DRAFT

OPERABLE UNIT THREE
MONITORING PROGRAM REPORT, 2012

W.R. GRACE SUPERFUND SITE
ACTON, MASSACHUSETTS

PREPARED FOR:

W.R. GRACE & CO. – CONN
62 WHITTEMORE AVENUE
CAMBRIDGE, MASSACHUSETTS02140

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LIST OF ACRONYMS

1,2-DCA	1,2-dichloroethane
AWD	Acton Water District
cfs	cubic feet per second
EPH	Extractable Petroleum Hydrocarbons
FS	Feasibility Study
FSP	Field Sampling Plan
Gpm	gallons per minute
Grace	W.R. Grace & Co. - Conn.
IGCL	Interim Groundwater Cleanup Level
MNA	Monitored Natural Attenuation
OU-3	Operable Unit 3
ORP	Oxidation-Reduction Potential
PCE	tetrachloroethene
PDB	Passive Diffusion Bag
POP	Project Operations Plan
QAPP	Quality Assurance Project Plan
RD/RA	Remedial Design/Remedial Action
RI	Remedial Investigation
ROD	Record of Decision
Site	W.R. Grace & Co. - Conn. Acton Superfund Site
TCA	1,1,1-trichloroethane
TCE	trichloroethene
trend test	Mann-Kendall trend test for small sample sizes
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
VDC	1,1-dichloroethene or vinylidene chloride
VOC	Volatile Organic Compound
VPH	Volatile Petroleum Hydrocarbons

1 INTRODUCTION

This report presents the results of the Operable Unit Three (OU-3) groundwater monitoring done at the W.R. Grace & Co. - Conn. (Grace) Superfund Site in Acton, Massachusetts (the “Site”) between February 1 and October 31, 2012. The current OU-3 monitoring program was defined in the Groundwater Monitoring Plan (GeoTrans, 2006) and modified by the letter Re: *Response to Comments on the September 12, 2006 Draft RD/RA Groundwater Monitoring Plan* (GeoTrans, 2007b).

The goals of the Site groundwater monitoring program are evolving as the remedial actions at the Site are implemented. There are now six active groundwater extraction wells and two injection wells at the Site: five extraction wells are located downgradient of the Industrial Landfill (MLF, SELF-1, SELF-2, SWLF-2 and WLF) and one extraction well (NE-1) and two injection wells (RE-1 and RE-2) are located in the Northeast Area. The Industrial Landfill area includes both the Southwest Landfill Area and the Southeast Landfill Area. The three remaining geographic areas of the Site, the Former Lagoon Area, the Southwest Area, and the Assabet River Area, are being remediated through monitored natural attenuation (MNA) processes. Figure 1-1 is a Site map showing the locations of the extraction wells in the Industrial Landfill Area and the extraction and injection wells in the Northeast Area.

The goals of the Site-wide monitoring program include:

- Groundwater level monitoring to confirm that the Landfill Area groundwater capture zone is being achieved;
- Groundwater quality monitoring within the Landfill Area groundwater capture zone to assess changes in groundwater quality within the capture zone;
- Water quality monitoring of the Northeast Area extraction system to assess the effectiveness of the remedial system at removing contaminant mass; and
- Groundwater quality monitoring outside of the Landfill Area groundwater capture zones and the Northeast Area targeted remediation area to assess the natural attenuation of contaminant concentrations in groundwater not being actively captured and treated.

The OU-3 groundwater monitoring program does not include treatment system monitoring. Treatment system monitoring has been done in accordance with the Northeast Area Groundwater Operation and Maintenance Plan (O&M and GeoTrans, 2010) and the Landfill Area Groundwater Operation and Maintenance Plan (O&M and Tetra Tech GEO, 2012).

Information related to operation of the two treatment systems, including mass removal information, will be included in the Groundwater Extraction Systems Operations Report, January 2012 through December 2012, to be submitted in early 2013.

2 WATER LEVEL MONITORING

A Site-wide water level measurement round was performed between September 10 and 11, 2012. All five Acton Water District (AWD) public water supply wells located within the Site boundaries, the five Landfill Area extraction wells (MLF, SELF-1, SELF-2, SWLF-2, and WLF), the one Northeast Area extraction well (NE-1), and Northeast Area reinjection well (RE-2) were operational at the time the measurements were collected. Table 2-1 summarizes the water levels measured on September 10-11, 2012 and Table 2-2 summarizes the pumping rates of the public water supply wells and extraction wells on September 10-11, 2012. On average, September 2012 water levels were approximately 2 feet lower than January 2012 water levels. Figures 2-1 and 2-2 illustrate the September 2012 water levels measured in the wells open to the unconsolidated deposits and bedrock, respectively. Figures 2-1 and 2-2 show that general directions of groundwater flow are to the south and southeast toward the Assabet River and to the north and northwest toward Fort Pond Brook. Some of the Site groundwater is captured by the operating extraction wells. The following sections further describe groundwater flow within the Site.

2.1 NORTHEAST OF GRACE PROPERTY

As indicated in Table 2-2, extraction well NE-1 was pumping at approximately 19.7 gpm during the water level monitoring event. Following treatment, the extracted groundwater was reinjected into the ground using injection well RE-2.

Figures 2-1 and 2-2 show that a water table and bedrock potentiometric level high extends from the Grace property onto the Linde (formerly BOC Gases) property to the northeast. Groundwater from the area of higher water table and potentiometric elevation flows to the northwest and north toward Fort Pond Brook and northeast toward the School Street well field. There is a localized groundwater mound on the unconsolidated deposits potentiometric map around reinjection well RE-2 due to reinjection of groundwater at that location. The bedrock potentiometric maps shows a small depression in the potentiometric surface around extraction well NE-1 due to pumping from that well. The limited areal extent of the hydraulic impact of extraction/reinjection in this area is consistent with the observations made during installation and start-up of the Northeast Area extraction system as summarized in the Interim Northeast Area Groundwater Remedial Action Report (GeoTrans and O&M, 2011).

Water level data from monitoring well clusters located northeast of the Grace property, and east of the AWD School Street wellfield, clearly illustrate a northwesterly hydraulic gradient in the unconsolidated deposits from wells AR-32D, AR-33D, and AR-34D toward the AWD public water supply wells and Fort Pond Brook (Figure 2-1). The bedrock water level data also indicate a northwesterly hydraulic gradient from the AR-34 cluster toward the AWD public water supply wells and Fort Pond Brook (Figure 2-2). The water level data indicate that east of the School Street wellfield, groundwater in the unconsolidated deposits and bedrock flows northwesterly toward the public water supply wells and Fort Pond Brook. The data indicate that the impacted groundwater from the Grace property does not migrate beyond the public water supply wells. Impacted water from the Grace property either 1) is captured by the public water supply wells and treated or 2) discharges to Fort Pond Brook.

2.2 LANDFILL AREA

The Landfill Area extraction wells were pumping at a total average rate of approximately 52.3 gpm during the water level round. Table 2-2 indicates the rate of each of the five Landfill Area extraction wells during the water level round. Figures 2-1 and 2-2 show shallow unconsolidated deposits and bedrock potentiometric contours for the entire Site. Figure 2-3 is a potentiometric contour map of the deep unconsolidated deposits in the Landfill Area.

Figures 2-1 and 2-3 show that the capture zone in the unconsolidated deposits extends from the area west of extraction wells SWLF-1 and WLF to the east, beyond extraction wells SELF-1 and SELF-2. The deep unconsolidated deposits capture zone extends further to the south in the southwestern and south-central portions of the landfill than does the shallow unconsolidated deposits capture zone.

The capture zone in bedrock, shown on Figure 2-2, extends from the area west of extraction well SWLF-2 to the east, beyond extraction well MLF and east of extraction wells SELF-1 and SELF-2. The bedrock capture zone is more extensive than the deep unconsolidated deposits capture zone in the area southwest of the Industrial Landfill, but less extensive in the area southeast of the Landfill. Figure 2-4 shows that downgradient of the western portion of the Industrial Landfill, along Section A-A’, the capture zone extends through the deep unconsolidated deposits and into the bedrock. Downgradient of the eastern portion of the Industrial Landfill, along Section B-B’ (Figure 2-5), the capture zone extends through the unconsolidated deposits and into the uppermost bedrock and extends to the southeast to beyond monitoring well cluster LF-22. The section locations are shown on Figure 1-1.

2.3 VERTICAL HYDRAULIC GRADIENTS

Vertical hydraulic gradients are downward between the unconsolidated deposits and bedrock across most of the Site. Near the Assabet River and Fort Pond Brook, however, vertical hydraulic gradients are generally upward, indicating that the river and brook are groundwater discharge locations for bedrock and unconsolidated deposits groundwater. In proximity to pumping wells, observed hydraulic gradients can be upward or downward depending upon the relative position of the monitoring well screened interval and the open interval of the pumping well.

3 GROUNDWATER QUALITY SAMPLING

Groundwater samples for the annual groundwater sampling round were collected between July 26, 2012 and October 1, 2012. Groundwater samples were analyzed for volatile organic compounds (VOCs), inorganic compounds, geochemical parameters and 1,4-dioxane. In addition, groundwater samples were collected from several locations in the Northeast Area to be analyzed for extractable petroleum hydrocarbons (EPH) and volatile petroleum hydrocarbons (VPH). The results are discussed below.

Tetra Tech GEO performed a Tier 1 validation of the VOC, inorganic compound, and 1,4-dioxane results. The data were checked for completeness and the lab narrative was reviewed. The data were qualified by the lab based on quality control results, holding times, and preservation. The groundwater sampling results are summarized below.

3.1 SAMPLING FOR VOC ANALYSIS

Groundwater samples were collected for VOC analysis from monitoring and extraction wells and from beneath the Assabet River. These results are described in the following sections.

3.1.1 MONITORING AND EXTRACTION WELL SAMPLING

Groundwater sampling was conducted between July 26, 2012 and October 1, 2012. Samples were collected from 71 wells for VOC analysis. Groundwater sampling was done according to the procedures outlined in the Field Sampling Plan (FSP) (HSI GeoTrans, 2000a) and the Project Operations Plan Addendum (POP) (GeoTrans 2007a). Groundwater samples from 37 locations were collected using passive diffusion bag (PDB) samplers. The results of the VOC analyses are included in Table A-1 of Attachment A.

3.1.2 SUB-RIVER GROUNDWATER SAMPLING

In addition to the groundwater samples collected from wells, two groundwater samples were collected from beneath the Assabet River at transect ASBRV-T6 using PDB samplers. These sub-river groundwater samples were collected to evaluate the VOC concentrations in groundwater that discharges to the river. The diffusion bag sampling was done during low river flow conditions to maximize the potential that the samples would be representative of discharging groundwater and not recharging surface water. The location of sub-river sampling transect ASBRV-T6 is shown on Figure 2-1.

Two water-filled diffusion bag samplers were deployed beneath the Assabet River at transect ASBRV-T6 on July 13, 2012. The samplers consisted of low-density polyethylene bags filled with laboratory water. The sample location naming convention was as follows: location ‘A’ was one-quarter of the distance across the river from the bank closest to the Grace Site and location ‘B’ was one-third of the distance across the river. The samplers were placed approximately six-inches beneath the riverbed at each location and marked with flagging tape. The samplers were removed from the river on August 14, 2012. The results of the sub-river groundwater analyses are included in Table A-1 of Attachment A and discussed in Section 3.1.3.

A temporary piezometer was installed at transect ASBRV-T6 to determine the direction of the vertical hydraulic gradient between the groundwater and the Assabet River. The groundwater level and the river water level were measured during installation and upon retrieval of the diffusion bag samplers on July 13, 2012, and August 14, 2012, respectively. Water level measurements collected from the piezometer are included on the diffusion bag sub-river sampling form included as Attachment B. Upward vertical hydraulic gradients of 0.15 and 0.04 were calculated from water level measurements made during diffusion bag sampler installation and retrieval.

Daily average flow in the Assabet River, as measured at the United States Geological Survey (USGS) gauging station located approximately 1.5 miles upstream of the Site in Maynard, ranged between 19 and 138 cubic feet per second (cfs) during the time period the diffusion bag samplers were in the river. Figure 3-1 is a graph showing the daily average flow rate in the river during 2012. As can be seen on Figure 3-1, flow in the Assabet River was low during the time the diffusion bag samplers were deployed. Historical hydraulic gradient and river flow measurements indicate that upward hydraulic gradients are present when river flow rates are less than 400 cfs. The Assabet River daily average flow was below 150 cfs for the entire period that the PDBs were in the river.

3.1.3 DISTRIBUTION OF VOCS WITH INTERIM GROUNDWATER CLEANUP LEVELS (IGCLS)

This section describes the current distribution of VOCs detected in groundwater. Table 3-1 compares the VOC results from groundwater samples collected between July 26, 2012 and October 1, 2012 to the Interim Groundwater Cleanup Level (IGCL) for each compound. The IGCLs for groundwater at the Site are defined in the Record of Decision (ROD) (USEPA, 2005). The following information is listed in Table 3-1 for each compound:

- The IGCL;
- The number of locations at which the compound was detected at a concentration greater than the IGCL;
- The total number of locations for which the compound was analyzed;
- The number of samples in which the compound was detected at concentrations greater than the IGCL;
- The total number of samples for which the compound was analyzed;
- The number of samples in which the compound was detected; and
- The maximum detected concentration.

Compounds detected above the IGCL in at least one sample are marked with an asterisk on the right side of the table.

As indicated in Table 3-1, 84 samples for VOC analysis were collected from a total of 73 locations (71 wells plus two locations at sub-river transect ASBRV-T6). Each of the eight detected VOCs has an IGCL. Seven of the eight VOCs were detected in at least one of the 73 sampling locations at a concentration greater than its IGCL (see Table 3-1). The three compounds detected most frequently at a concentration greater than their IGCL were 1,1-dichloroethene (VDC), vinyl chloride, and benzene. They were detected at a concentration greater than their IGCL at 29, 32, and 17 locations, respectively. These compounds were the most widespread in their occurrence. The other four VOCs which were detected at a concentration above their IGCL in a sample from at least one location were 1,2-dichloroethane (1,2-DCA), 1,2-dichloropropane, methylene chloride, and trichloroethene (TCE). These four compounds were only detected at a concentration greater than their IGCL at six, four, two, and two locations, respectively. The following sections describe the distribution of the seven compounds that were detected above their IGCL in at least one sampling location.

Figures 3-2 and 3-3 show the VDC, vinyl chloride, and benzene concentrations in groundwater samples collected from wells open to the unconsolidated deposits and bedrock, respectively. Also shown on Figure 3-2 are results of the analyses from groundwater samples collected beneath the Assabet River at transect ASBRV-T6.

3.1.3.1 VDC DISTRIBUTION

VDC was detected above the IGCL of 7 µg/L at 29 of 73 locations, and in 35 of 84 samples. The maximum VDC concentration (900 µg/L) was detected in a sample from well cluster OSA-13, which is located near the former Primary Lagoon. Figure 3-4 shows the maximum VDC concentration, regardless of depth, detected in groundwater samples collected between July 25, 2012 and October 1, 2012, the most recent Site-wide sampling round. The IGCL of 7 µg/L was used as the minimum isoconcentration line on Figure 3-4. The highest concentrations of VDC, greater than 200 µg/L, were detected in the unconsolidated deposits on the western edge of the former Primary Lagoon, in monitoring well cluster OSA-13, and in the deep unconsolidated deposits and shallow bedrock groundwater adjacent to the southwestern edge of the Industrial Landfill, in monitoring well clusters LF-02 and LF-10.

3.1.3.2 VINYL CHLORIDE DISTRIBUTION

Vinyl chloride was detected above the IGCL of 2 µg/L at 32 of 73 locations, and in 37 of 84 samples. The maximum vinyl chloride concentration (180 µg/L) was detected in a sample from well cluster LF-02, which is located near the Industrial Landfill. Figure 3-5 shows the maximum vinyl chloride concentration, regardless of depth, detected in groundwater samples collected between July 26, 2012 and October 1, 2012, the most recent Site-wide sampling round. The IGCL of 2 µg/L was used as the minimum isoconcentration contour on Figure 3-5. The highest concentrations of vinyl chloride, greater than 100 µg/L, were detected in the shallow bedrock groundwater adjacent to the southern edge of the Industrial Landfill, in monitoring well clusters LF-02 and LF-19, and in the unconsolidated deposits near the western edge of the former Primary Lagoon, in monitoring well cluster OSA-13.

A comparison of Figure 3-4 to Figure 3-5 shows that the vinyl chloride distribution is similar to the VDC distribution. In general, the distribution of vinyl chloride is less widespread Site-wide than that of VDC, and overall the vinyl chloride concentrations are lower than the VDC concentrations. The similarity in the distribution of these two compounds reflects the fact that vinyl chloride is a breakdown product of, and was also a possible impurity (less than 0.5 parts per million) in VDC that was used by Grace.

3.1.3.3 BENZENE DISTRIBUTION

Benzene was detected above the IGCL of 5 µg/L at 17 of 73 locations and in 21 of 84 samples. Figure 3-6 shows the maximum benzene concentration, regardless of depth, detected in samples collected between July 26, 2012 and October 1, 2012, the most recent Site-wide sampling round. The IGCL of 5 µg/L was used as the minimum isoconcentration contour on Figure 3-6. Elevated concentrations of benzene are limited mainly to the area of the Industrial

Landfill. The highest concentrations of benzene were detected in deep unconsolidated deposits groundwater adjacent to the southeastern edge of the Industrial Landfill, in extraction well SELF-2 and the LF-06 monitoring well cluster. The maximum benzene concentration detected was 220 µg/L. A comparison of Figure 3-6 to Figures 3-4 and 3-5 shows that benzene is less widely distributed across the site than VDC and vinyl chloride.

3.1.3.4 DISTRIBUTION OF OTHER VOCS DETECTED ABOVE IGCLS

As indicated in Table 3-1, four other VOCs were detected above their IGCL in at least one sample. These four compounds were detected above their IGCL at six or fewer locations and were not widely distributed.

The compounds 1,2-DCA, and 1,2-dichloropropane were detected above their IGCL of 5 µg/L at six and four locations, respectively. Concentrations in excess of the IGCL for these two compounds are limited to the area downgradient of the Industrial Landfill. 1,2-DCA was detected above its IGCL in extraction wells SELF-1 and SELF-2 and monitoring wells B-08B, LF-06C, LF-22S and LF-22D. 1,2-dichloropropane was detected above its IGCL in extraction wells SELF-1 and SELF-2 and in monitoring wells LF-22S and LF-22D.

Methylene chloride was detected above the IGCL of 5 µg/L at two locations, LF-06C and LF-22S, both of which are located in southeast of the Industrial Landfill.

TCE was detected above its IGCL of 5 µg/L at two locations. TCE was detected in a sample from one well of the PT-11 cluster, at a concentration of 8.5 µg/L. The PT-11 well cluster is located approximately 300 feet southeast of the southern edge of Turtle Pond and on the opposite side of the Assabet River from the Grace property. A review of groundwater quality data south of the Assabet River, included in Section 5.4 of the Phase 1 Data Report Addendum (GeoTrans, 2002), indicates that TCE is likely emanating from VOC sources located south of the Assabet River, and the concentrations detected in groundwater samples from the PT-11 cluster are from VOC sources that are unrelated to the Grace Site. TCE was also detected at a concentration of 49 µg/L in monitoring well LF-22S, which is located southeast of the Industrial Landfill. This is the first TCE detection in this monitoring well, which was installed in 2010.

A table listing all the detections of 1,1,1-trichloroethane (TCA), tetrachloroethene (PCE), and TCE at the Site in 2012 is included as Table 3-2. This table lists the detections of TCA, PCE, and TCE from all samples collected in 2012 and indicates the area in which the well is located.

No IGCLs were established for the Site for TCA and PCE. TCA and PCE are not detected above federal drinking water standards of 200 and 5 µg/L, respectively. TCE was detected above the IGCL at two locations, as described above.

3.2 INORGANIC COMPOUND SAMPLING

Groundwater samples were collected from eight locations for total inorganic compound analysis. A sample was not collected from AR-29SBR because the well did not yield sufficient water volume to collect a sample for metals analysis. Groundwater sampling was done according to the procedures outlined in the FSP (HSI GeoTrans, 2000a). The results of the total inorganic compound analyses are included in Table A-2 of Attachment A. Some of these samples were collected from monitoring wells located between the former source areas and the Assabet and School Street wellfields. The specific sampling locations were recommended by the Acton Water District to provide information regarding the concentrations of total inorganic compounds in groundwater upgradient of the two wellfields. In addition, samples were collected from monitoring wells RE-1OBS and RE-2OBS to evaluate the inorganic compound concentrations in the aquifer adjacent to the reinjection wells in the Northeast Area.

Table 3-3 compares the total concentration of inorganic compounds detected in groundwater samples collected from the eight monitoring wells between July 30, 2012 and October 1, 2012, to the IGCL for each compound. The IGCLs for groundwater are defined in the ROD (USEPA, 2005). The following information is listed in the table for each compound:

- The IGCL;
- The number of locations at which the compound was detected at concentrations greater than the IGCL;
- The total number of locations for which the compound was analyzed;
- The number of samples in which the compound was detected at concentrations greater than the IGCL;
- The total number of samples for which the compound was analyzed;
- The number of samples in which the compound was detected; and
- The maximum detected concentration.

Compounds that were detected at concentrations greater than their IGCL in at least one sample are marked with an asterisk on the right side of Table 3-3.

As indicated in Table 3-3, of the seven inorganic compounds that have an IGCL, one compound, manganese, was detected at a concentration greater than its IGCL in at least one sample. Total arsenic, nickel, lead, chromium, and beryllium were not detected at concentrations greater than their IGCLs at any of the eight locations, and antimony was not detected at any of the eight locations.

Total manganese was detected above its IGCL of 300 µg/L at three of the eight locations. The IGCL defined for manganese in the ROD is 300 µg/L. However, as indicated in the ROD, this IGCL value may be revised in the future due to the presence of elevated background concentrations of manganese. In a letter dated, September 30, 2009, Grace proposed an IGCL of 722 µg/L based on a statistical evaluation of background manganese concentrations (GeoTrans, 2009). Total manganese concentrations detected in 2012 at most locations were similar to concentrations observed in previous samples. As indicated in Section 3.5.3 of the Public Review Draft Remedial Investigation (RI) Report (GeoTrans, 2005a), Site data suggest that local geochemical conditions associated with Site activities in the area downgradient of the Industrial Landfill and near the former source areas have resulted in increased solubility of naturally occurring manganese.

To summarize, the sampling results indicate that inorganic compound concentrations in groundwater near the Assabet and School Street wellfields are similar to concentrations detected in previous sampling events. There is no indication that a plume of inorganic compound-contaminated groundwater is migrating toward the wellfields, as inorganic compound detections in excess of IGCLs are isolated. In addition, the water quality data from monitoring wells RE-1OBS and RE-2OBS, show that inorganic compound concentrations in the vicinity of the reinjection wells are below IGCLs.

3.3 GEOCHEMICAL SAMPLING

Groundwater sampling was done to monitor arsenic and manganese concentrations as well as geochemical conditions in two areas of the Site; near the Industrial Landfill and the Former Lagoon Area. Twelve locations were selected to include wells near and downgradient of the source areas that cover a range of VOC concentrations, arsenic concentrations, geochemical conditions, and lithologic units. Figure 3-7 shows the location of the 12 geochemical sampling locations. Four locations are near the Industrial Landfill, two locations are downgradient of the

Industrial Landfill, three locations are near the Former Lagoons and three locations are downgradient of the Former Lagoons toward the North Lagoon Wetland. Samples from the twelve monitoring wells were analyzed for dissolved arsenic, manganese, and iron, and for dissolved oxygen, oxidation-reduction potential (ORP), and pH. The results are presented in Table 3-4. A more detailed discussion of the geochemical controls on the occurrence and distribution of arsenic and manganese in Site groundwater is provided in Section 3.5 of the Public Review Draft RI Report (GeoTrans, 2005a) and Section 1.3.1.1.3 of the Public Review Draft Feasibility Study (FS) (GeoTrans, 2005b)

The results indicate that elevated arsenic and manganese concentrations are generally associated with low ORP values (negative values), high pH values (greater than 6), and low DO values (less than 1). This is consistent with the interpretation that the degradation of organic contaminants has created reducing conditions which favor the dissolution of naturally occurring iron and manganese oxides in the aquifer. The dissolution of iron and manganese oxides results in an increase in dissolved concentrations of iron and manganese as well as arsenic, which tends to adsorb to and be co-precipitated with the iron and manganese oxides. It is expected that with continued reduction of VOC concentrations and consequent reduction in the rate of VOC degradation, less-reducing conditions will be re-established in the aquifer, and the iron and manganese oxides will precipitate, thus lowering the concentrations of iron, manganese and arsenic in groundwater.

Time-concentration plots for each of the 12 locations monitored for geochemistry are included in Attachment C. Included on the graphs for each location are: the sum of VDC, vinyl chloride and benzene, arsenic, manganese, iron, pH, ORP and dissolved oxygen. In addition, to better show trends in arsenic concentrations, separate plots showing arsenic concentrations over time for each location are included in Attachment C. Concentrations of both total and dissolved arsenic, manganese and iron are graphed; open and closed symbols are used to distinguish between dissolved and total concentrations. A trend line is included for each parameter on each graph; for arsenic, manganese and iron, the trend lines are for dissolved concentrations. The graphs show that at most locations concentrations of VOCs, arsenic, manganese and iron are decreasing as pH, dissolved oxygen and ORP are increasing.

For reference, maps showing arsenic concentrations in unconsolidated deposits and bedrock groundwater are included as Figures 3-8 and 3-9, respectively. The maps show the total arsenic concentrations in groundwater samples collected upgradient of the public water supply wells and in the extraction wells, as well as the dissolved arsenic concentrations in groundwater samples collected to monitor geochemical conditions near the Industrial Landfill and Former Lagoon area.

3.4 1,4-DIOXANE SAMPLING

The compound 1,4-dioxane has historically been used throughout the United States for a variety of purposes, including use as a solvent stabilizer. Solvent stabilizers are chemicals added to chlorinated solvents such as TCE, TCA, and PCE to inhibit reactions that lead to the deterioration and ultimate breakdown of the solvents. There is currently no federal drinking water standard for 1,4-dioxane. Massachusetts has a GW-1 standard of 3 µg/L for 1,4-dioxane and the Massachusetts Office of Research and Standards Guideline recently reduced the guideline for 1,4-dioxane from 3 µg/L to 0.3 µg/L. Samples collected for 1,4-dioxane analysis were analyzed using EPA Method 522 according to the QAPP (Tetra Tech GEO, 2011).

Groundwater samples from 28 locations across the Site were analyzed for 1,4-dioxane in 2012. A sample was not collected from monitoring well AR-29SBR in 2012 because the well did not yield sufficient water volume to collect a sample for the 1,4-dioxane analysis. Table 3-5 lists the 1,4-dioxane results from all samples collected in 2012, and indicates the area of the Site in which the well is located. Figure 3-10 shows the maximum 1,4-dioxane concentration detected in groundwater at each location sampled in 2012 and shows the areas of the Site.

As indicated in Table 3-5, the highest 1,4-dioxane concentrations are found downgradient of the Industrial Landfill. The maximum concentration of 30.3 µg/L was detected in unconsolidated deposits extraction well SELF-1.

A total of 13 wells were sampled in the Northeast Area; 11 near the School Street well field public water supply wells and two near the Northeast Area groundwater extraction and treatment system. As shown on Figure 3-10, 1,4-dioxane concentrations near the Christofferson, Lawsbrook and Scribner public water supply wells ranged from 0.11 J µg/L to 1.9 µg/L. Concentrations in the public water supply wells themselves ranged from 0.15 J in the Christofferson well to 0.34 µg/L in the Scribner well.

In the area of the Northeast Area groundwater extraction and treatment system, which is located upgradient of the School Street well field, the data show that 1,4-dioxane concentrations being extracted from the bedrock groundwater range from approximately 1.6 J to 2.49 µg/L, with an average concentration of approximately 2 µg/L. This includes concentrations shown in Table 3-5 for NE-EFF (the northeast area treatment system effluent), which, since the treatment system does not treat 1,4-dioxane, also represents the concentrations being extracted from NE-1. The data from monitoring well RE-2OBS indicate that the unconsolidated deposits groundwater in the vicinity of the groundwater reinjected from the Northeast Area treatment system has 1,4-dioxane concentrations of approximately 2 µg/L. Groundwater samples collected between 2006 and 2009 indicate that, prior to reinjection, the 1,4-dioxane concentrations in the unconsolidated deposits from this area were approximately 0.2 µg/L.

The groundwater quality data indicate that the extraction/reinjection system is moving the 1,4-dioxane from the bedrock groundwater to the unconsolidated deposits groundwater. However, the extraction/reinjection system is not changing the ultimate discharge point of groundwater that flows beneath the Linde property. Bedrock and unconsolidated deposits groundwater beneath the Linde property flows toward either Fort Pond Brook or the School Street Public Water Supply wells. Extracting groundwater from the bedrock and reinjecting into the unconsolidated deposits beneath the Linde property does not cause groundwater to discharge to a location different from either Fort Pond Brook or the School Street Public Water Supply wells. Concentrations of 1,4-dioxane in groundwater in the School Street well field have historically been detected as high as 4 µg/L (AR-30D in 2007) and the extraction/reinjection system discharging approximately 2 µg/L into the unconsolidated deposits will not cause concentrations in the well field groundwater to increase above what has already been detected there.

Four locations were sampled to evaluate the 1,4-dioxane concentrations in the vicinity of the Assabet well field. As shown on Figure 3-10, 1,4-dioxane concentrations in monitoring wells in the Southwest Area ranged from 0.99 J µg/L to 1.7 µg/L. Concentrations in the public water supply wells themselves ranged from 0.07 J in Assabet-2A to 0.23 µg/L in Assabet-1A.

These data indicate that 1,4-dioxane concentrations between 0.3 µg/L and approximately 2 µg/L are found throughout the Site, and the higher 1,4-dioxane concentrations, greater than 3 µg/L, are limited to the area of the Industrial Landfill.

3.5 EPH AND VPH SAMPLING

The Linde property is a source of LNAPL and LNAPL-related contamination that is unrelated to the Grace Site. The Linde-related contamination consists of Number 2 fuel oil and associated dissolved-phase EPH and VPH contamination. Figure 3-11 shows the approximate extent of LNAPL-related groundwater contamination based on groundwater quality samples collected between 2001 and 2012 (ENSR/AECOM, various monitoring reports) as well as the area where separate-phase LNAPL has been observed on at least one occasion since 1996.

Groundwater quality samples were collected from several locations and analyzed for EPH and VPH to evaluate whether the Linde LNAPL-related contamination is migrating to the north toward the Grace extraction and reinjection wells. Samples were collected from monitoring well MW-49, which is completed across the water table; MW-06D1, which is completed in the shallow till; and MW-06D2, which is completed in the deep till. These three monitoring wells are located between the Linde LNAPL-related contamination and the area where bedrock groundwater extraction is occurring (Figure 3-11). EPH and VPH samples are also collected monthly from extraction well NE-1. As shown in Table A-3 in Attachment A, 2-methylnaphthalene and naphthalene were detected in the EPH analysis at concentrations of 3 µg/L and 17 µg/L, respectively, in monitoring well MW-49. These parameters were not detected in the duplicate sample collected from MW-49, nor was naphthalene detected in the VPH sample or duplicate VPH sample collected from MW-49. Naphthalene was also detected in the EPH analysis from the equipment blank associated with MW-49 at a concentration of 6 µg/L. In extraction well NE-1, C9-C12 aliphatics (adjusted) were detected once at a concentration of 56.5 µg/L and C9-C10 aromatics were detected once at a concentration of 50.3 µg/L. The inconsistency of these detections suggests that they may be due to laboratory issues rather than the presence of these parameters in groundwater as a result of migration of the Linde-related contamination.

4 EVALUATION OF VDC, VINYL CHLORIDE AND BENZENE CONCENTRATION TRENDS AND DISTRIBUTION

This section provides an evaluation of the concentration trends and distribution of the three main Site groundwater contaminants, VDC, vinyl chloride and benzene. Section 4.1 provides a statistical evaluation of long-term groundwater concentration trends for VDC, vinyl chloride and benzene. Section 4.2 provides a discussion of the recent changes in the spatial distribution and the statistically significant concentration trends for the six geographic areas of the Site. Section 4.3 provides a comparison of the current VDC distribution to the pre-1984 VDC distribution.

4.1 TREND TEST

A statistical evaluation of recent groundwater concentration trends was done using the Mann-Kendall Trend Test for Small Sample Sizes (“Trend Test”). The Trend Test for small sample sizes is described in “Guidance for Data Quality Assessment, Practical Methods for Data Analysis” (USEPA, 2000). The Trend Test was done for the three most prevalent compounds at the Site, VDC, vinyl chloride, and benzene, using data collected from 2004 through 2012.

The Trend Test was used to identify, for the time period between 2004 and 2012, whether there is a statistically significant increasing concentration trend or decreasing concentration trend at a 95 percent confidence level. The trend in concentration is determined by computing the difference between successive concentrations of a particular compound detected in samples from a well. The number of positive differences minus the number of negative differences is the statistic “S”. The value of S is compared to a table of values, in this case Table A-11 in the USEPA Guidance Document (USEPA, 2000), to determine if there is a statistically significant increasing trend, decreasing trend, or no statistically significant trend in the data set. The Trend Test evaluation requires that samples be collected at regularly-spaced time intervals, with no duplicate samples included and no missed sampling events. The analysis was done on wells that have been sampled annually since 2004 with two or fewer non-detect results. Wells that have not been sampled annually since 2004 or had more than two non-detect results were not evaluated using the Trend Test method because they did not meet the requirements of the trend test method. A concentration of one-half the detection limit for the relevant compound was assumed for all non-detect results.

Table 4-1 summarizes the results of the Trend Test. For the 54 wells in which the data were sufficient to perform the statistical analysis, the table indicates whether there has been a statistically significant trend in the VDC, vinyl chloride, or benzene concentration since 2004. Table 4-1 indicates, with “<=IGCL (#)”, locations from which concentrations from all samples collected over the nine-year time period were less than the IGCL of “#” and, with “ND”, wells for which not all sample results were less than or equal to the IGCL, but the reported concentrations from two or more years were less than detection limits. For wells in which a trend was identified, the range of concentration change is indicated, with the first number indicating the concentration detected in 2004 and the second number indicating the concentration detected in 2012.

In addition to the trend test, graphs showing the temporal change in VDC, vinyl chloride, and benzene concentrations in groundwater for all locations currently sampled are included as Attachment D.

4.1.1 VDC Concentration Trend Test

The Trend Test for VDC concentrations was done using data from 38 wells. The Trend Test was not done for 16 wells because VDC concentrations were below the IGCL of 7 µg/L in all the samples collected since 2004 from 14 wells, and because VDC was not detected for two or more years in two wells. Twenty-four of the 38 wells were identified as having a decreasing VDC concentration trend and four of the 38 wells were identified as having an increasing VDC concentration trend. The remaining 10 wells had no statistically significant VDC concentration trend.

4.1.2 Vinyl Chloride Concentration Trend Test

The Trend Test for vinyl chloride concentrations was done using data from 30 wells. The Trend Test was not done for 24 wells because vinyl chloride concentrations were below the IGCL of 2 µg/L in all of the samples collected since 2004 from 21 wells, and vinyl chloride was not detected for two or more years in three wells. Fifteen wells were identified as having a decreasing vinyl chloride concentration trend and three wells were identified as having an increasing vinyl chloride concentration trend. The remaining twelve wells had no statistically significant vinyl chloride concentration trend.

4.1.3 BENZENE CONCENTRATION TREND TEST

The Trend Test for benzene concentrations was done using data from 18 wells. The Trend Test was not done for 36 wells because benzene concentrations were below the IGCL of 5 µg/L in all the samples collected since 2004 from 35 wells and benzene was not detected for two or more years in one well. Eleven wells were identified as having a decreasing benzene concentration trend and two wells were identified as having an increasing concentration trend. The remaining five wells had no statistically significant benzene concentration trend.

4.2 SITE EVALUATION

The following describes the changes in spatial distribution and statistically significant concentration trends of the three main groundwater contaminants, VDC, vinyl chloride and benzene for the six geographic areas of the Site. The geographic areas had previously been defined on the basis of groundwater flow directions, as well as the nature and extent of groundwater contamination (GeoTrans, 2005b). The six areas are:

- Former Lagoon Area;
- Northeast Area;
- Southwest Area;
- Assabet River Area;
- Southwest Landfill Area; and
- Southeast Landfill Area.

Figures 1-1 shows the location of each of these six areas. The following sections provide a brief description of the nature and extent of Site groundwater contamination for each of these geographic areas, focusing on changes in the distribution of, and statistically significant concentration trends noted for the three main contaminants, VDC, vinyl chloride, benzene. For each of the three main contaminants, the subsections first describe any statistically significant concentration trends observed over the 2004 to 2012 time period followed by a discussion of the changes, if any, in the mapped distribution between the 2012 annual sampling results shown in this report and the 2011 annual sampling results reported in the Operable Unit Three Monitoring Program Report, 2011 (Tetra Tech GEO, 2012).

4.2.1 FORMER LAGOON AREA

The Former Lagoon Area corresponds to groundwater located beneath most of the former wastewater lagoons, including the former Primary Lagoon, former Emergency Lagoon, former Blowdown Pit, former Tank Car Area, and former North Lagoon, as well as groundwater located downgradient of the former North Lagoon. Historically five groundwater extraction wells operated in this area over the following time periods:

- NLGP – 3/85 to 1/09;
- NLBR and its replacement well NLBR-R – 3/85 to 1/09;
- NMGP – 1/88 to 12/02;
- SLGP and its replacement well SLGP-R - 3/85 to 11/08; and
- SLBR 3/85 to 12/08.

Operation of extraction well NMGP, located near the former North Lagoon, was discontinued in December 2002 because of a defective water discharge line. Operation of the remaining wells was discontinued in late 2008-early 2009 because they were not part of the final remedy for groundwater at the Site. The ROD (USEPA, 2005) selected MNA for this portion of the Site.

4.2.1.1 VDC

As indicated in Table 4-1, statistically significant decreasing VDC concentration trends were identified in seven locations in the Former Lagoon Area over the 2004 to 2012 time period. Among them are unconsolidated deposits monitoring wells OSA-01A (39 to 5 µg/L), OSA-05B (41 to 7.5 µg/L) and OSA-11B (18 to 5.9 µg/L) and bedrock monitoring well OSA-06BR (100 to 1). No increasing VDC concentration trends were identified in the Former Lagoon Area.

There is one notable change in VDC concentration in the Former Lagoon Area that is not captured by the trend evaluation. The VDC concentration in monitoring well OSA-13B, located near the former Primary Lagoon, just north of Sinking Pond, has increased to 900 µg/L. The VDC concentration in monitoring well OSA-13B had increased from not detected in 2009 to 120 µg/L in 2010. In 2011, the VDC concentration detected in OSA-13B decreased slightly to 110 µg/L; in August 2012, the VDC concentration increased to 770 µg/L. To confirm this result, OSA-13B was resampled in October and OSA-13A and OSA-13C, the other two monitoring wells in the cluster were sampled. The resampling of OSA-13B indicated a VDC concentration of 900 µg/L with a duplicate result of 820 µg/L. VDC concentrations in monitoring wells OSA-13A and OSA-13C were 0.39 J µg/L and 9.1 µg/L, respectively. These results confirmed the VDC increase in OSA-13B and indicate that the elevated VDC concentration does not extend to the shallower and deeper unconsolidated deposits groundwater in this location. Nor does the VDC extend downgradient to the B-04 monitoring well cluster, as VDC was not detected in monitoring well B-04B4.

There are two changes in the mapped distribution of VDC between the 2012 annual sampling results shown on Figure 3-4 and the 2011 annual sampling results reported in the Operable Unit Three Monitoring Program Report, 2011 (Tetra Tech GEO, 2012). One change was to add a greater than 200 to 900 µg/L VDC concentration contour interval around the OSA-13 monitoring well cluster. The second was to add a greater than 7 to 30 µg/L concentration contour around NLBR-R, which was not sampled in 2011, but had a VDC concentration of 10 µg/L in 2012.

4.2.1.2 VINYL CHLORIDE

In the Former Lagoon Area, a statistically significant decreasing vinyl chloride concentration trend was identified in bedrock monitoring wells AR-16ADP (2.2 µg/L to 1.4 µg/L) and OSA-06BR (5.3 µg/L to 2.7 µg/L), and former unconsolidated deposits bedrock extraction well SLGP-R (7 µg/L to 0.65 µg/L) between 2004 and 2012.

There is a minor change in the mapped distribution of vinyl chloride between the 2012 annual sampling results shown on Figure 3-5 and the 2011 annual sampling results reported in the Operable Unit Three Monitoring Program Report, 2011 (Tetra Tech GEO, 2012). The vinyl chloride concentration in OSA-13B increased from 3.4 µ/L in 2011 to 140 µg/L in August 2012. OSA-13B was resampled to confirm the result; the concentration detected in the second sample was 35 µg/L with a duplicate sample result of 32 µg/L. As a result, the greater than 30 µg/L to 100 µg/L and greater than 100 µg/L to 180 µg/L vinyl chloride contours were added in this area.

4.2.1.3 BENZENE

As indicated in Table 4-1, over the 2004 to 2012 time period, a statistically significant decreasing benzene concentration trend was observed in bedrock monitoring well, OSA-06BR

(8.4 µg/L to not detected). One increasing trend for benzene was observed for OSA-13B (45 µg/L to 110 µg/L). The spatial extent of the benzene plume did not change appreciably in the Former Lagoon Area.

4.2.1.4 FORMER LAGOON AREA SUMMARY

As previously indicated, groundwater extraction from the northern portion of the Former Lagoon Area ceased in late 2002 when pumping from extraction well NMGP was discontinued. As can be seen by reviewing the VDC, vinyl chloride and benzene concentration versus time graphs, included in Attachment D, for former extraction well NMGP and monitoring wells AR-16ADP, OSA-05B, and OSA-06BR, VDC, vinyl chloride and benzene concentrations have not increased in the northern portion of the Former Lagoon Area since NMGP went off-line in 2002. Statistically significant downward VDC, vinyl chloride and benzene concentration trends were identified in monitoring well OSA-06BR. A statistically significant downward VDC concentration trend was identified in former extraction well NMGP and a statistically significant downward vinyl chloride concentration trend was identified in bedrock monitoring well AR-16ADP. The data indicate that leaving well NMGP off-line has not had a negative effect on groundwater quality in the area of the former North Lagoon.

Groundwater extraction from the rest of the Former Lagoon Area ceased in late-2008 / early-2009 when pumping from the other four extraction wells was discontinued. Overall, VDC, vinyl chloride and benzene concentrations continue to decline. One exception to this is in the area of unconsolidated deposits monitoring well OSA-13B, located near the former Primary Lagoon, just north of Sinking Pond. Monitoring well OSA-13B has a statistically significant upward benzene concentration trend. As shown on the time-concentration plot in Attachment D, the increasing benzene concentration trend started before extraction from the Former Lagoon Area ceased in late-2008. In 2010, nearly two years after the Former Lagoon Area extraction wells were shut down, VDC and vinyl chloride concentrations began increasing. Monitoring of nearby wells, including OSA-13A, OSA-13C, and B-04B4, where elevated concentrations have not been detected, indicate that the area of increased concentrations is limited. Additional monitoring will be proposed for this area for 2013.

4.2.2 NORTHEAST AREA

The Northeast Area includes groundwater located northeast of the former wastewater lagoons. Groundwater contamination, consisting mainly of VDC and vinyl chloride, extends from the Grace property to the northeast beneath the Linde property and to the AWD property. The former Blowdown Pit was the likely source of groundwater contamination from the Grace property in the northeastern part of the Site. In addition to the Grace property-related VDC and vinyl chloride contamination, the Linde property is a source of LNAPL and LNAPL-related contamination that is unrelated to the Grace Site. The Linde property-related contamination consists of Number 2 fuel oil and associated dissolved-phase EPH and VPH contamination. Benzene was not detected above the IGCL of 5 µg/L in the Northeast Area.

The ROD-required groundwater remedy for the Northeast Area began operating in April 2010. Groundwater is pumped from bedrock extraction well NE-1, treated for VOCs and arsenic and then injected into the shallow unconsolidated deposits using reinjection well RE-1 and/or RE-2. The ROD does not require that a specific capture zone be attained by the Northeast Area extraction system, but focuses instead on groundwater extraction from the geographic area which had the highest residual VOC concentrations in 2001. The ROD goal was to attain a reduction in the areal extent of contaminated groundwater by extracting groundwater from the area with the highest residual VOC concentrations. It is unlikely, however, that a noticeable reduction in the areal extent of contaminated groundwater will be observed during the relatively short time period that this remedy is expected to be active, even though a reduction has been made to the high VOC concentrations. As stated in the ROD (USEPA, 2005, p. 69), USEPA assumed that the Northeast Area Remedial Action would continue for approximately three years. At the end of this three-year period and, if necessary, every two years thereafter, an evaluation will be made to determine if the Northeast Area Remedial Action can be discontinued. That three-year period will be completed in April 2013.

4.2.2.1 VDC

As indicated in Table 4-1, statistically significant decreasing VDC concentration trends were identified over the 2004 to 2012 time period in seven locations and a statistically significant increasing VDC concentration trend was identified in two locations. Among the wells with a decreasing trend were unconsolidated deposits monitoring wells AR-27D (29 µg/L to 1.8 J µg/L) and AR-09A (13 µg/L to 0.52 J µg/L), and bedrock monitoring wells MW-06B (190 µg/L to 25 µg/L) and MW-07B (85 µg/L to 16 µg/L). The VDC concentrations in bedrock monitoring wells MW-04B and MW-13B increased slightly from 12 µg/L to 20 µg/L and from 7.3 µg/L to 15 µg/L, respectively.

There is a change in the mapped distribution of VDC between the 2012 annual sampling results shown on Figure 3-4 and the 2011 annual sampling results reported in the Operable Unit Three Monitoring Program Report, 2011 (Tetra Tech GEO, 2012). The greater than 30 to 60 µg/L contour interval contracted because the maximum VDC concentration decreased between the August 2011 and the August 2012 time frame in monitoring well PS-22B (37 µg/L to 28 µg/L).

Figure 4-1, cross-section C-C', shows that Grace-related contaminated groundwater is found in the shallow bedrock, but not the unconsolidated deposits, in the area northeast of the former Blowdown Pit and beneath the Linde property. The location of cross-section C-C' is shown on Figure 1-1. Further downgradient, beneath the AWD property, contaminated groundwater is found in the unconsolidated deposits.

4.2.2.2 VINYL CHLORIDE

Statistically significant decreasing vinyl chloride concentration trends were identified at three locations (Table 4-1) over the 2004 to 2012 time period. The vinyl chloride concentrations in bedrock monitoring wells MW-06B and MW-07B decreased from 4.9 µg/L to 3 µg/L and 9.2 µg/L to 4.9 µg/L, respectively. Vinyl chloride concentrations also decreased in unconsolidated deposits monitoring well AR-09A (13 µg/L to not detected). A statistically significant increasing trend was identified at one location. In bedrock monitoring well MW-04B, vinyl chloride increased slightly, from 1.3 µg/L to 2.1 µg/L.

There are two minor changes in the mapped distribution of vinyl chloride between the 2012 annual sampling results shown on Figure 3-5 and the 2011 annual sampling results reported in the Operable Unit Three Monitoring Program Report, 2011 (Tetra Tech GEO, 2012). Near the Lawsbrook and Scribner public water supply wells, the maximum vinyl chloride concentration in well cluster AR-31D increased slightly from 1.9 µg/L to 2.8 µg/L. As described above, vinyl chloride concentrations in monitoring well MW-04B increased slightly, from 1.3 µg/L to 2.1 µg/L. This resulted in minor changes in the locations and extent of the greater than 2 to 30 µg/L vinyl chloride contours.

4.2.2.3 NORTHEAST AREA SUMMARY

Overall, VDC and vinyl chloride concentrations continue to decrease in the Northeast Area. The area with VDC concentrations greater than 60 µg/L has shrunk considerably. These results demonstrate that pumping from bedrock extraction well NE-1, which began in April 2010, has met the ROD-stated objective of removing VOC mass and thereby reducing VOC concentrations from the previously identified area of higher residual VOC concentrations.

4.2.3 SOUTHWEST AREA

The Southwest Area extends southwesterly from the area of Sinking Pond past the Assabet Public Water Supply wells to the Assabet River. The former Primary and Emergency Lagoons are the likely sources of groundwater contamination in the Southwest Area. Historically groundwater extraction occurred in this area from extraction wells RP-1 (10/86-11/02), WRG-1 (4/91-11/02) and WRG-3 (3/85-11/89). The ROD (USEPA, 2005) selected MNA for this area of the Site.

As indicated in Table 4-1, no statistically significant VDC, vinyl chloride or benzene concentration trends were identified. This result is logical, given that most of the area has concentrations below IGCLs.

4.2.4 ASSABET RIVER AREA

As shown on Figure 1-1, the Assabet River Area extends from the area south of the Former Lagoon Area to the Assabet River. Groundwater in the Assabet River Area may have been impacted by several different sources, including the former Primary Lagoon, the former Emergency Lagoon, and the former Blowdown Pit. The ROD (USEPA, 2005) selected MNA for this area of the Site.

As indicated in Table 4-1, statistically significant decreasing concentration trends were identified in unconsolidated deposits monitoring well LF-20D, where VDC concentrations decreased from 50 µg/L in 2004 to 9 µg/L in 2012 and vinyl chloride concentrations decreased from 29 µg/L in 2004 to 4.9 µg/L in 2012. Statistically significant decreasing concentration trends were also identified in unconsolidated deposits monitoring well LF-18D, where VDC, vinyl chloride and benzene concentrations decreased from 150 µg/L to 76 µg/L, 54 J to 33 µg/L and 8.6 µg/L to 5.4 µg/L, respectively. There is one minor change in the mapped distribution of

VDC between the 2012 annual sampling results shown on Figure 3-4 and the 2011 annual sampling results reported in the Operable Unit Three Monitoring Program Report, 2011 (Tetra Tech GEO, 2012). The area of VDC concentrations greater than 7 µg/L was reduced to reflect the decreasing concentrations of VDC detected beneath the Assabet River, 51 µg/L in 2011 and 5.6 µg/L in 2012. VDC, vinyl chloride and benzene concentrations continue to decrease in the Assabet River Area.

4.2.5 SOUTHWEST LANDFILL AREA

The Southwest Landfill Area extends from the western portion of the former Secondary Lagoon, beneath the western half of the Industrial Landfill to the south to the Assabet River. The source of groundwater contamination in the Southwest Landfill Area was likely the Industrial Landfill. The main contaminants in the Southwest Landfill Area are VDC and vinyl chloride. The highest concentrations of VDC and vinyl chloride are found in the deep unconsolidated deposits and shallow bedrock in the vicinity of the LF-10, LF-02 and LF-19 monitoring well clusters. The ROD (USEPA, 2005) selected groundwater extraction designed to capture groundwater generally in the area described as the “ROD Capture Zone” on Figures 3-4 through 3-6, combined with MNA to remediate groundwater contamination that was present beyond the boundary of the Capture Zone. Groundwater extraction from this portion of the Site has been ongoing, with pumping from deep unconsolidated deposits extraction wells MLF (1/93 to present) and WLF (3/85 to present), and bedrock extraction well SWLF-1/SWLF-2 (SWLF-1 9/08 to1/11; SWLF-2 4/11 to present).

Extraction well SWLF-1 was replaced by extraction well SWLF-2 in April 2011. The monitoring data show that VDC concentrations were higher in groundwater extracted by extraction well SWLF-1 than in groundwater extracted by extraction well SWLF-2. Extraction well SWLF-2, however, pumps at a higher rate than extraction well SWLF-1 and is likely pulling in groundwater from a larger area, some of which is not as contaminated. The monitoring data indicate that extraction well SWLF-2 is effective at maintaining the required capture zone.

4.2.5.1 VDC

As shown in Table 4-1, statistically significant decreasing VDC concentration trends were identified in five locations and a statistically significant increasing VDC concentration trend was identified in one location over the 2004 to 2012 time period. The VDC concentrations in unconsolidated deposits monitoring wells B-03B3 and LF-10, and shallow bedrock well LF-19SBR decreased from 34 J µg/L to 0.58 J µg/L, 640 E µg/L to 230 µg/L, and 640 E µg/L to 140 µg/L, respectively. The VDC concentration in extraction well MLF decreased from 46 µg/L to 3.7 µg/L. The VDC concentrations in bedrock monitoring well LF-02A, located southwest of the Industrial Landfill increased from 240 µg/L in 2004 to 440 µg/L in 2012. There are no notable changes to the mapped distribution of VDC.

4.2.5.2 VINYL CHLORIDE

As shown in Table 4-1, statistically significant decreasing vinyl chloride concentration trends were identified in five locations and a statistically significant increasing vinyl chloride concentration trend was identified in one location over the 2004 to 2012 time period. The vinyl chloride concentration in bedrock monitoring well LF-19SBR (190 µg/L to 120 µg/L) and unconsolidated deposits monitoring wells LF-10 (180 µg/L to 66 µg/L) and LF-19D (160 µg/L to 19 µg/L) decreased. The vinyl chloride concentrations in unconsolidated deposits monitoring well LF-13A (3.9 µg/L to 10 µg/L) increased slightly.

There are no notable changes in the mapped distribution of vinyl chloride between the 2012 annual sampling results shown on Figure 3-4 and the 2011 annual sampling results reported in the Operable Unit Three Monitoring Program Report, 2011 (Tetra Tech GEO, 2012).

4.2.5.3 BENZENE

As shown in Table 4-1, statistically significant decreasing benzene concentration trends were identified in two locations in the Southwest Landfill area. Over the 2004 to 2012 time period concentrations in unconsolidated deposits monitoring wells LF-10 and LF-19D decreased from 28 µg/L to 14µg/L and 28 µg/L to 3 µg/L, respectively.

There are minor changes to benzene distribution in this area. A greater than 30 µg/L to 100 µg/L contour interval was added to Figure 3-6 due to the increase in benzene concentration in unconsolidated deposits monitoring well LF-12 from 16 µg/L to 33 µg/L. In addition, the greater than 30 to 100 µg/L contour interval was eliminated as the benzene concentration detected in monitoring well LF-19SBR decreased from 33 µg/L in 2011 to 26 µg/L in 2012.

4.2.5.4 SOUTHWEST LANDFILL AREA CAPTURE EVALUATION AND SUMMARY

The Landfill Area extraction system was designed to capture groundwater with elevated VDC concentrations generally in the area described as the "ROD Capture Zone". Figure 3-4 is a plan view map showing the distribution of VDC contamination regardless of depth from samples collected during the July-October 2012 annual sampling round. Figure 4-2 is a cross-section through the Southwest Landfill Area showing the vertical distribution of VDC contamination for the same time period. The location of section A-A' is shown on Figure 1-1. Figures 3-4 and 4-2 also show the location of the September 2012 estimated capture zone and the plan view map (Figure 3-4) shows the "ROD Capture Zone". The September 2012 estimated capture zone on Figure 3-4 is a composite of the capture zones from Figures 2-1 through 2-3. The composite capture zone of Figure 3-4 shows the maximum extent of capture regardless of depth. As indicated by Figure 4-2, cross-section A-A', the highest VDC concentrations in groundwater southwest of the Industrial Landfill are in the deep unconsolidated deposits and shallow bedrock. Figures 3-4 and 4-2 demonstrate that groundwater with the highest VDC concentrations, both horizontally and vertically, is within the Landfill Area capture zone. Therefore, the current capture zone fulfills the requirements of the ROD (USEPA, 2005).

4.2.6 SOUTHEAST LANDFILL AREA

The Southeast Landfill Area extends from the eastern portion of the former Secondary Lagoon, beneath the eastern half of the Industrial Landfill to the south to the Assabet River. The source of groundwater contamination in the Southeast Landfill Area was likely the Industrial Landfill. The main contaminant southeast of the Industrial Landfill is benzene. The benzene contamination is generally shallow, with the highest concentrations detected in the sands and gravels. The highest concentrations are found in monitoring well LF-06C and the two extraction wells, SELF-1 and SELF-2. VDC and vinyl chloride contamination is also found southeast of the Industrial Landfill, generally in the unconsolidated deposits. The maximum VDC concentration is in monitoring well LF-05E (46 µg/L) and the maximum vinyl chloride concentration is in monitoring well LF-17D (100 µg/L).

The ROD (USEPA, 2005) selected groundwater extraction designed to maintain hydraulic control of the region of elevated benzene concentrations and highly anaerobic groundwater generally in the area described as the "ROD Capture Zone" on Figures 3-4 through

3-6, combined with MNA to remediate groundwater contamination that was present beyond the boundary of the Capture Zone. Groundwater extraction from this portion of the Site has been ongoing, with pumping from deep unconsolidated deposits extraction wells SELF-1 (9/08 to present) and SELF-2 (6/10 to present). Historically, extraction also occurred from extraction wells ELF (3/85-1/08) and RLF (3/85-4/07). Extraction wells ELF and RLF were decommissioned in May 2010.

4.2.6.1 VDC

As shown in Table 4-1, statistically significant decreasing VDC concentration trends were identified in three locations and a statistically significant increasing VDC concentration trend was identified in one location over the 2004 to 2012 time period. The VDC concentrations in unconsolidated deposits monitoring wells LF-17D, LF-11AR and LF-05E decreased from 49 µg/L to 0.41 J µg/L, 24 µg/L to 0.78 J µg/L, and 100 µg/L to 46 J µg/L, respectively. The VDC concentrations in unconsolidated deposits monitoring well AR-11B2 increased from 14 µg/L to 34 µg/L.

There are no notable changes in the mapped distribution of VDC between the 2012 annual sampling results shown on Figure 3-4 and the 2011 annual sampling results reported in the Operable Unit Three Monitoring Program Report, 2011 (Tetra Tech GEO, 2012).

4.2.6.2 VINYL CHLORIDE

Statistically significant decreasing vinyl chloride concentration trends were identified in two locations and a statistically significant increasing vinyl chloride concentration trend was identified in one location over the 2004 to 2012 time period (Table 4-1). The vinyl chloride concentrations in unconsolidated deposits monitoring wells LF-05E (80 µg/L to 38 J µg/L) and LF-11AR (110 µg/L to 3.3 µg/L) decreased. The vinyl chloride concentrations in unconsolidated deposits monitoring well AR-11B2 (28 µg/L to 78 µg/L) increased.

4.2.6.3 BENZENE

As shown in Table 4-1, seven of the wells with statistically significant decreasing benzene concentrations trends over the 2004 to 2012 time period are located in the Southeast Landfill Area: unconsolidated deposits monitoring wells B-08B, LF-05E, LF-11AR, LF-17D and LF-06C, and bedrock monitoring wells G-3BR and LF-06N. The largest statistically significant decreasing benzene concentration trends were observed in monitoring wells located adjacent to and downgradient of the eastern edge of the Industrial Landfill. This is the area where the highest benzene concentrations are detected at the Site. Benzene concentrations in unconsolidated deposits wells B-08B and LF-06C decreased from 300 E µg/L in 2004 to 4.6 µg/L in 2012 and from 3,200 E µg/L in 2004 to 220 µg/L in 2012, respectively. Benzene concentrations in bedrock monitoring well LF-06N decreased from 150 µg/L in 2004 to 15 J µg/L in 2012.

There is one notable change in the distribution of benzene between the 2012 annual sampling results shown on Figure 3-6 and the 2011 annual sampling results reported in the Operable Unit Three Monitoring Program Report, 2011 (Tetra Tech GEO, 2012). The 100 µg/L to 220 µg/L benzene contour extent was changed slightly to exclude extraction well SELF-1, as the concentration detected in SELF-1 decreased from 160 µg/L to 82 µg/L from 2011 to 2012.

4.2.6.4 SOUTHEAST LANDFILL AREA CAPTURE EVALUATION AND SUMMARY

The Landfill Area extraction system was designed to maintain hydraulic control of the region of elevated benzene concentrations and highly anaerobic groundwater generally in the area described as the "ROD Capture Zone". Figure 3-6 is a plan view map showing the distribution of benzene contamination regardless of depth from samples collected during the September-October 2011 annual sampling round. Figure 4-3 is a cross-section through the Southeast Landfill Area showing the vertical distribution of benzene contamination for the same time period. The location of section B-B' is shown on Figure 1-1. Figures 3-6 and 4-3 also show the location of the deep unconsolidated deposits capture zone and the plan view map (Figure 3-6) shows the "ROD Capture Zone". The deep unconsolidated deposits capture zone on Figure 3-6 is a composite of the capture zones from Figures 2-1 through 2-3. The composite capture zone of Figure 3-6 shows the maximum extent of capture regardless of depth.

As indicated by Figure 4-3, cross-section B-B, the highest benzene concentrations in groundwater southeast of the Industrial Landfill are in the unconsolidated deposits. Figures 3-4 and 4-2 demonstrate that groundwater with the highest benzene concentrations, both horizontally and vertically, is within the Landfill Area capture zone. Therefore, the current capture zone fulfills the requirements of the ROD (USEPA, 2005).

4.2.7 LONG-TERM GROUNDWATER QUALITY TRENDS

To provide a better perspective regarding the long-term groundwater quality trends at the Site, the pre-1984 distribution of VDC in groundwater is included as Figure 4-4. A comparison of Figure 4-4 to Figure 3-4 shows that VDC concentrations were considerably higher across the Site in 1984 than during the 2012 annual sampling round. The maximum VDC concentration detected in the 1984 time frame was 2,900 µg/L, while the maximum VDC concentration detected in the July-October 2012 was 900 µg/L. As shown on Figure 4-4, the area containing VDC concentrations greater than 200 µg/L was much more extensive in the 1984 time frame, extending beneath the former Blowdown Pit to the south beneath a portion of the Industrial Landfill, Sinking Pond, the Agway/Kress property and partially beneath Muskrat Pond. As shown on Figure 3-4, the area containing VDC concentrations greater than 200 µg/L in July-October 2012 is limited to a few monitoring wells located adjacent to and immediately south of the Industrial Landfill and one monitoring well near the former Primary Lagoon.

In addition, while there were no monitoring wells located northeast of the Grace property in the 1984 time frame, data collected by others between 1984 and 1987 indicate that VDC was likely present in groundwater in this area at concentrations greater than 200 µg/L in 1984. In July-October 2012, VDC concentrations in groundwater samples collected from wells located northeast of the Grace property were all less than 100 µg/L.

Concentrations of vinyl chloride and benzene have also decreased significantly since groundwater extraction began at the Site in 1985. In the early 1980s, vinyl chloride concentrations in excess of 100 µg/L extended from the former Lagoon Area to the southwest toward Turtle and Muskrat Ponds, to the south toward the Assabet River, and beneath and downgradient of the Industrial Landfill. The maximum vinyl chloride concentration detected was 890 µg/L in June 1982, while the maximum vinyl chloride concentration detected in the July-October 2012 was 180 µg/L. As shown on Figure 3-5, the area containing vinyl chloride concentrations greater than 100 µg/L in July-October 2012 is limited to one area located immediately southwest of the Industrial Landfill and one well adjacent to the former Primary Lagoon.

In the early 1980s, benzene concentrations, in excess of 500 µg/L, were found in eight monitoring well clusters located southeast of the Industrial Landfill and in monitoring well B-04 located just north of Sinking Pond. The maximum benzene concentration detected was 17,000 µg/L in the 1982-1984 time-frame, in the B-08 and LF-06 monitoring well clusters. The maximum benzene concentration detected in the July-October 2012 was 220 µg/L in monitoring well LF-06C and extraction well SELF-2, both located southeast of the Industrial Landfill.

5 CONCLUSIONS

Evaluation of the 2012 annual monitoring data indicates that the goals of the Site-wide monitoring program are being met. The monitoring program included:

- Groundwater level monitoring to confirm that the Landfill Area groundwater capture zone is being achieved;
- Groundwater quality monitoring within the Landfill Area groundwater capture zone to assess changes in groundwater quality within the capture zone;
- Water quality monitoring of the Northeast Area extraction system to assess the effectiveness of the remedial system at removing contaminant mass; and
- Groundwater quality monitoring outside of the Landfill Area groundwater capture zones and the Northeast Area targeted remediation area to assess the natural attenuation of contaminant concentrations in groundwater not being actively captured and treated.

In the Former Lagoon Area, where MNA was selected as the final remedy, VDC, vinyl chloride and benzene concentrations continue to exhibit an overall decline. One exception is unconsolidated deposits monitoring well OSA-13B, where sampling indicates increases in VDC and vinyl chloride concentrations since 2010, approximately two years after groundwater extraction ceased in the area. Monitoring from nearby wells indicates that the area of increased concentrations is limited. In the Northeast Area, the ROD-required groundwater extraction and injection remedy began operating in April 2010. Pumping from bedrock extraction well NE-1 is meeting the ROD-stated objective of removing VOC mass, reducing VOC concentrations from the previously identified area of higher residual VOC concentrations. The VOC mass removal information from the Northeast Area extraction system will be included in the Groundwater Extraction Systems Operations Report for the period January 2012 through December 2012, which is to be submitted by March 2013. Overall, VDC and vinyl chloride concentrations are decreasing in the Northeast Area, where the maximum VDC and vinyl chloride concentrations are now 86 µg/L and 7 µg/L, respectively. The maximum VDC concentration in the Northeast Area prior to operation of the treatment system was approximately 200 µg/L in extraction well NE-1.

In the Southwest Area, where MNA was selected as the final remedy, the data indicate that VDC, vinyl chloride and benzene are below IGCLs at all but one location. The VDC concentration in AR-03B1 was 8.8 µg/L in 2012. In the Assabet River Area, where MNA was selected as the final remedy, the data indicate that VDC, vinyl chloride and benzene concentrations continue to decrease.

In the Southwest and Southeast Landfill Areas, the ROD (USEPA, 2005) selected groundwater extraction designed to capture groundwater generally in the area described as the "ROD Capture Zone" combined with MNA to remediate groundwater contamination that was present beyond the boundary of the Capture Zone. The 2012 data demonstrate that groundwater with the highest VDC and benzene concentrations, both horizontally and vertically, is within the Landfill Area capture zone. Therefore, the current capture zone fulfills the requirements of the ROD (USEPA, 2005). Water quality data from both inside and outside of the Landfill Area capture zone document that, overall, VDC, vinyl chloride and benzene concentrations are decreasing.

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TABLES

Table 2-1. Water Level Measurements, September 2012.

