November 29, 2012

Mr. Thomas Mongelli
United States Environmental Protection Agency
Emergency and Remedial Response Division
New York Remediation Branch
290 Broadway, 20th Floor
New York, NY 10007

Re: Transmittal – Final Remedial Action Report Remedial Work Element II Groundwater
Tri-Cities Barrel Superfund Site, Fenton, New York

Dear Mr. Mongelli:

On behalf of the Tri-Cities Barrel Superfund Site Respondents, WSP Engineering of New York, P.C. submits the abovementioned report for your review and approval. In addition to your comments provided via electronic mail on November 19, 2012 and November 20, 2012, a few minor grammatical and editorial changes were made to the final report.

We trust that this information satisfies your requirements at this time. If you have any questions or require additional information, please do not hesitate to contact me or Steven Roach at (614) 790-3915.

Sincerely,

Erin Huntley
Technical Manager

Enclosures

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cc/encl: Mr. Ed Hampston, New York State Department of Environmental Conservation
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WSP ENGINEERING OF NEW YORK, P.C.

REMEDIAL ACTION REPORT - FINAL

Remedial Work Element II Groundwater

Tri-Cities Barrel Superfund Site, Fenton, New York

11/29/2012

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1 Background

1.1 Site Description

The Tri-Cities Barrel Superfund site (the site) is located approximately 5 miles northeast of Binghamton, New York, adjacent to Old Route 7, in the town of Fenton, Broome County, New York (Figure 1). The site comprises approximately 14.9 acres and is bordered by rural residential areas, farmland, and woodlands (Figure 2).

For discussion purposes, the site has been divided into three portions. The portion of the site north of Interstate 88 (I-88) is referred to herein as "north of I-88" and includes approximately 5.1 acres. This parcel is bordered to the north by Osborne Creek and to the south by the I-88 right-of-way. The portion of the site south of I-88 and north of Osborne Hollow Road is referred to herein as "south of I-88" and includes approximately 6.9 acres. This parcel is bordered to the north by I-88, to the south by Osborne Hollow Road, and to the east and west by private property. The far southern portion of the site (referred to herein as "south of Osborne Hollow Road") includes approximately 2.9 acres and is bordered to the north by Osborne Hollow Road and to the south by the D&H railroad tracks, to the east and west by private properties.

Two small-unnamed intermittent streams parallel the eastern and the western sides of the site. The eastern tributary is located outside the property boundary of the site; while the western tributary is located within the property boundary of the site. Both streams collect surface water runoff from south of the site, as well as along its entire channel, including Osborne Hollow Road, Old Route 7, and the railroad tracks. Both streams flow north and discharge into Osborne Creek.

1.2 Remedial Investigation/Feasibility Study

The site was listed on the National Priorities List (NPL) on October 4, 1989. The Respondents entered into an administrative order on consent (AOC) with the U.S. Environmental Protection Agency (EPA) on May 14, 1992, and retained Environmental Strategies Corporation as the environmental consultant to conduct the remedial investigation (RI) and feasibility study (FS)[1]. The RI was conducted in 4 phases from July 1993 through December 1997, and included the installation of monitoring wells and piezometers and the collection of groundwater, soil, surface water, sediment, ecological, air, and building material samples. The final RI report is dated March 25, 1999 (Environmental Strategies 1999a).

From October 14, 1996, to January 10, 1997, a time critical removal action was conducted as set forth in the AOC for Removal Actions, Index Number II-CERCLA-96-0207, dated September 25, 1996. The objectives of the removal action were to locate, characterize the contents, if any, and properly dispose of all containers, drums, tanks, and wastes located on the site; decontaminate and remove remaining equipment that was previously used during operations at the site; and decontaminate, demolish, and dispose of all buildings and structures located on the site. The objectives of the removal action were successfully achieved.

Drafts of the FS were prepared and submitted to the EPA for review between spring of 1997 and summer of 1999. The final version of the FS is dated August 25, 1999 and was followed by an addendum prepared by EPA that is dated December 9, 1999 (Environmental Strategies 1999b; EPA 1999).

1.3 Record of Decision

In January 2000, EPA issued the Proposed Remedial Action Plan that identified excavation and offsite disposal of contaminated sediment and soil as the Element I remedy and collection and treatment of contaminated

[1] After the RI/FS, ESC Engineering of New York, P.C. (WSP Engineering of New York, P.C.'s predecessor) was retained to perform engineering services.

groundwater as the Element II remedy. The public comment period extended from January 21, 2000 to February 19, 2000. The EPA preferred remedy was upheld and a corresponding Record of Decision (ROD) was issued in March 2000. The Consent Decree and Statement of Work were lodged on May 1, 2001.

1.3.1 Groundwater Remedial Action Objectives

Remedial action objectives (RAOs) consist of medium specific goals for protecting human health and the environment. The objectives are based on available information and standards such as Applicable or Relevant and Appropriate Requirements (ARARs) for drinking water. The following RAOs have been established for the site groundwater:

- restore site-wide groundwater quality to levels which meet state and federal drinking water standards within a reasonable time frame
- reduce or eliminate the direct contact or inhalation threat associated with contaminated groundwater

The preliminary remediation goals (PRG) for groundwater are presented in Table 1; the PRGs remain the same as in the 2000 ROD, except to the extent they have been waived in specific areas of the site. New York State Department of Environmental Conservation (NYSDEC) groundwater quality standards or guidance values were identified for each constituents of concern (COC) in accordance with the Division of Water Technical and Operational Guidance Series, Section 1.1.1, dated June 1998.

1.3.2 Element I Remedy

In 2003, the remedial action for Work Element I remedy was conducted. The effort resulted in the removal of 74,969 tons of soil contaminated with COCs from the vadose zone as follows:

- 71,455 tons of non-hazardous soil (2,065 truckloads)
- 2,550 tons of soil regulated by the Toxic Substances Control Act (TSCA) for direct landfill disposal (78 truckloads)
- 222 tons of soil regulated by the Resource Conservation and Recovery Act (RCRA) and TSCA for incineration (10 truckloads)
- 742 tons of soil regulated by RCRA for incineration (30 truckloads)
- remaining building foundations were excavated, decontaminated, cut into manageable sizes, and buried in a clean area on-site south-southwest of MW-19 (Figure 2)

The site was properly filled and graded to promote surface drainage and vegetation was established. Additional information is provided in the Remedial Action Report, dated March 18, 2004 (ESC Engineering 2004).

1.3.3 Element II Remedy

As granted by the Statement of Work (SOW) in the Consent Decree, the Respondents performed a monitored natural attenuation (MNA) study to evaluate whether or not natural attenuation of the groundwater is occurring at the site.

From 2001 through 2005, seven rounds of groundwater samples were collected as part of an MNA evaluation. As described by the 2007 Revised Comprehensive MNA Evaluation Report (ESC Engineering 2007B), the data indicate that the total mass of contaminants had greatly reduced after the removal of the source of the groundwater contamination, vadose zone soil. In addition, the presence of reductive microbial metabolic products indicates that the primary MNA mechanism responsible for the decline is biodegradation, with the exception of the MW-19 Area. The MW-19 Area appears to be an isolated area with tetrachloroethene (PCE) and 1,1,1-trichloroethane (TCA)

concentrations in shallow groundwater above the compliance criteria (5 µg/l) and without any clear evidence of naturally occurring biodegradation.

At the request of EPA, delineation of PCE and 1,1,1-TCA present in groundwater in the MW-19 Area was initiated in December 2006. One-time "grab samples" were collected from five temporary well points (TMW-1 through TMW-5) for analysis of COC volatile organic compounds (VOCs), 1,1,1-trichloroethane (TCA) and chloroethane (Figure 3)(ESC 2007a). The temporary well borings were advanced by a hollow stem auger (HSA) drill rig to a depth consistent with the screened interval of monitoring well MW-19 (983 to 973 feet above mean sea level [msl]). Only 1,1,1-TCA was detected above compliance criteria in the groundwater sample collected from temporary monitoring well point TMW-3 (8.9 micrograms per liter [µg/l]); the compliance criterion is 5 µg/l.

In October 2007, additional delineation activities with respect to 1,1,1-TCA and PCE in groundwater were conducted (ESC 2007c). Seven temporary well points (TMW-6, TMW-7, TMW-8, TMW-9, TMW-10, TMW-11, and TMW-12) were advanced in the MW-19 Area by a HSA drill rig (Figure 3). Soil samples were collected continuously using 2-foot long, 2-inch diameter split-barrel samplers; none of the split-barrel samples exhibited a photoionization detector (PID) reading greater than zero. PCE was detected above the compliance criteria (5 µg/l) in the duplicate groundwater sample collected from TMW-7 (12 µg/l). 1,1,1-TCA was detected above its compliance criteria (5 µg/l) in groundwater samples collected from TMW-3 (8.9 µg/l), TMW-6 (6.8 µg/l), and TMW-7 (39 µg/l and 27 µg/l).

1.3.3.1 MW-19 Area Pilot Study

EPA concluded, after review of the draft 2008 focused feasibility study (FFS) report which summarized the findings of the MNA study, that while MNA may be feasible for the majority of the site, the data did not demonstrate that MNA would address the groundwater contamination in the MW-19 Area. EPA also concluded that because of the low permeability of the aquifer, groundwater extraction and treatment was not technically viable for the site (EPA 2011).

At the direction of EPA, an enhanced reductive dechlorination (ERD) pilot test was initiated in December 2008 to assess the subsurface response to biostimulation of native microbes capable of attenuating dissolved chlorinated VOCs present within the MW-19 Area groundwater. As part of the pilot test, approximately 50 gallons of HRC and 35 gallons of HRC primer (electron donors) were applied to an 800 square foot area via 8 delivery points. Baseline groundwater samples were collected from monitoring wells MW-19 and P-2 before the HRC injection program (December 1, 2008), and immediately after the injection program at performance monitoring well PMW-1 (December 5, 2008).

During the ERD pilot test, the HRC® biostimulant was delivered throughout the target application zone (20 to 30 feet bgs). Initially, the microbial population responded favorably to the HRC biostimulant by quickly lowering the redox potential and establishing redox conditions necessary for the key halorespiring microbe *Dehalococcoides spp* (DHC). The DHC population increased during the pilot test. However, the population could not be maintained sufficiently to degrade the chlorinated VOCs present and the population quickly returned to ambient levels. The initial response to the injection (increases in appropriate microbial population and carbon concentrations from samples collected from permanent wells) was likely due to transport of injectate through small zones of relatively higher permeability within the till (i.e., sand/gravel zone) or fractures.

The pilot study results indicated that *in situ* ERD would not be an effective technology to address groundwater conditions in the MW-19 Area.

1.3.3.2 MW-19 Area Supplemental Investigation

After the pilot study was conducted, the EPA required supplemental investigation work with the objective of identifying the source of PCE and 1,1,1-TCA and remediating the source via *in situ* ERD. This investigation was conducted from September 23, 2010 through November 24, 2010. The scope of work for the MW-19 Area Supplemental Investigation included:

- Passive soil gas survey (to aid in locating the potential source area and identify soil boring locations)

- Advancement of 9 pilot borings
- Collection of a soil sample for laboratory analysis from the area having the highest PID reading
- Collection of discrete groundwater samples from both low permeability material (silt zone) and high permeability material (sand/gravel zone)
- Collection of a silt sample for permeability testing
- Hydraulic conductivity testing on the sand/gravel zone

One soil sample was collected for VOC analysis from the interval with the highest PID reading; no COC VOCs were detected above laboratory reporting limits in this sample. Groundwater samples were collected from the silt/clay zone and, when present, from the sand/gravel zone. A soil source was not identified in the MW-19 Area or nearby vicinity. The data indicate that affected groundwater (i.e., total VOCs above 5 µg/l) is limited to the thin, discontinuous sand/gravel zone in the immediate vicinity of MW-19 with an approximate areal extent of 9,000 square feet (approximately 2,300 square feet above 50 µg/l).

1.3.3.3 FFS

The FFS (Revision 2) was submitted on July 21, 2011 to EPA. The FFS was prepared while taking into consideration the MNA evaluation conducted at the site since 2001 as well as site specific characteristics. EPA requested that the FFS be prepared to satisfy two main objectives that include the following:

- Evaluate the performance of MNA as compared to the performance of a pump and treat (P&T) technology, including estimating the time required to achieve cleanup objectives
- Identify and evaluate technologies to address the MW-19 Area

The following site-wide alternatives were evaluated:

- No Action
- Groundwater P&T
- MNA

The following alternatives were evaluated for the MW-19 Area:

- No-Action
- Groundwater P&T
- Bioremediation

1.3.3.4 Concrete Rubble Removal

At the request of EPA, the concrete rubble placed in the MW-19 Area during the Element I remedial action was removed. The concrete rubble removal effort began on August 8, 2011 and was completed on August 15, 2011. The concrete rubble was separated from the soil and placed in a stock pile located within the excavation footprint. Once all of the concrete was separated from soil, the concrete was crushed, stockpiled, and characterized (all tested parameters were below the hazardous characteristic thresholds).

