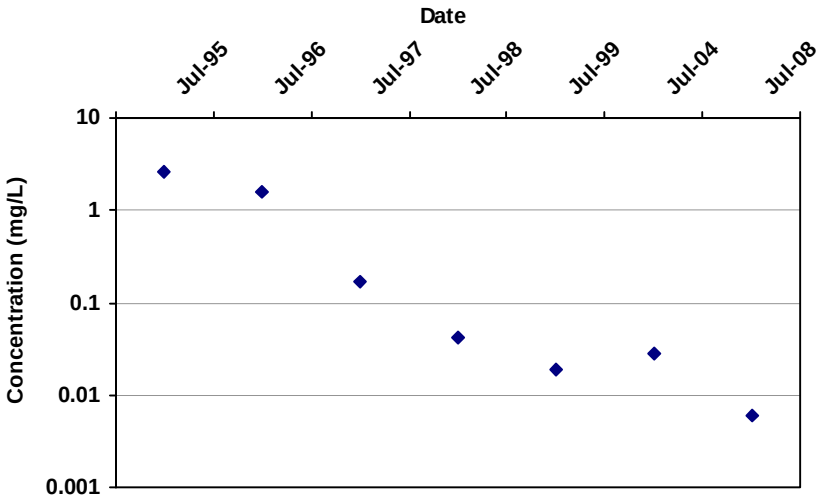
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-7C	T	7/1/1995	TRICHLOROETHYLENE (TCE)	1.7E-02		2	2
MW-7C	T	7/1/1997	TRICHLOROETHYLENE (TCE)	3.0E-03		1	1
MW-7C	T	7/1/2003	TRICHLOROETHYLENE (TCE)	8.5E-04		1	1
MW-7C	T	7/1/2004	TRICHLOROETHYLENE (TCE)	7.4E-04		1	1
MW-7C	T	7/1/2009	TRICHLOROETHYLENE (TCE)	1.8E-04		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-8B
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -19

Confidence in Trend: 99.9%

Coefficient of Variation: 1.63

Mann Kendall Concentration Trend: (See Note) D

Data Table:

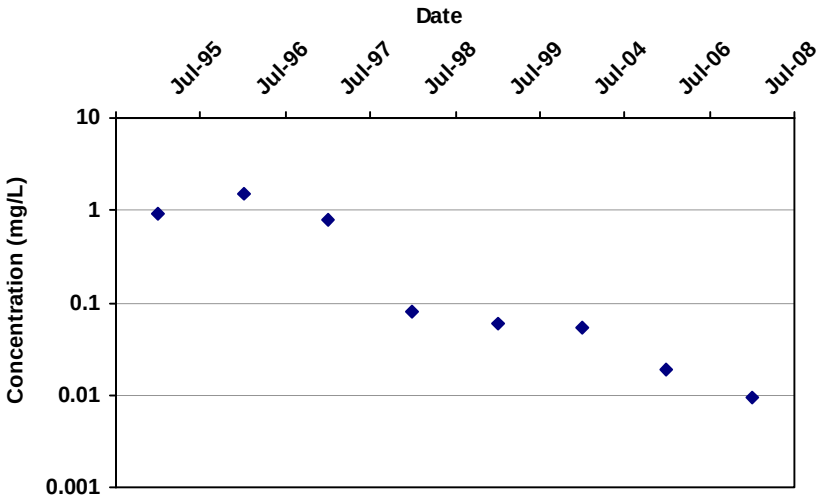
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-8B	T	7/1/1995	TRICHLOROETHYLENE (TCE)	2.6E+00		2	2
MW-8B	T	7/1/1996	TRICHLOROETHYLENE (TCE)	1.6E+00		2	2
MW-8B	T	7/1/1997	TRICHLOROETHYLENE (TCE)	1.7E-01		2	2
MW-8B	T	7/1/1998	TRICHLOROETHYLENE (TCE)	4.1E-02		1	1
MW-8B	T	7/1/1999	TRICHLOROETHYLENE (TCE)	1.9E-02		2	2
MW-8B	T	7/1/2004	TRICHLOROETHYLENE (TCE)	2.8E-02		1	1
MW-8B	T	7/1/2008	TRICHLOROETHYLENE (TCE)	6.0E-03		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-9B
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -26

Confidence in Trend: 100.0%

Coefficient of Variation: 1.32

Mann Kendall Concentration Trend: (See Note) D

Data Table:

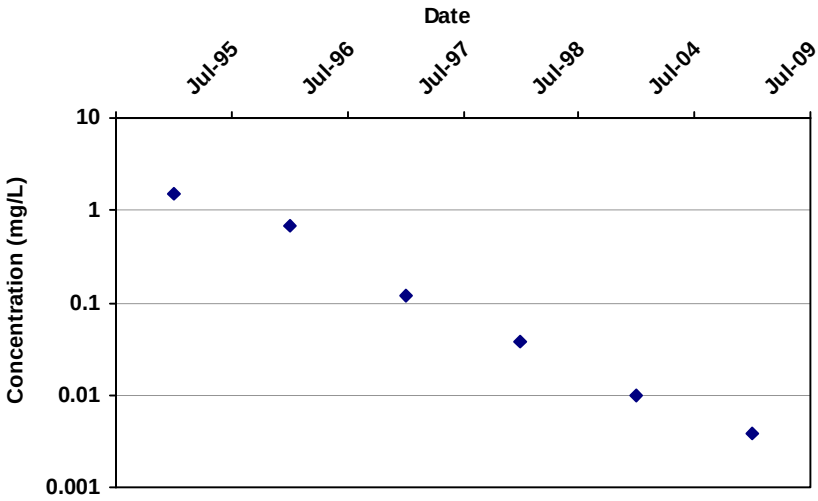
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-9B	T	7/1/1995	TRICHLOROETHYLENE (TCE)	9.4E-01		2	2
MW-9B	T	7/1/1996	TRICHLOROETHYLENE (TCE)	1.5E+00		2	2
MW-9B	T	7/1/1997	TRICHLOROETHYLENE (TCE)	7.8E-01		2	2
MW-9B	T	7/1/1998	TRICHLOROETHYLENE (TCE)	8.1E-02		2	2
MW-9B	T	7/1/1999	TRICHLOROETHYLENE (TCE)	6.0E-02		2	2
MW-9B	T	7/1/2004	TRICHLOROETHYLENE (TCE)	5.5E-02		1	1
MW-9B	T	7/1/2006	TRICHLOROETHYLENE (TCE)	1.9E-02		1	1
MW-9B	T	7/1/2008	TRICHLOROETHYLENE (TCE)	9.3E-03		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-9C
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -15

Confidence in Trend: 99.9%

Coefficient of Variation: 1.53

Mann Kendall Concentration Trend: (See Note) D

Data Table:

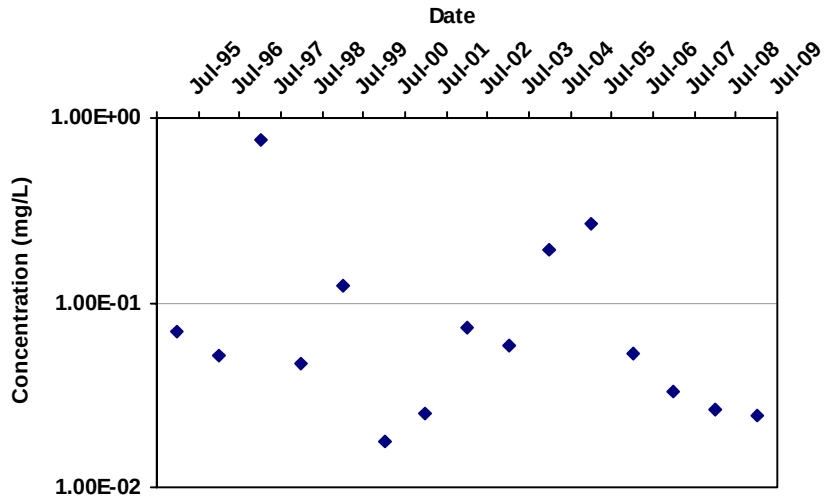
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-9C	T	7/1/1995	TRICHLOROETHYLENE (TCE)	1.5E+00		2	2
MW-9C	T	7/1/1996	TRICHLOROETHYLENE (TCE)	6.9E-01		2	2
MW-9C	T	7/1/1997	TRICHLOROETHYLENE (TCE)	1.2E-01		2	2
MW-9C	T	7/1/1998	TRICHLOROETHYLENE (TCE)	3.7E-02		1	1
MW-9C	T	7/1/2004	TRICHLOROETHYLENE (TCE)	1.0E-02		1	1
MW-9C	T	7/1/2009	TRICHLOROETHYLENE (TCE)	3.8E-03		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-10B
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -23

Confidence in Trend: 85.9%

Coefficient of Variation: 1.55

Mann Kendall Concentration Trend: (See Note) NT

Data Table:

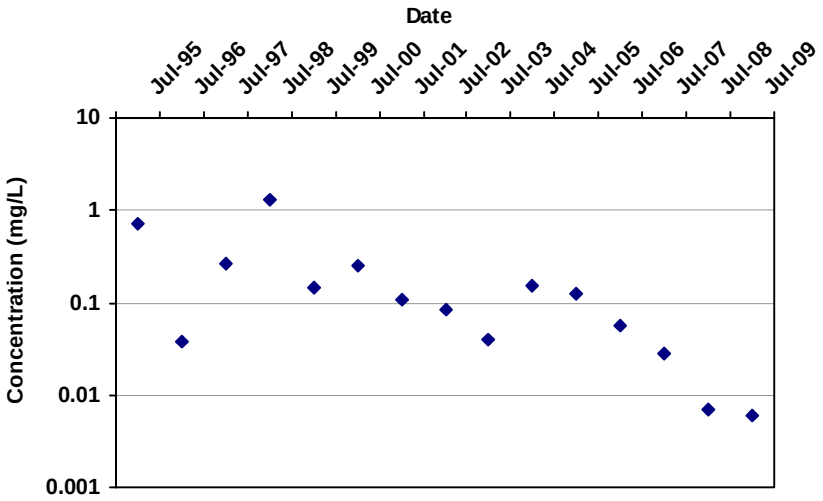
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-10B	T	7/1/1995	TRICHLOROETHYLENE (TCE)	7.0E-02		11	11
MW-10B	T	7/1/1996	TRICHLOROETHYLENE (TCE)	5.2E-02		2	2
MW-10B	T	7/1/1997	TRICHLOROETHYLENE (TCE)	7.5E-01		2	2
MW-10B	T	7/1/1998	TRICHLOROETHYLENE (TCE)	4.7E-02		2	2
MW-10B	T	7/1/1999	TRICHLOROETHYLENE (TCE)	1.2E-01		2	2
MW-10B	T	7/1/2000	TRICHLOROETHYLENE (TCE)	1.8E-02		3	3
MW-10B	T	7/1/2001	TRICHLOROETHYLENE (TCE)	2.5E-02		2	2
MW-10B	T	7/1/2002	TRICHLOROETHYLENE (TCE)	7.3E-02		3	3
MW-10B	T	7/1/2003	TRICHLOROETHYLENE (TCE)	5.8E-02		3	3
MW-10B	T	7/1/2004	TRICHLOROETHYLENE (TCE)	1.9E-01		2	2
MW-10B	T	7/1/2005	TRICHLOROETHYLENE (TCE)	2.7E-01		1	1
MW-10B	T	7/1/2006	TRICHLOROETHYLENE (TCE)	5.3E-02		1	1
MW-10B	T	7/1/2007	TRICHLOROETHYLENE (TCE)	3.3E-02		2	2
MW-10B	T	7/1/2008	TRICHLOROETHYLENE (TCE)	2.6E-02		2	2
MW-10B	T	7/1/2009	TRICHLOROETHYLENE (TCE)	2.4E-02		2	2

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-10C
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -63

Confidence in Trend: 99.9%

Coefficient of Variation: 1.56

Mann Kendall Concentration Trend: (See Note) D

Data Table:

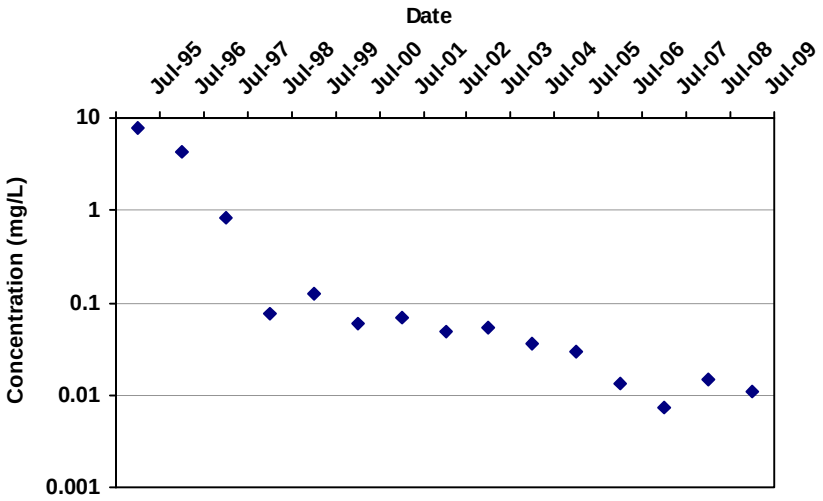
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-10C	T	7/1/1995	TRICHLOROETHYLENE (TCE)	7.0E-01		11	11
MW-10C	T	7/1/1996	TRICHLOROETHYLENE (TCE)	3.7E-02		2	2
MW-10C	T	7/1/1997	TRICHLOROETHYLENE (TCE)	2.6E-01		2	2
MW-10C	T	7/1/1998	TRICHLOROETHYLENE (TCE)	1.3E+00		2	2
MW-10C	T	7/1/1999	TRICHLOROETHYLENE (TCE)	1.4E-01		2	2
MW-10C	T	7/1/2000	TRICHLOROETHYLENE (TCE)	2.5E-01		3	3
MW-10C	T	7/1/2001	TRICHLOROETHYLENE (TCE)	1.1E-01		2	2
MW-10C	T	7/1/2002	TRICHLOROETHYLENE (TCE)	8.3E-02		3	3
MW-10C	T	7/1/2003	TRICHLOROETHYLENE (TCE)	4.1E-02		3	3
MW-10C	T	7/1/2004	TRICHLOROETHYLENE (TCE)	1.5E-01		2	2
MW-10C	T	7/1/2005	TRICHLOROETHYLENE (TCE)	1.2E-01		2	2
MW-10C	T	7/1/2006	TRICHLOROETHYLENE (TCE)	5.6E-02		2	2
MW-10C	T	7/1/2007	TRICHLOROETHYLENE (TCE)	2.9E-02		2	2
MW-10C	T	7/1/2008	TRICHLOROETHYLENE (TCE)	6.9E-03		2	2
MW-10C	T	7/1/2009	TRICHLOROETHYLENE (TCE)	6.0E-03		2	2

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-12C
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -93

Confidence in Trend: 100.0%

Coefficient of Variation: 2.44

Mann Kendall Concentration Trend: (See Note) D

Data Table:

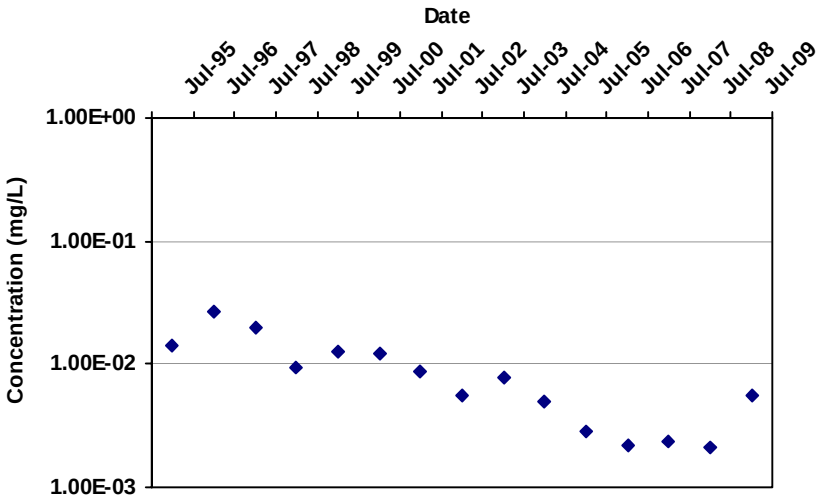
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-12C	T	7/1/1995	TRICHLOROETHYLENE (TCE)	7.7E+00		2	2
MW-12C	T	7/1/1996	TRICHLOROETHYLENE (TCE)	4.4E+00		2	2
MW-12C	T	7/1/1997	TRICHLOROETHYLENE (TCE)	8.1E-01		2	2
MW-12C	T	7/1/1998	TRICHLOROETHYLENE (TCE)	7.7E-02		2	2
MW-12C	T	7/1/1999	TRICHLOROETHYLENE (TCE)	1.2E-01		2	2
MW-12C	T	7/1/2000	TRICHLOROETHYLENE (TCE)	6.1E-02		2	2
MW-12C	T	7/1/2001	TRICHLOROETHYLENE (TCE)	7.0E-02		1	1
MW-12C	T	7/1/2002	TRICHLOROETHYLENE (TCE)	4.9E-02		1	1
MW-12C	T	7/1/2003	TRICHLOROETHYLENE (TCE)	5.5E-02		2	2
MW-12C	T	7/1/2004	TRICHLOROETHYLENE (TCE)	3.6E-02		2	2
MW-12C	T	7/1/2005	TRICHLOROETHYLENE (TCE)	2.9E-02		1	1
MW-12C	T	7/1/2006	TRICHLOROETHYLENE (TCE)	1.3E-02		1	1
MW-12C	T	7/1/2007	TRICHLOROETHYLENE (TCE)	7.4E-03		1	1
MW-12C	T	7/1/2008	TRICHLOROETHYLENE (TCE)	1.5E-02		1	1
MW-12C	T	7/1/2009	TRICHLOROETHYLENE (TCE)	1.1E-02		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-13C
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -83

Confidence in Trend: 100.0%

Coefficient of Variation: 0.78

Mann Kendall Concentration Trend: (See Note) D

Data Table:

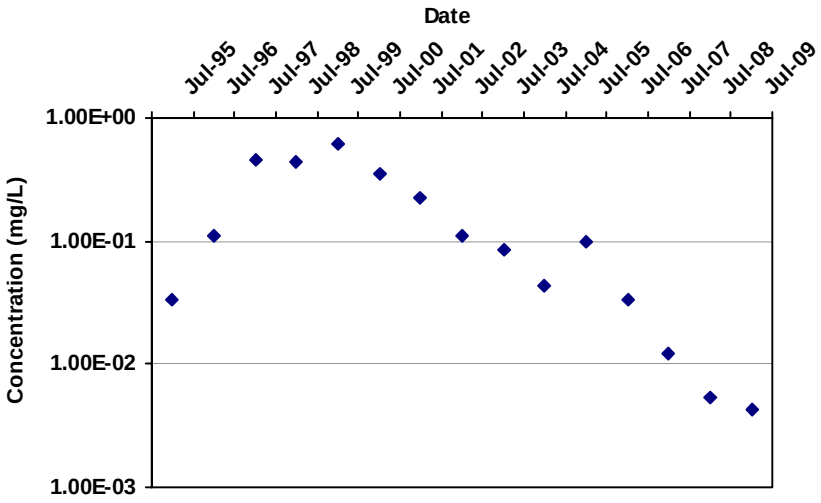
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-13C	T	7/1/1995	TRICHLOROETHYLENE (TCE)	1.4E-02		2	2
MW-13C	T	7/1/1996	TRICHLOROETHYLENE (TCE)	2.7E-02		2	2
MW-13C	T	7/1/1997	TRICHLOROETHYLENE (TCE)	2.0E-02		2	2
MW-13C	T	7/1/1998	TRICHLOROETHYLENE (TCE)	9.5E-03		2	2
MW-13C	T	7/1/1999	TRICHLOROETHYLENE (TCE)	1.2E-02		2	2
MW-13C	T	7/1/2000	TRICHLOROETHYLENE (TCE)	1.2E-02		2	2
MW-13C	T	7/1/2001	TRICHLOROETHYLENE (TCE)	8.8E-03		2	2
MW-13C	T	7/1/2002	TRICHLOROETHYLENE (TCE)	5.7E-03		2	2
MW-13C	T	7/1/2003	TRICHLOROETHYLENE (TCE)	7.9E-03		2	2
MW-13C	T	7/1/2004	TRICHLOROETHYLENE (TCE)	4.9E-03		2	2
MW-13C	T	7/1/2005	TRICHLOROETHYLENE (TCE)	2.8E-03		1	1
MW-13C	T	7/1/2006	TRICHLOROETHYLENE (TCE)	2.2E-03		1	1
MW-13C	T	7/1/2007	TRICHLOROETHYLENE (TCE)	2.4E-03		1	1
MW-13C	T	7/1/2008	TRICHLOROETHYLENE (TCE)	2.1E-03		1	1
MW-13C	T	7/1/2009	TRICHLOROETHYLENE (TCE)	5.6E-03		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: PW-1B
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -63