Location	Open Interval Elevation (feet NGVD)	Date Measured	Measuring Point Elevation (feet NGVD)	Depth to Water (feet)	Water Level Elevation (feet NGVD)
73-3	73 to 83	9/10/2012	130.96	NM	NM
73-4	48 to 58	9/10/2012	138.11	6.45	131.66
77-2	63 to 68	9/10/2012	133.63	7.42	126.21
77-3	46 to 51	9/10/2012	134.26	6.01	128.25
9-78	58 to 62	9/10/2012	138.96	13.52	125.44
A-2E	74 to NA	9/10/2012	132.7	9.82	122.88
A4-78	98 to 103	9/10/2012	134.98	NM	NM
A5-78	88 to 93	9/10/2012	132.32	5.7	126.62
A6-78	80 to 85	9/10/2012	138.55	11.07	127.48
A7-78	72 to 77	9/10/2012	136.12	7.47	128.65
AR-01P	122 to 132	9/10/2012	139.91	DRY	DRY
AR-02P	120 to 130	9/10/2012	137.38	11.63	125.75
AR-03P	120 to 130	9/10/2012	153.96	18.54	135.42
AR-05	126 to 131 (BR)	9/10/2012	198.8	64.51	134.29
AR-06P	132 to 137	9/10/2012	199.67	62.66	137.01
AR-07P	138 to NA	9/10/2012	202.7	56.6	146.1
AR-08P	124 to 129	9/10/2012	141.39	10.07	131.32
AR-09A	68 to 71	9/10/2012	186.34	51.97	134.37
AR-09BR	57 to 62 (BR)	9/10/2012	188.39	54.03	134.36
AR-09P	129 to 134	9/10/2012	187.84	50.41	137.43
AR-10BR	8 to 18 (BR)	9/10/2012	190.17	58.37	131.8
AR-10P	124 to 134	9/10/2012	191.68	54.88	136.8
AR-11P	122 to 127	9/10/2012	141.48	12.91	128.57
AR-11SBR	60 to 70 (BR)	9/10/2012	140.67	13.27	127.4
AR-12	103 to 113	9/10/2012	141.68	18	123.68
AR-12D	74 to 84	9/10/2012	143.16	14.28	128.88
AR-12DBR	11 to 20 (BR)	9/10/2012	143.16	16.31	126.85
AR-12SBR	49 to 61 (BR)	9/10/2012	143.16	16.43	126.73
AR-13P	117 to 122	9/10/2012	142.75	12.52	130.23
AR-14P	120 to 125	9/10/2012	152.31	25.11	127.2
AR-15P	128 to 133	9/10/2012	160.93	NM	NM
AR-16ADP	73 to 83 (BR)	9/10/2012	137.46	8.39	129.07
AR-16BSH	110 to 120	9/10/2012	137.41	8.51	128.9
AR-17ASH	118 to 128	9/10/2012	143.01	13.32	129.69
AR-17BDP	104 to 114 (BR)	9/10/2012	145.09	15.04	130.05
AR-18P	101 to 106	9/10/2012	185.12	49.44	135.68
AR-19ASH	122 to 127	9/10/2012	184.15	47.97	136.18
AR-19BDP	84 to 104	9/10/2012	184.92	48.84	136.08
AR-20	87 to 92 (BR)	9/10/2012	147.68	20.75	126.93

Table 2-1. (continued)

Location	Open Interval Elevation (feet NGVD)	Date Measured	Measuring Point Elevation (feet NGVD)	Depth to Water (feet)	Water Level Elevation (feet NGVD)
AR-20A	123 to 133	9/10/2012	147.69	16.57	131.12
AR-21	78 to 83 (BR)	9/10/2012	197.75	69.82	127.93
AR-21A	103 to 113	9/10/2012	197.55	69.68	127.87
AR-21B	131 to 136	9/10/2012	197.65	64.35	133.3
AR-22	106 to 116	9/10/2012	148.43	20.7	127.73
AR-23	98 to 103 (BR)	9/10/2012	165.99	32.01	133.98
AR-23A	116 to 126	9/10/2012	165.81	31.84	133.97
AR-23B	129 to 144	9/10/2012	165.53	31.41	134.12
AR-25B	52 to 57 (BR)	9/10/2012	192.82	58.95	133.87
AR-25D	89 to 99	9/10/2012	195.01	57.56	137.45
AR-25S	124 to 134	9/10/2012	193.02	55.48	137.54
AR-26D	87 to 97	9/10/2012	190.6	57.91	132.69
AR-26DBR	27 to 47 (BR)	9/10/2012	190.6	57.76	132.84
AR-26S	112 to 122	9/10/2012	190.6	57.25	133.35
AR-26SBR	53 to 70 (BR)	9/10/2012	190.6	57.91	132.69
AR-27D	104 to 114	9/11/2012	148.3	10.15	138.15
AR-27S	124 to 134	9/11/2012	148.3	12.5	135.8
AR-27SBR	82 to 91 (BR)	9/11/2012	148.3	12.9	135.4
AR-28D	85 to 95	9/10/2012	148.56	22.11	126.45
AR-28DBR	43 to 54 (BR)	9/10/2012	148.56	21.97	126.59
AR-28S	115 to 125	9/10/2012	148.56	22.9	125.66
AR-28SBR	65 to 77 (BR)	9/10/2012	148.56	22.21	126.35
AR-29D	91 to 101	9/10/2012	162.8	35.9	126.9
AR-29DBR	28 to 45 (BR)	9/10/2012	162.8	36.05	126.75
AR-29S	126 to 136	9/10/2012	162.8	31.35	131.45
AR-29SBR	56 to 67 (BR)	9/10/2012	162.8	NM	NM
AR-30D	75 to 85	9/10/2012	125.1	2.56	122.54
AR-30DBR	22 to 41 (BR)	9/10/2012	125.1	2.52	122.58
AR-30S	105 to 115	9/10/2012	125.1	2.07	123.03
AR-30SBR	47 to 61 (BR)	9/10/2012	125.1	2.59	122.51
AR-31D	82 to 92	9/10/2012	139.97	19.25	120.72
AR-31DBR	14 to 33 (BR)	9/10/2012	139.97	11.14	128.83
AR-31S	112 to 122	9/10/2012	139.97	19.51	120.46
AR-31SBR	51 to 67 (BR)	9/10/2012	139.97	15.74	124.23
AR-32D	97 to 102	9/11/2012	139.48	19.93	119.55
AR-33D	117 to 133	9/11/2012	172.79	39.71	133.08
AR-34D	139 to 144	9/11/2012	184.87	33.38	151.49
AR-34DBR	55 to 75 (BR)	9/11/2012	184.85	42.95	141.9
AR-34SBR	100 to 120 (BR)	9/11/2012	184.79	39.52	145.27

Table 2-1. (continued)

Location	Open Interval Elevation (feet NGVD)	Date Measured	Measuring Point Elevation (feet NGVD)	Depth to Water (feet)	Water Level Elevation (feet NGVD)
AR-35DBR	-188 to -178 (BR)	9/10/2012	151.58	21.37	130.21
AR-35MBR	-88 to -78 (BR)	9/10/2012	151.48	21.29	130.19
AR-35SBR	82 to 92 (BR)	9/10/2012	151.64	22.55	129.09
ASBRV-D2	Surface Water	9/11/2012	139.1	21.75	117.35
ASBRV-M	Surface Water	9/11/2012	121.64	1.71	119.93
ASBRV-U	Surface Water	9/10/2012	144.18	16.95	127.23
ASSABET-1A	78 to 88	9/10/2012	138.89	23.33	115.56
ASSABET-2A	98 to 106	9/10/2012	134.56	16.91	117.65
B-01P	133 to 136	9/10/2012	178.28	41.93	136.35
B-03P	118 to 121	9/10/2012	166.12	31.25	134.87
B-04P	128 to 131	9/10/2012	168.06	31.02	137.04
B-06P	110 to 113	9/10/2012	139.13	14.5	124.63
B-08A	15 to 25 (BR)	9/10/2012	199.19	69.19	130
B-08B	76 to 86	9/10/2012	199.16	66.78	132.38
B-08C	108 to 118	9/10/2012	199.07	63.64	135.43
B-08D	125 to 140	9/10/2012	199.13	63.51	135.62
B-10P	128 to 131	9/10/2012	193.54	56.97	136.57
BD-2	124 to 134	9/10/2012	195.91	59.19	136.72
CHRISTOFFERSON	86 to 96	9/10/2012	126.1	4.7	121.4
CLF-101	115 to 125	9/11/2012	145.64	19.95	125.69
CLF-102	118 to 128	9/11/2012	133.06	9.56	123.5
CLF-103	117 to 128	9/11/2012	133.08	9.53	123.55
CLF-104	115 to 125	9/11/2012	133.86	11.01	122.85
CLF-105	113 to 123	9/11/2012	133.34	9.12	124.22
CLF-106	113 to 123	9/11/2012	133.85	10.81	123.04
CLF-107	114 to 124	9/11/2012	134.91	NM	NM
CLF-108	115 to 125	9/10/2012	141.88	NM	NM
CLF-109	115 to 125	9/10/2012	141.9	22.78	119.12
CLF-112	114 to 124	9/10/2012	143.49	16.57	126.92
CLF-1P	120 to 125	9/10/2012	153.99	25.58	128.41
CLF-2A	84 to 89	9/10/2012	131.65	8.49	123.16
CLF-2B	104 to 109	9/10/2012	129.81	7.09	122.72
CLF-2C	114 to 124	9/10/2012	131.78	7.78	124
CLF-3A	116 to 126	9/10/2012	132.1	9.42	122.68
CLF-3B	106 to 111	9/11/2012	133.23	NM	NM
CLF-3C	86 to 91	9/10/2012	133.86	9.41	124.45
EL-3	123 to 128	9/10/2012	169.96	33.83	136.13
ELF-OBS	97 to 102	9/10/2012	197.9	63.87	134.03
FPB	Surface Water	9/10/2012	129.36	1.9	127.46

Table 2-1. (continued)

Location	Open Interval Elevation (feet NGVD)	Date Measured	Measuring Point Elevation (feet NGVD)	Depth to Water (feet)	Water Level Elevation (feet NGVD)
FPB-D	Surface Water	9/11/2012	133.85	10.26	123.59
FPB-D1	Surface Water	9/11/2012	125.28	NM	NM
FPB-D2	Surface Water	9/13/2012	125.88	DRY	DRY
FPB-D3A	Surface Water	9/11/2012	124.87	3.57	121.3
FPB-D3B	Surface Water	9/13/2012	124.18	2.92	121.26
G-1	135 to 138	9/10/2012	201.75	64.67	137.08
G-2	132 to 135	9/10/2012	198.21	61.83	136.38
G-3	125 to 128	9/10/2012	192.13	55.82	136.31
G-3A	43 to 53	9/10/2012	191.82	56.34	135.48
G-3BR	10 to 20 (BR)	9/10/2012	192.45	57.54	134.91
LAWSBROOK	108 to 118	9/10/2012	160.5	33	127.5
LF-01P	126 to 131	9/10/2012	192.67	56.49	136.18
LF-02A	35 to 45 (BR)	9/10/2012	199.03	67.6	131.43
LF-02P	119 to 124	9/10/2012	198.55	65.67	132.88
LF-03A	13 to 23 (BR)	9/10/2012	199.64	68.45	131.19
LF-03P	123 to 128	9/10/2012	200.86	65.15	135.71
LF-04P	127 to 137	9/10/2012	200.27	66.35	133.92
LF-05A	125 to 135	9/10/2012	199.71	63.97	135.74
LF-05B	126 to 136	9/10/2012	198.51	62.72	135.79
LF-05C	125 to 135	9/10/2012	197.89	62.04	135.85
LF-05D	82 to 92	9/10/2012	199.38	66.63	132.75
LF-05E	96 to 106	9/10/2012	197.1	62.44	134.66
LF-05P	132 to 137	9/10/2012	199.56	64.82	134.74
LF-06	26 to 36 (BR)	9/10/2012	197.55	70.42	127.13
LF-06C	105 to 115	9/10/2012	198.55	67.6	130.95
LF-06N	85 to 90 (BR)	9/10/2012	198.15	71.18	126.97
LF-06S	127 to 132	9/10/2012	198.45	62.88	135.57
LF-09	80 to 95	9/10/2012	200.28	67.7	132.58
LF-09A	113 to 127	9/10/2012	200.34	67.75	132.59
LF-09B	128 to 138	9/10/2012	200.8	68.45	132.35
LF-10	35 to 45	9/10/2012	199.42	66.32	133.1
LF-10A	56 to 71	9/10/2012	199.71	66.57	133.14
LF-10B	78 to 86	9/10/2012	199.37	66.3	133.07
LF-10C	128 to 138	9/10/2012	199.45	63.91	135.54
LF-11AR	40 to 50	9/10/2012	195.6	61.68	133.92
LF-11BR	85 to 95	9/10/2012	195.88	60.55	135.33
LF-11CR	127 to 137	9/10/2012	195.65	59.19	136.46
LF-11R	-11 to -1 (BR)	9/10/2012	195.64	65.25	130.39
LF-12	88 to 98	9/10/2012	199.64	70.41	129.23

Table 2-1. (continued)

Location	Open Interval Elevation (feet NGVD)	Date Measured	Measuring Point Elevation (feet NGVD)	Depth to Water (feet)	Water Level Elevation (feet NGVD)
LF-12A	127 to 137	9/10/2012	199.81	67.97	131.84
LF-13	14 to 24 (BR)	9/10/2012	129.12	3.71	125.41
LF-13A	90 to 100	9/10/2012	129.4	6.73	122.67
LF-13B	115 to 125	9/10/2012	129.22	6.5	122.72
LF-13SBR	68 to 78 (BR)	9/10/2012	129.18	3.65	125.53
LF-14	120 to 130	9/10/2012	184.12	44.09	140.03
LF-15	120 to 130	9/10/2012	199.9	64.28	135.62
LF-16	119 to 129	9/10/2012	194.68	59.03	135.65
LF-17D	83 to 93	9/10/2012	201.62	70.78	130.84
LF-17S	113 to 123	9/10/2012	201.62	65.34	136.28
LF-17SBR	56 to 62 (BR)	9/10/2012	201.62	71.85	129.77
LF-18D	53 to 63	9/10/2012	133.81	10.05	123.76
LF-18DBR	-15 to -5 (BR)	9/10/2012	133.75	8.98	124.77
LF-18SBR	31 to 41 (BR)	9/10/2012	133.84	9.18	124.66
LF-19D	50 to 60	9/10/2012	198.89	66.44	132.45
LF-19DBR	-48 to -33 (BR)	9/10/2012	197.53	70.89	126.64
LF-19MBR	-23 to -8 (BR)	9/10/2012	197.53	71.28	126.25
LF-19S	110 to 130	9/10/2012	198.89	64.27	134.62
LF-19SBR	11 to 23 (BR)	9/10/2012	198.89	68.94	129.95
LF-20D	34 to 44	9/10/2012	150.16	26.07	124.09
LF-20DBR	-53 to -43 (BR)	9/10/2012	150.46	25.18	125.28
LF-20SBR	-1 to 9 (BR)	9/10/2012	150.16	25.41	124.75
LF-21D	61 to 71	9/10/2012	157.05	28.32	128.73
LF-21DBR	-30 to -20 (BR)	9/10/2012	158.37	31.6	126.77
LF-21SBR	41 to 51 (BR)	9/10/2012	156.94	30.17	126.77
LF-22D	80 to 90	9/10/2012	197.71	70.34	127.37
LF-22S	100 to 110	9/10/2012	197.37	66.88	130.49
MLF	83 to 123	9/10/2012	198.81	70.77	128.04
MLF	83 to 123	9/12/2012	198.81	70.75	128.06
MUSKPOND	Surface Water	9/11/2012	131.745	DRY	DRY
MW-01B	40 to 45 (BR)	9/10/2012	192.75	54.89	137.86
MW-01D	79 to 89	9/10/2012	192.52	54.77	137.75
MW-01S	134 to 149	9/10/2012	192.84	54.97	137.87
MW-02B	29 to 34 (BR)	9/10/2012	194.98	61.76	133.22
MW-02D	82 to 92	9/10/2012	194.93	NM	NM
MW-02S	128 to 143	9/10/2012	195.17	NM	NM
MW-03B	76 to 81 (BR)	9/10/2012	191.02	NM	NM
MW-03D	109 to 119	9/10/2012	191.54	58.35	133.19
MW-03S	130 to 145	9/10/2012	191.41	58.2	133.21

Table 2-1. (continued)

Location	Open Interval Elevation (feet NGVD)	Date Measured	Measuring Point Elevation (feet NGVD)	Depth to Water (feet)	Water Level Elevation (feet NGVD)
MW-04B	36 to 41 (BR)	9/10/2012	190.57	55.53	135.04
MW-04D	106 to 116	9/10/2012	190.74	54.05	136.69
MW-04S	132 to 147	9/10/2012	190.68	54.3	136.38
MW-05S	132 to 147	9/10/2012	187.67	NM	NM
MW-06B	40 to 45 (BR)	9/10/2012	186.93	68.09	118.84
MW-06D	111 to 121	9/10/2012	187.28	49.92	137.36
MW-06D1	85 to 95	9/10/2012	187.56	52	135.56
MW-06D2	59 to 69	9/10/2012	187.56	54.57	132.99
MW-06S	125 to 140	9/10/2012	186.95	50.47	136.48
MW-07B	50 to 60 (BR)	9/10/2012	190.9	58.26	132.64
MW-07D	98 to 108	9/10/2012	191.13	52.74	138.39
MW-07S	129 to 144	9/10/2012	191.16	51.76	139.4
MW-08S	128 to 143	9/10/2012	183.81	46.02	137.79
MW-09S	130 to 145	9/10/2012	197.59	NM	NM
MW-10S	128 to 143	9/10/2012	194.71	55.55	139.16
MW-11D	101 to 111	9/10/2012	195.28	NM	NM
MW-11S	131 to 146	9/10/2012	195.07	NM	NM
MW-12S	129 to 144	9/10/2012	186.16	NM	NM
MW-13B	46 to 56 (BR)	9/10/2012	185.88	52.02	133.86
MW-14S	134 to 144	9/10/2012	190.94	NM	NM
MW-15S	134 to 144	9/10/2012	192.63	53.76	138.87
MW-16B	73 to 93 (BR)	9/10/2012	191.41	58.46	132.95
MW-17S	135 to 145	9/10/2012	191.37	52.26	139.11
MW-18S	136 to 146	9/10/2012	190.03	50.87	139.16
MW-19S	138 to 148	9/10/2012	191.2	51.91	139.29
MW-20S	137 to 147	9/10/2012	191.98	NM	NM
MW-21S	134 to 144	9/10/2012	184.73	42.31	142.42
MW-40	132 to 142	9/10/2012	193.73	54.93	138.8
MW-42	136 to 146	9/10/2012	195.2	56.98	138.22
MW-43D	121 to 131	9/10/2012	193.94	54.95	138.99
MW-43S	133 to 143	9/10/2012	194.08	55.09	138.99
MW-44	132 to 142	9/10/2012	193.09	54.03	139.06
MW-45	132 to 142	9/10/2012	193.27	54.19	139.08
MW-46	131 to 141	9/10/2012	191.75	52.71	139.04
MW-47	133 to 143	9/10/2012	192.39	NM	NM
MW-48	127 to 137	9/10/2012	188.05	50.23	137.82
MW-49	128 to 138	9/10/2012	189.32	51.37	137.95
NE-1	-66 to 45 (BR)	9/10/2012	186.08	121.78	64.3
NLBR	76 to 86 (BR)	9/10/2012	182.76	47.49	135.27

Table 2-1. (continued)

Location	Open Interval Elevation (feet NGVD)	Date Measured	Measuring Point Elevation (feet NGVD)	Depth to Water (feet)	Water Level Elevation (feet NGVD)
NLBR-R	75 to 89 (BR)	9/10/2012	183.1	49.21	133.89
NLGP	93 to 108	9/10/2012	182.66	47.58	135.08
NMGP	101 to 116	9/10/2012	143.22	6.18	137.04
OSA-01A	128 to 138	9/10/2012	195.78	59.21	136.57
OSA-01B	98 to 108	9/10/2012	196.6	60.19	136.41
OSA-01BR	62 to 72 (BR)	9/10/2012	195.99	60.39	135.6
OSA-01C	80 to 90	9/10/2012	196.24	59.93	136.31
OSA-02A	130 to 140	9/10/2012	196.06	59.32	136.74
OSA-02B	104 to 114	9/10/2012	195.8	59.36	136.44
OSA-02BR	49 to 69 (BR)	9/10/2012	196.42	61.51	134.91
OSA-03A	128 to 138	9/10/2012	194.06	57.22	136.84
OSA-03B	104 to 114	9/10/2012	194.22	57.48	136.74
OSA-03BR	55 to 65 (BR)	9/10/2012	194.47	59.81	134.66
OSA-04	130 to 140	9/10/2012	196.89	60.21	136.68
OSA-05A	128 to 138	9/10/2012	152.89	17.33	135.56
OSA-05B	100 to 110	9/10/2012	152.94	18.52	134.42
OSA-05BR	70 to 80 (BR)	9/10/2012	152.86	18.56	134.3
OSA-06A	125 to 135	9/10/2012	141.22	7.71	133.51
OSA-06B	101 to 111	9/10/2012	141.52	8.13	133.39
OSA-06BR	51 to 61 (BR)	9/10/2012	141.29	8.12	133.17
OSA-07A	127 to 137	9/10/2012	149.58	15.31	134.27
OSA-07B	89 to 99	9/10/2012	149.4	16.08	133.32
OSA-08R	to NA	9/10/2012	153.1	18.02	135.08
OSA-09A	126 to 136	9/10/2012	188.94	52.31	136.63
OSA-09B	86 to 96	9/10/2012	189	53.15	135.85
OSA-10A	129 to 139	9/10/2012	183.22	46.69	136.53
OSA-10B	99 to 109	9/10/2012	183.16	47.78	135.38
OSA-11A	126 to 136	9/10/2012	183.7	47.56	136.14
OSA-11B	108 to 118	9/10/2012	184.09	48.37	135.72
OSA-11BR	78 to 88 (BR)	9/10/2012	183.5	49.41	134.09
OSA-12A	125 to 140	9/10/2012	184.4	47.91	136.49
OSA-12B	68 to 78	9/10/2012	184.45	48.56	135.89
OSA-12BR	37 to 47 (BR)	9/10/2012	184.64	48.38	136.26
OSA-13A	123 to 138	9/10/2012	177.43	41.15	136.28
OSA-13B	105 to 115	9/10/2012	176.71	40.51	136.2
OSA-13C	73 to 83	9/10/2012	177.54	41.38	136.16
OSA-14A	125 to 135	9/10/2012	175.3	39.45	135.85
OSA-14B	79 to 89	9/10/2012	175.23	39.32	135.91
OSA-14BR	-1 to 9 (BR)	9/10/2012	175.17	NM	NM

Table 2-1. (continued)

Location	Open Interval Elevation (feet NGVD)	Date Measured	Measuring Point Elevation (feet NGVD)	Depth to Water (feet)	Water Level Elevation (feet NGVD)
OSA-15A	129 to 139	9/10/2012	180.37	44.15	136.22
OSA-15B	73 to 83	9/10/2012	181.08	45.04	136.04
OSA-16A	129 to 139	9/10/2012	188.8	52.32	136.48
OSA-16B	54 to 64	9/10/2012	188.89	54.52	134.37
OSA-16BR	7 to 17 (BR)	9/10/2012	188.32	54.28	134.04
OSA-17	128 to 138	9/10/2012	169.26	24.88	144.38
OSA-18	133 to 143	9/10/2012	165.73	27.71	138.02
OSA-19	134 to 144	9/10/2012	178.2	40.98	137.22
OSA-20	142 to 152	9/10/2012	196.27	DRY	DRY
OSA-21	135 to 145	9/10/2012	189	49.13	139.87
OSA-22	120 to 130	9/10/2012	171.58	34.82	136.76
OSA-23A	129 to 139	9/10/2012	179.07	43.02	136.05
OSA-23B	115 to 125	9/10/2012	179.22	43.73	135.49
OSA-24	74 to 89 (BR)	9/10/2012	183	48.59	134.41
OW-8	110 to 115	9/11/2012	129.1	9.57	119.53
OW-B	87 to 92	9/11/2012	142.3	24.87	117.43
OW-E	98 to 103	9/10/2012	138	21.45	116.55
PL-4P	131 to 134	9/11/2012	163.4	27.04	136.36
PS-22A	124 to 126	9/10/2012	143.2	17.39	125.81
PS-22B	96 to 98	9/10/2012	143.2	17.65	125.55
PS-29A	117 to 119	9/10/2012	141.69	13.52	128.17
PS-29B	86 to 91	9/10/2012	141.39	12.51	128.88
PT-01P	120 to 130	9/10/2012	135.54	NM	NM
PT-02P	123 to 128	9/10/2012	134.58	NM	NM
PT-03P	121 to 126	9/11/2012	138.57	15.96	122.61
PT-04P	118 to 123	9/11/2012	135.9	14.99	120.91
PT-05P	122 to 132	9/10/2012	137.25	DRY	DRY
PT-09	43 to 53	9/10/2012	134.65	10.6	124.05
PT-10	103 to 108	9/10/2012	135.23	11.31	123.92
PT-11P	114 to 124	9/10/2012	133.33	9.15	124.18
PT-12	126 to 136	9/10/2012	153.54	18.35	135.19
R-1	44 to 49 (BR)	9/10/2012	155.98	27.85	128.13
R-2	65 to 70 (BR)	9/10/2012	138.03	11.3	126.73
R-2A	86 to 91	9/10/2012	138.78	11.16	127.62
R-3P	76 to 81	9/10/2012	145.97	18.81	127.16
R-4	36 to 41 (BR)	9/10/2012	139.11	NM	NM
R-4A	to NA	9/10/2012	140.59	7.76	132.83
R-5	33 to 38 (BR)	9/10/2012	139.02	NM	NM
RE-1	124 to 164	9/10/2012	188.01	50.28	137.73

Table 2-1. (continued)

Location	Open Interval Elevation (feet NGVD)	Date Measured	Measuring Point Elevation (feet NGVD)	Depth to Water (feet)	Water Level Elevation (feet NGVD)
RE-1OBS	120 to 140	9/10/2012	188.1	50.19	137.91
RE-2	121 to 161	9/10/2012	188.44	30.79	157.65
RE-2OBS	120 to 140	9/10/2012	189.13	50.5	138.63
RP-1	53 to 63 (BR)	9/10/2012	138.66	9.91	128.75
RW-1	126 to 141	9/10/2012	190.56	51.41	139.15
RW-2	127 to 142	9/10/2012	191.24	52.05	139.19
RW-3	127 to 142	9/10/2012	194.34	55.75	138.59
RW-4	125 to 140	9/10/2012	194.17	55.32	138.85
RW-5	125 to 140	9/10/2012	193.76	54.91	138.85
SELF-1	95 to 113	9/12/2012	198.32	81.15	117.17
SELF-1	95 to 113	9/10/2012	198.32	81.28	117.04
SELF-2	85 to 113	9/10/2012	198.09	77.69	120.4
SELF-2	85 to 113	9/12/2012	198.09	77.25	120.84
SINKPOND 3B	Surface Water	9/13/2012	138.77	3.37	135.4
SL-5P	122 to 131	9/10/2012	180.89	NM	NM
SL-9	125 to 130	9/10/2012	179.95	NM	NM
SLBR	39 to 49 (BR)	9/10/2012	181.23	46.19	135.04
SLGP	70 to 90	9/10/2012	182.19	45.21	136.98
SLGP-R	66 to 83	9/10/2012	181.9	46.63	135.27
SWLF-1	-12 to 28 (BR)	9/10/2012	197.13	67.24	129.89
SWLF-2	-25 to 30 (BR)	9/12/2012	197	75.4	121.6
SWLF-2	-25 to 30 (BR)	9/10/2012	197	75.57	121.43
TCA-1	121 to 126	9/10/2012	183.62	48.02	135.6
TF-1	117 to NA	9/10/2012	191.32	55.21	136.11
TURTPOND	Surface Water	9/10/2012	128.1	DRY	DRY
TW-2-78	71 to 76	9/10/2012	151.61	17.03	134.58
UNA-1	111 to NA	9/10/2012	143.57	16.6	126.97
UNA-2	97 to NA	9/10/2012	138.39	9.94	128.45
UNA-3	103 to NA	9/10/2012	154.79	24.42	130.37
UNA-5	111 to NA	9/10/2012	157.75	24.19	133.56
WLF	86 to 104	9/10/2012	197.56	68.67	128.89
WLF	86 to 104	9/12/2012	197.56	68.55	129.01
WLF-OBS	92 to 117	9/12/2012	199.24	66.28	132.96
WRG-1	84 to 99	9/10/2012	138.7	NM	NM
WRG1-OBS	102 to NA	9/10/2012	146.18	14.35	131.83
WRG2-OBS	103 to NA	9/10/2012	146.83	15.15	131.68

Table 2-1. (continued)

Location	Open Interval Elevation (feet NGVD)	Date Measured	Measuring Point Elevation (feet NGVD)	Depth to Water (feet)	Water Level Elevation (feet NGVD)

Note:

(BR) - Open interval in bedrock.
NGVD - National Geodetic Vertical Datum
NM - Not Measured
NA - Not Available

Table 2-2. Summary of Extraction Rates, September 10-11, 2012

Location	Extraction Rate (gpm)
Public Water Supply Wells	
Assabet 1A	263
Assabet 2A	178
Christofferson	11
Lawsbrook	128
Scribner	118
Extraction Wells	
NE-1	19.7
MLF	38
SELF-1	1
SELF-2	1.2
SWLF-2	5.7
WLF	6.4
gpm - gallons per minute	

Table 3-1. Comparison of VOCs detected in groundwater to Interim Groundwater Cleanup Levels, Fall 2012.

Compound	IGCL (ug/l)	No. Locations > IGCL / Total No. Locations	No. Samples > IGCL / Total No. Samples	No. of Detections	Maximum Concentration Detected (ug/l)	
VOCs						
Vinyl Chloride	2	32 / 73	37 / 84	56	180	*
1,1-Dichloroethene	7	29 / 73	35 / 84	72	900	*
Benzene	5	17 / 73	21 / 84	47	220	*
1,2-Dichloroethane	5	6 / 73	6 / 84	14	38	*
1,2-Dichloropropane	5	4 / 73	4 / 84	19	96	*
Trichloroethene	5	2 / 73	2 / 84	10	49	*
Methylene Chloride	5	2 / 73	2 / 84	4	14	*
Methyl tert butyl ether	16	0 / 73	0 / 84	11	2.4	

Concentrations in µg/L.
IGCL – Interim Groundwater Cleanup Level as defined in Record of Decision (USEPA, 2005).
* - Compound detected above IGCL.

Table 3-2. PCE, TCA and TCE Concentrations in Groundwater, 2012.

Area	Location	Sample Date	QA Type	Result
1,1,1-Trichloroethane				
Assabet River Area	PT-11B1	8/8/2012		5.7
Tetrachloroethene				
Assabet River Area	PT-11B1	8/8/2012		2.1
Northeast Area	PS-22B	8/7/2012		0.33 J
Northeast Area	PS-29B	8/7/2012		0.61 J
Trichloroethene				
Assabet River Area	PT-11B1	8/8/2012		8.5
Northeast Area	AR-27D	7/31/2012		2.9 J
Northeast Area	AR-31D	8/8/2012		1.2
Northeast Area	PS-22B	8/7/2012	Dup	2.2
Northeast Area	PS-22B	8/7/2012		2.3
Northeast Area	PS-29B	8/7/2012		0.69 J
Northeast Area	SCRIBNER	7/30/2012	Dup	0.2 J
Southeast Landfill Area	B-08B	8/8/2012		0.35 J
Southeast Landfill Area	LF-22S	8/10/2012		49
Southeast Landfill Area	SELF-1	10/11/2012		1.1 J
Southwest Area	Assabet-1A	7/30/2012		0.23 J

Notes:

Concentrations in µg/L
Dup - Duplicate Sample
J - Estimated Concentration

PCE - Tetrachloroethene
TCA - 1,1,1-Trichloroethane
TCE - Trichloroethene

Table 3-3. Comparison of inorganic compounds detected in groundwater to Interim Groundwater Cleanup Levels, Fall 2012.

Compound	IGCL (ug/l)	No. Locations > IGCL / Total No. Locations	No. Samples > IGCL / Total No. Samples	No. of Detections	Maximum Concentration Detected (ug/l)
Metals					
Manganese (1)	300	3 / 8	3 / 9	9	2500 *
Nickel	100	0 / 8	0 / 9	7	25
Arsenic	10	0 / 8	0 / 9	7	4.8
Lead	15	0 / 8	0 / 9	4	5.4
Chromium	100	0 / 8	0 / 9	4	28
Beryllium	4	0 / 8	0 / 9	1	0.29
Antimony	6	0 / 8	0 / 9	0	0

Concentrations in µg/L.
IGCL –Interim Groundwater Cleanup Level as defined in Record of Decision (USEPA, 2005).
* - Compound detected above IGCL.
(1) A background value, to be determined during remedial design, may be selected as the IGCL for manganese.

Table 3-4. Summary of Geochemical Results, 2012.

LOCATION	Lithologic Unit	Screen Depth	Sample Date	QA Type	Dissolved Arsenic (µg/L)	Dissolved Iron (µg/L)	Dissolved Manganese (µg/L)	DO (mg/L)	ORP (mV)	pH
Former Lagoon Area										
Close to Source										
OSA-01B	Sand & Gravel	86-96	8/2/2012		120	450	1200	2.29	-102.4	6.78
OSA-09B	Till	91-101	8/2/2012		85	200	12	0.18	50.8	9.24
OSA-11B	Sand & Gravel	64-74	8/6/2012		1.6	19 J	120	1.89	252.1	5.5
Downgradient toward North Lagoon Wetland										
OSA-05A	Sand & Gravel	12-22	8/6/2012		2.3	760	430	6.35	131.5	5.82
OSA-06BR	Bedrock	78-88	8/7/2012		50	4500	710	0.76	-35.6	66.43
OSA-07A	Sand & Gravel	10-20	8/7/2012		ND (2)	5300	930	1.3	46.9	4.6
Industrial Landfill										
Close to Source										
B-08C	Till	80-90	8/2/2012		29	33000	5000	0.77	-41.1	5.86
B-08D	Sand & Gravel	58-73	8/3/2012		ND (1)	55 J	3600	1.9	87.4	4.58
LF-06C	Sand & Gravel	82-92	8/8/2012		360	15000	2500 B	1	-71.7	6.78
LF-15	Till	68-78	8/3/2012		63	14000	2200	1.16	-78.8	6.54
Downgradient toward Assabet River										
AR-21	Bedrock	113-118	8/7/2012		0.7 J	ND (100)	1.5 J	7.78	34.8	6.75
LF-12	Till	100-110	8/3/2012		18	30 J	140	1.19	-45	7.26

NOTES:

DUP - Duplicate Sample.
ND (10) - Compound not detected at limit indicated in parentheses.
J - Estimated Value.
B - Detected in blank

Table 3-5. 1,4-Dioxane Concentrations in Groundwater, 2012.

Location	Sample Date	QA Type	Result
Northeast Area			
AR-28S	8/1/2012		0.18 J
AR-30D	8/10/2012		1.2
AR-30SBR	8/10/2012		0.48
AR-31D	8/8/2012		1.9
CHRISTOFFERSON	4/20/2012		0.164 J
CHRISTOFFERSON	5/17/2012		0.169 J
CHRISTOFFERSON	7/31/2012		0.15 J
CHRISTOFFERSON	8/14/2012		0.155 J
LAWSBROOK	4/20/2012		0.199
LAWSBROOK	7/31/2012		0.2
LAWSBROOK	8/14/2012		0.207
NE-1	2/8/2012		1.98
NE-EFF	1/4/2012		1.92
NE-EFF	2/8/2012		2.49
NE-EFF	3/1/2012		1.67
NE-EFF	4/11/2012		2.25
NE-EFF	5/4/2012		2.07
NE-EFF	6/5/2012		1.97
NE-EFF	7/10/2012		1.91
NE-EFF	8/16/2012		1.9
NE-EFF	9/13/2012		2
NE-EFF	10/10/2012		1.6
PS-22A	8/1/2012		0.28
PS-22B	8/7/2012	Dup	1.6
PS-22B	8/7/2012		1.7
PS-29A	8/7/2012		0.11 J
PS-29B	8/7/2012		0.19 J
RE-2OBS	8/9/2012		2
SCRIBNER	4/20/2012		0.3
SCRIBNER	7/30/2012	Dup	0.3
SCRIBNER	7/30/2012		0.34
SCRIBNER	8/14/2012		0.329
Southeast Landfill Area			
B-08B	8/8/2012		18
LF-06C	8/8/2012		12
SELF-1	1/11/2012		30.3
SELF-1	3/1/2012		25.3

Location	Sample Date	QA Type	Result
SELF-1	7/26/2012		22.1
SELF-1	10/11/2012		24
SELF-2	1/11/2012		28.7
SELF-2	3/1/2012		25
SELF-2	7/26/2012		24.5
SELF-2	10/11/2012		24
Southwest Area			
ASSABET-1A	6/13/2012		0.221
ASSABET-1A	6/19/2012		0.192
Assabet-1A	7/30/2012		0.22
ASSABET-1A	8/14/2012		0.231
ASSABET-2A	6/13/2012		0.0929 J
ASSABET-2A	6/19/2012		0.0709 J
Assabet-2A	7/30/2012		0.13 J
ASSABET-2A	8/14/2012		0.13 J
B-05B4	8/8/2012		0.99
B-09B4	8/9/2012		1.7
Southwest Landfill Area			
MLF	1/11/2012		1.66
MLF	3/1/2012		1.37
MLF	7/26/2012		1.23
MLF	10/11/2012		1.3
SWLF-2	1/11/2012		5.61
SWLF-2	3/1/2012		4.83
SWLF-2	7/26/2012		4.76
SWLF-2	10/11/2012		4.7
WLF	1/11/2012		3.59
WLF	3/1/2012		3.01
WLF	7/26/2012		3.21
WLF	10/11/2012		3

Notes:

Concentrations in µg/L

Dup - Duplicate Sample

J - Estimated Concentration

ND (10) - Compound not detected at limit indicated in parentheses.

NE-EFF represents 1, 4 Dioxane concentrations from extraction well NE-1

Table 4-1. Statistically Significant Concentration Trends Based on Mann-Kendall Trend Test for Small Sample Size

Location	VDC Trend	VDC 2004/2012	Vinyl Chloride Trend	Vinyl Chloride 2004/2012	Benzene Trend	Benzene 2004/2012
Former Lagoon Area						
AR-16ADP	none	NA	downward	2.2/1.4	<=IGCL (5)	NA
NMGP	downward	8.9/3	<=IGCL (2)	NA	<=IGCL (5)	NA
OSA-01A	downward	39/5	<=IGCL (2)	NA	<=IGCL (5)	NA
OSA-01C	downward	6.5/1.9	<=IGCL (2)	NA	<=IGCL (5)	NA
OSA-02A	none	NA	<=IGCL (2)	NA	<=IGCL (5)	NA
OSA-03BR	none	NA	none	NA	<=IGCL (5)	NA
OSA-05B	downward	41/7.5	<=IGCL (2)	NA	<=IGCL (5)	NA
OSA-06BR	downward	100/1	downward	5.3/2.7	downward	8.4/ND(1)
OSA-11B	downward	18/5.9	<=IGCL (2)	NA	<=IGCL (5)	NA
OSA-13B	ND	NA	ND	NA	upward	45/110
SLGP-R	downward	47/1.4	downward	7/0.65	<=IGCL (5)	NA
Northeast Area						
AR-09A	downward	13/0.52 J	downward	13.0/ND(.5)	<=IGCL (5)	NA
AR-27D	downward	29/1.8 J	<=IGCL (2)	NA	<=IGCL (5)	NA
AR-29SBR	downward	63/ND(1)	ND	NA	<=IGCL (5)	NA
AR-30D	downward	5.2/0.88 J	<=IGCL (2)	NA	<=IGCL (5)	NA
AR-31D	none	NA	none	NA	<=IGCL (5)	NA
AR-35MBR	none	NA	<=IGCL (2)	NA	<=IGCL (5)	NA
CHRISTOFFERSON	<=IGCL (7)	NA	<=IGCL (2)	NA	<=IGCL (5)	NA
LAWSBROOK	<=IGCL (7)	NA	<=IGCL (2)	NA	<=IGCL (5)	NA
MW-04B	upward	12/20	upward	1.3/2.1	<=IGCL (5)	NA
MW-06B	downward	190/25	downward	4.9/3	<=IGCL (5)	NA
MW-07B	downward	85/16	downward	9.2/4.9	<=IGCL (5)	NA
MW-13B	upward	7.3/15	none	NA	<=IGCL (5)	NA
PS-22B	none	NA	none	NA	<=IGCL (5)	NA
PS-29B	none	NA	<=IGCL (2)	NA	<=IGCL (5)	NA
SCRIBNER	downward	9/3.5	<=IGCL (2)	NA	<=IGCL (5)	NA
Southwest Area						
ASSABET-1A	<=IGCL (7)	NA	<=IGCL (2)	NA	<=IGCL (5)	NA
ASSABET-2A	<=IGCL (7)	NA	<=IGCL (2)	NA	<=IGCL (5)	NA
B-09B4	<=IGCL (7)	NA	<=IGCL (2)	NA	<=IGCL (5)	NA
PT-11B1	none	NA	<=IGCL (2)	NA	<=IGCL (5)	NA

Table 4-1. Statistically Significant Concentration Trends Based on Mann-Kendall Trend Test for Small Sample Size

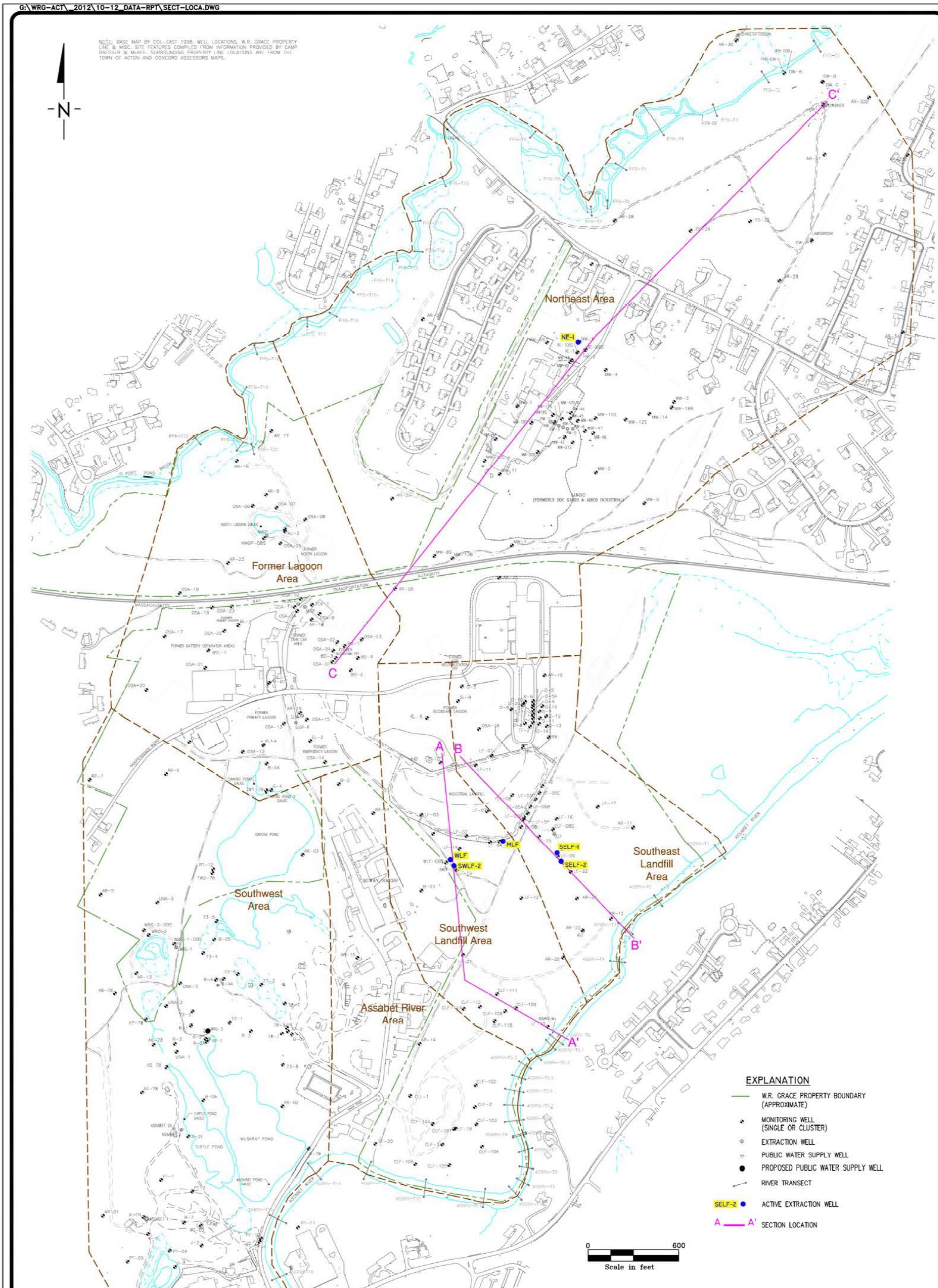
Location	VDC Trend	VDC 2004/2012	Vinyl Chloride Trend	Vinyl Chloride 2004/2012	Benzene Trend	Benzene 2004/2012
Assabet River Area						
LF-18D	downward	150/76	downward	54/33	downward	8.6/5.4
LF-20D	downward	50/9	downward	29/4.9	<=IGCL (5)	NA
Southwest Landfill Area						
AR-20	none	NA	none	NA	<=IGCL (5)	NA
B-03B3	downward	34/0.58 J	downward	16/0.48 J	<=IGCL (5)	NA
LF-02A	upward	240/440	none	NA	none	NA
LF-10	downward	640 E/230	downward	180/66	downward	28/14
LF-12	<=IGCL (7)	NA	<=IGCL (2)	NA	none	NA
LF-13A	downward	21/14	upward	3.9/10	<=IGCL (5)	NA
LF-19D	ND	NA	downward	160/19	downward	28/3
LF-19SBR	downward	640 E/140	downward	190/120	none	NA
MLF	downward	46/3.7	downward	12/3.2	<=IGCL (5)	NA
WLF	none	NA	none	NA	<=IGCL (5)	NA
Southeast Landfill Area						
AR-11B2	upward	14/34	upward	28/78	upward	3.7/8.3
AR-21	<=IGCL (7)	NA	<=IGCL (2)	NA	ND	NA
B-08B	<=IGCL (7)	NA	none	NA	downward	300 E/4.6
G-3A	<=IGCL (7)	NA	none	NA	<=IGCL (5)	NA
G-3BR	<=IGCL (7)	NA	<=IGCL (2)	NA	downward	9.1/5.4
LF-05E	downward	100/46 J	downward	80/38 J	downward	7.6/3.1 J
LF-06	<=IGCL (7)	NA	<=IGCL (2)	NA	none	NA
LF-06C	<=IGCL (7)	NA	ND	NA	downward	3200 E/220
LF-06N	<=IGCL (7)	NA	none	NA	downward	150/15 J
LF-11AR	downward	24/0.78 J	downward	110/3.3	downward	20/0.39 J
LF-17D	downward	49/0.41 J	none	NA	downward	8.8/5.8
OSA-16B	<=IGCL (7)	NA	none	NA	none	NA

Notes:

NA - Not applicable.
<=IGCL (7) - Concentrations from all samples collected over the nine year time period were less than or equal to the Interim Groundwater Cleanup Goal (value of IGCL in µg/L)
ND - Not all sample results were less than or equal to IGCL. Trend analysis could not be completed because two or more results were not detected.
J = Estimated value
E = Exceeded calibration

FIGURES

G:\WRG-ACT_2012\10-12_DATA-RPT\SECT-LOCA.DWG



TITLE:

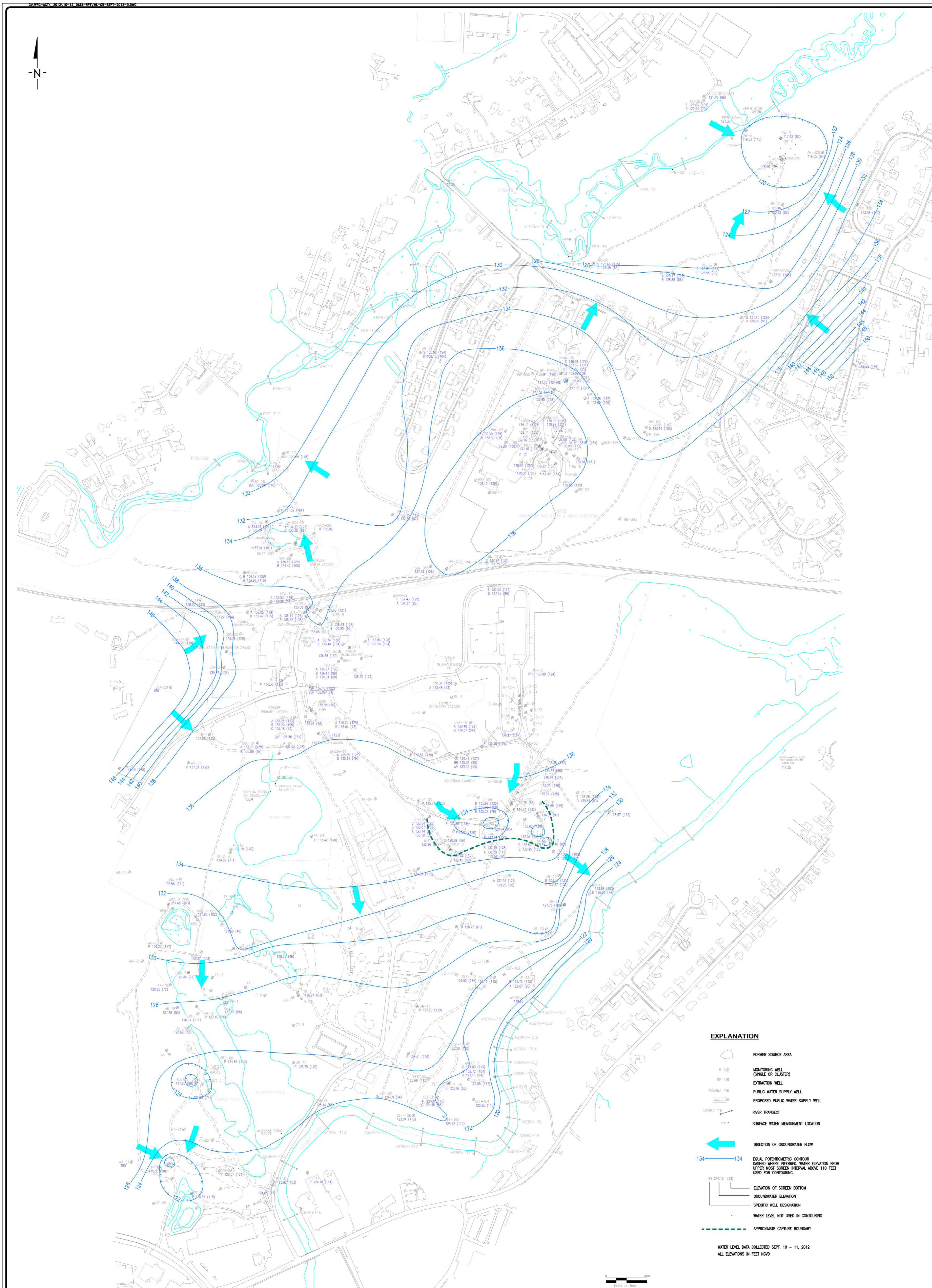
SITE MAP WITH SECTION LOCATIONS

LOCATION:

W.R. Grace, Acton, Massachusetts

TETRA TECH GEO

APPROVED	ABS	FIGURE
DRAFTED	RMK	1-1
PROJECT#	117-3008	
DATE	DEC. 2012	

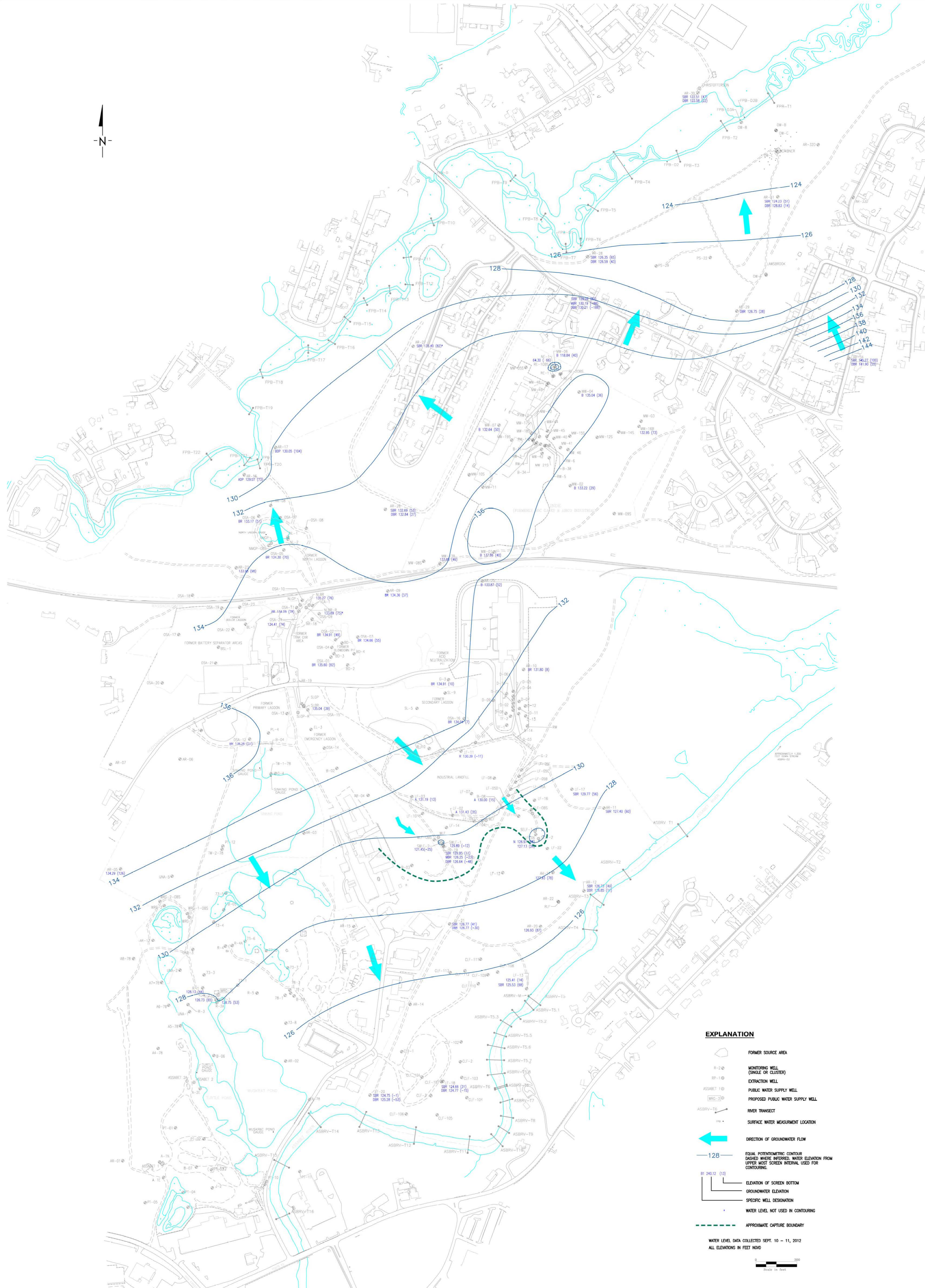


TITLE: SHALLOW UNCONSOLIDATED DEPOSITS POTENTIOMETRIC CONTOUR MAP, SEPTEMBER 2012

LOCATION: W.R. Grace, Acton, Massachusetts

TETRA TECH GEO

APPROVED	ABS	FIGURE	2-1
DRAFTED	RMK		
PROJECT#	117-3008		
DATE	NOV. 2012		



TITLE: **BEDROCK POTENTIOMETRIC CONTOUR MAP, SEPTEMBER 2012**

LOCATION: **W.R. Grace, Acton, MA.**

TETRA TECH GEO

APPROVED	ABS	FIGURE
DRAFTED	RMK	2-2
PROJECT#	117–3008	
DATE	DEC. 2012	

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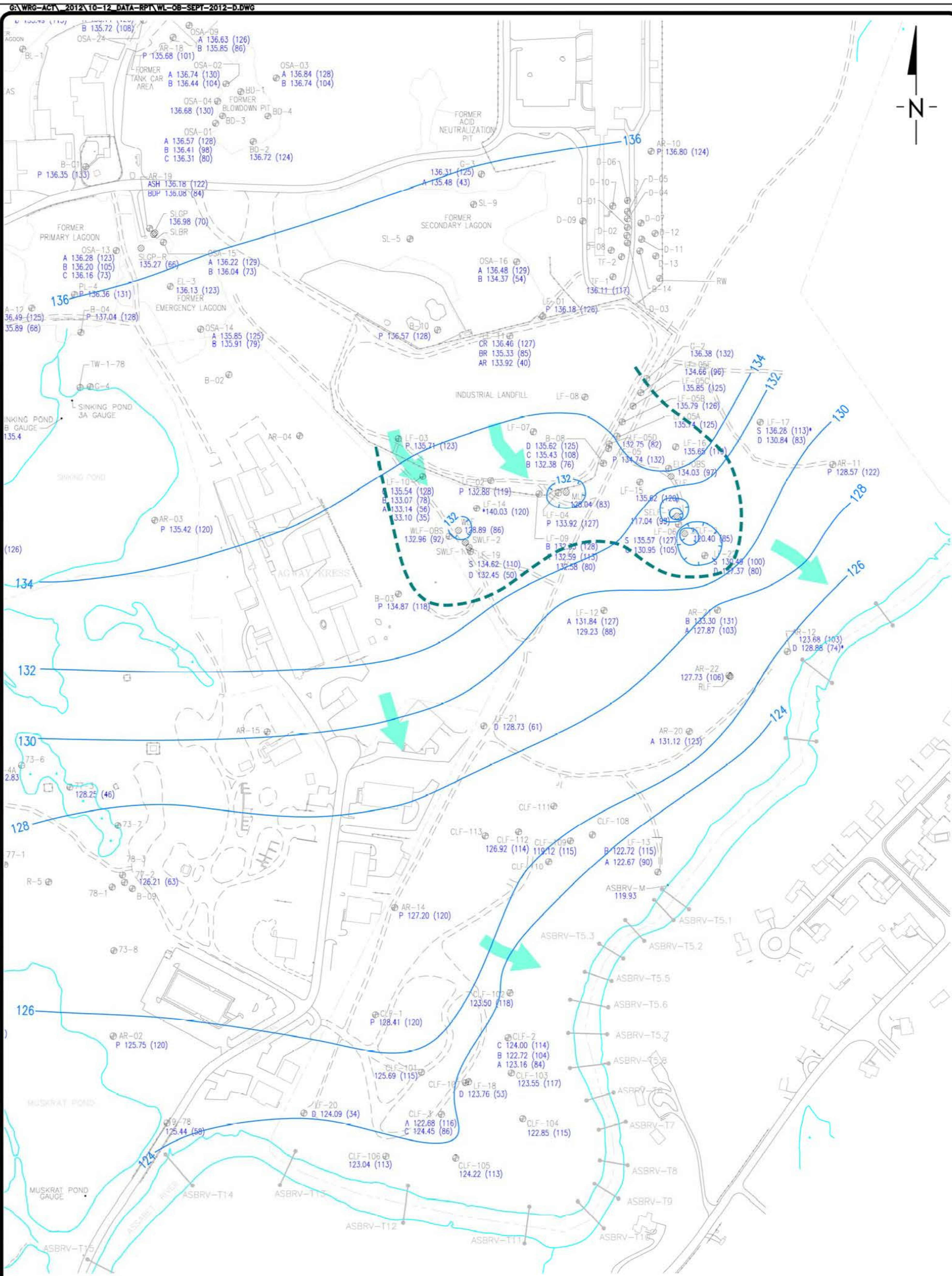


EXPLANATION

- FORMER SOURCE AREA
- R-2 — MONITORING WELL (SINGLE OR CLUSTER)
- RP-1 — EXTRACTION WELL
- ASBRV-T6 — RIVER TRANSECT
- FPB • — SURFACE WATER MEASURMENT LOCATION
- —134— EQUAL POTENTIOMETRIC CONTOUR DASHED WHERE INFERRED. WATER ELEVATION FROM WELLS WITH SCREEN BOTTOM ≤ 105'
- B1 240.12 (13) — ELEVATION OF SCREEN BOTTOM; GROUNDWATER ELEVATION; SPECIFIC WELL DESIGNATION
- * WATER LEVEL NOT USED IN CONTOURING
- APPROXIMATE CAPTURE BOUNDARY
- DIRECTION OF GROUNDWATER FLOW

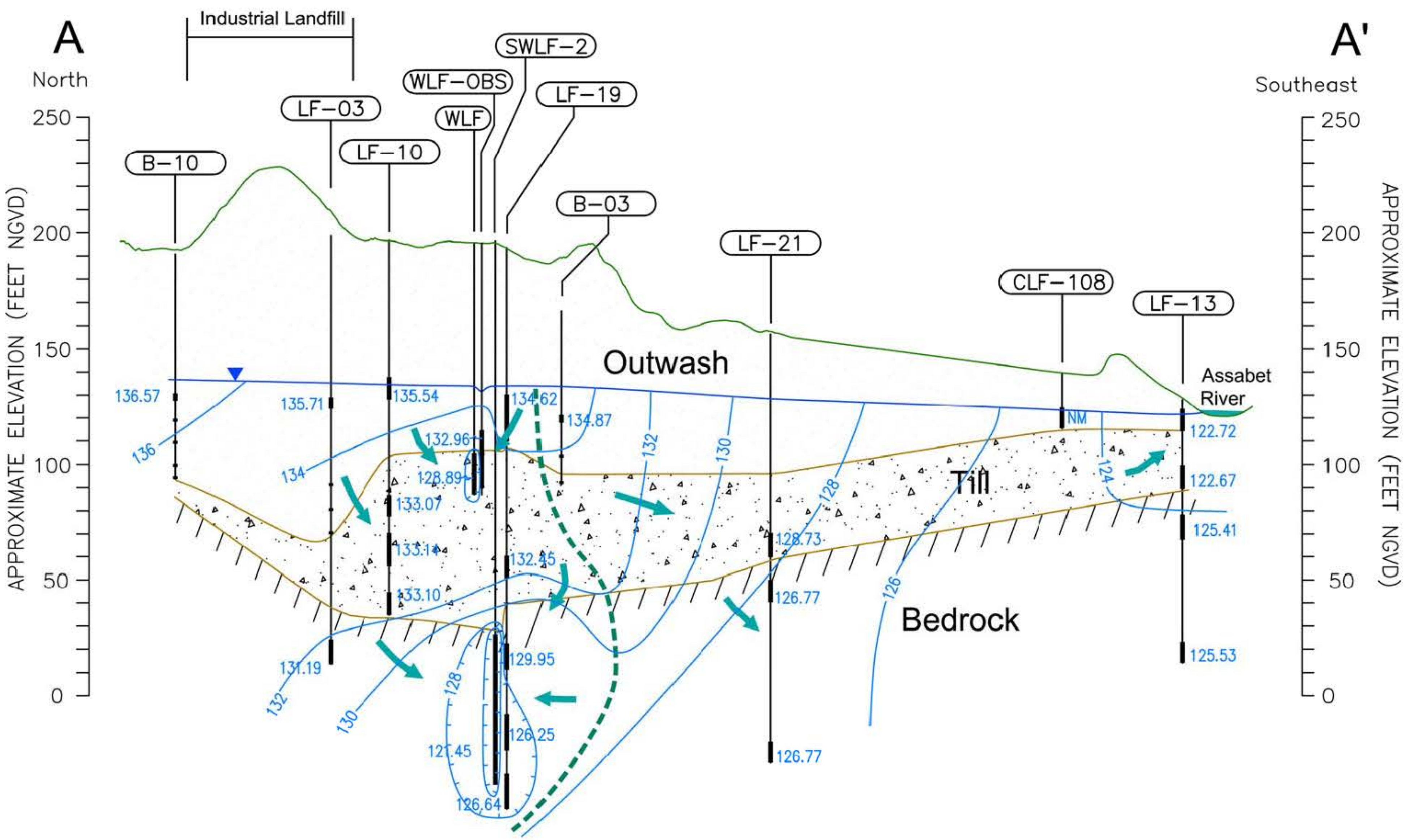
WATER LEVEL DATA COLLECTED SEPT. 10 – 11, 2012
ALL ELEVATIONS IN FEET NGVD

0 300 Scale in feet

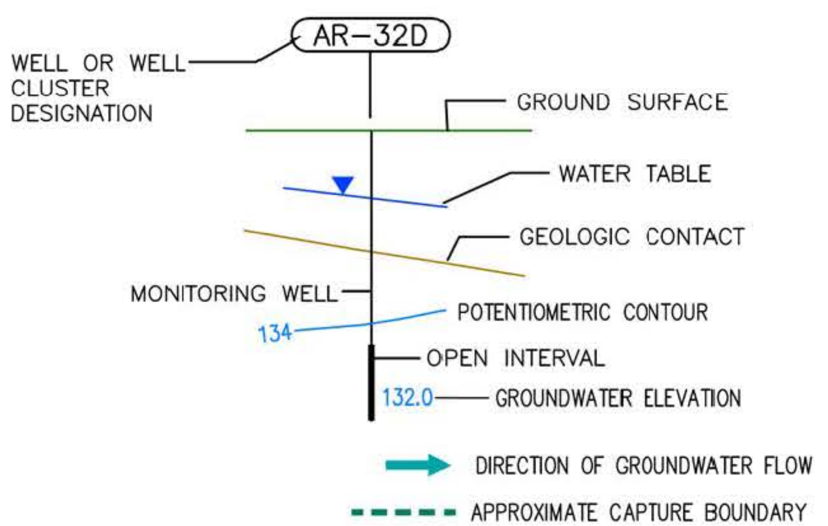
TITLE:	DEEP UNCONSOLIDATED DEPOSITS POTENTIOMETRIC CONTOUR MAP, LANDFILL AREA, SEPTEMBER 2012
LOCATION:	W.R Grace, Acton, Massachusetts

TETRA TECH GEO

APPROVED	ABS	FIGURE
DRAFTED	RMK	2-3
PROJECT#	117-3008080	
DATE	NOV. 2012	

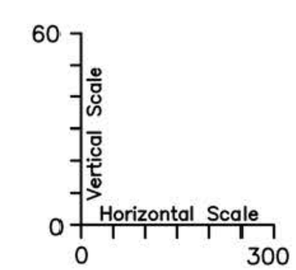


Explanation



WATER LEVEL DATA COLLECTED SEPTEMBER 10–11, 2012

ALL ELEVATIONS IN FEET NGVD



Scale in Feet
Vertical Exaggeration 5X

TITLE:	POTENTIOMETRIC SECTION A-A', SEPTEMBER 2012
LOCATION:	W.R. Grace, Acton, Massachusetts

TETRA TECH GEO

APPROVED	ABS	FIGURE
DRAFTED	RMK	2-4
PROJECT#	117-3008080	
DATE	NOV. 2012	

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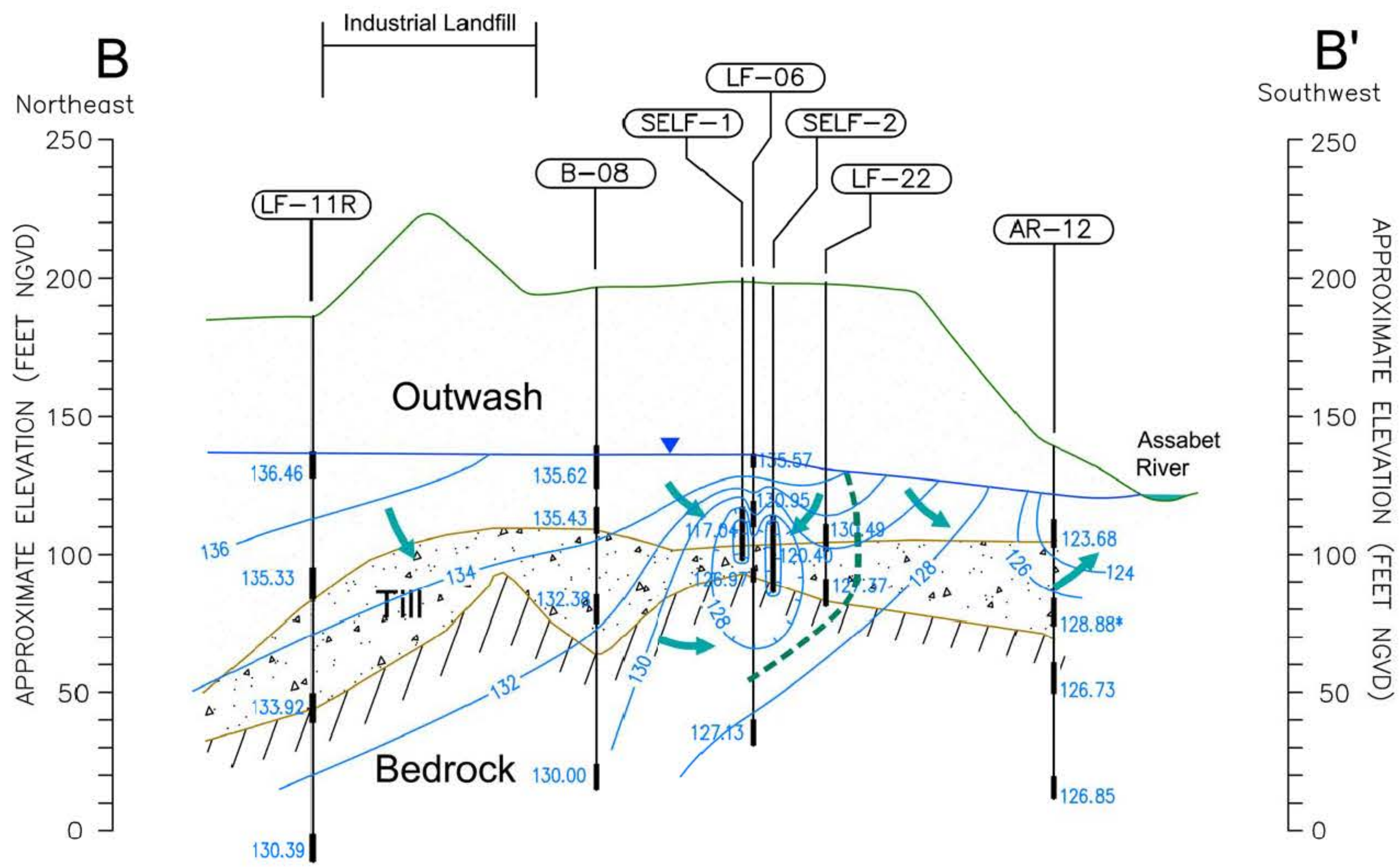