The crushed concrete was loaded into trucks for disposal at the Hyland Facility Associates Landfill located in Angelica, New York. Four loads (129.80 tons) were shipped from the site. The excavation area was backfilled with clean imported soil material and capped with previously excavated onsite top soil and seeded.

1.4 ROD Amendment

In consideration of the results of the pilot study and supplemental work conducted at the MW-19 Area and information presented in the FFS, the EPA moved forward with an Amendment to the ROD. On September 27, 2011, an Amendment to the ROD was issued by EPA modifying the groundwater remedy for the site. The major components of the selected modified groundwater remedy, as extracted from the ROD Amendment, include the following:

- Monitored natural attenuation of groundwater contamination throughout the site, except in the "MW-19 Area"
- Long-term groundwater monitoring to verify that the level and extent of groundwater contaminants are declining within the timeframe projected and that conditions are protective of human health and the environment
- Periodic monitoring of nearby residential private wells to ensure the effectiveness of the selected remedy.

EPA has determined that the restoration of the groundwater in the MW-19 Area is technically impracticable from an engineering perspective due to the ineffectiveness of active remedies in low permeable soils found at the site, the limited mobility of the groundwater contamination (the contaminant plume is not migrating), and the inability to locate a source.

The "technical impracticability zone" is the approximate 120 feet by 80 feet area to a depth of 30 feet deep (Figure 2). The chemical-specific ARARs are waived in this zone for PCE, 1,1,1-TCA, 1,1-dicloroethane (DCA), cis-1,2-dichloroethene (DCE), and vinyl chloride.

Under this remedy, the installation and use of groundwater wells at the site for drinking water purposes are prohibited by an existing deed restriction (Appendix A).

2 Construction Activities

2.1 Element II Remedial Action

The remedial action of the Element II remedy consisted of two groundwater monitoring events conducted in December 2011 and June 2012. The following monitoring wells were sampled:

- Shallow unconsolidated monitoring wells: MW-2S, MW-3S, MW-7S, MW-16S, MW-18S, MW-19, MW-20S, PMW-1
- Deep unconsolidated monitoring wells: MW-2, MW-3, MW-7, MW-16, MW-18, and MW-20

A summary of well construction information is provided in Table 2.

The analytical program consisted of VOCs (EPA Method 8260B) for both events, and biodegradation parameters for the June 2012 event (Table 3).

2.2 Sampling Activities

The December 2011 groundwater sampling event was conducted during the week of December 20, 2011 and the June 2012 groundwater sampling event was conducted during the week of June 18, 2012.

The Element II remedial action was monitored in a manner consistent with the previous MNA sampling protocol for the site; specifically, the groundwater sampling was conducted in accordance with WSP Engineering's Standard Operating Procedures (SOPs) and the EPA Region II low-flow sampling protocol. Before initiating any sampling activities, the water level at each site monitoring well was measured using a water level indicator. Monitoring well locations are shown on Figure 2.

The above identified monitoring wells were then purged at flow rates less than 500 milliliters per minute, in accordance with EPA Region II's and WSP Engineering's low-flow SOPs. During purging, field measurements of temperature, pH, conductance, dissolved oxygen, oxidation-reduction potential (ORP), and turbidity was monitored using a water quality meter equipped with a flow-through cell to minimize atmospheric interference. Quality assurance/quality control samples, including equipment blanks, trip blanks, and duplicates, were collected in accordance with the SOPs and the Quality Assurance Project Plan as appended within the Pre-Design and Remedial Design Work Plan (ESC Engineering 2001).

2.3 Sampling Results

The groundwater sampling results continue to indicate that (1) natural attenuation mechanisms including biodegradation are active at the site, (2) the groundwater plume is stable and (3) VOC-affected groundwater is primarily restricted to the area south of I-88 (former lagoon area) (Table 4). Most of the dissolved organic contaminant mass is located in the shallow portion of the unconfined water-bearing zone in the area defined by samples from monitoring wells MW-16S and MW-3S and is primarily comprised of reductive breakdown products of PCE and 1,1,1-TCA. The VOC analytical data were validated by ECT.CON Inc. Time-series plots for monitoring wells with VOCs detected above the New York State Ambient Water Quality Standards (AWQS) are provided in Appendix B.

2.3.1 December 2011

The following VOCs were detected above the AWQS in groundwater samples collected during the December 2011 event: chloroethane, 1,1-DCA, 1,2- DCA, *cis*-1,2- DCE, PCE, 1,1,1-TCA, trichloroethene (TCE), and vinyl chloride.

The December 2011 analytical data show that VOCs were detected at concentrations greater than the AWQS in groundwater samples collected from the source area monitoring wells (MW-2S, MW-2, MW-3S, and MW-16S) and in the MW-19 Area (MW-19 and PMW-1).

2.3.2 June 2012

The following VOCs were detected above the AWQS in groundwater samples collected during the June 2012 event: chloroethane, 1,1-DCA, 1,2- DCA, *cis*-1,2- DCE, *trans*-1,2-DCE, PCE, 1,1,1-TCA, TCE, and vinyl chloride. The June 2012 analytical data show that VOCs were detected at concentrations greater than the AWQS in groundwater samples collected from the source area monitoring wells (MW-2S, MW-2, MW-3S, and MW-16S) and in the MW-19 Area (MW-19 and PMW-1).

2.3.2.1 MNA Parameter Results

Ethene and ethane are the reductive degradation products of vinyl chloride. Ethane may also be generated by reduction of chloroethane (1,1-DCA branch of the 1,1,1-TCA pathway). Dissolved ethene and/or ethane were detected in samples collected from all monitoring wells except MW-7, MW-18, and MW-19. No VOCs were detected in either MW-7 or MW-18; historically, evidence of biodegradation in the MW-19 Area has not been observed. The highest ethene and ethane concentrations were detected in MW-3S at 84,000 nanograms per liter (ng/l) and 4,900 ng/l, respectively.

Carbon dioxide, indicative of bio-oxidation, ranged from 3.8 milligrams per liter (mg/l) at MW-19 to 160 mg/l at MW-20S; generally higher carbon dioxide concentrations were detected in shallow wells.

Dissolved hydrogen was detected in all samples collected and ranged from 0.83 nanoMolar (nM) at MW-18S to 2.1 nM at MW-2S; this range is indicative of sulfate reduction, and reductive dechlorination.

Methane was detected in all samples collected and ranged from 0.0009 mg/l at MW-16 to 0.61 mg/l at MW-16S and MW-2. Methane concentrations greater than 0.5 mg/l generally indicate strongly reducing conditions where vinyl chloride can be reduced to ethene and ethane. Methane concentrations less than 0.5 mg/l generally favor oxidation of vinyl chloride.

Chloride is an innocuous end product of reductive dechlorination and was detected in samples from all wells, except MW-2S, at concentrations ranging from 43 mg/l at MW-3S to 280 mg/l at MW-16; chloride was generally detected at higher concentrations in the deeper wells.

Nitrate was not detected in any sample. Nitrate is not likely to interfere with reductive dechlorination processes at the site.

Ferrous iron, the product of iron reduction, was detected at concentrations of 0.2 mg/ at MW-2S l, 0.9 mg/l at MW-16S, 0.3 mg/l at MW-19, and 1 mg/l at PMW-1.

Sulfate was detected in samples collected from all wells except MW-2S, and ranged from 9.5 mg/l at MW-3S to 59 mg/l at MW-16S; sulfate was generally detected at higher concentrations in the samples collected from the deeper wells. Sulfide, which can inhibit key dechlorinating microbes, was not detected in any of the samples collected.

Organic carbon was detected in all groundwater samples collected and ranged in concentration from 0.55 mg/l at MW-19 to 7.9 mg/l at MW-3S; organic carbon was not detected above laboratory reporting limits in the samples collected from MW-7 and MW-16. Organic carbon was generally detected at higher concentrations in the samples collected from the shallow wells.

Alkalinity, indicative of microbial activity, ranged from 77 mg/l (as calcium carbonate) at MW-7S to 520 mg/l at MW-3S, and was generally higher in the shallow monitoring wells.

Dissolved oxygen concentrations were low and ranged from 1.32 mg/l at MW-16 to 0.02 mg/l at MW-18S.

Positive ORP measurements, indicating a more oxidizing environment, were only observed in the following shallow monitoring wells: MW-2S, MW-3S, MW-7S, and MW-20S. Negative ORP measurements, indicating reducing conditions, were observed in the remaining monitoring wells. ORP ranged from -144 millivolts (mV) at PMW-1 to 62 mV at MW-20S.

Despite measurable dissolved oxygen, the data indicate anoxic conditions, generally within the range favorable to reductive dechlorination, are present; conditions favorable to vinyl chloride oxidation are present downgradient (i.e., MW-20S and MW-7). These conditions, coupled with the presence of ethene, and to a lesser extent ethane, indicate that biodegradation is active at the site, with the exception of the MW-19 Area.

2.3.3 Remedial Action Summary

Groundwater VOC data collected since the mid-1990s have consistently shown the plume to be positionally stable. With the exception of the MW-19 Area, the data continue to indicate that VOC concentrations in samples collected from each well are decreasing or stable and that MNA is an appropriate remedial alternative for groundwater at the site. Natural attenuation mechanisms have proven to be effective in reducing COC mass in the groundwater and preventing migration of COCs.

2.4 Restrictive Covenants

On November 22, 1996 a Grant of Easements and Declaration of Restrictive Covenants was enacted for the site (Appendix A). The covenant states that “Groundwater underlying the property shall not be withdrawn for drinking water purposes, and drinking water wells shall not be installed on any part of the property.”

3 Chronology of Events

The following table lists the dates of key events leading up to the completion of the remedial action of Work Element II.

Date	Event
October 4, 1989	EPA places the Tri-Cities Barrel Superfund Site on the NPL
May 14, 1992	AOC for RI/FS executed
May 15, 1999	RI completed
August 25, 1999	FS completed
March 2000	ROD executed
May 1, 2001	Remedial Design / Remedial Action Consent Decree executed
November 15, 2001	Pre-Design and Remedial Design Work Plan submitted
December 2001 to August 2007	MNA evaluated for groundwater
August 16, 2007	Revised Comprehensive MNA Evaluation Report submitted to the EPA
August 17, 2007	EPA approves the MNA Evaluation Report
December 2008	ERD Pilot Study conducted for MW-19 Area
July 21, 2011	FFS finalized
July 2011	EPA issues Superfund Proposed Plan for Remedy Modification
August 2011	Concrete rubble removed from the MW-19 Area
September 27, 2011	EPA executes Amendment to ROD
September 28, 2011	EPA issues Superfund Preliminary Closeout Report
December 2011 to August 2012	Remedial Action work conducted for Element II
January 11, 2012	Long Term MNA Sampling Program finalized
November 29, 2012	Remedial Action Report for groundwater submitted to EPA

4 Performance Standards and Construction Quality Control

4.1 MNA Investigation

ESC Engineering of New York (now WSP Engineering of New York) conducted seven rounds of groundwater sampling to assess the Element II remedy (MNA) from December 2001 through January 2005; additional data was also collected in August 2003 (MW-20 cluster) and May 2005 (MW-19 Area). The MNA evaluation was conducted to confirm the Round 1 (December 2001) and Round 2 (June and July 2002) results; to evaluate attenuation processes for the shallow and deep portions of the unconsolidated water-bearing zone containing VOCs, semivolatile organic compounds (SVOCs), pesticides, and metals; to monitor the geochemical characteristics and attenuation capacity post-soil remediation (source removal); and to substantiate further the applicability of MNA at the site.

A semi-annual groundwater monitoring program was also initiated in December 2006. To date, nine semi-annual rounds of groundwater data were collected from selected wells, from December 2006 to December 2010.

The MNA evaluation involved installing additional monitoring wells, collecting groundwater samples from selected monitoring wells for geochemical parameters, reviewing historical groundwater sampling data, and comparing pre- and post-excavation data. The results for groundwater samples collected from monitoring wells during the seven sampling rounds of the MNA evaluation indicate the absence of several organic COCs at concentrations greater than their compliance criterion, that were historically detected at concentrations greater than their criterion (e.g., SVOCs, pesticides, polychlorinated biphenyls, and several metals). All MNA sampling events were consistently conducted using the low-flow sampling technique (EPA 1996)[2].

Historical site data indicate that the majority of the COC mass was contained within vadose zone soils. Historically, leaching of COCs from vadose zone soils (source) to groundwater occurred; soil remediation activities completed in 2003 resulted in the removal of COC-affected soils from the unsaturated zone of the site and eliminated the vadose zone COCs source.