Confidence in Trend: 99.9%

Coefficient of Variation: 1.12

Mann Kendall Concentration Trend: (See Note) D

Data Table:

Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
PW-1B	T	7/1/1995	TRICHLOROETHYLENE (TCE)	3.3E-02		11	11
PW-1B	T	7/1/1996	TRICHLOROETHYLENE (TCE)	1.1E-01		12	12
PW-1B	T	7/1/1997	TRICHLOROETHYLENE (TCE)	4.6E-01		9	9
PW-1B	T	7/1/1998	TRICHLOROETHYLENE (TCE)	4.3E-01		3	3
PW-1B	T	7/1/1999	TRICHLOROETHYLENE (TCE)	6.2E-01		4	4
PW-1B	T	7/1/2000	TRICHLOROETHYLENE (TCE)	3.5E-01		5	5
PW-1B	T	7/1/2001	TRICHLOROETHYLENE (TCE)	2.3E-01		4	4
PW-1B	T	7/1/2002	TRICHLOROETHYLENE (TCE)	1.1E-01		4	4
PW-1B	T	7/1/2003	TRICHLOROETHYLENE (TCE)	8.5E-02		3	3
PW-1B	T	7/1/2004	TRICHLOROETHYLENE (TCE)	4.4E-02		2	2
PW-1B	T	7/1/2005	TRICHLOROETHYLENE (TCE)	9.7E-02		2	2
PW-1B	T	7/1/2006	TRICHLOROETHYLENE (TCE)	3.4E-02		2	2
PW-1B	T	7/1/2007	TRICHLOROETHYLENE (TCE)	1.2E-02		2	2
PW-1B	T	7/1/2008	TRICHLOROETHYLENE (TCE)	5.3E-03		2	2
PW-1B	T	7/1/2009	TRICHLOROETHYLENE (TCE)	4.3E-03		2	2

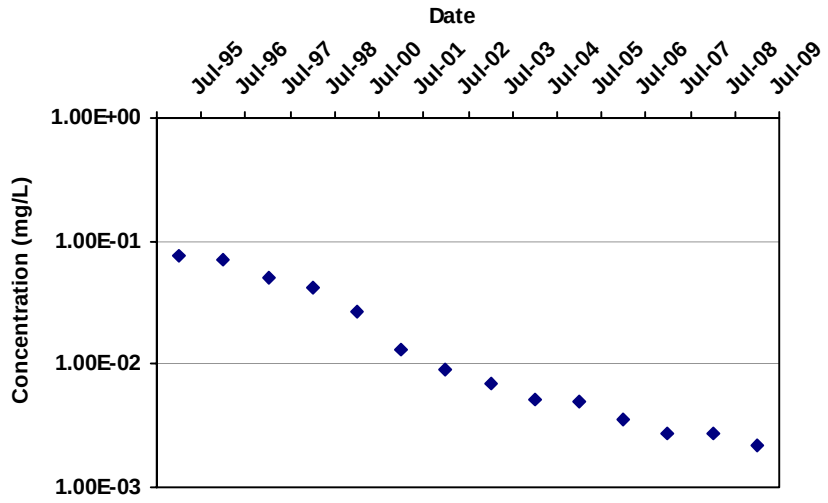
Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

INTERMEDIATE WELLS

MAROS Mann-Kendall Statistics Summary

Well: AMW-16
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -90

Confidence in Trend: 100.0%

Coefficient of Variation: 1.17

Mann Kendall Concentration Trend: (See Note) D

Data Table:

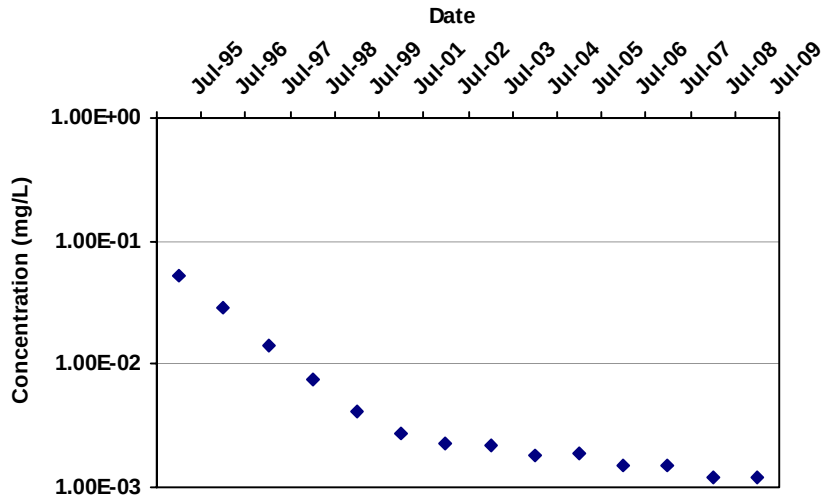
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
AMW-16	T	7/1/1995	TRICHLOROETHYLENE (TCE)	7.7E-02		2	2
AMW-16	T	7/1/1996	TRICHLOROETHYLENE (TCE)	6.9E-02		2	2
AMW-16	T	7/1/1997	TRICHLOROETHYLENE (TCE)	5.1E-02		2	2
AMW-16	T	7/1/1998	TRICHLOROETHYLENE (TCE)	4.2E-02		2	2
AMW-16	T	7/1/2000	TRICHLOROETHYLENE (TCE)	2.7E-02		2	2
AMW-16	T	7/1/2001	TRICHLOROETHYLENE (TCE)	1.3E-02		1	1
AMW-16	T	7/1/2002	TRICHLOROETHYLENE (TCE)	9.0E-03		1	1
AMW-16	T	7/1/2003	TRICHLOROETHYLENE (TCE)	7.0E-03		1	1
AMW-16	T	7/1/2004	TRICHLOROETHYLENE (TCE)	5.1E-03		1	1
AMW-16	T	7/1/2005	TRICHLOROETHYLENE (TCE)	5.0E-03		1	1
AMW-16	T	7/1/2006	TRICHLOROETHYLENE (TCE)	3.6E-03		1	1
AMW-16	T	7/1/2007	TRICHLOROETHYLENE (TCE)	2.7E-03		1	1
AMW-16	T	7/1/2008	TRICHLOROETHYLENE (TCE)	2.7E-03		1	1
AMW-16	T	7/1/2009	TRICHLOROETHYLENE (TCE)	2.2E-03		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: AMW-17
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -88

Confidence in Trend: 100.0%

Coefficient of Variation: 1.67

Mann Kendall Concentration Trend: (See Note) D

Data Table:

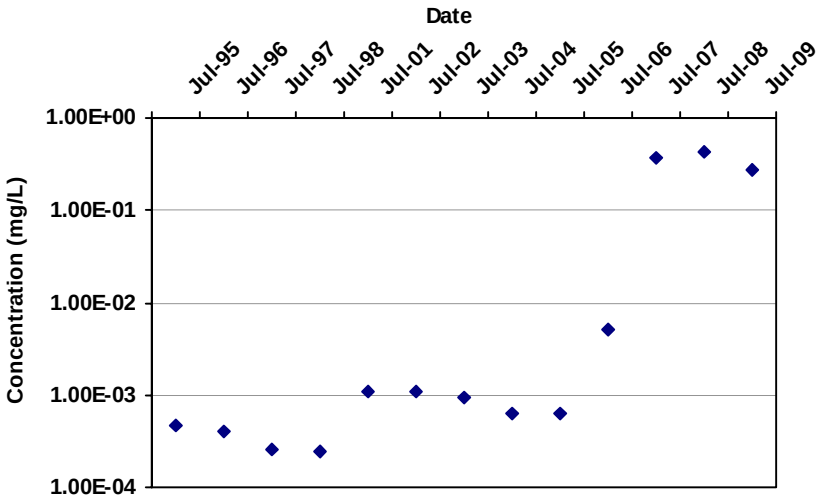
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
AMW-17	T	7/1/1995	TRICHLOROETHYLENE (TCE)	5.3E-02		2	2
AMW-17	T	7/1/1996	TRICHLOROETHYLENE (TCE)	2.8E-02		2	2
AMW-17	T	7/1/1997	TRICHLOROETHYLENE (TCE)	1.4E-02		2	2
AMW-17	T	7/1/1998	TRICHLOROETHYLENE (TCE)	7.5E-03		2	2
AMW-17	T	7/1/1999	TRICHLOROETHYLENE (TCE)	4.1E-03		2	2
AMW-17	T	7/1/2001	TRICHLOROETHYLENE (TCE)	2.7E-03		1	1
AMW-17	T	7/1/2002	TRICHLOROETHYLENE (TCE)	2.3E-03		1	1
AMW-17	T	7/1/2003	TRICHLOROETHYLENE (TCE)	2.2E-03		1	1
AMW-17	T	7/1/2004	TRICHLOROETHYLENE (TCE)	1.8E-03		1	1
AMW-17	T	7/1/2005	TRICHLOROETHYLENE (TCE)	1.9E-03		1	1
AMW-17	T	7/1/2006	TRICHLOROETHYLENE (TCE)	1.5E-03		1	1
AMW-17	T	7/1/2007	TRICHLOROETHYLENE (TCE)	1.5E-03		1	1
AMW-17	T	7/1/2008	TRICHLOROETHYLENE (TCE)	1.2E-03		1	1
AMW-17	T	7/1/2009	TRICHLOROETHYLENE (TCE)	1.2E-03		3	3

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: AMW-18
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: 43

Confidence in Trend: 99.6%

Coefficient of Variation: 1.92

Mann Kendall Concentration Trend: (See Note) I

Data Table:

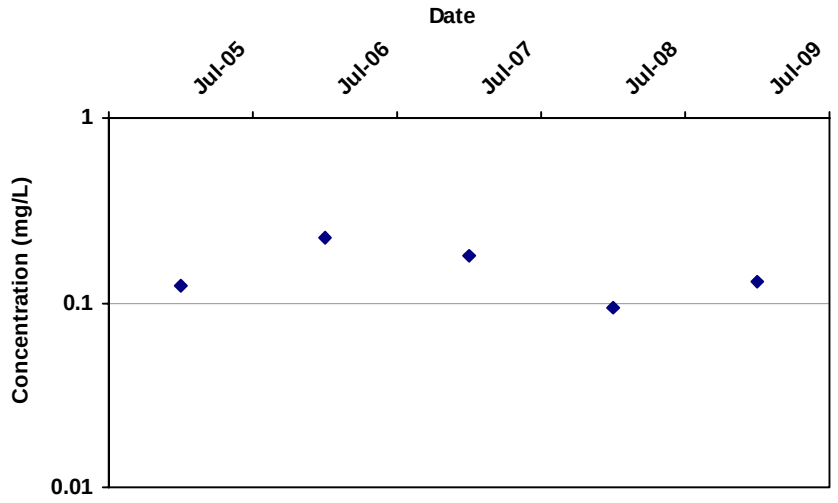
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
AMW-18	T	7/1/1995	TRICHLOROETHYLENE (TCE)	4.7E-04		2	2
AMW-18	T	7/1/1996	TRICHLOROETHYLENE (TCE)	3.9E-04		2	1
AMW-18	T	7/1/1997	TRICHLOROETHYLENE (TCE)	2.5E-04		2	1
AMW-18	T	7/1/1998	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	1	0
AMW-18	T	7/1/2001	TRICHLOROETHYLENE (TCE)	1.1E-03		1	1
AMW-18	T	7/1/2002	TRICHLOROETHYLENE (TCE)	1.1E-03		1	1
AMW-18	T	7/1/2003	TRICHLOROETHYLENE (TCE)	9.5E-04		1	1
AMW-18	T	7/1/2004	TRICHLOROETHYLENE (TCE)	6.4E-04		1	1
AMW-18	T	7/1/2005	TRICHLOROETHYLENE (TCE)	6.2E-04		1	1
AMW-18	T	7/1/2006	TRICHLOROETHYLENE (TCE)	5.1E-03		1	1
AMW-18	T	7/1/2007	TRICHLOROETHYLENE (TCE)	3.7E-01		2	2
AMW-18	T	7/1/2008	TRICHLOROETHYLENE (TCE)	4.3E-01		4	4
AMW-18	T	7/1/2009	TRICHLOROETHYLENE (TCE)	2.7E-01		3	3

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: AMW-59
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -2

Confidence in Trend: 59.2%

Coefficient of Variation: 0.34

Mann Kendall Concentration Trend: (See Note) S

Data Table:

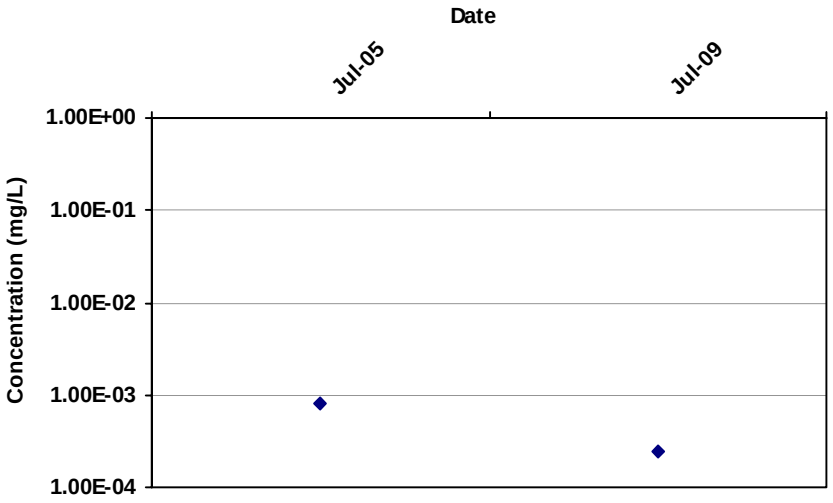
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
AMW-59	T	7/1/2005	TRICHLOROETHYLENE (TCE)	1.2E-01		3	3
AMW-59	T	7/1/2006	TRICHLOROETHYLENE (TCE)	2.2E-01		2	2
AMW-59	T	7/1/2007	TRICHLOROETHYLENE (TCE)	1.8E-01		1	1
AMW-59	T	7/1/2008	TRICHLOROETHYLENE (TCE)	9.5E-02		1	1
AMW-59	T	7/1/2009	TRICHLOROETHYLENE (TCE)	1.3E-01		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: AMW-60
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: 0

Confidence in Trend: 0.0%

Coefficient of Variation: 0.00

Mann Kendall Concentration Trend: (See Note) N/A

Data Table:

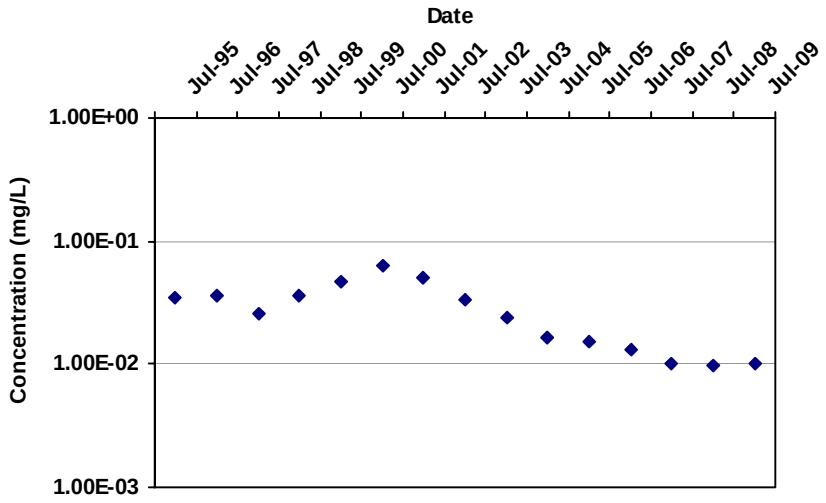
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
AMW-60	T	7/1/2005	TRICHLOROETHYLENE (TCE)	8.2E-04		2	2
AMW-60	T	7/1/2009	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	1	0

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: CPU-14
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -66

Confidence in Trend: 100.0%

Coefficient of Variation: 0.58

Mann Kendall Concentration Trend: (See Note) D

Data Table:

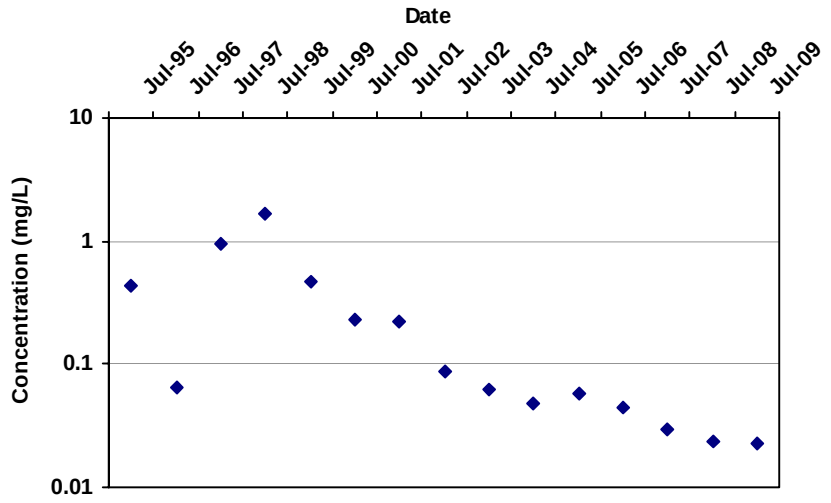
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
CPU-14	T	7/1/1995	TRICHLOROETHYLENE (TCE)	3.4E-02		2	2
CPU-14	T	7/1/1996	TRICHLOROETHYLENE (TCE)	3.6E-02		2	2
CPU-14	T	7/1/1997	TRICHLOROETHYLENE (TCE)	2.6E-02		1	1
CPU-14	T	7/1/1998	TRICHLOROETHYLENE (TCE)	3.6E-02		2	2
CPU-14	T	7/1/1999	TRICHLOROETHYLENE (TCE)	4.7E-02		2	2
CPU-14	T	7/1/2000	TRICHLOROETHYLENE (TCE)	6.3E-02		2	2
CPU-14	T	7/1/2001	TRICHLOROETHYLENE (TCE)	5.1E-02		2	2
CPU-14	T	7/1/2002	TRICHLOROETHYLENE (TCE)	3.3E-02		2	2
CPU-14	T	7/1/2003	TRICHLOROETHYLENE (TCE)	2.3E-02		2	2
CPU-14	T	7/1/2004	TRICHLOROETHYLENE (TCE)	1.6E-02		2	2
CPU-14	T	7/1/2005	TRICHLOROETHYLENE (TCE)	1.5E-02		2	2
CPU-14	T	7/1/2006	TRICHLOROETHYLENE (TCE)	1.3E-02		1	1
CPU-14	T	7/1/2007	TRICHLOROETHYLENE (TCE)	1.0E-02		1	1
CPU-14	T	7/1/2008	TRICHLOROETHYLENE (TCE)	9.8E-03		1	1
CPU-14	T	7/1/2009	TRICHLOROETHYLENE (TCE)	1.0E-02		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-14C
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -83