Explanation

WELL OR WELL CLUSTER DESIGNATION — AR-32D

GROUND SURFACE

WATER TABLE

GEOLOGIC CONTACT

WELL SHAFT

134 — POTENTIOMETRIC CONTOUR

OPEN INTERVAL

132.0 — GROUNDWATER ELEVATION

DIRECTION OF GROUNDWATER FLOW

APPROXIMATE CAPTURE BOUNDARY

* WATER LEVEL NOT USED IN CONTOURING

WATER LEVEL DATA COLLECTED SEPTEMBER 10–11, 2012

ALL ELEVATIONS IN FEET NGVD

Vertical Scale: 0–60

Horizontal Scale: 0–300

Scale in Feet

Vertical Exaggeration 5X

TITLE:	POTENTIOMETRIC SECTION B-B', SEPTEMBER 2012
LOCATION:	W.R. Grace, Acton, Massachusetts

TETRA TECH GEO

APPROVED	ABS	FIGURE
DRAFTED	RMK	2-5
PROJECT#	117-3008080	
DATE	NOV 2012	

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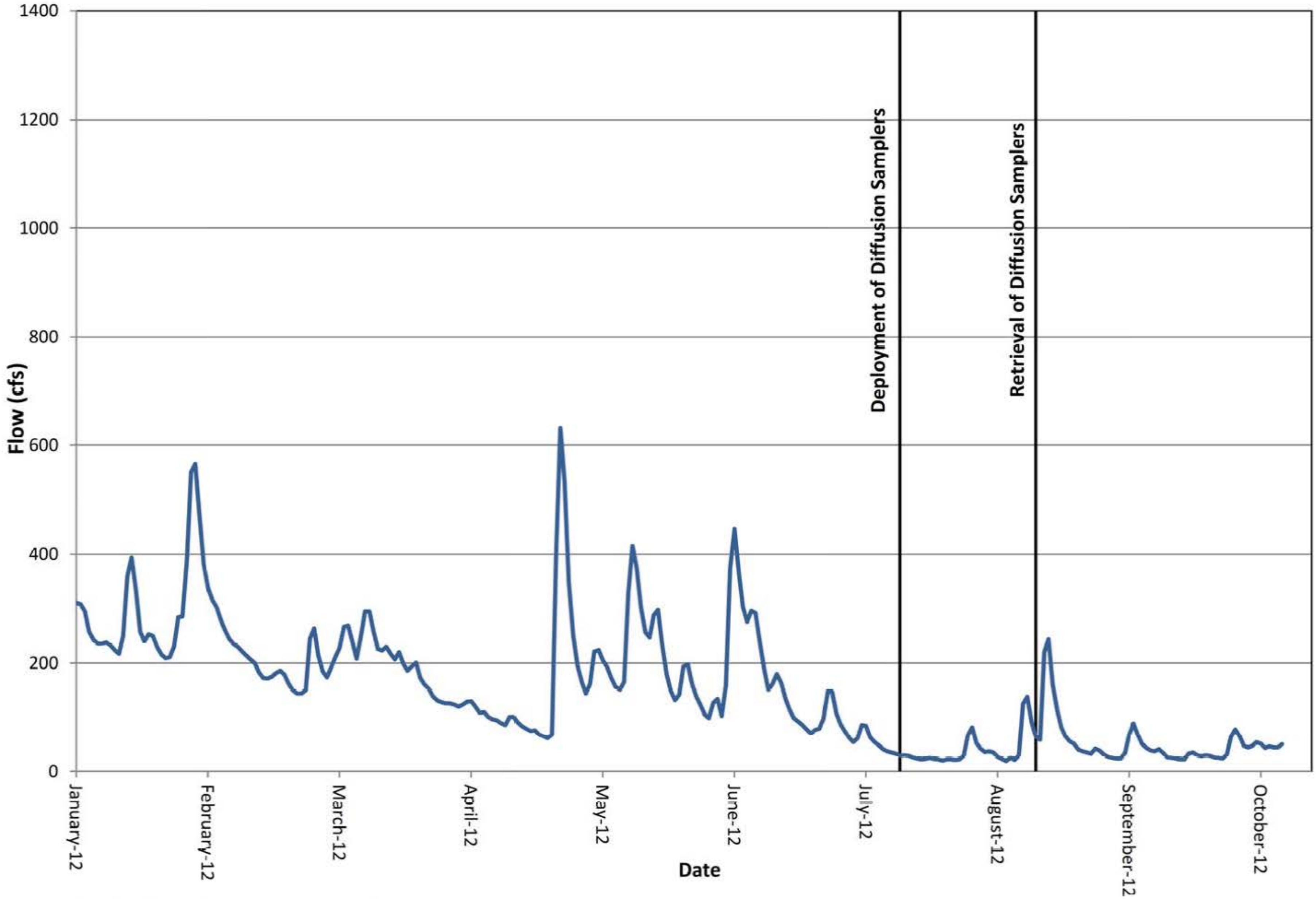
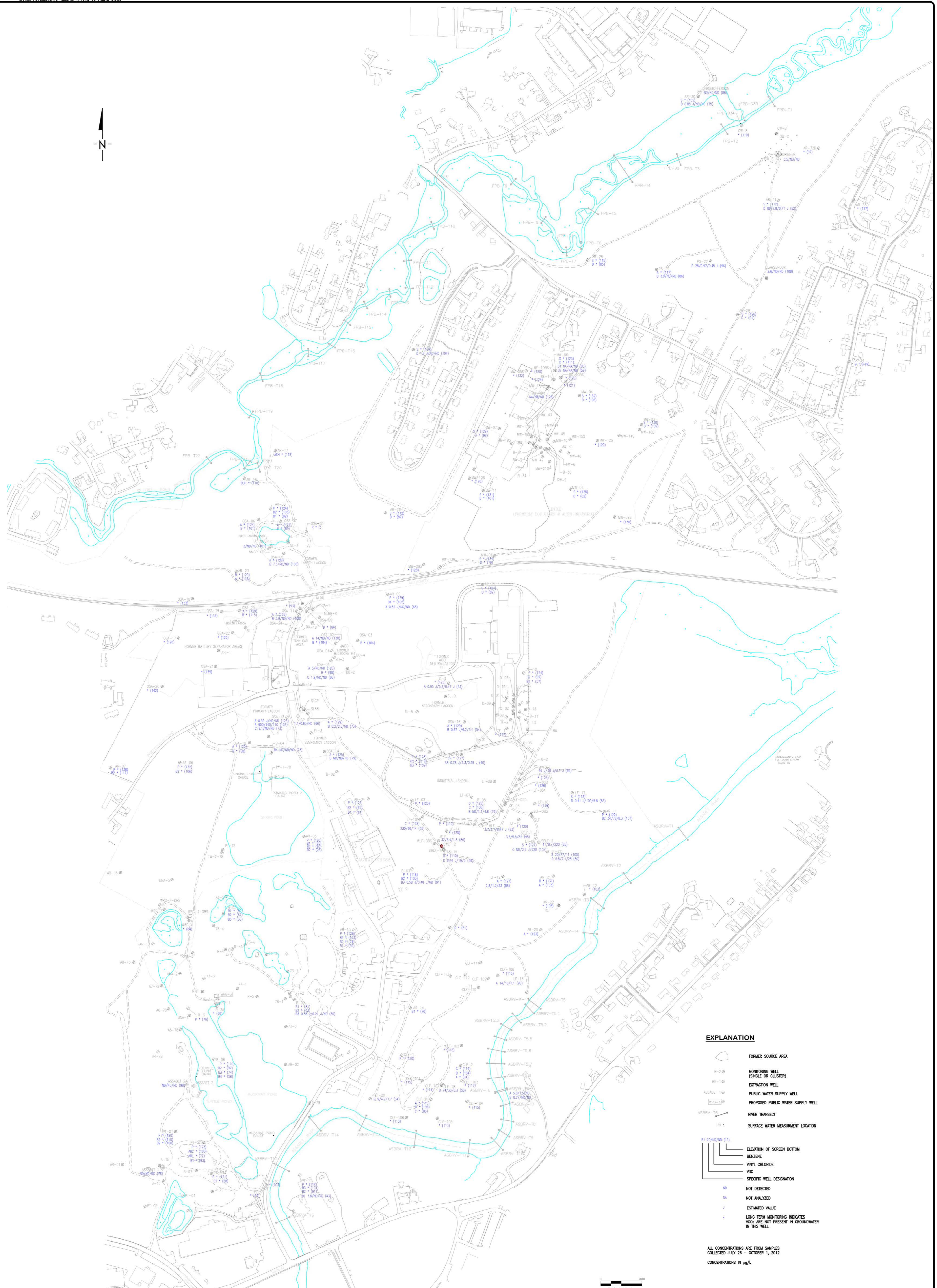


Figure 3-1. Assabet River Daily Average Flow, 2012

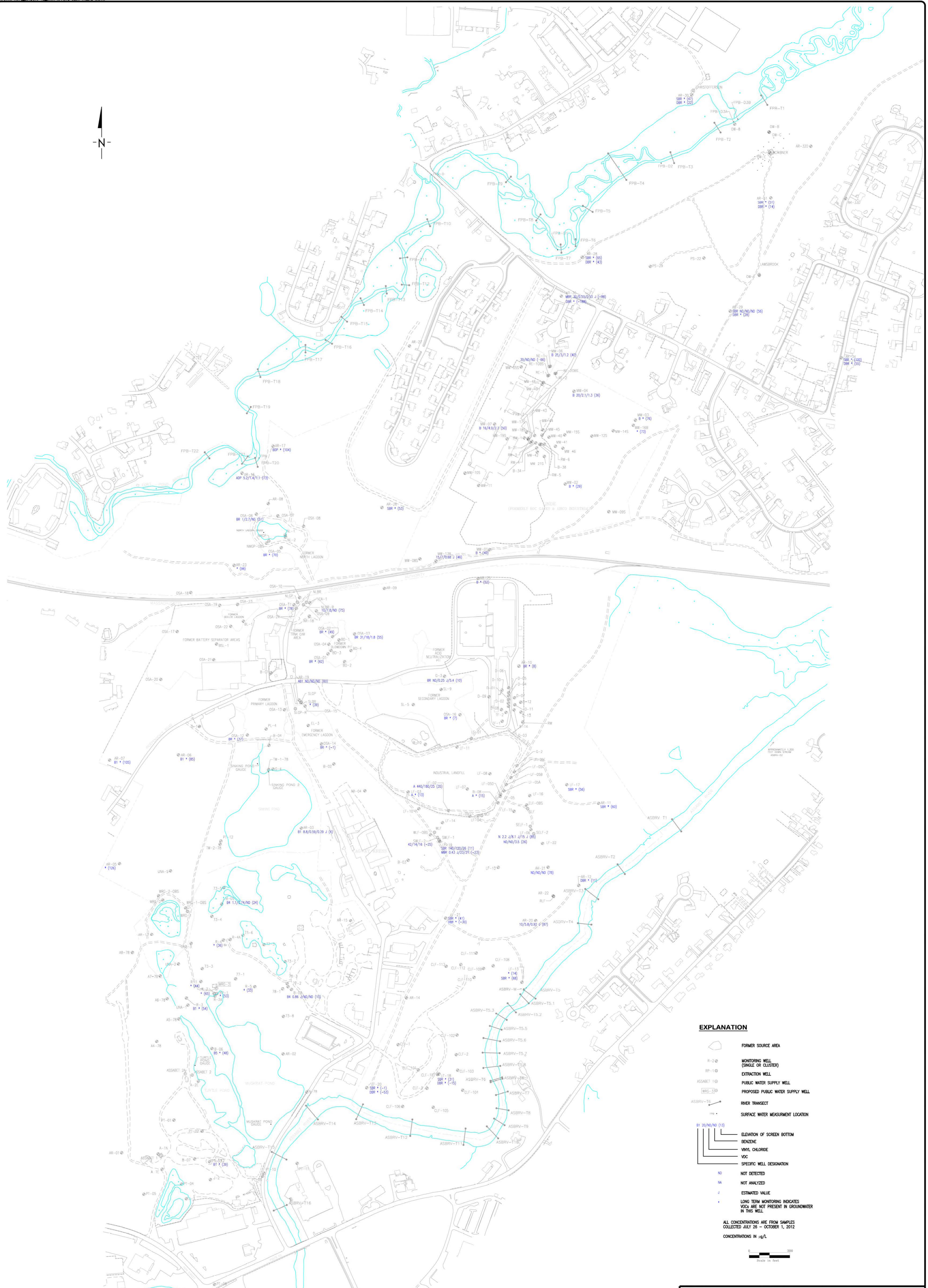


TITLE: **VDC, VINYL CHLORIDE & BENZENE CONCENTRATIONS IN UNCONSOLIDATED DEPOSITS 2012**

LOCATION: **W.R. Grace, Acton, Massachusetts**

TETRA TECH GEO

APPROVED	ABS	FIGURE
DRAFTED	RMK	
PROJECT#	117-3008	3-2
DATE	NOV. 2012	



TITLE: **VDC, VINYL CHLORIDE & BENZENE CONCENTRATIONS IN BEDROCK, 2012**

LOCATION: **W.R. Grace, Acton, MA.**

TETRA TECH GEO

APPROVED	ABS	FIGURE
DRAFTED	RMK	3-3
PROJECT#	117–3008	
DATE	OCT 2012	

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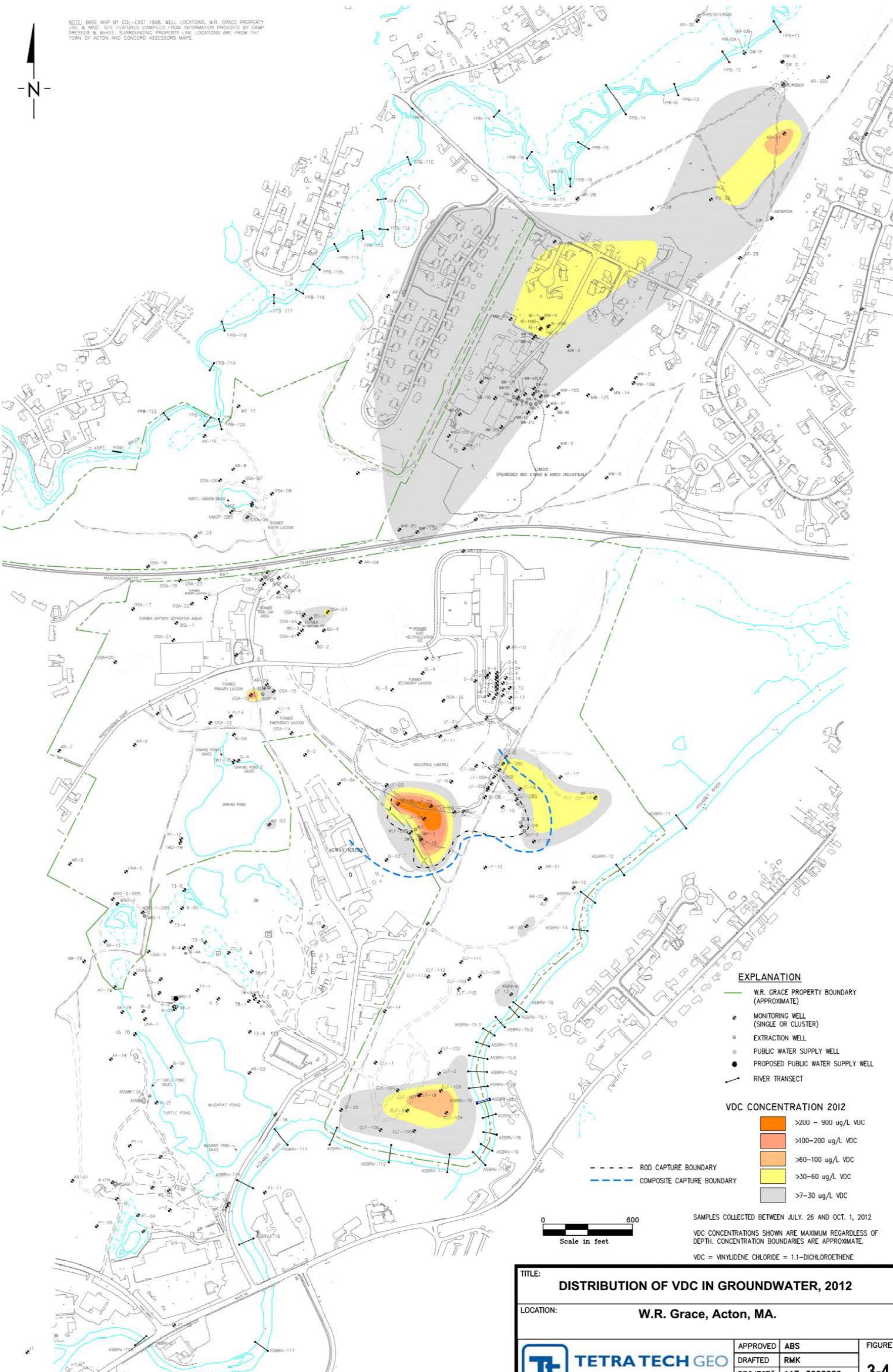

TITLE: **DISTRIBUTION OF VDC IN GROUNDWATER, 2012**

LOCATION: **W.R. Grace, Acton, MA.**

TETRA TECH GEO

APPROVED	ABS	FIGURE
DRAFTED	RMK	3-4
PROJECT#	117-3008080	
DATE	NOV 2012	

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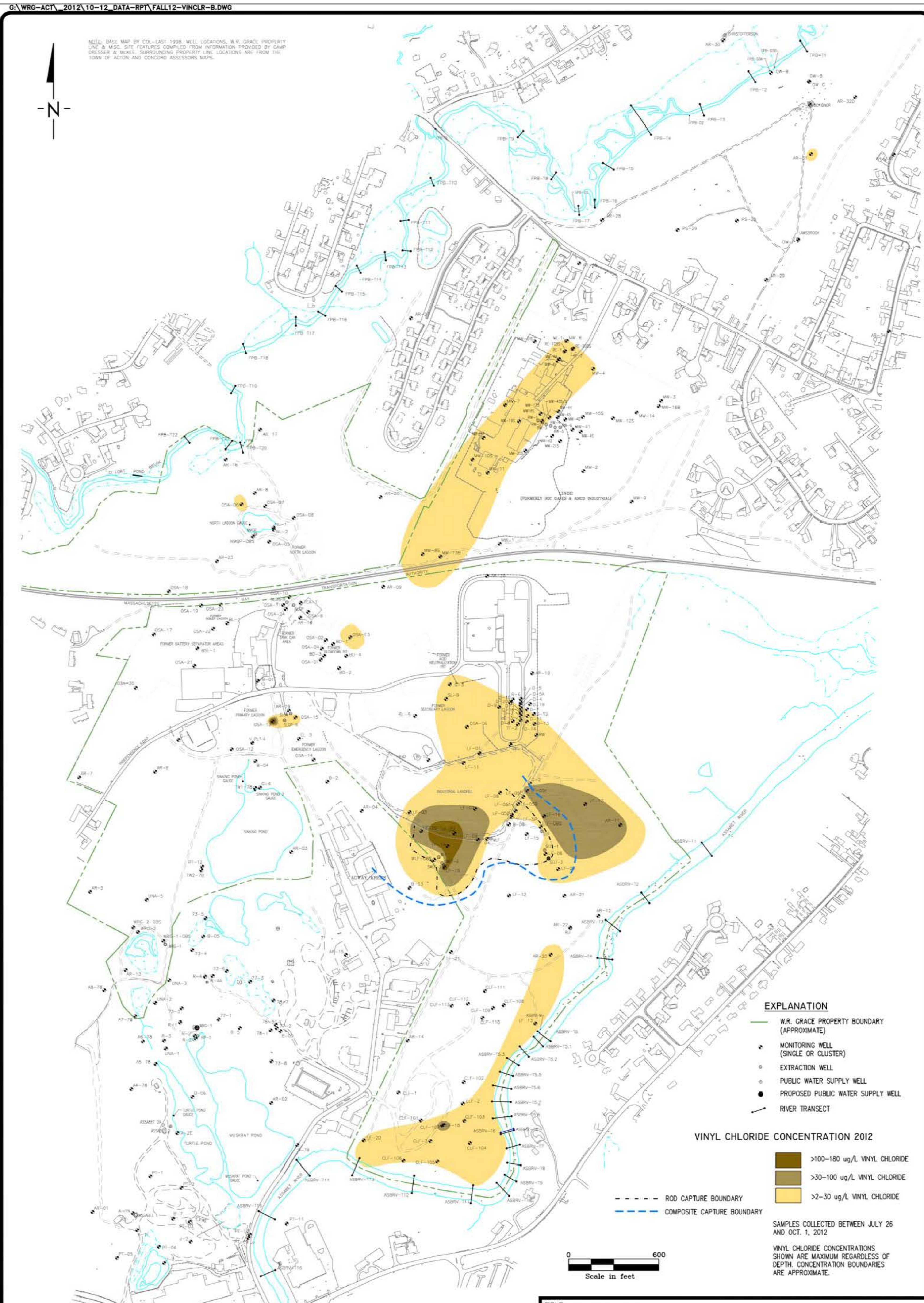

TITLE:
DISTRIBUTION OF VINYL CHLORIDE IN GROUNDWATER, 2012

LOCATION: **W.R. Grace, Acton, MA.**

TETRA TECH GEO

APPROVED	ABS	FIGURE	
DRAFTED	RMK		
PROJECT#	117-3008080	3-5	
DATE	NOV 2012		

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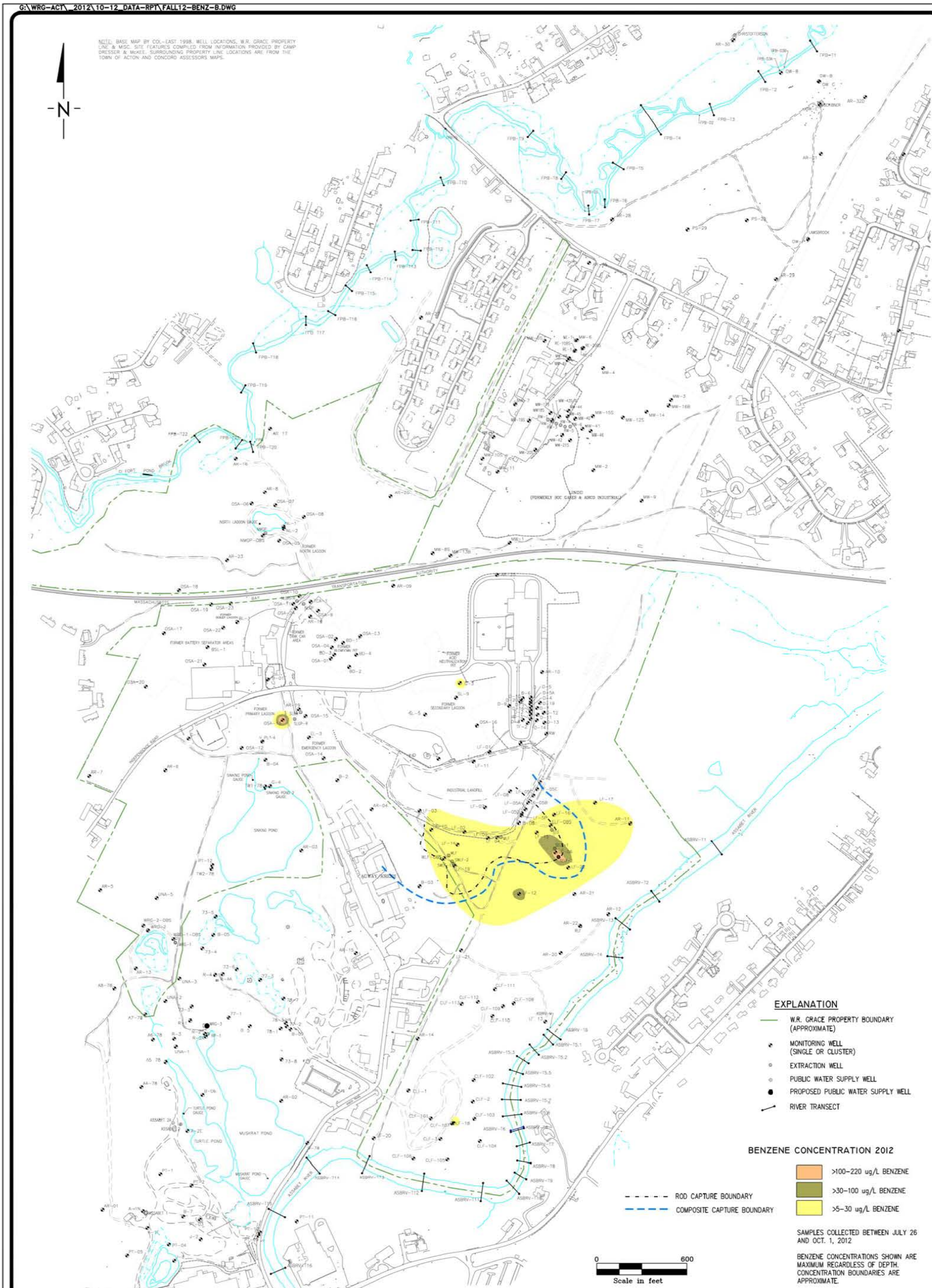

TITLE:

DISTRIBUTION OF BENZENE IN GROUNDWATER, 2012

LOCATION:

W.R. Grace, Acton, MA.

TETRA TECH GEO

		FIGURE
APPROVED	ABS	3-6
DRAFTED	RMK	
PROJECT#	117-3008080	
DATE	NOV 2012	

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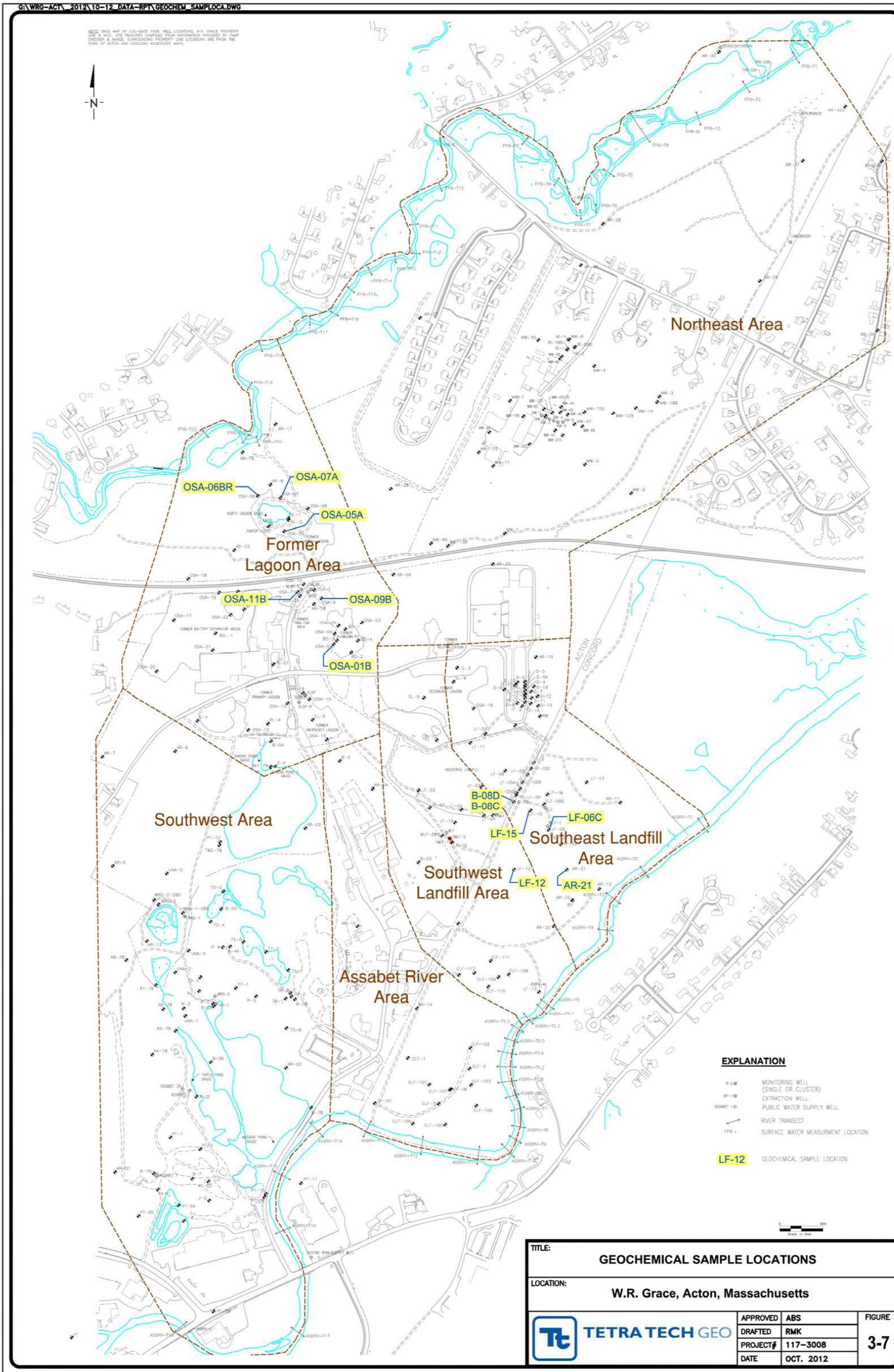
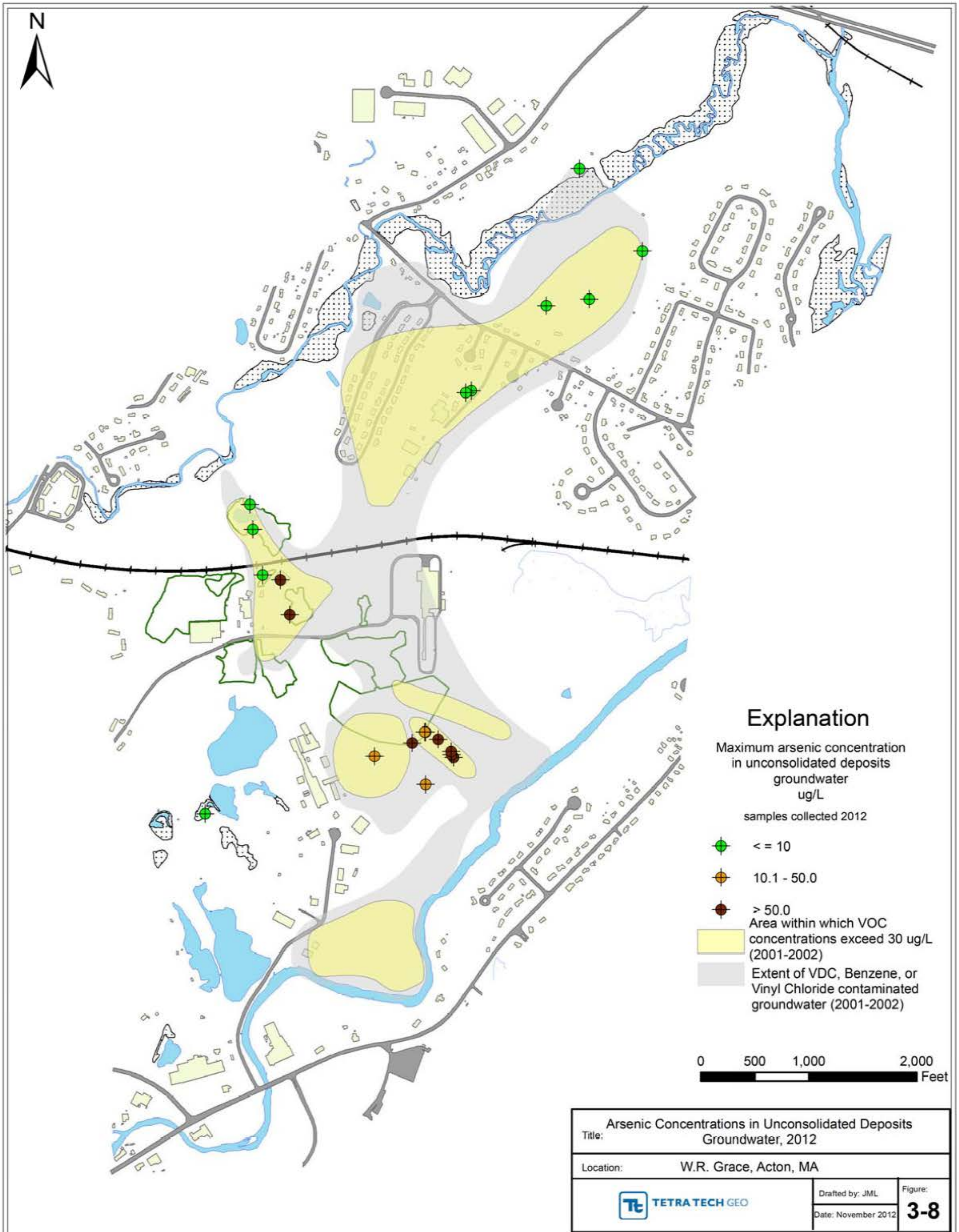
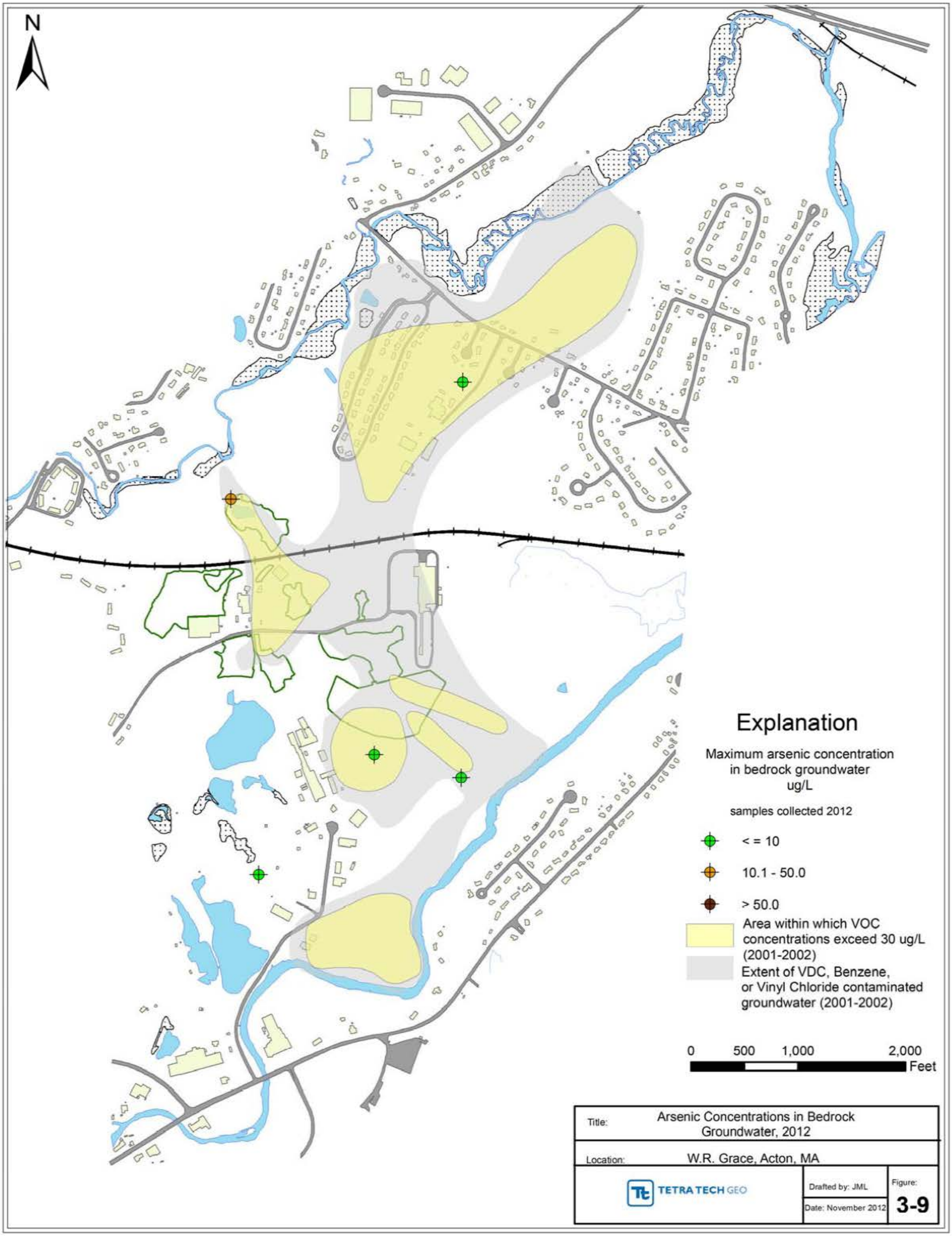



N
Explanation
Maximum arsenic concentration
in unconsolidated deposits
groundwater
ug/L
samples collected 2012
< = 10
10.1 - 50.0
> 50.0
Area within which VOC
concentrations exceed 30 ug/L
(2001-2002)
Extent of VDC, Benzene, or
Vinyl Chloride contaminated
groundwater (2001-2002)
0
500
1,000
2,000
Feet
Title: Arsenic Concentrations in Unconsolidated Deposits
Groundwater, 2012
Location: W.R. Grace, Acton, MA
TETRA TECH GEO
Drafted by: JML
Date: November 2012
Figure:
3-8


N
Explanation
Maximum arsenic concentration
in bedrock groundwater
ug/L
samples collected 2012
< = 10
10.1 - 50.0
> 50.0
Area within which VOC
concentrations exceed 30 ug/L
(2001-2002)
Extent of VDC, Benzene,
or Vinyl Chloride contaminated
groundwater (2001-2002)
0 500 1,000 2,000
Feet
Title: Arsenic Concentrations in Bedrock
Groundwater, 2012
Location: W.R. Grace, Acton, MA
TETRA TECH GEO
Drafted by: JML
Date: November 2012
Figure:
3-9

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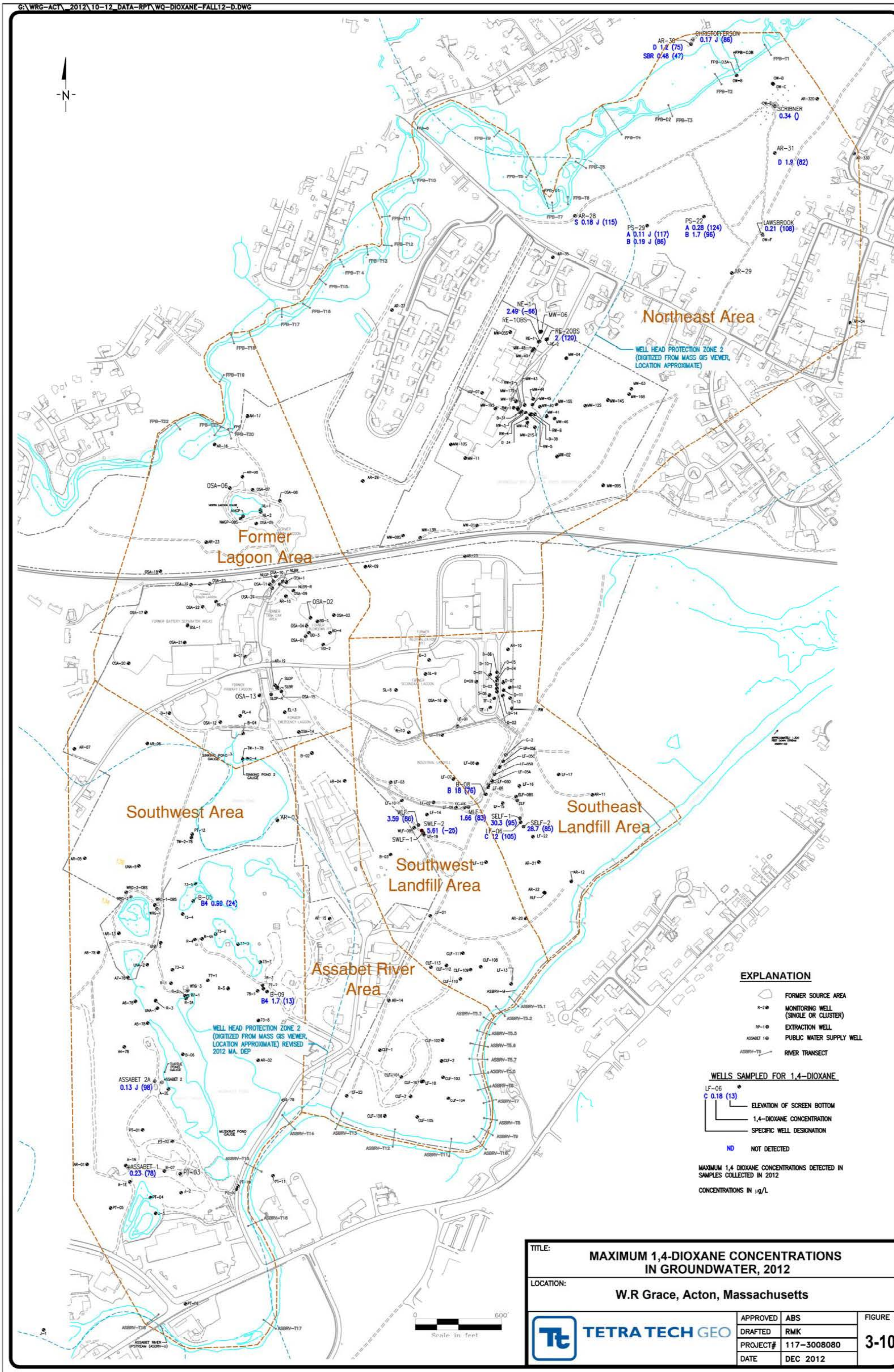
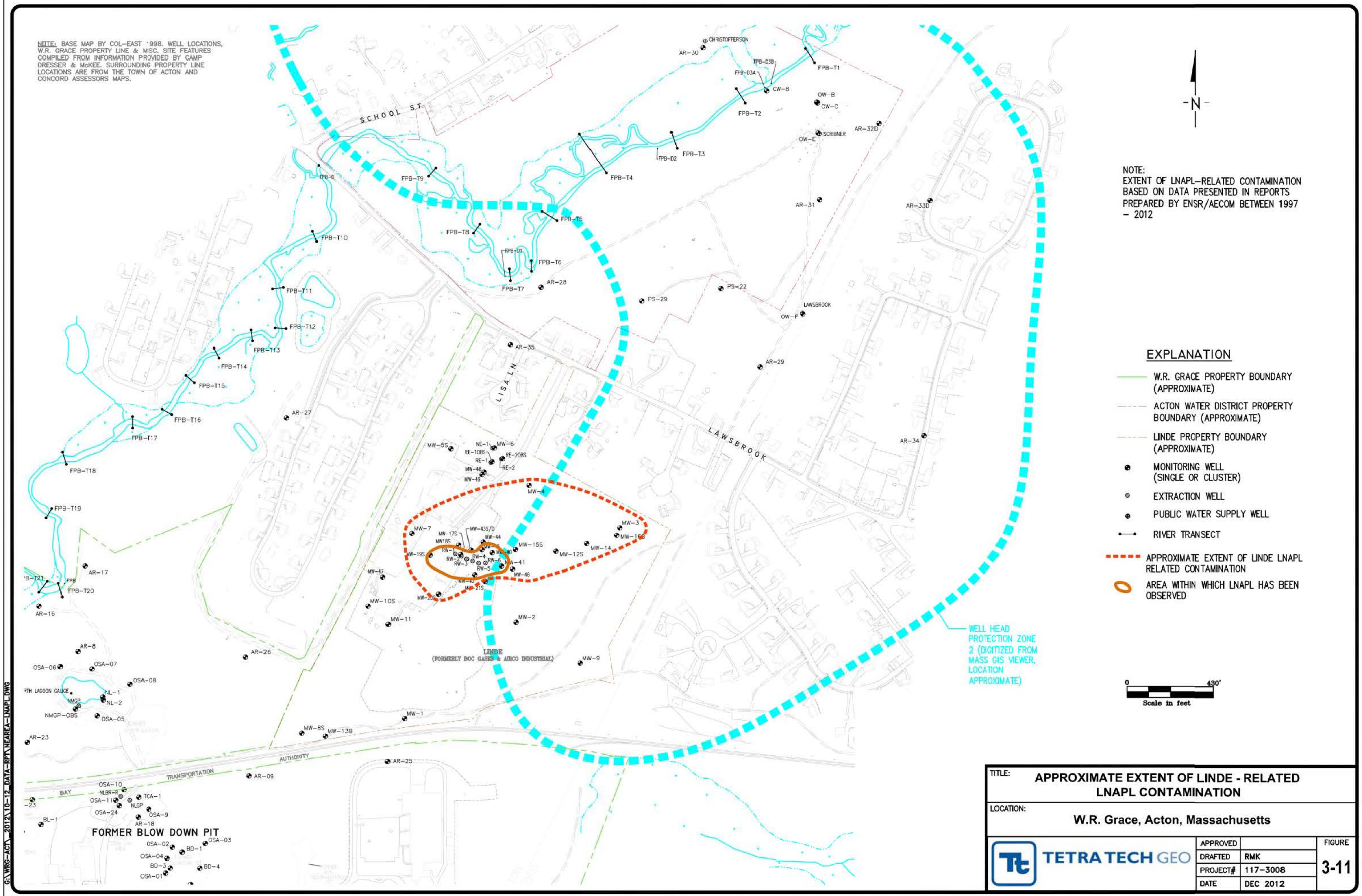


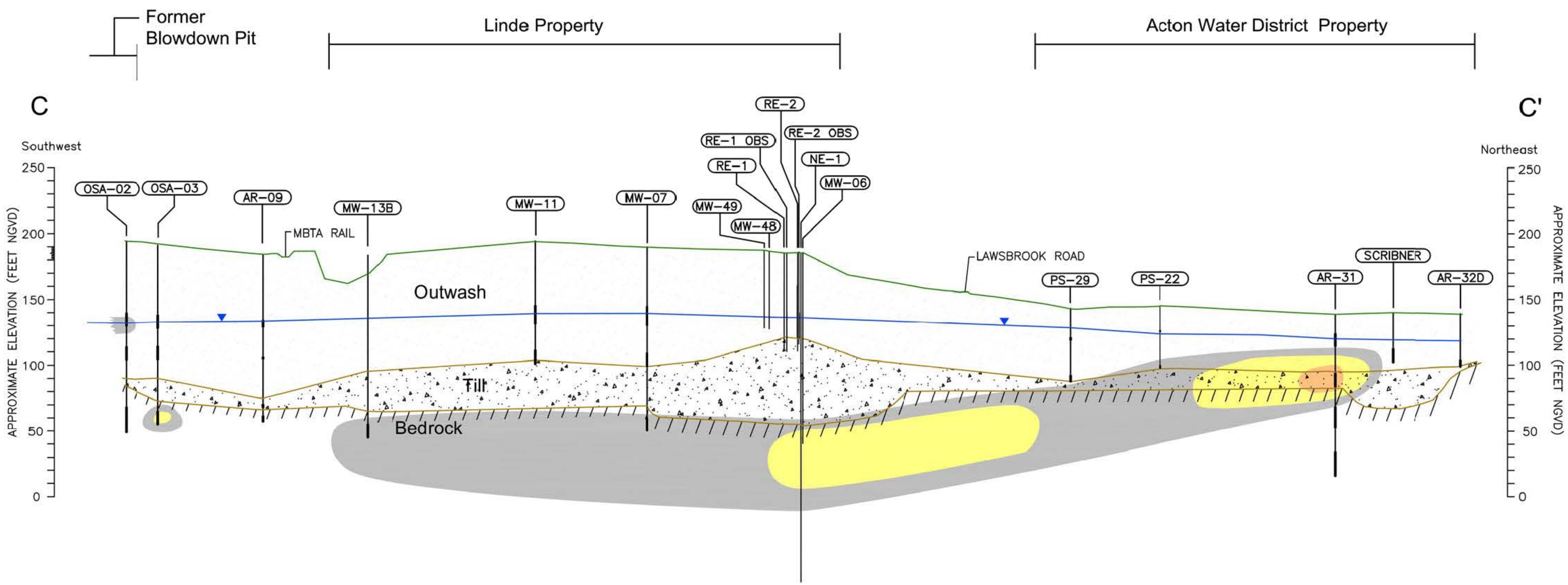


TITLE: **APPROXIMATE EXTENT OF LINDE - RELATED LNAPL CONTAMINATION**

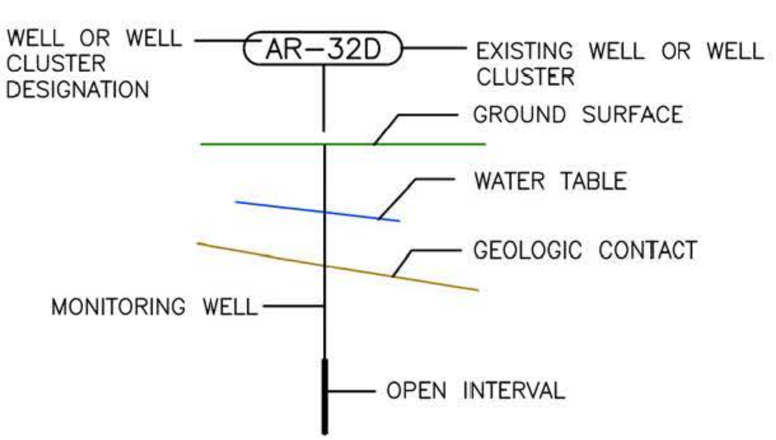
LOCATION: **W.R. Grace, Acton, Massachusetts**

TETRA TECH GEO

APPROVED		FIGURE
DRAFTED	RMK	3-11
PROJECT#	117-3008	
DATE	DEC 2012	



Explanation



VDC CONCENTRATION 2012

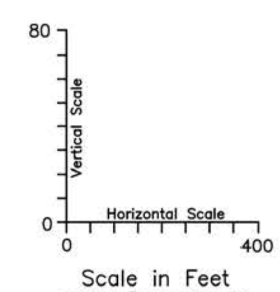
- >60–86 ug/L VDC
- >30–60 ug/L VDC
- >7–30 ug/L VDC

SAMPLES COLLECTED BETWEEN JULY 26, – OCT. 1, 2012

CONCENTRATION BOUNDARIES ARE APPROXIMATE.

VDC = VINYLIDENE CHLORIDE = 1.1-DICHLOROETHENE

NOTE: ALL ELEVATIONS IN FEET NGVD



TITLE: **2012 VDC CONCENTRATIONS, SECTION C-C'**

LOCATION: **W.R. Grace, Acton, Massachusetts**

TETRA TECH GEO

APPROVED	ABS	FIGURE
DRAFTED	RMK	4-1
PROJECT#	117-3008	
DATE	FEB 2012	

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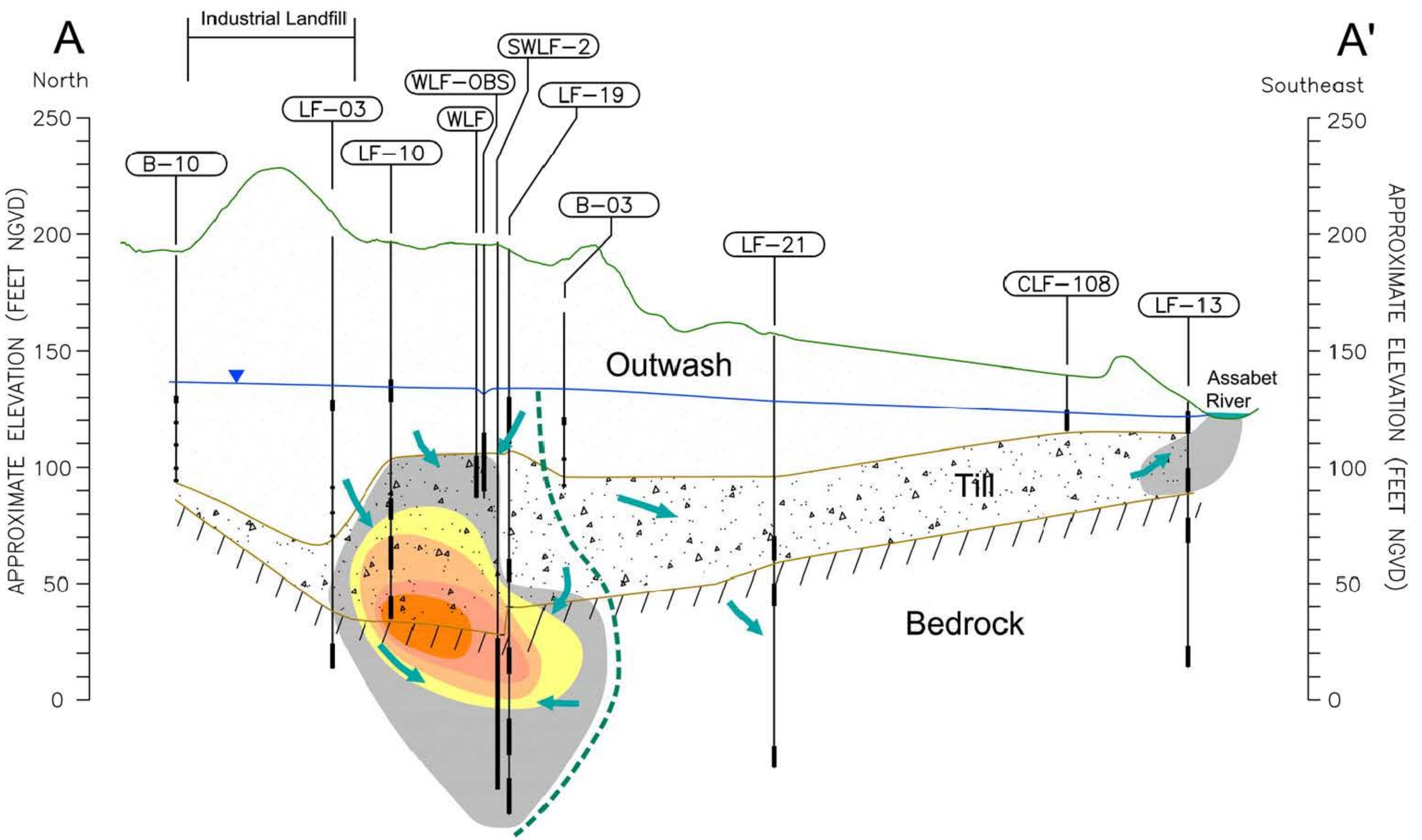

Explanation

WELL OR WELL CLUSTER DESIGNATION — AR-32D

GROUND SURFACE

WATER TABLE

GEOLOGIC CONTACT

MONITORING WELL

OPEN INTERVAL

DIRECTION OF GROUNDWATER FLOW

APPROXIMATE CAPTURE BOUNDARY

VDC CONCENTRATION 2012

- >200–230 ug/L VDC
- >100–200 ug/L VDC
- >60–100 ug/L VDC
- >30–60 ug/L VDC
- >7–30 ug/L VDC

SAMPLES COLLECTED BETWEEN JULY. 26 AND OCT. 1, 2012

CONCENTRATION BOUNDARIES ARE APPROXIMATE.

VDC = VINYLIDENE CHLORIDE = 1.1-DICHLOROETHENE

NOTE: ALL ELEVATIONS IN FEET NGVD

Vertical Scale 0–60; Horizontal Scale 0–300

Scale in Feet
Vertical Exaggeration 5X

TITLE:	2012 VDC CONCENTRATIONS, SECTION A-A'
LOCATION:	W.R. Grace, Acton, Massachusetts

TETRA TECH GEO

APPROVED	ABS	FIGURE
DRAFTED	RMK	4-2
PROJECT#	117-3008	
DATE	DEC 2012	

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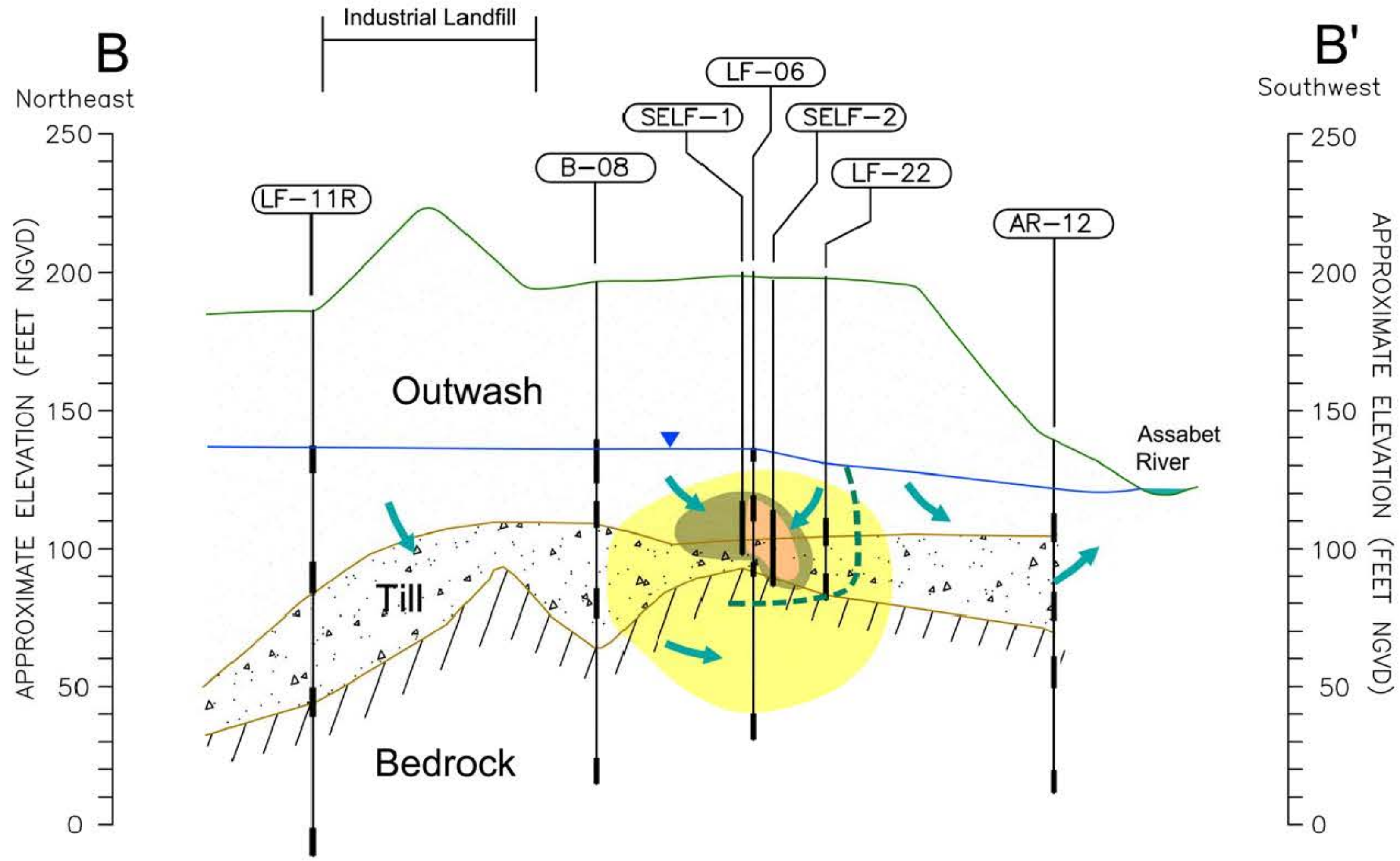
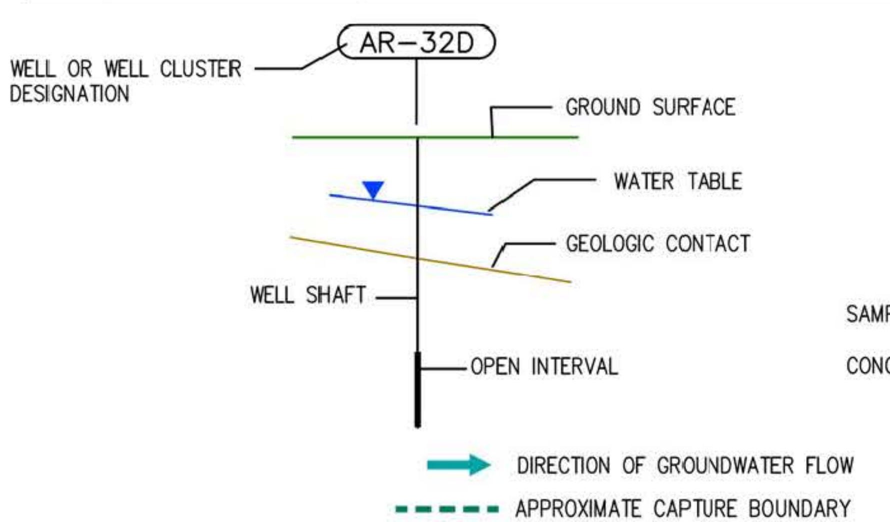


Explanation



BENZENE CONCENTRATION 2012

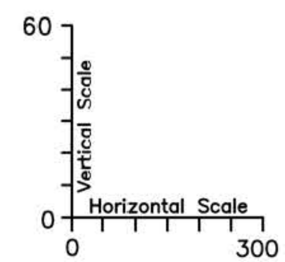
>100–220 ug/L BENZENE

>30–100 ug/L BENZENE

>5–30 ug/L BENZENE

SAMPLES COLLECTED BETWEEN JULY 26 AND OCT. 1, 2012

CONCENTRATION BOUNDARIES ARE APPROXIMATE.



Scale in Feet
Vertical Exaggeration 5X

TITLE:
2012 BENZENE CONCENTRATIONS, SECTION B-B'

LOCATION:
W.R. Grace, Acton, Massachusetts

TETRA TECH GEO

APPROVED	ABS
DRAFTED	RMK
PROJECT#	117-3008
DATE	DEC 2012

FIGURE
4-3

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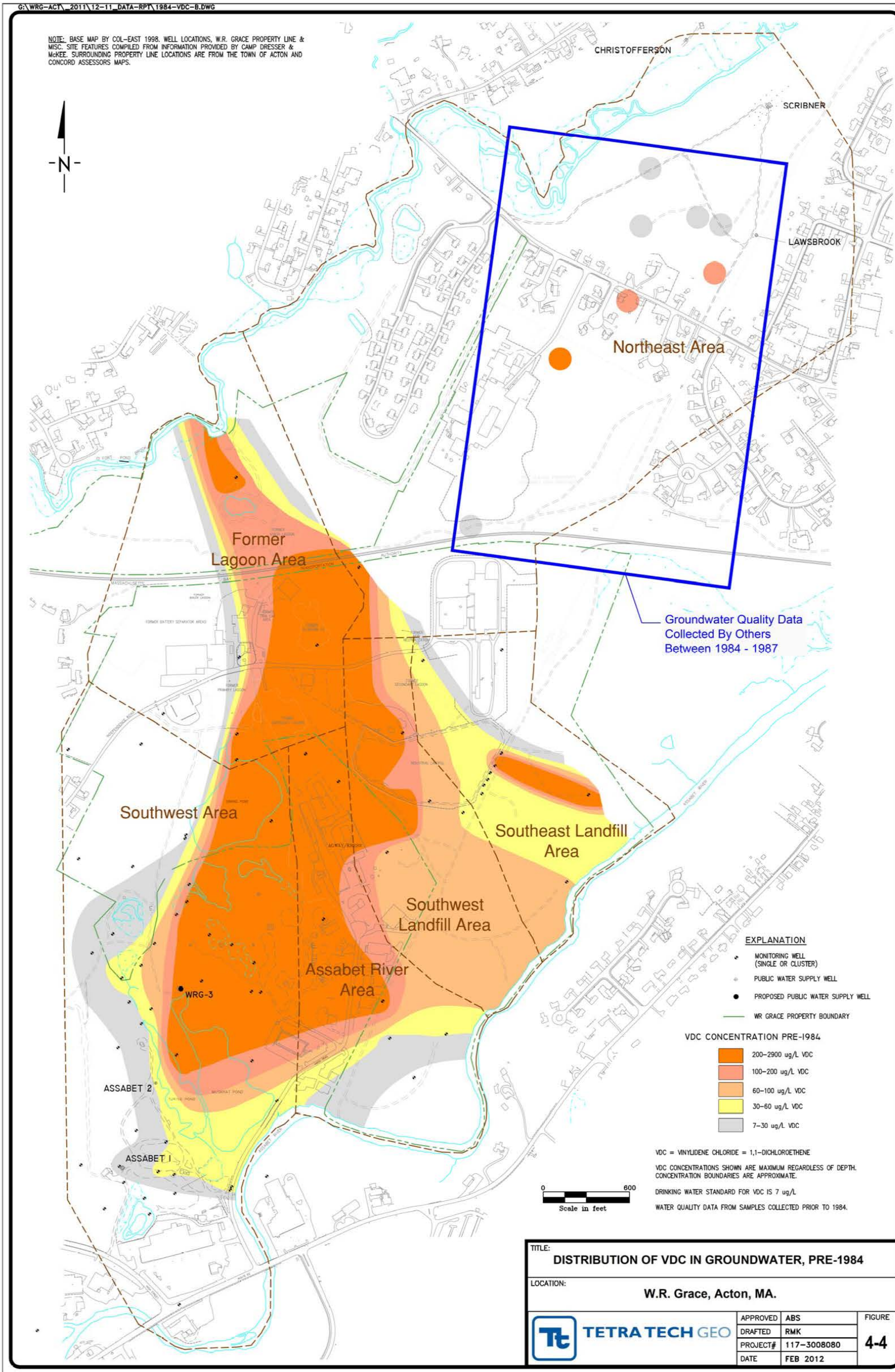


TITLE: DISTRIBUTION OF VDC IN GROUNDWATER, PRE-1984

LOCATION: W.R. Grace, Acton, MA.

TETRA TECH GEO

APPROVED	ABS	FIGURE
DRAFTED	RMK	4-4
PROJECT#	117-3008080	
DATE	FEB 2012	

ATTACHMENT A

Table A-1. VOC concentrations in groundwater.