4.1.1 Sampling Results

Groundwater quality data suggest that horizontal and vertical COC migration is limited and many COC concentrations are decreasing (Table 4; Appendix B). COCs in groundwater samples collected from monitoring wells MW-16S and MW-2S decreased significantly since excavation. These data also indicate that the stability of the plume is attributable to MNA processes (biodegradation, dispersion, dilution, sorption, volatilization, and chemical and biochemical stabilization). Following the lowest concentrations of COCs detected in samples from MW-16S in 2004, subsequent data trends reveal somewhat of a fluctuating increase in COC concentrations (Table 4; Appendix B). However, the total concentration of TCE and its chlorinated daughter products in samples collected from MW-16S are down 60 percent since the soils excavation (May, 2003 to December, 2010) and 15 percent during the past 2 years (June, 2009 to December, 2010). Over the same time periods, these concentrations are down 96 and 74 percent respectively in samples collected from MW-3S, which is located immediately down gradient of MW-16S. Additionally, field parameter data collected during the groundwater sampling events show conditions in samples collected from MW-16S remain favorable for reductive dechlorination (no dissolved oxygen and negative ORP). These data show natural attenuation is effective.

[2] Drawdown at several low yielding monitoring wells is consistently observed during sampling (i.e., monitoring wells MW-2S, MW-3S, and MW-16S). Drawdown is not observed during sampling of other site monitoring wells during low flow sampling.

Site-specific biodegradation rates were calculated to account for advection, dispersion, and adsorption, attributing remaining decreases in COC concentration to biodegradation, and observing changes in COC concentration with distance. Overall, the site-specific rates of degradation are within or greater than the range of published rates. The sorption and dispersion mechanisms of natural attenuation will also act to restore groundwater quality. Adsorption distribution coefficients calculated using site data predict that the COCs will adsorb strongly to soils and that the maximum contaminant velocity is expected to be less than 0.9 foot per day, the groundwater seepage velocity (ESC 1999a/b). The MNA remedial objectives are to reduce COC groundwater concentrations below compliance criteria and prevent COC migration to the nearest downgradient receptor (Osborne Creek). Based on the groundwater sampling data, the groundwater plume is delineated, most COCs are stable or decreasing in concentration; the source has been removed (excluding the MW-19 Area); a current deed restriction prohibits the use of site groundwater; the apparent rate at which biodegradation and other natural attenuation processes are occurring is protective of the closest downgradient receptor (Osborne Creek); and the microbial processes responsible for contaminant attenuation are likely to remain active. The validity of these rates is substantiated by multiple data sets and the fact that decades have passed since industrial operations began at the site; it has been over 10 years since industrial operations ceased, and organic compounds are absent in groundwater samples collected from downgradient monitoring wells. The resulting data definitively attribute plume stability to MNA processes and further indicate that these processes are sustainable and will result in the complete remediation of site groundwater in a timeframe consistent with other remedial technologies considered for implementation at the site (e.g., P&T). The evidence and site characteristics support the applicability of MNA at the site. Additional information is provided in the Revised Comprehensive MNA Evaluation Report (ESC Engineering 2007B).

4.1.2 Quality Assurance and Quality Control

The quality assurance and quality control (QAQC) samples, including equipment blanks, trip blanks, and duplicates, were collected in accordance with the SOPs and the Quality Assurance Project Plan as appended within the Pre-Design and Remedial Design Work Plan (ESC Engineering 2001). The analytical data were validated by ECT.CON Inc., and provided to EPA.

5 Final Inspection and Certifications

5.1 Inspection Results

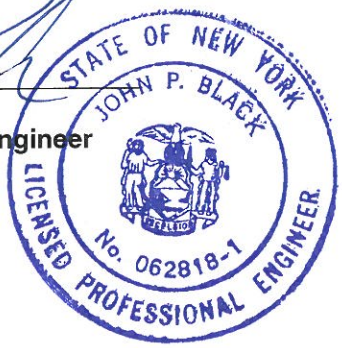
The EPA conducted a final site inspection of the remedial action on August 16, 2011. No issues were identified. The remedial action was implemented in accordance with the Long Term MNA Sampling Program (WSP Engineering 2012a) and is determined to be Operational and Functional as of September 27, 2012 (one year from execution of the Amendment to the ROD).

11/29/2012

Date

John P. Black, Professional Engineer

License Number 062818-1



5.2 Health and Safety

The Remedial Investigation/Feasibility Study Health and Safety Plan (HASP) dated May 21, 1993 provides an overview of conditions at the site and describes the safety procedures to be employed and the rationale for their selection. The HASP was prepared to address any potentially health-threatening contingencies while work is being performed in accordance with the approved RI/FS Work Plan and Sampling and Analysis Plan (SAP); modifications to the HASP have been made to provide safety procedures for work not described in the RI/FS or SAP (e.g., EDR pilot test).

During the development of this HASP, consideration was given to current safety standards as defined by the EPA, the Occupational Safety and Health Administration (OSHA), the National Institute of Occupational Safety and Health (NIOSH), and the U.S. Coast Guard. In addition, this HASP also describes the health effects and standards for known contaminants and the procedures designed to account for the potential for exposure to unknown substances.

No health and safety problems were encountered during the implementation of the remedial action for Element II.

6 Operation and Maintenance Activities

6.1 Monitoring Well Network

As stated in the Long Term MNA Sampling Program (WSP Engineering 2012a), the following wells are included in the monitoring well network (Figure 4):

- Shallow unconsolidated monitoring wells: MW-2S, MW-3S, MW-7S, MW-16S, MW-18S, MW-19, MW-20S, PMW-1
- Deep unconsolidated monitoring wells: MW-2, MW-3, MW-7, MW-16, MW-18, and MW-20

All wells included in the network were installed prior to implementation of the Long Term MNA Sampling Program. A summary of well construction information is provided in Table 2.

6.2 Sampling Activities

The monitoring wells listed above will be sampled on a semi-annual basis for VOCs (EPA Method 8260B); biodegradation parameters will be analyzed every third sampling event (Table 3). The long term groundwater sampling will be conducted in a manner consistent with the previous MNA sampling protocol for the site as discussed in Long Term MNA Sampling Program (WSP Engineering 2012a).

6.3 QAQC

The QAQC samples, including equipment blanks, trip blanks, and duplicates, will be collected in accordance with the SOPs and the Quality Assurance Project Plan as appended within the Pre-Design and Remedial Design Work Plan (ESC Engineering 2001). The VOC analytical data will be validated; all data will be provided to EPA.

6.4 Well Maintenance

Maintenance and repair activities will be performed (as needed) when equipment failure or changes in the operating characteristics of the well prevents attainment of the program objectives. At a minimum, inspections and maintenance will include surface and subsurface inspections. Maintenance schedules are developed using collected inspection information, historical data, and reports of deteriorating performance.

6.5 Waste Management

The waste expected to be generated during MNA operations include sampling purge water. The generated waste is identified, characterized, containerized, labeled, stored, and disposed of in accordance with all applicable requirements.

7 Contact Information

The following personnel served key roles during the development of remediation plans and performance of the remedial action.

7.1 Regulatory Management

Thomas Mongelli
United States Environmental Protection Agency
Emergency and Remedial Response Division
New York Remediation Branch
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New York, NY 10007
(212) 637-4256

Ed Hampston
New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Bureau B
625 Broadway, 12th Floor
Albany, NY 12233-9814
(518) 402-9774

7.2 Respondents Representatives

Steven Roach
Project Coordinator
Ashland Inc.
5200 Blazer Parkway
Dublin, OH 43017
(614) 790-3915

7.3 Design and Remediation Contractor

Glen Rieger
Project Manager
WSP Engineering of New York, P.C.
750 Holiday Drive, Suite 410
Pittsburgh, PA 15220
(412) 604-1040

8 References

Environmental Strategies Corporation. 1993. Remedial Investigation/Feasibility Study for the Tri-Cities Barrel Superfund Site, Fenton, New York, Health and Safety Plan Revision No. 3. May 21.

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WSP Engineering of New York. 2012a. Long Term Monitored Natural Attenuation Sampling Program Tri-Cities Barrel Superfund Site, Fenton, New York. January 11.

WSP Engineering of New York. 2012b. December 2011 Groundwater Monitoring Report Tri-Cities Barrel Superfund Site, Fenton, New York. April 16.

WSP Engineering of New York. 2012c. June 2012 Groundwater Monitoring Report Tri-Cities Barrel Superfund Site, Fenton, New York. September 24.

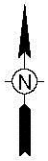
9 Abbreviations and Acronyms

administrative order on consent	AOC
Applicable or Relevant and Appropriate Requirements	ARAR
ambient water quality standards	AWQS
below ground surface	bgs
Comprehensive Environmental Response Compensation and Liability Act	CERCLA
constituents of concern	COCs
Dehalococcoides spp	DHC
dichloroethene	DCE
dicloroethane	DCA
enhanced reductive dechlorination	ERD
feasibility study	FS
focused feasibility study	FFS
health and safety plan	HASP
hollow stem auger	HSA
mean sea level	msl
micrograms per liter	µg/l
milligrams per liter	mg/l
monitored natural attenuation	MNA
nanograms per liter	ng/l
National Institute of Occupational Safety and Health	NIOSH
National Priorities List	NPL
New York State Department of Environmental Conservation	NYSDEC
oxidation reduction potential	ORP
Occupational Safety and Health Administration	OSHA
photoionization detector	PID
preliminary remediation goals	PRG
pump and treat	P&T
quality assurance and quality control	QAQC
Record of Decision	ROD
remedial action objectives	RAOs
remedial investigation	RI
Resource Conservation and Recovery Act	RCRA
sampling and analysis plan	SAP
Statement of Work	SOW
semivolatile organic compounds	SVOC
tetrachloroethene	PCE
Toxic Substances Control Act	TSCA
trichloroethane	TCA
U.S. Environmental Protection Agency	EPA
volatile organic compounds	VOCs

Figures

A	Drawn By: EMH 11/09/2012	Checked: EMH 6/5/2012	DWG Name: 00006725-A01
		Approved: GER 11/9/2012	

REFERENCE:
7.5 MINUTE SERIES TOPOGRAPHIC QUADRANGLE
CHENANGO FORKS, NEW YORK
2010 SCALE 1:24,000



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WSP Environment & Energy
750 Holiday Drive, Suite 410
Pittsburgh, Pennsylvania 15220
(412) 604-1040

FIGURE 1

SITE LOCATION MAP

TRI-CITIES BARREL SUPERFUND SITE
FENTON, NEW YORK

PREPARED FOR

TRI-CITIES BARREL
SITE RESPONDENTS

MW-11S
EXISTING MONUMENT
PMW-1
MW-19
P-2
MW-14
MW-14B
TECHNICALLY IMPRACTICABLE ZONE
EXISTING MONUMENT
MW-18S
MW-18
MW-16
MW-16S
MW-3S
MW-3
MW-7S
MW-7
MW-20S
MW-20
MW-20D
MW-9S
MW-9
MW-12S
MW-2B
MW-2
MW-2S
MW-8
MW-8S
MW-1B
MW-1SA
MW-1S
CULTURAL RESOURCE SENSITIVE AREA
EXISTING I-PIPE
POOL
HIGHWAY BOUNDARY
INTERSTATE 88 (STATE ROUTE 5242)
OSBORNE HOLLOW ROAD
OLD NEW YORK STATE ROUTE 7
(ACTIVE R.R. R/W)
COMPANY
SIGN
PIPE
EXISTING MONUMENT 1.09 OFF P/L
N 786000
N 787750
N 787500
N 787250
N 787000
E 1029750
E 1029500
E 1029250
N 788000

LEGEND

- MW-2S — SHALLOW MONITORING WELL
- MW-2 — DEEP MONITORING WELL
- MW-2B — BEDROCK MONITORING WELL
- P-2 — PIEZOMETER
- UP/L — UTILITY POLE/LIGHT POLE
- 980 — EXISTING 10 FOOT CONTOUR
- EXISTING 2 FOOT CONTOUR
- FENCE LINE
- PROPERTY LINE
- 100 AND 500 YEAR FLOOD PLAIN LIMIT
- ORDINARY HIGH WATER MARK
- TREE LINE
- BURIED RUBBLE REMOVED AUGUST 2011 (APPROXIMATE LOCATION)
- RIGHT-OF-WAY
- GUIDE RAIL

SCALE, FEET
40 0 40 80

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REFERENCES:

1. HARTMANN ASSOC. INC. DRAWING TITLED, "SURVEYED LOCATIONS – PHASE III REMEDIAL INVESTIGATION SAMPLING LOCATIONS", DATED OCTOBER 1994, LAST REV. NOVEMBER 21, 1995, JOB. NO. 93-017-03.

2. HARTMANN ASSOC. INC. DRAWING TITLED, "TOPOGRAPHIC MAP, TRI-CITIES BARREL SITE", JOB NO. PA709, CREATED: JANUARY 09, 1997.