Confidence in Trend: 100.0%

Coefficient of Variation: 1.55

Mann Kendall Concentration Trend: (See Note) D

Data Table:

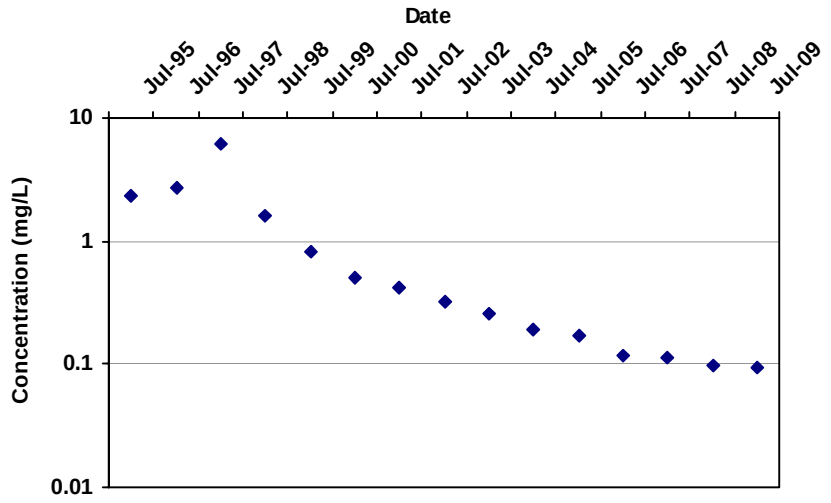
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-14C	T	7/1/1995	TRICHLOROETHYLENE (TCE)	4.4E-01		11	11
MW-14C	T	7/1/1996	TRICHLOROETHYLENE (TCE)	6.5E-02		2	2
MW-14C	T	7/1/1997	TRICHLOROETHYLENE (TCE)	9.4E-01		6	6
MW-14C	T	7/1/1998	TRICHLOROETHYLENE (TCE)	1.7E+00		2	2
MW-14C	T	7/1/1999	TRICHLOROETHYLENE (TCE)	4.6E-01		3	3
MW-14C	T	7/1/2000	TRICHLOROETHYLENE (TCE)	2.3E-01		5	5
MW-14C	T	7/1/2001	TRICHLOROETHYLENE (TCE)	2.2E-01		4	4
MW-14C	T	7/1/2002	TRICHLOROETHYLENE (TCE)	8.9E-02		4	4
MW-14C	T	7/1/2003	TRICHLOROETHYLENE (TCE)	6.3E-02		3	3
MW-14C	T	7/1/2004	TRICHLOROETHYLENE (TCE)	4.8E-02		2	2
MW-14C	T	7/1/2005	TRICHLOROETHYLENE (TCE)	5.7E-02		2	2
MW-14C	T	7/1/2006	TRICHLOROETHYLENE (TCE)	4.4E-02		2	2
MW-14C	T	7/1/2007	TRICHLOROETHYLENE (TCE)	2.9E-02		2	2
MW-14C	T	7/1/2008	TRICHLOROETHYLENE (TCE)	2.4E-02		2	2
MW-14C	T	7/1/2009	TRICHLOROETHYLENE (TCE)	2.2E-02		2	2

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-14E
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -99

Confidence in Trend: 100.0%

Coefficient of Variation: 1.56

Mann Kendall Concentration Trend: (See Note) D

Data Table:

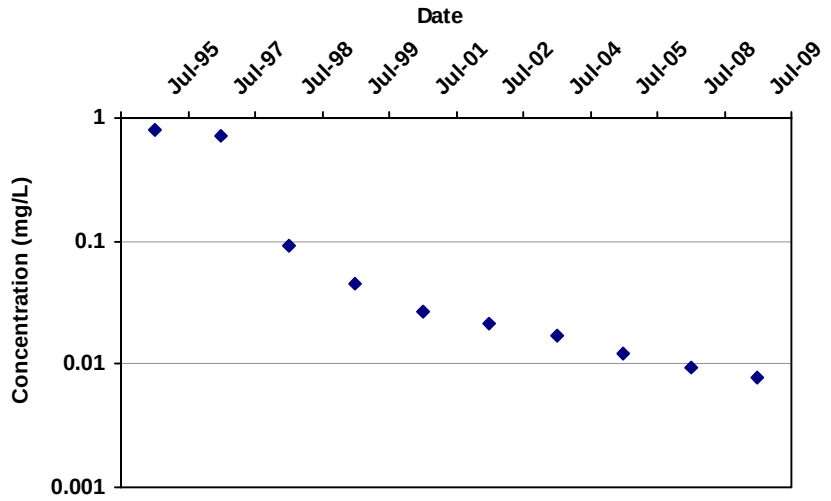
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-14E	T	7/1/1995	TRICHLOROETHYLENE (TCE)	2.3E+00		11	11
MW-14E	T	7/1/1996	TRICHLOROETHYLENE (TCE)	2.7E+00		2	2
MW-14E	T	7/1/1997	TRICHLOROETHYLENE (TCE)	6.3E+00		2	2
MW-14E	T	7/1/1998	TRICHLOROETHYLENE (TCE)	1.6E+00		3	3
MW-14E	T	7/1/1999	TRICHLOROETHYLENE (TCE)	8.2E-01		4	4
MW-14E	T	7/1/2000	TRICHLOROETHYLENE (TCE)	5.1E-01		5	5
MW-14E	T	7/1/2001	TRICHLOROETHYLENE (TCE)	4.2E-01		4	4
MW-14E	T	7/1/2002	TRICHLOROETHYLENE (TCE)	3.3E-01		4	4
MW-14E	T	7/1/2003	TRICHLOROETHYLENE (TCE)	2.6E-01		3	3
MW-14E	T	7/1/2004	TRICHLOROETHYLENE (TCE)	1.9E-01		2	2
MW-14E	T	7/1/2005	TRICHLOROETHYLENE (TCE)	1.7E-01		2	2
MW-14E	T	7/1/2006	TRICHLOROETHYLENE (TCE)	1.2E-01		2	2
MW-14E	T	7/1/2007	TRICHLOROETHYLENE (TCE)	1.1E-01		2	2
MW-14E	T	7/1/2008	TRICHLOROETHYLENE (TCE)	9.7E-02		2	2
MW-14E	T	7/1/2009	TRICHLOROETHYLENE (TCE)	9.3E-02		2	2

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-15E
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -45

Confidence in Trend: 100.0%

Coefficient of Variation: 1.77

Mann Kendall Concentration Trend: (See Note) D

Data Table:

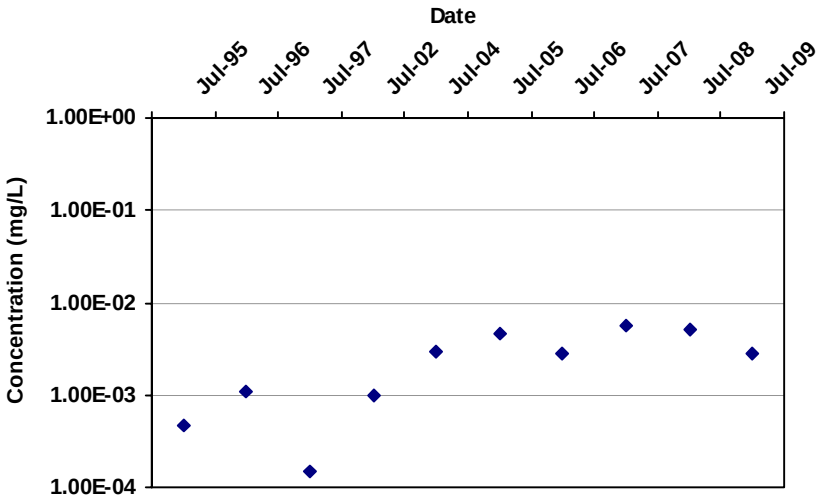
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-15E	T	7/1/1995	TRICHLOROETHYLENE (TCE)	8.1E-01		2	2
MW-15E	T	7/1/1997	TRICHLOROETHYLENE (TCE)	7.0E-01		2	2
MW-15E	T	7/1/1998	TRICHLOROETHYLENE (TCE)	9.2E-02		2	2
MW-15E	T	7/1/1999	TRICHLOROETHYLENE (TCE)	4.5E-02		2	2
MW-15E	T	7/1/2001	TRICHLOROETHYLENE (TCE)	2.7E-02		1	1
MW-15E	T	7/1/2002	TRICHLOROETHYLENE (TCE)	2.1E-02		1	1
MW-15E	T	7/1/2004	TRICHLOROETHYLENE (TCE)	1.7E-02		1	1
MW-15E	T	7/1/2005	TRICHLOROETHYLENE (TCE)	1.2E-02		1	1
MW-15E	T	7/1/2008	TRICHLOROETHYLENE (TCE)	9.5E-03		2	2
MW-15E	T	7/1/2009	TRICHLOROETHYLENE (TCE)	7.9E-03		2	2

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-16E
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: 24

Confidence in Trend: 98.2%

Coefficient of Variation: 0.74

Mann Kendall Concentration Trend: (See Note) I

Data Table:

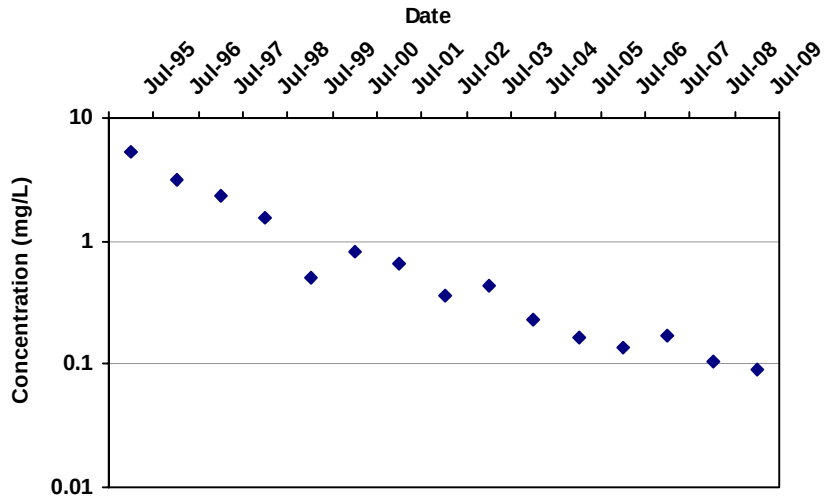
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-16E	T	7/1/1995	TRICHLOROETHYLENE (TCE)	4.6E-04		2	2
MW-16E	T	7/1/1996	TRICHLOROETHYLENE (TCE)	1.1E-03		2	2
MW-16E	T	7/1/1997	TRICHLOROETHYLENE (TCE)	1.5E-04	ND	1	0
MW-16E	T	7/1/2002	TRICHLOROETHYLENE (TCE)	1.0E-03		1	1
MW-16E	T	7/1/2004	TRICHLOROETHYLENE (TCE)	3.0E-03		1	1
MW-16E	T	7/1/2005	TRICHLOROETHYLENE (TCE)	4.6E-03		1	1
MW-16E	T	7/1/2006	TRICHLOROETHYLENE (TCE)	2.8E-03		1	1
MW-16E	T	7/1/2007	TRICHLOROETHYLENE (TCE)	5.7E-03		1	1
MW-16E	T	7/1/2008	TRICHLOROETHYLENE (TCE)	5.1E-03		1	1
MW-16E	T	7/1/2009	TRICHLOROETHYLENE (TCE)	2.8E-03		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-18D
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -95

Confidence in Trend: 100.0%

Coefficient of Variation: 1.39

Mann Kendall Concentration Trend: (See Note) D

Data Table:

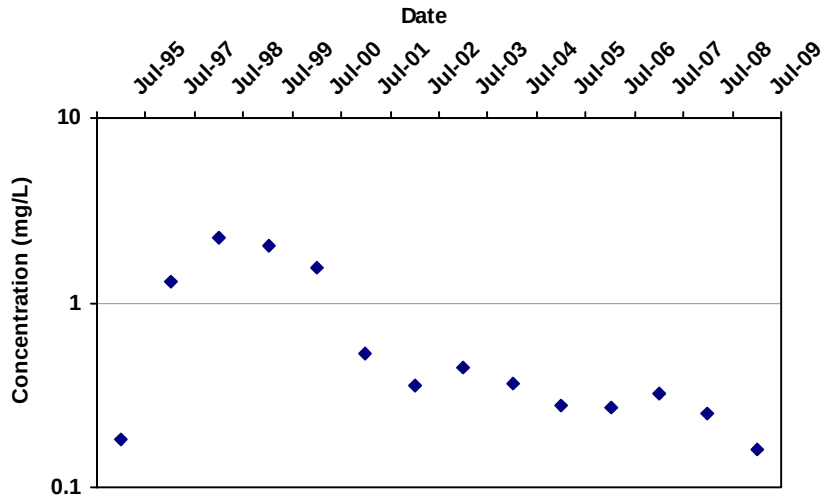
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-18D	T	7/1/1995	TRICHLOROETHYLENE (TCE)	5.3E+00		11	11
MW-18D	T	7/1/1996	TRICHLOROETHYLENE (TCE)	3.2E+00		8	8
MW-18D	T	7/1/1997	TRICHLOROETHYLENE (TCE)	2.3E+00		9	9
MW-18D	T	7/1/1998	TRICHLOROETHYLENE (TCE)	1.5E+00		3	3
MW-18D	T	7/1/1999	TRICHLOROETHYLENE (TCE)	5.0E-01		4	4
MW-18D	T	7/1/2000	TRICHLOROETHYLENE (TCE)	8.1E-01		5	5
MW-18D	T	7/1/2001	TRICHLOROETHYLENE (TCE)	6.5E-01		2	2
MW-18D	T	7/1/2002	TRICHLOROETHYLENE (TCE)	3.6E-01		4	4
MW-18D	T	7/1/2003	TRICHLOROETHYLENE (TCE)	4.4E-01		3	3
MW-18D	T	7/1/2004	TRICHLOROETHYLENE (TCE)	2.3E-01		2	2
MW-18D	T	7/1/2005	TRICHLOROETHYLENE (TCE)	1.6E-01		2	2
MW-18D	T	7/1/2006	TRICHLOROETHYLENE (TCE)	1.3E-01		2	2
MW-18D	T	7/1/2007	TRICHLOROETHYLENE (TCE)	1.7E-01		2	2
MW-18D	T	7/1/2008	TRICHLOROETHYLENE (TCE)	1.1E-01		2	2
MW-18D	T	7/1/2009	TRICHLOROETHYLENE (TCE)	9.1E-02		2	2

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-18E
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -53

Confidence in Trend: 99.8%

Coefficient of Variation: 0.99

Mann Kendall Concentration Trend: (See Note) D

Data Table:

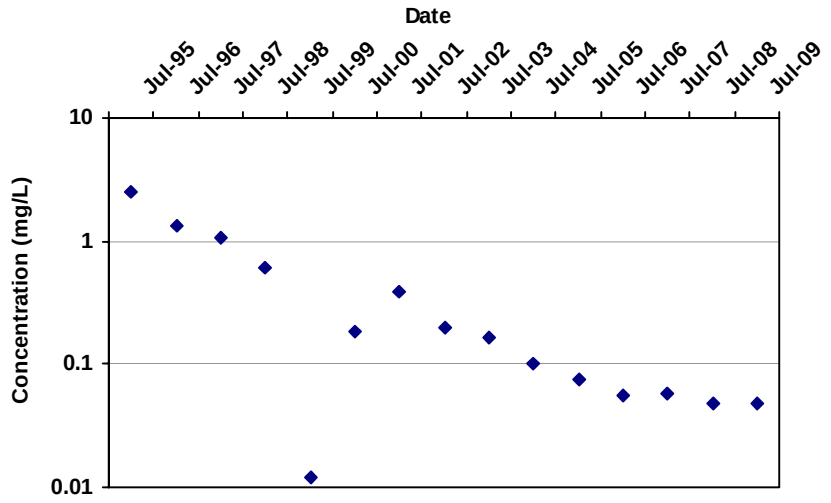
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-18E	T	7/1/1995	TRICHLOROETHYLENE (TCE)	1.8E-01		2	2
MW-18E	T	7/1/1997	TRICHLOROETHYLENE (TCE)	1.3E+00		2	2
MW-18E	T	7/1/1998	TRICHLOROETHYLENE (TCE)	2.3E+00		2	2
MW-18E	T	7/1/1999	TRICHLOROETHYLENE (TCE)	2.0E+00		2	2
MW-18E	T	7/1/2000	TRICHLOROETHYLENE (TCE)	1.5E+00		2	2
MW-18E	T	7/1/2001	TRICHLOROETHYLENE (TCE)	5.4E-01		4	4
MW-18E	T	7/1/2002	TRICHLOROETHYLENE (TCE)	3.6E-01		2	2
MW-18E	T	7/1/2003	TRICHLOROETHYLENE (TCE)	4.4E-01		2	2
MW-18E	T	7/1/2004	TRICHLOROETHYLENE (TCE)	3.6E-01		2	2
MW-18E	T	7/1/2005	TRICHLOROETHYLENE (TCE)	2.8E-01		1	1
MW-18E	T	7/1/2006	TRICHLOROETHYLENE (TCE)	2.7E-01		2	2
MW-18E	T	7/1/2007	TRICHLOROETHYLENE (TCE)	3.2E-01		1	1
MW-18E	T	7/1/2008	TRICHLOROETHYLENE (TCE)	2.5E-01		1	1
MW-18E	T	7/1/2009	TRICHLOROETHYLENE (TCE)	1.6E-01		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-19D
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -77

Confidence in Trend: 100.0%

Coefficient of Variation: 1.51

Mann Kendall Concentration Trend: (See Note) D

Data Table:

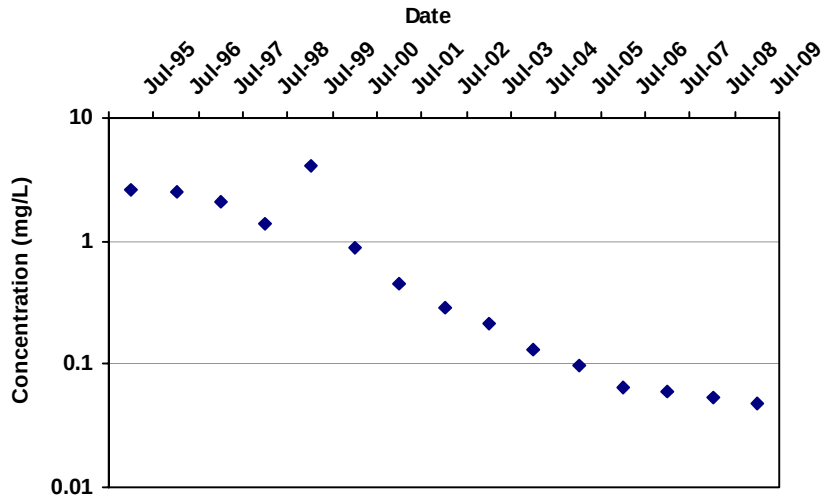
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-19D	T	7/1/1995	TRICHLOROETHYLENE (TCE)	2.5E+00		11	11
MW-19D	T	7/1/1996	TRICHLOROETHYLENE (TCE)	1.3E+00		12	12
MW-19D	T	7/1/1997	TRICHLOROETHYLENE (TCE)	1.1E+00		6	6
MW-19D	T	7/1/1998	TRICHLOROETHYLENE (TCE)	6.1E-01		3	3
MW-19D	T	7/1/1999	TRICHLOROETHYLENE (TCE)	1.2E-02		1	1
MW-19D	T	7/1/2000	TRICHLOROETHYLENE (TCE)	1.9E-01		4	4
MW-19D	T	7/1/2001	TRICHLOROETHYLENE (TCE)	3.9E-01		4	4
MW-19D	T	7/1/2002	TRICHLOROETHYLENE (TCE)	2.0E-01		4	4
MW-19D	T	7/1/2003	TRICHLOROETHYLENE (TCE)	1.7E-01		3	3
MW-19D	T	7/1/2004	TRICHLOROETHYLENE (TCE)	1.0E-01		2	2
MW-19D	T	7/1/2005	TRICHLOROETHYLENE (TCE)	7.5E-02		2	2
MW-19D	T	7/1/2006	TRICHLOROETHYLENE (TCE)	5.6E-02		2	2
MW-19D	T	7/1/2007	TRICHLOROETHYLENE (TCE)	5.8E-02		2	2
MW-19D	T	7/1/2008	TRICHLOROETHYLENE (TCE)	4.7E-02		2	2
MW-19D	T	7/1/2009	TRICHLOROETHYLENE (TCE)	4.8E-02		2	2