LOCATION:	AR-03B1	AR-09A	AR-11B2	AR-16ADP	AR-19AB1	AR-20	AR-21	AR-27D
DATE SAMPLED:	7/31/12	8/10/12	8/1/12	8/13/12	8/1/12	8/13/12	8/7/12	7/31/12
OPEN INTERVAL:	4 to 5 (BR)	68 to 71	101 to 102	73 to 83 (BR)	60 to 61 (BR)	87 to 92 (BR)	78 to 83 (BR)	104 to 114
QA TYPE (DB):		L1		L2		L1		
VOCs								
1,1,1-Trichloroethane	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (4)
1,1,2,2-Tetrachloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2)
1,1,2-Trichloroethane	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (4)
1,1-Dichloroethane	ND (1)	ND (1)	1	ND (1)	ND (1)	ND (1)	ND (1)	ND (4)
1,1-Dichloroethene	8.8	0.52 J	34	5.2	ND (1)	10	ND (1)	1.8 J
1,2-Dichloroethane	ND (1)	ND (1)	0.69 J	ND (1)	ND (1)	ND (1)	ND (1)	ND (4)
1,2-Dichloropropane	ND (1)	ND (1)	ND (1)	0.56 J	ND (1)	0.54 J	ND (1)	ND (4)
1,4-Dioxane	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	1.4 J	ND (10)	ND (40)
2-Hexanone	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (40)
4-Methyl-2-Pentanone	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (40)
Acetone	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	34 J	ND (50)	87 J
Benzene	0.29 J	ND (1)	8.3	1.1	ND (1)	0.92 J	ND (1)	ND (4)
Bromochloromethane	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (4)
Bromodichloromethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2)
Bromoform	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (4)
Bromomethane	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (8)
Carbon Disulfide	ND (10)	ND (10)	0.42 J	ND (10)	ND (10)	ND (10)	ND (10)	ND (40)
Carbon Tetrachloride	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (4)
Chlorobenzene	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (4)
Chloroethane	ND (2)	ND (2)	0.39 J	ND (2)	ND (2)	ND (2)	ND (2)	ND (8)
Chloroform	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (4)
Chloromethane	ND (2)	ND (2)	ND (2)	ND (2)	0.22 J	ND (2)	ND (2)	ND (8)
cis-1,2-Dichloroethene	ND (1)	ND (1)	0.21 J	ND (1)	ND (1)	ND (1)	ND (1)	ND (4)
cis-1,3-Dichloropropene	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.4)	ND (1.6)
Dibromochloromethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2)
Ethylbenzene	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (4)
m,p-Xylenes	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (8)
Methyl tert butyl ether	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (4)
Methylene Chloride	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (8)
o-Xylene	ND (1)	ND (1)	0.32 J	ND (1)	ND (1)	ND (1)	ND (1)	ND (4)
Styrene	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (4)
Tetrachloroethene	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (4)
Toluene	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (4)
trans-1,2-Dichloroethene	ND (1)	ND (1)	0.5 J	ND (1)	ND (1)	ND (1)	ND (1)	ND (4)
trans-1,3-Dichloropropene	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.4)	ND (1.6)
Trichloroethene	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	2.9 J
Trichlorofluoromethane	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (4)
Vinyl Acetate	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (40)
Vinyl Chloride	0.59	ND (0.5)	78	1.4	ND (0.5)	5.8	ND (0.5)	ND (2)

NOTES:

Concentrations in µg/L
Open Interval - elevation in feet NGVD, (BR) - Open Interval in bedrock
NA - Not Applicable

DUP - Duplicate Sample
ND (10) - Compound not detected at limit indicated in parentheses
DB - Diffusion Bag Interval: L1=0-5 feet, L2=5-10 feet, L3= 10-15 feet from top of screen

J - Estimated Value
D - Diluted Value

Table A-1. VOC concentrations in groundwater.

LOCATION:	AR-28S	AR-29SBR	AR-30D	AR-30SBR	AR-31D	AR-35MBR	ASBRV-T6A	ASBRV-T6B
DATE SAMPLED:	8/1/12	8/9/12	8/10/12	8/10/12	8/8/12	8/13/12	8/14/12	8/14/12
OPEN INTERVAL:	115 to 125	56 to 67 (BR)	75 to 85	47 to 61 (BR)	82 to 92	-88 to -78 (BR)	to	to
QA TYPE (DB):						L1		
VOCs								
1,1,1-Trichloroethane	NA	ND (1)	ND (1)	NA	ND (1)	ND (1)	ND (1)	ND (1)
1,1,2,2-Tetrachloroethane	NA	ND (0.5)	ND (0.5)	NA	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1,2-Trichloroethane	NA	ND (1)	ND (1)	NA	ND (1)	ND (1)	ND (1)	ND (1)
1,1-Dichloroethane	NA	ND (1)	0.21 J	NA	0.35 J	ND (1)	ND (1)	ND (1)
1,1-Dichloroethene	NA	ND (1)	0.88 J	NA	86	30	5.6	0.27 J
1,2-Dichloroethane	NA	ND (1)	ND (1)	NA	ND (1)	ND (1)	ND (1)	ND (1)
1,2-Dichloropropane	NA	ND (1)	ND (1)	NA	ND (1)	0.31 J	ND (1)	ND (1)
1,4-Dioxane	0.18 J	NA	1.2	0.48	1.9	NA	NA	NA
2-Butanone	NA	120	ND (10)	NA	ND (10)	1.3 J	1.9 J	2.1 J
2-Hexanone	NA	ND (10)	ND (10)	NA	ND (10)	ND (10)	ND (10)	ND (10)
4-Methyl-2-Pentanone	NA	ND (10)	ND (10)	NA	ND (10)	ND (10)	ND (10)	ND (10)
Acetone	NA	25 J	ND (50)	NA	20 J	ND (50)	37 J	37 J
Benzene	NA	ND (1)	ND (1)	NA	0.71 J	0.53 J	ND (1)	ND (1)
Bromochloromethane	NA	ND (1)	ND (1)	NA	ND (1)	ND (1)	ND (1)	ND (1)
Bromodichloromethane	NA	ND (0.5)	ND (0.5)	NA	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromoform	NA	ND (1)	ND (1)	NA	ND (1)	ND (1)	ND (1)	ND (1)
Bromomethane	NA	ND (2)	ND (2)	NA	ND (2)	ND (2)	ND (2)	ND (2)
Carbon Disulfide	NA	1.3 J	0.2 J	NA	ND (10)	0.24 J	ND (10)	ND (10)
Carbon Tetrachloride	NA	ND (1)	ND (1)	NA	ND (1)	ND (1)	ND (1)	ND (1)
Chlorobenzene	NA	ND (1)	ND (1)	NA	ND (1)	ND (1)	ND (1)	ND (1)
Chloroethane	NA	ND (2)	ND (2)	NA	0.51 J	ND (2)	ND (2)	ND (2)
Chloroform	NA	ND (1)	0.34 J	NA	ND (1)	ND (1)	ND (1)	ND (1)
Chloromethane	NA	ND (2)	ND (2)	NA	2.4	ND (2)	ND (2)	ND (2)
cis-1,2-Dichloroethene	NA	ND (1)	ND (1)	NA	0.37 J	ND (1)	ND (1)	ND (1)
cis-1,3-Dichloropropene	NA	ND (0.4)	ND (0.4)	NA	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.4)
Dibromochloromethane	NA	ND (0.5)	ND (0.5)	NA	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Ethylbenzene	NA	ND (1)	ND (1)	NA	ND (1)	ND (1)	ND (1)	ND (1)
m,p-Xylenes	NA	ND (2)	ND (2)	NA	ND (2)	ND (2)	ND (2)	ND (2)
Methyl tert butyl ether	NA	ND (1)	ND (1)	NA	2.4	ND (1)	ND (1)	ND (1)
Methylene Chloride	NA	ND (2)	ND (2)	NA	ND (2)	ND (2)	ND (2)	ND (2)
o-Xylene	NA	ND (1)	ND (1)	NA	ND (1)	ND (1)	ND (1)	ND (1)
Styrene	NA	ND (1)	ND (1)	NA	ND (1)	ND (1)	ND (1)	ND (1)
Tetrachloroethene	NA	ND (1)	ND (1)	NA	ND (1)	ND (1)	ND (1)	ND (1)
Toluene	NA	0.43 J	ND (1)	NA	ND (1)	ND (1)	ND (1)	ND (1)
trans-1,2-Dichloroethene	NA	ND (1)	ND (1)	NA	ND (1)	ND (1)	ND (1)	ND (1)
trans-1,3-Dichloropropene	NA	ND (0.4)	ND (0.4)	NA	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.4)
Trichloroethene	NA	ND (1)	ND (1)	NA	1.2	ND (1)	ND (1)	ND (1)
Trichlorofluoromethane	NA	ND (1)	ND (1)	NA	ND (1)	ND (1)	ND (1)	ND (1)
Vinyl Acetate	NA	ND (10)	ND (10)	NA	ND (10)	ND (10)	ND (10)	ND (10)
Vinyl Chloride	NA	ND (0.5)	ND (0.5)	NA	2.8	0.53	1.5	ND (0.5)

NOTES:
Concentrations in µg/L
Open Interval - elevation in feet NGVD, (BR) - Open Interval in bedrock
NA - Not Applicable
DUP - Duplicate Sample
ND (10) - Compound not detected at limit indicated in parentheses
DB - Diffusion Bag Interval: L1=0-5 feet, L2=5-10 feet, L3= 10-15 feet from top of screen
J - Estimated Value
D - Diluted Value

Table A-1. VOC concentrations in groundwater.

LOCATION:	ASSABET-1A	ASSABET-1A	Assabet-1A	ASSABET-1A	ASSABET-2A	ASSABET-2A	Assabet-2A	ASSABET-2A
DATE SAMPLED:	6/13/12	6/19/12	7/30/12	8/14/12	6/13/12	6/19/12	7/30/12	8/14/12
OPEN INTERVAL:	78 to 88	78 to 88	78 to 88	78 to 88	98 to 106	98 to 106	98 to 106	98 to 106
QA TYPE (DB):								
VOCs								
1,1,1-Trichloroethane	NA	NA	ND (1)	ND ()	NA	NA	ND (1)	ND ()
1,1,2,2-Tetrachloroethane	NA	NA	ND (0.5)	ND ()	NA	NA	ND (0.5)	ND ()
1,1,2-Trichloroethane	NA	NA	ND (1)	ND ()	NA	NA	ND (1)	ND ()
1,1-Dichloroethane	NA	NA	ND (1)	ND ()	NA	NA	ND (1)	ND ()
1,1-Dichloroethene	NA	NA	ND (1)	ND ()	NA	NA	ND (1)	ND ()
1,2-Dichloroethane	NA	NA	ND (1)	ND ()	NA	NA	ND (1)	ND ()
1,2-Dichloropropane	NA	NA	ND (1)	ND ()	NA	NA	ND (1)	ND ()
1,4-Dioxane	0.221	0.192	0.22	0.231	0.0929 J	0.0709 J	0.13 J	0.13 J
2-Butanone	NA	NA	ND (10)	NA	NA	NA	ND (10)	NA
2-Hexanone	NA	NA	ND (10)	NA	NA	NA	ND (10)	NA
4-Methyl-2-Pentanone	NA	NA	ND (10)	NA	NA	NA	ND (10)	NA
Acetone	NA	NA	ND (50)	NA	NA	NA	ND (50)	NA
Benzene	NA	NA	ND (1)	ND ()	NA	NA	ND (1)	ND ()
Bromochloromethane	NA	NA	ND (1)	ND ()	NA	NA	ND (1)	ND ()
Bromodichloromethane	NA	NA	ND (0.5)	ND ()	NA	NA	ND (0.5)	ND ()
Bromoform	NA	NA	ND (1)	ND ()	NA	NA	ND (1)	ND ()
Bromomethane	NA	NA	ND (2)	ND ()	NA	NA	ND (2)	ND ()
Carbon Disulfide	NA	NA	ND (10)	NA	NA	NA	ND (10)	NA
Carbon Tetrachloride	NA	NA	ND (1)	ND ()	NA	NA	ND (1)	ND ()
Chlorobenzene	NA	NA	ND (1)	ND ()	NA	NA	ND (1)	ND ()
Chloroethane	NA	NA	ND (2)	ND ()	NA	NA	ND (2)	ND ()
Chloroform	NA	NA	ND (1)	ND ()	NA	NA	ND (1)	ND ()
Chloromethane	NA	NA	0.29 J	ND ()	NA	NA	0.32 J	ND ()
cis-1,2-Dichloroethene	NA	NA	ND (1)	ND ()	NA	NA	ND (1)	ND ()
cis-1,3-Dichloropropene	NA	NA	ND (0.4)	NA	NA	NA	ND (0.4)	NA
Dibromochloromethane	NA	NA	ND (0.5)	ND ()	NA	NA	ND (0.5)	ND ()
Ethylbenzene	NA	NA	ND (1)	ND ()	NA	NA	ND (1)	ND ()
m,p-Xylenes	NA	NA	ND (2)	NA	NA	NA	ND (2)	NA
Methyl tert butyl ether	NA	NA	0.83 J	0.7	NA	NA	ND (1)	ND ()
Methylene Chloride	NA	NA	ND (2)	ND ()	NA	NA	ND (2)	ND ()
o-Xylene	NA	NA	ND (1)	NA	NA	NA	ND (1)	NA
Styrene	NA	NA	ND (1)	ND ()	NA	NA	ND (1)	ND ()
Tetrachloroethene	NA	NA	ND (1)	ND ()	NA	NA	ND (1)	ND ()
Toluene	NA	NA	ND (1)	ND ()	NA	NA	ND (1)	ND ()
trans-1,2-Dichloroethene	NA	NA	ND (1)	ND ()	NA	NA	ND (1)	ND ()
trans-1,3-Dichloropropene	NA	NA	ND (0.4)	NA	NA	NA	ND (0.4)	NA
Trichloroethene	NA	NA	0.23 J	ND ()	NA	NA	ND (1)	ND ()
Trichlorofluoromethane	NA	NA	ND (1)	ND ()	NA	NA	ND (1)	ND ()
Vinyl Acetate	NA	NA	ND (10)	NA	NA	NA	ND (10)	NA
Vinyl Chloride	NA	NA	ND (0.5)	ND ()	NA	NA	ND (0.5)	ND ()

NOTES:
Concentrations in µg/L
Open Interval - elevation in feet NGVD, (BR) - Open Interval in bedrock
NA - Not Applicable
DUP - Duplicate Sample
ND (10) - Compound not detected at limit indicated in parentheses
DB - Diffusion Bag Interval L1=0-5 feet, L2=5-10 feet, L3=10-15 feet from top of screen
J - Estimated Value
D - Diluted Value

Table A-1. VOC concentrations in groundwater.

LOCATION:	B-03B3	B-04B4	B-05B4	B-08B	B-09B3	B-09B4	IRISTOFFERSOI	IRISTOFFERSO
DATE SAMPLED:	7/31/12	7/30/12	8/8/12	8/8/12	7/31/12	8/9/12	4/20/12	5/17/12
OPEN INTERVAL:	91 to 92	73 to 74	24 to 25 (BR)	76 to 86	30 to 31	13 to 14 (BR)	86 to 96	86 to 96
QA TYPE (DB):								
VOCs								
1,1,1-Trichloroethane	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	NA	NA
1,1,2,2-Tetrachloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	NA	NA
1,1,2-Trichloroethane	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	NA	NA
1,1-Dichloroethane	ND (1)	ND (1)	ND (1)	7.1	ND (1)	ND (1)	NA	NA
1,1-Dichloroethene	0.58 J	ND (1)	1.1	ND (1)	0.88 J	0.86 J	NA	NA
1,2-Dichloroethane	ND (1)	ND (1)	ND (1)	14	ND (1)	ND (1)	NA	NA
1,2-Dichloropropane	ND (1)	ND (1)	ND (1)	0.77 J	ND (1)	ND (1)	NA	NA
1,4-Dioxane	NA	NA	0.99	18	NA	1.7	0.164 J	0.169 J
2-Butanone	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	NA	NA
2-Hexanone	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	NA	NA
4-Methyl-2-Pentanone	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	NA	NA
Acetone	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	NA	NA
Benzene	ND (1)	ND (1)	ND (1)	4.6	ND (1)	ND (1)	NA	NA
Bromochloromethane	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	NA	NA
Bromodichloromethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	NA	NA
Bromoform	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	NA	NA
Bromomethane	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	NA	NA
Carbon Disulfide	ND (10)	ND (10)	0.28 J	ND (10)	ND (10)	ND (10)	NA	NA
Carbon Tetrachloride	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	NA	NA
Chlorobenzene	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	NA	NA
Chloroethane	ND (2)	ND (2)	ND (2)	4.6	ND (2)	ND (2)	NA	NA
Chloroform	ND (1)	0.78 J	ND (1)	ND (1)	ND (1)	ND (1)	NA	NA
Chloromethane	ND (2)	ND (2)	ND (2)	0.58 J	ND (2)	ND (2)	NA	NA
cis-1,2-Dichloroethene	ND (1)	ND (1)	ND (1)	0.67 J	ND (1)	ND (1)	NA	NA
cis-1,3-Dichloropropene	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.4)	NA	NA
Dibromochloromethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	NA	NA
Ethylbenzene	ND (1)	ND (1)	ND (1)	0.2 J	ND (1)	ND (1)	NA	NA
m,p-Xylenes	ND (2)	ND (2)	ND (2)	0.52 J	ND (2)	ND (2)	NA	NA
Methyl tert butyl ether	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	NA	NA
Methylene Chloride	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	NA	NA
o-Xylene	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	NA	NA
Styrene	0.22 J	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	NA	NA
Tetrachloroethene	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	NA	NA
Toluene	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	NA	NA
trans-1,2-Dichloroethene	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	NA	NA
trans-1,3-Dichloropropene	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.4)	NA	NA
Trichloroethene	ND (1)	ND (1)	ND (1)	0.35 J	ND (1)	ND (1)	NA	NA
Trichlorofluoromethane	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	NA	NA
Vinyl Acetate	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	NA	NA
Vinyl Chloride	0.48 J	ND (0.5)	0.74	1.1	0.21 J	ND (0.5)	NA	NA

NOTES:
Concentrations in µg/L
Open Interval - elevation in feet NGVD, (BR) - Open Interval in bedrock
NA - Not Applicable
DUP - Duplicate Sample
ND (10) - Compound not detected at limit indicated in parentheses
DB - Diffusion Bag Interval L1=0-5 feet, L2=5-10 feet, L3= 10-15 feet from top of screen
J - Estimated Value
D - Diluted Value

Table A-1. VOC concentrations in groundwater.

LOCATION:	RISTOFFERSO	RISTOFFERSO	G-3A	G-3BR	LAWSBROOK	LAWSBROOK	LAWSBROOK	LF-02A
DATE SAMPLED:	7/31/12	8/14/12	8/10/12	8/10/12	4/20/12	7/31/12	8/14/12	8/13/12
OPEN INTERVAL:	86 to 96	86 to 96	43 to 53	10 to 20 (BR)	108 to 118	108 to 118	108 to 118	35 to 45 (BR)
QA TYPE (DB):			L2	L1				L1
VOCs								
1,1,1-Trichloroethane	ND (1)	ND ()	ND (1)	ND (1)	NA	ND (1)	ND ()	ND (10)
1,1,2,2-Tetrachloroethane	ND (0.5)	ND ()	ND (0.5)	ND (0.5)	NA	ND (0.5)	ND ()	ND (5)
1,1,2-Trichloroethane	ND (1)	ND ()	ND (1)	ND (1)	NA	ND (1)	ND ()	ND (10)
1,1-Dichloroethane	ND (1)	ND ()	ND (1)	ND (1)	NA	ND (1)	ND ()	ND (10)
1,1-Dichloroethene	ND (1)	ND ()	0.95 J	ND (1)	NA	2.6	2.2	440
1,2-Dichloroethane	ND (1)	ND ()	ND (1)	ND (1)	NA	ND (1)	ND ()	ND (10)
1,2-Dichloropropane	ND (1)	ND ()	ND (1)	ND (1)	NA	ND (1)	ND ()	ND (10)
1,4-Dioxane	0.15 J	0.155 J	NA	NA	0.199	0.2	0.207	NA
2-Butanone	ND (10)	NA	ND (10)	1.3 J	NA	ND (10)	NA	ND (100)
2-Hexanone	ND (10)	NA	ND (10)	ND (10)	NA	ND (10)	NA	ND (100)
4-Methyl-2-Pentanone	ND (10)	NA	ND (10)	ND (10)	NA	ND (10)	NA	ND (100)
Acetone	ND (50)	NA	ND (50)	ND (50)	NA	ND (50)	NA	ND (500)
Benzene	ND (1)	ND ()	0.47 J	5.4	NA	ND (1)	ND ()	25
Bromochloromethane	ND (1)	ND ()	ND (1)	ND (1)	NA	ND (1)	ND ()	ND (10)
Bromodichloromethane	ND (0.5)	ND ()	ND (0.5)	ND (0.5)	NA	ND (0.5)	ND ()	ND (5)
Bromoform	ND (1)	ND ()	ND (1)	ND (1)	NA	ND (1)	ND ()	ND (10)
Bromomethane	ND (2)	ND ()	ND (2)	ND (2)	NA	ND (2)	ND ()	ND (20)
Carbon Disulfide	ND (10)	NA	0.56 J	ND (10)	NA	ND (10)	NA	2.1 J
Carbon Tetrachloride	ND (1)	ND ()	ND (1)	ND (1)	NA	ND (1)	ND ()	ND (10)
Chlorobenzene	ND (1)	ND ()	ND (1)	ND (1)	NA	ND (1)	ND ()	ND (10)
Chloroethane	ND (2)	ND ()	ND (2)	ND (2)	NA	ND (2)	ND ()	ND (20)
Chloroform	ND (1)	ND ()	ND (1)	ND (1)	NA	ND (1)	ND ()	ND (10)
Chloromethane	ND (2)	ND ()	0.33 J	ND (2)	NA	ND (2)	ND ()	ND (20)
cis-1,2-Dichloroethene	ND (1)	ND ()	ND (1)	ND (1)	NA	ND (1)	ND ()	ND (10)
cis-1,3-Dichloropropene	ND (0.4)	NA	ND (0.4)	ND (0.4)	NA	ND (0.4)	NA	ND (4)
Dibromochloromethane	ND (0.5)	ND ()	ND (0.5)	ND (0.5)	NA	ND (0.5)	ND ()	ND (5)
Ethylbenzene	ND (1)	ND ()	0.63 J	1.1	NA	ND (1)	ND ()	ND (10)
m,p-Xylenes	ND (2)	NA	ND (2)	ND (2)	NA	ND (2)	NA	ND (20)
Methyl tert butyl ether	ND (1)	ND ()	ND (1)	ND (1)	NA	0.27 J	ND ()	ND (10)
Methylene Chloride	ND (2)	ND ()	ND (2)	ND (2)	NA	ND (2)	ND ()	ND (20)
o-Xylene	ND (1)	NA	0.4 J	0.64 J	NA	ND (1)	NA	2.8 J
Styrene	ND (1)	ND ()	ND (1)	ND (1)	NA	ND (1)	ND ()	ND (10)
Tetrachloroethene	ND (1)	ND ()	ND (1)	ND (1)	NA	ND (1)	ND ()	ND (10)
Toluene	ND (1)	ND ()	ND (1)	ND (1)	NA	ND (1)	ND ()	ND (10)
trans-1,2-Dichloroethene	ND (1)	ND ()	ND (1)	ND (1)	NA	ND (1)	ND ()	ND (10)
trans-1,3-Dichloropropene	ND (0.4)	NA	ND (0.4)	ND (0.4)	NA	ND (0.4)	NA	ND (4)
Trichloroethene	ND (1)	ND ()	ND (1)	ND (1)	NA	ND (1)	ND ()	ND (10)
Trichlorofluoromethane	ND (1)	ND ()	ND (1)	ND (1)	NA	ND (1)	ND ()	ND (10)
Vinyl Acetate	ND (10)	NA	ND (10)	ND (10)	NA	ND (10)	NA	ND (100)
Vinyl Chloride	ND (0.5)	ND ()	5.2	0.25 J	NA	ND (0.5)	ND ()	180

NOTES:
Concentrations in µg/L
Open Interval - elevation in feet NGVD; (BR) - Open Interval in bedrock
NA - Not Applicable

DUP - Duplicate Sample
ND (10) - Compound not detected at limit indicated in parentheses
DB - Diffusion Bag Interval: L1=0-5 feet, L2=5-10 feet, L3= 10-15 feet from top of screen

J - Estimated Value
D - Diluted Value

Table A-1. VOC concentrations in groundwater.

LOCATION:	LF-05E	LF-06	LF-06C	LF-06N	LF-10	LF-11AR	LF-12	LF-13A
DATE SAMPLED:	8/13/12	8/13/12	8/8/12	8/13/12	8/10/12	8/13/12	8/3/12	8/13/12
OPEN INTERVAL:	96 to 106	26 to 36 (BR)	105 to 115	85 to 90 (BR)	35 to 45	40 to 50	88 to 98	90 to 100
QA TYPE (DB):	L2	L2		L1	L2	L2		L1
VOCs								
1,1,1-Trichloroethane	ND (1)	ND (1)	ND (10)	ND (1)	ND (10)	ND (1)	ND (1)	ND (1)
1,1,2,2-Tetrachloroethane	ND (0.5)	ND (0.5)	ND (5)	ND (0.5)	ND (5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1,2-Trichloroethane	ND (1)	ND (1)	ND (10)	ND (1)	ND (10)	ND (1)	ND (1)	ND (1)
1,1-Dichloroethane	0.61 J	ND (1)	2.6 J	0.5 J	ND (10)	0.42 J	0.44 J	ND (1)
1,1-Dichloroethene	46 J	ND (1)	ND (10)	2.2 J	230	0.78 J	2.8	14
1,2-Dichloroethane	ND (1)	0.51 J	20	1.6 J	ND (10)	ND (1)	ND (1)	ND (1)
1,2-Dichloropropane	ND (1)	ND (1)	ND (10)	ND (1)	ND (10)	ND (1)	3	ND (1)
1,4-Dioxane	NA	NA	12	NA	NA	NA	NA	NA
2-Butanone	ND (10)	1.4 J	ND (100)	1.6 J	ND (100)	1.6 J	ND (10)	1.4 J
2-Hexanone	ND (10)	ND (10)	ND (100)	ND (10)	ND (100)	ND (10)	ND (10)	ND (10)
4-Methyl-2-Pentanone	ND (10)	ND (10)	ND (100)	ND (10)	ND (100)	ND (10)	ND (10)	ND (10)
Acetone	ND (50)	ND (50)	ND (500)	30 J	ND (500)	ND (50)	ND (50)	37 J
Benzene	3.1 J	3.5	220	15 J	14	0.39 J	33	1.1
Bromochloromethane	ND (1)	ND (1)	ND (10)	ND (1)	ND (10)	ND (1)	ND (1)	ND (1)
Bromodichloromethane	ND (0.5)	ND (0.5)	ND (5)	ND (0.5)	ND (5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromoform	ND (1)	ND (1)	ND (10)	ND (1)	ND (10)	ND (1)	ND (1)	ND (1)
Bromomethane	ND (2)	ND (2)	ND (20)	ND (2)	ND (20)	ND (2)	ND (2)	ND (2)
Carbon Disulfide	ND (10)	ND (10)	ND (100)	0.21 J	ND (100)	ND (10)	ND (10)	ND (10)
Carbon Tetrachloride	ND (1)	ND (1)	ND (10)	ND (1)	ND (10)	ND (1)	ND (1)	ND (1)
Chlorobenzene	ND (1)	ND (1)	ND (10)	ND (1)	ND (10)	ND (1)	ND (1)	ND (1)
Chloroethane	0.67 J	ND (2)	9.7 J	0.52 J	ND (20)	ND (2)	ND (2)	ND (2)
Chloroform	ND (1)	ND (1)	ND (10)	ND (1)	ND (10)	ND (1)	ND (1)	ND (1)
Chloromethane	ND (2)	ND (2)	ND (20)	ND (2)	ND (20)	ND (2)	ND (2)	ND (2)
cis-1,2-Dichloroethene	0.48 J	ND (1)	ND (10)	ND (1)	ND (10)	ND (1)	ND (1)	ND (1)
cis-1,3-Dichloropropene	ND (0.4)	ND (0.4)	ND (4)	ND (0.4)	ND (4)	ND (0.4)	ND (0.4)	ND (0.4)
Dibromochloromethane	ND (0.5)	ND (0.5)	ND (5)	ND (0.5)	ND (5)	ND (0.5)	ND (0.5)	ND (0.5)
Ethylbenzene	ND (1)	ND (1)	10	ND (1)	ND (10)	ND (1)	ND (1)	ND (1)
m,p-Xylenes	ND (2)	ND (2)	ND (20)	ND (2)	ND (20)	ND (2)	ND (2)	ND (2)
Methyl tert butyl ether	ND (1)	ND (1)	ND (10)	ND (1)	ND (10)	ND (1)	ND (1)	ND (1)
Methylene Chloride	ND (2)	ND (2)	14 J	ND (2)	ND (20)	ND (2)	ND (2)	ND (2)
o-Xylene	0.3 J	ND (1)	ND (10)	ND (1)	ND (10)	ND (1)	ND (1)	ND (1)
Styrene	ND (1)	ND (1)	2 J	ND (1)	2.2 J	ND (1)	ND (1)	ND (1)
Tetrachloroethene	ND (1)	ND (1)	ND (10)	ND (1)	ND (10)	ND (1)	ND (1)	ND (1)
Toluene	ND (1)	ND (1)	ND (10)	ND (1)	ND (10)	ND (1)	ND (1)	ND (1)
trans-1,2-Dichloroethene	2.1 J	ND (1)	ND (10)	ND (1)	ND (10)	ND (1)	ND (1)	ND (1)
trans-1,3-Dichloropropene	ND (0.4)	ND (0.4)	ND (4)	ND (0.4)	ND (4)	ND (0.4)	ND (0.4)	ND (0.4)
Trichloroethene	ND (1)	ND (1)	ND (10)	ND (1)	ND (10)	ND (1)	ND (1)	ND (1)
Trichlorofluoromethane	ND (1)	ND (1)	ND (10)	ND (1)	ND (10)	ND (1)	ND (1)	ND (1)
Vinyl Acetate	ND (10)	ND (10)	ND (100)	ND (10)	ND (100)	ND (10)	ND (10)	ND (10)
Vinyl Chloride	38 J	ND (0.5)	2.2 J	8.1 J	66	3.3	1.2	10

NOTES:
Concentrations in µg/L
Open Interval - elevation in feet NGVD; (BR) - Open Interval in bedrock
NA - Not Applicable
DUP - Duplicate Sample
ND (10) - Compound not detected at limit indicated in parentheses
DB - Diffusion Bag Interval: L1=0-5 feet, L2=5-10 feet, L3= 10-15 feet from top of screen
J - Estimated Value
D - Diluted Value

Table A-1. VOC concentrations in groundwater.

LOCATION:	LF-17D	LF-18D	LF-18D	LF-19D	LF-19MBR	LF-19MBR	LF-19SBR	LF-20D
DATE SAMPLED:	8/1/12	8/13/12	8/13/12	8/17/12	8/13/12	8/13/12	8/17/12	8/13/12
OPEN INTERVAL:	83 to 93	53 to 63	53 to 63	50 to 60	-23 to -8 (BR)	-23 to -8 (BR)	11 to 23 (BR)	34 to 44
QA TYPE (DB):		L2	L2 (DUP)		L2	L2 (DUP)		L1
VOCs								
1,1,1-Trichloroethane	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (10)	ND (1)
1,1,2,2-Tetrachloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (5)	ND (0.5)
1,1,2-Trichloroethane	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (10)	ND (1)
1,1-Dichloroethane	0.71 J	0.33 J	0.31 J	ND (1)	ND (1)	ND (1)	ND (10)	ND (1)
1,1-Dichloroethene	0.41 J	74	76	0.24 J	0.43 J	0.51 J	140	9
1,2-Dichloroethane	0.23 J	ND (1)	ND (1)	ND (1)	0.24 J	0.28 J	ND (10)	ND (1)
1,2-Dichloropropane	ND (1)	0.43 J	0.37 J	0.26 J	0.38 J	0.41 J	ND (10)	ND (1)
1,4-Dioxane	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (100)	ND (10)
2-Hexanone	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (100)	ND (10)
4-Methyl-2-Pentanone	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (100)	ND (10)
Acetone	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	ND (500)	ND (50)
Benzene	5.8	5.3	5.4	3	21	24 J	26	1.7
Bromochloromethane	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (10)	ND (1)
Bromodichloromethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (5)	ND (0.5)
Bromoform	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (10)	ND (1)
Bromomethane	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (20)	ND (2)
Carbon Disulfide	0.21 J	ND (10)	ND (10)	ND (10)	0.36 J	0.38 J	ND (100)	ND (10)
Carbon Tetrachloride	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (10)	ND (1)
Chlorobenzene	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (10)	ND (1)
Chloroethane	ND (2)	ND (2)	0.33 J	ND (2)	ND (2)	ND (2)	ND (20)	ND (2)
Chloroform	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (10)	ND (1)
Chloromethane	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (20)	ND (2)
cis-1,2-Dichloroethene	ND (1)	0.24 J	0.23 J	ND (1)	ND (1)	ND (1)	ND (10)	ND (1)
cis-1,3-Dichloropropene	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.4)	ND (4)	ND (0.4)
Dibromochloromethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (5)	ND (0.5)
Ethylbenzene	ND (1)	ND (1)	ND (1)	ND (1)	0.67 J	0.7 J	ND (10)	ND (1)
m,p-Xylenes	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (20)	ND (2)
Methyl tert butyl ether	ND (1)	ND (1)	ND (1)	0.59 J	ND (1)	ND (1)	ND (10)	ND (1)
Methylene Chloride	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (20)	ND (2)
o-Xylene	0.26 J	ND (1)	ND (1)	ND (1)	0.2 J	ND (1)	ND (10)	ND (1)
Styrene	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (10)	ND (1)
Tetrachloroethene	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (10)	ND (1)
Toluene	ND (1)	ND (1)	ND (1)	0.3 J	0.62 J	0.68 J	ND (10)	ND (1)
trans-1,2-Dichloroethene	0.49 J	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (10)	ND (1)
trans-1,3-Dichloropropene	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.4)	ND (4)	ND (0.4)
Trichloroethene	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (10)	ND (1)
Trichlorofluoromethane	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (10)	ND (1)
Vinyl Acetate	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (100)	ND (10)
Vinyl Chloride	100	33	33	19	23	27 J	120	4.9

NOTES:
Concentrations in µg/L
Open Interval - elevation in feet NGVD, (BR) - Open Interval in bedrock
NA - Not Applicable
DUP - Duplicate Sample
ND (10) - Compound not detected at limit indicated in parentheses
DB - Diffusion Bag Interval: L1=0-5 feet, L2=5-10 feet, L3= 10-15 feet from top of screen
J - Estimated Value
D - Diluted Value

Table A-1. VOC concentrations in groundwater.

LOCATION:	LF-22D	LF-22S	MLF	MLF	MLF	MW-04B	MW-06B	MW-07B
DATE SAMPLED:	8/10/12	8/10/12	3/1/12	7/26/12	10/11/12	8/14/12	8/14/12	8/14/12
OPEN INTERVAL:	80 to 90	100 to 110	83 to 123	83 to 123	83 to 123	36 to 41 (BR)	40 to 45 (BR)	50 to 60 (BR)
QA TYPE (DB):	L1	L2				L1	L1	L1
VOCs								
1,1,1-Trichloroethane	ND (1)	ND (5)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
1,1,2,2-Tetrachloroethane	ND (0.5)	ND (2.5)	ND (1)	ND (1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1,2-Trichloroethane	ND (1)	ND (5)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
1,1-Dichloroethane	2.9	14	0.48 J	0.4 J	0.46 J	ND (1)	ND (1)	ND (1)
1,1-Dichloroethene	6.8	20	3.4	3.7	2.8	20	25	16
1,2-Dichloroethane	7.3	38	0.8 J	0.65 J	0.76 J	ND (1)	ND (1)	ND (1)
1,2-Dichloropropane	6.9	96	0.64 J	0.65 J	0.72 J	ND (1)	ND (1)	ND (1)
1,4-Dioxane	NA	NA	1.37	1.23	1.3	NA	NA	NA
2-Butanone	ND (10)	ND (50)	ND (5)	ND (5)	ND (10)	1.5 J	ND (10)	ND (10)
2-Hexanone	ND (10)	ND (50)	ND (5)	ND (5)	ND (10)	ND (10)	ND (10)	ND (10)
4-Methyl-2-Pentanone	ND (10)	ND (50)	ND (5)	ND (5)	ND (10)	ND (10)	ND (10)	ND (10)
Acetone	ND (50)	ND (250)	ND (5)	ND (5)	ND (50)	ND (50)	ND (50)	ND (50)
Benzene	28	11	0.52 J	0.47 J	0.38 J	1.3	1.2	2.3
Bromochloromethane	ND (1)	ND (5)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
Bromodichloromethane	ND (0.5)	ND (2.5)	ND (1)	ND (1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromoform	ND (1)	ND (5)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
Bromomethane	ND (2)	ND (10)	ND (1)	ND (1)	ND (2)	ND (2)	ND (2)	ND (2)
Carbon Disulfide	ND (10)	ND (50)	0.23 J	ND (1)	ND (10)	ND (10)	ND (10)	ND (10)
Carbon Tetrachloride	ND (1)	ND (5)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
Chlorobenzene	ND (1)	ND (5)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
Chloroethane	0.98 J	18	ND (1)	ND (1)	ND (2)	ND (2)	0.43 J	ND (2)
Chloroform	ND (1)	ND (5)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
Chloromethane	ND (2)	ND (10)	ND (1)	ND (1)	ND (2)	0.79 J	ND (2)	ND (2)
cis-1,2-Dichloroethene	0.24 J	ND (5)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	0.22 J
cis-1,3-Dichloropropene	ND (0.4)	ND (2)	ND (1)	ND (1)	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.4)
Dibromochloromethane	ND (0.5)	ND (2.5)	ND (1)	ND (1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Ethylbenzene	ND (1)	ND (5)	ND (1)	ND (1)	0.24 J	ND (1)	ND (1)	ND (1)
m,p-Xylenes	ND (2)	ND (10)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)
Methyl tert butyl ether	ND (1)	ND (5)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
Methylene Chloride	ND (2)	6.3 J	ND (1)	ND (1)	ND (2)	ND (2)	ND (2)	ND (2)
o-Xylene	ND (1)	ND (5)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
Styrene	ND (1)	ND (5)	ND (1)	ND (1)	0.32 J	ND (1)	ND (1)	ND (1)
Tetrachloroethene	ND (1)	ND (5)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
Toluene	ND (1)	ND (5)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
trans-1,2-Dichloroethene	ND (1)	ND (5)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
trans-1,3-Dichloropropene	ND (0.4)	ND (2)	ND (1)	ND (1)	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.4)
Trichloroethene	ND (1)	49	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
Trichlorofluoromethane	ND (1)	ND (5)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
Vinyl Acetate	ND (10)	ND (50)	ND (2)	ND (2)	ND (10)	ND (10)	ND (10)	ND (10)
Vinyl Chloride	7.1	27	3.2	1.7	1.2	2.1	3	4.9

NOTES:

Concentrations in µg/L

Open Interval - elevation in feet NGVD. (BR) - Open Interval in bedrock

NA - Not Applicable

DUP - Duplicate Sample

ND (10) - Compound not detected at limit indicated in parentheses

DB - Diffusion Bag Interval: L1=0-5 feet, L2=5-10 feet, L3= 10-15 feet from top of screen

J - Estimated Value

D - Diluted Value

Table A-1. VOC concentrations in groundwater.

LOCATION:	MW-13B	NE-1	NE-1	NE-1	NE-1	NE-1	NE-1	NE-1
DATE SAMPLED:	8/14/12	1/4/12	2/8/12	2/8/12	2/8/12	3/1/12	3/1/12	4/11/12
OPEN INTERVAL:	46 to 56 (BR)	-66 to 45 (BR)	-66 to 45 (BR)	-66 to 45 (BR)	-66 to 45 (BR)	-66 to 45 (BR)	-66 to 45 (BR)	-66 to 45 (BR)
QA TYPE (DB):	L1							
VOCs								
1,1,1-Trichloroethane	ND (1)	NA	NA	NA	ND (1)	NA	ND (1)	NA
1,1,2,2-Tetrachloroethane	ND (0.5)	NA	NA	NA	ND (1)	NA	ND (1)	NA
1,1,2-Trichloroethane	ND (1)	NA	NA	NA	ND (1)	NA	ND (1)	NA
1,1-Dichloroethane	ND (1)	NA	NA	NA	ND (1)	NA	ND (1)	NA
1,1-Dichloroethene	15	NA	NA	NA	43	NA	44	NA
1,2-Dichloroethane	ND (1)	NA	NA	NA	ND (1)	NA	ND (1)	NA
1,2-Dichloropropane	ND (1)	NA	NA	NA	ND (1)	NA	ND (1)	NA
1,4-Dioxane	NA	NA	NA	1.98	NA	NA	NA	NA
2-Butanone	ND (10)	NA	NA	NA	ND (5)	NA	ND (5)	NA
2-Hexanone	ND (10)	NA	NA	NA	ND (5)	NA	ND (5)	NA
4-Methyl-2-Pentanone	ND (10)	NA	NA	NA	ND (5)	NA	ND (5)	NA
Acetone	ND (50)	NA	NA	NA	ND (5)	NA	ND (5)	NA
Benzene	0.68 J	ND (2)	ND (2)	NA	1.3	ND (2)	1.2	ND (2)
Bromochloromethane	ND (1)	NA	NA	NA	ND (1)	NA	ND (1)	NA
Bromodichloromethane	ND (0.5)	NA	NA	NA	ND (1)	NA	ND (1)	NA
Bromoform	ND (1)	NA	NA	NA	ND (1)	NA	ND (1)	NA
Bromomethane	ND (2)	NA	NA	NA	ND (1)	NA	ND (1)	NA
Carbon Disulfide	ND (10)	NA	NA	NA	ND (1)	NA	ND (1)	NA
Carbon Tetrachloride	ND (1)	NA	NA	NA	ND (1)	NA	ND (1)	NA
Chlorobenzene	ND (1)	NA	NA	NA	ND (1)	NA	ND (1)	NA
Chloroethane	ND (2)	NA	NA	NA	0.48 J	NA	0.66 J	NA
Chloroform	ND (1)	NA	NA	NA	ND (1)	NA	ND (1)	NA
Chloromethane	ND (2)	NA	NA	NA	ND (1)	NA	ND (1)	NA
cis-1,2-Dichloroethene	ND (1)	NA	NA	NA	ND (1)	NA	ND (1)	NA
cis-1,3-Dichloropropene	ND (0.4)	NA	NA	NA	ND (1)	NA	ND (1)	NA
Dibromochloromethane	ND (0.5)	NA	NA	NA	ND (1)	NA	ND (1)	NA
Ethylbenzene	ND (1)	ND (2)	ND (2)	NA	ND (1)	ND (2)	ND (1)	ND (2)
m,p-Xylenes	ND (2)	ND (2)	ND (2)	NA	ND (2)	ND (2)	ND (2)	ND (2)
Methyl tert butyl ether	ND (1)	ND (3)	ND (3)	NA	ND (1)	ND (3)	ND (1)	ND (3)
Methylene Chloride	ND (2)	NA	NA	NA	ND (1)	NA	ND (1)	NA
o-Xylene	ND (1)	ND (2)	ND (2)	NA	ND (1)	ND (2)	ND (1)	ND (2)
Styrene	ND (1)	NA	NA	NA	ND (1)	NA	ND (1)	NA
Tetrachloroethene	ND (1)	NA	NA	NA	ND (1)	NA	ND (1)	NA
Toluene	ND (1)	ND (2)	ND (2)	NA	ND (1)	ND (2)	ND (1)	ND (2)
trans-1,2-Dichloroethene	ND (1)	NA	NA	NA	ND (1)	NA	ND (1)	NA
trans-1,3-Dichloropropene	ND (0.4)	NA	NA	NA	ND (1)	NA	ND (1)	NA
Trichloroethene	ND (1)	NA	NA	NA	ND (1)	NA	ND (1)	NA
Trichlorofluoromethane	ND (1)	NA	NA	NA	ND (1)	NA	ND (1)	NA
Vinyl Acetate	ND (10)	NA	NA	NA	ND (2)	NA	ND (2)	NA
Vinyl Chloride	7	NA	NA	NA	1.6	NA	1.4	NA

NOTES:

Concentrations in µg/L
Open Interval - elevation in feet NGVD; (BR) - Open Interval in bedrock
NA - Not Applicable

DUP - Duplicate Sample
ND (10) - Compound not detected at limit indicated in parentheses
DB - Diffusion Bag Interval L1=0-5 feet, L2=5-10 feet, L3=10-15 feet from top of screen

J - Estimated Value
D - Diluted Value

Table A-1. VOC concentrations in groundwater.

LOCATION:	NE-1	NE-1	NE-1	NE-1	NE-1	NE-1	NE-1	NE-1
DATE SAMPLED:	4/11/12	5/4/12	5/4/12	6/5/12	6/5/12	7/10/12	7/10/12	8/16/12
OPEN INTERVAL:	-66 to 45 (BR)	-66 to 45 (BR)	-66 to 45 (BR)	-66 to 45 (BR)	-66 to 45 (BR)	-66 to 45 (BR)	-66 to 45 (BR)	-66 to 45 (BR)
QA TYPE (DB):								
VOCs								
1,1,1-Trichloroethane	ND (1)	NA	ND (1)	NA	ND (1)	NA	ND (1)	ND (1)
1,1,2,2-Tetrachloroethane	ND (1)	NA	ND (1)	NA	ND (1)	NA	ND (1)	ND (0.5)
1,1,2-Trichloroethane	ND (1)	NA	ND (1)	NA	ND (1)	NA	ND (1)	ND (1)
1,1-Dichloroethane	ND (1)	NA	ND (1)	NA	ND (1)	NA	ND (1)	NA
1,1-Dichloroethene	45	NA	43	NA	40	NA	52	40
1,2-Dichloroethane	ND (1)	NA	ND (1)	NA	ND (1)	NA	ND (1)	ND (1)
1,2-Dichloropropane	ND (1)	NA	ND (1)	NA	ND (1)	NA	ND (1)	0.21 J
1,4-Dioxane	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	ND (5)	NA	ND (5)	NA	ND (5)	NA	ND (5)	ND (10)
2-Hexanone	ND (5)	NA	ND (5)	NA	ND (5)	NA	ND (5)	ND (10)
4-Methyl-2-Pentanone	ND (5)	NA	ND (5)	NA	ND (5)	NA	ND (5)	ND (10)
Acetone	ND (5)	NA	ND (5)	NA	ND (5)	NA	ND (5)	ND (50)
Benzene	1.1	ND (2)	1.1	ND (2)	1.1	ND (2)	1	ND (1)
Bromochloromethane	ND (1)	NA	ND (1)	NA	ND (1)	NA	ND (1)	ND (1)
Bromodichloromethane	ND (1)	NA	ND (1)	NA	ND (1)	NA	ND (1)	ND (0.5)
Bromoform	ND (1)	NA	ND (1)	NA	ND (1)	NA	ND (1)	ND (1)
Bromomethane	ND (1)	NA	ND (1)	NA	ND (1)	NA	ND (1)	ND (2)
Carbon Disulfide	ND (1)	NA	ND (1)	NA	ND (1)	NA	ND (1)	ND (10)
Carbon Tetrachloride	ND (1)	NA	ND (1)	NA	ND (1)	NA	ND (1)	ND (1)
Chlorobenzene	ND (1)	NA	ND (1)	NA	ND (1)	NA	ND (1)	ND (1)
Chloroethane	0.74 J	NA	0.56 J	NA	0.68 J	NA	0.57 J	0.68 J
Chloroform	ND (1)	NA	ND (1)	NA	ND (1)	NA	ND (1)	ND (1)
Chloromethane	ND (1)	NA	ND (1)	NA	ND (1)	NA	ND (1)	ND (2)
cis-1,2-Dichloroethene	ND (1)	NA	ND (1)	NA	ND (1)	NA	ND (1)	ND (1)
cis-1,3-Dichloropropene	ND (1)	NA	ND (1)	NA	ND (1)	NA	ND (1)	ND (0.4)
Dibromochloromethane	ND (1)	NA	ND (1)	NA	ND (1)	NA	ND (1)	ND (0.5)
Ethylbenzene	ND (1)	ND (2)	ND (1)	ND (2)	ND (1)	ND (2)	ND (1)	ND (1)
m,p-Xylenes	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)
Methyl tert butyl ether	ND (1)	ND (3)	ND (1)	ND (3)	ND (1)	ND (3)	ND (1)	ND (1)
Methylene Chloride	ND (1)	NA	ND (1)	NA	ND (1)	NA	ND (1)	ND (2)
o-Xylene	ND (1)	ND (2)	ND (1)	ND (2)	ND (1)	ND (2)	ND (1)	ND (1)
Styrene	ND (1)	NA	ND (1)	NA	ND (1)	NA	ND (1)	ND (1)
Tetrachloroethene	ND (1)	NA	ND (1)	NA	ND (1)	NA	ND (1)	ND (1)
Toluene	ND (1)	ND (2)	ND (1)	ND (2)	ND (1)	ND (2)	ND (1)	ND (1)
trans-1,2-Dichloroethene	ND (1)	NA	ND (1)	NA	ND (1)	NA	ND (1)	ND (1)
trans-1,3-Dichloropropene	ND (1)	NA	ND (1)	NA	ND (1)	NA	ND (1)	ND (0.4)
Trichloroethene	ND (1)	NA	ND (1)	NA	ND (1)	NA	ND (1)	ND (1)
Trichlorofluoromethane	ND (1)	NA	ND (1)	NA	ND (1)	NA	ND (1)	ND (1)
Vinyl Acetate	ND (2)	NA	ND (2)	NA	ND (2)	NA	ND (2)	ND (10)
Vinyl Chloride	1.4	NA	1.4	NA	1.1	NA	1.6	1.8

NOTES:
Concentrations in µg/L
Open Interval - elevation in feet NGVD; (BR) - Open Interval in bedrock
NA - Not Applicable
DUP - Duplicate Sample
ND (10) - Compound not detected at limit indicated in parentheses
DB - Diffusion Bag Interval: L1=0-5 feet, L2=5-10 feet, L3= 10-15 feet from top of screen
J - Estimated Value
D - Diluted Value

Table A-1. VOC concentrations in groundwater.

LOCATION:	NE-1	NE-1	NLBR-R	NLBR-R	NLBR-R	NMGP	OSA-01A	OSA-01C
DATE SAMPLED:	9/13/12	10/10/12	8/13/12	8/13/12	8/13/12	8/13/12	8/10/12	8/13/12
OPEN INTERVAL:	-66 to 45 (BR)	-66 to 45 (BR)	75 to 89 (BR)	75 to 89 (BR)	75 to 89 (BR)	101 to 116	128 to 138	80 to 90
QA TYPE (DB):			L2	L3	L1	L3	L1	L2
VOCs								
1,1,1-Trichloroethane	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
1,1,2,2-Tetrachloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1,2-Trichloroethane	ND (1)	ND (1)	ND (1)	0.25 J	ND (1)	ND (1)	ND (1)	ND (1)
1,1-Dichloroethane	NA	NA	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
1,1-Dichloroethene	39	33	6.8	10	7	3	5	1.9
1,2-Dichloroethane	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
1,2-Dichloropropane	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
1,4-Dioxane	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	ND (10)	ND (10)	3.1 J	2.8 J	2.9 J	ND (10)	1.3 J	2.4 J
2-Hexanone	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
4-Methyl-2-Pentanone	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
Acetone	ND (50)	ND (50)	48 J	50	59	ND (50)	ND (50)	22 J
Benzene	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
Bromochloromethane	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
Bromodichloromethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromoform	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
Bromomethane	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)
Carbon Disulfide	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
Carbon Tetrachloride	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
Chlorobenzene	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
Chloroethane	0.66 J	0.59 J	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)
Chloroform	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
Chloromethane	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)
cis-1,2-Dichloroethene	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
cis-1,3-Dichloropropene	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.4)
Dibromochloromethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Ethylbenzene	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
m,p-Xylenes	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)
Methyl tert butyl ether	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
Methylene Chloride	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)
o-Xylene	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
Styrene	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
Tetrachloroethene	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
Toluene	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
trans-1,2-Dichloroethene	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
trans-1,3-Dichloropropene	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.4)
Trichloroethene	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
Trichlorofluoromethane	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
Vinyl Acetate	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
Vinyl Chloride	1.3	1.4	1.4	1.8	1.6	ND (0.5)	ND (0.5)	ND (0.5)

NOTES:
Concentrations in µg/L
Open Interval - elevation in feet NGVD, (BR) - Open Interval in bedrock
NA - Not Applicable
DUP - Duplicate Sample
ND (10) - Compound not detected at limit indicated in parentheses
DB - Diffusion Bag Interval: L1=0-5 feet, L2=5-10 feet, L3= 10-15 feet from top of screen
J - Estimated Value
D - Diluted Value

Table A-1. VOC concentrations in groundwater.

LOCATION:	OSA-02A	OSA-03BR	OSA-03BR	OSA-05B	OSA-06BR	OSA-11B	OSA-13A	OSA-13B
DATE SAMPLED:	8/13/12	8/3/12	8/3/12	8/13/12	8/7/12	8/6/12	10/1/12	8/13/12
OPEN INTERVAL:	130 to 140	55 to 65 (BR)	55 to 65 (BR)	100 to 110	51 to 61 (BR)	108 to 118	123 to 138	105 to 115
QA TYPE (DB):			DUP	L2			L2	L1
VOCs								
1,1,1-Trichloroethane	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
1,1,2,2-Tetrachloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1,2-Trichloroethane	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	0.99 J
1,1-Dichloroethane	ND (1)	0.27 J	0.28 J	ND (1)	ND (1)	ND (1)	ND (1)	4.5
1,1-Dichloroethene	14	31	30	7.5	1	5.9	0.39 J	770
1,2-Dichloroethane	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
1,2-Dichloropropane	ND (1)	0.34 J	0.29 J	ND (1)	ND (1)	ND (1)	ND (1)	0.37 J
1,4-Dioxane	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	2.9 J	ND (10)
2-Hexanone	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
4-Methyl-2-Pentanone	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
Acetone	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	24 J	20 J
Benzene	ND (1)	1.8	1.7	ND (1)	ND (1)	ND (1)	ND (1)	110
Bromochloromethane	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
Bromodichloromethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromoform	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
Bromomethane	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)
Carbon Disulfide	ND (10)	0.32 J	0.29 J	ND (10)	0.31 J	ND (10)	1.7 J	ND (10)
Carbon Tetrachloride	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
Chlorobenzene	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
Chloroethane	ND (2)	0.28 J	0.36 J	ND (2)	0.52 J	ND (2)	ND (2)	ND (2)
Chloroform	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	0.31 J
Chloromethane	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	23
cis-1,2-Dichloroethene	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	0.88 J
cis-1,3-Dichloropropene	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.4)
Dibromochloromethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Ethylbenzene	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	5.5	72
m,p-Xylenes	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	150
Methyl tert butyl ether	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
Methylene Chloride	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)
o-Xylene	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	13
Styrene	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	0.72 J	0.74 J
Tetrachloroethene	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
Toluene	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	3.8
trans-1,2-Dichloroethene	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	2.5
trans-1,3-Dichloropropene	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.4)
Trichloroethene	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
Trichlorofluoromethane	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
Vinyl Acetate	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
Vinyl Chloride	ND (0.5)	18	18	ND (0.5)	2.7	ND (0.5)	ND (0.5)	140

NOTES:
Concentrations in µg/L
Open Interval - elevation in feet NGVD, (BR) - Open Interval in bedrock
NA - Not Applicable
DUP - Duplicate Sample
ND (10) - Compound not detected at limit indicated in parentheses
DB - Diffusion Bag Interval: L1=0-5 feet, L2=5-10 feet, L3=10-15 feet from top of screen
J - Estimated Value
D - Diluted Value

Table A-1. VOC concentrations in groundwater.

LOCATION:	OSA-13B	OSA-13B	OSA-13C	OSA-13C	OSA-14B	OSA-15B	OSA-16B	PS-22A
DATE SAMPLED:	10/1/12	10/1/12	10/1/12	10/1/12	8/13/12	8/13/12	8/13/12	8/1/12
OPEN INTERVAL:	105 to 115	105 to 115	73 to 83	73 to 83	79 to 89	73 to 83	54 to 64	124 to 126
QA TYPE (DB):	L1	L1 (DUP)	L1	L2	L1	L1	L2	
VOCs								
1,1,1-Trichloroethane	ND (50)	ND (50)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	NA
1,1,2,2-Tetrachloroethane	ND (25)	ND (25)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	NA
1,1,2-Trichloroethane	ND (50)	ND (50)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	NA
1,1-Dichloroethane	ND (50)	ND (50)	ND (1)	ND (1)	ND (1)	ND (1)	0.31 J	NA
1,1-Dichloroethene	900	820	3.6	9.1	ND (1)	8.2	0.67 J	NA
1,2-Dichloroethane	ND (50)	ND (50)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	NA
1,2-Dichloropropane	ND (50)	ND (50)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	NA
1,4-Dioxane	NA	NA	NA	NA	NA	NA	NA	0.28
2-Butanone	ND (500)	ND (500)	2.6 J	2.4 J	ND (10)	ND (10)	ND (10)	NA
2-Hexanone	ND (500)	ND (500)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	NA
4-Methyl-2-Pentanone	ND (500)	ND (500)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	NA
Acetone	ND (2500)	ND (2500)	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	NA
Benzene	83	78	ND (1)	ND (1)	ND (1)	ND (1)	3.1	NA
Bromochloromethane	ND (50)	ND (50)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	NA
Bromodichloromethane	ND (25)	ND (25)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	NA
Bromoform	ND (50)	ND (50)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	NA
Bromomethane	ND (100)	ND (100)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	NA
Carbon Disulfide	ND (500)	ND (500)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	NA
Carbon Tetrachloride	ND (50)	ND (50)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	NA
Chlorobenzene	ND (50)	ND (50)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	NA
Chloroethane	ND (100)	ND (100)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	NA
Chloroform	ND (50)	ND (50)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	NA
Chloromethane	ND (100)	ND (100)	ND (2)	ND (2)	ND (2)	ND (2)	0.21 J	NA
cis-1,2-Dichloroethene	ND (50)	ND (50)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	NA
cis-1,3-Dichloropropene	ND (20)	ND (20)	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.4)	NA
Dibromochloromethane	ND (25)	ND (25)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	NA
Ethylbenzene	64	61	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	NA
m,p-Xylenes	110	100	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	NA
Methyl tert butyl ether	ND (50)	ND (50)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	NA
Methylene Chloride	ND (100)	ND (100)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	NA
o-Xylene	14 J	13 J	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	NA
Styrene	ND (50)	13 J	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	NA
Tetrachloroethene	ND (50)	ND (50)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	NA
Toluene	ND (50)	ND (50)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	NA
trans-1,2-Dichloroethene	ND (50)	ND (50)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	NA
trans-1,3-Dichloropropene	ND (20)	ND (20)	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.4)	NA
Trichloroethene	ND (50)	ND (50)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	NA
Trichlorofluoromethane	ND (50)	ND (50)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	NA
Vinyl Acetate	ND (500)	ND (500)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	NA
Vinyl Chloride	35	32	ND (0.5)	ND (0.5)	ND (0.5)	2.6	6.2	NA

NOTES:

Concentrations in µg/L
Open Interval - elevation in feet NGVD, (BR) - Open Interval in bedrock
NA - Not Applicable

DUP - Duplicate Sample
ND (10) - Compound not detected at limit indicated in parentheses
DB - Diffusion Bag Interval: L1=0-5 feet, L2=5-10 feet, L3=10-15 feet from top of screen

J - Estimated Value
D - Diluted Value

Table A-1. VOC concentrations in groundwater.

LOCATION:	PS-22B	PS-22B	PS-29A	PS-29B	PT-11B1	RE-2OBS	SCRIBNER	SCRIBNER
DATE SAMPLED:	8/7/12	8/7/12	8/7/12	8/7/12	8/8/12	8/9/12	4/20/12	7/30/12
OPEN INTERVAL:	96 to 98	96 to 98	117 to 119	86 to 91	43 to 44	120 to 140	to	to
QA TYPE (DB):		DUP						
VOCs								
1,1,1-Trichloroethane	ND (1)	ND (1)	NA	ND (1)	5.7	NA	NA	ND (1)
1,1,2,2-Tetrachloroethane	ND (0.5)	ND (0.5)	NA	ND (0.5)	ND (0.5)	NA	NA	ND (0.5)
1,1,2-Trichloroethane	ND (1)	ND (1)	NA	ND (1)	ND (1)	NA	NA	ND (1)
1,1-Dichloroethane	0.36 J	0.34 J	NA	0.29 J	1.5	NA	NA	ND (1)
1,1-Dichloroethene	28	27	NA	3.9	3.8	NA	NA	3.5
1,2-Dichloroethane	ND (1)	ND (1)	NA	ND (1)	ND (1)	NA	NA	ND (1)
1,2-Dichloropropane	ND (1)	ND (1)	NA	ND (1)	ND (1)	NA	NA	ND (1)
1,4-Dioxane	1.7	1.6	0.11 J	0.19 J	NA	2	0.3	0.34
2-Butanone	ND (10)	ND (10)	NA	ND (10)	ND (10)	NA	NA	ND (10)
2-Hexanone	ND (10)	ND (10)	NA	ND (10)	ND (10)	NA	NA	ND (10)
4-Methyl-2-Pentanone	ND (10)	ND (10)	NA	ND (10)	ND (10)	NA	NA	ND (10)
Acetone	ND (50)	ND (50)	NA	ND (50)	ND (50)	NA	NA	ND (50)
Benzene	0.45 J	0.47 J	NA	ND (1)	ND (1)	NA	NA	ND (1)
Bromochloromethane	ND (1)	ND (1)	NA	ND (1)	ND (1)	NA	NA	ND (1)
Bromodichloromethane	ND (0.5)	ND (0.5)	NA	ND (0.5)	ND (0.5)	NA	NA	ND (0.5)
Bromoform	ND (1)	ND (1)	NA	ND (1)	ND (1)	NA	NA	ND (1)
Bromomethane	ND (2)	ND (2)	NA	ND (2)	ND (2)	NA	NA	ND (2)
Carbon Disulfide	0.68 J	0.62 J	NA	0.82 J	ND (10)	NA	NA	ND (10)
Carbon Tetrachloride	ND (1)	ND (1)	NA	ND (1)	ND (1)	NA	NA	ND (1)
Chlorobenzene	ND (1)	ND (1)	NA	ND (1)	ND (1)	NA	NA	ND (1)
Chloroethane	ND (2)	ND (2)	NA	ND (2)	ND (2)	NA	NA	ND (2)
Chloroform	ND (1)	ND (1)	NA	ND (1)	ND (1)	NA	NA	ND (1)
Chloromethane	0.26 J	ND (2)	NA	0.22 J	ND (2)	NA	NA	ND (2)
cis-1,2-Dichloroethene	0.66 J	0.68 J	NA	0.34 J	0.76 J	NA	NA	ND (1)
cis-1,3-Dichloropropene	ND (0.4)	ND (0.4)	NA	ND (0.4)	ND (0.4)	NA	NA	ND (0.4)
Dibromochloromethane	ND (0.5)	ND (0.5)	NA	ND (0.5)	ND (0.5)	NA	NA	ND (0.5)
Ethylbenzene	ND (1)	ND (1)	NA	ND (1)	ND (1)	NA	NA	ND (1)
m,p-Xylenes	ND (2)	ND (2)	NA	ND (2)	ND (2)	NA	NA	ND (2)
Methyl tert butyl ether	1	0.98 J	NA	0.26 J	ND (1)	NA	NA	0.49 J
Methylene Chloride	ND (2)	ND (2)	NA	ND (2)	ND (2)	NA	NA	ND (2)
o-Xylene	ND (1)	ND (1)	NA	ND (1)	ND (1)	NA	NA	ND (1)
Styrene	ND (1)	ND (1)	NA	ND (1)	ND (1)	NA	NA	ND (1)
Tetrachloroethene	0.33 J	ND (1)	NA	0.61 J	2.1	NA	NA	ND (1)
Toluene	ND (1)	ND (1)	NA	ND (1)	ND (1)	NA	NA	ND (1)
trans-1,2-Dichloroethene	ND (1)	ND (1)	NA	ND (1)	ND (1)	NA	NA	ND (1)
trans-1,3-Dichloropropene	ND (0.4)	ND (0.4)	NA	ND (0.4)	ND (0.4)	NA	NA	ND (0.4)
Trichloroethene	2.3	2.2	NA	0.69 J	8.5	NA	NA	ND (1)
Trichlorofluoromethane	ND (1)	ND (1)	NA	ND (1)	ND (1)	NA	NA	ND (1)
Vinyl Acetate	ND (10)	ND (10)	NA	ND (10)	ND (10)	NA	NA	ND (10)
Vinyl Chloride	0.97	0.89	NA	ND (0.5)	ND (0.5)	NA	NA	ND (0.5)

NOTES:
Concentrations in µg/L
Open Interval - elevation in feet NGVD, (BR) - Open Interval in bedrock
NA - Not Applicable
DUP - Duplicate Sample
ND (10) - Compound not detected at limit indicated in parentheses
DB - Diffusion Bag Interval: L1=0-5 feet, L2=5-10 feet, L3= 10-15 feet from top of screen
J - Estimated Value
D - Diluted Value

Table A-1. VOC concentrations in groundwater.

LOCATION:	SCRIBNER	SCRIBNER	SELF-1	SELF-1	SELF-1	SELF-2	SELF-2	SELF-2
DATE SAMPLED:	7/30/12	8/14/12	3/1/12	7/26/12	10/11/12	3/1/12	7/26/12	10/11/12
OPEN INTERVAL:	to	to	95 to 113	95 to 113	95 to 113	85 to 113	85 to 113	85 to 113
QA TYPE (DB):	DUP							
VOCs								
1,1,1-Trichloroethane	ND (1)	ND ()	ND (2)	ND (1)	ND (4)	ND (2.5)	ND (2)	ND (4)
1,1,2,2-Tetrachloroethane	ND (0.5)	ND ()	ND (2)	ND (1)	ND (2)	ND (2.5)	ND (2)	ND (2)
1,1,2-Trichloroethane	ND (1)	ND ()	ND (2)	ND (1)	ND (4)	ND (2.5)	ND (2)	ND (4)
1,1-Dichloroethane	ND (1)	ND ()	5.1	4.5	4.2	5.3	5	4.3
1,1-Dichloroethene	3.5	3	4.2	3.5	3.3 J	12	11	8.9
1,2-Dichloroethane	ND (1)	ND ()	37	28	28	24	20	13
1,2-Dichloropropane	ND (1)	ND ()	6.3	5.9	6.3	20	18	17
1,4-Dioxane	0.3	0.329	25.3	22.1	24	25	24.5	24
2-Butanone	ND (10)	NA	ND (10)	0.84 J	ND (40)	ND (13)	ND (10)	ND (40)
2-Hexanone	ND (10)	NA	ND (10)	ND (5)	ND (40)	ND (13)	ND (10)	ND (40)
4-Methyl-2-Pentanone	ND (10)	NA	ND (10)	ND (5)	ND (40)	ND (13)	ND (10)	ND (40)
Acetone	ND (50)	NA	3.7 J	3.4 J	ND (200)	7.9 J	ND (10)	ND (200)
Benzene	ND (1)	ND ()	190	82	230	290	220	200
Bromochloromethane	ND (1)	ND ()	ND (2)	ND (1)	ND (4)	ND (2.5)	ND (2)	ND (4)
Bromodichloromethane	ND (0.5)	ND ()	ND (2)	ND (1)	ND (2)	ND (2.5)	ND (2)	ND (2)
Bromoform	ND (1)	ND ()	ND (2)	ND (1)	ND (4)	ND (2.5)	ND (2)	ND (4)
Bromomethane	ND (2)	ND ()	ND (2)	ND (1)	ND (8)	ND (2.5)	ND (2)	ND (8)
Carbon Disulfide	ND (10)	NA	ND (2)	ND (1)	ND (40)	ND (2.5)	ND (2)	ND (40)
Carbon Tetrachloride	ND (1)	ND ()	ND (2)	ND (1)	ND (4)	ND (2.5)	ND (2)	ND (4)
Chlorobenzene	ND (1)	ND ()	ND (2)	ND (1)	ND (4)	ND (2.5)	ND (2)	ND (4)
Chloroethane	ND (2)	ND ()	8.1	8	8.6	5.5	5.8	6.5 J
Chloroform	ND (1)	ND ()	ND (2)	ND (1)	0.89 J	ND (2.5)	ND (2)	ND (4)
Chloromethane	ND (2)	ND ()	ND (2)	ND (1)	ND (8)	ND (2.5)	ND (2)	1.1 J
cis-1,2-Dichloroethene	ND (1)	ND ()	ND (2)	0.31 J	ND (4)	ND (2.5)	ND (2)	ND (4)
cis-1,3-Dichloropropene	ND (0.4)	NA	ND (2)	ND (1)	ND (1.6)	ND (2.5)	ND (2)	ND (1.6)
Dibromochloromethane	ND (0.5)	ND ()	ND (2)	ND (1)	ND (2)	ND (2.5)	ND (2)	ND (2)
Ethylbenzene	ND (1)	ND ()	10	5	14	6.9	2.9	4.8
m,p-Xylenes	ND (2)	NA	1.4 J	0.79 J	ND (8)	0.58 J	0.58 J	ND (8)
Methyl tert butyl ether	0.5 J	ND ()	ND (2)	ND (1)	ND (4)	ND (2.5)	0.4 J	ND (4)
Methylene Chloride	ND (2)	ND ()	0.98 J	0.98 J	ND (8)	0.75 J	0.72 J	ND (8)
o-Xylene	ND (1)	NA	0.4 J	0.29 J	ND (4)	ND (2.5)	ND (2)	ND (4)
Styrene	ND (1)	ND ()	ND (2)	ND (1)	ND (4)	ND (2.5)	ND (2)	ND (4)
Tetrachloroethene	ND (1)	ND ()	ND (2)	ND (1)	ND (4)	ND (2.5)	ND (2)	ND (4)
Toluene	ND (1)	ND ()	0.9 J	0.45 J	2.3 J	0.95 J	0.68 J	2.6 J
trans-1,2-Dichloroethene	ND (1)	ND ()	ND (2)	0.29 J	ND (4)	ND (2.5)	ND (2)	ND (4)
trans-1,3-Dichloropropene	ND (0.4)	NA	ND (2)	ND (1)	ND (1.6)	ND (2.5)	ND (2)	ND (1.6)
Trichloroethene	0.2 J	ND ()	ND (2)	ND (1)	1.1 J	ND (2.5)	ND (2)	ND (4)
Trichlorofluoromethane	ND (1)	ND ()	ND (2)	ND (1)	ND (4)	ND (2.5)	ND (2)	ND (4)
Vinyl Acetate	ND (10)	NA	ND (4)	ND (2)	ND (40)	ND (5)	ND (4)	ND (40)
Vinyl Chloride	ND (0.5)	ND ()	5.9	5.8	5.5	8.9	8.7	8.3

NOTES:
Concentrations in µg/L
Open Interval - elevation in feet NGVD, (BR) - Open Interval in bedrock
NA - Not Applicable
DUP - Duplicate Sample
ND (10) - Compound not detected at limit indicated in parentheses
DB - Diffusion Bag Interval: L1=0-5 feet, L2=5-10 feet, L3= 10-15 feet from top of screen
J - Estimated Value
D - Diluted Value

Table A-1. VOC concentrations in groundwater.