3. RICHARD M. RYBINSKY, L.S. DRAWING TITLED, "WELL, BORING AND SAMPLING LOCATIONS", DATED DECEMBER 14, 2001. [BK 10: 145-146 FENTON.dwg 10103].

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2				
3				

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ORIGINAL SEALED BY JOHN F. BLACK, P.E. ON 11/28/2012

DATE

DRAWN BY		11/27/2012
CHECKED		11/28/2012
APPROVED		11/28/2012

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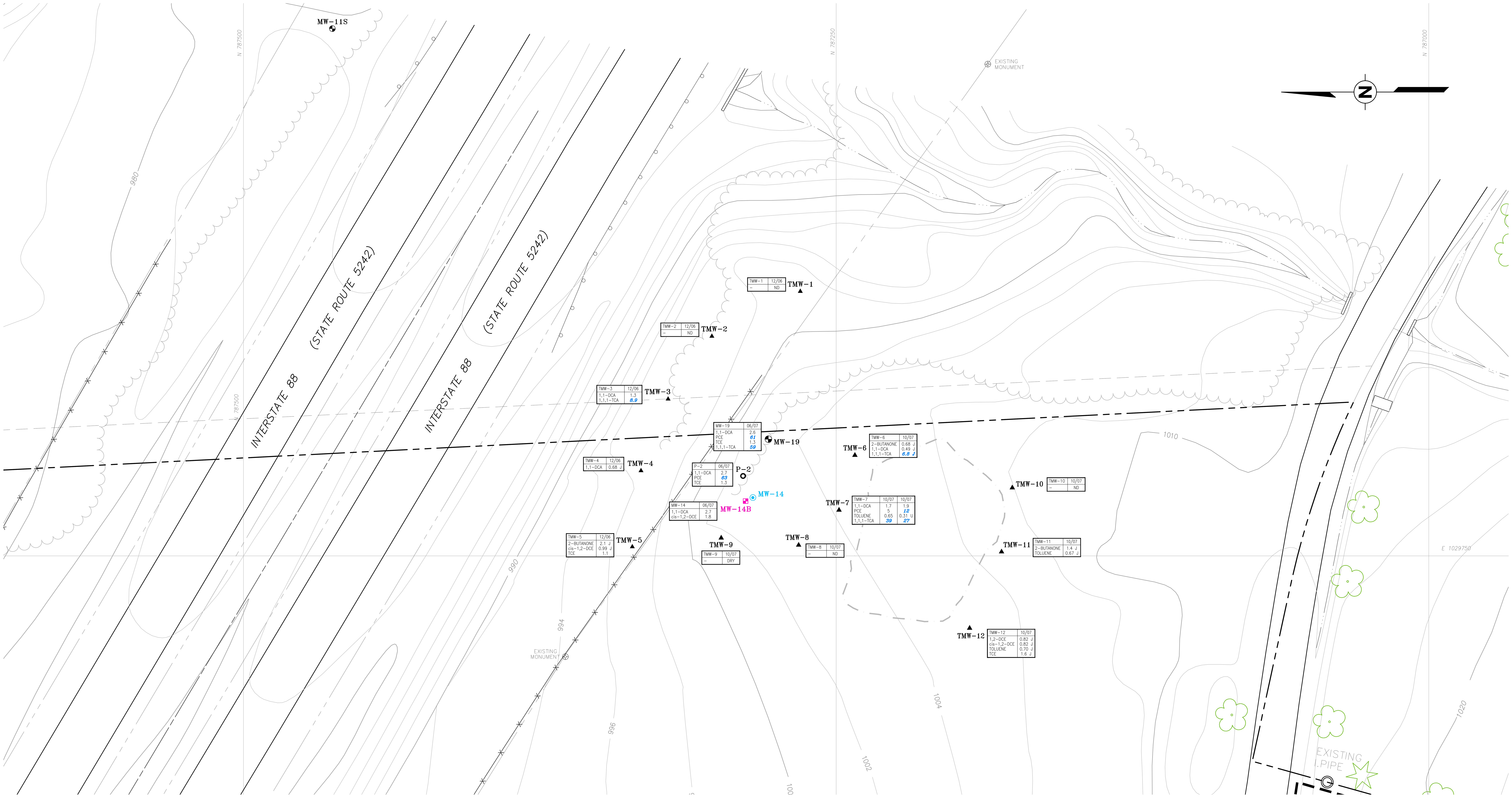
SITE LAYOUT
REMEDIAL ACTION REPORT
TRI-CITIES BARREL SUPERFUND SITE
FENTON, NEW YORK

PREPARED FOR
TRI-CITIES BARREL
SITE RESPONDENTS

WSP ENGINEERING OF NEW YORK, P.C.
750 Holiday Drive, Suite 410
Pittsburgh, Pennsylvania 15220
(412) 604-1040
www.wspenvironmental.com/usa

FIGURE 2

Drawing Number
00006725-D12



REFERENCES:

1. HARTMANN ASSOC. INC. DRAWING TITLED, ''SURVEYED LOCATIONS – PHASE III REMEDIAL INVESTIGATION SAMPLING LOCATIONS'', DATED OCTOBER 1994, LAST REV. NOVEMBER 21, 1995, JOB. NO. 93–017–03.

2. HARTMANN ASSOC. INC. DRAWING TITLED, ''TOPOGRAPHIC MAP, TRI–CITIES BARREL SITE'', JOB NO. PA709, CREATED: JANUARY 09, 1997.

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LEGEND

TMW–8	TEMPORARY MONITORING WELL
MW–19	SHALLOW MONITORING WELL
MW–14	DEEP MONITORING WELL
MW–14B	BEDROCK MONITORING WELL
P–2	PIEZOMETER
UP/L	UTILITY POLE/LIGHT POLE
	PROPERTY LINE
	FENCE LINE
980	EXISTING 10 FOOT CONTOUR
	EXISTING 2 FOOT CONTOUR
	BURIED RUBBLE REMOVED AUGUST 2011 (APPROXIMATE LOCATION)

LEGEND

TMW–6	SAMPLE DESIGNATION
10/07	SAMPLE DATE
2–BUTANONE 0.68 J; 1,1–DCA 0.49 J; 1,1,1–TCA *6.8 J*	RESULTS REPORTED IN μg/l; – VALUES IN *BLUE ITALIC* TYPE EXCEED NEW YORK STATE AMBIENT WATER QUALITY STANDARD
DCA	DICHLOROETHANE
DCE	DICHLOROETHENE
PCE	TETRACHLOROETHENE
TCA	TRICHLOROETHANE
TCE	TRICHLOROETHENE
ND	COMPOUND NOT DETECTED
	RIGHT–OF–WAY
	GUIDE RAIL

NOTE:

TEMPORARY MONITORING WELLS WERE ABANDONED AFTER SAMPLE COLLECTION.

NEW YORK STATE AMBIENT WATER QUALITY STANDARDS	
2–BUTANONE	50
1,1–DCA	5
1,2–DCE	–
cis–1,2–DCE	5
PCE	5
TOLUENE	5
1,1,1–TCA	5
TCE	5

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20 0 20 40

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DATE

DRAWN BY	RAZ 11/27/2012
CHECKED	11/28/2012
APPROVED	11/28/2012

MW–19 AREA DELINEATION RESULTS
REMEDIAL ACTION REPORT

TRI–CITIES BARREL SUPERFUND SITE
FENTON, NEW YORK

PREPARED FOR

TRI–CITIES BARREL SITE RESPONDENTS

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FIGURE 3

Drawing Number
00006725–D13

MW-11S
EXISTING MONUMENT
PMW-1
MW-19
P-2
MW-14
MW-14B
TECHNICALLY IMPRACTICABLE ZONE
EXISTING MONUMENT
MW-18S
MW-18
MW-3S
MW-3
MW-16
MW-16S
MW-7S
MW-7
MW-20S
MW-20
MW-20D
MW-9S
MW-9
MW-2B
MW-2
MW-2S
MW-12S
MW-8
MW-8S
MW-1B
MW-1SA
MW-1S
POOL
EXISTING PIPE
CULTURAL RESOURCE SENSITIVE AREA
HIGHWAY BOUNDARY
INTERSTATE 88 (STATE ROUTE 5242)
OSBORNE HOLLOW ROAD
OLD NEW YORK STATE ROUTE 7
COMPANY (ACTIVE R.R. R/W)
SIGN
PIPE
EXISTING MONUMENT 1.09' OFF P/L
N 788000
N 787750
N 787500
N 787250
N 787000
E 1029750
E 1029500
E 1029250

LEGEND

- GROUNDWATER SAMPLE LOCATION
- MW-2S SHALLOW MONITORING WELL
- MW-2 DEEP MONITORING WELL
- MW-2B BEDROCK MONITORING WELL
- P-2 PIEZOMETER
- UP/L UTILITY POLE/LIGHT POLE
- 980 EXISTING 10 FOOT CONTOUR
- EXISTING 2 FOOT CONTOUR
- FENCE LINE
- PROPERTY LINE
- 100 AND 500 YEAR FLOOD PLAIN LIMIT
- ORDINARY HIGH WATER MARK
- TREE LINE
- BURIED RUBBLE REMOVED AUGUST 2011 (APPROXIMATE LOCATION)
- RIGHT-OF-WAY
- GUIDE RAIL

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2	Revised:	Chkd:	Appr.:	
3	Revised:	Chkd:	Appr.:	

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DATE

DRAWN BY — 11/27/2012
CHECKED — 11/30/2012
APPROVED — 11/30/2012

LONG TERM MNA SAMPLING PROGRAM MONITORING WELL NETWORK REMEDIAL ACTION REPORT

TRI-CITIES BARREL SUPERFUND SITE FENTON, NEW YORK

PREPARED FOR
TRI-CITIES BARREL
SITE RESPONDENTS

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FIGURE 4

Drawing Number
00006725-D14

Tables

Table 1

Groundwater Preliminary Remediation Goals
Tri-Cities Barrel Superfund Site
Fenton, New York (a)

Constituent	Groundwater Quality Standard (a)
Inorganics	
Antimony	3
Arsenic	25
Cadmium	5
Chromium (III or VI)	50
Iron	300 (b)
Lead	25
Manganese	300 (b)
Nickel	100
Volatile Organics	
2-Butanone	50
1,1-Dichloroethane	5
1,2-Dichloroethane	0.6
cis-1,2-Dichloroethene	5
Methylene chloride	5
Tetrachloroethene	5
Toluene	5
Trichloroethene	5
Vinyl Chloride	2
Semivolatile Organics	
Bis(2-ethylhexyl)phthalate	5
4-Methylphenol	5
PCBs/Pesticides	
Alpha-chlordane	0.05
Aroclor 1242	0.09 (c)
Aroclor 1248	0.09 (c)
Aroclor 1254	0.09 (c)
Aroclor 1260	0.09 (c)
4,4'-DDE	0.2
Heptachlor	0.04

a/ New York State Ambient Water Quality Standards and Guidance Values, Division of Water Technical and Operational Guidance Series (1.1.1), June 1998.
b/ Combined concentration of iron and manganese cannot exceed 500 mg/l.
c/ The sum of PCB congeners cannot exceed 0.09 µg/l.

Table 2

Well Construction Data
Tri-Cities Barrel Superfund Site
Fenton, New York (a)

Location	Ground Surface Elevation (ft-msl)	Top-of-Casing Elevation (ft-msl)	Screened Interval ft-bgs	Screened Interval ft-msl
MW-1S	1021.13	1023.63	13.5 - 23.5	997.6 - 1007.6
MW-1B	1023.09	1024.61	109 - 119	904 - 914
MW-2S	993.40	993.49	10 - 20	973 - 983
MW-2	993.30	993.40	32 - 42	951.3 - 961.3
MW-2B	1000.23	1001.08	80 - 90	910 - 920
MW-3S	995.10	994.49	10 - 20	975 - 985
MW-3	995.00	994.50	39 - 49	946 - 956
MW-7S	964.32	966.32	24 - 34	930 - 940
MW-7	964.81	966.81	44.5 - 54.5	910.3 - 920.3
MW-8S	1024.85	1026.85	15 - 25	1000 - 1010
MW-8	1024.88	1026.88	34 - 44	981 - 991
MW-9S	977.20	977.06	14 - 24	953 - 963
MW-9	977.20	976.98	24 - 29	948 - 953
MW-11S	979.70	982.06	7 - 17	963 - 973
MW-12S	968.70	970.92	11 - 21	948 - 958
MW-14	1002.80	1004.49	39 - 49	954 - 964
MW-14B	1003.01	1004.47	81.5 - 91.5	911.5 - 921.5
MW-16S	1000.70	1002.70	15 - 25	976 986
MW-16	1000.80	1002.90	35 - 45	956 966
MW-18S	1006.05	1008.53	20 - 30	976 - 986
MW-18	1006.24	1008.69	35 - 40	966 - 971
MW-19	1003.29	1005.65	20 - 30	973 - 983
MW-20S	971.50	974.40	15 - 25	946.5 - 956.5
MW-20	971.60	974.50	28 - 33	938.6 - 943.6
MW-20D	971.80	974.40	54 - 61	910.8 - 917.8
P-2	1002.54	1004.42	18.5 - 28.5	974.0 - 984.0
PMW-1	1000.25	1002.64	18.0 - 28.0	972.3 - 982.3

a/ ft-MSL = feet mean sea level; "-" = no data.
b/ Well pad damaged; repaired on December 19, 2006.
d/ Well not installed.
e/ Water level not measured due to ice in the casing.
f/ Water level not measured.