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-20D
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -97

Confidence in Trend: 100.0%

Coefficient of Variation: 1.27

Mann Kendall Concentration Trend: (See Note) D

Data Table:

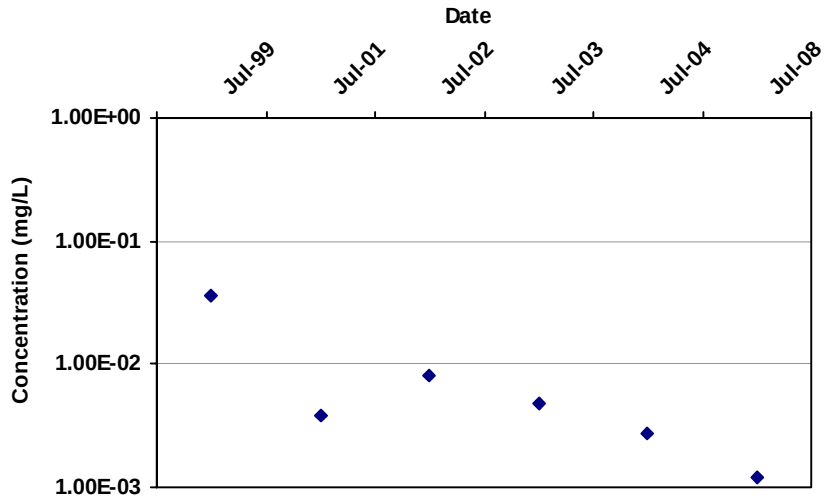
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-20D	T	7/1/1995	TRICHLOROETHYLENE (TCE)	2.6E+00		11	11
MW-20D	T	7/1/1996	TRICHLOROETHYLENE (TCE)	2.5E+00		12	12
MW-20D	T	7/1/1997	TRICHLOROETHYLENE (TCE)	2.1E+00		9	9
MW-20D	T	7/1/1998	TRICHLOROETHYLENE (TCE)	1.4E+00		3	3
MW-20D	T	7/1/1999	TRICHLOROETHYLENE (TCE)	4.1E+00		1	1
MW-20D	T	7/1/2000	TRICHLOROETHYLENE (TCE)	8.7E-01		5	5
MW-20D	T	7/1/2001	TRICHLOROETHYLENE (TCE)	4.5E-01		4	4
MW-20D	T	7/1/2002	TRICHLOROETHYLENE (TCE)	2.9E-01		4	4
MW-20D	T	7/1/2003	TRICHLOROETHYLENE (TCE)	2.1E-01		3	3
MW-20D	T	7/1/2004	TRICHLOROETHYLENE (TCE)	1.3E-01		2	2
MW-20D	T	7/1/2005	TRICHLOROETHYLENE (TCE)	9.6E-02		2	2
MW-20D	T	7/1/2006	TRICHLOROETHYLENE (TCE)	6.4E-02		2	2
MW-20D	T	7/1/2007	TRICHLOROETHYLENE (TCE)	6.0E-02		2	2
MW-20D	T	7/1/2008	TRICHLOROETHYLENE (TCE)	5.3E-02		2	2
MW-20D	T	7/1/2009	TRICHLOROETHYLENE (TCE)	4.7E-02		2	2

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-40
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -11

Confidence in Trend: 97.2%

Coefficient of Variation: 1.40

Mann Kendall Concentration Trend: (See Note) D

Data Table:

Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-40	T	7/1/1999	TRICHLOROETHYLENE (TCE)	3.6E-02		1	1
MW-40	T	7/1/2001	TRICHLOROETHYLENE (TCE)	3.9E-03		1	1
MW-40	T	7/1/2002	TRICHLOROETHYLENE (TCE)	8.2E-03		1	1
MW-40	T	7/1/2003	TRICHLOROETHYLENE (TCE)	4.8E-03		1	1
MW-40	T	7/1/2004	TRICHLOROETHYLENE (TCE)	2.7E-03		1	1
MW-40	T	7/1/2008	TRICHLOROETHYLENE (TCE)	1.2E-03		1	1

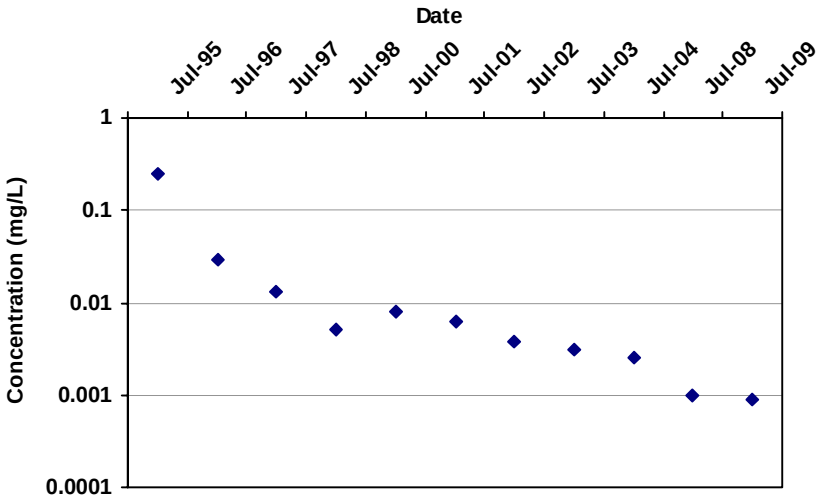
Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

CHURCH OF GOD WELLS

MAROS Mann-Kendall Statistics Summary

Well: AMW-14
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -51

Confidence in Trend: 100.0%

Coefficient of Variation: 2.48

Mann Kendall Concentration Trend: (See Note) D

Data Table:

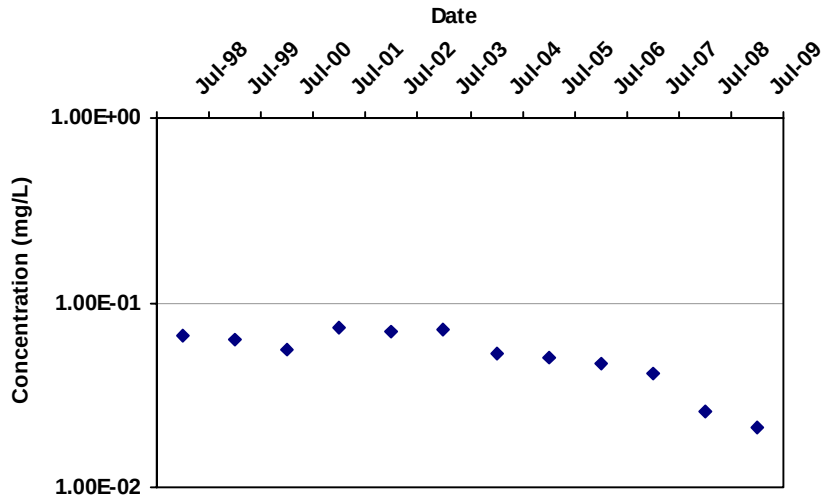
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
AMW-14	T	7/1/1995	TRICHLOROETHYLENE (TCE)	2.4E-01		2	2
AMW-14	T	7/1/1996	TRICHLOROETHYLENE (TCE)	3.0E-02		2	2
AMW-14	T	7/1/1997	TRICHLOROETHYLENE (TCE)	1.3E-02		2	2
AMW-14	T	7/1/1998	TRICHLOROETHYLENE (TCE)	5.0E-03		1	1
AMW-14	T	7/1/2000	TRICHLOROETHYLENE (TCE)	7.9E-03		1	1
AMW-14	T	7/1/2001	TRICHLOROETHYLENE (TCE)	6.2E-03		2	2
AMW-14	T	7/1/2002	TRICHLOROETHYLENE (TCE)	3.8E-03		2	2
AMW-14	T	7/1/2003	TRICHLOROETHYLENE (TCE)	3.0E-03		2	2
AMW-14	T	7/1/2004	TRICHLOROETHYLENE (TCE)	2.5E-03		1	1
AMW-14	T	7/1/2008	TRICHLOROETHYLENE (TCE)	1.0E-03		1	1
AMW-14	T	7/1/2009	TRICHLOROETHYLENE (TCE)	8.8E-04		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: AMW-27
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -46

Confidence in Trend: 100.0%

Coefficient of Variation: 0.32

Mann Kendall Concentration Trend: (See Note) D

Data Table:

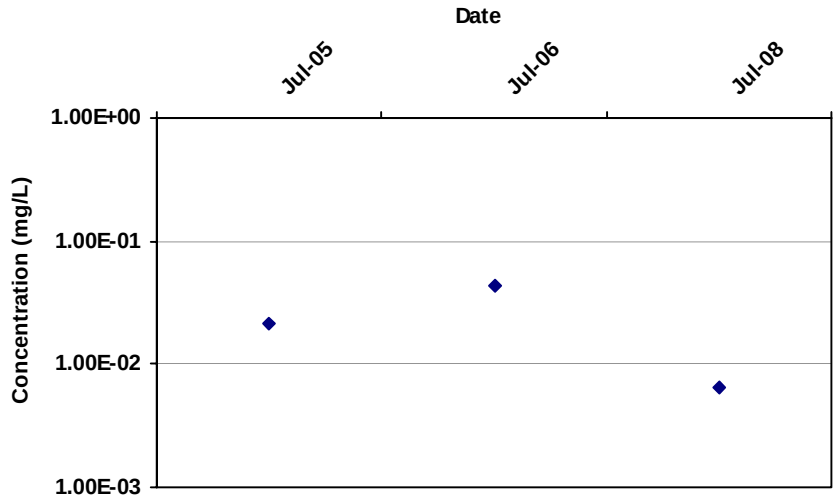
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
AMW-27	T	7/1/1998	TRICHLOROETHYLENE (TCE)	6.6E-02		1	1
AMW-27	T	7/1/1999	TRICHLOROETHYLENE (TCE)	6.3E-02		4	4
AMW-27	T	7/1/2000	TRICHLOROETHYLENE (TCE)	5.6E-02		5	5
AMW-27	T	7/1/2001	TRICHLOROETHYLENE (TCE)	7.3E-02		4	4
AMW-27	T	7/1/2002	TRICHLOROETHYLENE (TCE)	7.0E-02		4	4
AMW-27	T	7/1/2003	TRICHLOROETHYLENE (TCE)	7.1E-02		3	3
AMW-27	T	7/1/2004	TRICHLOROETHYLENE (TCE)	5.3E-02		2	2
AMW-27	T	7/1/2005	TRICHLOROETHYLENE (TCE)	5.0E-02		2	2
AMW-27	T	7/1/2006	TRICHLOROETHYLENE (TCE)	4.6E-02		2	2
AMW-27	T	7/1/2007	TRICHLOROETHYLENE (TCE)	4.1E-02		2	2
AMW-27	T	7/1/2008	TRICHLOROETHYLENE (TCE)	2.6E-02		2	2
AMW-27	T	7/1/2009	TRICHLOROETHYLENE (TCE)	2.1E-02		2	2

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: AMW-61
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: 0

Confidence in Trend: 0.0%

Coefficient of Variation: 0.00

Mann Kendall Concentration Trend: (See Note) N/A

Data Table:

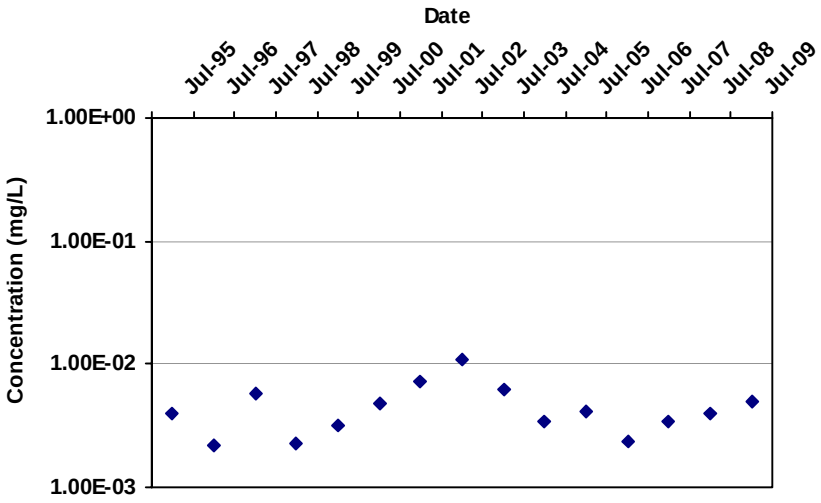
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
AMW-61	T	7/1/2005	TRICHLOROETHYLENE (TCE)	2.1E-02		2	2
AMW-61	T	7/1/2006	TRICHLOROETHYLENE (TCE)	4.3E-02		1	1
AMW-61	T	7/1/2008	TRICHLOROETHYLENE (TCE)	6.5E-03		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: CPU-12
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: 13

Confidence in Trend: 72.1%

Coefficient of Variation: 0.50

Mann Kendall Concentration Trend: (See Note) NT

Data Table:

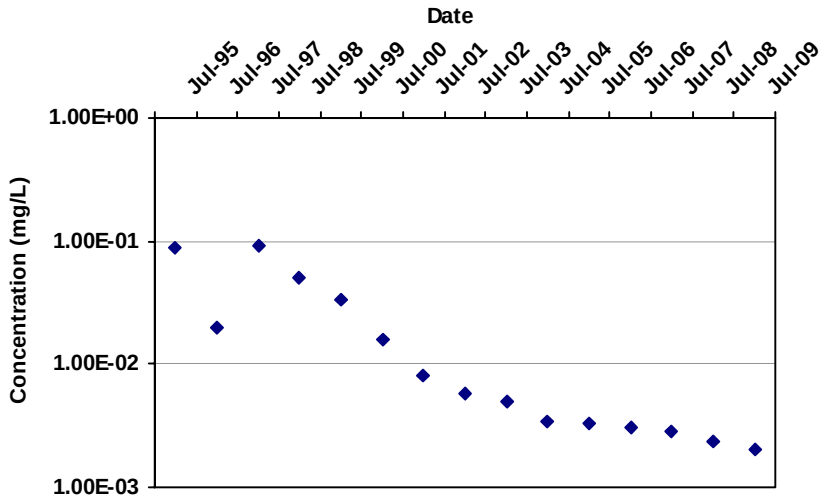
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
CPU-12	T	7/1/1995	TRICHLOROETHYLENE (TCE)	3.9E-03		2	1
CPU-12	T	7/1/1996	TRICHLOROETHYLENE (TCE)	2.2E-03		2	1
CPU-12	T	7/1/1997	TRICHLOROETHYLENE (TCE)	5.7E-03		2	2
CPU-12	T	7/1/1998	TRICHLOROETHYLENE (TCE)	2.2E-03		2	2
CPU-12	T	7/1/1999	TRICHLOROETHYLENE (TCE)	3.2E-03		2	2
CPU-12	T	7/1/2000	TRICHLOROETHYLENE (TCE)	4.8E-03		2	2
CPU-12	T	7/1/2001	TRICHLOROETHYLENE (TCE)	7.1E-03		2	2
CPU-12	T	7/1/2002	TRICHLOROETHYLENE (TCE)	1.1E-02		2	2
CPU-12	T	7/1/2003	TRICHLOROETHYLENE (TCE)	6.1E-03		2	2
CPU-12	T	7/1/2004	TRICHLOROETHYLENE (TCE)	3.4E-03		2	2
CPU-12	T	7/1/2005	TRICHLOROETHYLENE (TCE)	4.1E-03		2	2
CPU-12	T	7/1/2006	TRICHLOROETHYLENE (TCE)	2.4E-03		1	1
CPU-12	T	7/1/2007	TRICHLOROETHYLENE (TCE)	3.4E-03		1	1
CPU-12	T	7/1/2008	TRICHLOROETHYLENE (TCE)	4.0E-03		1	1
CPU-12	T	7/1/2009	TRICHLOROETHYLENE (TCE)	4.9E-03		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: CPU-13
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -97

Confidence in Trend: 100.0%

Coefficient of Variation: 1.38

Mann Kendall Concentration Trend: (See Note) D

Data Table:

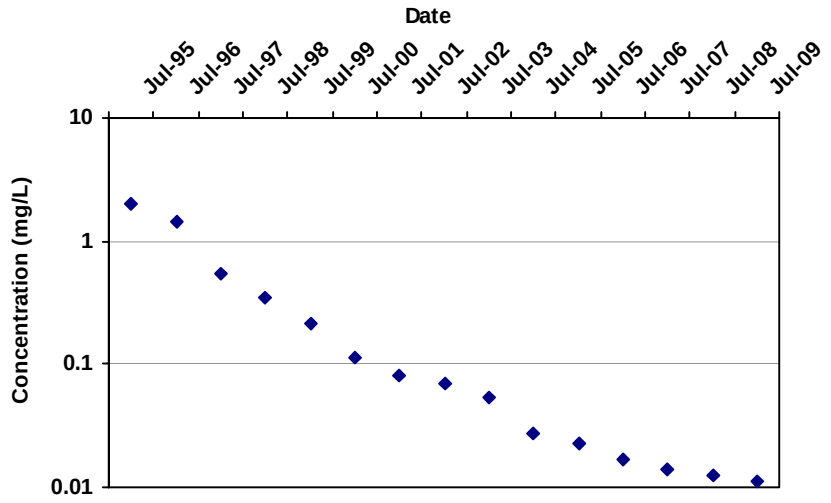
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
CPU-13	T	7/1/1995	TRICHLOROETHYLENE (TCE)	9.0E-02		11	11
CPU-13	T	7/1/1996	TRICHLOROETHYLENE (TCE)	2.0E-02		2	2
CPU-13	T	7/1/1997	TRICHLOROETHYLENE (TCE)	9.2E-02		2	2
CPU-13	T	7/1/1998	TRICHLOROETHYLENE (TCE)	5.0E-02		2	2
CPU-13	T	7/1/1999	TRICHLOROETHYLENE (TCE)	3.4E-02		4	4
CPU-13	T	7/1/2000	TRICHLOROETHYLENE (TCE)	1.6E-02		5	5
CPU-13	T	7/1/2001	TRICHLOROETHYLENE (TCE)	8.0E-03		4	4
CPU-13	T	7/1/2002	TRICHLOROETHYLENE (TCE)	5.8E-03		4	4
CPU-13	T	7/1/2003	TRICHLOROETHYLENE (TCE)	4.9E-03		3	3
CPU-13	T	7/1/2004	TRICHLOROETHYLENE (TCE)	3.4E-03		2	2
CPU-13	T	7/1/2005	TRICHLOROETHYLENE (TCE)	3.3E-03		2	2
CPU-13	T	7/1/2006	TRICHLOROETHYLENE (TCE)	3.0E-03		2	2
CPU-13	T	7/1/2007	TRICHLOROETHYLENE (TCE)	2.8E-03		2	2
CPU-13	T	7/1/2008	TRICHLOROETHYLENE (TCE)	2.4E-03		2	2
CPU-13	T	7/1/2009	TRICHLOROETHYLENE (TCE)	2.0E-03		2	2