LOCATION:	SLGP-R	SWLF-2	SWLF-2	SWLF-2	WLF	WLF	WLF
DATE SAMPLED:	8/13/12	3/1/12	7/26/12	10/11/12	3/1/12	7/26/12	10/11/12
OPEN INTERVAL:	66 to 83	-25 to 30 (BR)	-25 to 30 (BR)	-25 to 30 (BR)	86 to 104	86 to 104	86 to 104
QA TYPE (DB):	L2						
VOCs							
1,1,1-Trichloroethane	ND (1)	ND (1)	ND (1)	ND (4)	ND (1)	ND (1)	ND (1)
1,1,2,2-Tetrachloroethane	ND (0.5)	ND (1)	ND (1)	ND (2)	ND (1)	ND (1)	ND (0.5)
1,1,2-Trichloroethane	ND (1)	ND (1)	ND (1)	ND (4)	ND (1)	ND (1)	ND (1)
1,1-Dichloroethane	ND (1)	0.24 J	ND (1)	ND (4)	ND (1)	ND (1)	ND (1)
1,1-Dichloroethene	1.4	35	42	24	31	32	28
1,2-Dichloroethane	ND (1)	ND (1)	0.78 J	ND (4)	ND (1)	ND (1)	ND (1)
1,2-Dichloropropane	ND (1)	ND (1)	ND (1)	ND (4)	ND (1)	ND (1)	ND (1)
1,4-Dioxane	NA	4.83	4.76	4.7	3.01	3.21	3
2-Butanone	ND (10)	1.6 J	ND (5)	ND (40)	ND (5)	ND (5)	ND (10)
2-Hexanone	ND (10)	ND (5)	ND (5)	ND (40)	ND (5)	ND (5)	ND (10)
4-Methyl-2-Pentanone	ND (10)	ND (5)	ND (5)	ND (40)	ND (5)	ND (5)	ND (10)
Acetone	ND (50)	ND (5)	ND (5)	ND (200)	ND (5)	ND (5)	ND (50)
Benzene	ND (1)	17	16	15	1.7	1.8	1.8
Bromochloromethane	ND (1)	ND (1)	ND (1)	ND (4)	ND (1)	ND (1)	ND (1)
Bromodichloromethane	ND (0.5)	ND (1)	ND (1)	ND (2)	ND (1)	ND (1)	ND (0.5)
Bromoform	ND (1)	ND (1)	ND (1)	ND (4)	ND (1)	ND (1)	ND (1)
Bromomethane	ND (2)	ND (1)	ND (1)	ND (8)	ND (1)	ND (1)	ND (2)
Carbon Disulfide	ND (10)	ND (1)	ND (1)	ND (40)	ND (1)	ND (1)	ND (10)
Carbon Tetrachloride	ND (1)	ND (1)	ND (1)	ND (4)	ND (1)	ND (1)	ND (1)
Chlorobenzene	ND (1)	ND (1)	ND (1)	ND (4)	ND (1)	ND (1)	ND (1)
Chloroethane	ND (2)	ND (1)	0.47 J	ND (8)	ND (1)	ND (1)	ND (2)
Chloroform	ND (1)	ND (1)	ND (1)	ND (4)	ND (1)	ND (1)	ND (1)
Chloromethane	ND (2)	ND (1)	ND (1)	ND (8)	ND (1)	ND (1)	ND (2)
cis-1,2-Dichloroethene	ND (1)	0.28 J	0.22 J	ND (4)	0.22 J	ND (1)	ND (1)
cis-1,3-Dichloropropene	ND (0.4)	ND (1)	ND (1)	ND (1.6)	ND (1)	ND (1)	ND (0.4)
Dibromochloromethane	ND (0.5)	ND (1)	ND (1)	ND (2)	ND (1)	ND (1)	ND (0.5)
Ethylbenzene	ND (1)	0.7 J	0.72 J	1.3 J	ND (1)	ND (1)	ND (1)
m,p-Xylenes	ND (2)	ND (2)	0.21 J	ND (8)	ND (2)	ND (2)	ND (2)
Methyl tert butyl ether	ND (1)	ND (1)	ND (1)	ND (4)	0.59 J	0.52 J	0.71 J
Methylene Chloride	ND (2)	ND (1)	ND (1)	ND (8)	ND (1)	ND (1)	ND (2)
o-Xylene	ND (1)	ND (1)	ND (1)	ND (4)	ND (1)	ND (1)	ND (1)
Styrene	ND (1)	ND (1)	ND (1)	1.1 J	ND (1)	ND (1)	ND (1)
Tetrachloroethene	ND (1)	ND (1)	ND (1)	ND (4)	ND (1)	ND (1)	ND (1)
Toluene	ND (1)	ND (1)	ND (1)	ND (4)	ND (1)	ND (1)	ND (1)
trans-1,2-Dichloroethene	ND (1)	ND (1)	ND (1)	ND (4)	0.28 J	ND (1)	ND (1)
trans-1,3-Dichloropropene	ND (0.4)	ND (1)	ND (1)	ND (1.6)	ND (1)	ND (1)	ND (0.4)
Trichloroethene	ND (1)	ND (1)	ND (1)	ND (4)	ND (1)	ND (1)	ND (1)
Trichlorofluoromethane	ND (1)	ND (1)	ND (1)	ND (4)	ND (1)	ND (1)	ND (1)
Vinyl Acetate	ND (10)	ND (2)	ND (2)	ND (40)	ND (2)	ND (2)	ND (10)
Vinyl Chloride	0.65	14	14	11	6.6	6.4	6.2

NOTES:
Concentrations in µg/L
Open Interval - elevation in feet NGVD; (BR) - Open Interval in bedrock
NA - Not Applicable
DUP - Duplicate Sample
ND (10) - Compound not detected at limit indicated in parentheses
DB - Diffusion Bag Interval: L1=0-5 feet, L2=5-10 feet, L3= 10-15 feet from top of screen
J - Estimated Value
D - Diluted Value

Table A-2. Inorganic compound concentrations in groundwater

LOCATION:	AR-21	AR-30D	AR-31D	B-05B3	B-08C	B-08D	B-09B4	LF-06C
DATE SAMPLED:	8/7/12	8/10/12	8/8/12	8/8/12	8/2/12	8/3/12	8/10/12	8/8/12
OPEN INTERVAL:	78 to 83 (BR)	75 to 85	82 to 92	36 to 37	108 to 118	125 to 140	13 to 14 (BR)	105 to 115
QA TYPE (Analysis):	(Diss.)				(Diss.)	(Diss.)		(Diss.)
Metals								
Antimony	NA	ND (6)	ND (6)	ND (6)	NA	NA	ND (6)	NA
Arsenic	0.7 J	1.1	4	ND (1)	29	ND (1)	1.9	360
Beryllium	NA	ND (1)	ND (1)	ND (1)	NA	NA	ND (1)	NA
Chromium	NA	ND (5)	2.1 J	ND (5)	NA	NA	ND (5)	NA
Iron	ND (100)	12 J	8300	35 J	33000	55 J	5800	15000
Lead	NA	ND (1)	ND (1)	ND (1)	NA	NA	0.3 J	NA
Manganese	1.5 J	83	230	2500	5000	3600	550	2500 B
Nickel	NA	ND (10)	ND (10)	3.9 J	NA	NA	1.8 J	NA

NOTES:

Concentrations in µg/L.
Open Interval - elevation in feet NGVD; (BR) - Open Interval in bedrock
DUP - Duplicate Sample.
ND (10) - Compound not detected at limit indicated in parentheses.
J - Estimated Value.
(Diss.) - Sample filtered and analyzed for dissolved metals
N - MS recovery outside lab limits
NA - Not Applicable

Table A-2. Inorganic compound concentrations in groundwater

LOCATION:	LF-12	LF-15	MLF	MLF	MLF	NE-1	NE-1	NE-1
DATE SAMPLED:	8/3/12	8/3/12	3/1/12	7/26/12	10/11/12	2/8/12	3/1/12	4/11/12
OPEN INTERVAL:	88 to 98	120 to 130	83 to 123	83 to 123	83 to 123	-66 to 45 (BR)	-66 to 45 (BR)	-66 to 45 (BR)
QA TYPE (Analysis):	(Diss.)	(Diss.)						
Metals								
Antimony	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	18	63	59.2	51.6	51	4.5	3.7	3.4
Beryllium	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	NA	NA	NA	NA	NA	NA	NA	NA
Iron	30 J	14000	16700	17000	15000	286	ND (100)	ND (100)
Lead	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	140	2200	4370	4040	3400	61.3	68.6	63.8
Nickel	NA	NA	NA	NA	NA	NA	NA	NA

NOTES:

Concentrations in µg/L.
Open Interval - elevation in feet NGVD; (BR) - Open Interval in bedrock
DUP - Duplicate Sample.
ND (10) - Compound not detected at limit indicated in parentheses.
J - Estimated Value.
(Diss.) - Sample filtered and analyzed for dissolved metals
N - MS recovery outside lab limits
NA - Not Applicable

Table A-2. Inorganic compound concentrations in groundwater

LOCATION:	NE-1	NE-1	NE-1	NE-1	NE-1	NE-1	OSA-01B	OSA-05A
DATE SAMPLED:	5/4/12	6/5/12	7/10/12	8/16/12	9/13/12	10/10/12	8/2/12	8/6/12
OPEN INTERVAL:	-66 to 45 (BR)	-66 to 45 (BR)	-66 to 45 (BR)	-66 to 45 (BR)	-66 to 45 (BR)	-66 to 45 (BR)	98 to 108	128 to 138
QA TYPE (Analysis):							(Diss.)	(Diss.)
Metals								
Antimony	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	3.7	3.5	3.6	4	4	4.4	120	2.3
Beryllium	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	NA	NA	NA	NA	NA	NA	NA	NA
Iron	ND (100)	ND (100)	ND (100)	18 J B	47 J B	20 J	450	760
Lead	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	65.6	64.8	64.4	60	58 B	59	1200	430
Nickel	NA	NA	NA	NA	NA	NA	NA	NA

NOTES:

Concentrations in µg/L.
Open Interval - elevation in feet NGVD; (BR) - Open Interval in bedrock
DUP - Duplicate Sample.
ND (10) - Compound not detected at limit indicated in parentheses.
J - Estimated Value.
(Diss.) - Sample filtered and analyzed for dissolved metals
N - MS recovery outside lab limits
NA - Not Applicable

Table A-2. Inorganic compound concentrations in groundwater

LOCATION:	OSA-06BR	OSA-07A	OSA-09B	OSA-11B	PS-22B	PS-22B	PS-29B	RE-1OBS
DATE SAMPLED:	8/7/12	8/7/12	8/2/12	8/6/12	8/7/12	8/7/12	8/7/12	8/9/12
OPEN INTERVAL:	51 to 61 (BR)	127 to 137	86 to 96	108 to 118	96 to 98	96 to 98	86 to 91	120 to 140
QA TYPE (Analysis):	(Diss.)	(Diss.)	(Diss.)	(Diss.)		DUP		
Metals								
Antimony	NA	NA	NA	NA	ND (6)	ND (6)	ND (6)	ND (6)
Arsenic	50	ND (2)	85	1.6	ND (1)	0.59 J	4.8 J	1.6
Beryllium	NA	NA	NA	NA	ND (1)	ND (1)	0.29 J	ND (1)
Chromium	NA	NA	NA	NA	ND (5)	ND (5)	28	3.4 J
Iron	4500	5300	200	19 J	72 J B	55 J	19000 B	140
Lead	NA	NA	NA	NA	ND (1)	ND (1)	5.4	0.6 J
Manganese	710	930	12	120	230 B	240	370 B	4.6 J
Nickel	NA	NA	NA	NA	2.9 J	2.9 J	25	1.7 J

NOTES:

Concentrations in µg/L.
Open Interval - elevation in feet NGVD; (BR) - Open Interval in bedrock
DUP - Duplicate Sample.
ND (10) - Compound not detected at limit indicated in parentheses.
J - Estimated Value.
(Diss.) - Sample filtered and analyzed for dissolved metals
N - MS recovery outside lab limits
NA - Not Applicable

Table A-2. Inorganic compound concentrations in groundwater

LOCATION:	RE-2OBS	SELF-1	SELF-1	SELF-1	SELF-2	SELF-2	SELF-2	SWLF-2
DATE SAMPLED:	8/9/12	3/1/12	7/26/12	10/11/12	3/1/12	7/26/12	10/11/12	3/1/12
OPEN INTERVAL:	120 to 140	95 to 113	95 to 113	95 to 113	85 to 113	85 to 113	85 to 113	-25 to 30 (BR)
QA TYPE (Analysis):								
Metals								
Antimony	ND (6)	NA	NA	NA	NA	NA	NA	NA
Arsenic	2.8	44.1	80.8	210	135	125	410	2
Beryllium	ND (1)	NA	NA	NA	NA	NA	NA	NA
Chromium	19	NA	NA	NA	NA	NA	NA	NA
Iron	500	1920	7580	20000	18100	14000	29000	3940
Lead	1	NA	NA	NA	NA	NA	NA	NA
Manganese	96	1870	1750	1600	1960	1870	1600	270
Nickel	12	NA	NA	NA	NA	NA	NA	NA

NOTES:

Concentrations in µg/L.
Open Interval - elevation in feet NGVD; (BR) - Open Interval in bedrock
DUP - Duplicate Sample.
ND (10) - Compound not detected at limit indicated in parentheses.
J - Estimated Value.
(Diss.) - Sample filtered and analyzed for dissolved metals
N - MS recovery outside lab limits
NA - Not Applicable

Table A-2. Inorganic compound concentrations in groundwater

LOCATION:	SWLF-2	SWLF-2	WLF	WLF	WLF	
DATE SAMPLED:	7/26/12	10/11/12	3/1/12	7/26/12	10/11/12	
OPEN INTERVAL:	-25 to 30 (BR)	-25 to 30 (BR)	86 to 104	86 to 104	86 to 104	
QA TYPE (Analysis):						
Metals						
Arsenic	1.7	1.7	26.9	27	26	
Iron	3730	3400	2360	2650	2000	
Manganese	268	220	1650	1580	1400	

NOTES:

Concentrations in µg/L.
Open Interval - elevation in feet NGVD; (BR) - Open Interval in bedrock
DUP - Duplicate Sample.
ND (10) - Compound not detected at limit indicated in parentheses.
J - Estimated Value.
(Diss.) - Sample filtered and analyzed for dissolved metals
N - MS recovery outside lab limits
NA - Not Applicable

Table A-3. EPH and VPH concentrations in groundwater.

LOCATION:	MW-06D1	MW-06D2	MW-49	MW-49	NE-1	NE-1
DATE SAMPLED:	8/2/12	8/2/12	8/2/12	8/2/12	1/4/12	2/8/12
OPEN INTERVAL:	85 to 95	59 to 69	128 to 138	128 to 138	-66 to 45 (BR)	-66 to 45 (BR)
QA TYPE:				DUP		
EPH						
2-Methylnaphthalene	ND (0.97)	ND (0.96)	3	ND (0.96)	ND (0.4)	ND (0.41)
Acenaphthene	ND (0.97)	ND (0.96)	ND (0.96)	ND (0.96)	ND (0.4)	ND (0.41)
Acenaphthylene	ND (0.29)	ND (0.29)	ND (0.29)	ND (0.29)	ND (0.4)	ND (0.41)
Aliphatics, C19-C36	ND (97)	ND (96)	ND (96)	ND (96)	ND (100)	ND (100)
Aliphatics, C9-C18	ND (97)	ND (96)	ND (96)	ND (96)	ND (100)	ND (100)
Anthracene	ND (0.97)	ND (0.96)	ND (0.96)	ND (0.96)	ND (0.4)	ND (0.41)
Aromatics, C11-C22, adjusted	ND (97)	ND (96)	ND (96)	ND (96)	ND (100)	ND (100)
Aromatics, C11-C22, unadjusted	ND (97)	ND (96)	ND (96)	ND (96)	ND (100)	ND (100)
Benzo(a)anthracene	ND (0.29)	ND (0.29)	ND (0.29)	ND (0.29)	ND (0.4)	ND (0.41)
Benzo(a)pyrene	ND (0.19)	ND (0.19)	ND (0.19)	ND (0.19)	ND (0.2)	ND (0.2)
Benzo(b)fluoranthene	ND (0.29)	ND (0.29)	ND (0.29)	ND (0.29)	ND (0.4)	ND (0.41)
Benzo(g,h,i)Perylene	ND (0.49)	ND (0.48)	ND (0.48)	ND (0.48)	ND (0.4)	ND (0.41)
Benzo(k)fluoranthene	ND (0.29)	ND (0.29)	ND (0.29)	ND (0.29)	ND (0.4)	ND (0.41)
Chrysene	ND (0.97)	ND (0.96)	ND (0.96)	ND (0.96)	ND (0.4)	ND (0.41)
Dibenzo(a,h)anthracene	ND (0.44)	ND (0.43)	ND (0.43)	ND (0.43)	ND (0.4)	ND (0.41)
Fluoranthene	ND (0.97)	ND (0.96)	ND (0.96)	ND (0.96)	ND (0.4)	ND (0.41)
Fluorene	ND (0.97)	ND (0.96)	ND (0.96)	ND (0.96)	ND (0.4)	ND (0.41)
Indeno(1,2,3-cd)Pyrene	ND (0.44)	ND (0.43)	ND (0.43)	ND (0.43)	ND (0.4)	ND (0.41)
Naphthalene	ND (0.97)	ND (0.96)	17	ND (0.96)	ND (0.4)	ND (0.41)
Phenanthrene	ND (0.19)	ND (0.19)	ND (0.19)	ND (0.19)	ND (0.4)	ND (0.41)
Pyrene	ND (0.97)	ND (0.96)	ND (0.96)	ND (0.96)	ND (0.4)	ND (0.41)
VPH						
Aliphatics, C5-C8, adjusted	ND (200)	ND (200)	ND (50)	ND (50)	ND (50)	ND (50)
Aliphatics, C5-C8, unadjusted	ND (200)	ND (200)	ND (50)	ND (50)	ND (50)	ND (50)
Aliphatics, C9-C12, adjusted	ND (200)	ND (200)	ND (50)	ND (50)	ND (50)	ND (50)
Aliphatics, C9-C12, unadjusted	ND (200)	ND (200)	ND (50)	ND (50)	ND (50)	ND (50)
Aromatics, C9-C10	ND (200)	ND (200)	ND (50)	ND (50)	ND (50)	ND (50)
Benzene	ND (4)	ND (4)	ND (1)	ND (1)	ND (2)	ND (2)
Ethylbenzene	ND (4)	ND (4)	ND (1)	ND (1)	ND (2)	ND (2)
m,p-Xylenes	ND (8)	ND (8)	ND (2)	ND (2)	ND (2)	ND (2)
Methyl tert butyl ether	ND (4)	ND (4)	ND (1)	ND (1)	ND (3)	ND (3)
Naphthalene	ND (20)	ND (20)	ND (5)	ND (5)	ND (4)	ND (4)
o-Xylene	ND (4)	ND (4)	ND (1)	ND (1)	ND (2)	ND (2)
Toluene	ND (4)	ND (4)	ND (1)	ND (1)	ND (2)	ND (2)

Notes:

Concentrations in µg/L.

Open Interval - elevation in feet NGVD; (BR) - Open Interval in bedrock

NA - Not Applicable

DUP - Duplicate Sample

ND (10) - Compound not detected at limit indicated in parentheses.

J - Estimated Value

Table A-3. EPH and VPH concentrations in groundwater.

LOCATION:	NE-1	NE-1	NE-1	NE-1	NE-1	NE-1
DATE SAMPLED:	3/1/12	4/11/12	5/4/12	6/5/12	7/10/12	8/16/12
OPEN INTERVAL:	-66 to 45 (BR)	-66 to 45 (BR)	-66 to 45 (BR)	-66 to 45 (BR)	-66 to 45 (BR)	-66 to 45 (BR)
QA TYPE:						
EPH						
2-Methylnaphthalene	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.408)	ND (0.4)	ND (0.93)
Acenaphthene	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.408)	ND (0.4)	ND (0.93)
Acenaphthylene	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.408)	ND (0.4)	ND (0.28)
Aliphatics, C19-C36	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (93)
Aliphatics, C9-C18	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (93)
Anthracene	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.408)	ND (0.4)	ND (0.93)
Aromatics, C11-C22, adjusted	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (93)
Aromatics, C11-C22, unadjusted	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (93)
Benzo(a)anthracene	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.408)	ND (0.4)	ND (0.28)
Benzo(a)pyrene	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.19)
Benzo(b)fluoranthene	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.408)	ND (0.4)	ND (0.28)
Benzo(g,h,i)Perylene	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.408)	ND (0.4)	ND (0.46)
Benzo(k)fluoranthene	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.408)	ND (0.4)	ND (0.28)
Chrysene	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.408)	ND (0.4)	ND (0.93)
Dibenzo(a,h)anthracene	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.408)	ND (0.4)	ND (0.42)
Fluoranthene	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.408)	ND (0.4)	ND (0.93)
Fluorene	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.408)	ND (0.4)	ND (0.93)
Indeno(1,2,3-cd)Pyrene	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.408)	ND (0.4)	ND (0.42)
Naphthalene	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.408)	ND (0.4)	ND (0.93)
Phenanthrene	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.408)	ND (0.4)	ND (0.19)
Pyrene	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.408)	ND (0.4)	ND (0.93)
VPH						
Aliphatics, C5-C8, adjusted	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)
Aliphatics, C5-C8, unadjusted	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)
Aliphatics, C9-C12, adjusted	ND (50)	ND (50)	ND (50)	56.5	ND (50)	ND (50)
Aliphatics, C9-C12, unadjusted	ND (50)	ND (50)	ND (50)	56.5	91.3	ND (50)
Aromatics, C9-C10	ND (50)	ND (50)	ND (50)	ND (50)	50.3	ND (50)
Benzene	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (1)
Ethylbenzene	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (1)
m,p-Xylenes	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)
Methyl tert butyl ether	ND (3)	ND (3)	ND (3)	ND (3)	ND (3)	ND (1)
Naphthalene	ND (4)	ND (4)	ND (4)	ND (4)	ND (4)	ND (5)
o-Xylene	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (1)
Toluene	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (1)

Notes:

Concentrations in µg/L.

Open Interval - elevation in feet NGVD; (BR) - Open Interval in bedrock

NA - Not Applicable

DUP - Duplicate Sample

ND (10) - Compound not detected at limit indicated in parentheses.

J - Estimated Value

Table A-3. EPH and VPH concentrations in groundwater.

LOCATION:	NE-1	NE-1
DATE SAMPLED:	9/13/12	10/10/12
OPEN INTERVAL:	-66 to 45 (BR)	-66 to 45 (BR)
QA TYPE:		
EPH		
2-Methylnaphthalene	ND (10)	ND (0.4)
Acenaphthene	ND (10)	ND (0.4)
Acenaphthylene	ND (10)	ND (0.4)
Aliphatics, C19-C36	ND (100)	ND (100)
Aliphatics, C9-C18	ND (100)	ND (100)
Anthracene	ND (10)	ND (0.4)
Aromatics, C11-C22, adjusted	ND (100)	ND (100)
Aromatics, C11-C22, unadjusted	ND (100)	ND (100)
Benzo(a)anthracene	ND (10)	ND (0.4)
Benzo(a)pyrene	ND (10)	ND (0.2)
Benzo(b)fluoranthene	ND (10)	ND (0.4)
Benzo(g,h,i)Perylene	ND (10)	ND (0.4)
Benzo(k)fluoranthene	ND (10)	ND (0.4)
Chrysene	ND (10)	ND (0.4)
Dibenzo(a,h)anthracene	ND (10)	ND (0.4)
Fluoranthene	ND (10)	ND (0.4)
Fluorene	ND (10)	ND (0.4)
Indeno(1,2,3-cd)Pyrene	ND (10)	ND (0.4)
Naphthalene	ND (0.92)	ND (0.94)
Phenanthrene	ND (10)	ND (0.4)
Pyrene	ND (10)	ND (0.4)
VPH		
Aliphatics, C5-C8, adjusted	ND (50)	ND (50)
Aliphatics, C5-C8, unadjusted	ND (50)	ND (50)
Aliphatics, C9-C12, adjusted	ND (50)	ND (50)
Aliphatics, C9-C12, unadjusted	ND (50)	ND (50)
Aromatics, C9-C10	ND (50)	ND (50)
Benzene	ND (1)	ND (1)
Ethylbenzene	ND (1)	ND (1)
m,p-Xylenes	ND (2)	ND (2)
Methyl tert butyl ether	ND (1)	ND (1)
Naphthalene	ND (5)	ND (5)
o-Xylene	ND (1)	ND (1)
Toluene	ND (1)	ND (1)

Notes:

Concentrations in µg/L.

Open Interval - elevation in feet NGVD; (BR) - Open Interval in bedrock

NA - Not Applicable

DUP - Duplicate Sample

ND (10) - Compound not detected at limit indicated in parentheses.

J - Estimated Value

ATTACHMENT B

DIFFUSIVE SUB-RIVER SAMPLING FORM

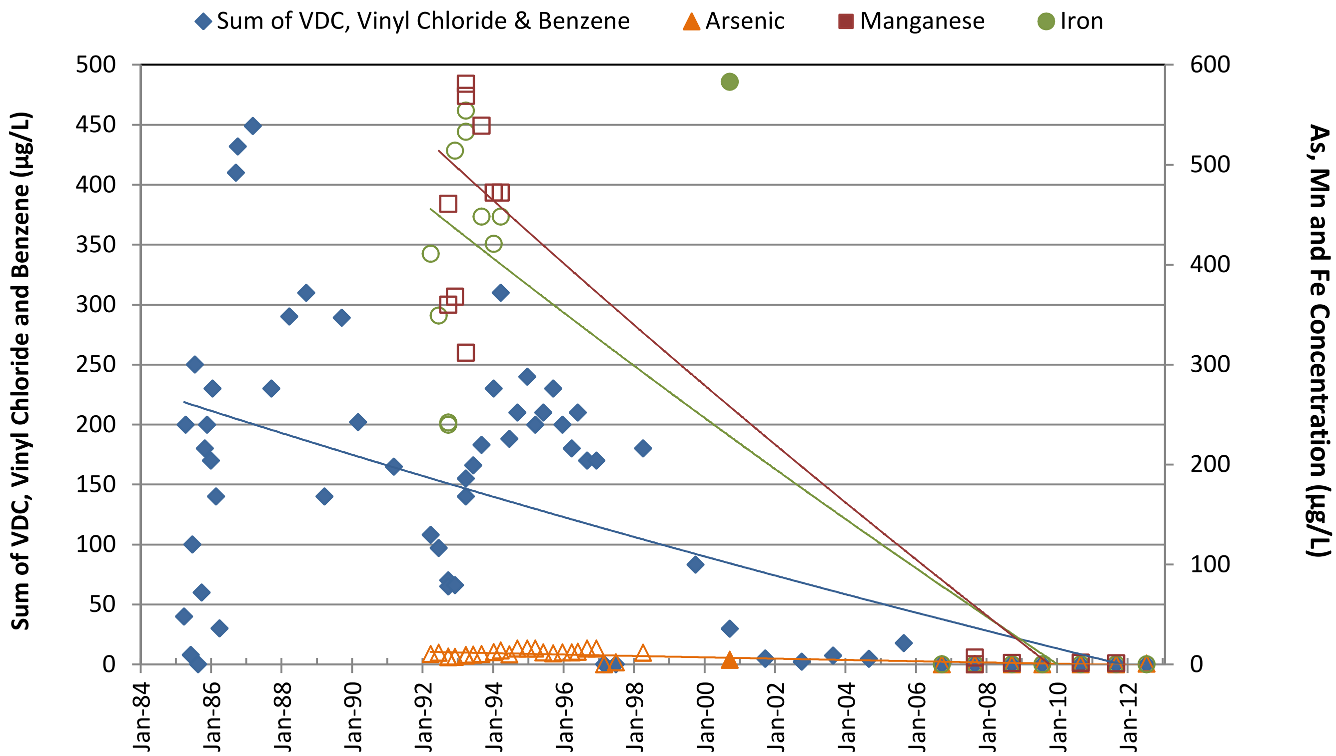
Diffusive Sub-River Sampling

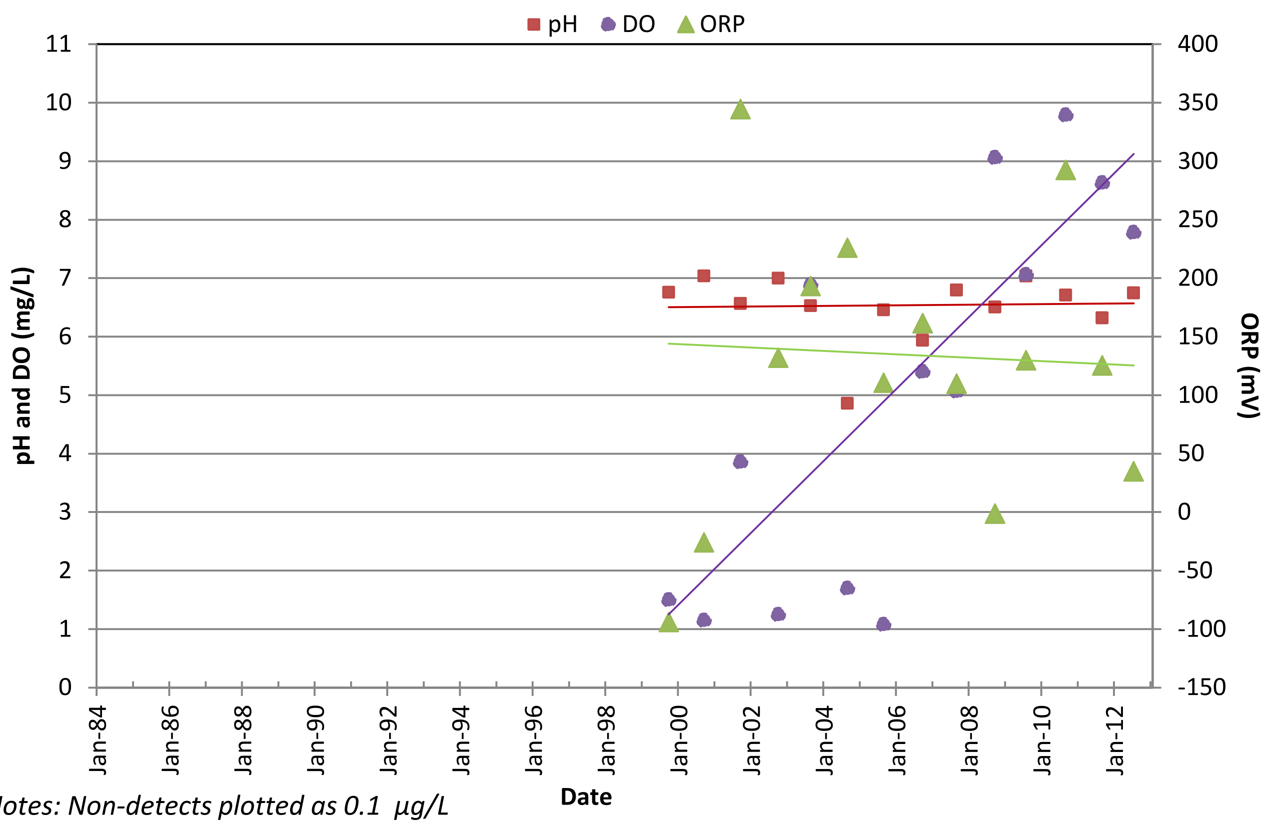
Transect # ASBRV-T6						Description of Transect Location: Located between a 90-degree bend in river to west (upstream) and gentle curve to northeast (downstream). Site (west) end of T-6 is in grassy, marshy area. House on opposite bank.		
Width of River (ft): 66.51 feet						Depth of Piezometer Screen Bottom in Riverbed: 2.66		
Installation	Date: 7/13/2012	Flow Rate	**Removal**	Date:	8/14/2012	Flow Rate	**Add'l measurement:** Date	Flow Rate
DTW inside Piezometer	1.79		DTW inside Piezometer		1.76		DTW inside Piezometer	
DTW outside Piezometer	2.02	30 cfs	DTW outside Piezometer		1.83	64 cfs	DTW outside Piezometer	cfs

Sample Number	Time of Placement	Time of Removal	Distance from West Riverbank (ft)	Water Depth (ft) on	Water Depth (ft) on	Sediment Description	Notes
TR-6A	13:15	10:55	16.00	1.52	1.38	sand, cobbles	1/4 across transect
TR-6B	13:20	11:00	22.00	1.52	1.38	sand, cobbles	1/3 across transect
TR-6C	NA	NA	NA	NA	NA	NA	1/2 across transect
TR-6D	NA	NA	NA	NA	NA	NA	2/3 across transect

ATTACHMENT C

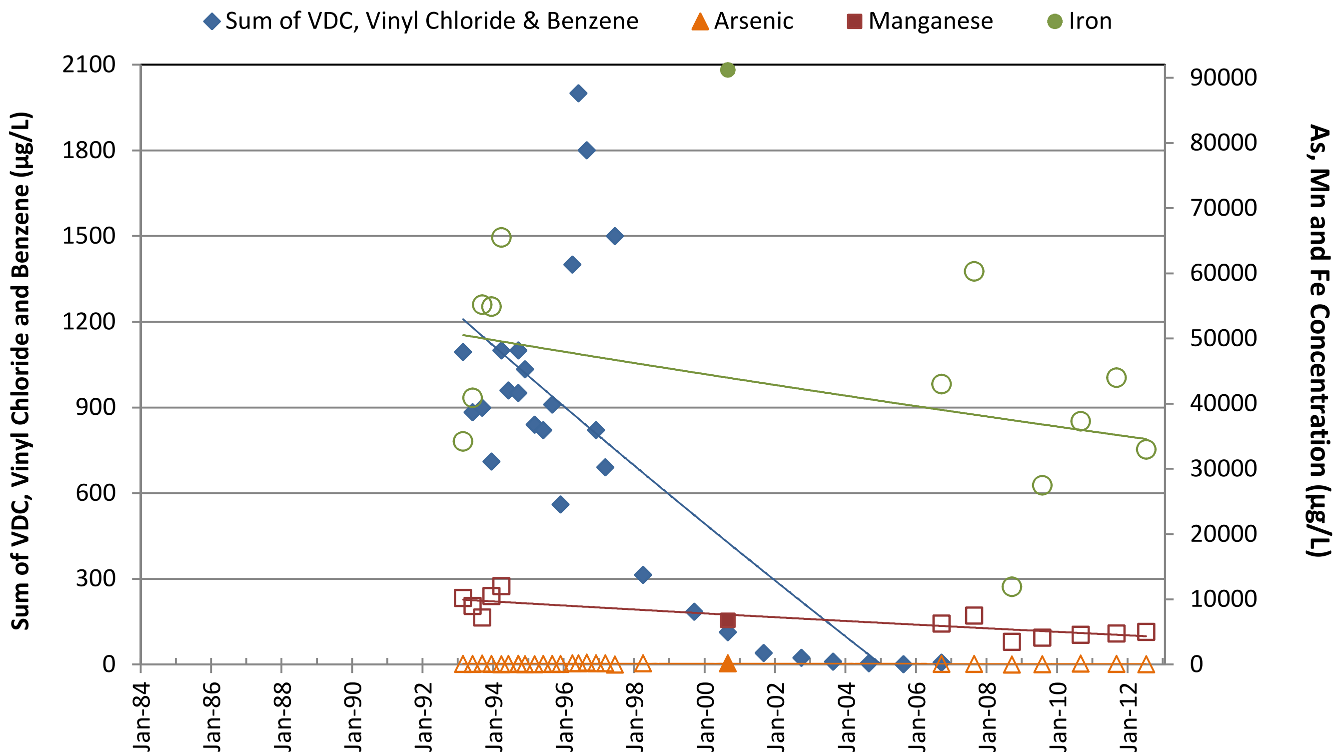
GEOCHEMISTRY VERSUS TIME GRAPHS

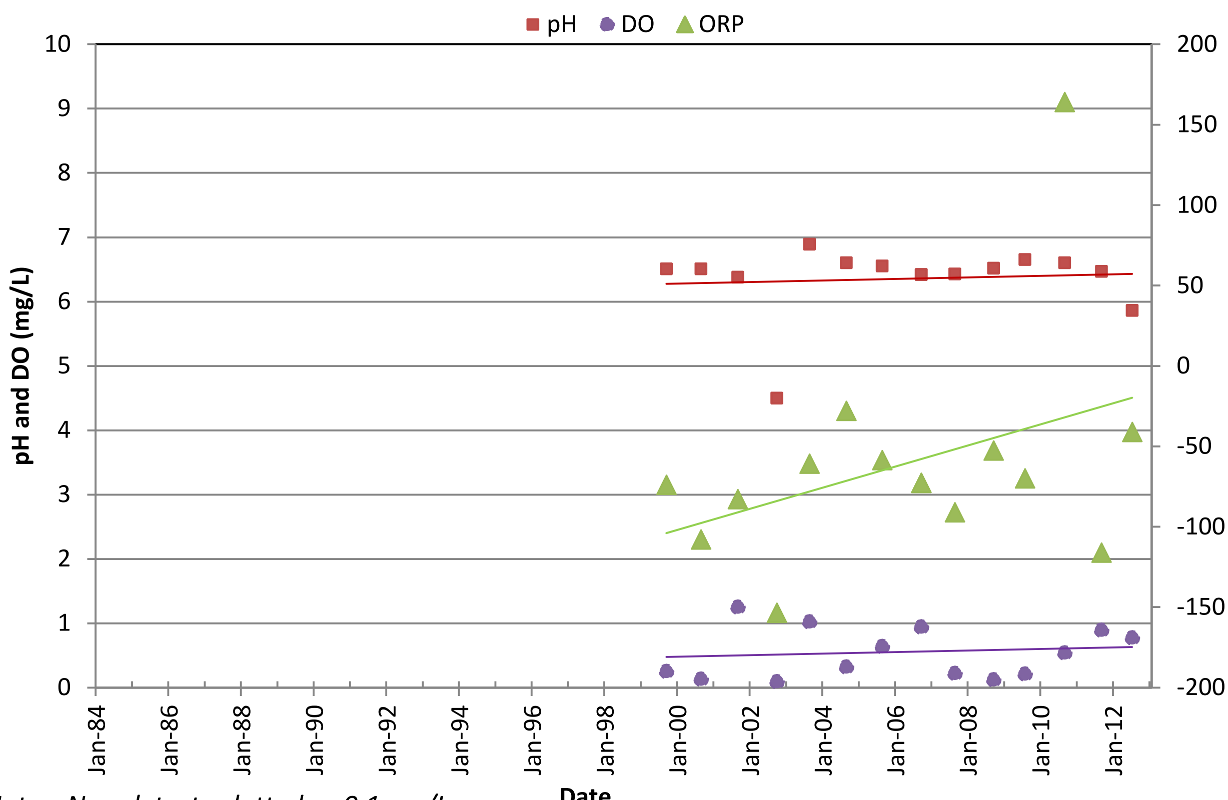




Notes: Non-detects plotted as 0.1 µg/L
Open symbols are dissolved concentrations; solid symbols are total concentrations.

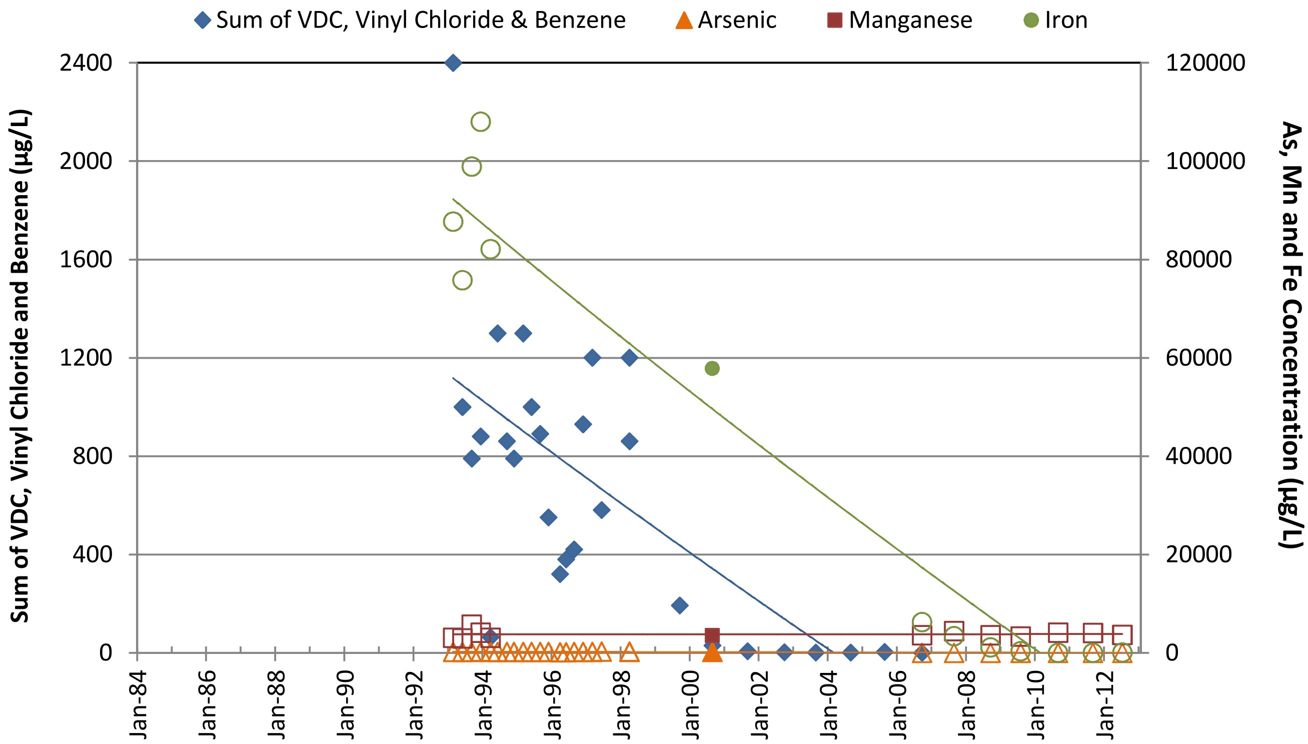
AR-21

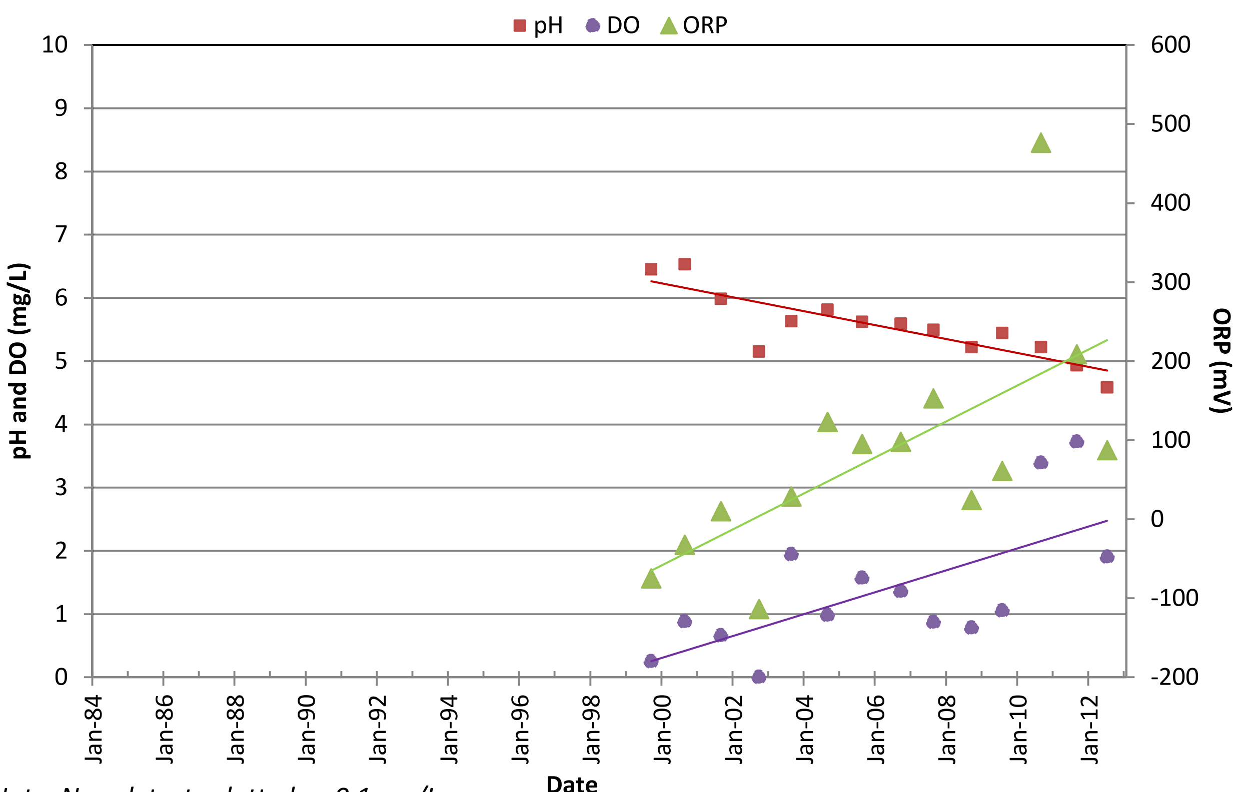




Notes: Non-detects plotted as 0.1 µg/L
Open symbols are dissolved concentrations; solid symbols are total concentrations.

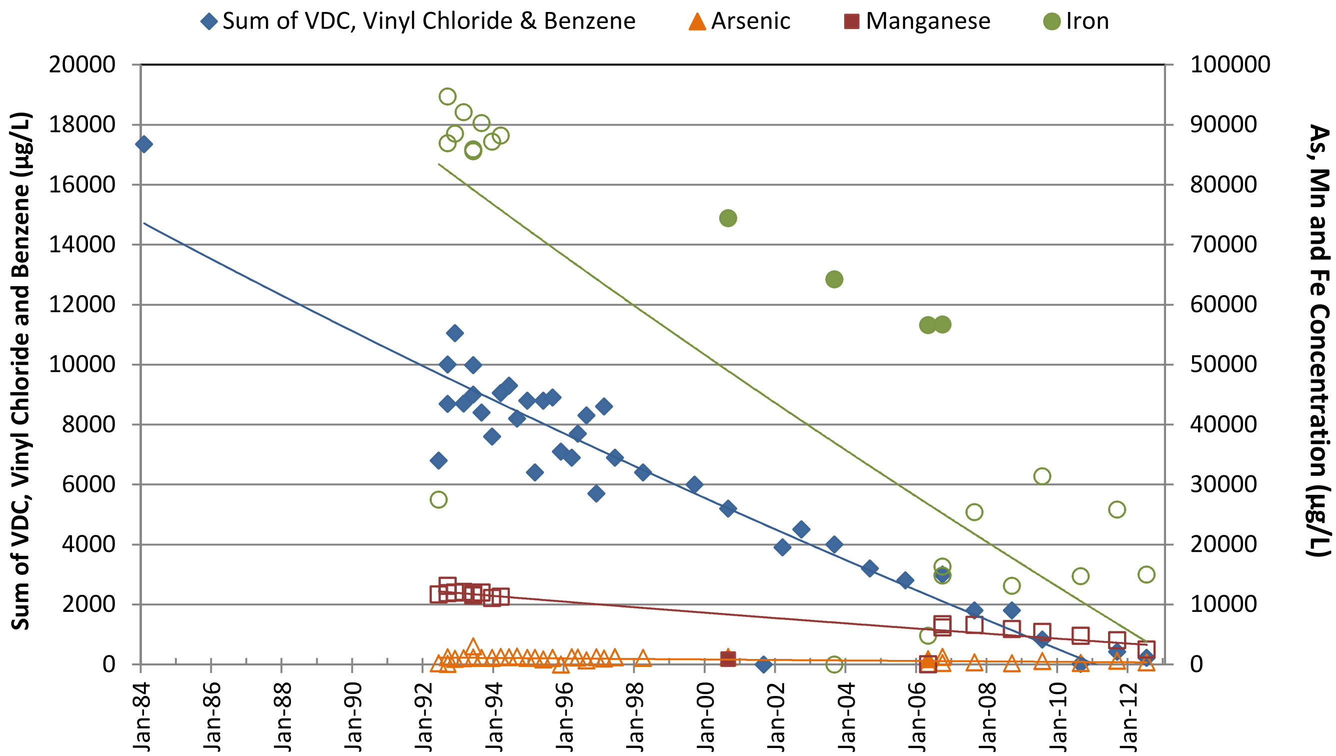
B-08C

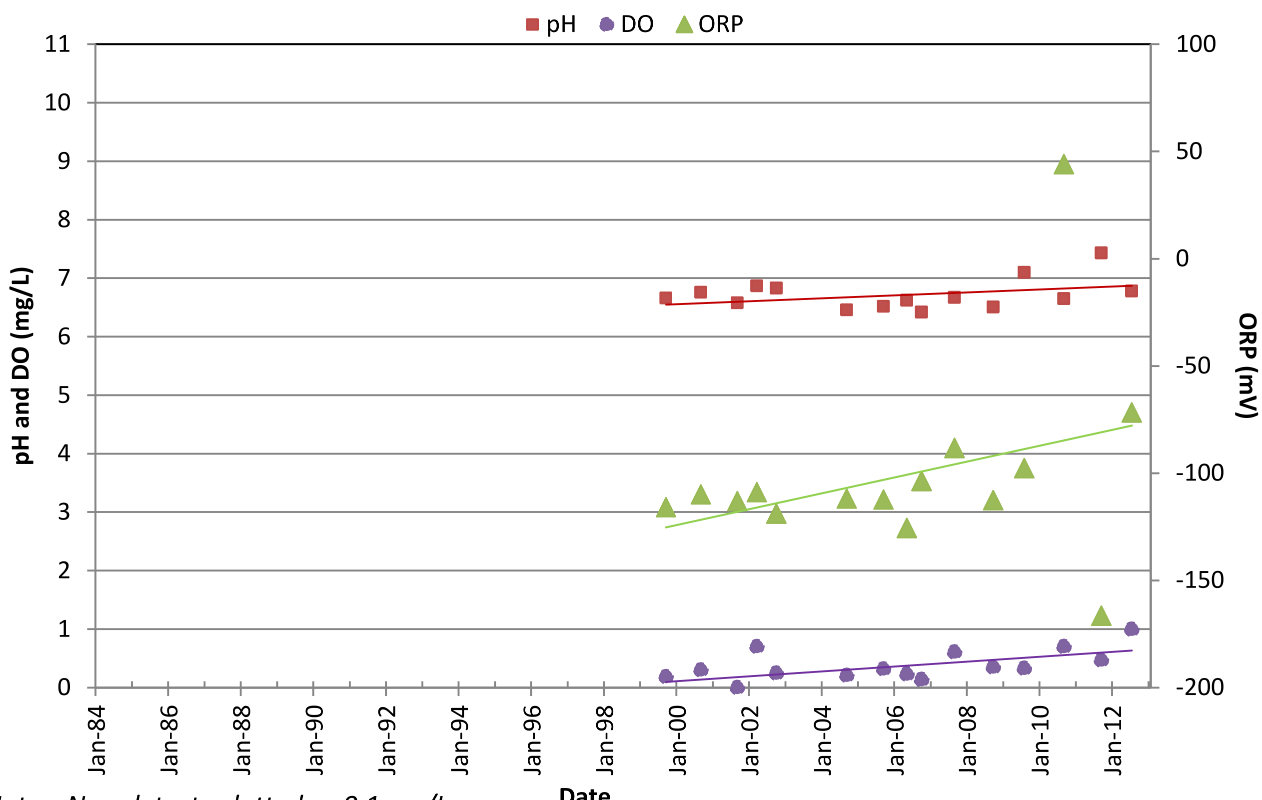




Note: Non-detects plotted as 0.1 µg/L
Open symbols are dissolved concentrations; solid symbols are total concentrations.

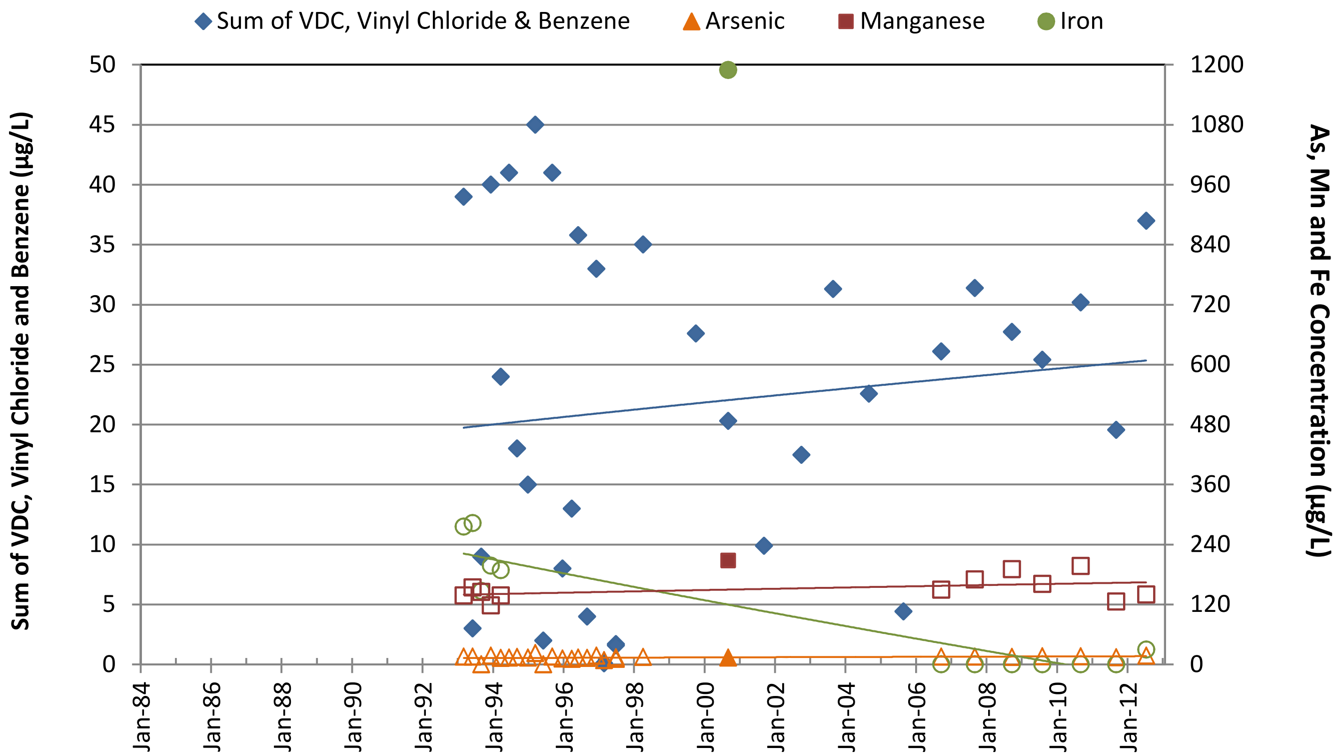
B-08D

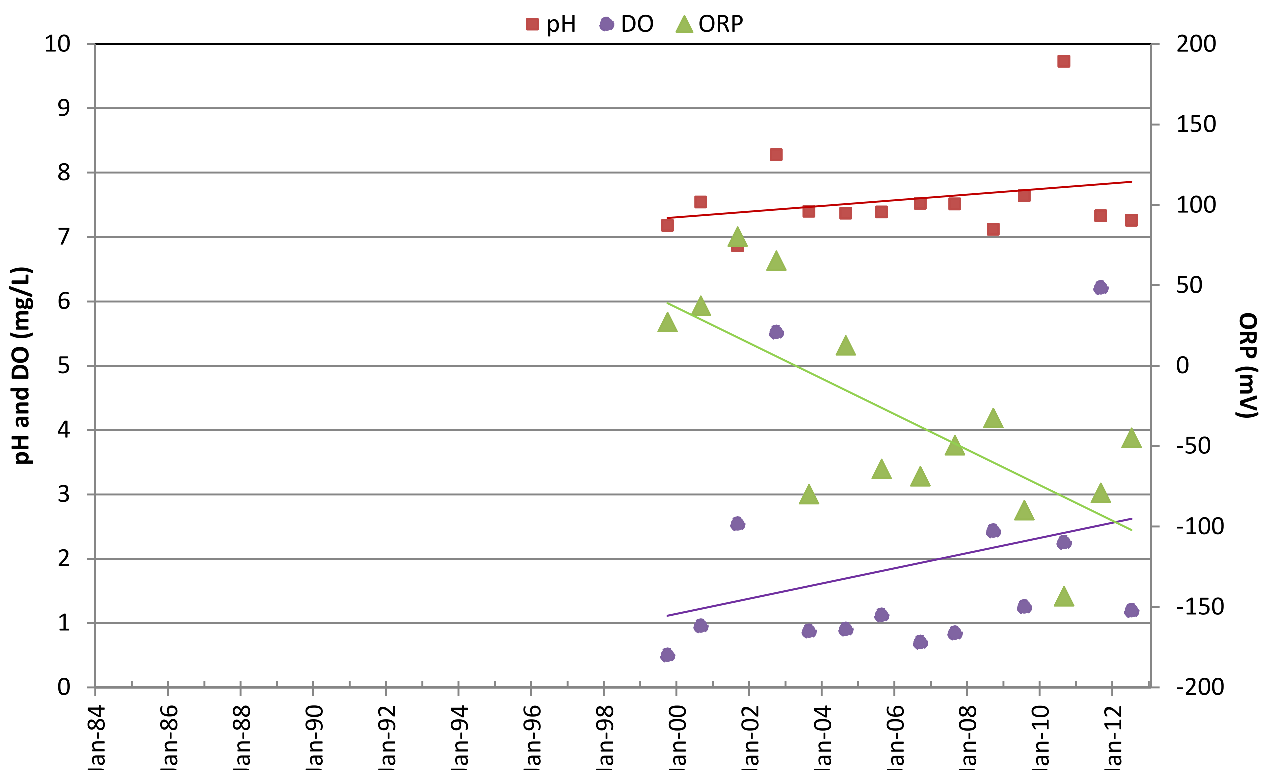




Notes: Non-detects plotted as 0.1 µg/L
Open symbols are dissolved concentrations; solid symbols are total concentrations.

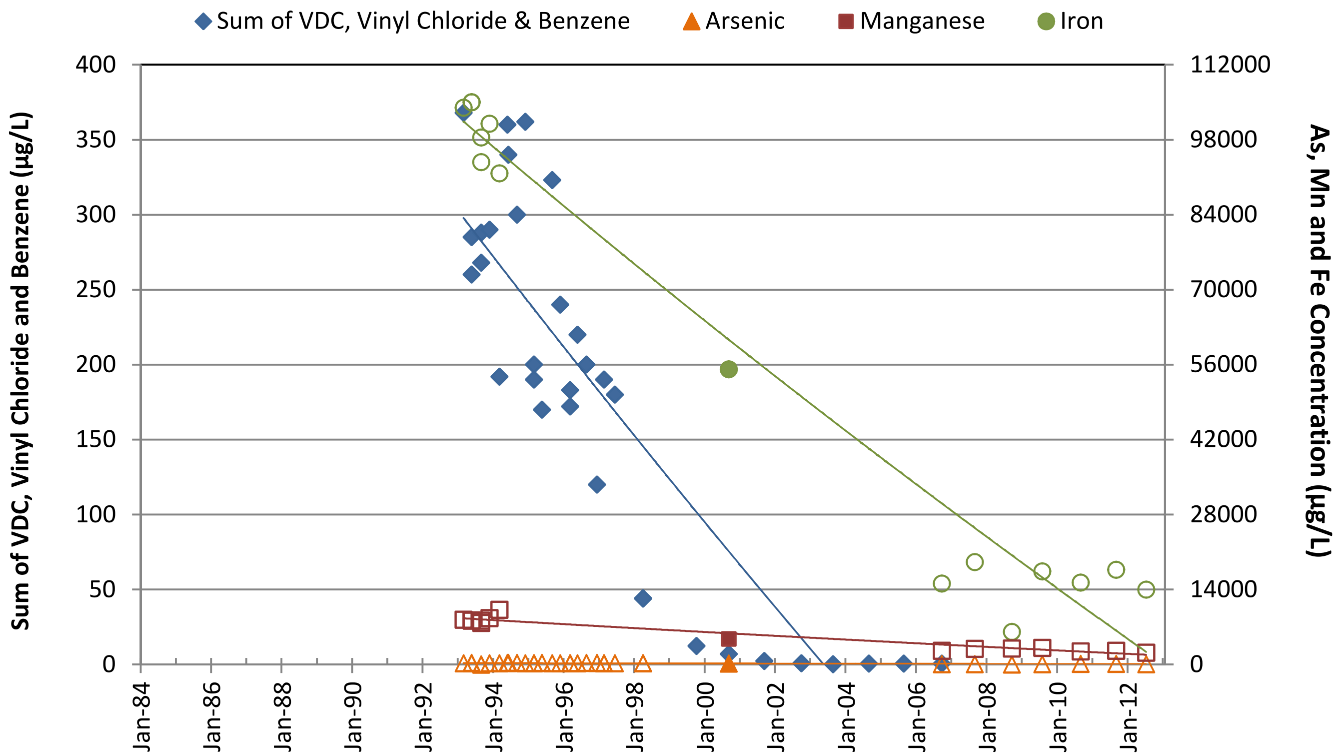
LF-06C

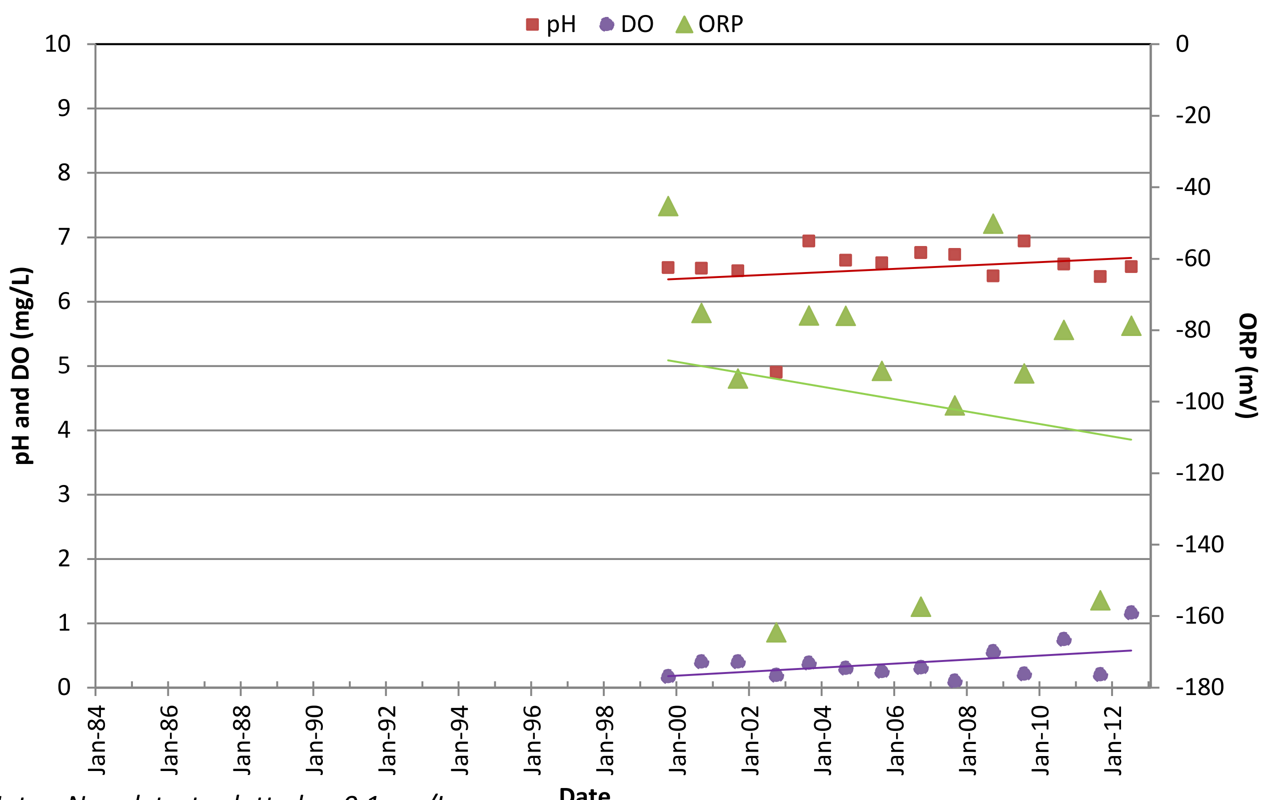




Notes: Non-detects plotted as 0.1 µg/L
Open symbols are dissolved concentrations; solid symbols are total concentrations.