Table 3

Monitored Natural Attenuation (MNA) Sampling Program
Tri-Cities Barrel Superfund Site
Fenton, New York (a)

Well ID	VOCs (b)	Field Parameters (c)	MNA Parameters (d)
MW-2	S	S	Every Third Event
MW-2S	S	S	Every Third Event
MW-3	S	S	Every Third Event
MW-3S	S	S	Every Third Event
MW-7	S	S	Every Third Event
MW-7S	S	S	Every Third Event
MW-16	S	S	Every Third Event
MW-16S	S	S	Every Third Event
MW-18	S	S	Every Third Event
MW-18S	S	S	Every Third Event
MW-19	S	S	Every Third Event
MW-20	S	S	Every Third Event
MW-20S	S	S	Every Third Event
PMW-1	S	S	Every Third Event

a/ S = semi-annual sampling; June and December
b/ Volatile Organic Compounds (VOCs) EPA Method 8260B
c/ Field Parameters include the following:
- Temperature
- pH
- Specific Conductance
- Dissolved Oxygen
- Oxidation-Reduction Potential (ORP)
- Turbidity

d/ MNA Parameters include the following:
- ferrous iron
- total iron
- alkalinity
- carbon dioxide
- ethane
- ethene
- hydrogen
- methane
- chloride
- nitrate-N
- sulfate
- sulfide
- total organic carbon

e/ MNA parameters will be analyzed during every third sampling event starting with June 2012; subsequent events for MNA parameters include December 2013, June 2015, etc.

Table 4

Summary of Groundwater Sampling Results - Historical
Tri-Cities Barrel Superfund Site
Fenton, New York (a)

Monitored Zone:		Shallow Unconsolidated																	
Well ID:		MW-2S																	
Sample Date:	New York State AWQS (c)	10/04/94	12/01/95	11/24/97	12/19/97	12/19/01	06/27/02	05/06/03	04/28/04	07/15/04	10/12/2004 (b)	10/13/2004 (b)	01/13/05	12/12/06	06/27/07	12/11/07	06/10/08	12/02/08	06/23/09
Volatile Organic Compounds (µg/l)																			
Acetone	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzene	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromodichloromethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromoform	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromomethane (Methyl bromide)	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Butanone (MEK)	50	ND	5 U (d)	5 U	-	10 U	10 UJ	13 J	20 U	20 U	10 U	10 U	10 U	10 U	10 U	0.89 UJ	10 U	10 U	10 U
Carbon disulfide	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon tetrachloride	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorobenzene	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroethane	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroform	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloromethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibromochloromethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethane	5	***380 D***	***340 D***	***260 D***	***190 D***	***280***	***350 J***	***340***	***160***	***120***	***54***	***76***	***80***	***60***	***39***	***17***	***9.7***	***13***	***13 J***
1,2-Dichloroethane	0.6	-	***1***	-	-	0.6 UJ	***1.2***	2.4 U	1.2 U	1.2 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	1 U	0.6 U
1,1-Dichloroethene	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,2-Dichloroethene	5	***48***	***58***	***31***	***40 D***	***31***	***68***	***79***	***38***	***28***	***17***	***18***	***22***	***22***	***17***	***7.2***	4.8	***6.3***	4.5
trans-1,2-Dichloroethene	5	3	4	2	1	-	-	4.8	2.8	1 J	1.2	0.85 J	1.4	1 U	1.2	0.51 J	0.36 J	0.42 J	1 U
1,2-Dichloroethene, Total	-	-	-	-	-	-	-	84	41	29	18	19	23	22	18	7.7	5.1	6.7	4.5
1,2-Dichloropropane	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloropropene	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,3-Dichloropropene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
trans-1,3-Dichloropropene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Hexanone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methylene chloride	5	4	3 U	-	-	2.5 J	5 U	6.6 U	2.8 J	1.6 J	5 U	5 U	0.76 J	1 U	1 U	1 U	1 U	5 U	1 U
4-Methyl-2-pentanone (MIBK)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Styrene	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2,2-Tetrachloroethane	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	5	-	1	2	1	0.5 J	0.49 J	4 U	2 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	5	-	1 U	-	0.6 J	1 U	1 U	1.2	2 U	2 U	1 U	1.4	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	5	-	-	-	-	-	-	-	-	-	-	-	-	-	1 U	-	-	-	-
1,1,2-Trichloroethane	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethene	5	1	2	1	1	3.3	***8.7***	5.1 U	1.5 J	2 U	0.68 J	2.3	0.71 J	1 U	0.68 J	1 U	1 U	1 U	1 U
Vinyl acetate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl chloride	2	***73***	***87***	***49***	***25***	***69***	***100***	***120***	***34***	***29***	***7.8***	***7.7***	***12***	***10***	***4.9***	***2.2***	2 U	1.1	1.2 J
Xylenes, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Field Measurements																			
Temperature (°C)	-	-	-	-	-	9.43	18.63	10.47	9.23	15.89	12.41	16.4	8.08	7.85	17.39	3.73	25.65	5.96	19.8
Conductance (mS/cm)	-	-	-	-	-	1.01	1.182	1.361	1.046	0.955	0.978	0.953	1.032	0.887	0.667	0.568	0.552	0.728	0.482
Dissolved Oxygen (mg/l)	-	-	-	-	-	0	0.4	0.91	0.71	3.26	3.05	1.55	1.11	-	1.51	0.36	0.34	3.47	1.14
pH (s.u.)	-	-	-	-	-	7.58	5.97	6.33	6.35	6.47	6.38	6.36	7.01	6.62	6.26	6.65	6.72	6.85	6.7
ORP (mV)	-	-	-	-	-	-30	159	-50	165	82	-125	234	162	55.2	26.1	-53.5	16.9	136.8	-46
Turbidity (NTU)	-	-	-	-	-	0.8	7.7	7.9	3.81	20	103.9	33	14	10.46	28	6.12	17.9	3.9	2.75
Dissolved Gases																			
Carbon dioxide (mg/l)	-	-	-	-	-	160	340	300	290 J (c)	160	-	56	250	-	-	-	-	-	-
Ethane (ng/l)	-	-	-	-	-	1,800	3,800	7,000	6,200 J	1,400	-	480	2,500	-	-	-	-	-	-
Ethene (ng/l)	-	-	-	-	-	170,000	320,000	110,000	220,000 J	52,000 J	-	6,800	43,000	-	-	-	-	-	-
Hydrogen (nM)	-	-	-	-	-	1.4	1.2	5.7	- (f)	- (f)	-	5.9	-	-	-	-	-	-	-
Methane (mg/l)	-	-	-	-	-	0.93	2	5.2	4.7 J	0.5 J	-	0.21	4.1	-	-	-	-	-	-
General Chemistry (mg/l)																			
Chloride	-	-	-	-	-	56	48	55	30	24	-	11	11	-	-	-	-	-	-
Nitrate-N (mg/l)	-	-	-	-	-	0.01 U	0.05 U	0.05 U	0.05 U	0.05 U	-	0.05 U	0.037 J	-	-	-	-	-	-
Sulfate	-	-	-	-	-	30	26 J	19 J	30	31	-	26	19	-	-	-	-	-	-
Sulfide	-	-	-	-	-	0.4 U	1 U	1 U	1 U	1 U	-	1 U	1 U	-	-	-	-	-	-
TOC / DOC (g)	-	-	-	-	-	18	15	20	25	13	-	6.8	7.7	-	-	-	-	-	-
Ferrous Iron	-	-	-	-	-	1.65	0.34	0.31	0.2	0	-	0.28	0.04	-	-	-	-	-	-
Total Iron	-	-	-	-	-	1.69	0.54	0.65	0.07	0.14	-	0.03	0.14	-	-	-	-	-	-
Alkalinity (as $CaCO_3$)	-	-	-	-	-	517	623	840	554	579	-	561	565	-	-	-	-	-	-

Boxed values indicates concentration greater than criteria

Table 4

Summary of Groundwater Sampling Results - Historical
Tri-Cities Barrel Superfund Site
Fenton, New York (a)

Monitored Zone:		Shallow Unconsolidated																	
Well ID:		MW-2S (continued)						MW-3S											
Sample Date:	New York State AWQS (c)	12/15/09	06/15/10	12/21/10	06/20/11	12/20/11	06/18/12	10/06/94	12/14/95	12/18/01	06/27/02	05/06/03	04/28/04	07/15/04	10/12/2004 (b)	10/14/2004 (b)	01/13/05	12/12/06	06/26/07
Volatile Organic Compounds (µg/l)																			
Acetone	50	-	-	-	-	25 U	25 UJ	-	-	-	-	-	-	-	-	-	-	-	-
Benzene	1	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-	-
Bromodichloromethane	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-	-
Bromoform	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-	-
Bromomethane (Methyl bromide)	5	-	-	-	-	1 UJ	1 UJ	-	-	-	-	-	-	-	-	-	-	-	-
2-Butanone (MEK)	50	10 U	10 U	10 U	10 U	10 U	10 UJ	ND	***5,300***	***650***	***520***	880 U	500 U	500 U	500 U	1000 U	500 U	10 U	10 U
Carbon disulfide	-	-	-	-	-	2 U	2 U	-	-	-	-	-	-	-	-	-	-	-	-
Carbon tetrachloride	5	-	-	-	-	1 UJ	1 UJ	-	-	-	-	-	-	-	-	-	-	-	-
Chlorobenzene	5	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-	-
Chloroethane	5	-	-	-	-	1.6 J	1 UJ	-	-	-	-	-	-	-	-	-	-	-	-
Chloroform	7	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-	-
Chloromethane	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-	-
Dibromochloromethane	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethane	5	***7.2***	3.4	***12***	***8.2***	***12***	***5.8***	1000 U	***4,700***	***880***	***1,800***	***1,400***	***660***	***790***	***950***	***1,100***	***580***	***200***	***410***
1,2-Dichloroethane	0.6	0.6 U	1 U	1 U	1 U	0.6 U	1 U	ND	250 U	***57***	***68***	***47***	30 U	***19 J***	***37***	***39 J***	***14 J***	0.6 U	***5.9***
1,1-Dichloroethene	5	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,2-Dichloroethene	5	3.4	1.9	***5.8***	4.2	***7.5***	2.9	***8,400***	***12,000***	***1,500***	***5,600***	***1,700***	***5,200***	***5,500***	***6,800***	***9,000***	***3,000***	***600***	***1,100***
trans-1,2-Dichloroethene	5	0.22 J	1 U	0.34 J	0.33 J	0.49 J	1 U	1000 U	250 U	-	-	***51***	***37 J***	50 U	***62***	***14 J***	***19 J***	3.6	***11***
1,2-Dichloroethene, Total	-	3.6	1.9 J	6.2	4.6	7.9	2.9	-	-	-	-	1,800	5,300	5,500	6,800	9,000	3,100	600	1,300
1,2-Dichloropropane	1	-	-	-	-	0.16	1 U	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloropropene	5	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,3-Dichloropropene	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-	-
trans-1,3-Dichloropropene	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	5	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-	-
2-Hexanone	-	-	-	-	-	10 U	10 UJ	-	-	-	-	-	-	-	-	-	-	-	-
Methylene chloride	5	1 U	5 U	5 U	5 U	1 U	5 U	***1,600 J***	250 U	***340***	***710***	***530***	***35 J***	250 U	***59 J***	500 U	50 U	2.3	***11***
4-Methyl-2-pentanone (MIBK)	-	-	-	-	-	10 U	10 U	-	-	-	-	-	-	-	-	-	-	-	-
Styrene	5	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2,2-Tetrachloroethane	5	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	5	1 U	1 U	1 U	1 U	1 U	1 U	ND	250 U	50 UJ	***29 J***	50 U	50 U	50 U	50 U	100 U	50 U	1.5	2.9
Toluene	5	1 U	1 U	1 U	1 U	1 U	1 U	ND	***7,500***	***5,200***	***4,700***	***4,800***	***27 J***	***190***	50 U	***26 J***	***9.2 J***	1 U	1 U
1,1,1-Trichloroethane	5	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2-Trichloroethane	1	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethene	5	0.15 J	0.22 J	0.21 J	0.2 J	0.25 J	0.15 J	1000 U	250 U	50 U	***30 J***	50 U	50 U	50 U	***34 J***	***38 J***	***13 J***	2.5	***6.2***
Vinyl acetate	-	-	-	-	-	2 U	2 UJ	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl chloride	2	2 U	0.21 J	1.2	0.89 J	1.7 J	0.44 J	1000 U	***21,000***	***1,800***	***6,600***	***2,000***	***1,200***	***1,700***	***2,000***	***2,600***	***120***	***54***	***170***
Xylenes, Total	-	-	-	-	-	2 U	2 U	-	-	-	-	-	-	-	-	-	-	-	-
Field Measurements																			
Temperature (°C)	-	8.29	21.89	1.32	27.74	8.54	16.03	-	-	8.65	17.77	9.21	9.6	16.55	14.66	-	4.6	6.84	25.11
Conductance (mS/cm)	-	0.609	0.622	0.646	0.486	0.497	0.446	-	-	4.73	4.23	4.27	1.484	1.99	2.01	-	1.452	1.153	1.421
Dissolved Oxygen (mg/l)	-	0.07	0.14	0.79	0	2.91	0.59	-	-	0	0.39	0.37	5.78	0.82	0.71	-	1.76	2.89	0.63
pH (s.u.)	-	6.92	6.72	5.47	6.65	6.46	6.84	-	-	7.93	6.44	6.44	7.47	6.72	6.74	-	6.59	6.83	6.85
ORP (mV)	-	44	-52	160	105	47	30	-	-	-104	-68	123	128	15	59	-	164	25.1	60.2
Turbidity (NTU)	-	3.38	0.7	5.2	9.8	6.8	9.7	-	-	9.9	7.5	195	9.5	32	139	-	26	7	9
Dissolved Gases																			
Carbon dioxide (mg/l)	-	-	-	-	-	-	70	-	-	290	300	340	140 J	160	-	130	69	-	-
Ethane (ng/l)	-	-	-	-	-	-	97	-	-	2,600	1,500	940	1,700 J	680	-	2,500	420	-	-
Ethene (ng/l)	-	-	-	-	-	-	170	-	-	8,100,000	6,700,000	5,800,000	1,600,000 J	510,000 J	-	600,000	590	-	-
Hydrogen (nM)	-	-	-	-	-	-	2.1	-	-	4.8	1.1	1.3	- (f)	- (f)	-	-	-	-	-
Methane (mg/l)	-	-	-	-	-	-	0.22	-	-	1.2	0.52 J	0.55	0.42 J	0.11 J	-	0.7	0.015	-	-
General Chemistry (mg/l)																			
Chloride	-	-	-	-	-	-	5 U	-	-	480	450	440	160	200	-	210	130	-	-
Nitrate-N (mg/l)	-	-	-	-	-	-	0.02 U	-	-	0.01 U	0.019 J	0.05 U	0.14	0.14	-	0.05 U	0.22	-	-
Sulfate	-	-	-	-	-	-	5 U	-	-	1.7 U	5 UJ	5 U	110	100	-	66	120	-	-
Sulfide	-	-	-	-	-	-	10 U	-	-	0.4 U	1 U	1 U	1 U	1 U	-	1 U	1 U	-	-
TOC / DOC (g)	-	-	-	-	-	-	3.8	-	-	940	760	720	23	34	-	48	49	-	-
Ferrous Iron	-	-	-	-	-	-	0.2	-	-	58	7	1.67	0.08	0.04	-	0.13	0.06	-	-
Total Iron	-	-	-	-	-	-	2.1	-	-	76	41.75	2.51	0.01	1.13	-	0.32	0.12	-	-
Alkalinity (as $CaCO_3$)	-	-	-	-	-	-	280	-	-	144	1,491	1,360	532	624	-	711	528	-	-