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-21D
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -105

Confidence in Trend: 100.0%

Coefficient of Variation: 1.79

Mann Kendall Concentration Trend: (See Note) D

Data Table:

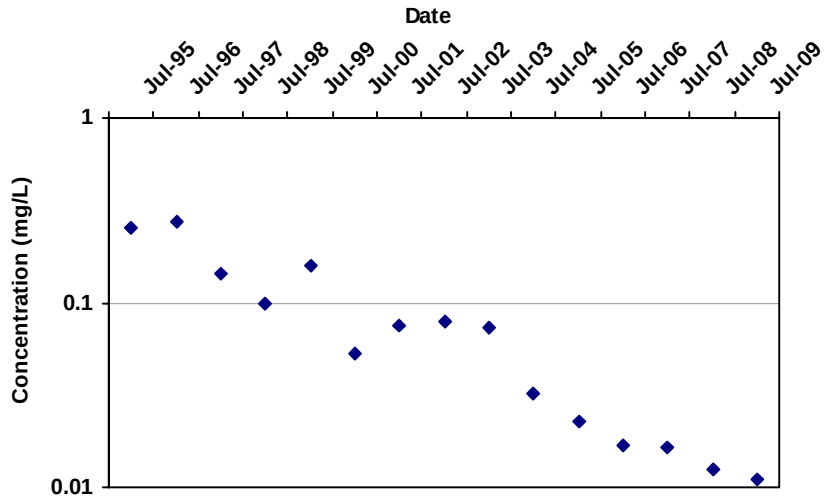
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-21D	T	7/1/1995	TRICHLOROETHYLENE (TCE)	2.0E+00		11	11
MW-21D	T	7/1/1996	TRICHLOROETHYLENE (TCE)	1.4E+00		12	12
MW-21D	T	7/1/1997	TRICHLOROETHYLENE (TCE)	5.5E-01		9	9
MW-21D	T	7/1/1998	TRICHLOROETHYLENE (TCE)	3.5E-01		3	3
MW-21D	T	7/1/1999	TRICHLOROETHYLENE (TCE)	2.2E-01		4	4
MW-21D	T	7/1/2000	TRICHLOROETHYLENE (TCE)	1.1E-01		5	5
MW-21D	T	7/1/2001	TRICHLOROETHYLENE (TCE)	8.1E-02		4	4
MW-21D	T	7/1/2002	TRICHLOROETHYLENE (TCE)	6.9E-02		4	4
MW-21D	T	7/1/2003	TRICHLOROETHYLENE (TCE)	5.4E-02		3	3
MW-21D	T	7/1/2004	TRICHLOROETHYLENE (TCE)	2.7E-02		2	2
MW-21D	T	7/1/2005	TRICHLOROETHYLENE (TCE)	2.2E-02		2	2
MW-21D	T	7/1/2006	TRICHLOROETHYLENE (TCE)	1.7E-02		2	2
MW-21D	T	7/1/2007	TRICHLOROETHYLENE (TCE)	1.4E-02		2	2
MW-21D	T	7/1/2008	TRICHLOROETHYLENE (TCE)	1.2E-02		2	2
MW-21D	T	7/1/2009	TRICHLOROETHYLENE (TCE)	1.1E-02		2	2

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-22D
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -91

Confidence in Trend: 100.0%

Coefficient of Variation: 0.97

Mann Kendall Concentration Trend: (See Note) D

Data Table:

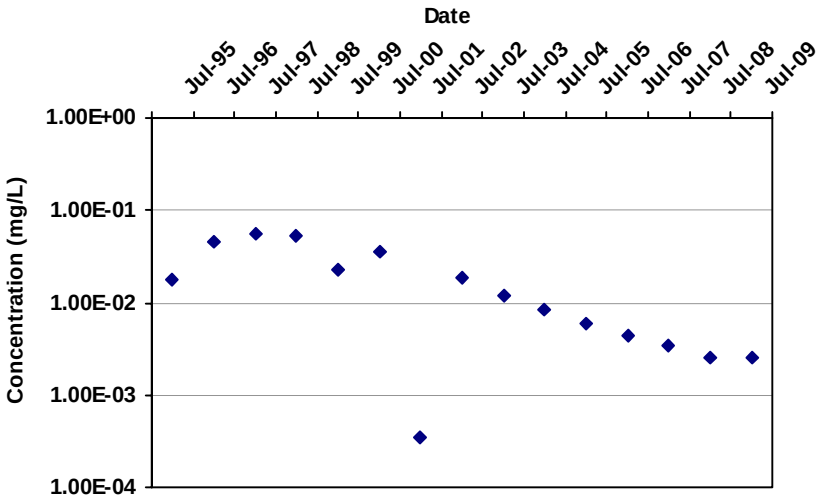
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-22D	T	7/1/1995	TRICHLOROETHYLENE (TCE)	2.5E-01		11	11
MW-22D	T	7/1/1996	TRICHLOROETHYLENE (TCE)	2.7E-01		11	11
MW-22D	T	7/1/1997	TRICHLOROETHYLENE (TCE)	1.4E-01		9	9
MW-22D	T	7/1/1998	TRICHLOROETHYLENE (TCE)	9.9E-02		3	3
MW-22D	T	7/1/1999	TRICHLOROETHYLENE (TCE)	1.6E-01		2	2
MW-22D	T	7/1/2000	TRICHLOROETHYLENE (TCE)	5.3E-02		4	4
MW-22D	T	7/1/2001	TRICHLOROETHYLENE (TCE)	7.5E-02		4	4
MW-22D	T	7/1/2002	TRICHLOROETHYLENE (TCE)	7.8E-02		3	3
MW-22D	T	7/1/2003	TRICHLOROETHYLENE (TCE)	7.3E-02		3	3
MW-22D	T	7/1/2004	TRICHLOROETHYLENE (TCE)	3.2E-02		2	2
MW-22D	T	7/1/2005	TRICHLOROETHYLENE (TCE)	2.3E-02		2	2
MW-22D	T	7/1/2006	TRICHLOROETHYLENE (TCE)	1.7E-02		2	2
MW-22D	T	7/1/2007	TRICHLOROETHYLENE (TCE)	1.6E-02		2	2
MW-22D	T	7/1/2008	TRICHLOROETHYLENE (TCE)	1.2E-02		2	2
MW-22D	T	7/1/2009	TRICHLOROETHYLENE (TCE)	1.1E-02		2	2

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-23D
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -71

Confidence in Trend: 100.0%

Coefficient of Variation: 1.00

Mann Kendall Concentration Trend: (See Note) D

Data Table:

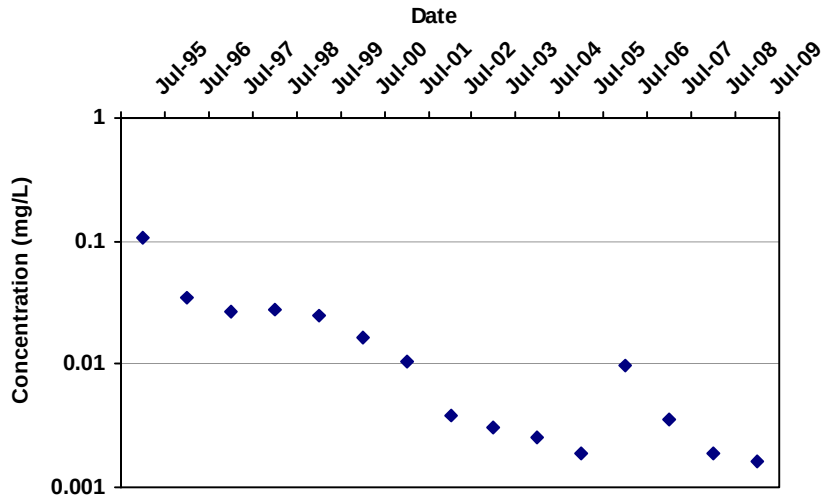
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-23D	T	7/1/1995	TRICHLOROETHYLENE (TCE)	1.7E-02		2	2
MW-23D	T	7/1/1996	TRICHLOROETHYLENE (TCE)	4.6E-02		2	2
MW-23D	T	7/1/1997	TRICHLOROETHYLENE (TCE)	5.6E-02		2	2
MW-23D	T	7/1/1998	TRICHLOROETHYLENE (TCE)	5.3E-02		2	2
MW-23D	T	7/1/1999	TRICHLOROETHYLENE (TCE)	2.3E-02		2	2
MW-23D	T	7/1/2000	TRICHLOROETHYLENE (TCE)	3.5E-02		2	2
MW-23D	T	7/1/2001	TRICHLOROETHYLENE (TCE)	3.5E-04		2	1
MW-23D	T	7/1/2002	TRICHLOROETHYLENE (TCE)	1.9E-02		2	2
MW-23D	T	7/1/2003	TRICHLOROETHYLENE (TCE)	1.2E-02		2	2
MW-23D	T	7/1/2004	TRICHLOROETHYLENE (TCE)	8.4E-03		2	2
MW-23D	T	7/1/2005	TRICHLOROETHYLENE (TCE)	5.9E-03		2	2
MW-23D	T	7/1/2006	TRICHLOROETHYLENE (TCE)	4.4E-03		1	1
MW-23D	T	7/1/2007	TRICHLOROETHYLENE (TCE)	3.5E-03		1	1
MW-23D	T	7/1/2008	TRICHLOROETHYLENE (TCE)	2.6E-03		1	1
MW-23D	T	7/1/2009	TRICHLOROETHYLENE (TCE)	2.5E-03		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-25D
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -88

Confidence in Trend: 100.0%

Coefficient of Variation: 1.45

Mann Kendall Concentration Trend: (See Note) D

Data Table:

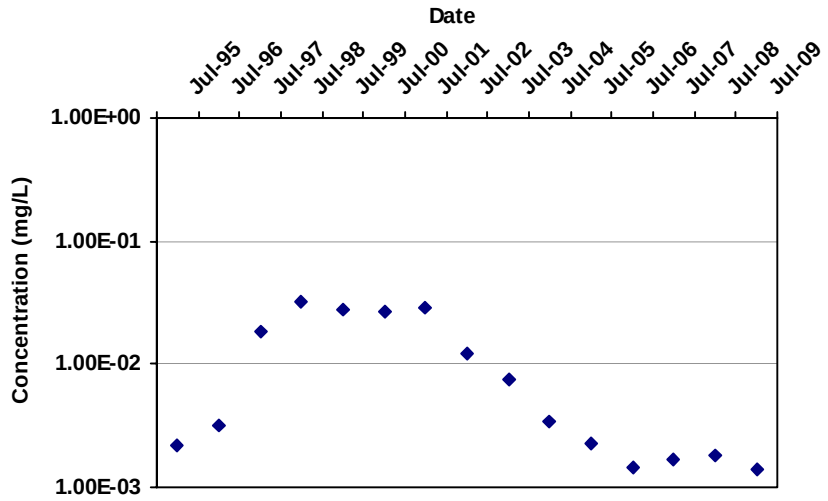
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-25D	T	7/1/1995	TRICHLOROETHYLENE (TCE)	1.1E-01		12	12
MW-25D	T	7/1/1996	TRICHLOROETHYLENE (TCE)	3.4E-02		12	12
MW-25D	T	7/1/1997	TRICHLOROETHYLENE (TCE)	2.7E-02		9	9
MW-25D	T	7/1/1998	TRICHLOROETHYLENE (TCE)	2.8E-02		3	3
MW-25D	T	7/1/1999	TRICHLOROETHYLENE (TCE)	2.4E-02		4	4
MW-25D	T	7/1/2000	TRICHLOROETHYLENE (TCE)	1.6E-02		5	5
MW-25D	T	7/1/2001	TRICHLOROETHYLENE (TCE)	1.1E-02		4	4
MW-25D	T	7/1/2002	TRICHLOROETHYLENE (TCE)	3.8E-03		4	4
MW-25D	T	7/1/2003	TRICHLOROETHYLENE (TCE)	3.1E-03		3	3
MW-25D	T	7/1/2004	TRICHLOROETHYLENE (TCE)	2.6E-03		2	2
MW-25D	T	7/1/2005	TRICHLOROETHYLENE (TCE)	1.9E-03		1	1
MW-25D	T	7/1/2006	TRICHLOROETHYLENE (TCE)	9.9E-03		1	1
MW-25D	T	7/1/2007	TRICHLOROETHYLENE (TCE)	3.6E-03		3	3
MW-25D	T	7/1/2008	TRICHLOROETHYLENE (TCE)	1.9E-03		2	2
MW-25D	T	7/1/2009	TRICHLOROETHYLENE (TCE)	1.6E-03		2	2

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-26D
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -51

Confidence in Trend: 99.4%

Coefficient of Variation: 1.04

Mann Kendall Concentration Trend: (See Note) D

Data Table:

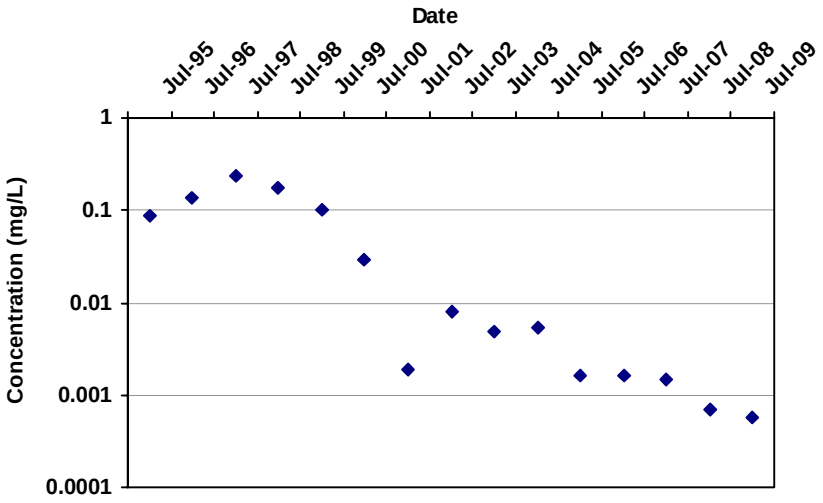
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-26D	T	7/1/1995	TRICHLOROETHYLENE (TCE)	2.2E-03		11	10
MW-26D	T	7/1/1996	TRICHLOROETHYLENE (TCE)	3.1E-03		12	12
MW-26D	T	7/1/1997	TRICHLOROETHYLENE (TCE)	1.9E-02		9	9
MW-26D	T	7/1/1998	TRICHLOROETHYLENE (TCE)	3.2E-02		3	3
MW-26D	T	7/1/1999	TRICHLOROETHYLENE (TCE)	2.7E-02		4	4
MW-26D	T	7/1/2000	TRICHLOROETHYLENE (TCE)	2.7E-02		5	5
MW-26D	T	7/1/2001	TRICHLOROETHYLENE (TCE)	2.9E-02		4	4
MW-26D	T	7/1/2002	TRICHLOROETHYLENE (TCE)	1.2E-02		4	4
MW-26D	T	7/1/2003	TRICHLOROETHYLENE (TCE)	7.4E-03		3	3
MW-26D	T	7/1/2004	TRICHLOROETHYLENE (TCE)	3.4E-03		2	2
MW-26D	T	7/1/2005	TRICHLOROETHYLENE (TCE)	2.3E-03		2	2
MW-26D	T	7/1/2006	TRICHLOROETHYLENE (TCE)	1.4E-03		2	2
MW-26D	T	7/1/2007	TRICHLOROETHYLENE (TCE)	1.7E-03		2	2
MW-26D	T	7/1/2008	TRICHLOROETHYLENE (TCE)	1.8E-03		2	2
MW-26D	T	7/1/2009	TRICHLOROETHYLENE (TCE)	1.4E-03		2	2

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-27D
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -84

Confidence in Trend: 100.0%

Coefficient of Variation: 1.46

Mann Kendall Concentration Trend: (See Note) D

Data Table:

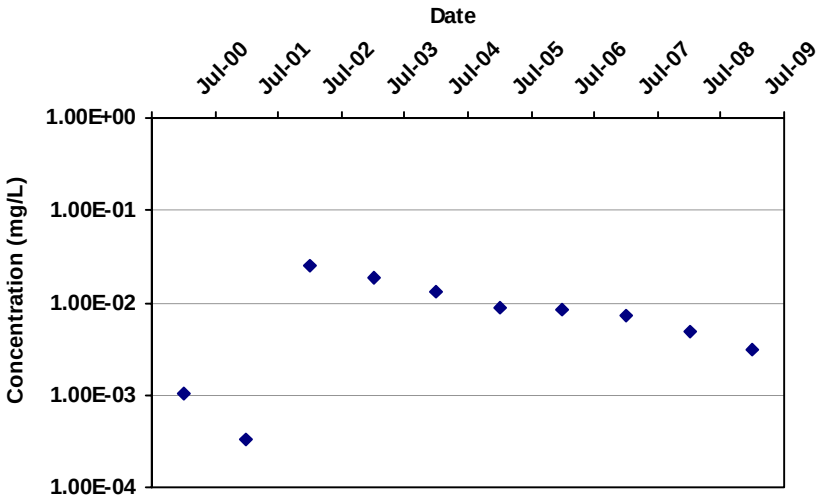
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-27D	T	7/1/1995	TRICHLOROETHYLENE (TCE)	8.9E-02		11	11
MW-27D	T	7/1/1996	TRICHLOROETHYLENE (TCE)	1.4E-01		2	2
MW-27D	T	7/1/1997	TRICHLOROETHYLENE (TCE)	2.4E-01		2	2
MW-27D	T	7/1/1998	TRICHLOROETHYLENE (TCE)	1.7E-01		2	2
MW-27D	T	7/1/1999	TRICHLOROETHYLENE (TCE)	1.0E-01		2	2
MW-27D	T	7/1/2000	TRICHLOROETHYLENE (TCE)	3.0E-02		4	4
MW-27D	T	7/1/2001	TRICHLOROETHYLENE (TCE)	1.9E-03		4	3
MW-27D	T	7/1/2002	TRICHLOROETHYLENE (TCE)	8.1E-03		4	4
MW-27D	T	7/1/2003	TRICHLOROETHYLENE (TCE)	5.0E-03		3	3
MW-27D	T	7/1/2004	TRICHLOROETHYLENE (TCE)	5.3E-03		2	2
MW-27D	T	7/1/2005	TRICHLOROETHYLENE (TCE)	1.6E-03		1	1
MW-27D	T	7/1/2006	TRICHLOROETHYLENE (TCE)	1.6E-03		1	1
MW-27D	T	7/1/2007	TRICHLOROETHYLENE (TCE)	1.5E-03		1	1
MW-27D	T	7/1/2008	TRICHLOROETHYLENE (TCE)	6.9E-04		2	2
MW-27D	T	7/1/2009	TRICHLOROETHYLENE (TCE)	5.8E-04		2	2

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-49
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -13

Confidence in Trend: 85.4%

Coefficient of Variation: 0.86

Mann Kendall Concentration Trend: (See Note) S

Data Table:

Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-49	T	7/1/2000	TRICHLOROETHYLENE (TCE)	1.0E-03		3	2
MW-49	T	7/1/2001	TRICHLOROETHYLENE (TCE)	3.4E-04		4	2
MW-49	T	7/1/2002	TRICHLOROETHYLENE (TCE)	2.5E-02		4	4
MW-49	T	7/1/2003	TRICHLOROETHYLENE (TCE)	1.9E-02		3	3
MW-49	T	7/1/2004	TRICHLOROETHYLENE (TCE)	1.3E-02		2	2
MW-49	T	7/1/2005	TRICHLOROETHYLENE (TCE)	9.0E-03		2	2
MW-49	T	7/1/2006	TRICHLOROETHYLENE (TCE)	8.5E-03		2	2
MW-49	T	7/1/2007	TRICHLOROETHYLENE (TCE)	7.3E-03		2	2
MW-49	T	7/1/2008	TRICHLOROETHYLENE (TCE)	4.9E-03		2	2
MW-49	T	7/1/2009	TRICHLOROETHYLENE (TCE)	3.1E-03		2	2

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

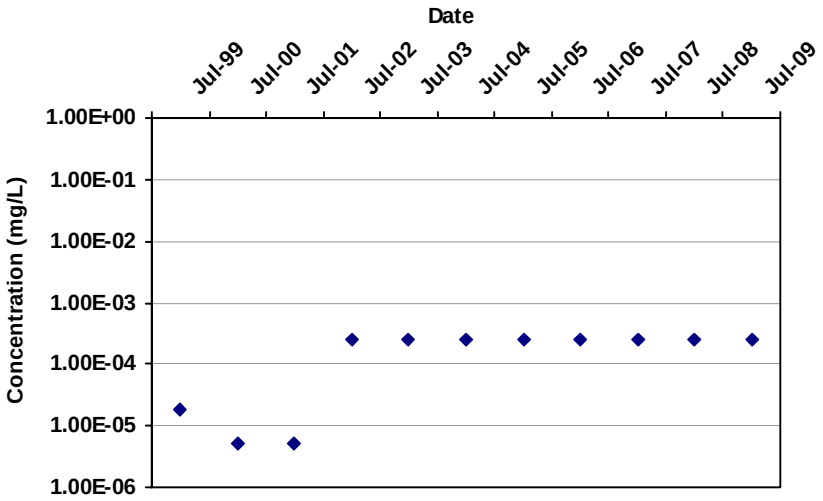
TOE OF PLUME

Sentinel Wells

MAROS Mann-Kendall Statistics Summary

Well: AMW-43
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: 22

Confidence in Trend: 94.9%

Coefficient of Variation: 0.61

Mann Kendall Concentration Trend: (See Note) PI

Data Table:

Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
AMW-43	T	7/1/1999	TRICHLOROETHYLENE (TCE)	1.8E-05	ND	6	0
AMW-43	T	7/1/2000	TRICHLOROETHYLENE (TCE)	5.0E-06	ND	8	0
AMW-43	T	7/1/2001	TRICHLOROETHYLENE (TCE)	5.0E-06	ND	2	0
AMW-43	T	7/1/2002	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	2	0
AMW-43	T	7/1/2003	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	2	0
AMW-43	T	7/1/2004	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	4	0
AMW-43	T	7/1/2005	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	4	0
AMW-43	T	7/1/2006	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	2	0
AMW-43	T	7/1/2007	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	4	0
AMW-43	T	7/1/2008	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	2	0
AMW-43	T	7/1/2009	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	2	0

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

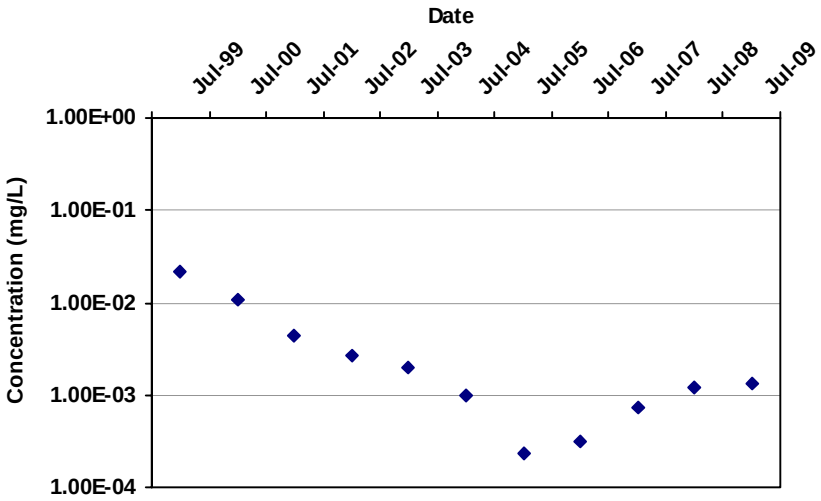
TOE OF PLUME

Other Toe Wells

MAROS Mann-Kendall Statistics Summary

Well: AMW-42
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -31

Confidence in Trend: 99.2%

Coefficient of Variation: 1.54

Mann Kendall Concentration Trend: (See Note) D

Data Table:

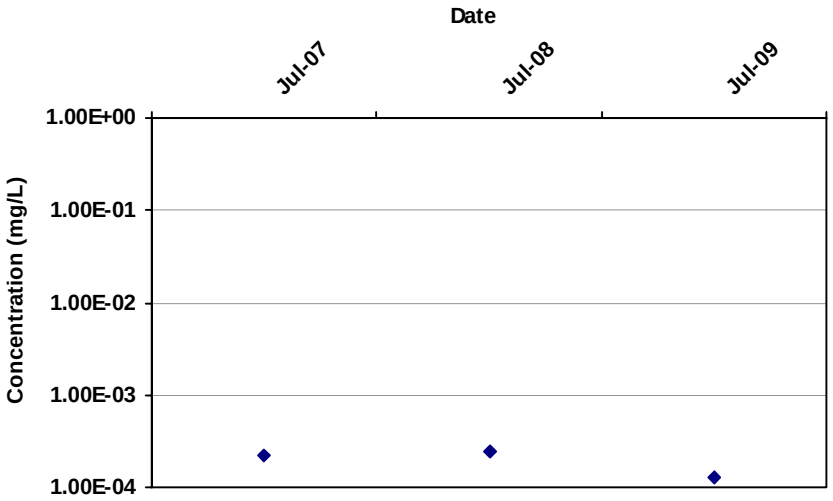
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
AMW-42	T	7/1/1999	TRICHLOROETHYLENE (TCE)	2.1E-02		9	9
AMW-42	T	7/1/2000	TRICHLOROETHYLENE (TCE)	1.1E-02		13	13
AMW-42	T	7/1/2001	TRICHLOROETHYLENE (TCE)	4.3E-03		4	4
AMW-42	T	7/1/2002	TRICHLOROETHYLENE (TCE)	2.7E-03		4	4
AMW-42	T	7/1/2003	TRICHLOROETHYLENE (TCE)	2.0E-03		3	3
AMW-42	T	7/1/2004	TRICHLOROETHYLENE (TCE)	9.9E-04		6	5
AMW-42	T	7/1/2005	TRICHLOROETHYLENE (TCE)	2.3E-04		4	1
AMW-42	T	7/1/2006	TRICHLOROETHYLENE (TCE)	3.1E-04		2	2
AMW-42	T	7/1/2007	TRICHLOROETHYLENE (TCE)	7.5E-04		2	2
AMW-42	T	7/1/2008	TRICHLOROETHYLENE (TCE)	1.2E-03		1	1
AMW-42	T	7/1/2009	TRICHLOROETHYLENE (TCE)	1.3E-03		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: AMW-63
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: 0

Confidence in Trend: 0.0%

Coefficient of Variation: 0.00

Mann Kendall Concentration Trend: (See Note) N/A

Data Table:

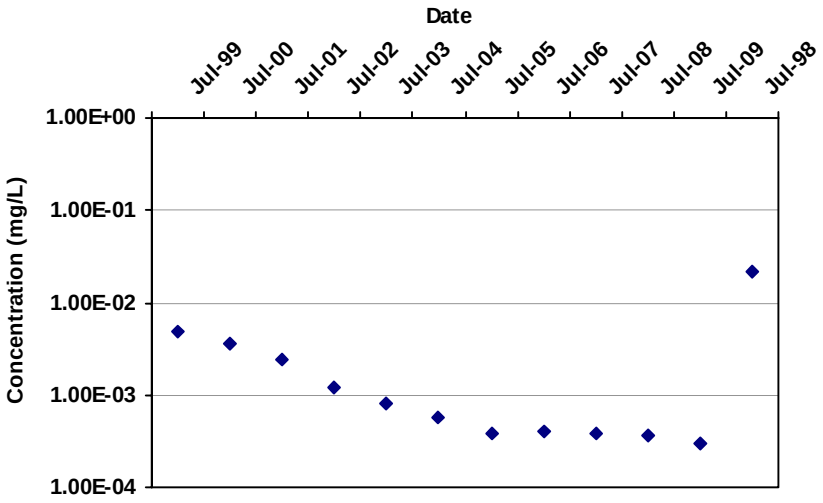
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
AMW-63	T	7/1/2007	TRICHLOROETHYLENE (TCE)	2.3E-04		4	1
AMW-63	T	7/1/2008	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	2	0
AMW-63	T	7/1/2009	TRICHLOROETHYLENE (TCE)	1.3E-04		2	2

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-31
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -62

Confidence in Trend: 100.0%

Coefficient of Variation: 1.96

Mann Kendall Concentration Trend: (See Note) D

Data Table:

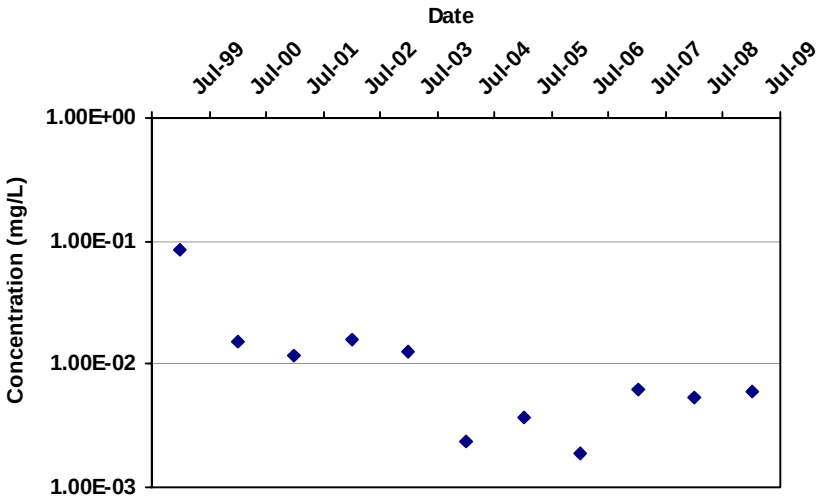
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-31	T	7/1/1998	TRICHLOROETHYLENE (TCE)	2.2E-02		2	2
MW-31	T	7/1/1999	TRICHLOROETHYLENE (TCE)	4.9E-03		8	8
MW-31	T	7/1/2000	TRICHLOROETHYLENE (TCE)	3.7E-03		13	13
MW-31	T	7/1/2001	TRICHLOROETHYLENE (TCE)	2.4E-03		2	2
MW-31	T	7/1/2002	TRICHLOROETHYLENE (TCE)	1.2E-03		3	3
MW-31	T	7/1/2003	TRICHLOROETHYLENE (TCE)	7.9E-04		3	3
MW-31	T	7/1/2004	TRICHLOROETHYLENE (TCE)	5.7E-04		2	2
MW-31	T	7/1/2005	TRICHLOROETHYLENE (TCE)	3.8E-04		1	1
MW-31	T	7/1/2006	TRICHLOROETHYLENE (TCE)	4.0E-04		1	1
MW-31	T	7/1/2007	TRICHLOROETHYLENE (TCE)	3.9E-04		1	1
MW-31	T	7/1/2008	TRICHLOROETHYLENE (TCE)	3.6E-04		1	1
MW-31	T	7/1/2009	TRICHLOROETHYLENE (TCE)	3.0E-04		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-35
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: -27

Confidence in Trend: 98.0%

Coefficient of Variation: 1.57

Mann Kendall Concentration Trend: (See Note) D

Data Table:

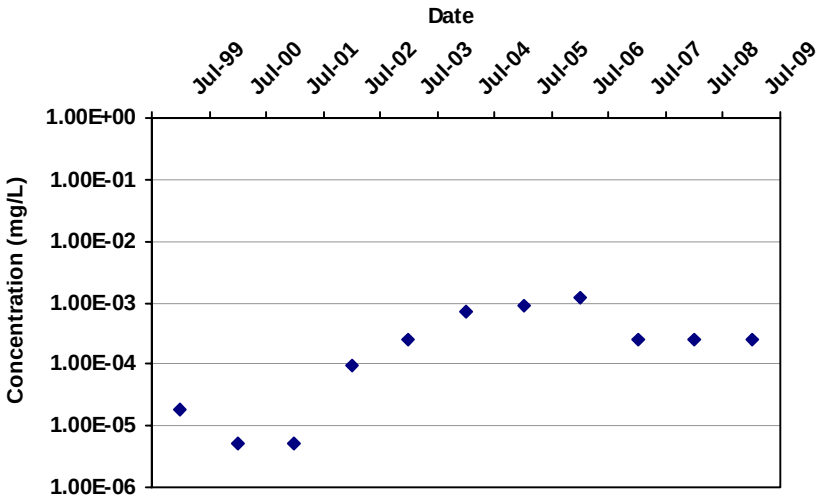
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-35	T	7/1/1999	TRICHLOROETHYLENE (TCE)	8.5E-02		6	6
MW-35	T	7/1/2000	TRICHLOROETHYLENE (TCE)	1.5E-02		12	12
MW-35	T	7/1/2001	TRICHLOROETHYLENE (TCE)	1.2E-02		12	11
MW-35	T	7/1/2002	TRICHLOROETHYLENE (TCE)	1.6E-02		7	7
MW-35	T	7/1/2003	TRICHLOROETHYLENE (TCE)	1.3E-02		3	3
MW-35	T	7/1/2004	TRICHLOROETHYLENE (TCE)	2.4E-03		5	5
MW-35	T	7/1/2005	TRICHLOROETHYLENE (TCE)	3.6E-03		4	4
MW-35	T	7/1/2006	TRICHLOROETHYLENE (TCE)	1.9E-03		2	2
MW-35	T	7/1/2007	TRICHLOROETHYLENE (TCE)	6.2E-03		2	2
MW-35	T	7/1/2008	TRICHLOROETHYLENE (TCE)	5.4E-03		2	2
MW-35	T	7/1/2009	TRICHLOROETHYLENE (TCE)	6.1E-03		2	2

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-41
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: 24

Confidence in Trend: 96.4%

Coefficient of Variation: 1.13

Mann Kendall Concentration Trend: (See Note) I

Data Table:

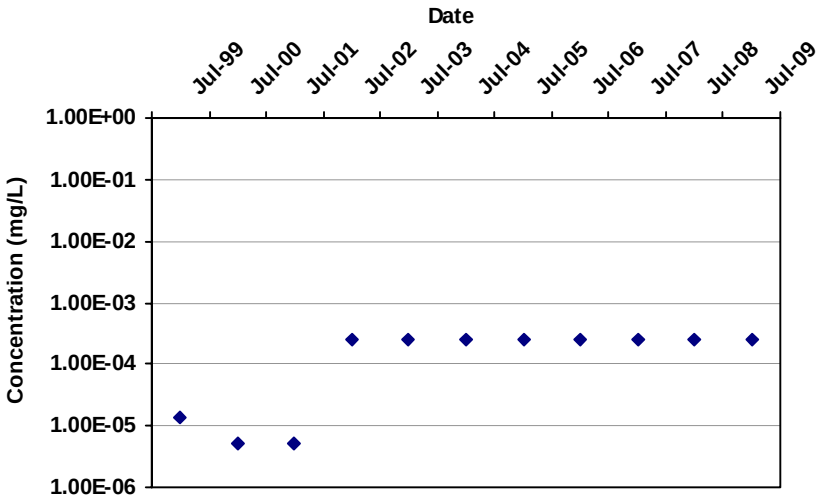
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-41	T	7/1/1999	TRICHLOROETHYLENE (TCE)	1.8E-05	ND	9	0
MW-41	T	7/1/2000	TRICHLOROETHYLENE (TCE)	5.0E-06	ND	13	0
MW-41	T	7/1/2001	TRICHLOROETHYLENE (TCE)	5.0E-06	ND	4	0
MW-41	T	7/1/2002	TRICHLOROETHYLENE (TCE)	9.4E-05	ND	4	0
MW-41	T	7/1/2003	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	3	0
MW-41	T	7/1/2004	TRICHLOROETHYLENE (TCE)	7.1E-04		6	2
MW-41	T	7/1/2005	TRICHLOROETHYLENE (TCE)	8.7E-04		5	4
MW-41	T	7/1/2006	TRICHLOROETHYLENE (TCE)	1.2E-03		2	1
MW-41	T	7/1/2007	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	4	0
MW-41	T	7/1/2008	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	2	0
MW-41	T	7/1/2009	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	2	0

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-46
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: 15

Confidence in Trend: 85.9%

Coefficient of Variation: 0.62

Mann Kendall Concentration Trend: (See Note) NT

Data Table:

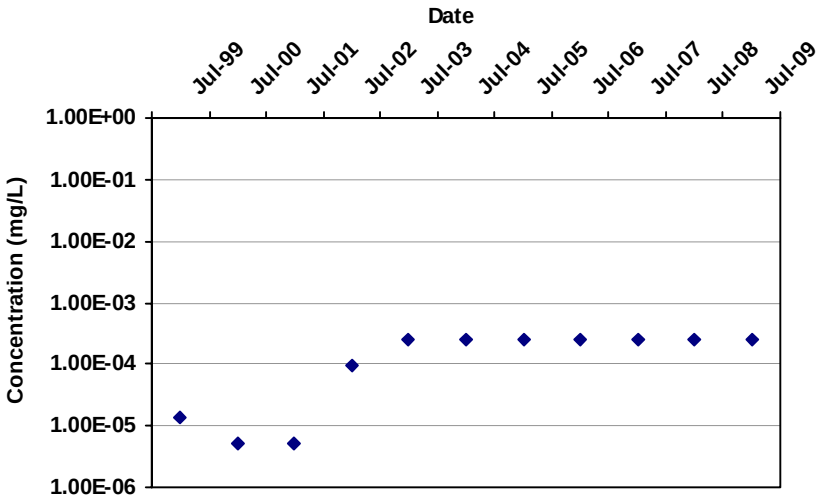
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-46	T	7/1/1999	TRICHLOROETHYLENE (TCE)	1.3E-05	ND	4	0
MW-46	T	7/1/2000	TRICHLOROETHYLENE (TCE)	5.0E-06	ND	9	0
MW-46	T	7/1/2001	TRICHLOROETHYLENE (TCE)	5.0E-06	ND	3	0
MW-46	T	7/1/2002	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	3	0
MW-46	T	7/1/2003	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	3	0
MW-46	T	7/1/2004	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	5	0
MW-46	T	7/1/2005	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	4	0
MW-46	T	7/1/2006	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	2	0
MW-46	T	7/1/2007	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	4	0
MW-46	T	7/1/2008	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	2	0
MW-46	T	7/1/2009	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	2	0

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Well: MW-48
Well Type: T
COC: TRICHLOROETHYLENE (TCE)

Time Period: 1/19/1995 **to** 10/20/2009
Consolidation Period: Yearly
Consolidation Type: Geometric Mean
Duplicate Consolidation: Maximum
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic: 27

Confidence in Trend: 98.0%

Coefficient of Variation: 0.67

Mann Kendall Concentration Trend: (See Note) I

Data Table:

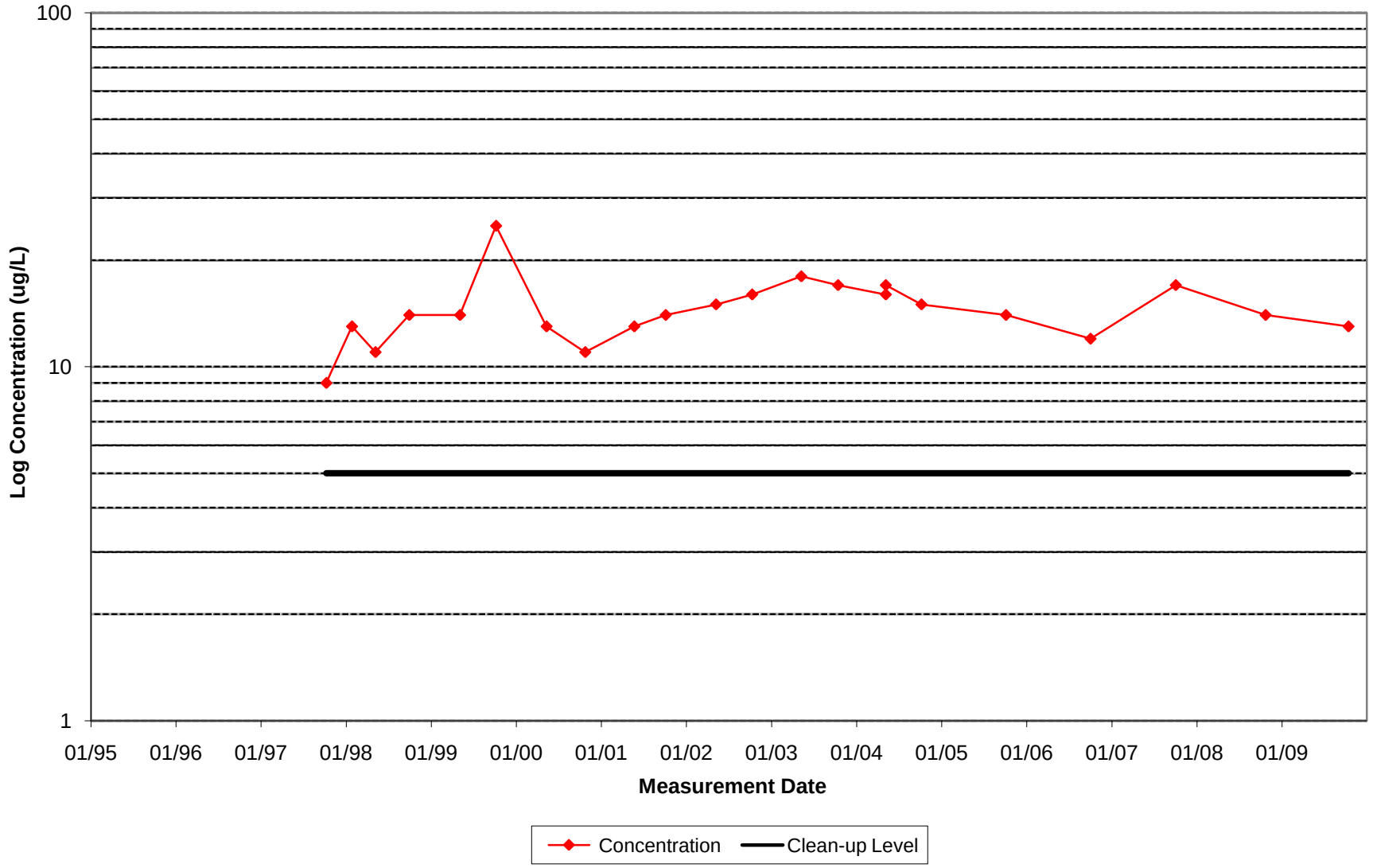
Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-48	T	7/1/1999	TRICHLOROETHYLENE (TCE)	1.3E-05	ND	4	0
MW-48	T	7/1/2000	TRICHLOROETHYLENE (TCE)	5.0E-06	ND	9	0
MW-48	T	7/1/2001 *	TRICHLOROETHYLENE (TCE)	5.0E-06	ND	4	0
MW-48	T	7/1/2002	TRICHLOROETHYLENE (TCE)	9.4E-05	ND	4	0
MW-48	T	7/1/2003	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	3	0
MW-48	T	7/1/2004	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	5	0
MW-48	T	7/1/2005	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	4	0
MW-48	T	7/1/2006	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	2	0
MW-48	T	7/1/2007	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	1	0
MW-48	T	7/1/2008	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	1	0
MW-48	T	7/1/2009	TRICHLOROETHYLENE (TCE)	2.5E-04	ND	1	0

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

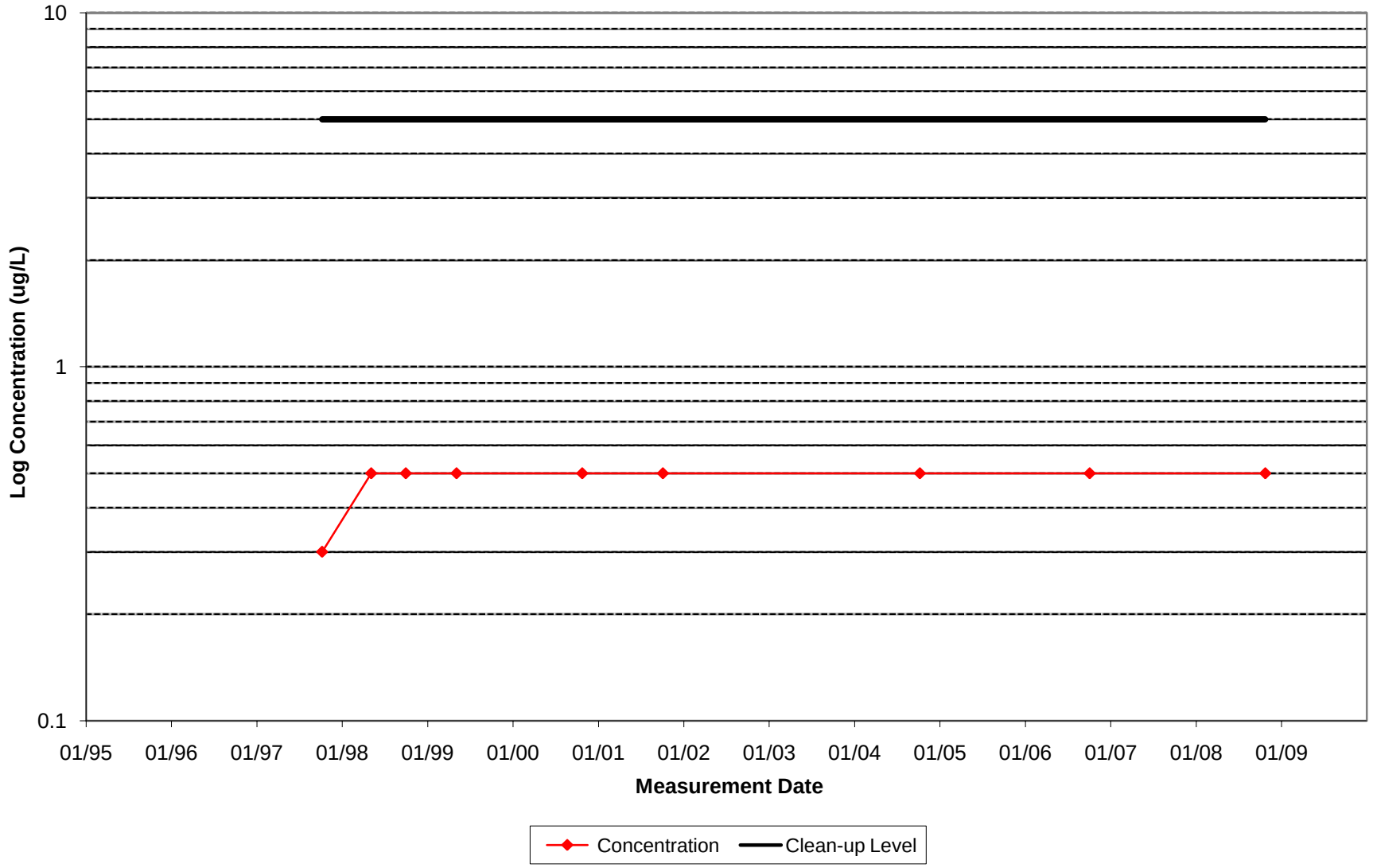
* The outlier of 20 ug/L sampled on 2/14/2001 was not included in the MAROS analysis. A value of zero was used in its place.

TROUTDALE WELLS

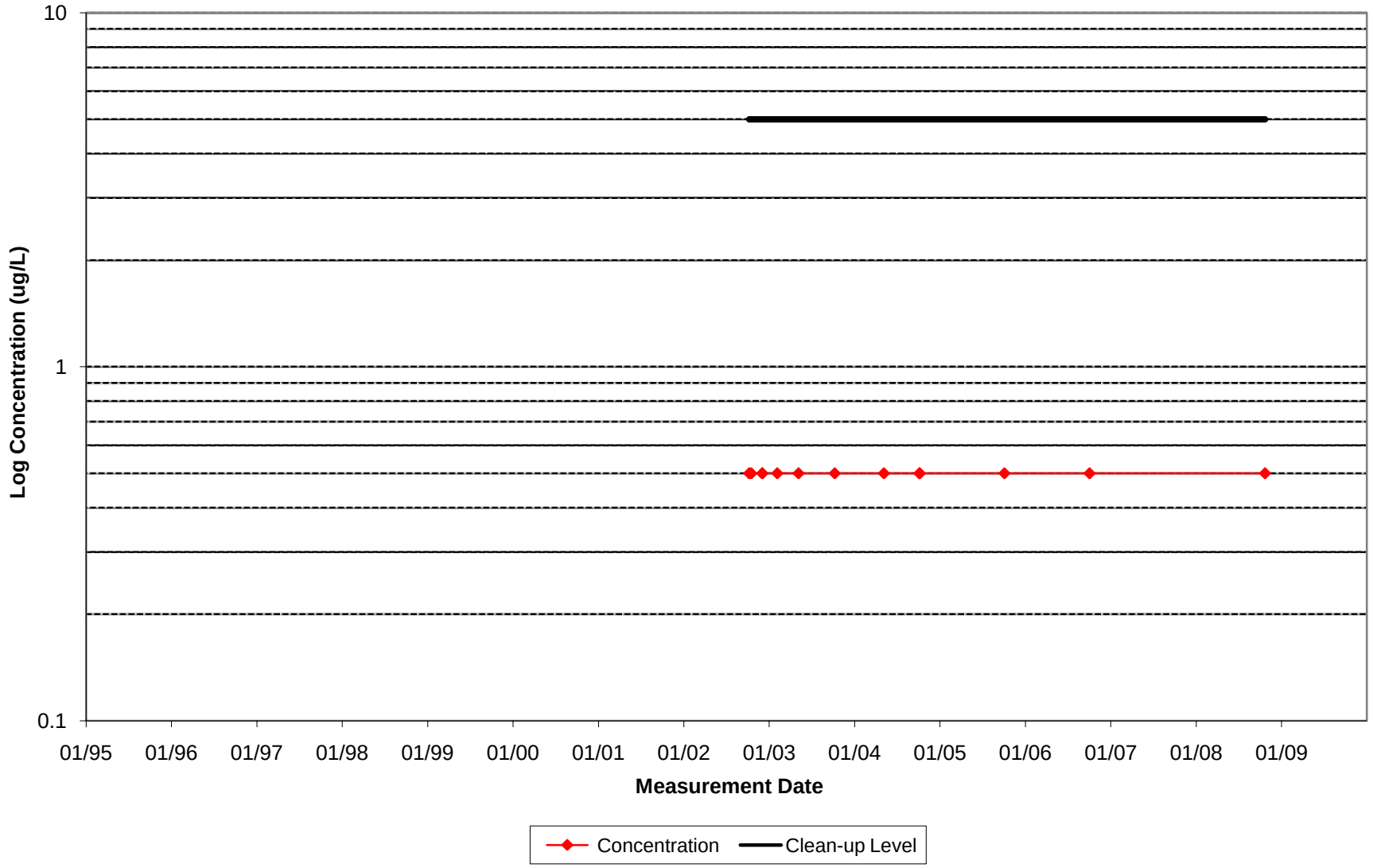
AMW-24 - TCE (ug/L)



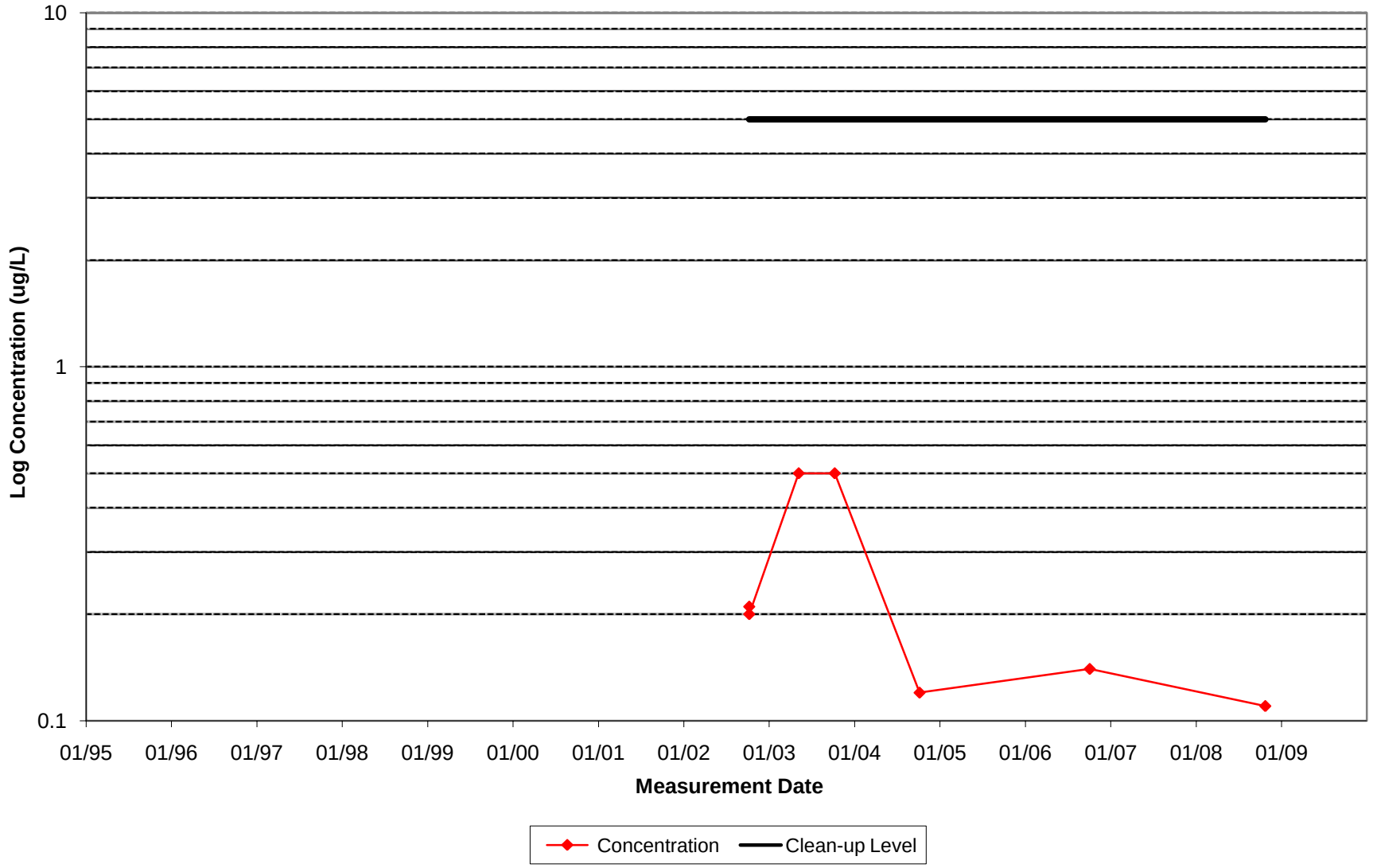
AMW-25 - TCE (ug/L)



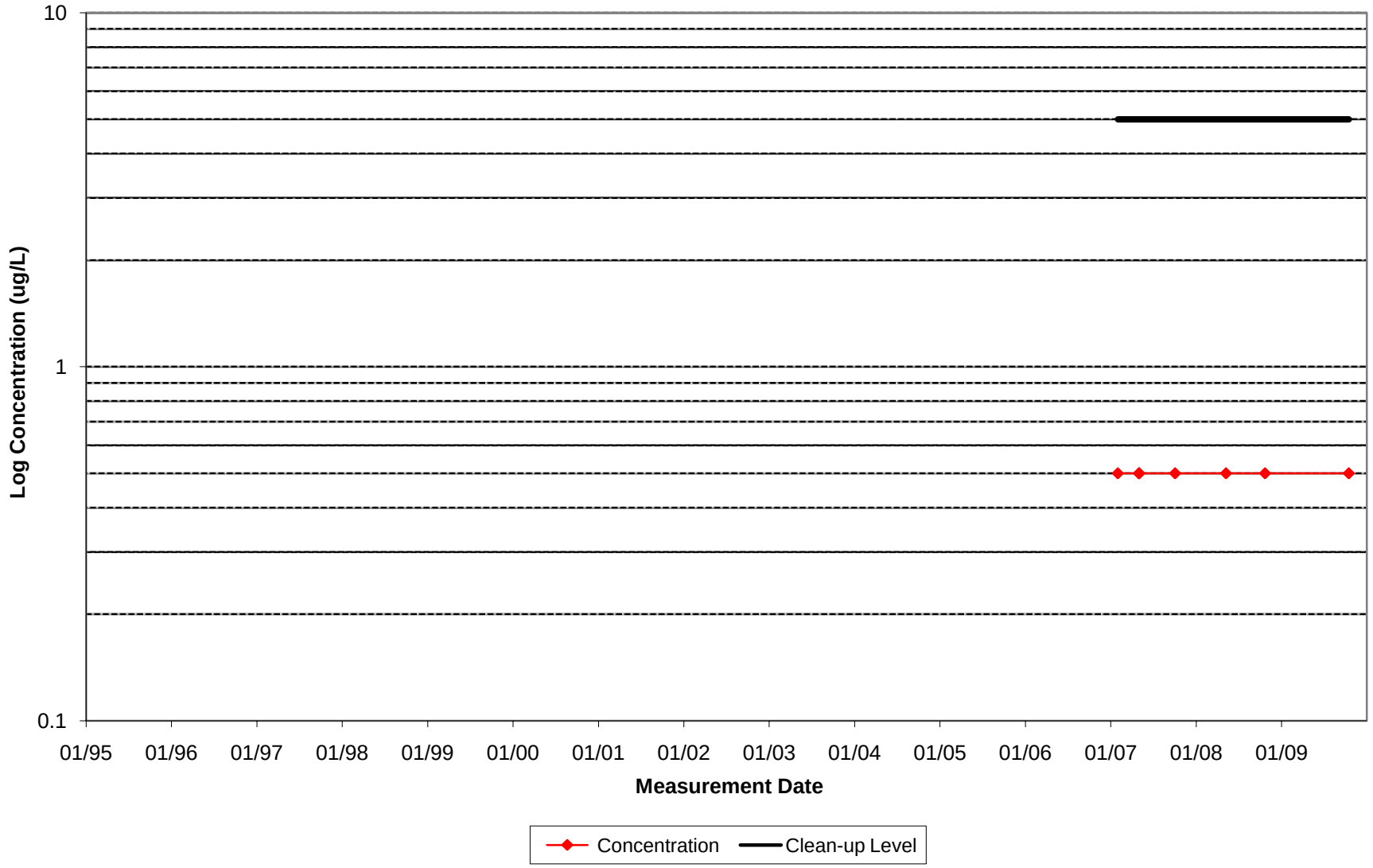
AMW-50 - TCE (ug/L)