LF-12

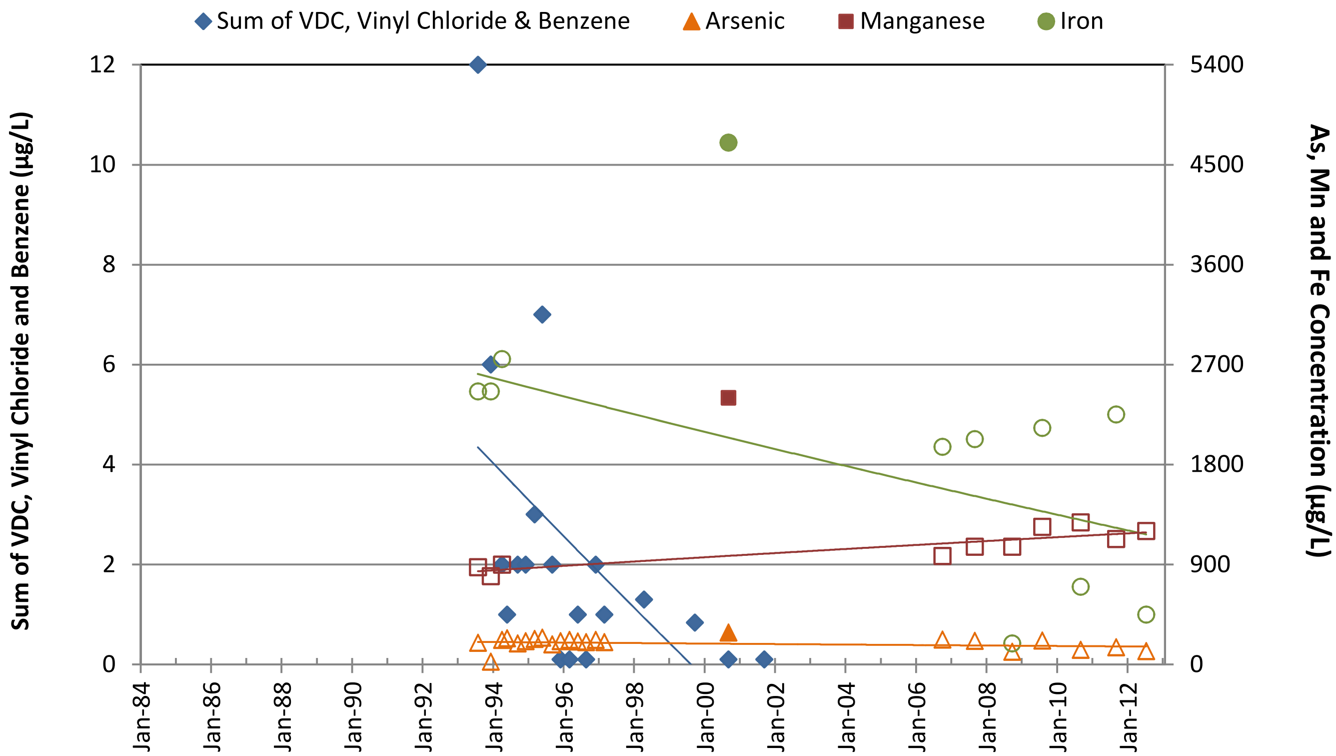


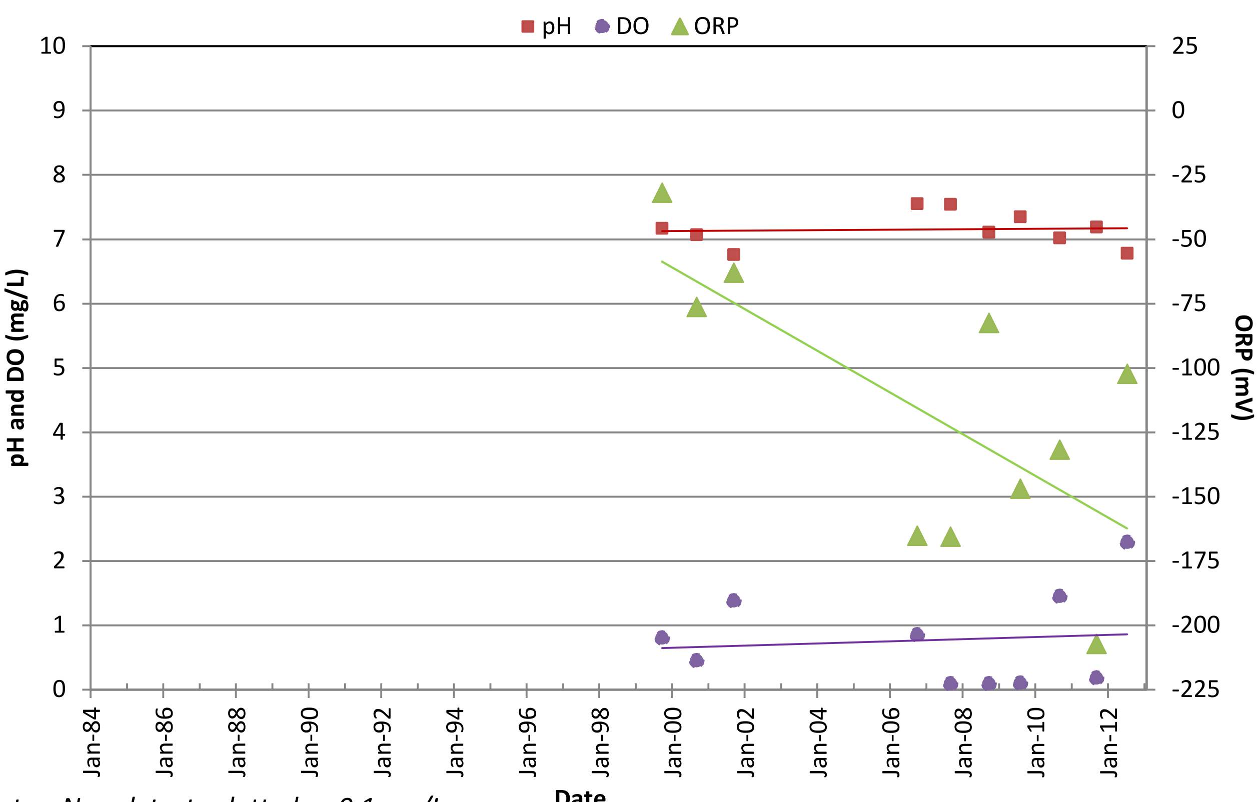


Notes: Non-detects plotted as 0.1 µg/L

Open symbols are dissolved concentrations; solid symbols are total concentrations.

LF-15

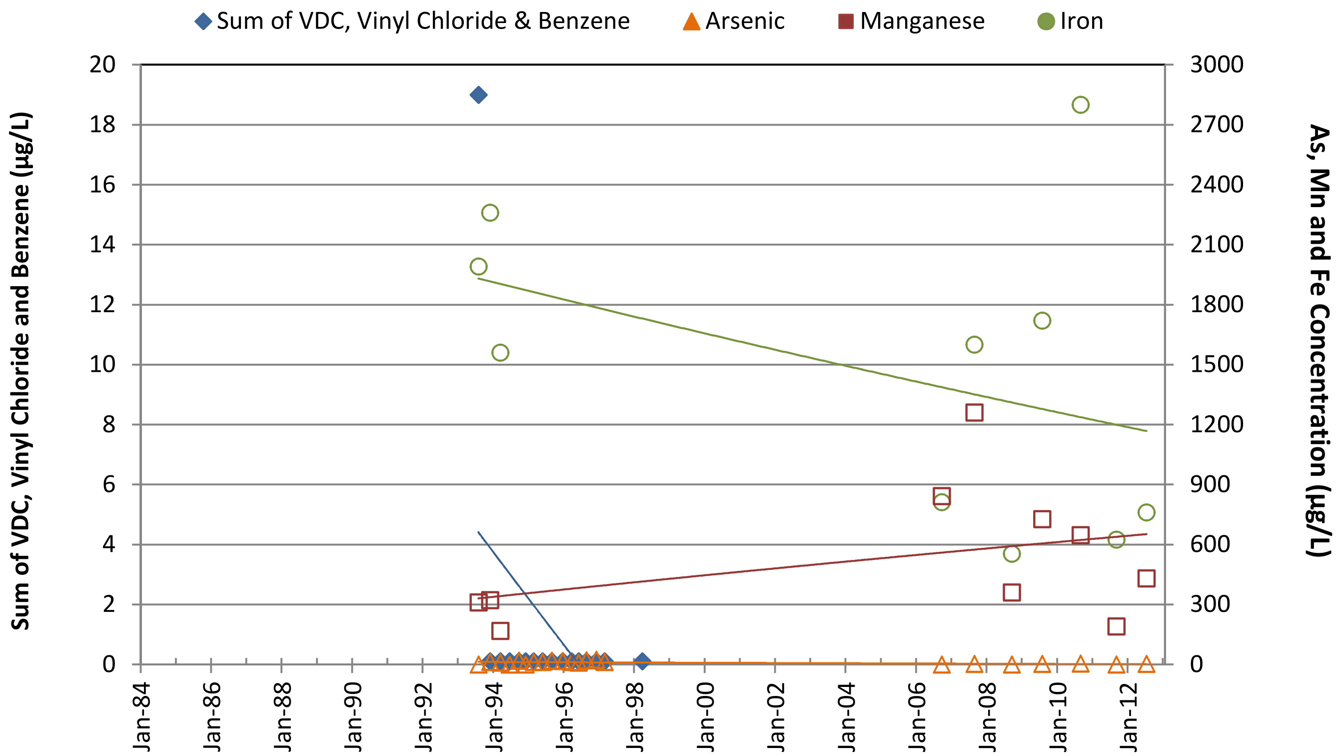


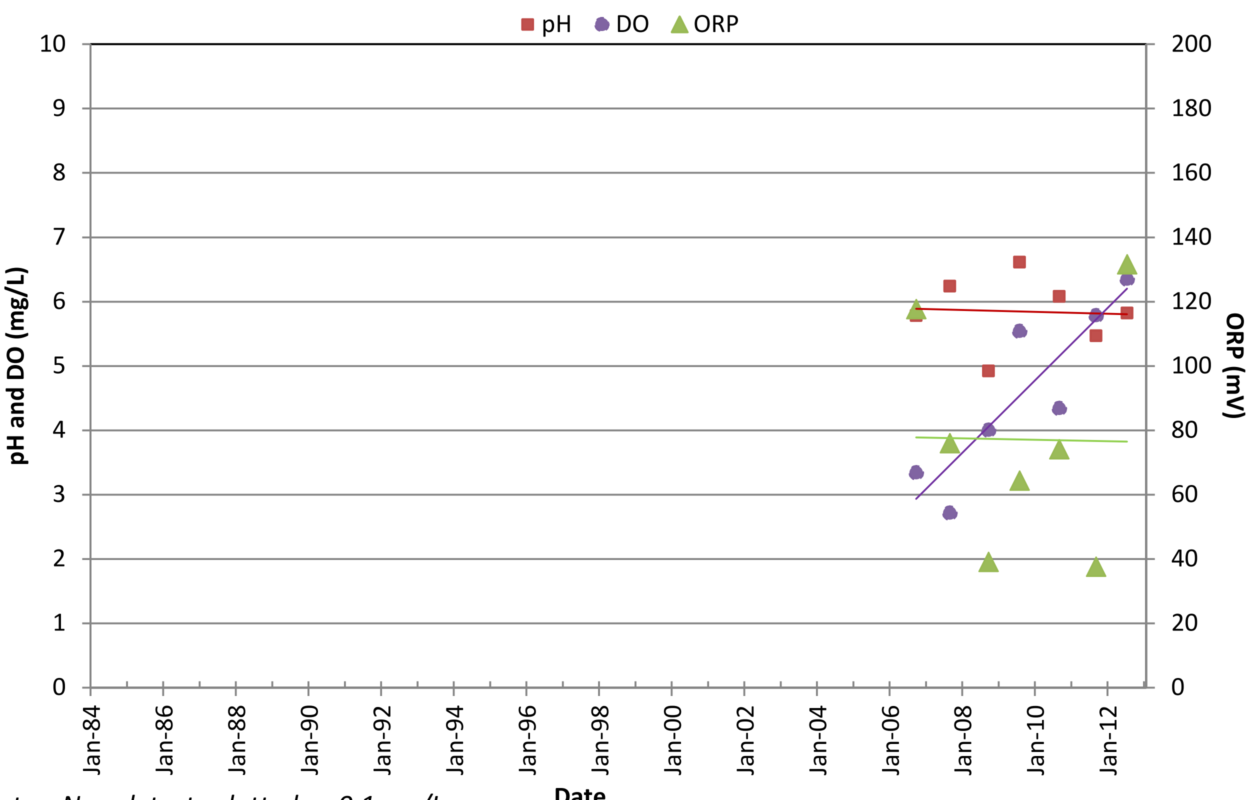


Notes: Non-detects plotted as 0.1 µg/L
Open symbols are dissolved concentrations; solid symbols are total concentrations.

OSA-01B

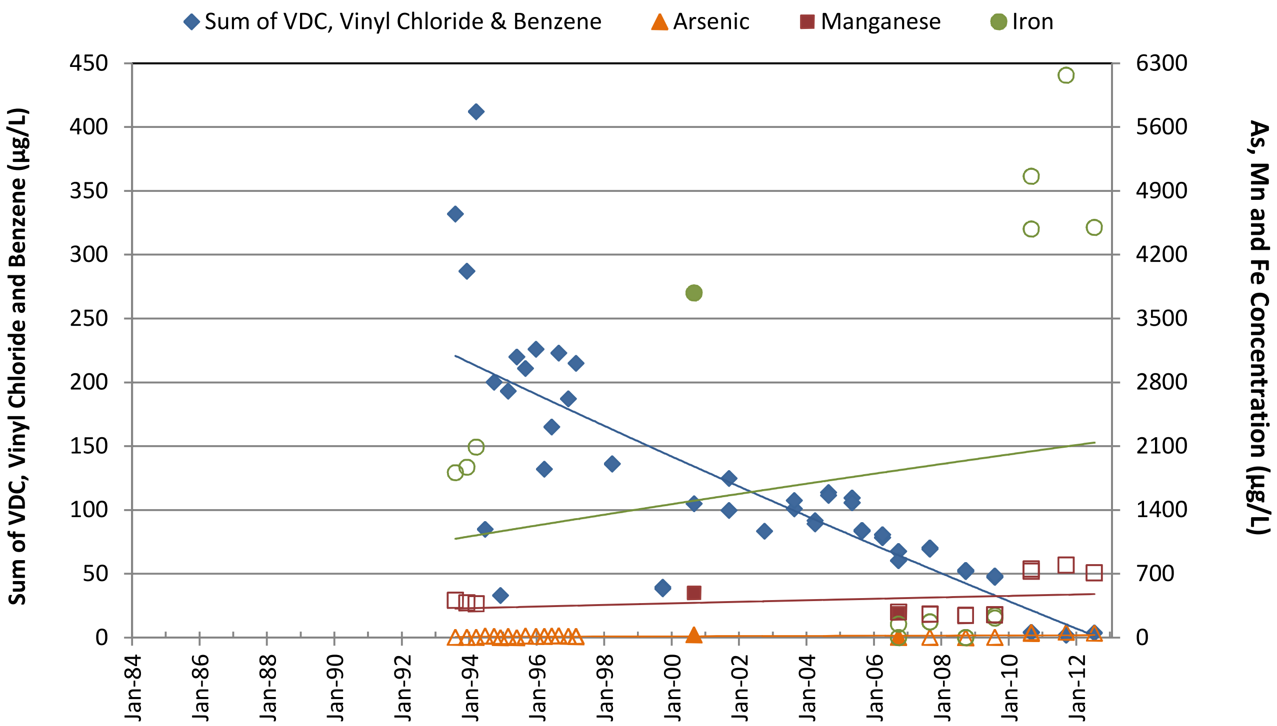
P:\PROJECT\WRGACTON\Geochem\2012\geochemgraphs2012.xlsxOSA-01BGraph

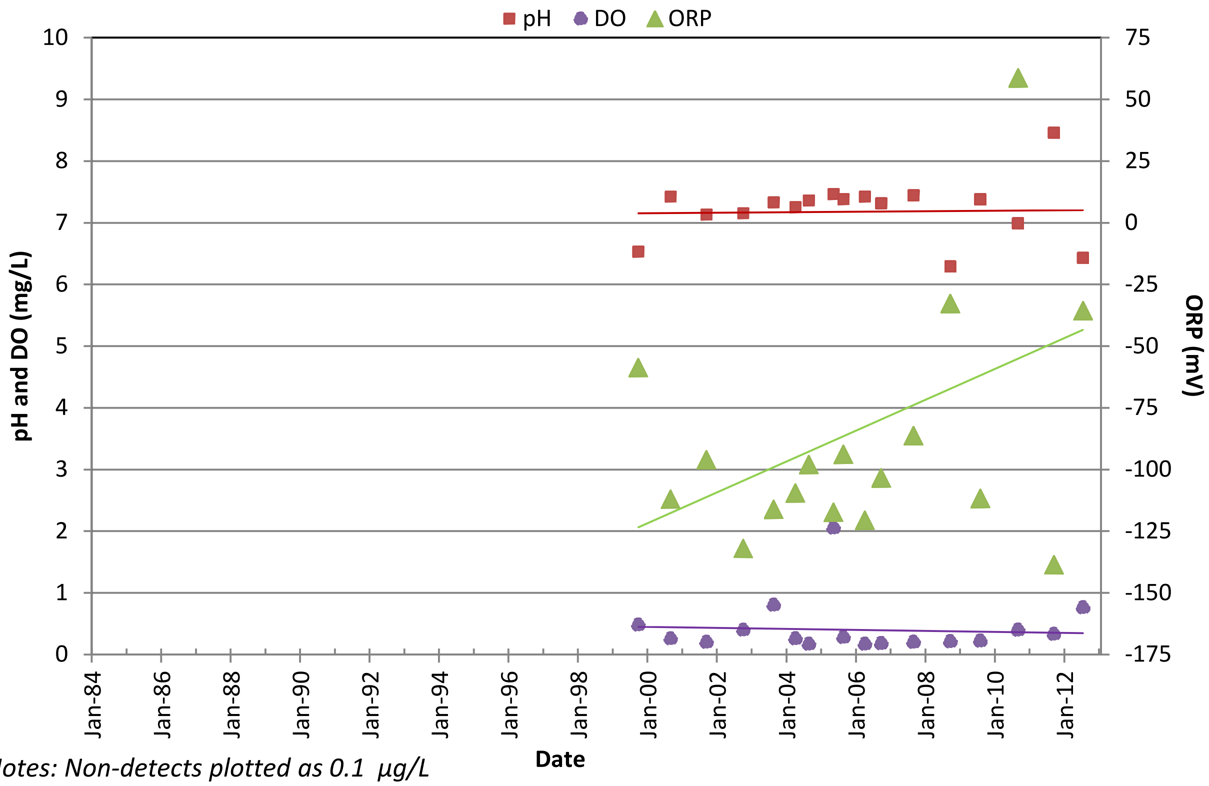




Notes: Non-detects plotted as 0.1 µg/L
Open symbols are dissolved concentrations; solid symbols are total concentrations.

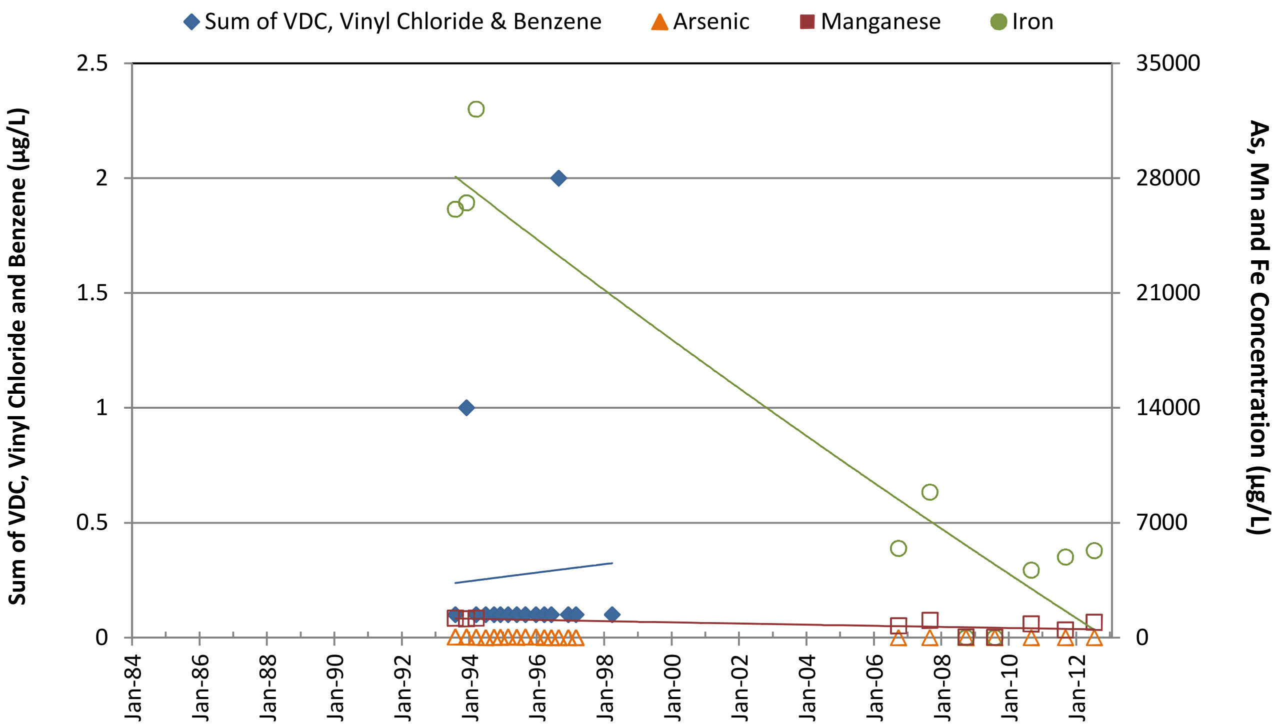
OSA-05A

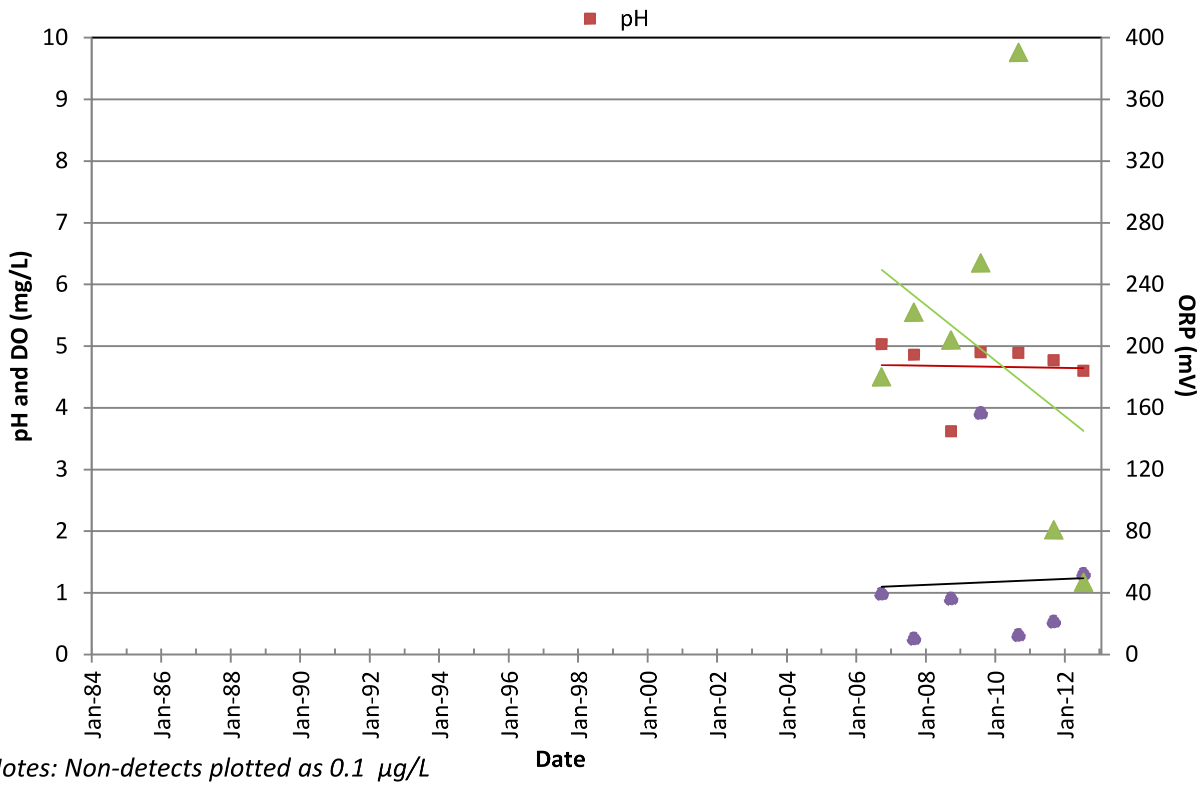




Notes: Non-detects plotted as 0.1 µg/L
Open symbols are dissolved concentrations; solid symbols are total concentrations.

OSA-06BR

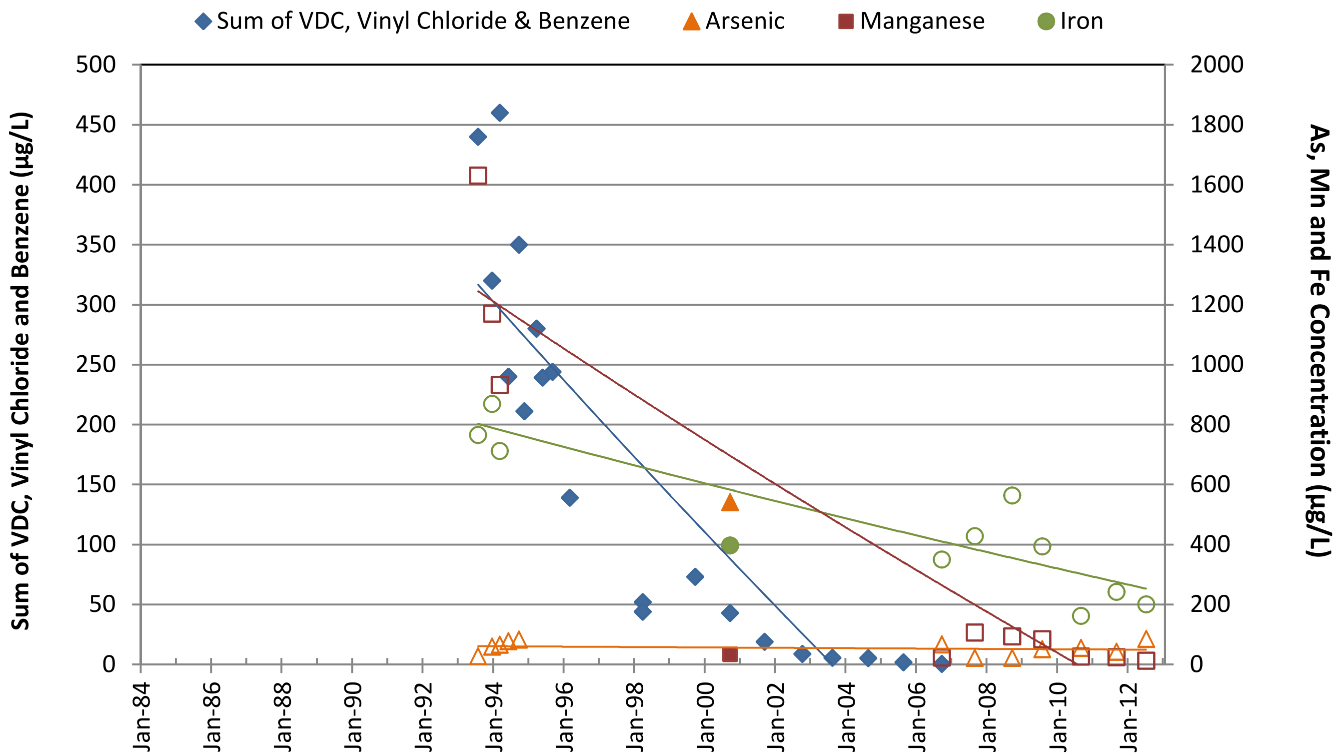


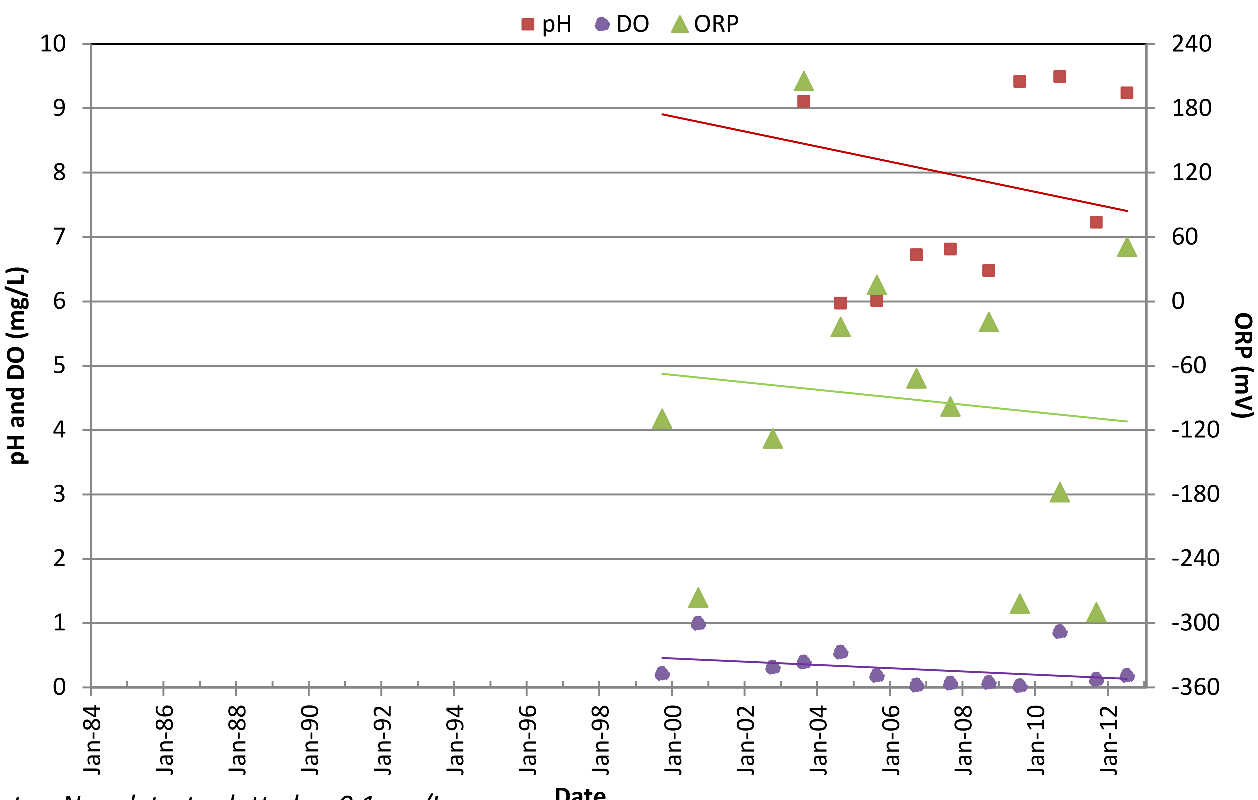


Notes: Non-detects plotted as 0.1 µg/L

Open symbols are dissolved concentrations; solid symbols are total concentrations.

OSA-07A

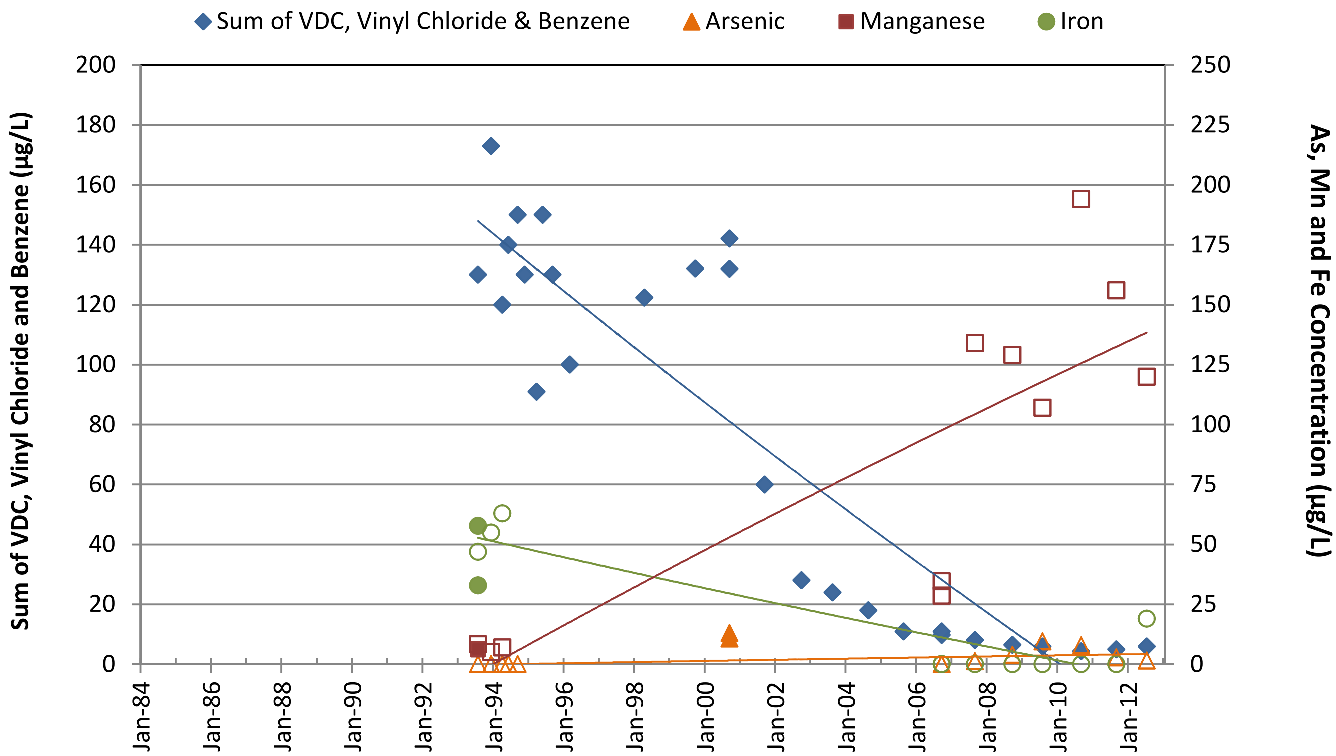


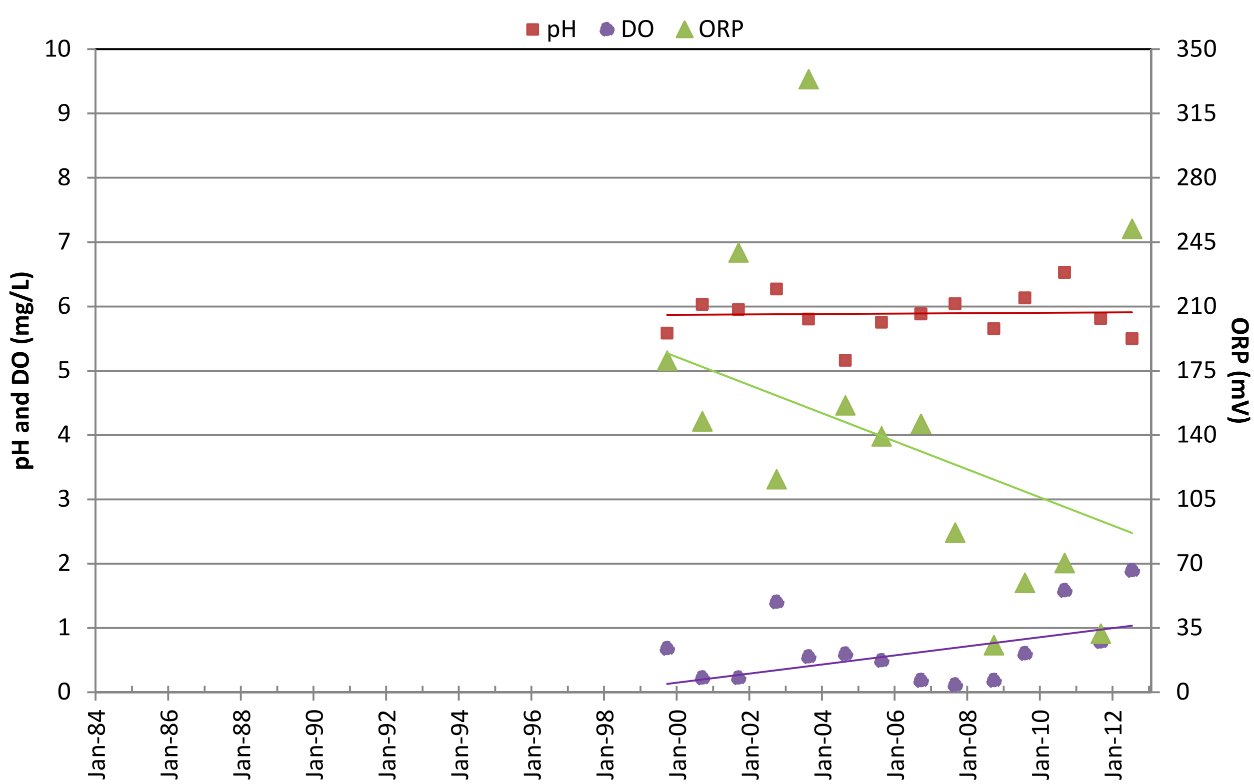


Notes: Non-detects plotted as 0.1 µg/L

Open symbols are dissolved concentrations; solid symbols are total concentrations.

OSA-09B

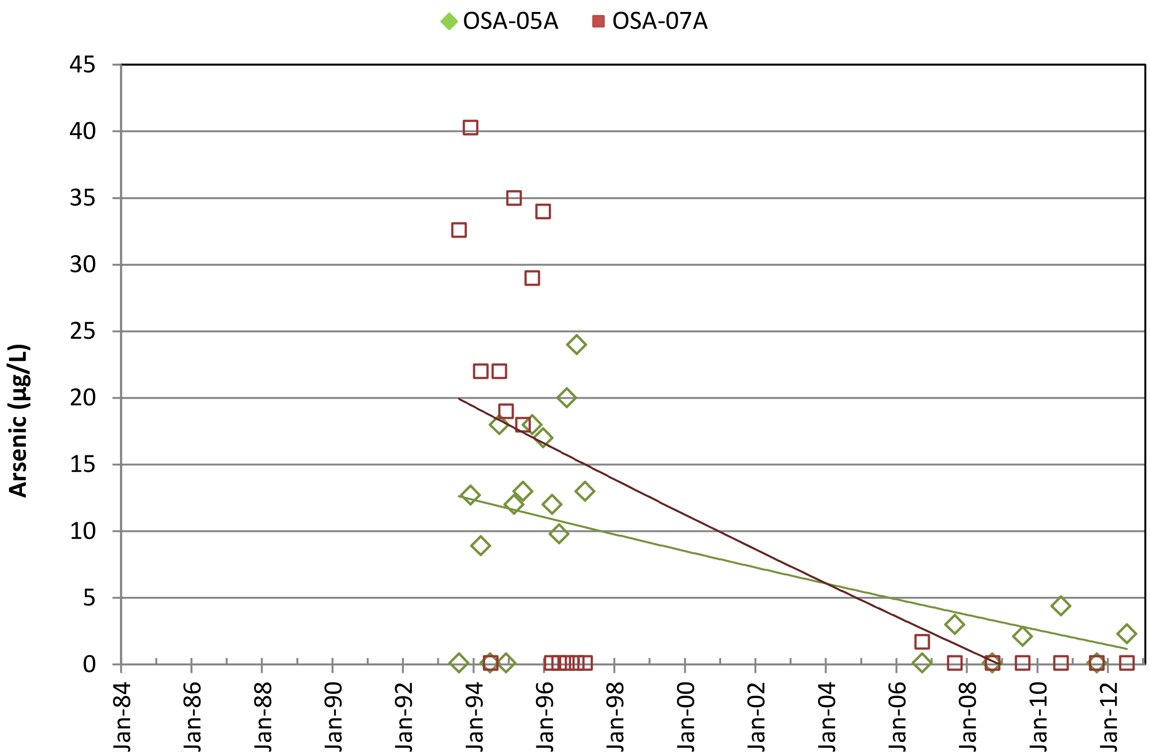


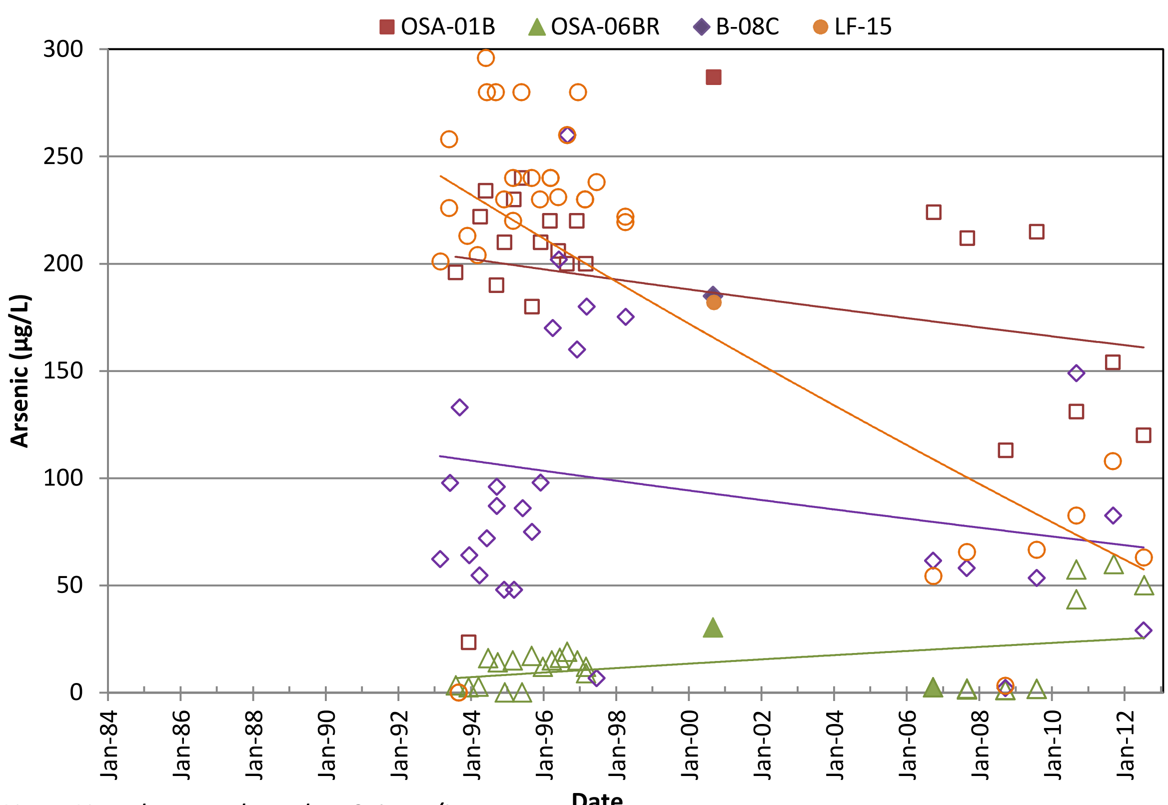


Notes: Non-detects plotted as 0.1 µg/L
Open symbols are dissolved concentrations; solid symbols are total concentrations.

OSA-11B

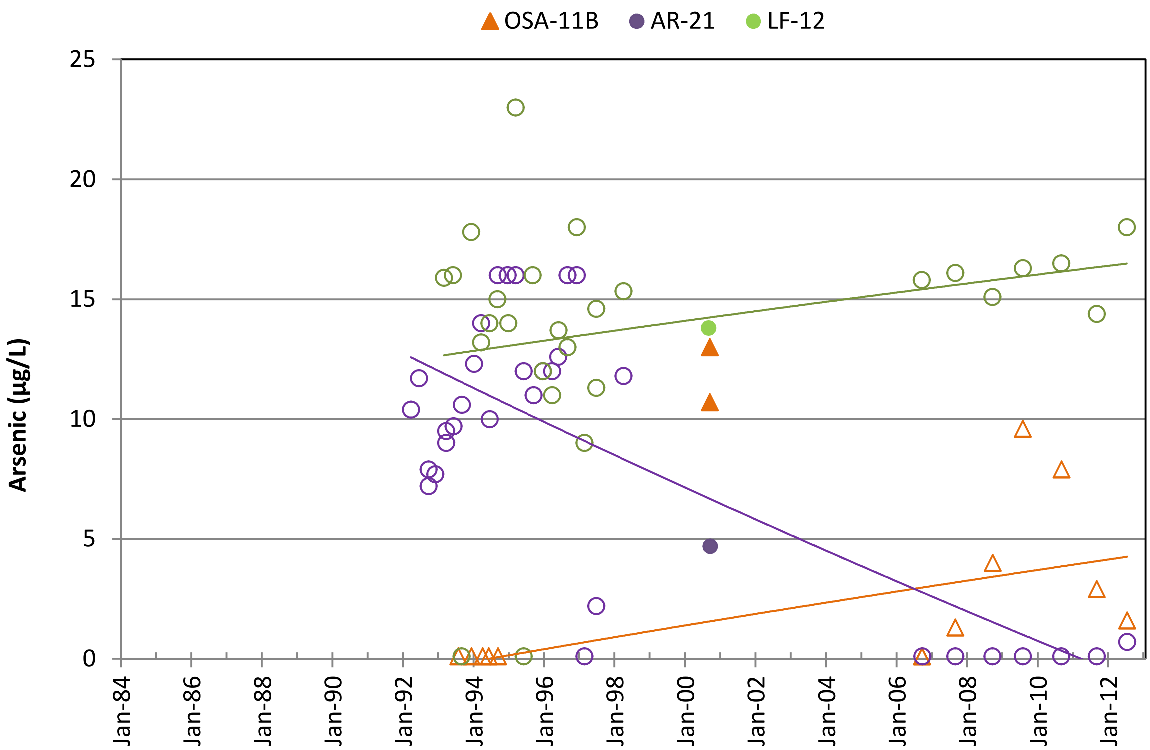
P:\PROJECT\WRGACTON\Geochem\2012\geochemgraphs2012.xlsxOSA-11BGraph

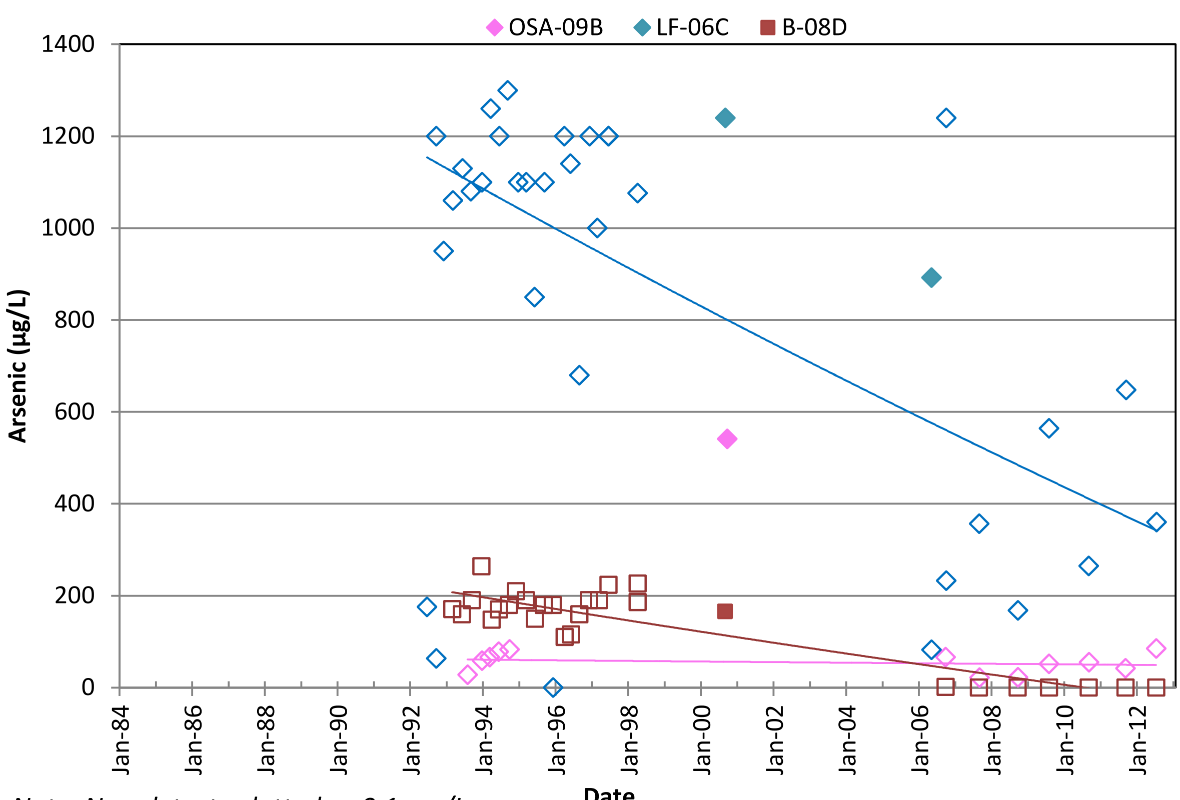




Note: Non-detects plotted as 0.1 µg/L
Open symbols are dissolved concentrations; Solid symbols are total concentrations.

Arsenic Concentrations in OSA-05A, OSA-07A, OSA-01B, OSA-06BR, B-08C, and LF-15





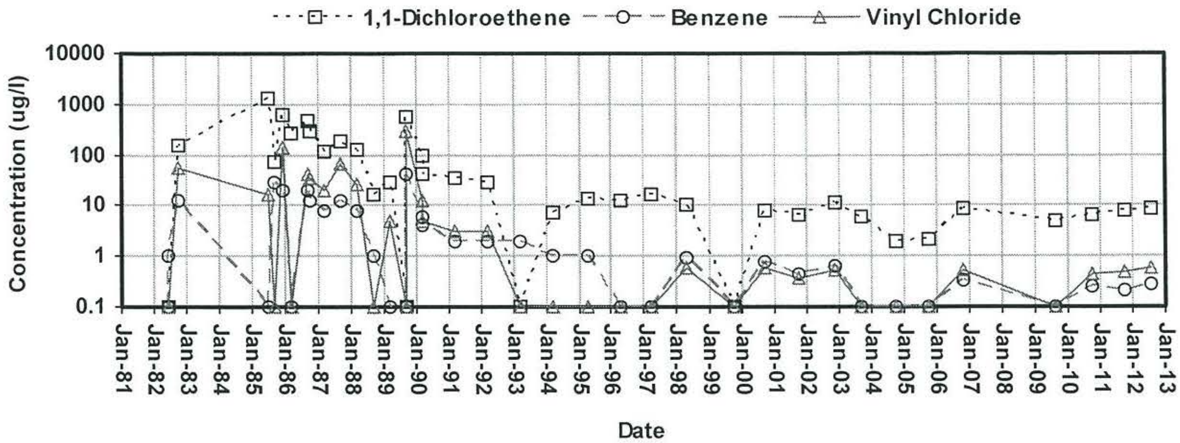
Note: Non-detects plotted as 0.1 µg/L
Open symbols are dissolved concentrations; solid symbols are total concentrations.

Arsenic Concentrations in OSA-11B, AR-21, LF-12, OSA-09B, LF-06C and B-08D

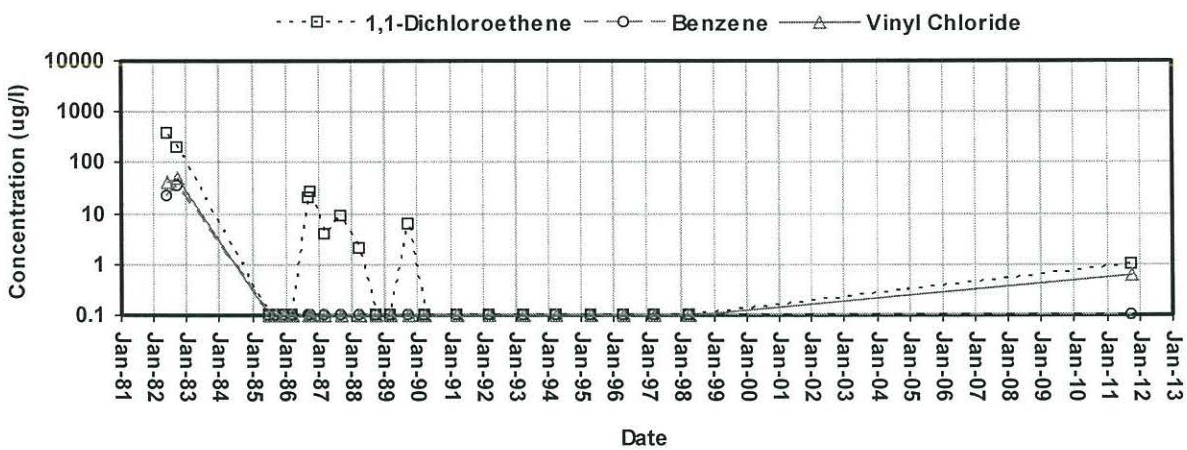
ATTACHMENT D

WATER QUALITY VERSUS TIME GRAPHS

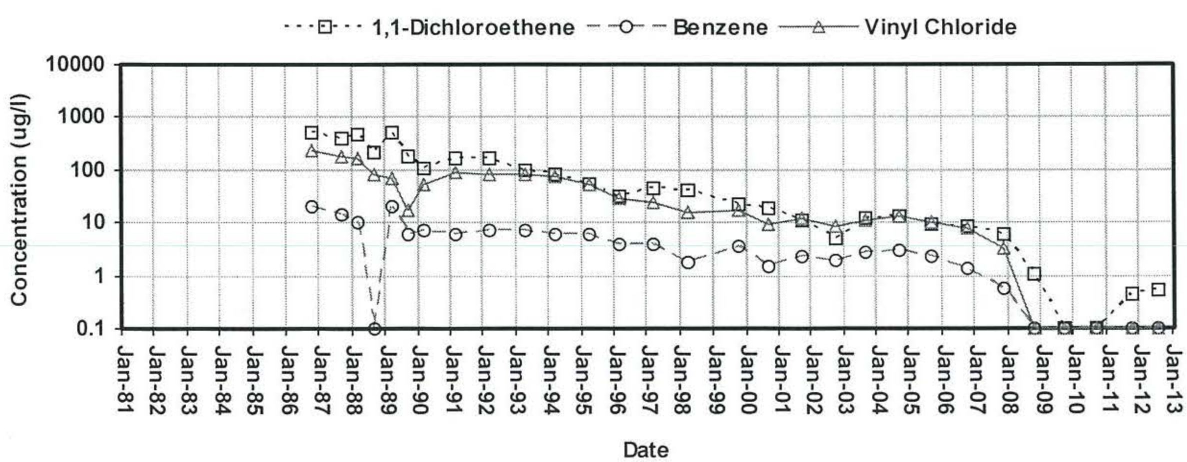
Concentration Plot for: AR-03B1
BOS elevation: 4 (BR)

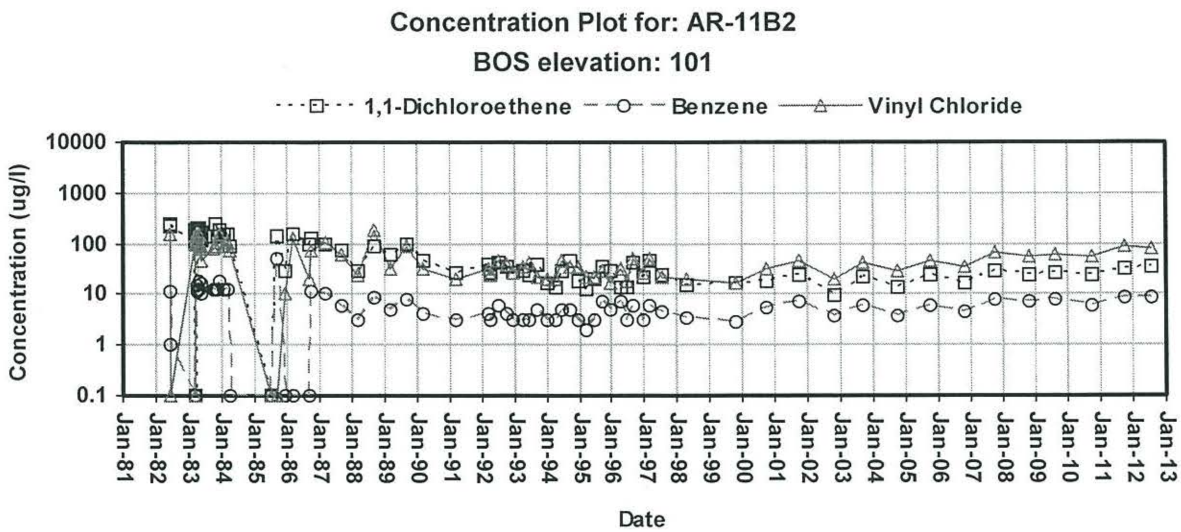


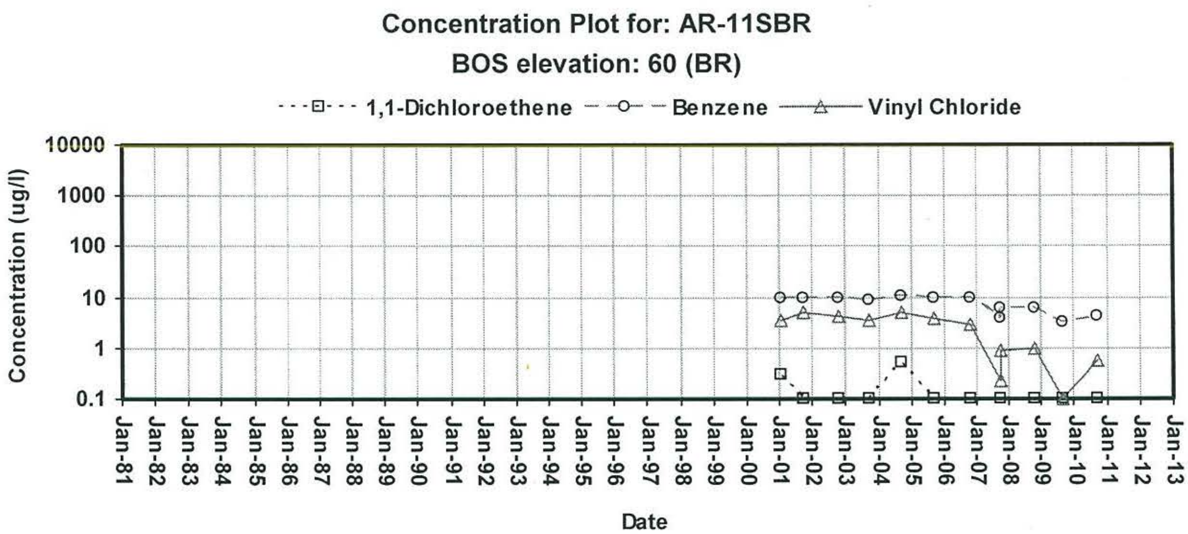
Concentration Plot for: AR-03B2
BOS elevation: 28

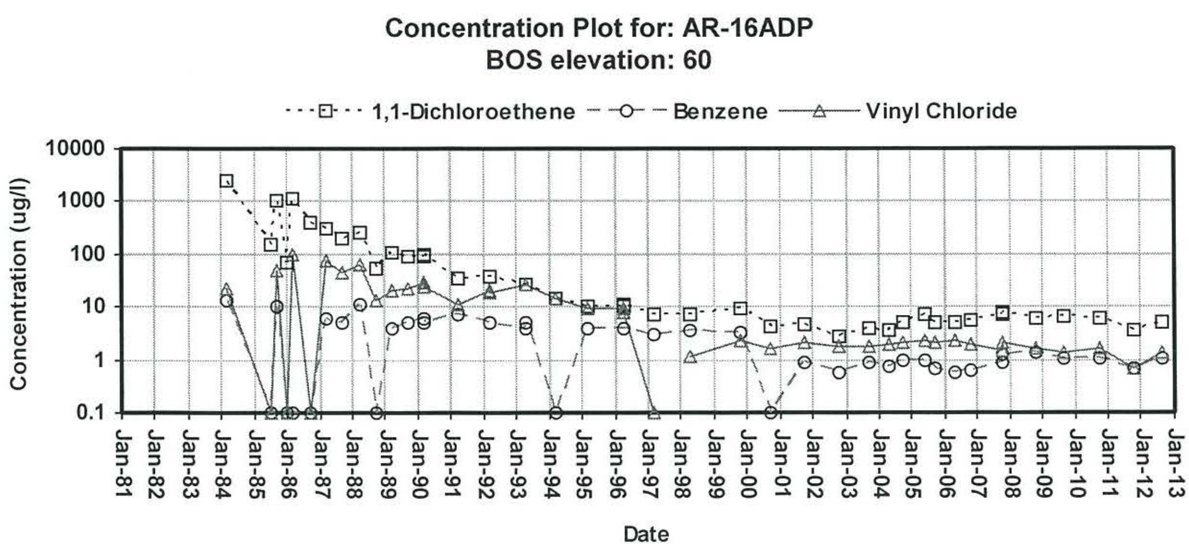


Concentration Plot for: AR-09A
BOS elevation: 28

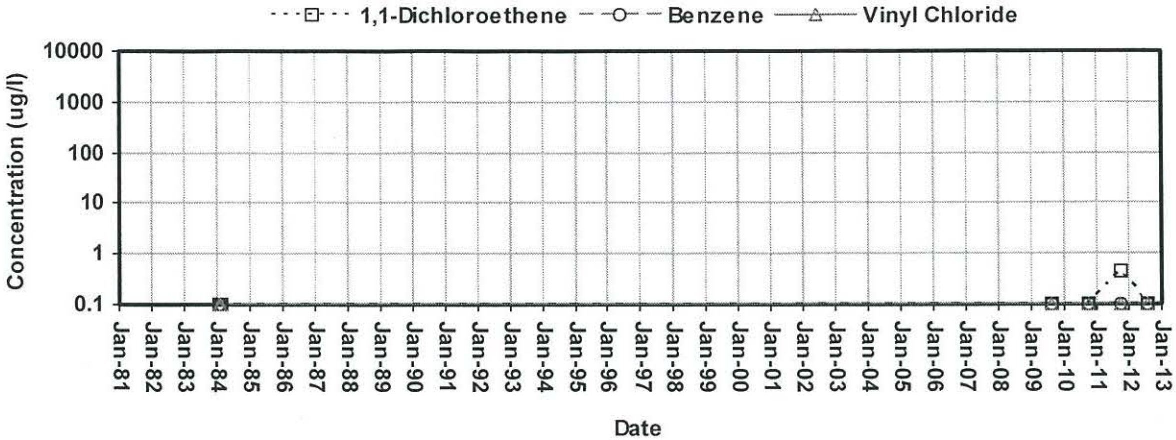



Concentration Plot for: AR-11B2
BOS elevation: 101
1,1-Dichloroethene
Benzene
Vinyl Chloride
Concentration (ug/l)
10000
1000
100
10
1
0.1
Jan-81
Jan-82
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Date

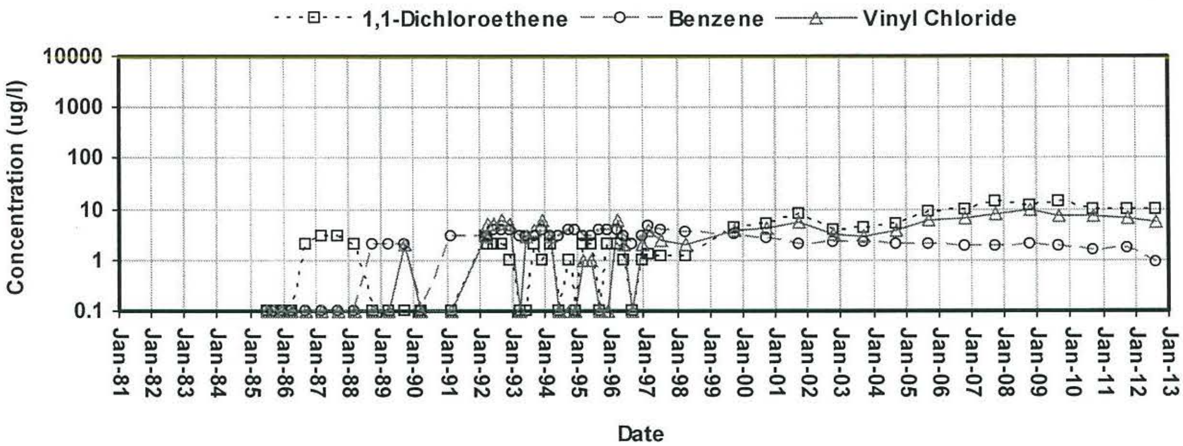

Concentration Plot for: AR-11SBR
BOS elevation: 60 (BR)
1,1-Dichloroethene
Benzene
Vinyl Chloride
Concentration (ug/l)
10000
1000
100
10
1
0.1
Jan-81
Jan-82
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Date


Concentration Plot for: AR-16ADP
BOS elevation: 60
1,1-Dichloroethene
Benzene
Vinyl Chloride
Concentration (ug/l)
10000
1000
100
10
1
0.1
Jan-81
Jan-82
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Date

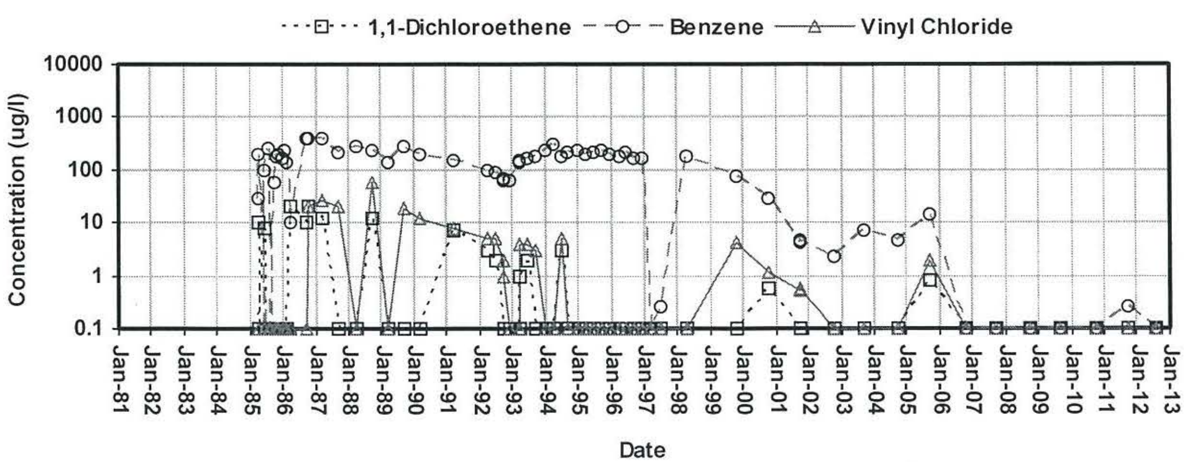
Concentration Plot for: AR-19AB1
BOS elevation: 60 (BR)

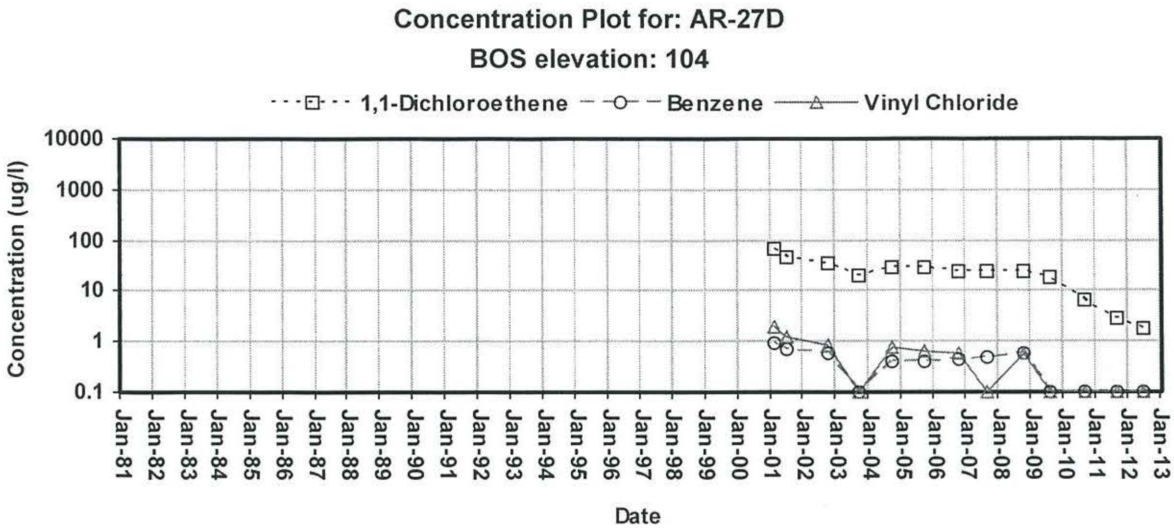


Concentration Plot for: AR-20
BOS elevation: 87 (BR)