Boxed values indicates concentration greater than criteria

Table 4

Summary of Groundwater Sampling Results - Historical
Tri-Cities Barrel Superfund Site
Fenton, New York (a)

Monitored Zone:		Shallow Unconsolidated																		
Well ID:		MW-3S (continued)										MW-7S								
Sample Date:	New York State AWQS (c)	12/12/07	06/10/08	12/02/08	06/24/09	12/16/09	06/16/10	12/21/10	06/21/11	12/20/11	06/18/12	12/20/01	06/29/02	05/06/03	04/29/04	07/14/04	10/14/04	01/11/05	12/12/06	06/26/07
Volatile Organic Compounds (µg/l)																				
Acetone	50	-	-	-	-	-	-	-	-	25 U	25 UJ	-	-	-	-	-	-	-	-	-
Benzene	1	-	-	-	-	-	-	-	-	0.26 J	0.82 J	-	-	-	-	-	-	-	-	-
Bromodichloromethane	-	-	-	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-
Bromoform	-	-	-	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-
Bromomethane (Methyl bromide)	5	-	-	-	-	-	-	-	-	1 UJ	1 UJ	-	-	-	-	-	-	-	-	-
2-Butanone (MEK)	50	0.9 UJ	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon disulfide	-	-	-	-	-	-	-	-	-	2 UJ	2 U	-	-	-	-	-	-	-	-	-
Carbon tetrachloride	5	-	-	-	-	-	-	-	-	1 U	1 UJ	-	-	-	-	-	-	-	-	-
Chlorobenzene	5	-	-	-	-	-	-	-	-	1.8	2.3	-	-	-	-	-	-	-	-	-
Chloroethane	5	-	-	-	-	-	-	-	-	***59 J***	***16***	-	-	-	-	-	-	-	-	-
Chloroform	7	-	-	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-
Chloromethane	-	-	-	-	-	-	-	-	-	1 UJ	1 U	-	-	-	-	-	-	-	-	-
Dibromochloromethane	-	-	-	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-
1,1-Dichloroethane	5	***160***	***190***	***240***	***310 J***	***150***	***200***	***160***	***200***	***110***	***130***	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	0.6	***2***	***2.1***	***4.3***	***2.1***	***2.1***	***3.7***	***2.5***	***1.8***	***1.8***	***1.1***	0.6 UJ	0.6 UJ	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
1,1-Dichloroethene	5	-	-	-	-	-	-	-	-	0.69 J	0.54 J	-	-	-	-	-	-	-	-	-
cis-1,2-Dichloroethene	5	***440***	***670***	***350***	***480***	***300***	***270***	***130***	***310***	***160***	***160***	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,2-Dichloroethene	5	1.9	4.5	3	3.3	2.1	2.7	2	3.2	1.7	1.9	-	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethene, Total	-	470	580	420	390	300	270	130	330	160	170	-	-	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichloropropane	1	-	-	-	-	-	-	-	-	0.74 J	0.54 J	-	-	-	-	-	-	-	-	-
1,1-Dichloropropene	5	-	-	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-
cis-1,3-Dichloropropene	-	-	-	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-
trans-1,3-Dichloropropene	-	-	-	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-
Ethylbenzene	5	-	-	-	-	-	-	-	-	1 U	0.45 J	-	-	-	-	-	-	-	-	-
2-Hexanone	-	-	-	-	-	-	-	-	-	10 U	10 UJ	-	-	-	-	-	-	-	-	-
Methylene chloride	5	2.6	2.4	***5.6***	4.3	2.3	3.8 J	4 J	6.7 U	2.4 J	2 J	5 U	5 U	5 U	5 U	5 U	5 U	1 U	1 U	1 U
4-Methyl-2-pentanone (MIBK)	-	-	-	-	-	-	-	-	-	10 U	10 UJ	-	-	-	-	-	-	-	-	-
Styrene	5	-	-	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-
1,1,2,2-Tetrachloroethane	5	-	-	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-
Tetrachloroethene	5	1.3	1.4	1.7	0.78 J	1.4	1.5	1.1	1.8	1.2	1.2	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	5	1 U	2.2	1 U	1 U	1 U	1 U	1 U	0.62 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	5	-	-	-	-	-	-	-	-	0.75 J	1 UJ	-	-	-	-	-	-	-	-	1 U
1,1,2-Trichloroethane	1	-	-	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-
Trichloroethene	5	2.1	2.2	2.9	2.5	2.2	1.9	1.1	2.2	1.5	1.6	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl acetate	-	-	-	-	-	-	-	-	-	2 U	2 UJ	-	-	-	-	-	-	-	-	-
Vinyl chloride	2	***61***	***110***	***44***	***51***	***32***	***68***	***6.9***	***150***	***21***	***42***	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	2 U
Xylenes, Total	-	-	-	-	-	-	-	-	-	2 U	1.7 J	-	-	-	-	-	-	-	-	-
Field Measurements																				
Temperature (°C)	-	3.74	21	7.34	22.6	8.47	17.79	3.73	15.23	7.72	16.12	8.22	13.01	8.56	10.88	9.62	9.75	8.29	9.82	13.31
Conductance (mS/cm)	-	1.155	1.071	0.588	1.142	1.13	1.27	1.25	1.15	1.06	0.874	1.14	1.16	1.166	1.26	1.262	1.207	1.169	0.915	0.667
Dissolved Oxygen (mg/l)	-	2.62	0.83	7.36	1.21	1.64	0.25	0.9	0	2.64	1.14	-	0.24	1.09	0.93	0.13	0.69	5.62	2.1	0.55
pH (s.u.)	-	7.1	7.06	7.01	6.99	7.24	7.09	6.44	6.59	7.01	6.99	6.14	6.02	6.39	6.08	6.4	6.66	6.29	6.37	6.18
ORP (mV)	-	291	28.9	-162	42.5	66	129	205	127	141	50	-115	82	-199	83	-45	152	25	-12.6	41.3
Turbidity (NTU)	-	44.8	10.11	0	17	4.65	16	9.7	2	4.7	9.5	4.5	17	4.43	8.88	3.79	4.19	7.4	5.2	11
Dissolved Gases																				
Carbon dioxide (mg/l)	-	-	-	-	-	-	-	-	-	-	95	-	-	24	29 J	31	10	28	-	-
Ethane (ng/l)	-	-	-	-	-	-	-	-	-	-	4,900	-	-	7	8.1 J	2.8 J	2.6 J	5.4	-	-
Ethene (ng/l)	-	-	-	-	-	-	-	-	-	-	84,000	-	-	11	4.8 J	5 U	5.1	5 U	-	-
Hydrogen (nM)	-	-	-	-	-	-	-	-	-	-	1.4	-	-	1.6	1.3 J	85	6.6	1.4	-	-
Methane (mg/l)	-	-	-	-	-	-	-	-	-	-	0.076	-	-	0.00032	0.00054 J	0.00021	0.00024	0.0004	-	-
General Chemistry (mg/l)																				
Chloride	-	-	-	-	-	-	-	-	-	-	43	-	300 J	310	330	330	330 J	330	-	-
Nitrate-N (mg/l)	-	-	-	-	-	-	-	-	-	-	0.02 U	-	-	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	-	-
Sulfate	-	-	-	-	-	-	-	-	-	-	9.5	-	20	16 J	19	19	19	21	-	-
Sulfide	-	-	-	-	-	-	-	-	-	-	10 U	-	-	1 U	1 U	1 U	1 U	1 U	-	-
TOC / DOC (g)	-	-	-	-	-	-	-	-	-	-	7.9	-	2.2	1.2	0.76 J	1.9	2.8	1.9	-	-
Ferrous Iron	-	-	-	-	-	-	-	-	-	-	0.2 U	-	-	2.83	1.84	1.47	2.09	1.74	-	-
Total Iron	-	-	-	-	-	-	-	-	-	-	0.9	-	-	2.53	1.79	1.7	1.99	1.98	-	-
Alkalinity (as $CaCO_3$)	-	-	-	-	-	-	-	-	-	-	520	-	-	52	62	56	59	57	-	-

Boxed values indicates concentration greater than criteria

Table 4

Summary of Groundwater Sampling Results - Historical
Tri-Cities Barrel Superfund Site
Fenton, New York (a)