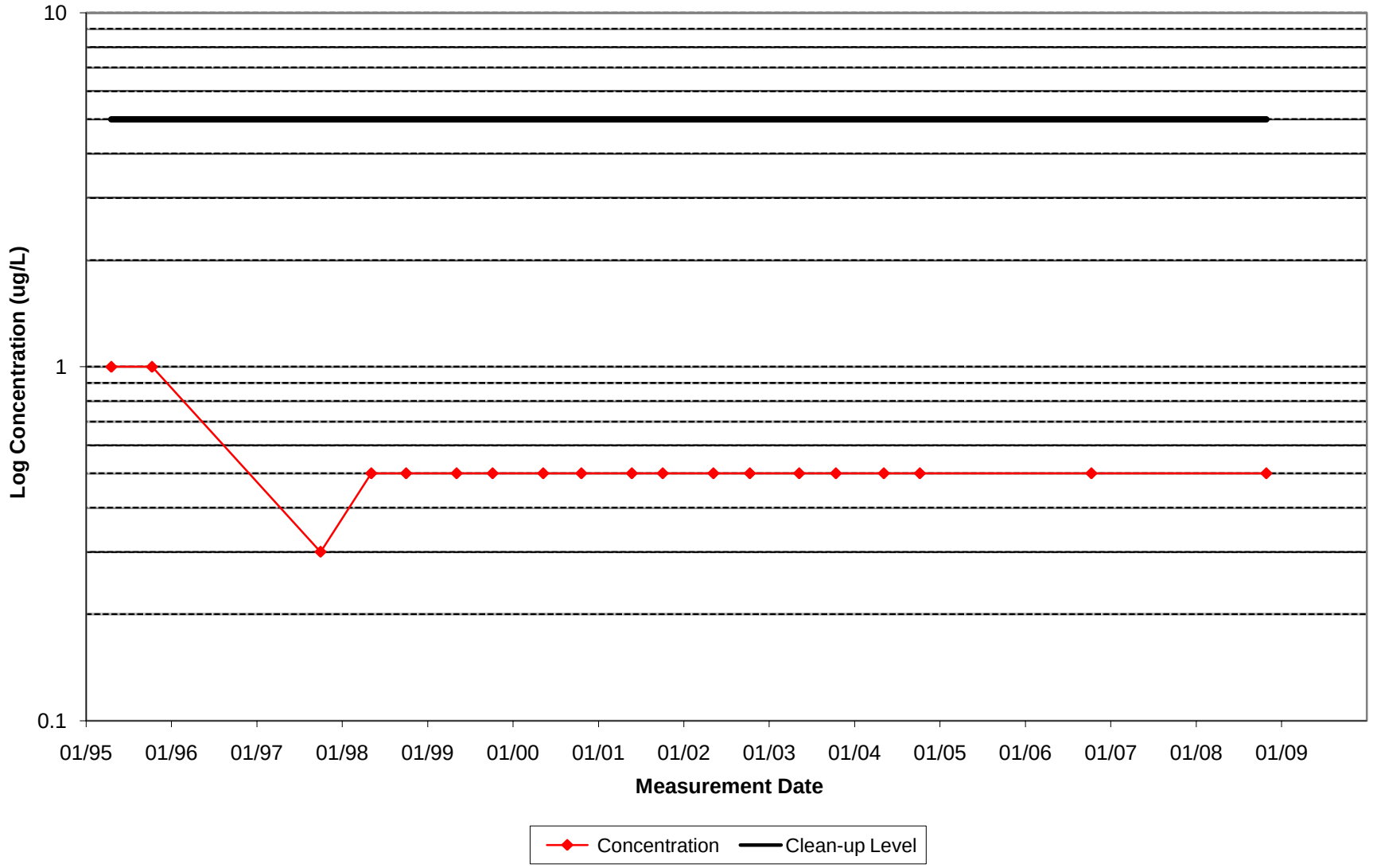
AMW-51 - TCE (ug/L)



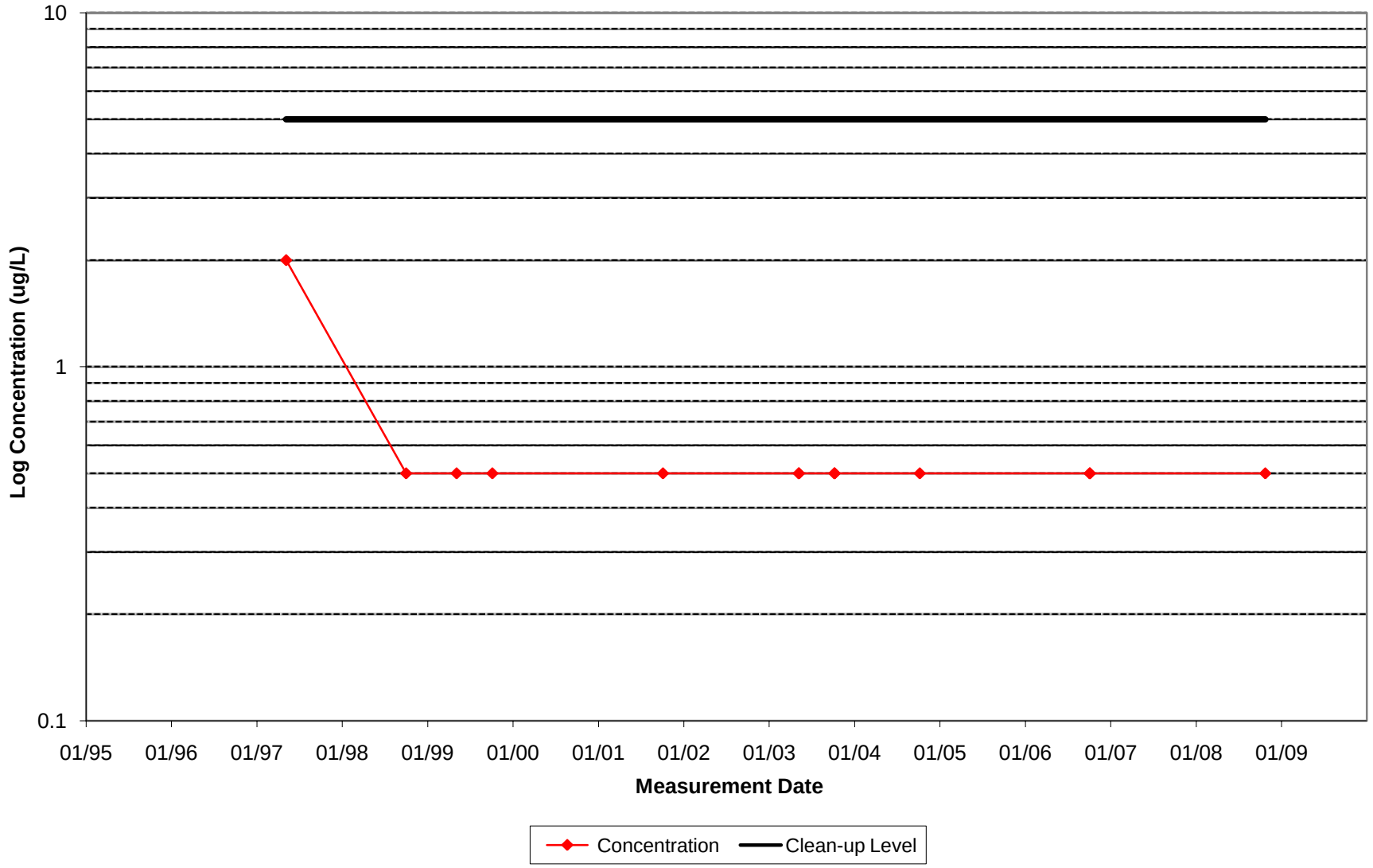
AMW-62 - TCE (ug/L)



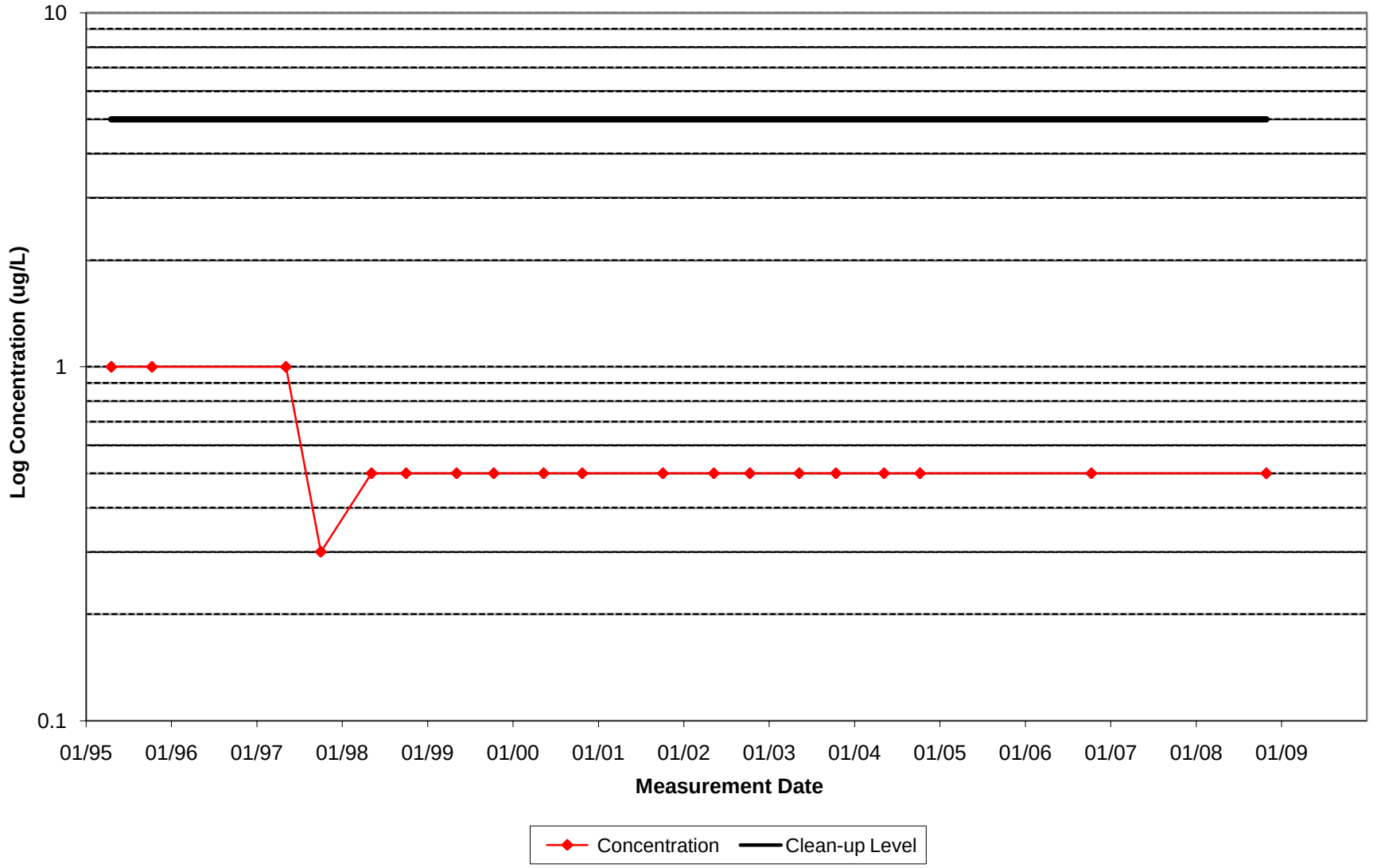
CPU-2 - TCE (ug/L)


10
1
0.1
Log Concentration (ug/L)
01/95
01/96
01/97
01/98
01/99
01/00
01/01
01/02
01/03
01/04
01/05
01/06
01/07
01/08
01/09
Measurement Date
Concentration
Clean-up Level

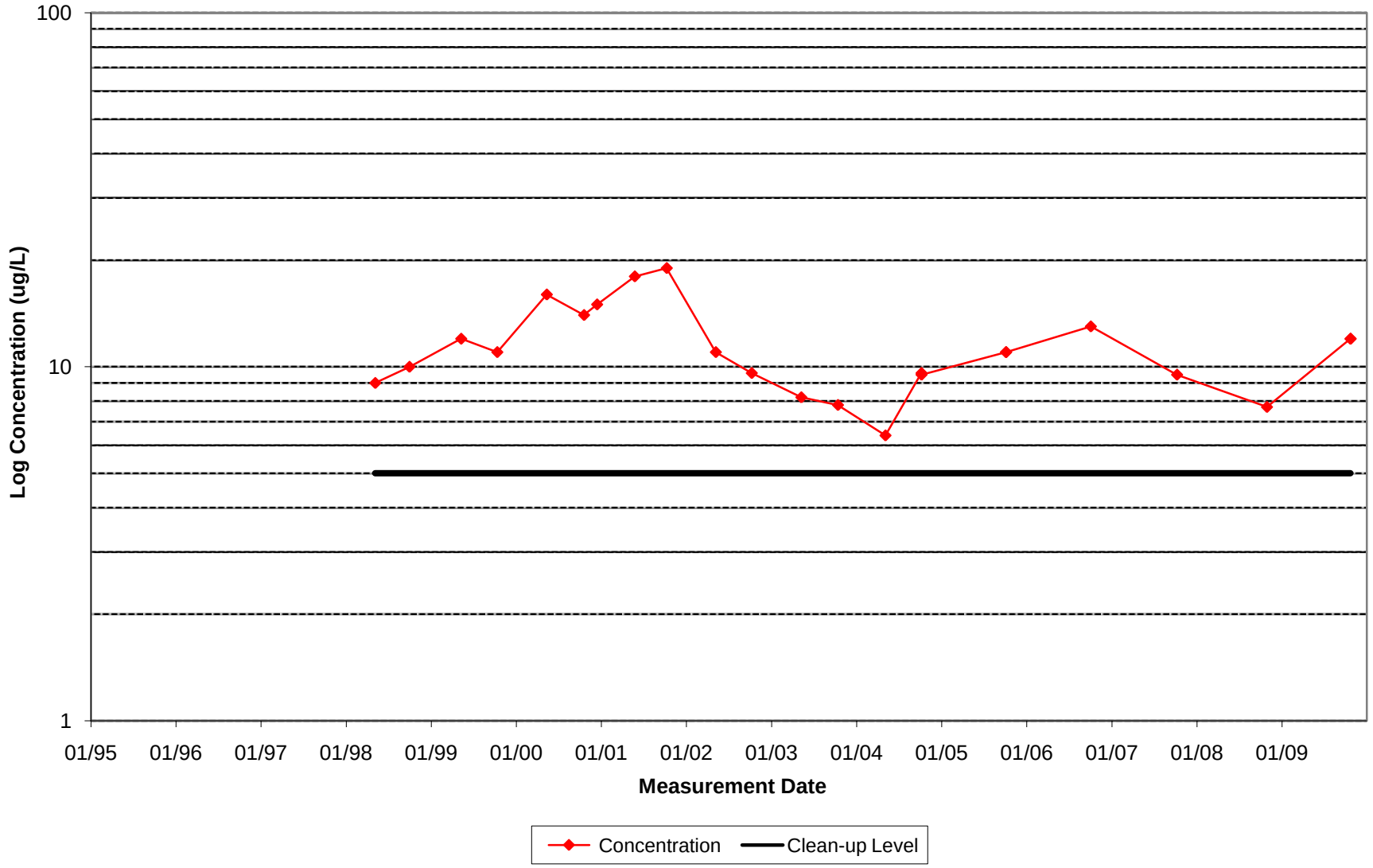
CPU-3D - TCE (ug/L)



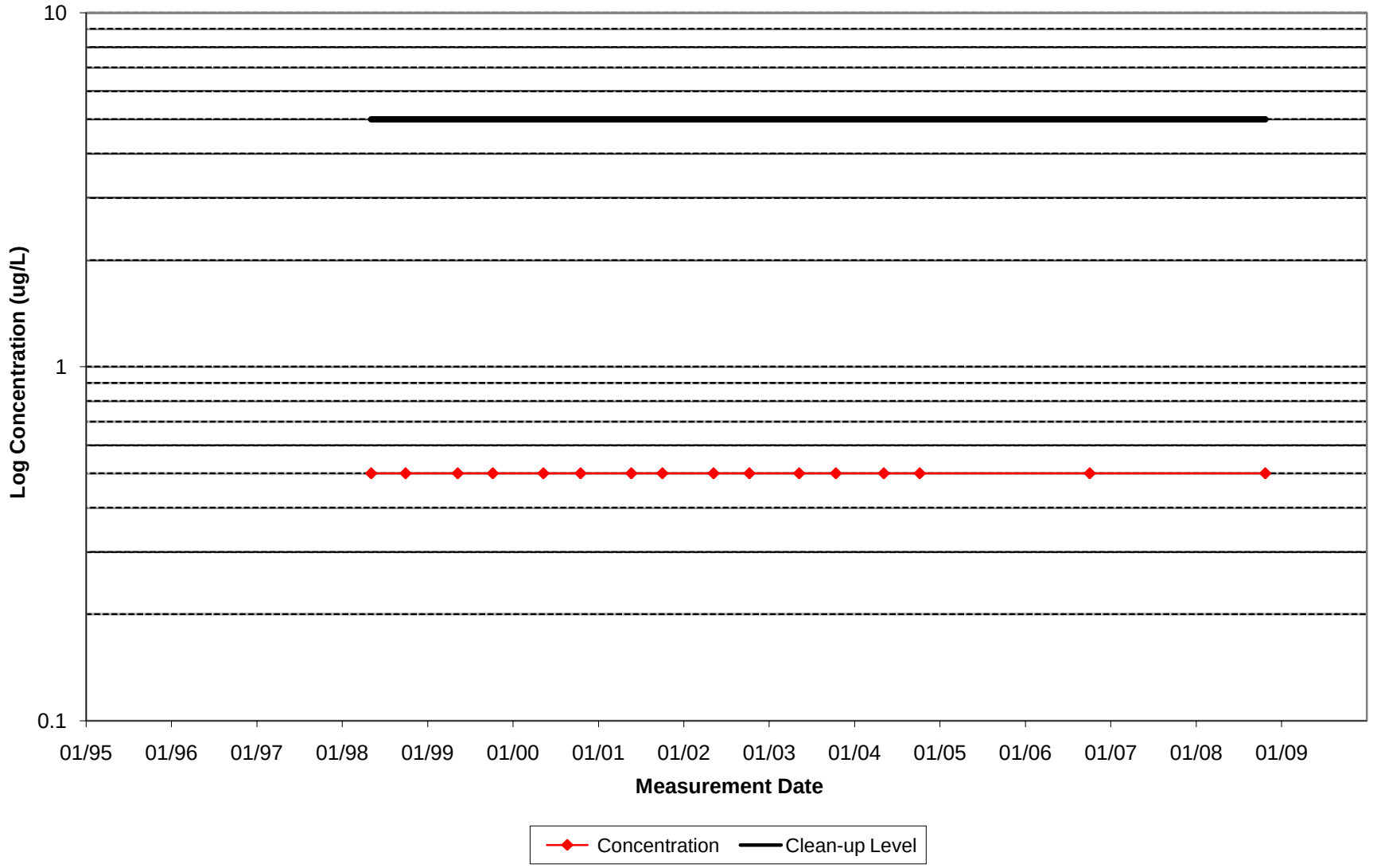
CPU-10 - TCE (ug/L)



MW-33 - TCE (ug/L)


100
10
1
Log Concentration (ug/L)
01/95
01/96
01/97
01/98
01/99
01/00
01/01
01/02
01/03
01/04
01/05
01/06
01/07
01/08
01/09
Measurement Date
Concentration
Clean-up Level

MW-34 - TCE (ug/L)


10
1
0.1
Log Concentration (ug/L)
01/95
01/96
01/97
01/98
01/99
01/00
01/01
01/02
01/03
01/04
01/05
01/06
01/07
01/08
01/09
Measurement Date
Concentration
Clean-up Level

BENNETT - TCE (ug/L)