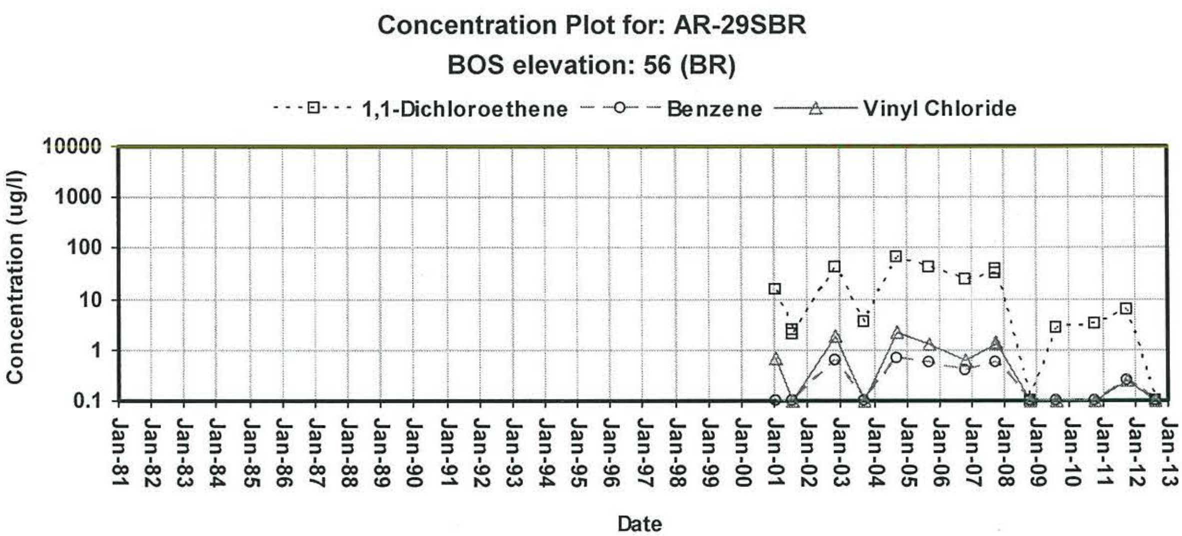


Concentration Plot for: AR-21
BOS elevation: 87

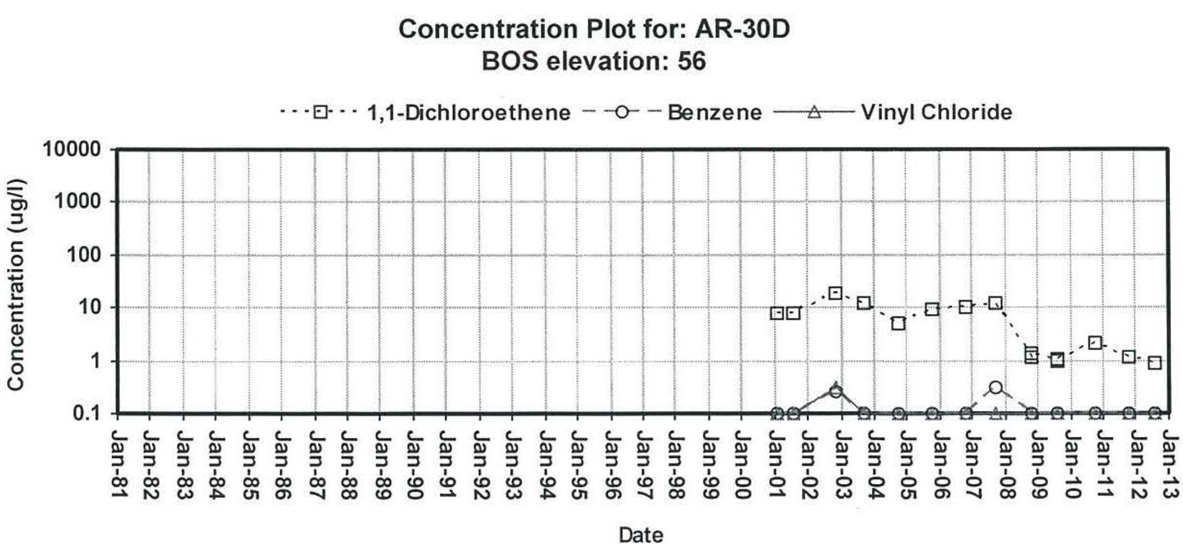




Concentration Plot for: AR-27D
BOS elevation: 104
1,1-Dichloroethene
Benzene
Vinyl Chloride
Concentration (ug/l)
10000
1000
100
10
1
0.1
Jan-81 Jan-82 Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09 Jan-10 Jan-11 Jan-12 Jan-13
Date



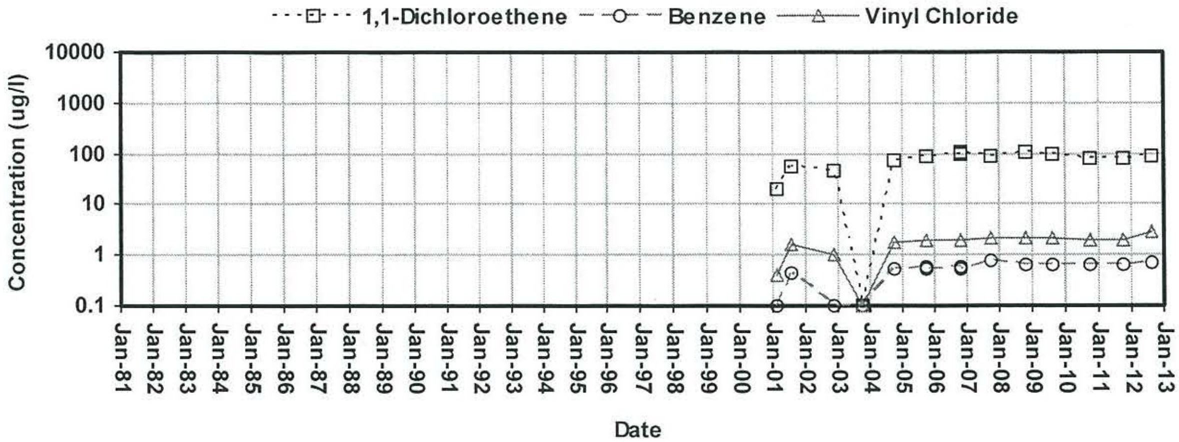
Concentration Plot for: AR-29SBR
BOS elevation: 56 (BR)
1,1-Dichloroethene
Benzene
Vinyl Chloride
Concentration (ug/l)
10000
1000
100
10
1
0.1
Jan-81 Jan-82 Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09 Jan-10 Jan-11 Jan-12 Jan-13
Date



Concentration Plot for: AR-30D
BOS elevation: 56
1,1-Dichloroethene
Benzene
Vinyl Chloride
Concentration (ug/l)
10000
1000
100
10
1
0.1
Jan-81 Jan-82 Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09 Jan-10 Jan-11 Jan-12 Jan-13
Date

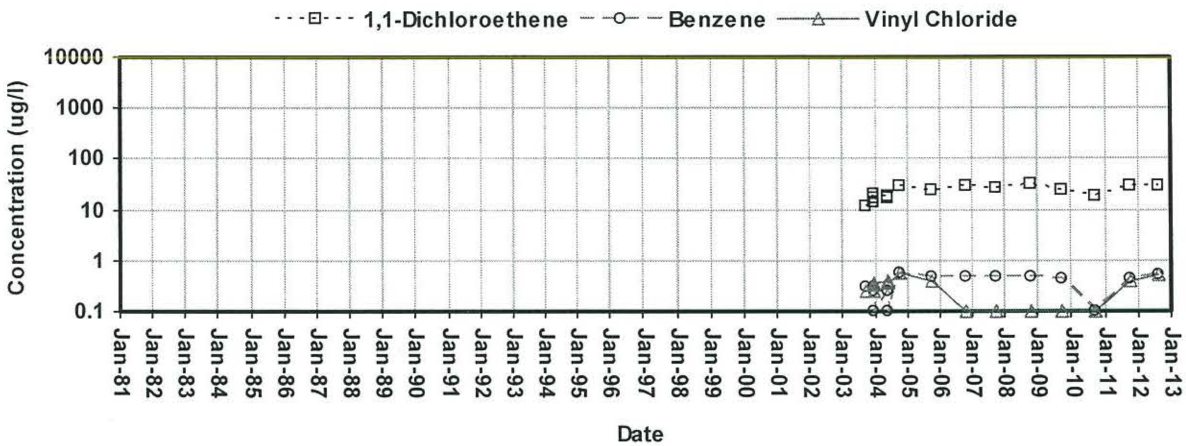
Concentration Plot for: AR-31D

BOS elevation: 82



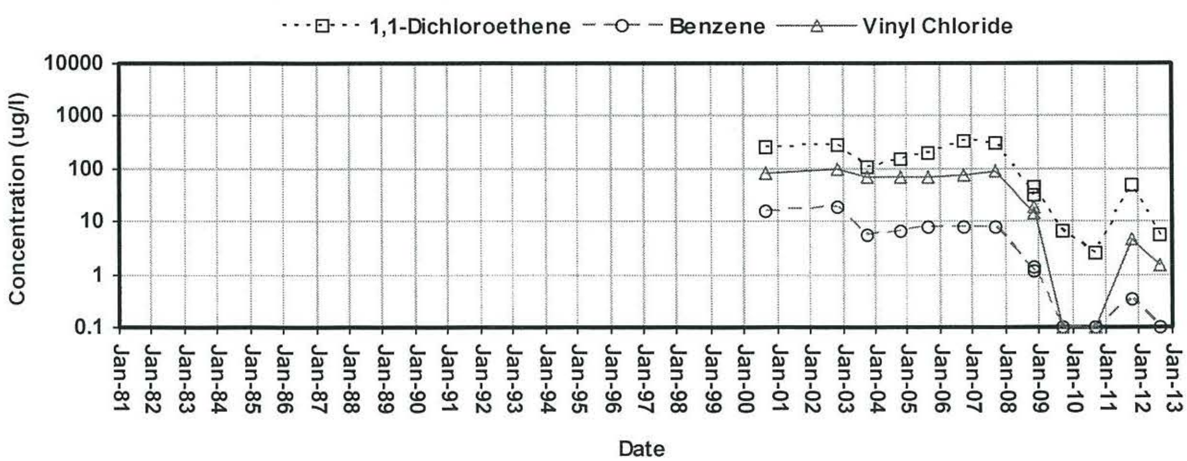
Concentration Plot for: AR-35MBR

BOS elevation: -88 (BR)

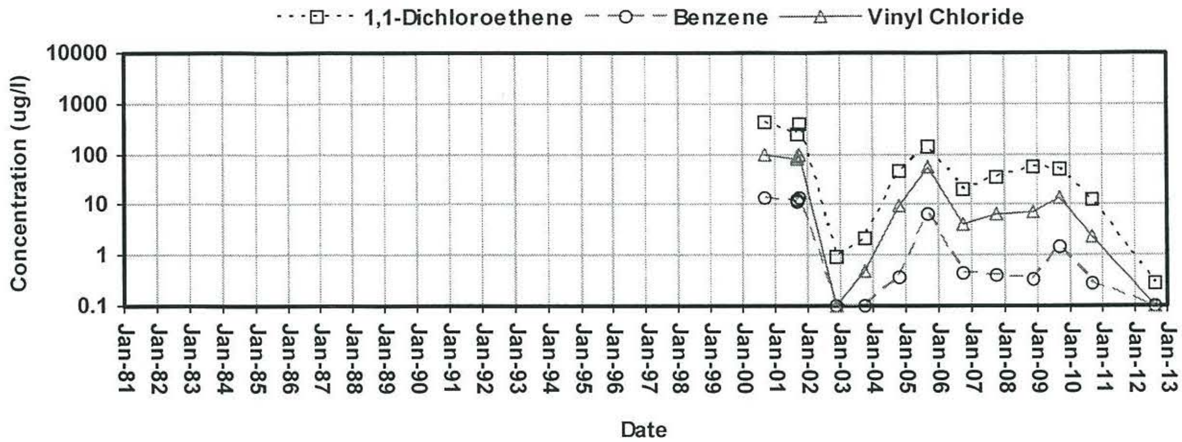


Concentration Plot for: ASBRV-T6A

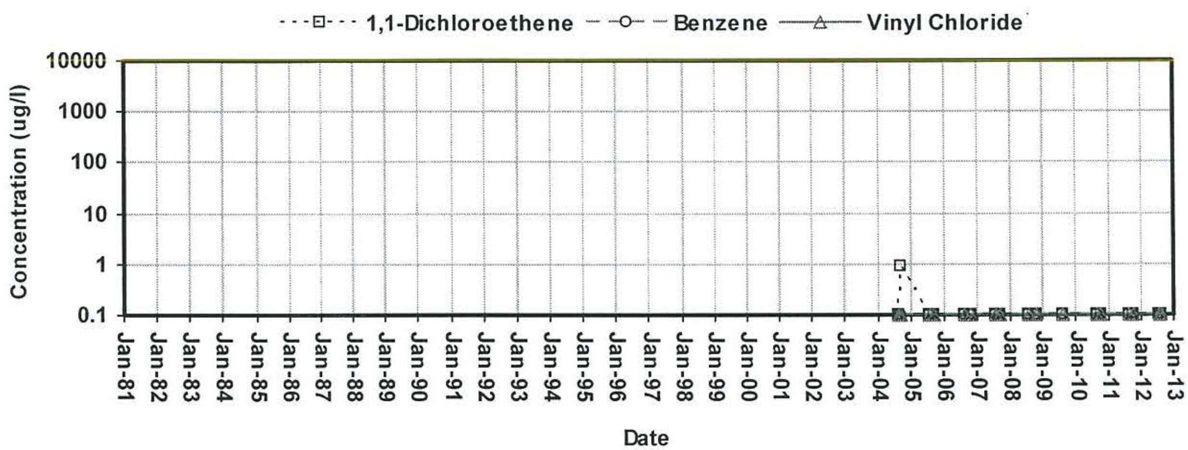
BOS elevation: -88



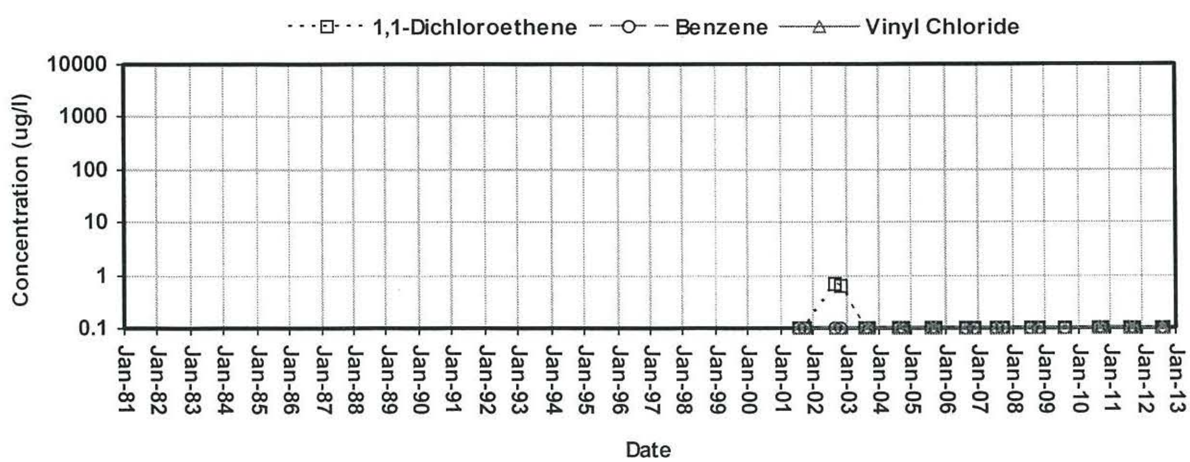
Concentration Plot for: ASBRV-T6B
BOS elevation:

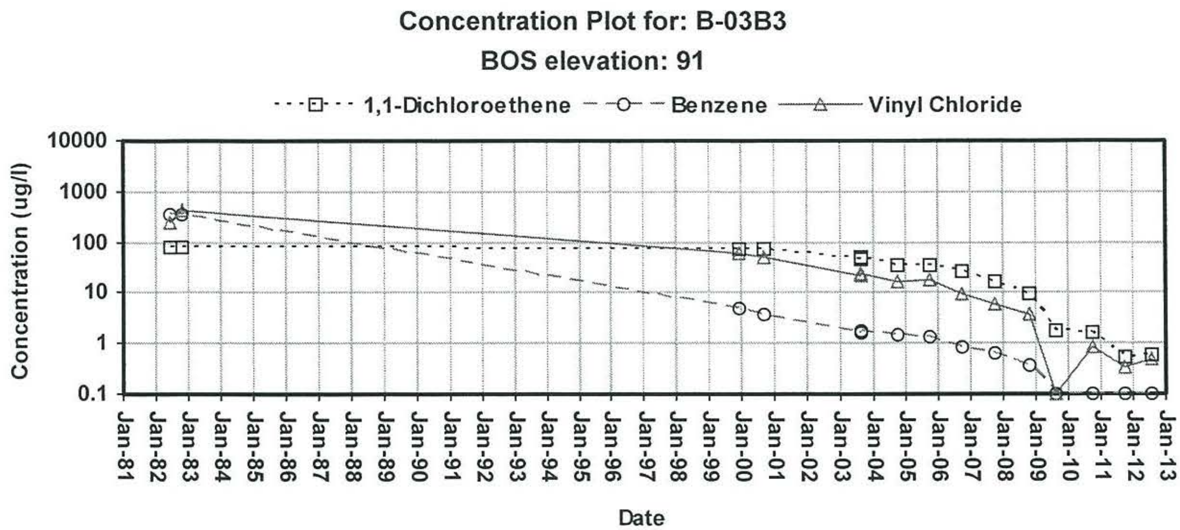


Concentration Plot for: Assabet-1A
BOS elevation: 78

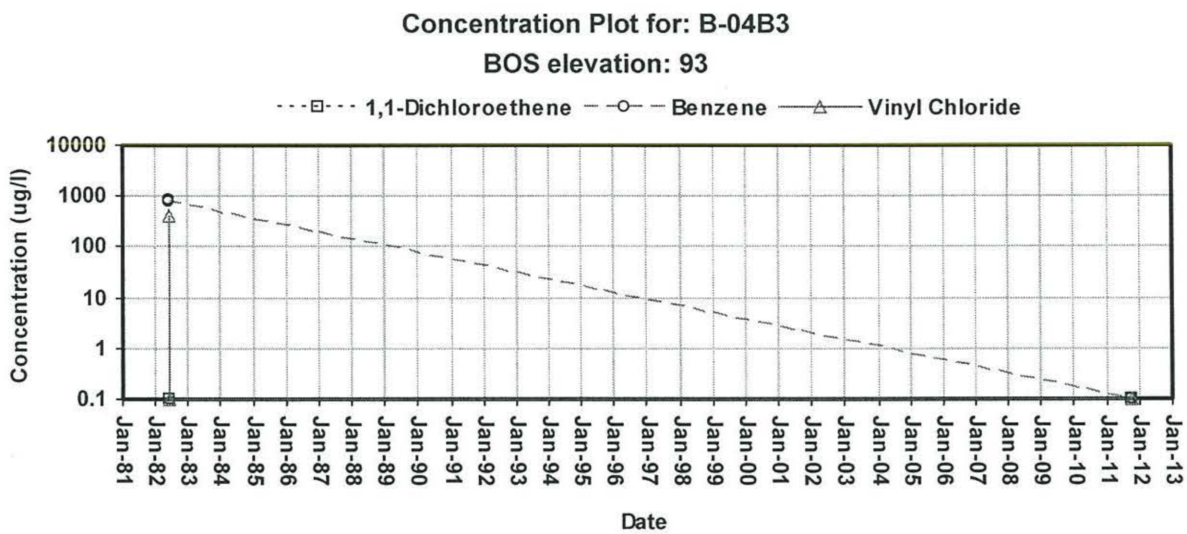


Concentration Plot for: Assabet-2A
BOS elevation: 78

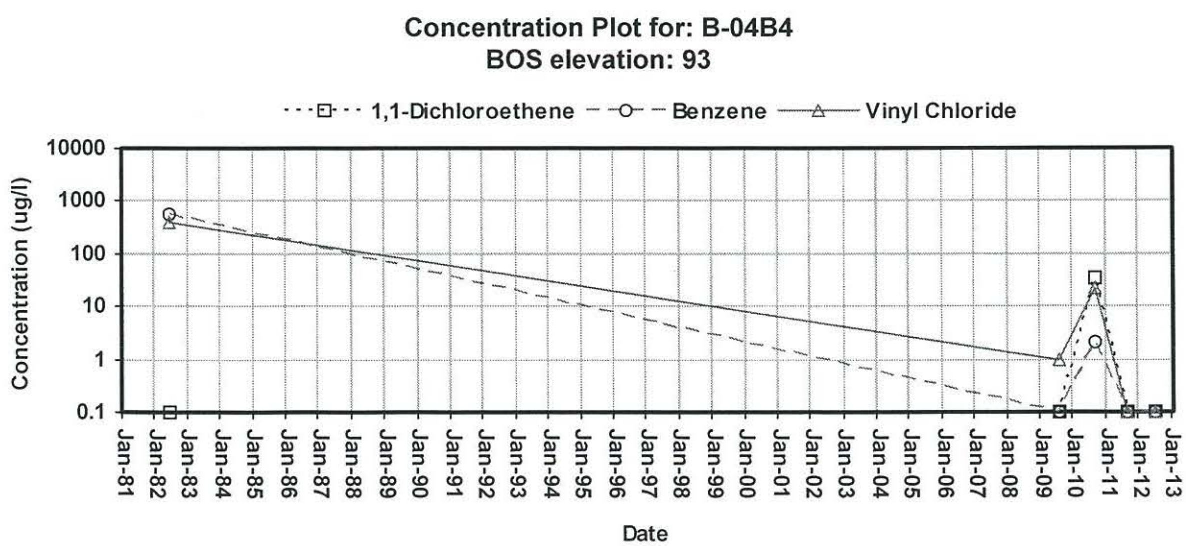




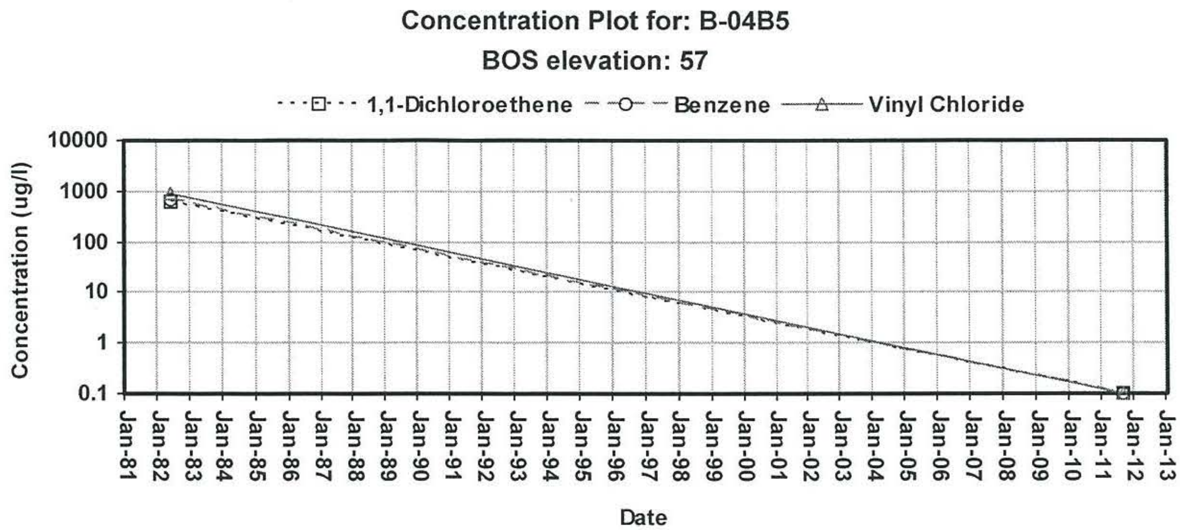
Concentration Plot for: B-03B3
BOS elevation: 91
1,1-Dichloroethene
Benzene
Vinyl Chloride
Concentration (ug/l)
10000
1000
100
10
1
0.1
Jan-81 Jan-82 Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09 Jan-10 Jan-11 Jan-12 Jan-13
Date

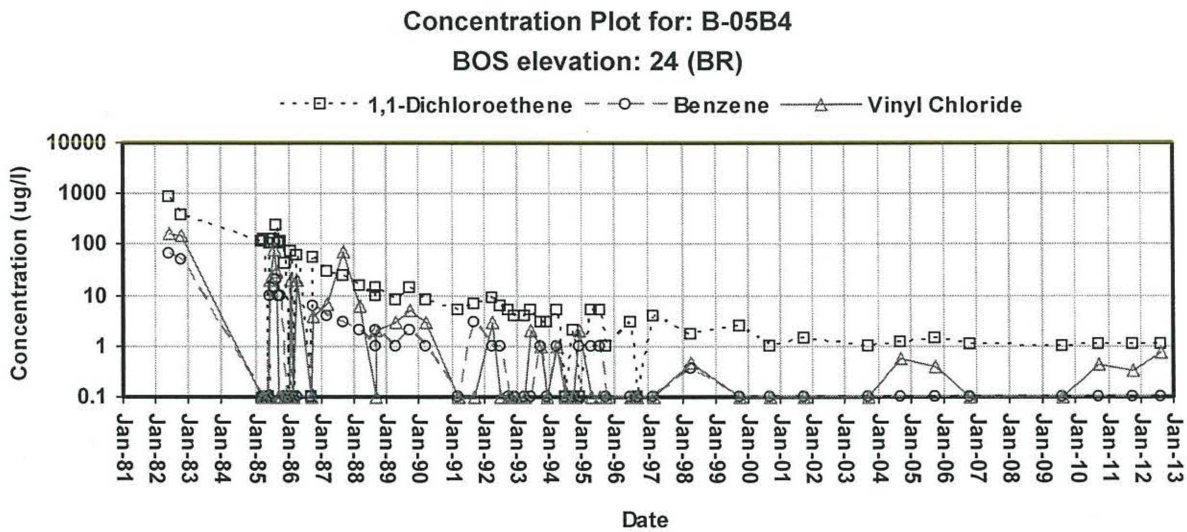


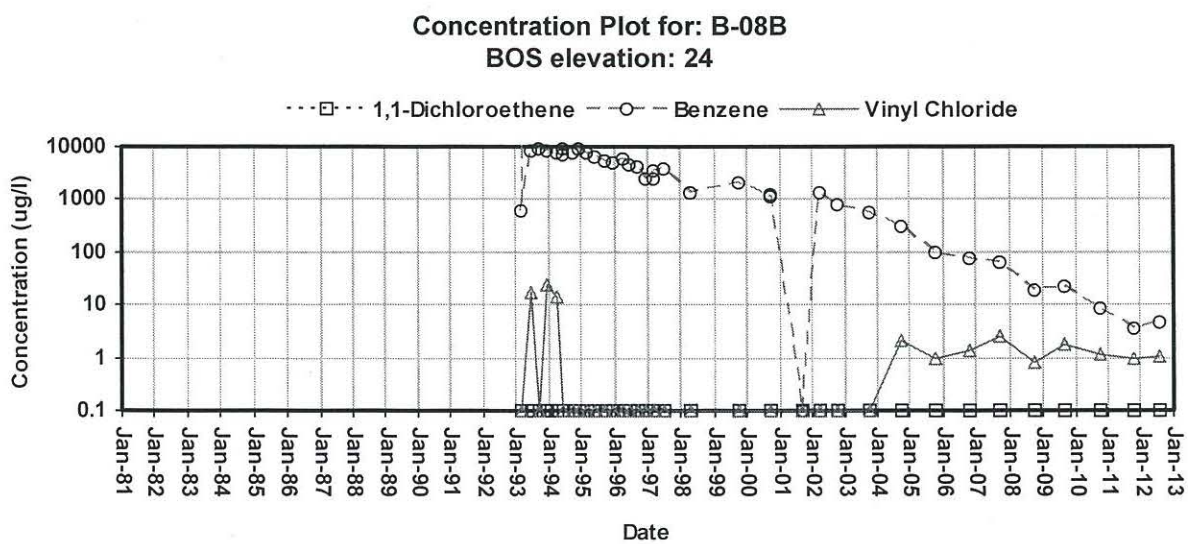
Concentration Plot for: B-04B3
BOS elevation: 93
1,1-Dichloroethene
Benzene
Vinyl Chloride
Concentration (ug/l)
10000
1000
100
10
1
0.1
Jan-81 Jan-82 Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09 Jan-10 Jan-11 Jan-12 Jan-13
Date

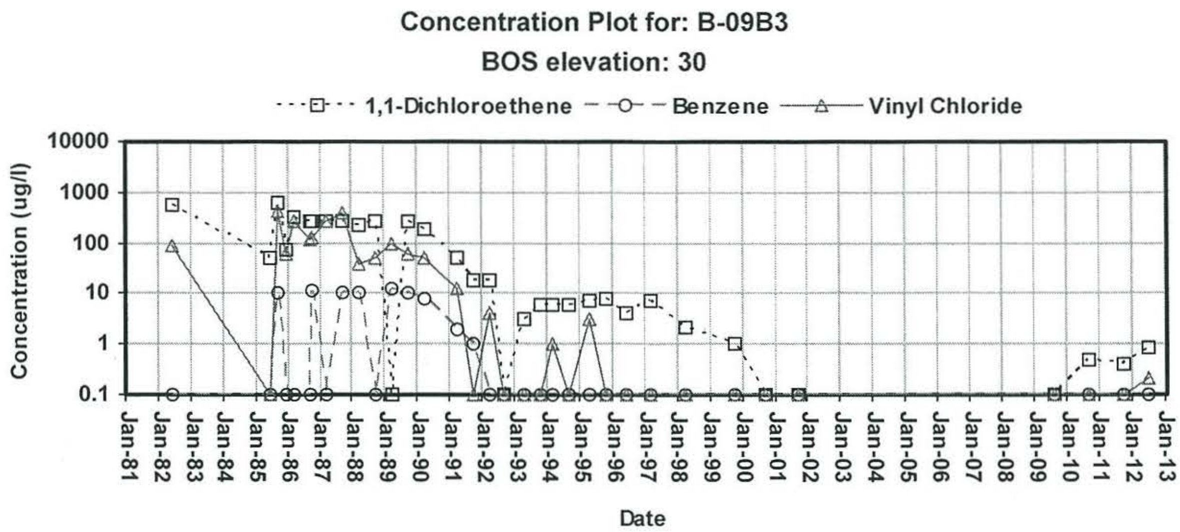


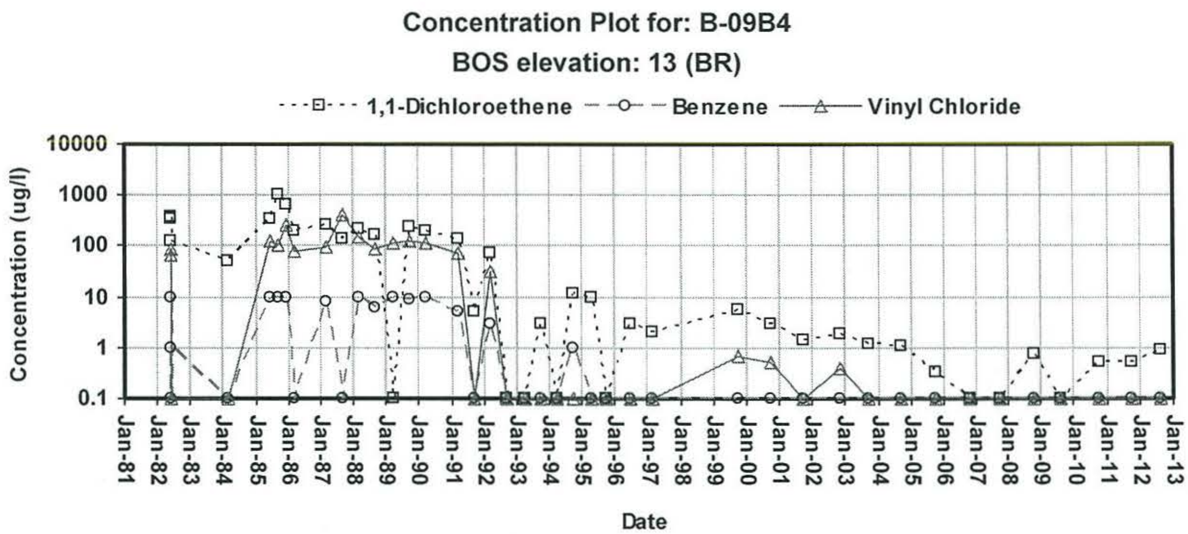
Concentration Plot for: B-04B4
BOS elevation: 93
1,1-Dichloroethene
Benzene
Vinyl Chloride
Concentration (ug/l)
10000
1000
100
10
1
0.1
Jan-81 Jan-82 Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09 Jan-10 Jan-11 Jan-12 Jan-13
Date

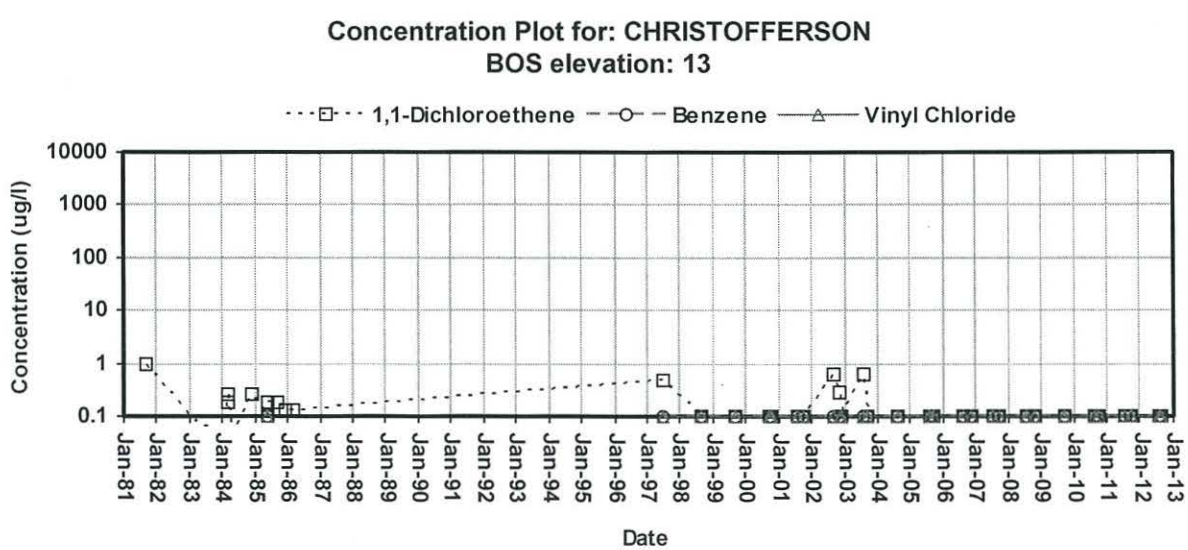

Concentration Plot for: B-04B5
BOS elevation: 57
1,1-Dichloroethene
Benzene
Vinyl Chloride
Concentration (ug/l)
Date

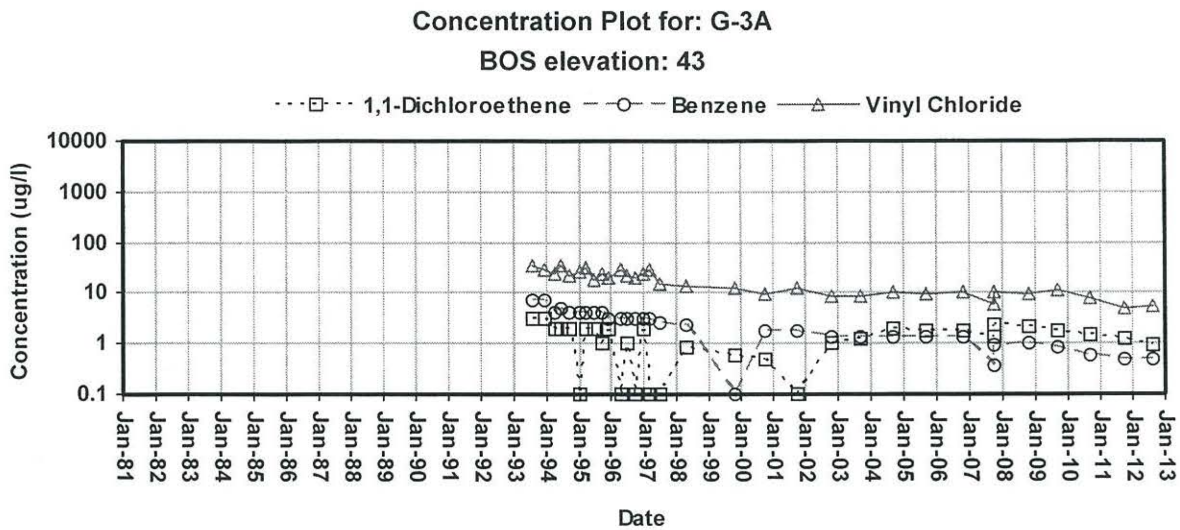

Concentration Plot for: B-05B4
BOS elevation: 24 (BR)
1,1-Dichloroethene
Benzene
Vinyl Chloride
Concentration (ug/l)
Date


Concentration Plot for: B-08B
BOS elevation: 24
1,1-Dichloroethene
Benzene
Vinyl Chloride
Concentration (ug/l)
Date


Concentration Plot for: B-09B3
BOS elevation: 30
1,1-Dichloroethene
Benzene
Vinyl Chloride
Concentration (ug/l)
10000
1000
100
10
1
0.1
Jan-81 Jan-82 Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09 Jan-10 Jan-11 Jan-12 Jan-13
Date


Concentration Plot for: B-09B4
BOS elevation: 13 (BR)
1,1-Dichloroethene
Benzene
Vinyl Chloride
Concentration (ug/l)
10000
1000
100
10
1
0.1
Jan-81 Jan-82 Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09 Jan-10 Jan-11 Jan-12 Jan-13
Date


Concentration Plot for: CHRISTOFFERSON
BOS elevation: 13
1,1-Dichloroethene
Benzene
Vinyl Chloride
Concentration (ug/l)
10000
1000
100
10
1
0.1
Jan-81 Jan-82 Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09 Jan-10 Jan-11 Jan-12 Jan-13
Date


Concentration Plot for: G-3A
BOS elevation: 43
1,1-Dichloroethene
Benzene
Vinyl Chloride
Concentration (ug/l)
10000
1000
100
10
1
0.1
Jan-81
Jan-82
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
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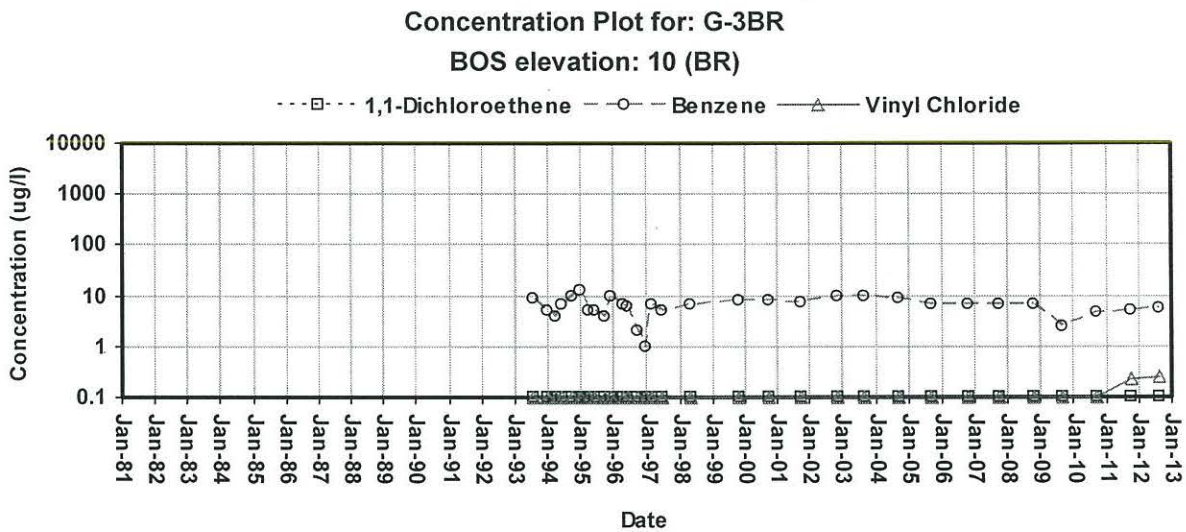
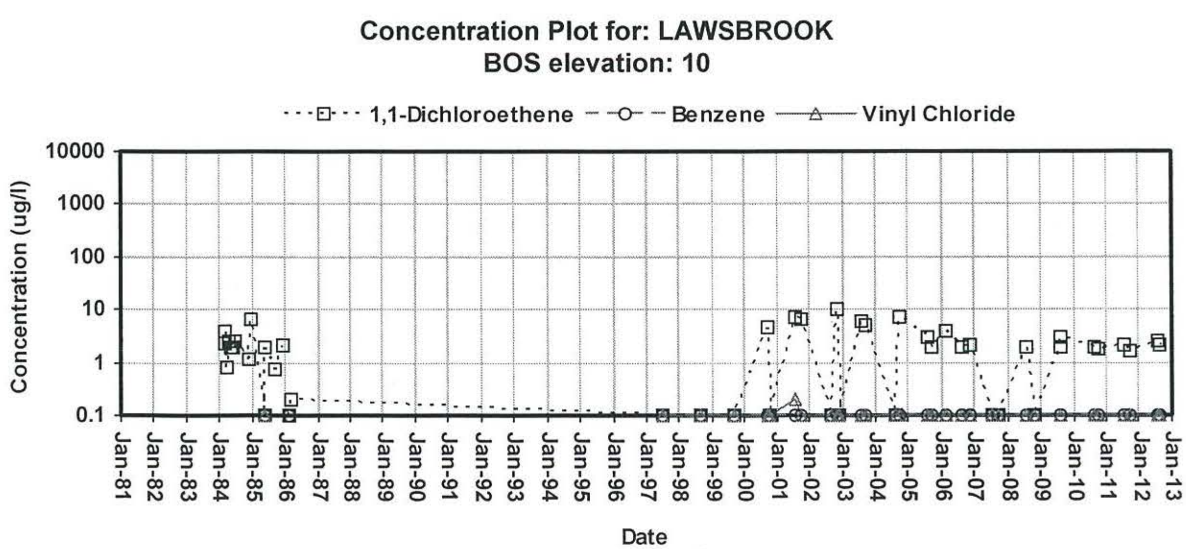
Jan-10
Jan-11
Jan-12
Jan-13
Date


Concentration Plot for: G-3BR
BOS elevation: 10 (BR)
1,1-Dichloroethene
Benzene
Vinyl Chloride
Concentration (ug/l)
10000
1000
100
10
1
0.1
Jan-81
Jan-82
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Date


Concentration Plot for: LAWSBROOK
BOS elevation: 10
1,1-Dichloroethene
Benzene
Vinyl Chloride
Concentration (ug/l)
10000
1000
100
10
1
0.1
Jan-81
Jan-82
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
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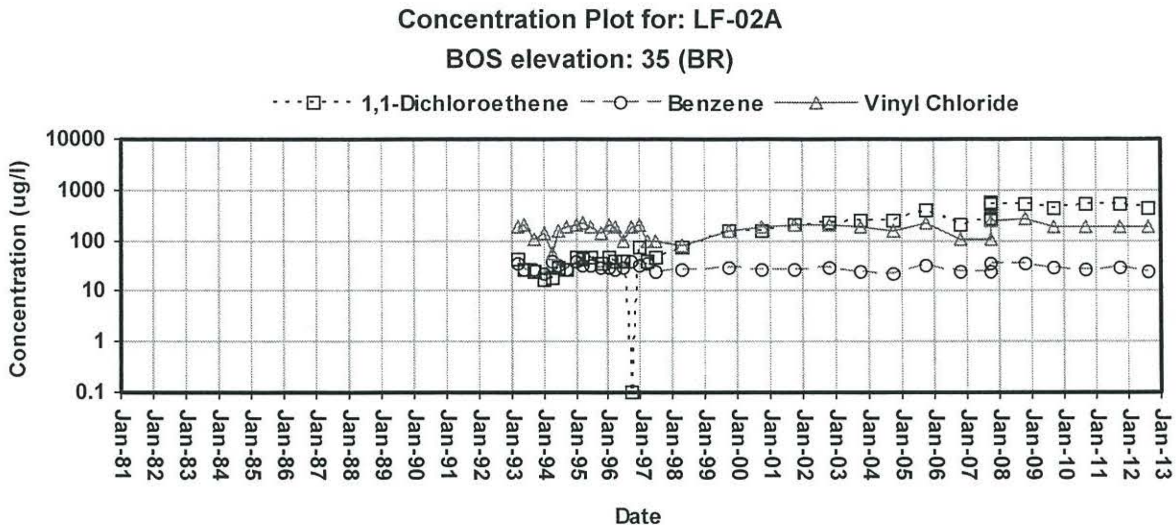
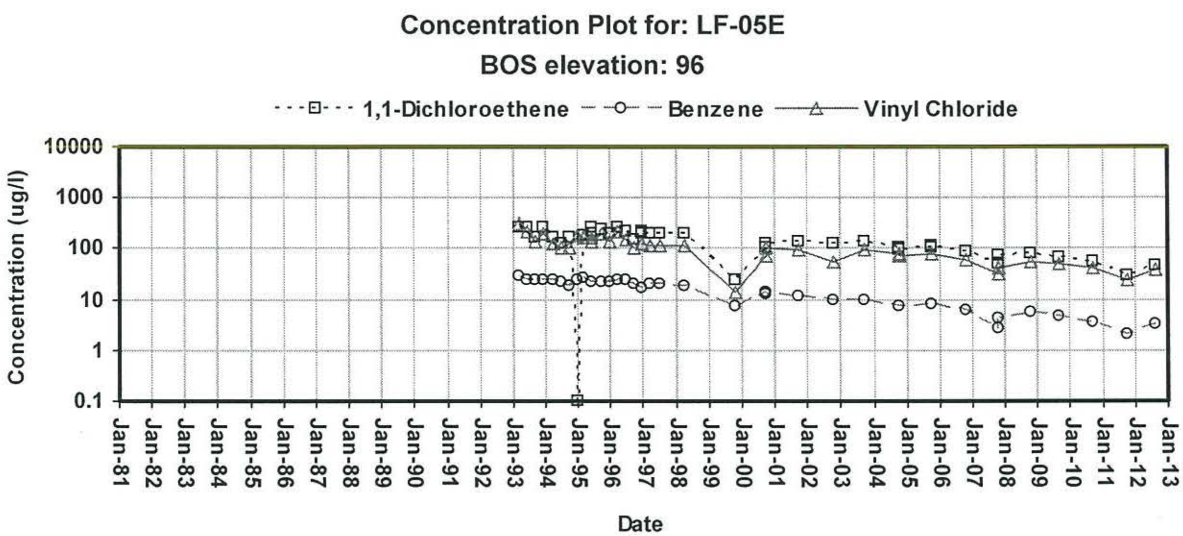
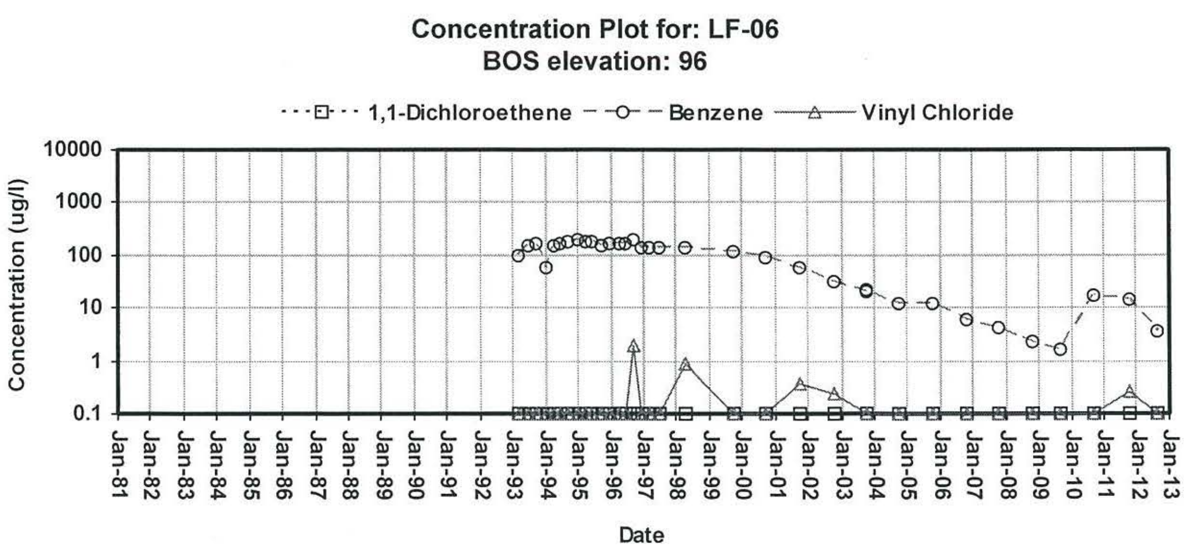
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Date



Concentration Plot for: LF-02A
BOS elevation: 35 (BR)
1,1-Dichloroethene
Benzene
Vinyl Chloride
Concentration (ug/l)
10000
1000
100
10
1
0.1
Jan-81 Jan-82 Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09 Jan-10 Jan-11 Jan-12 Jan-13
Date

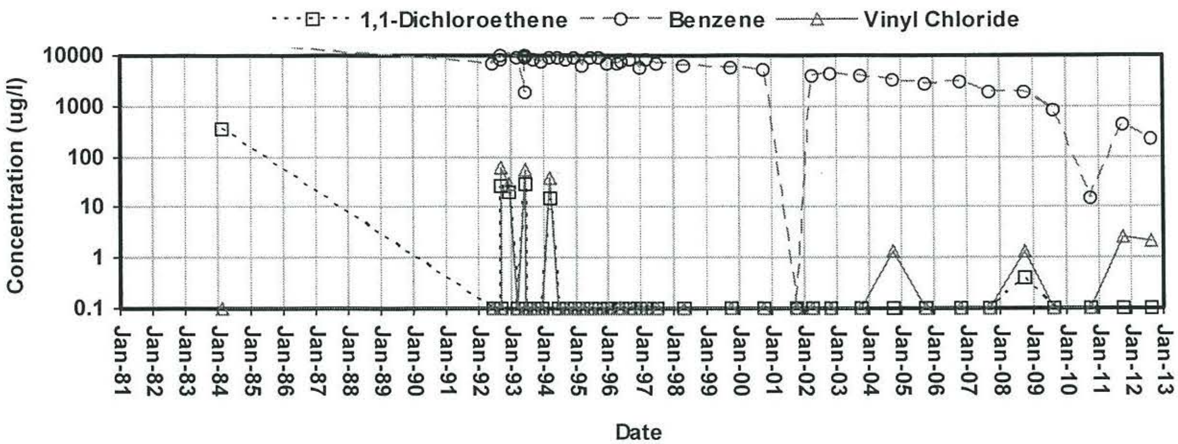


Concentration Plot for: LF-05E
BOS elevation: 96
1,1-Dichloroethene
Benzene
Vinyl Chloride
Concentration (ug/l)
10000
1000
100
10
1
0.1
Jan-81 Jan-82 Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09 Jan-10 Jan-11 Jan-12 Jan-13
Date

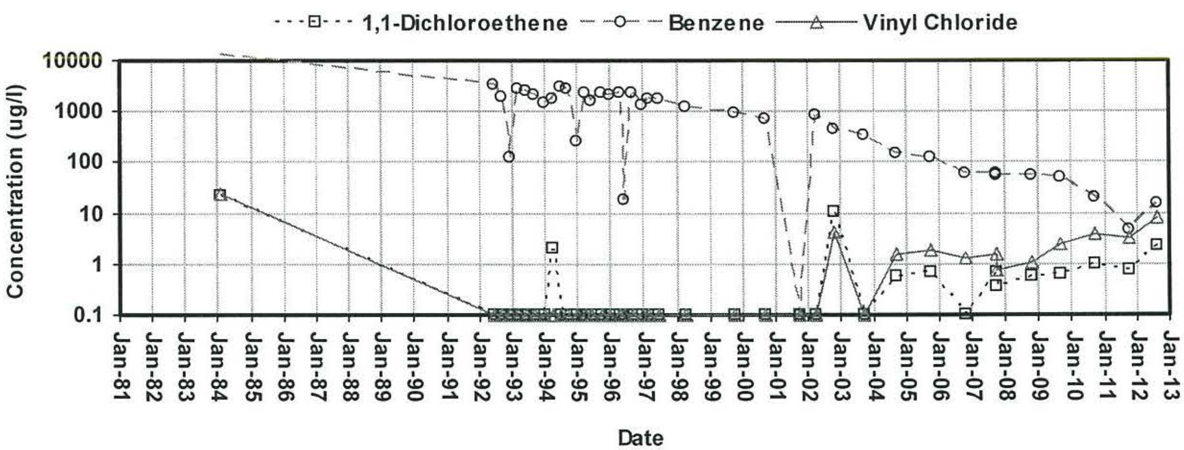


Concentration Plot for: LF-06
BOS elevation: 96
1,1-Dichloroethene
Benzene
Vinyl Chloride
Concentration (ug/l)
10000
1000
100
10
1
0.1
Jan-81 Jan-82 Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09 Jan-10 Jan-11 Jan-12 Jan-13
Date

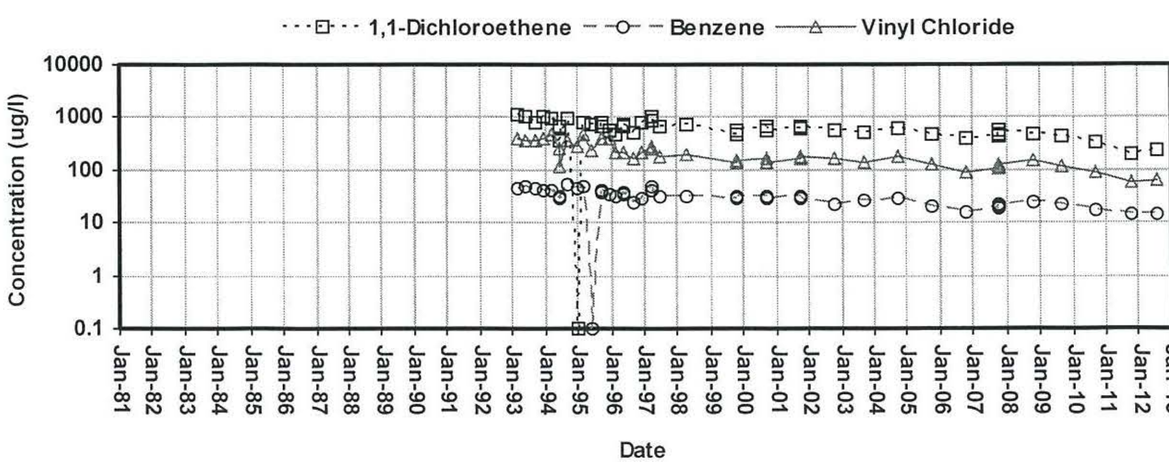
Concentration Plot for: LF-06C
BOS elevation: 105

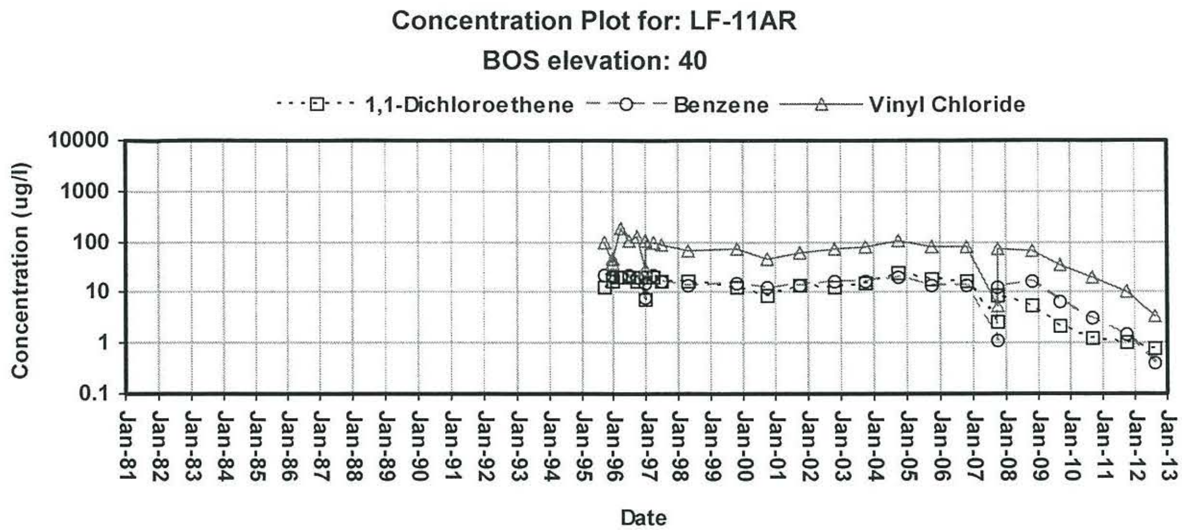


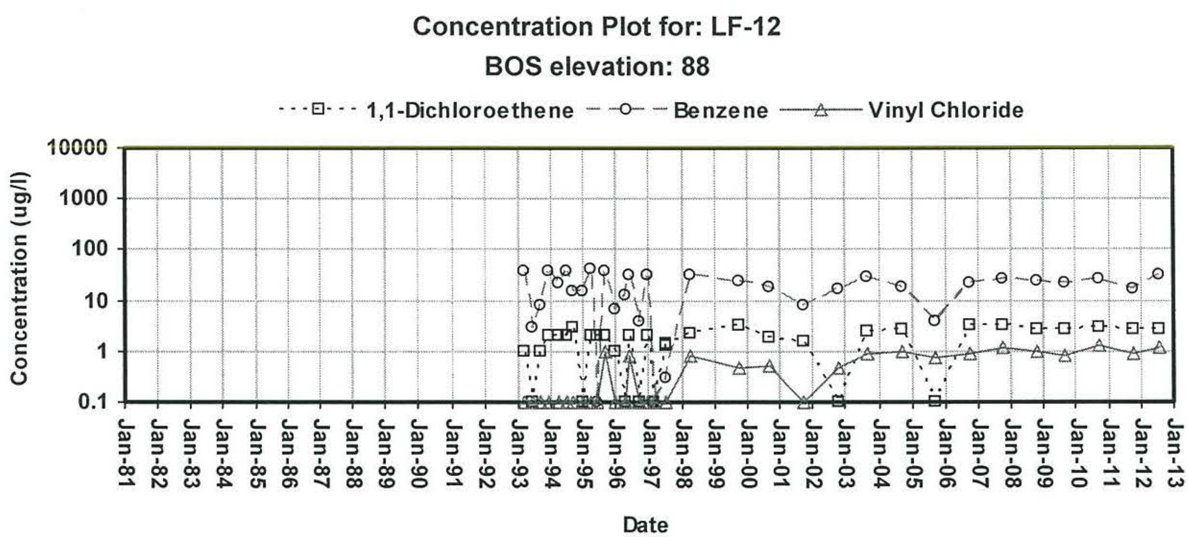
Concentration Plot for: LF-06N
BOS elevation: 85 (BR)

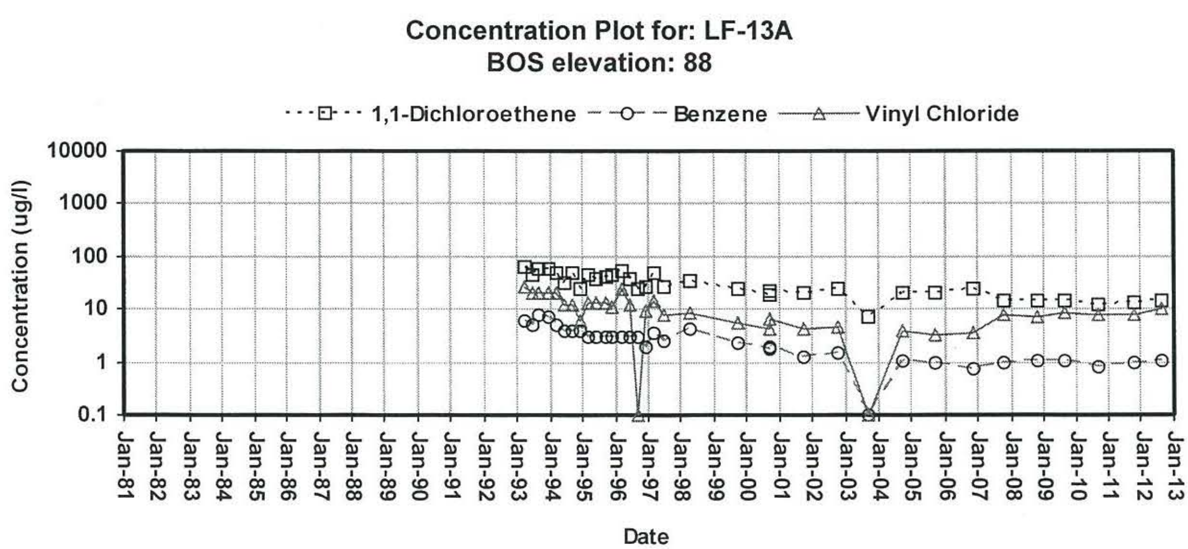


Concentration Plot for: LF-10
BOS elevation: 85




Concentration Plot for: LF-11AR
BOS elevation: 40
1,1-Dichloroethene
Benzene
Vinyl Chloride
Concentration (ug/l)
10000
1000
100
10
1
0.1
Jan-81
Jan-82
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Date


Concentration Plot for: LF-12
BOS elevation: 88
1,1-Dichloroethene
Benzene
Vinyl Chloride
Concentration (ug/l)
10000
1000
100
10
1
0.1
Jan-81
Jan-82
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Date


Concentration Plot for: LF-13A
BOS elevation: 88
1,1-Dichloroethene
Benzene
Vinyl Chloride
Concentration (ug/l)
10000
1000
100
10
1
0.1
Jan-81
Jan-82
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
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Jan-06
Jan-07
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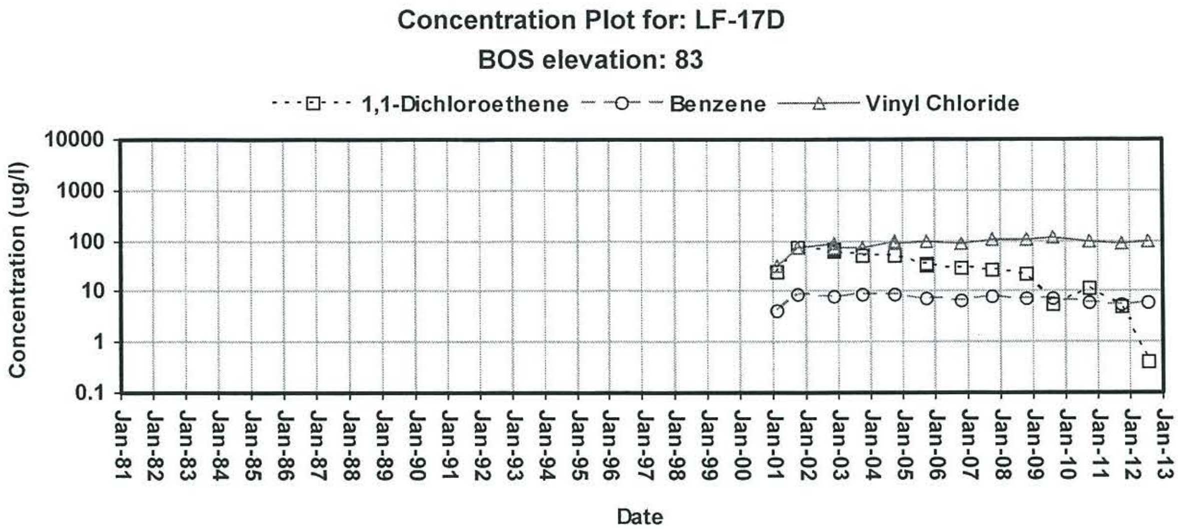
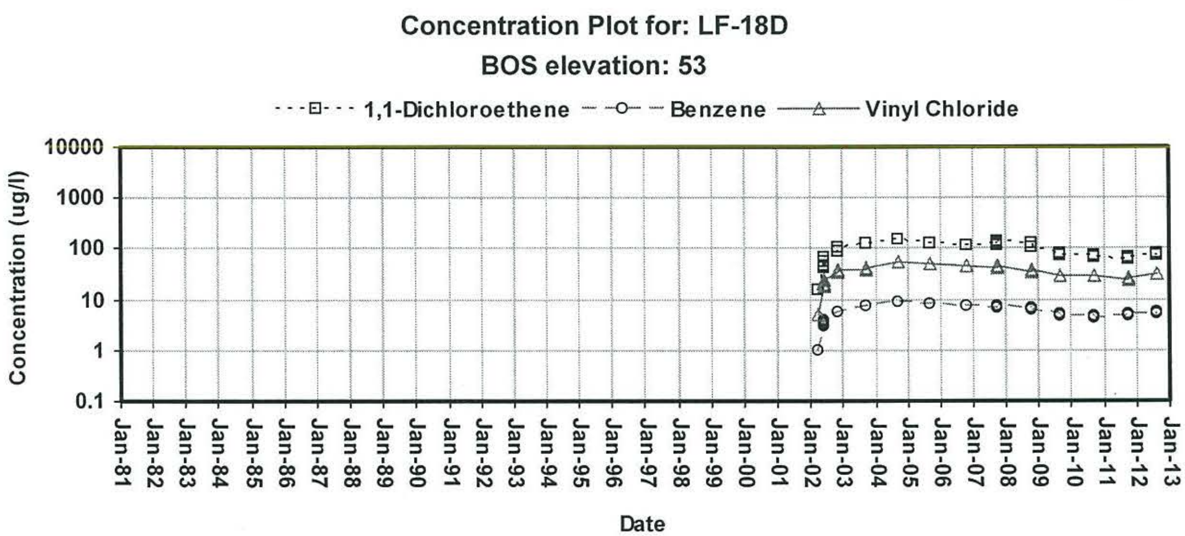
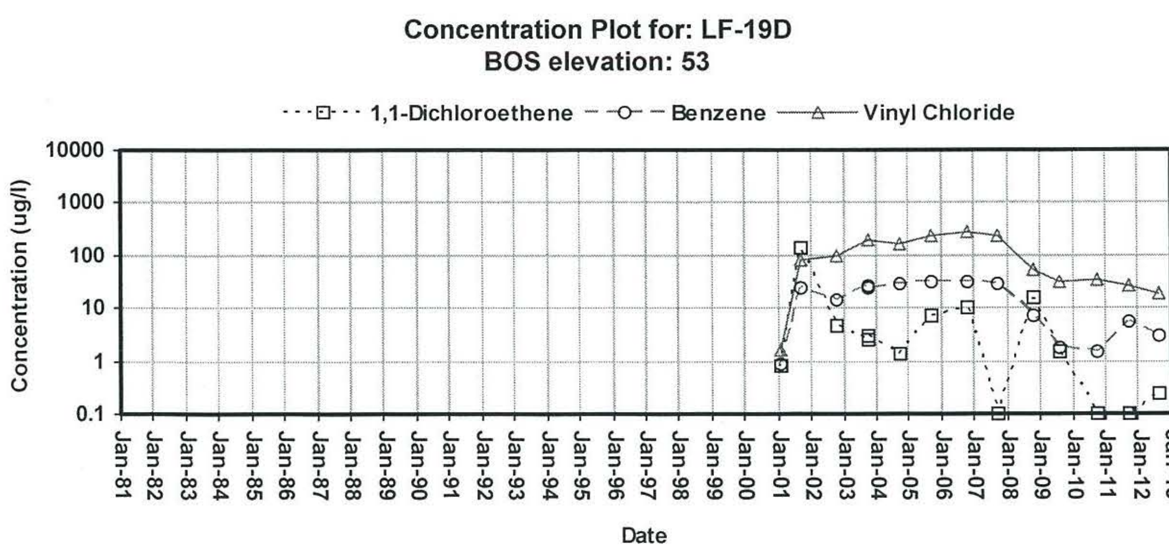
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Date