Monitored Zone:		Shallow Unconsolidated																		
Well ID:		MW-7S (continued)										MW-16S								
Sample Date:	New York State AWQS (c)	12/12/07	06/11/08	12/02/08	06/23/09	12/15/09	06/15/10	12/21/10	06/21/11	12/21/11	06/18/12	12/27/01	06/25/02	05/01/03	04/28/04	07/13/04	10/12/2004 (b)	10/14/2004 (b)	01/13/05	12/13/06
Volatile Organic Compounds (µg/l)																				
Acetone	50	-	-	-	-	-	-	-	-	25 U	25 UJ	-	-	-	-	-	-	-	-	-
Benzene	1	-	-	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-
Bromodichloromethane	-	-	-	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-
Bromoform	-	-	-	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-
Bromomethane (Methyl bromide)	5	-	-	-	-	-	-	-	-	1 UJ	1 UJ	-	-	-	-	-	-	-	-	-
2-Butanone (MEK)	50	10 UJ	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U	50 U	3.9 J	10 U	10 U	10 U	10 U	10 U	10 U
Carbon disulfide	-	-	-	-	-	-	-	-	-	2 U	2 U	-	-	-	-	-	-	-	-	-
Carbon tetrachloride	5	-	-	-	-	-	-	-	-	1 UJ	1 UJ	-	-	-	-	-	-	-	-	-
Chlorobenzene	5	-	-	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-
Chloroethane	5	-	-	-	-	-	-	-	-	1 UJ	1 U	-	-	-	-	-	-	-	-	-
Chloroform	7	-	-	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-
Chloromethane	-	-	-	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-
Dibromochloromethane	-	-	-	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-
1,1-Dichloroethane	5	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	***17 D***	***34***	***110***	0.63 J	2.1	2.8	2.3	2.2	4.5
1,2-Dichloroethane	0.6	0.6 U	0.6 U	1 U	0.6 U	0.6 U	1 U	1 U	1 U	0.6 U	1 U	0.6 UJ	3 UJ	3 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
1,1-Dichloroethene	5	-	-	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-
cis-1,2-Dichloroethene	5	1 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	***420 D***	***1,400***	***1,900***	***24***	***100***	***120***	***56***	***97***	***290***
trans-1,2-Dichloroethene	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	-	-	***11***	0.43 J	0.62 J	0.94 J	4.5	0.44 J	0.95 J
1,2-Dichloroethene, Total	-	1 J	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	-	-	1,900	24	100	120	61 J	98	290
1,2-Dichloropropane	1	-	-	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-
1,1-Dichloropropene	5	-	-	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-
cis-1,3-Dichloropropene	-	-	-	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-
trans-1,3-Dichloropropene	-	-	-	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-
Ethylbenzene	5	-	-	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-
2-Hexanone	-	-	-	-	-	-	-	-	-	10 U	10 U	-	-	-	-	-	-	-	-	-
Methylene chloride	5	1 U	1 U	5 U	1 U	1 U	5 U	5 U	5 U	1 U	5 U	1.2 J	25 U	3.8 J	5 U	5 U	5 U	5 U	1 U	0.63 J
4-Methyl-2-pentanone (MIBK)	-	-	-	-	-	-	-	-	-	10 U	10 U	-	-	-	-	-	-	-	-	-
Styrene	5	-	-	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-
1,1,2,2-Tetrachloroethane	5	-	-	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-
Tetrachloroethene	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	5	-	-	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-
1,1,2-Trichloroethane	1	-	-	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-
Trichloroethene	5	0.74 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	***120 D***	***540***	***1000***	***8***	***72***	***100***	***52***	***110***	***360***
Vinyl acetate	-	-	-	-	-	-	-	-	-	2 U	2 UJ	-	-	-	-	-	-	-	-	-
Vinyl chloride	2	2 U	2 U	1 U	2 U	2 U	1 U	1 U	1 U	2 U	1 U	***83 D***	***460***	***770***	***3***	***3.8***	***4.3***	***2.7***	2 U	***52***
Xylenes, Total	-	-	-	-	-	-	-	-	-	2 U	2 U	-	-	-	-	-	-	-	-	-
Field Measurements																				
Temperature (°C)	-	8.15	11.96	10.09	10.77	8.95	10.19	7.45	13.59	7.85	12.09	9.02	18.9	28.04	5.03	18.94	12.42	-	8.82	9.04
Conductance (mS/cm)	-	0.832	0.615	0.48	0.622	0.764	0.805	0.688	0.241	0.481	0.4	0.67	0.95	1.224	0.863	0.985	0.967	-	0.956	1.037
Dissolved Oxygen (mg/l)	-	3.05	2.03	0.2	0.5	0.78	9.09	0.19	1.5	0	0.18	6.34	0.34	0.93	2.91	0.7	0.82	-	7.21	1.28
pH (s.u.)	-	6.25	6.46	6.32	6.19	6.27	6.31	5.74	6.86	6.41	6.49	7.36	5.1	7.08	7.47	7.21	7.23	-	7.12	8.82
ORP (mV)	-	226.3	4.8	-155.6	10.3	-53	-3	63	81	82	30	236	83	-94	118	79	180	-	151	-3.6
Turbidity (NTU)	-	35.1	25.9	1.5	3.77	3.9	0.8	3.7	219	1.6	2.2	971	220	34.8	16	9.69	22	-	6.5	0.5
Dissolved Gases																				
Carbon dioxide (mg/l)	-	-	-	-	-	-	-	-	-	-	57	11	480	28	23 J	23	-	21	14	-
Ethane (ng/l)	-	-	-	-	-	-	-	-	-	-	25 U	68	1,700	3,700	110 J	160	-	120	12	-
Ethene (ng/l)	-	-	-	-	-	-	-	-	-	-	27	2,300	80,000	68,000	330 J	680	-	860	21	-
Hydrogen (nM)	-	-	-	-	-	-	-	-	-	-	480	6.8	1.5	2.8	-	- (f)	-	-	-	-
Methane (mg/l)	-	-	-	-	-	-	-	-	-	-	0.0027	0.011	0.47	1.2	0.0017 J	0.0025	-	0.0065	0.0016	-
General Chemistry (mg/l)																				
Chloride	-	-	-	-	-	-	-	-	-	-	100	120	120	130	87	96	-	88	100	-
Nitrate-N (mg/l)	-	-	-	-	-	-	-	-	-	-	0.02 U	0.01 U	0.05 U	0.05 U	0.05 U	0.047 J	-	0.05 U	0.15	-
Sulfate	-	-	-	-	-	-	-	-	-	-	17	53	49	47 J	78	73	-	61	100	-
Sulfide	-	-	-	-	-	-	-	-	-	-	10 U	0.4 U	1 U	1 U	1 U	1 U	-	1 U	1 U	-
TOC / DOC (g)	-	-	-	-	-	-	-	-	-	-	2.2	13	9	8.9	2.9	6.2	-	24	2.5	-
Ferrous Iron	-	-	-	-	-	-	-	-	-	-	0.2 U	0	0.16	0.01	0	0.03	-	0.18	0	-
Total Iron	-	-	-	-	-	-	-	-	-	-	0.2 U	0	0.19	0.06	0.01	0.03	-	0.85	0	-
Alkalinity (as $CaCO_3$)	-	-	-	-	-	-	-	-	-	-	77	-	224	404	238	253	-	277	497	-

Boxed values indicates concentration greater than criteria

Table 4

Summary of Groundwater Sampling Results - Historical
Tri-Cities Barrel Superfund Site
Fenton, New York (a)

Monitored Zone:		Shallow Unconsolidated																	
Well ID:		MW-16S (continued)											MW-18S						
Sample Date:	New York State AWQS (c)	06/26/07	12/11/07	06/10/08	12/05/08	06/23/09	12/15/09	06/15/10	12/21/10	06/21/11	12/21/11	06/19/12	12/21/01	06/25/02	04/30/03	04/27/04	07/15/04	10/13/04	01/12/05
Volatile Organic Compounds (µg/l)																			
Acetone	50	-	-	-	-	-	-	-	-	-	250 U	25 UJ	-	-	-	-	-	-	-
Benzene	1	-	-	-	-	-	-	-	-	-	10 U	0.3 J	-	-	-	-	-	-	-
Bromodichloromethane	-	-	-	-	-	-	-	-	-	-	10 U	1 U	-	-	-	-	-	-	-
Bromoform	-	-	-	-	-	-	-	-	-	-	10 U	1 U	-	-	-	-	-	-	-
Bromomethane (Methyl bromide)	5	-	-	-	-	-	-	-	-	-	10 UJ	1 UJ	-	-	-	-	-	-	-
2-Butanone (MEK)	50	10 U	0.76 UJ	10 U	10 U	10 U	10 U	10 U	100 U	100 U	100 U	10 UJ	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon disulfide	-	-	-	-	-	-	-	-	-	-	20 U	2 U	-	-	-	-	-	-	-
Carbon tetrachloride	5	-	-	-	-	-	-	-	-	-	10 UJ	1 U	-	-	-	-	-	-	-
Chlorobenzene	5	-	-	-	-	-	-	-	-	-	10 U	1 U	-	-	-	-	-	-	-
Chloroethane	5	-	-	-	-	-	-	-	-	-	1 UJ	1 U	-	-	-	-	-	-	-
Chloroform	7	-	-	-	-	-	-	-	-	-	10 U	1 U	-	-	-	-	-	-	-
Chloromethane	-	-	-	-	-	-	-	-	-	-	10 U	1 U	-	-	-	-	-	-	-
Dibromochloromethane	-	-	-	-	-	-	-	-	-	-	10 U	1 U	-	-	-	-	-	-	-
1,1-Dichloroethane	5	***7.9***	***5.6***	***7.2***	***6.7***	***15 J***	***7.8***	***10***	***8.8 J***	***15***	***6.6 J***	***15***	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	0.6	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.21 J	10 U	10 U	6 U	1 U	0.6 UJ	1 UJ	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
1,1-Dichloroethene	5	-	-	-	-	-	-	-	-	-	1.1 J	1.9 U	-	-	-	-	-	-	-
cis-1,2-Dichloroethene	5	***480***	***360***	***620***	***410***	***710***	***500***	***630***	***610***	***900***	***430***	***560***	-	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,2-Dichloroethene	5	2.7	0.67 J	3.2	1.4	***6.4***	1.1	2.6	10 U	4 J	10 U	***37***	-	-	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethene, Total	-	600	410	580	480	730	500	550	610	900	430	610	-	-	2 U	2 U	2 U	2 U	2 U
1,2-Dichloropropane	1	-	-	-	-	-	-	-	-	-	10 U	1 U	-	-	-	-	-	-	-
1,1-Dichloropropene	5	-	-	-	-	-	-	-	-	-	10 U	1 U	-	-	-	-	-	-	-
cis-1,3-Dichloropropene	-	-	-	-	-	-	-	-	-	-	10 U	1 U	-	-	-	-	-	-	-
trans-1,3-Dichloropropene	-	-	-	-	-	-	-	-	-	-	10 U	1 U	-	-	-	-	-	-	-
Ethylbenzene	5	-	-	-	-	-	-	-	-	-	10 U	1 U	-	-	-	-	-	-	-
2-Hexanone	-	-	-	-	-	-	-	-	-	-	100 U	10 UJ	-	-	-	-	-	-	-
Methylene chloride	5	1.3	1 U	1.1	1 U	1.5	1 U	5 U	50 U	50 U	1 U	1.7 J	5 U	5 U	5 U	5 U	5 U	5 U	1 U
4-Methyl-2-pentanone (MIBK)	-	-	-	-	-	-	-	-	-	-	100 U	10 U	-	-	-	-	-	-	-
Styrene	5	-	-	-	-	-	-	-	-	-	10 U	1 U	-	-	-	-	-	-	-
1,1,2,2-Tetrachloroethane	5	-	-	-	-	-	-	-	-	-	10 U	1 U	-	-	-	-	-	-	-
Tetrachloroethene	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	10 U	10 U	10 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	10 U	10 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	5	0.75 J	-	-	-	-	0.75 J	-	-	-	10 U	0.63 J	-	-	-	-	-	-	-
1,1,2-Trichloroethane	1	-	-	-	-	-	-	-	-	-	10 U	1 U	-	-	-	-	-	-	-
Trichloroethene	5	***480***	***460***	***640***	***480***	***720***	***710***	***720***	***680***	***940***	***590***	***550***	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl acetate	-	-	-	-	-	-	-	-	-	-	20 U	2 UJ	-	-	-	-	-	-	-
Vinyl chloride	2	***190***	***83***	***190***	***190***	***280***	***60***	***270***	***170***	***340***	***43***	***200***	1 U	1 U	1 U	1 U	1 U	1 U	2 U
Xylenes, Total	-	-	-	-	-	-	-	-	-	-	20 U	2 U	-	-	-	-	-	-	-
Field Measurements																			
Temperature (°C)	-	20.52	6.78	23.57	8.3	20.18	7.01	15.66	6.83	26.24	9.08	13.17	9.76	12.45	11.05	9.83	12.78	12.47	9.3
Conductance (mS/cm)	-	0.859	1.018	0.961	0.566	0.953	1.04	1.06	1.11	1.07	0.923	0.81	0.888	0.792	0.812	0.897	0.848	0.868	0.748
Dissolved Oxygen (mg/l)	-	0.23	1.64	1.34	0.93	1.07	0.08	0	0	0	8.87	0.46	-	0.27	0.4	0.24	0.18	1.78	1.4
pH (s.u.)	-	7.03	7.23	7.32	7.27	7.2	7.53	7.46	6.44	7.12	7.75	7.41	7.3	5.88	7.07	6.95	6.99	6.88	6.94
ORP (mV)	-	42	188.5	-60.3	-279.5	-10.9	76	-29	-20	-67	69	-90	-37	205	-29	170	115	-181	-9
Turbidity (NTU)	-	30	18	21.1	6.4	4.89	2	3.8	4	9.3	1.6	9.2	14.7	18	15	52	59.7	30.4	240
Dissolved Gases																			
Carbon dioxide (mg/l)	-	-	-	-	-	-	-	-	-	-	-	25	24	250	-	25 J	31	30	26
Ethane (ng/l)	-	-	-	-	-	-	-	-	-	-	-	2,000	360	33	-	4.7 J	3.6 J	4.7 J	3.3 J
Ethene (ng/l)	-	-	-	-	-	-	-	-	-	-	-	53,000	280	19	-	6 J	4.6 J	4.9 J	5 U
Hydrogen (nM)	-	-	-	-	-	-	-	-	-	-	-	1.1	15,000	1.2	-	3 J	100	87	1.2
Methane (mg/l)	-	-	-	-	-	-	-	-	-	-	-	0.61	0.017	0.00066	-	0.006 J	0.016	0.017	0.015
General Chemistry (mg/l)																			
Chloride	-	-	-	-	-	-	-	-	-	-	-	110	72	72	-	81	79	83	200
Nitrate-N (mg/l)	-	-	-	-	-	-	-	-	-	-	-	0.02 U	0.033	0.13	-	0.06	0.027 J	0.05 U	0.12
Sulfate	-	-	-	-	-	-	-	-	-	-	-	59	30	27	-	21	21	22	28
Sulfide	-	-	-	-	-	-	-	-	-	-	-	10 U	0.4 U	1 U	-	1 U	1 U	1 U	1 U
TOC / DOC (g)	-	-	-	-	-	-	-	-	-	-	-	6.9	3.6	1.7	-	8.9	2.1	2.1	2.1
Ferrous Iron	-	-	-	-	-	-	-	-	-	-	-	0.9	0.01	0.01	-	0.01	0.06	0.29	0
Total Iron	-	-	-	-	-	-	-	-	-	-	-	1.9	0.08	0.1	-	0	0.04	0.11	0
Alkalinity (as $CaCO_3$)	-	-	-	-	-	-	-	-	-	-	-	280	250	341	-	296	307	323	309