Concentration Plot for: LF-17D
BOS elevation: 83
1,1-Dichloroethene
Benzene
Vinyl Chloride
Concentration (ug/l)
10000
1000
100
10
1
0.1
Jan-81 Jan-82 Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09 Jan-10 Jan-11 Jan-12 Jan-13
Date

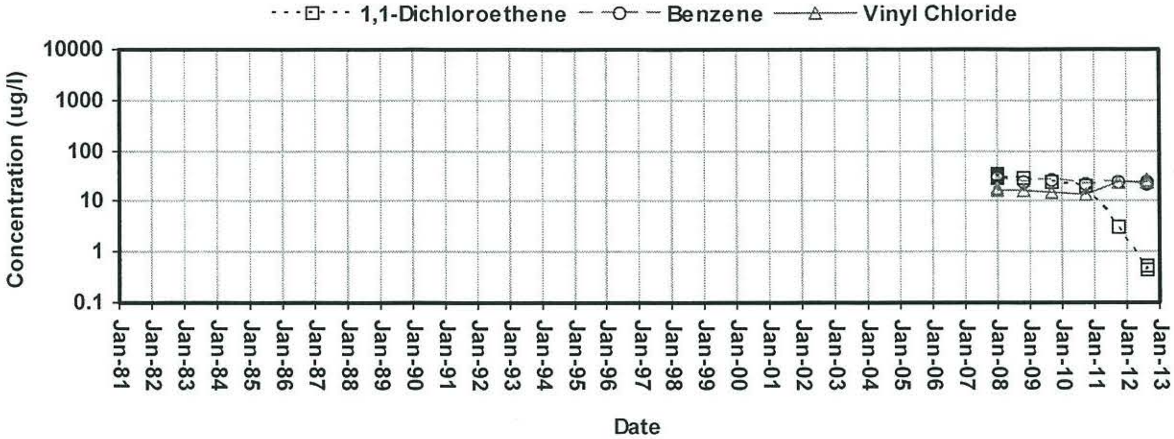


Concentration Plot for: LF-18D
BOS elevation: 53
1,1-Dichloroethene
Benzene
Vinyl Chloride
Concentration (ug/l)
10000
1000
100
10
1
0.1
Jan-81 Jan-82 Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09 Jan-10 Jan-11 Jan-12 Jan-13
Date

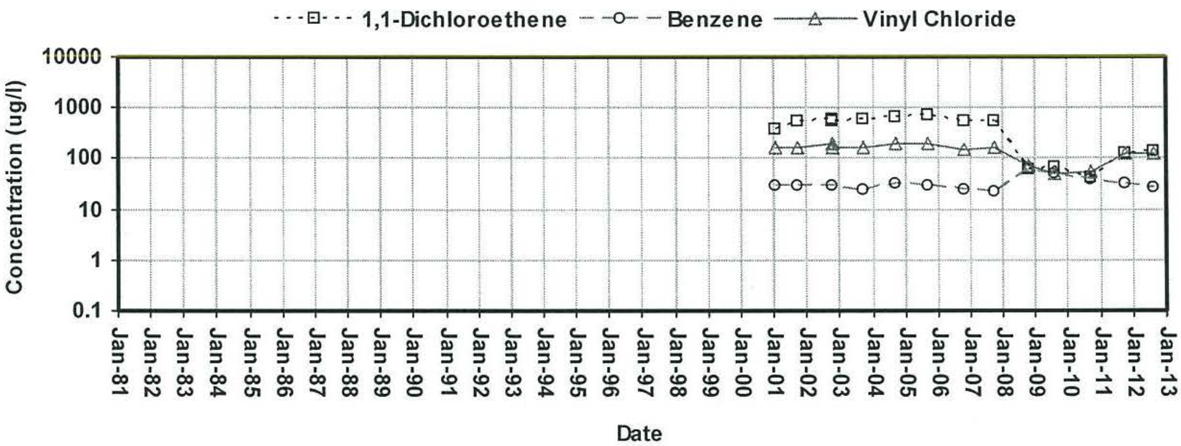


Concentration Plot for: LF-19D
BOS elevation: 53
1,1-Dichloroethene
Benzene
Vinyl Chloride
Concentration (ug/l)
10000
1000
100
10
1
0.1
Jan-81 Jan-82 Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09 Jan-10 Jan-11 Jan-12 Jan-13
Date

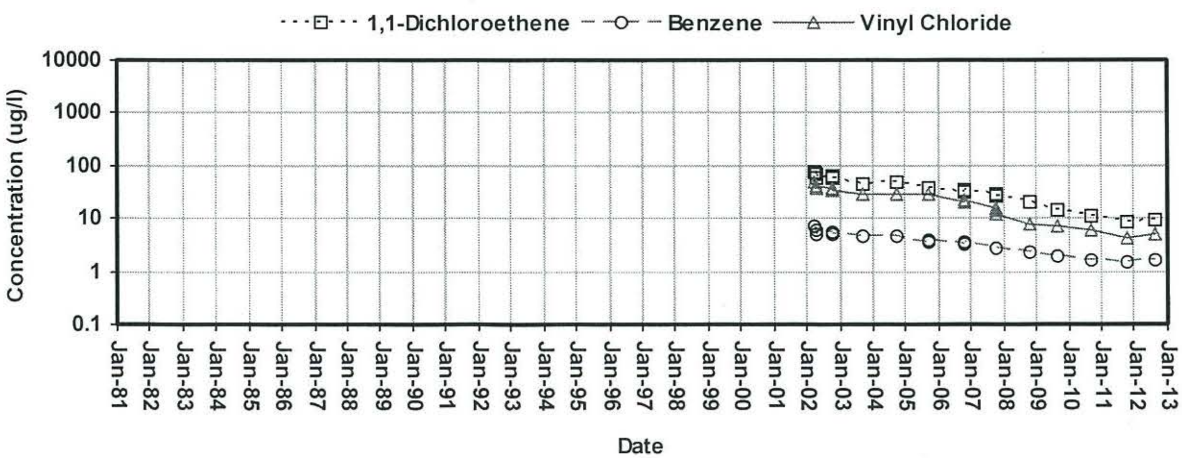
Concentration Plot for: LF-19MBR
BOS elevation: -23 (BR)



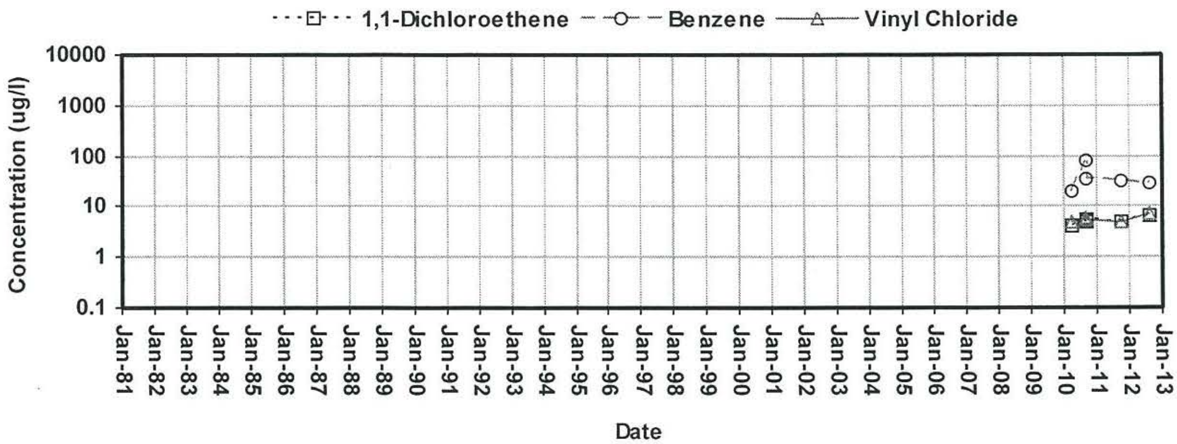
Concentration Plot for: LF-19SBR
BOS elevation: 11 (BR)



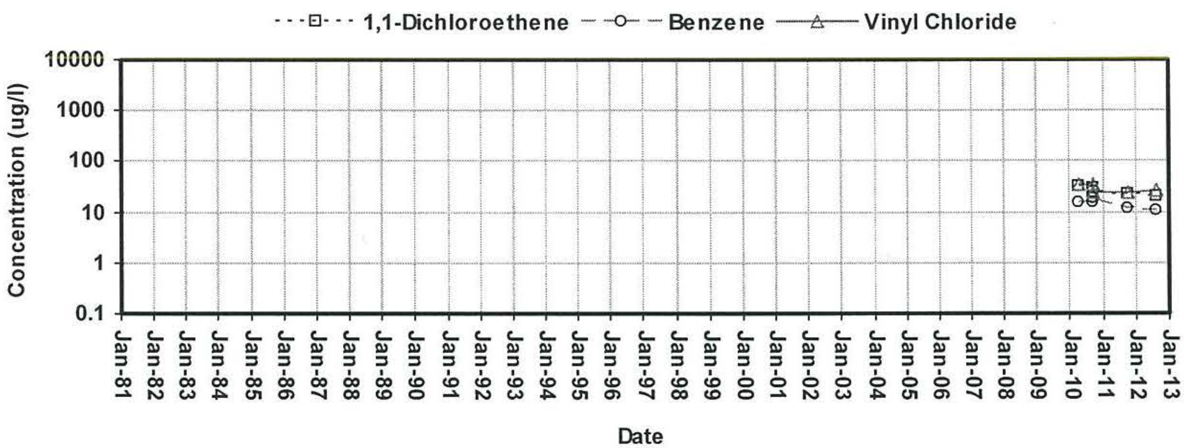
Concentration Plot for: LF-20D
BOS elevation: 11



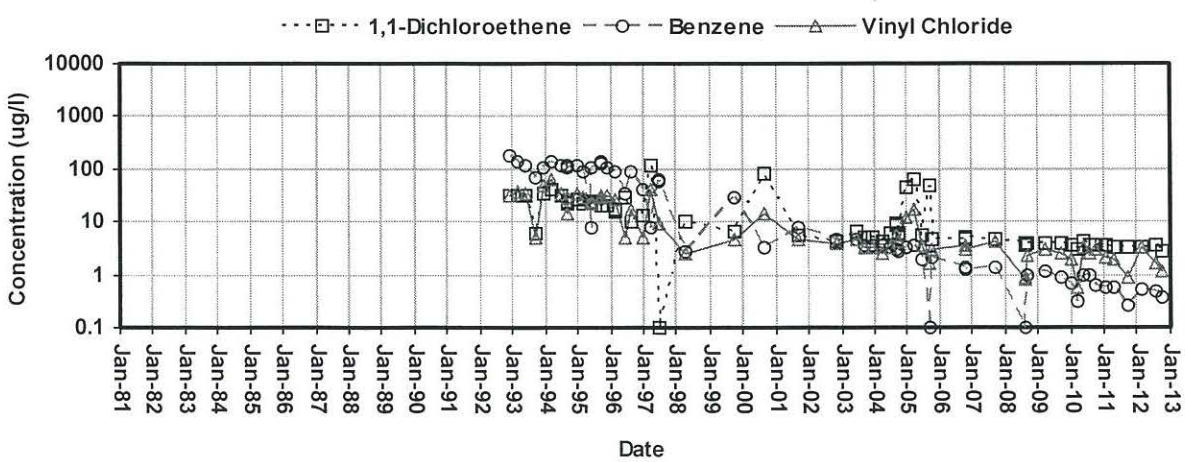
Concentration Plot for: LF-22D
BOS elevation: 80



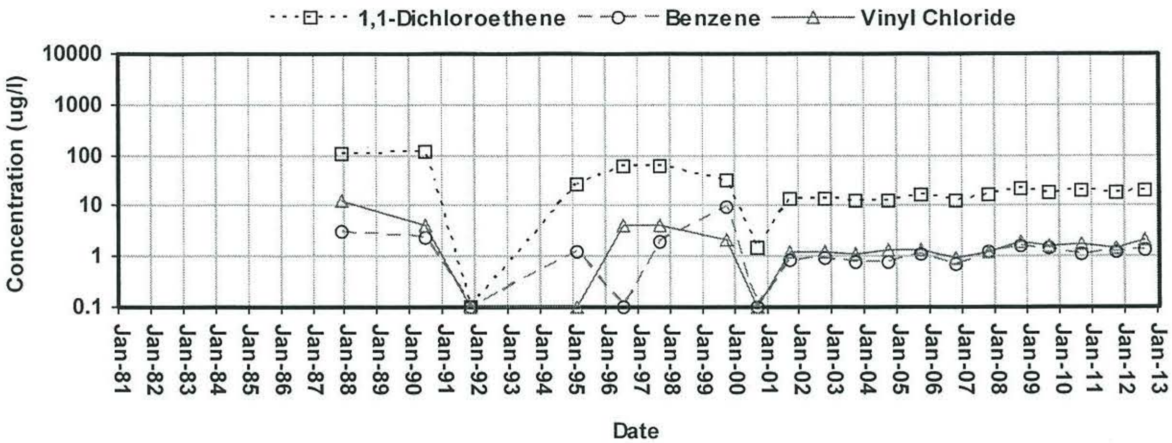
Concentration Plot for: LF-22S
BOS elevation: 100



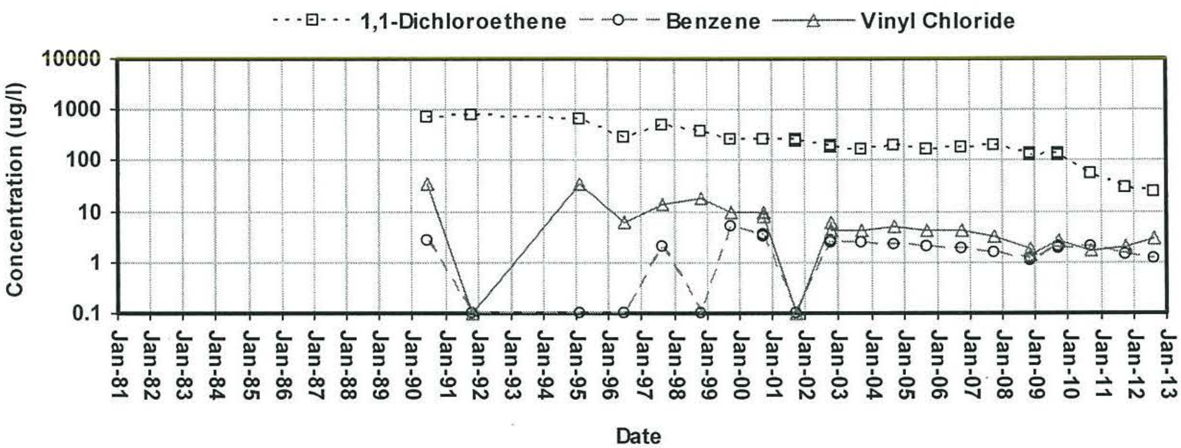
Concentration Plot for: MLF
BOS elevation: 100



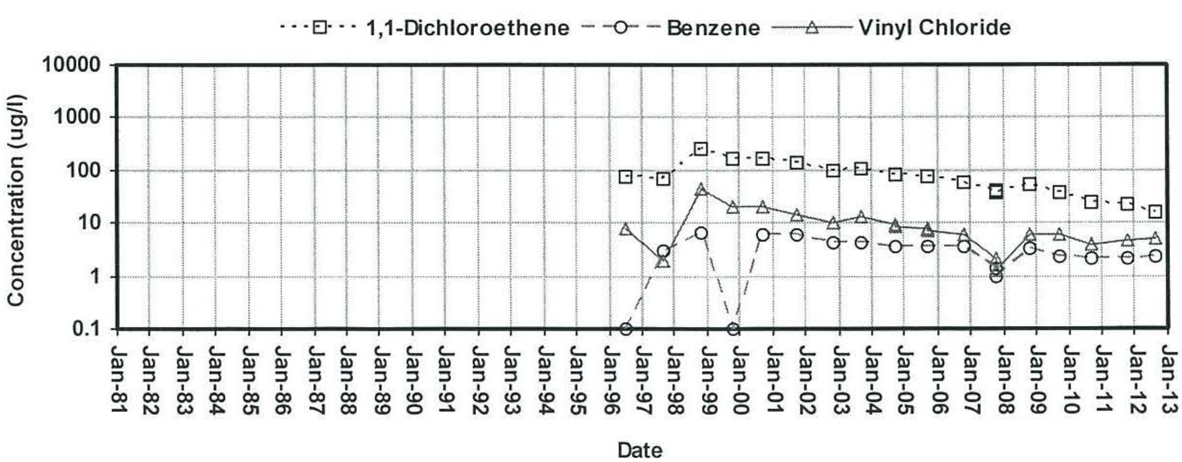
Concentration Plot for: MW-04B
BOS elevation: 36 (BR)

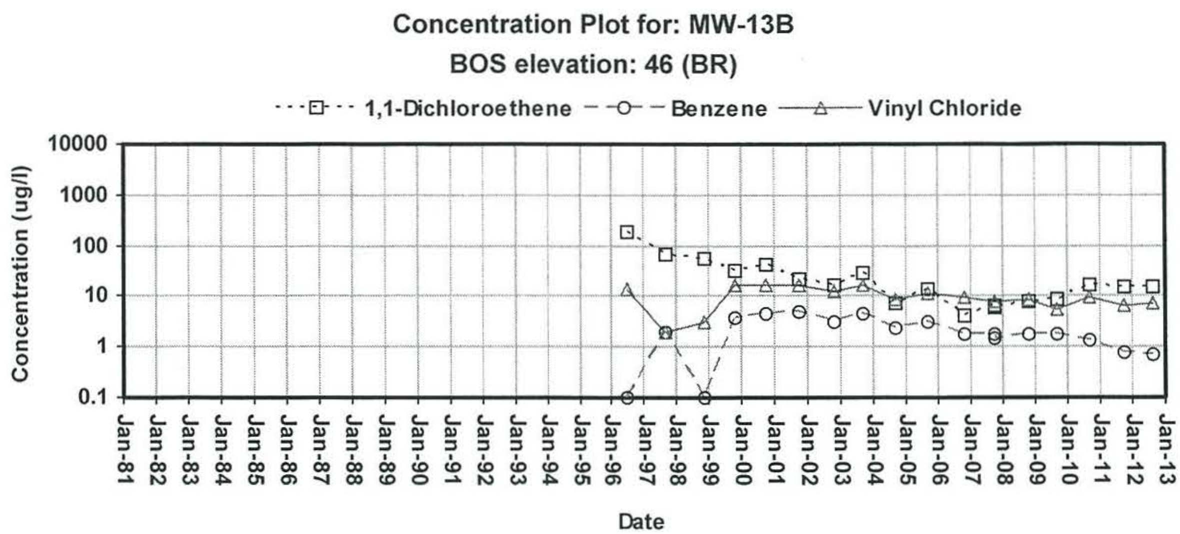


Concentration Plot for: MW-06B
BOS elevation: 40 (BR)

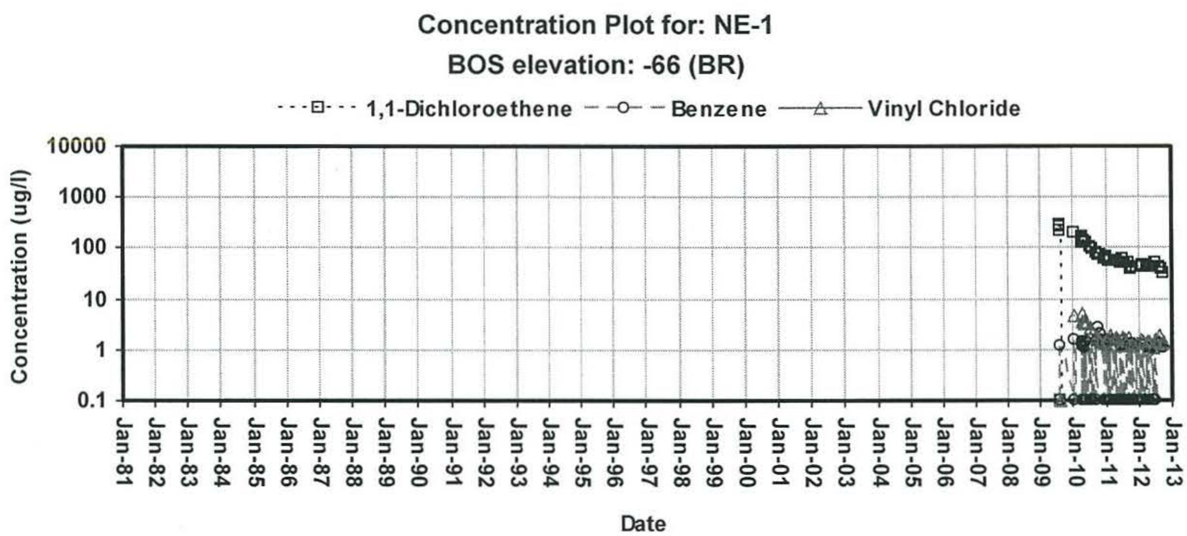


Concentration Plot for: MW-07B
BOS elevation: 40

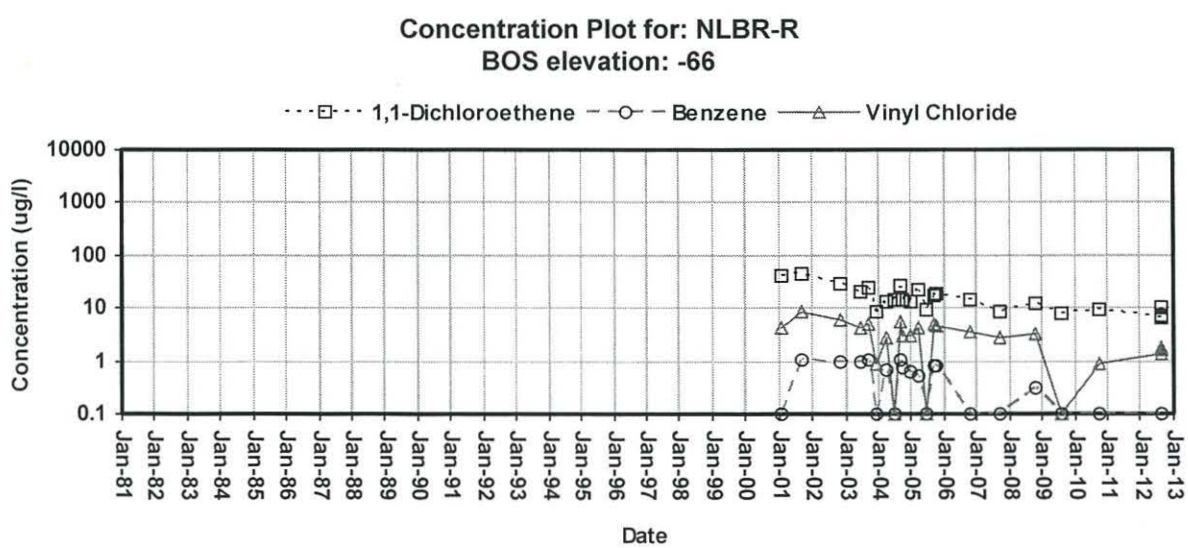




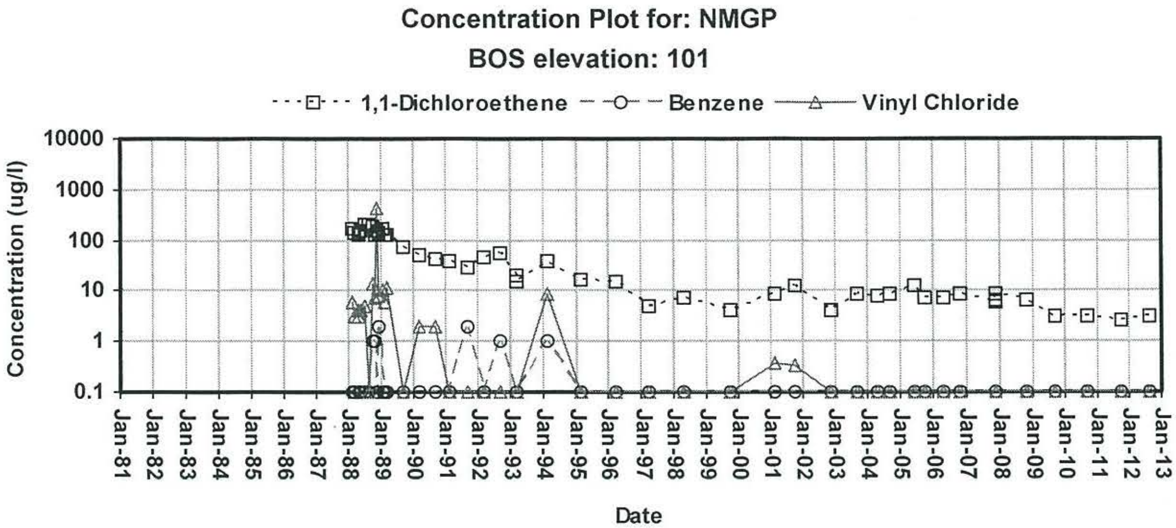
Concentration Plot for: MW-13B
BOS elevation: 46 (BR)
1,1-Dichloroethene
Benzene
Vinyl Chloride
Concentration (ug/l)
10000
1000
100
10
1
0.1
Jan-81 Jan-82 Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09 Jan-10 Jan-11 Jan-12 Jan-13
Date



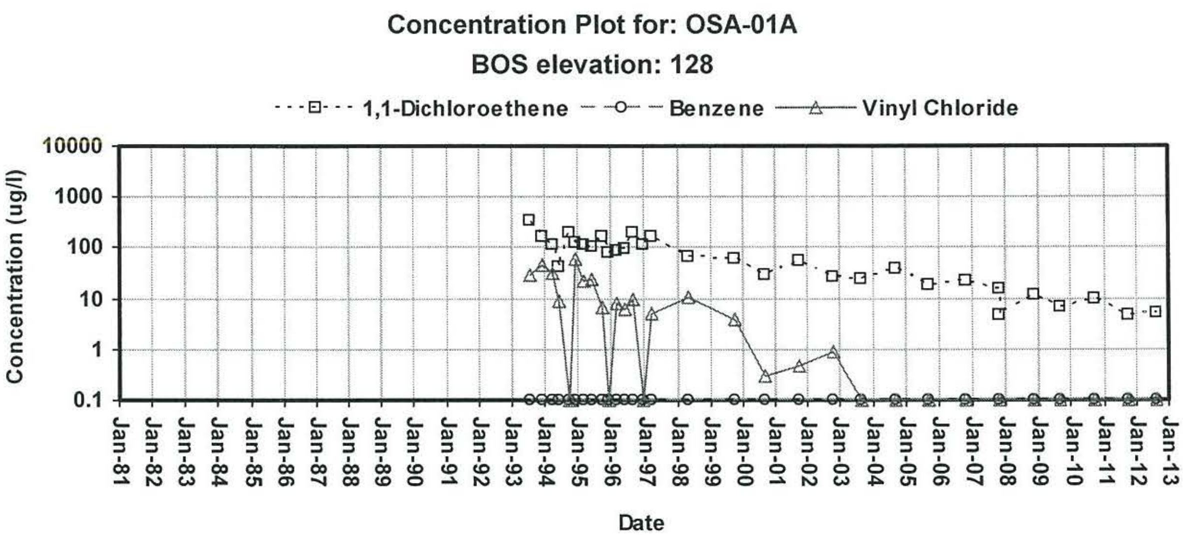
Concentration Plot for: NE-1
BOS elevation: -66 (BR)
1,1-Dichloroethene
Benzene
Vinyl Chloride
Concentration (ug/l)
10000
1000
100
10
1
0.1
Jan-81 Jan-82 Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09 Jan-10 Jan-11 Jan-12 Jan-13
Date



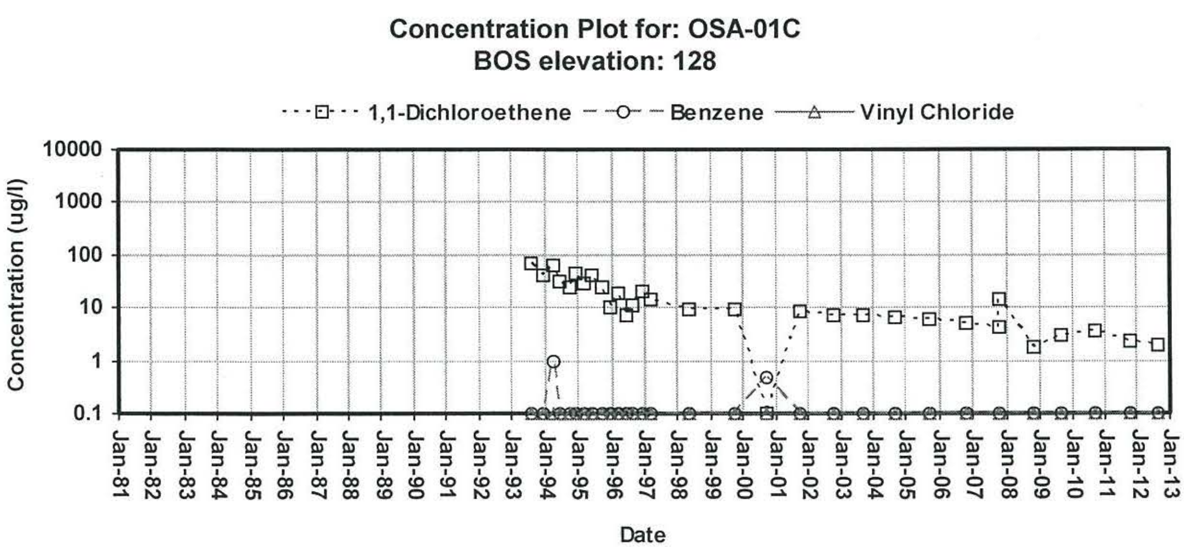
Concentration Plot for: NLBR-R
BOS elevation: -66
1,1-Dichloroethene
Benzene
Vinyl Chloride
Concentration (ug/l)
10000
1000
100
10
1
0.1
Jan-81 Jan-82 Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09 Jan-10 Jan-11 Jan-12 Jan-13
Date



Concentration Plot for: NMGP
BOS elevation: 101
1,1-Dichloroethene
Benzene
Vinyl Chloride
Concentration (ug/l)
Date

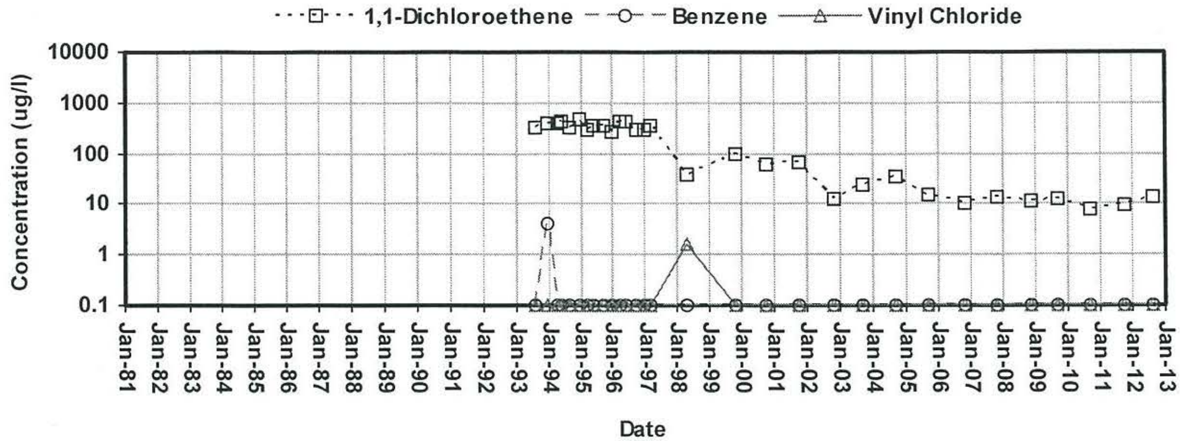


Concentration Plot for: OSA-01A
BOS elevation: 128
1,1-Dichloroethene
Benzene
Vinyl Chloride
Concentration (ug/l)
Date

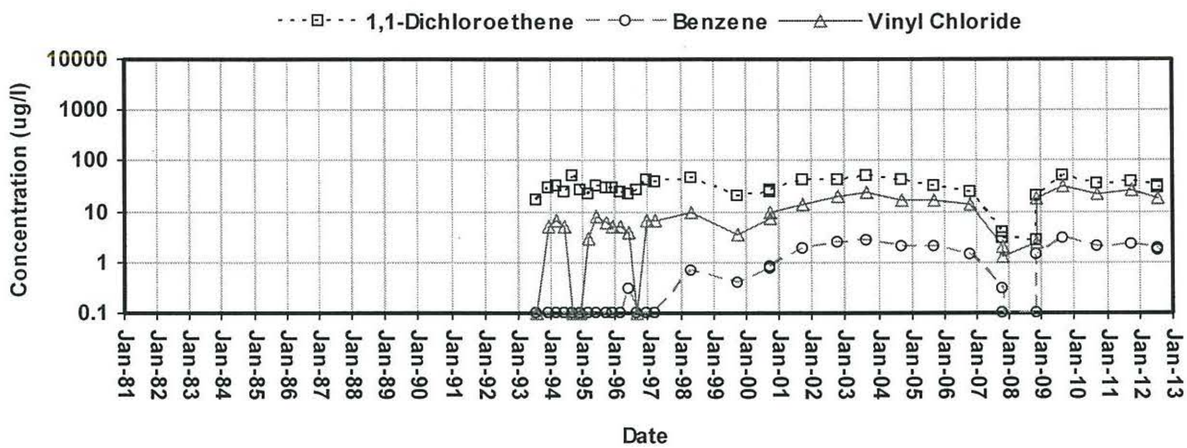


Concentration Plot for: OSA-01C
BOS elevation: 128
1,1-Dichloroethene
Benzene
Vinyl Chloride
Concentration (ug/l)
Date

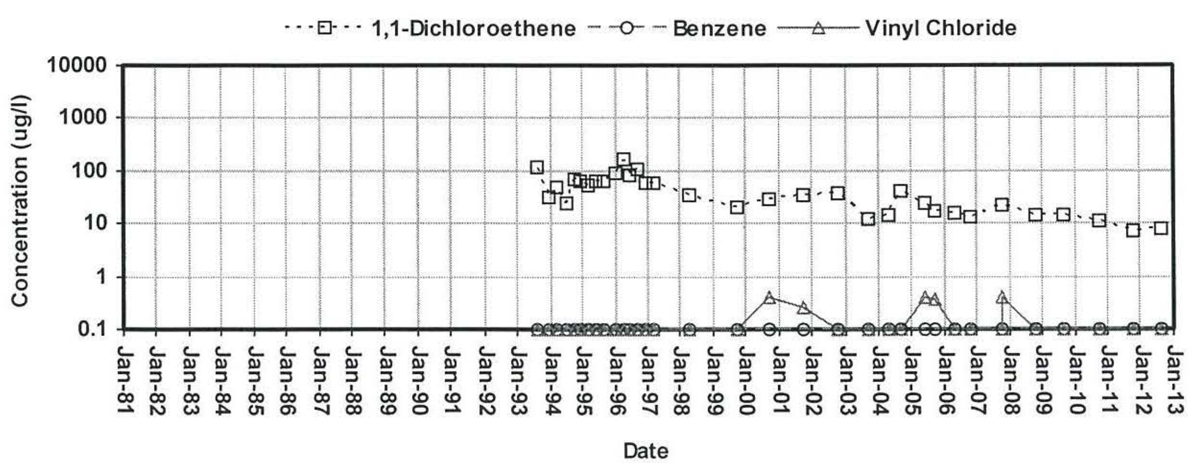
Concentration Plot for: OSA-02A
BOS elevation: 130



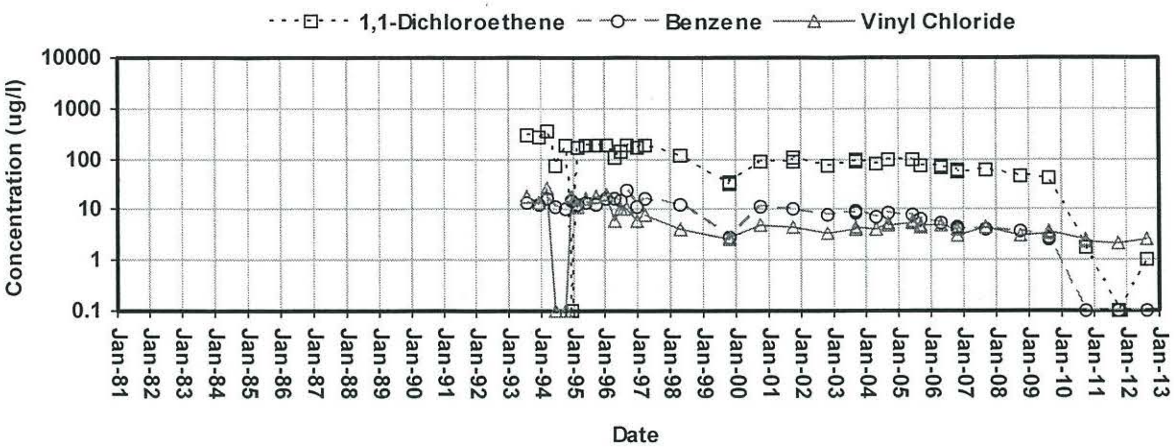
Concentration Plot for: OSA-03BR
BOS elevation: 55 (BR)



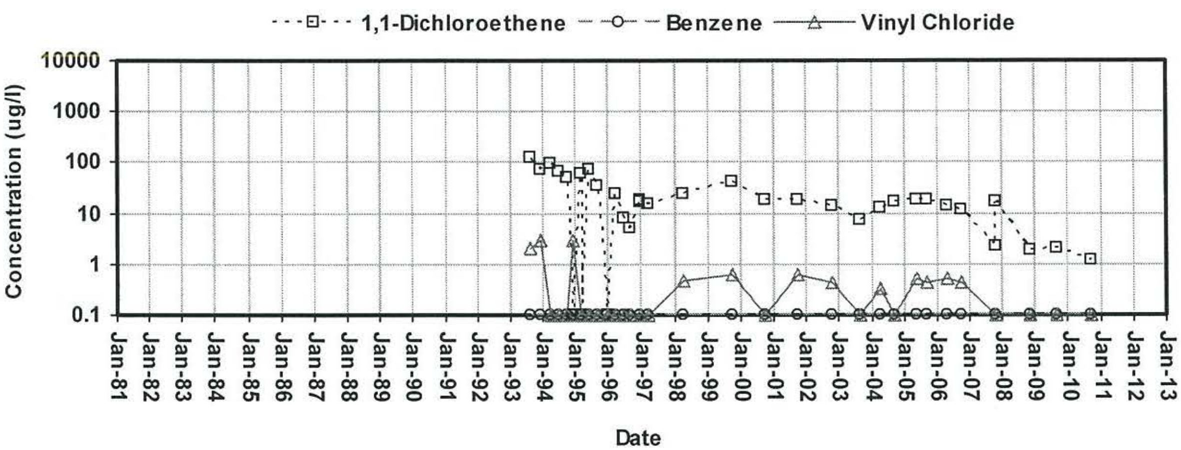
Concentration Plot for: OSA-05B
BOS elevation: 55



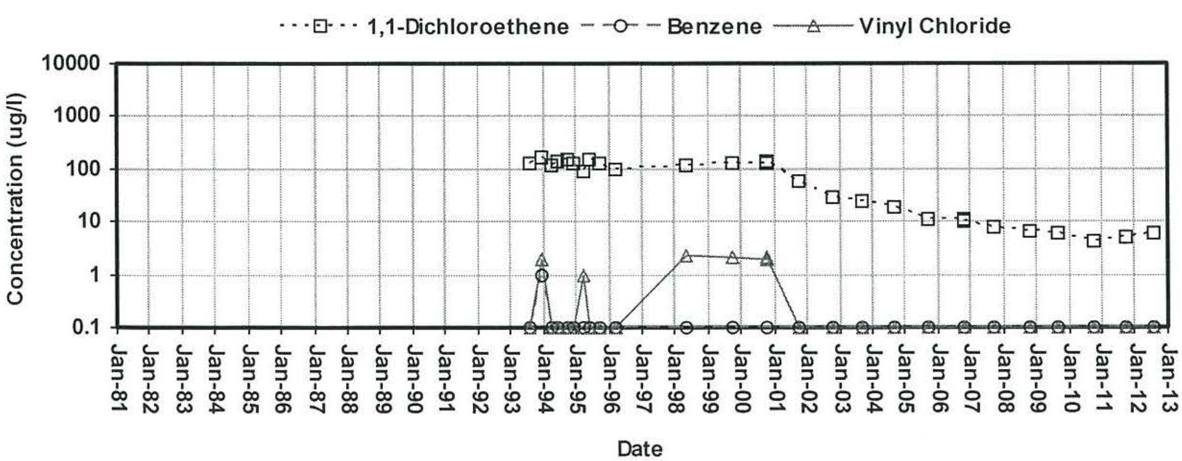
Concentration Plot for: OSA-06BR
BOS elevation: 51 (BR)



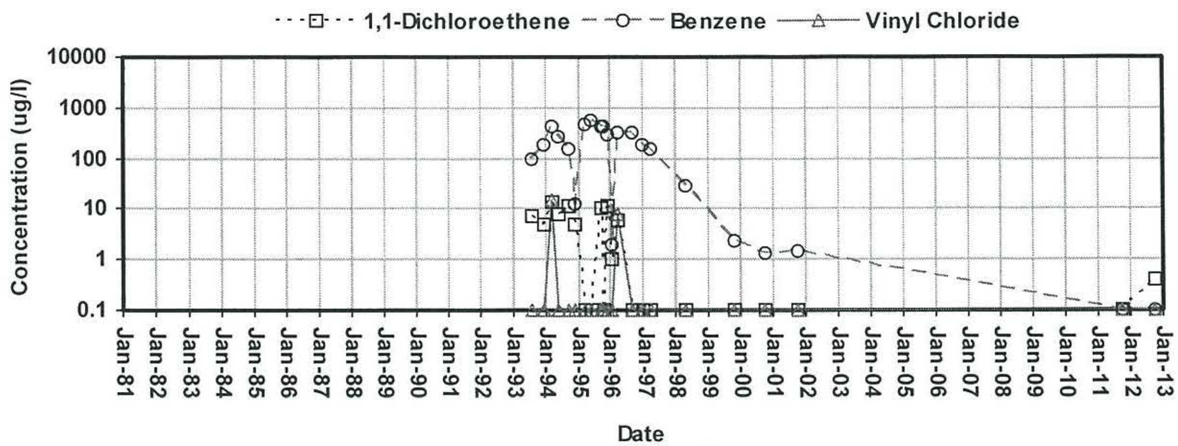
Concentration Plot for: OSA-07B
BOS elevation: 89



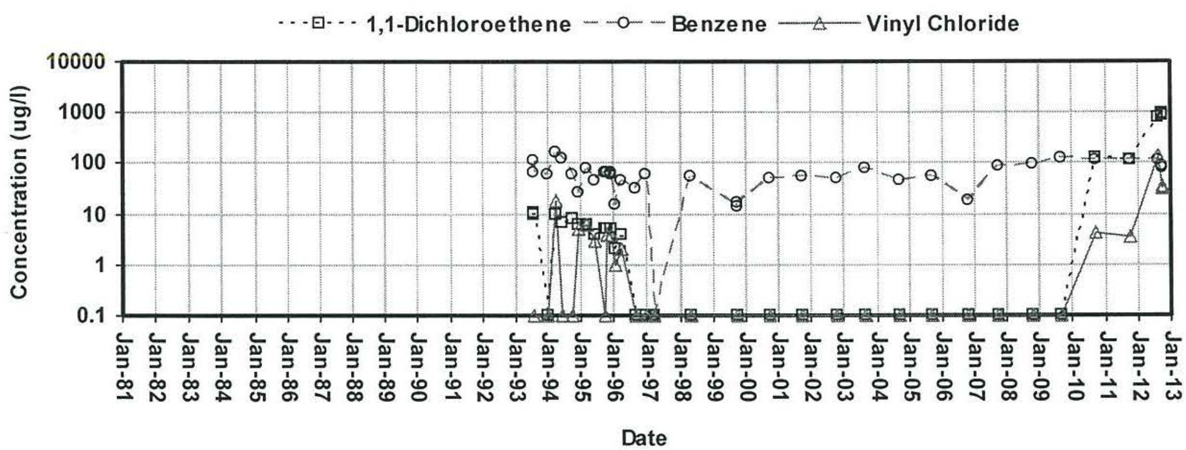
Concentration Plot for: OSA-11B
BOS elevation: 89



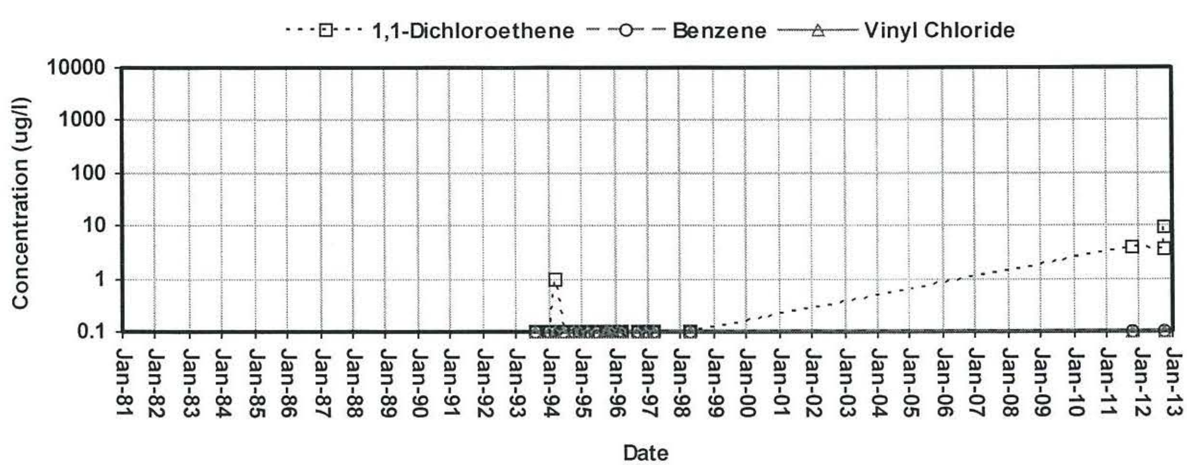
Concentration Plot for: OSA-13A
BOS elevation: 123



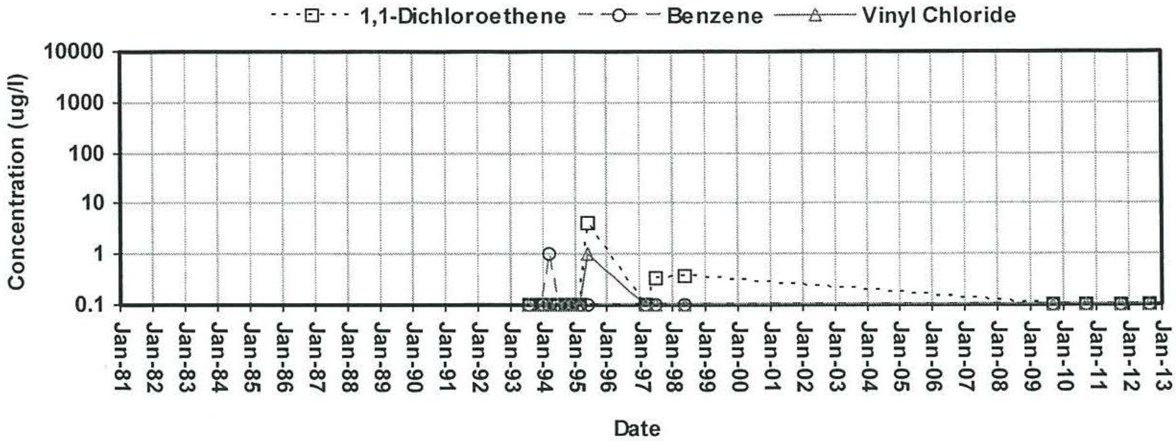
Concentration Plot for: OSA-13B
BOS elevation: 105



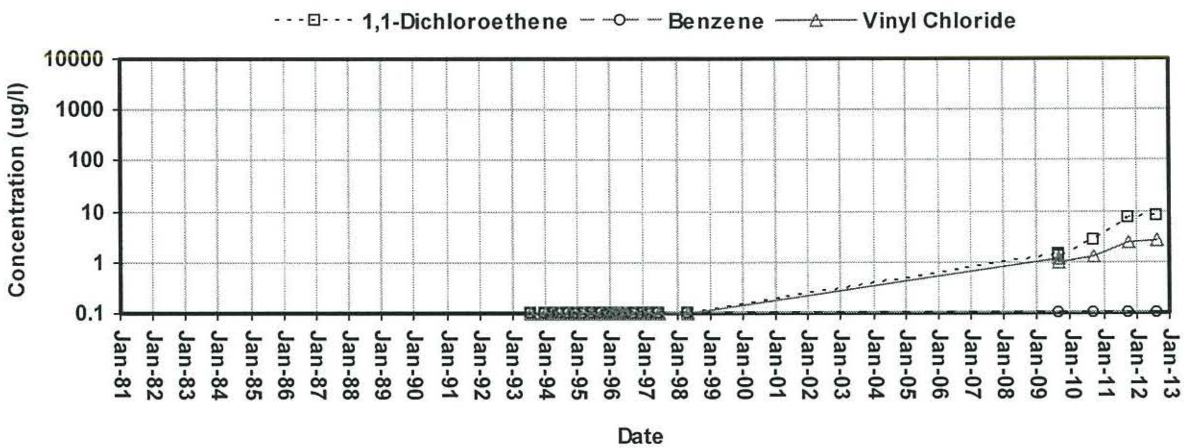
Concentration Plot for: OSA-13C
BOS elevation: 105



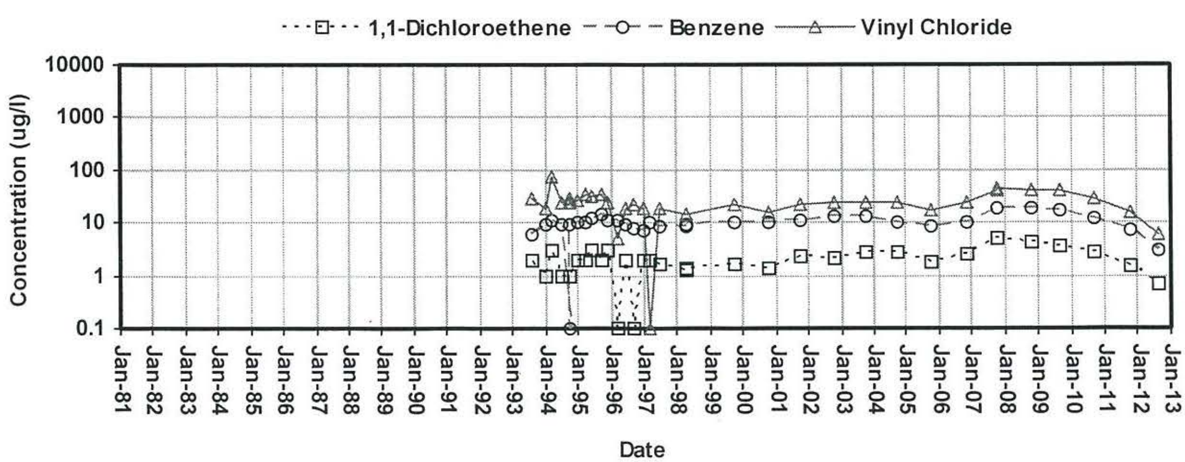
Concentration Plot for: OSA-14B
BOS elevation: 79



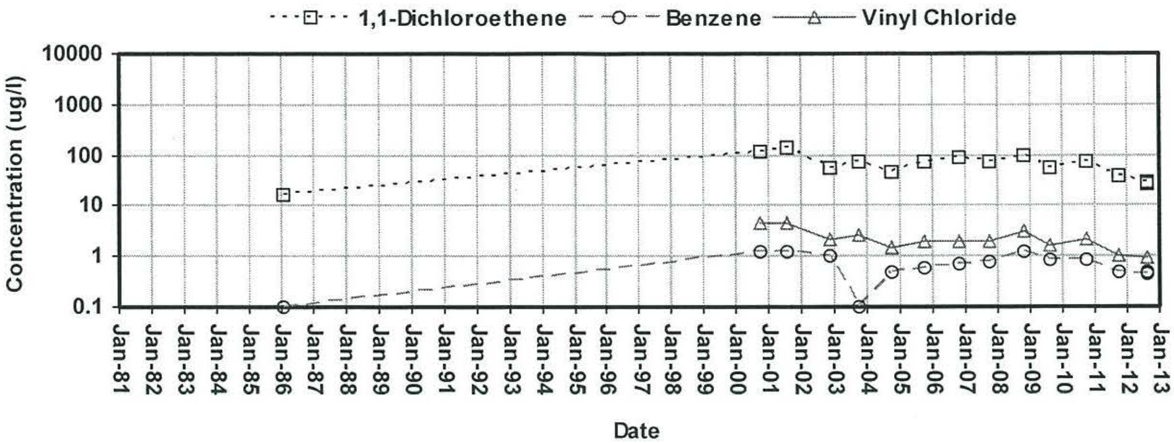
Concentration Plot for: OSA-15B
BOS elevation: 73



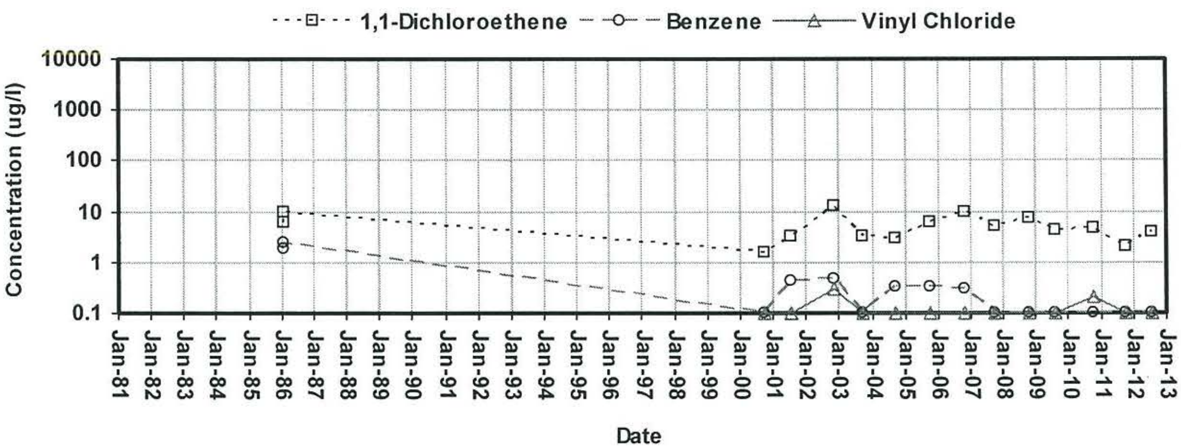
Concentration Plot for: OSA-16B
BOS elevation: 73



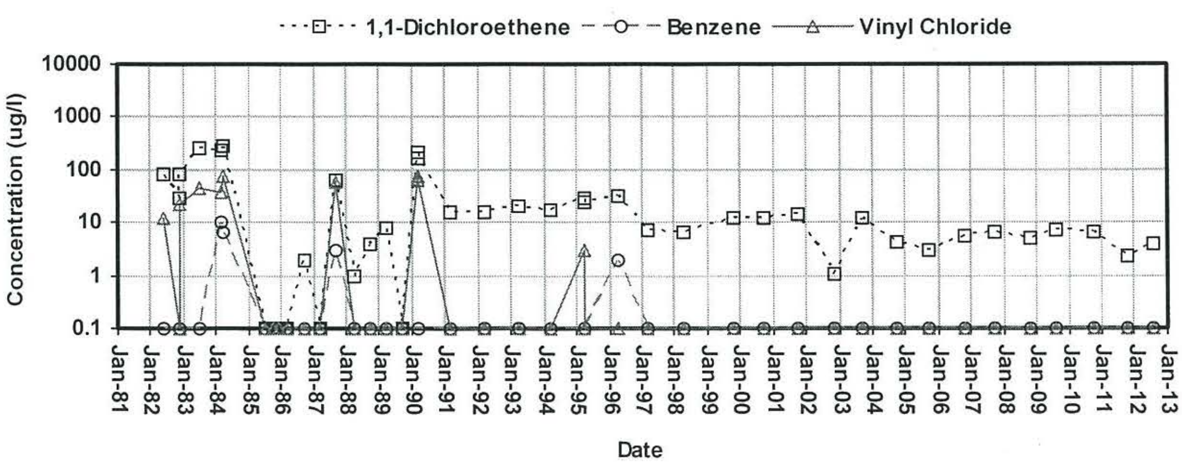
Concentration Plot for: PS-22B
BOS elevation: 96

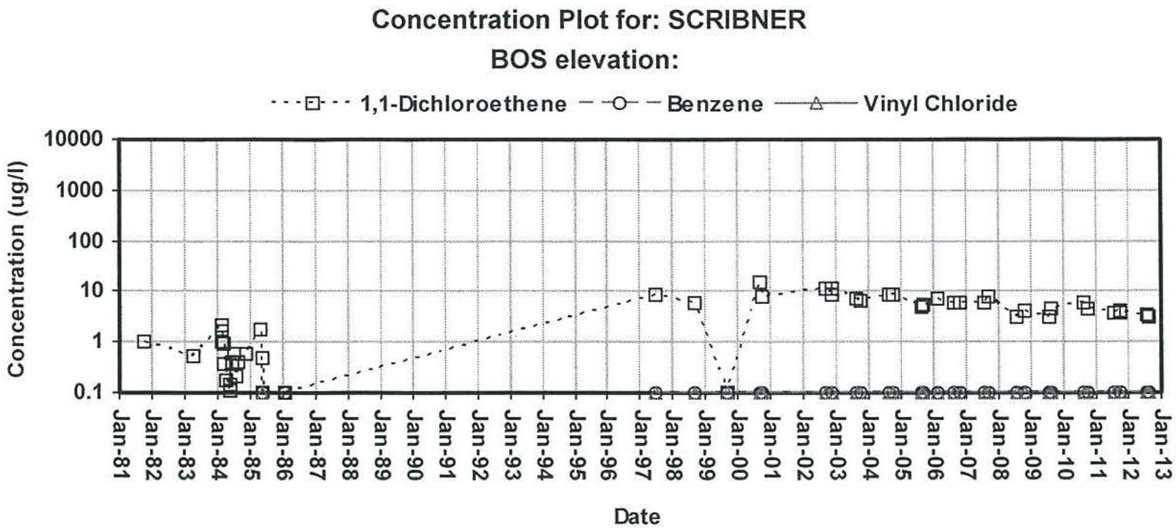


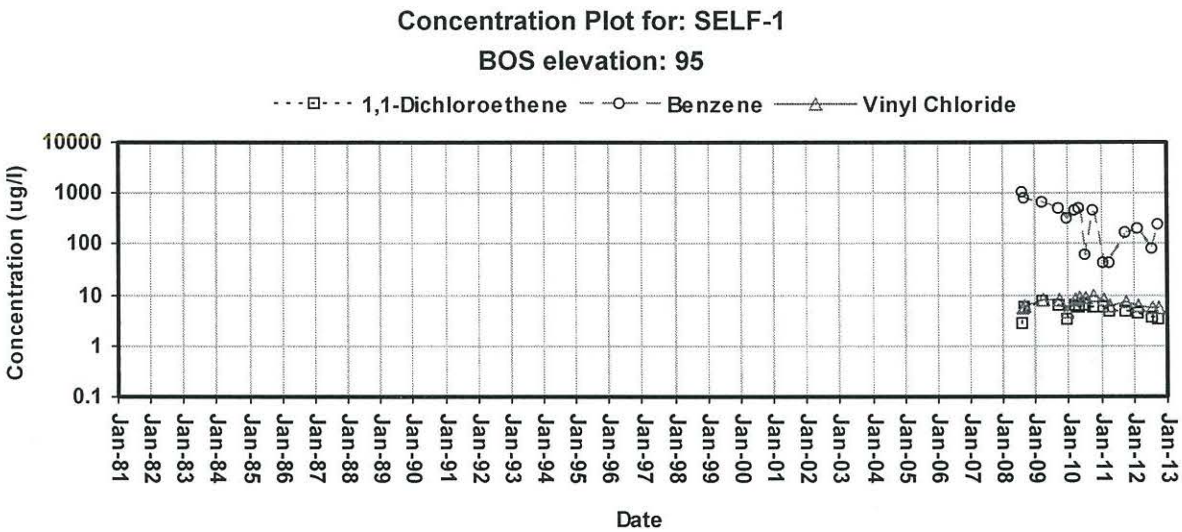
Concentration Plot for: PS-29B
BOS elevation: 86

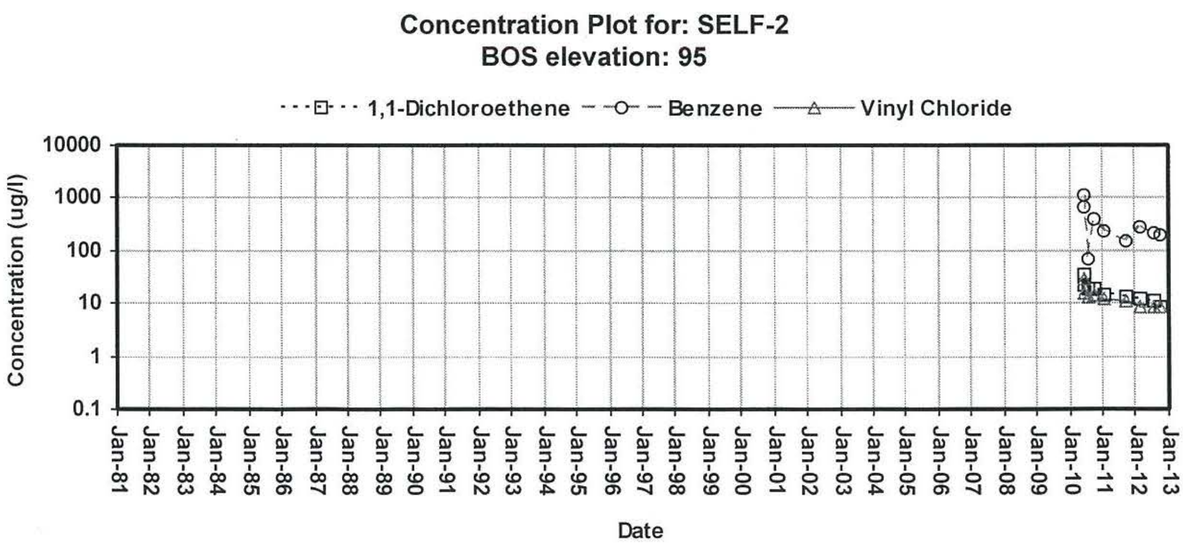


Concentration Plot for: PT-11B1
BOS elevation: 86

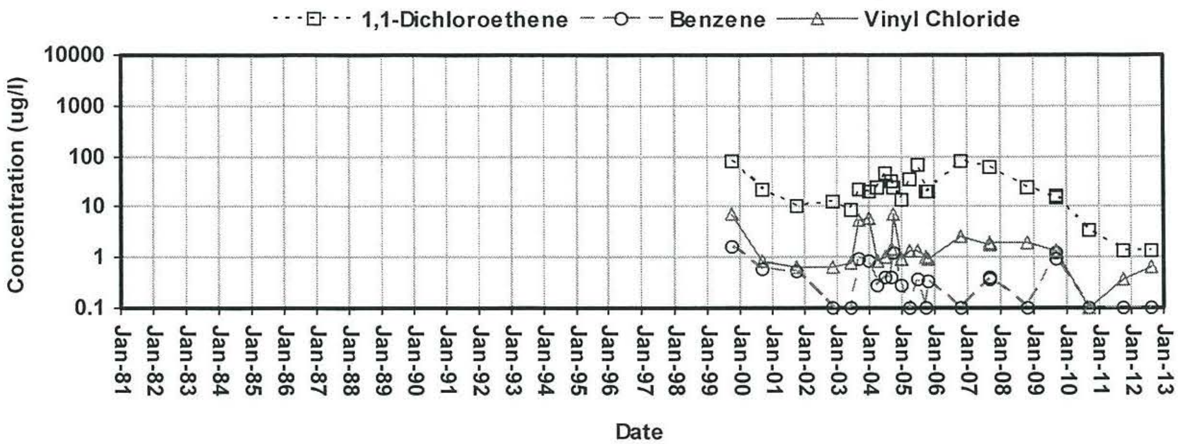



Concentration Plot for: SCRIBNER
BOS elevation:
1,1-Dichloroethene
Benzene
Vinyl Chloride
Concentration (ug/l)
10000
1000
100
10
1
0.1
Jan-81
Jan-82
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Date

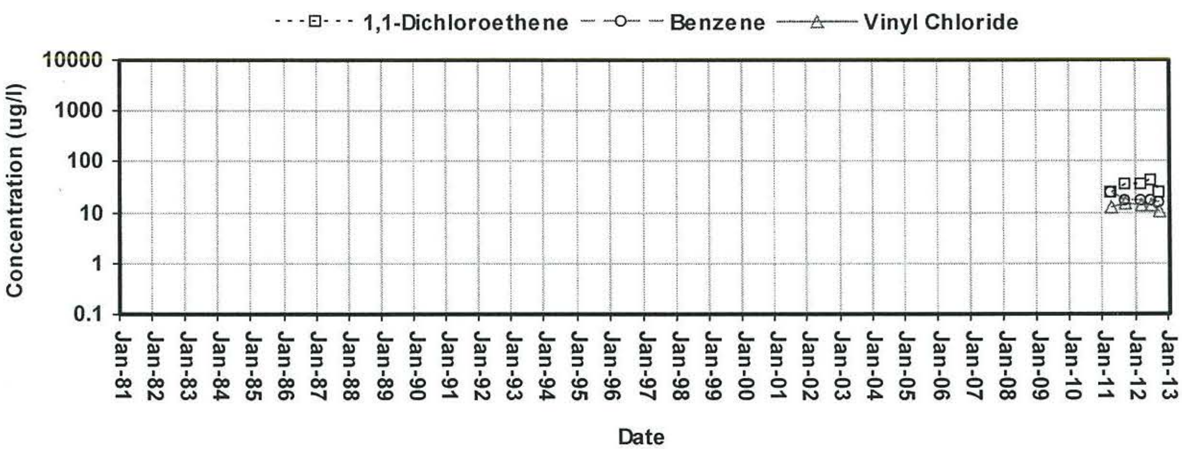

Concentration Plot for: SELF-1
BOS elevation: 95
1,1-Dichloroethene
Benzene
Vinyl Chloride
Concentration (ug/l)
10000
1000
100
10
1
0.1
Jan-81
Jan-82
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Date


Concentration Plot for: SELF-2
BOS elevation: 95
1,1-Dichloroethene
Benzene
Vinyl Chloride
Concentration (ug/l)
10000
1000
100
10
1
0.1
Jan-81
Jan-82
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Date

Concentration Plot for: SLGP-R
BOS elevation: 66



Concentration Plot for: SWLF-2
BOS elevation: -25 (BR)



Concentration Plot for: WLF
BOS elevation: -25