Boxed values indicates concentration greater than criteria

Table 4

Summary of Groundwater Sampling Results - Historical
Tri-Cities Barrel Superfund Site
Fenton, New York (a)

Monitored Zone:		Shallow Unconsolidated																	
Well ID:		MW-18S (continued)		MW-19															
Sample Date:	New York State AWQS (c)	12/20/11	06/20/12	12/20/01	06/28/02	05/01/03	04/27/04	07/13/04	10/12/04	01/12/05	5/16/05 (e)	5/16/05 (e)	12/13/06 (e)	12/13/06 (e)	06/26/07 (e)	06/26/07 (e)	12/11/07 (e)	12/11/07 (e)	06/10/08 (e)
Volatile Organic Compounds (µg/l)																			
Acetone	50	25 U	25 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzene	1	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromodichloromethane	-	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromoform	-	1 UJ	1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromomethane (Methyl bromide)	5	1 UJ	1 UJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Butanone (MEK)	50	10 U	10 U	10 U	10 U	0.91 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 UJ	10 U
Carbon disulfide	-	2 U	2 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon tetrachloride	5	1 U	1 UJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorobenzene	5	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroethane	5	1 U	1 U	-	-	-	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-
Chloroform	7	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloromethane	-	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibromochloromethane	-	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethane	5	1 U	1 U	1.4	1 U	1 U	1.5	1.6	2	1.9	2	1 U	2.2	2.2	2.6	2.7	1.9	2	2.4
1,2-Dichloroethane	0.6	0.6 U	1 U	0.6 UJ	1 UJ	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	1 U	1 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
1,1-Dichloroethene	5	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,2-Dichloroethene	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,2-Dichloroethene	5	1 U	1 U	-	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethene, Total	-	2 U	2 U	-	-	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichloropropane	1	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloropropene	5	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,3-Dichloropropene	-	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
trans-1,3-Dichloropropene	-	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	5	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Hexanone	-	10 U	10 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methylene chloride	5	1 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	1 U	1 UJ	1 U	5 U	5 U	1 U	1 U	1 U	1 U	1 U
4-Methyl-2-pentanone (MIBK)	-	10 U	10 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Styrene	5	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2,2-Tetrachloroethane	5	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	5	1 U	1 U	***12***	***16***	***21***	***30***	***31***	***37***	***42***	***49***	***46***	***52***	***49***	***61***	***61***	***43***	***44***	***61***
Toluene	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	5	1 U	1 U	-	-	-	-	-	-	-	-	-	***60***	***59***	***59***	***62***	***53***	***54***	***66***
1,1,2-Trichloroethane	1	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethene	5	1 U	1 U	0.27 J	1 U	1 U	0.61 J	0.68 J	0.88 J	0.78 J	0.93 J	0.88 J	1.2	1.2	1.3	1.3	1.1	1.1	1.3
Vinyl acetate	-	2 U	2 UJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl chloride	2	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	2 U	1 U	1 U	2 U	2 U	2 U	2 U	2 U
Xylenes, Total	-	2 U	2 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Field Measurements																			
Temperature (°C)	-	7.03	13.46	9.36	15.58	10.3	9.06	10.54	11.94	9.25	9.51	-	-	-	-	-	-	-	11.3
Conductance (mS/cm)	-	0.862	0.69	0.423	0.442	0.457	0.475	0.493	0.484	0.445	0.477	-	-	-	-	-	-	-	0.458
Dissolved Oxygen (mg/l)	-	0	0.02	0	0.82	0.3	0.2	0.15	0.17	0.16	0.17	-	-	-	-	-	-	-	0.3
pH (s.u.)	-	7.23	7.19	8.47	8.79	7.57	7.35	7.55	7.35	7.07	7.47	-	-	-	-	-	-	-	6.79
ORP (mV)	-	37	-20	-48	56	159	157	105	177	198	192	-	-	-	-	-	-	-	67.2
Turbidity (NTU)	-	53.6	8.9	37.9	890	120	60	9.73	24	50	Clear (h)	-	-	-	-	-	-	-	38.6
Dissolved Gases																			
Carbon dioxide (mg/l)	-	-	35	4.1	5	4.8	3 J	4	4.8	3.1	3.5 J	-	-	-	-	-	-	-	-
Ethane (ng/l)	-	-	15 J	20	21	5 U	5 UJ	5 U	1.9 J	5 U	0.01 U	-	-	-	-	-	-	-	-
Ethene (ng/l)	-	-	8 J	72	26	6	3 J	3.3 J	8.9	5 U	0.01 U	-	-	-	-	-	-	-	-
Hydrogen (nM)	-	-	0.83	690	1.9	2.6	34 J	3.2	1.4	1.2	2.2	-	-	-	-	-	-	-	-
Methane (mg/l)	-	-	0.04	0.035	0.035 J	0.041	0.035 J	0.049	0.049	0.033	41 J	-	-	-	-	-	-	-	-
General Chemistry (mg/l)																			
Chloride	-	-	82	60	55	58	62	62	66	66	66	66	-	-	-	-	-	-	-
Nitrate-N (mg/l)	-	-	0.02 U	0.01 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.03 J	0.05 U	-	-	-	-	-	-	-
Sulfate	-	-	12	15	15	13 J	14	12	11	13	14	14	-	-	-	-	-	-	-
Sulfide	-	-	10 U	0.4 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	-	-	-	-	-	-	-
TOC / DOC (g)	-	-	2.1	0.82	1 U	1 U	1 U	0.62 J	1.9	2.1	1 U	1 U	-	-	-	-	-	-	-
Ferrous Iron	-	-	0.2 U	0	0	0.03	0	0	0.06	0	0.02	-	-	-	-	-	-	-	-
Total Iron	-	-	0.5	0.02	0.01	0.05	0	0.02	0.01	0	0.09	-	-	-	-	-	-	-	-
Alkalinity (as $CaCO_3$)	-	-	270	160	125	164	121	126	129	127	119	-	-	-	-	-	-	-	-

Boxed values indicates concentration greater than criteria

Table 4

Summary of Groundwater Sampling Results - Historical
Tri-Cities Barrel Superfund Site
Fenton, New York (a)

Monitored Zone:		Shallow Unconsolidated																			
Well ID:		MW-19 (continued)																		MW-20S	
Sample Date:	New York State AWQS (c)	06/10/08 (e)	12/01/08 (e)	12/01/08 (e)	06/24/09 (e)	06/24/09 (e)	12/15/09 (e)	12/15/09 (e)	06/16/10 (e)	06/16/10 (e)	12/22/10 (e)	12/22/10 (e)	06/21/11 (e)	06/21/11 (e)	12/22/2011 (e)	12/22/2011 (e)	06/21/12 (e)	06/21/12 (e)	05/08/03	08/04/03
Volatile Organic Compounds (µg/l)																				
Acetone	50	-	-	-	-	-	-	-	-	-	-	-	-	-	25 U	25 U	25 U	25 U	-	-
Benzene	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1 U	1 U	1 U	1 U	-	-
Bromodichloromethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1 U	1 U	1 U	1 U	-	-
Bromoform	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1 U	1 U	1 U	1 U	-	-
Bromomethane (Methyl bromide)	5	-	-	-	-	-	-	-	-	-	-	-	-	-	1 UJ	1 UJ	1 UJ	1 UJ	-	-
2-Butanone (MEK)	50	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon disulfide	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2 U	2 U	2 U	2 U	-	-
Carbon tetrachloride	5	-	-	-	-	-	-	-	-	-	-	-	-	-	1 UJ	1 UJ	1 UJ	1 UJ	-	-
Chlorobenzene	5	-	-	-	-	-	-	-	-	-	-	-	-	-	1 U	1 U	1 U	1 U	-	-
Chloroethane	5	-	1 U	1 U	-	-	-	-	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 UJ	1 UJ	1 UJ	-	-
Chloroform	7	-	-	-	-	-	-	-	-	-	-	-	-	-	1 U	1 U	1 U	1 U	-	-
Chloromethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1 U	1 U	1 U	1 U	-	-
Dibromochloromethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1 U	1 U	1 U	1 U	-	-
1,1-Dichloroethane	5	2.4	1.8	1.8	***12 J***	***12***	***5.7***	***5.8***	4.4	4.3	3.9	3.8	3.7	3.7	3	3.9	4.3	4	1 U	1 U
1,2-Dichloroethane	0.6	0.6 U	0.6 U	0.6 U	0.6 U	0.6 J	0.6 U	0.6 U	0.6 U	0.6 U	1 U	1 U	0.6 U	0.6 U	0.6 U	0.6 U	1 U	1 U	0.6 U	0.6 UJ
1,1-Dichloroethene	5	-	-	-	-	-	-	-	0.68 J	0.76 J	0.98 J	0.98 J	1.1 J	1.1 J	1.2	0.86 J	1.4	1.3	-	-
cis-1,2-Dichloroethene	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.2 J	0.29 J	0.27 J	0.44 J	0.25 J	0.21 J	0.24 J	0.22 J	0.21 J	1 U	1 U
trans-1,2-Dichloroethene	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethene, Total	-	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.29 J	2 U	0.44 J	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichloropropane	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1 U	1 U	1 U	1 U	-	-
1,1-Dichloropropene	5	-	-	-	-	-	-	-	-	-	-	-	-	-	1 U	1 U	1 U	1 U	-	-
cis-1,3-Dichloropropene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1 U	1 U	1 U	1 U	-	-
trans-1,3-Dichloropropene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1 U	1 U	1 U	1 U	-	-
Ethylbenzene	5	-	-	-	-	-	-	-	-	-	-	-	-	-	1 U	1 U	1 U	1 U	-	-
2-Hexanone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10 U	10 U	10 U	10 U	-	-
Methylene chloride	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	5 U	5 U	1 U	1 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone (MIBK)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10 U	10 U	10 U	10 U	-	-
Styrene	5	-	-	-	-	-	-	-	-	-	-	-	-	-	1 U	1 U	1 U	1 U	-	-
1,1,2,2-Tetrachloroethane	5	-	-	-	-	-	-	-	-	-	-	-	-	-	1 U	1 U	1 U	1 U	-	-
Tetrachloroethene	5	***61***	***51***	***57***	***57***	***55***	***59***	***59***	***64***	***66***	***66***	***69***	***64 J***	***69 J***	***75***	***78***	***91***	***87***	1 U	1 U
Toluene	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	5	***64***	***41***	***45***	***67***	***66***	***58***	***59***	***83***	***99***	***66***	***67***	***61***	***62***	***81***	***83***	***60***	***58***	-	-
1,1,2-Trichloroethane	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1 U	1 U	1 U	1 U	-	-
Trichloroethene	5	1.3	1.2	1.3	1.2	1.3	1.7	1.6	1.7	1.7	1.8	1.7	1.7	1.7	2.2	2	2.1	2	1 U	1 U
Vinyl acetate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2 U	2 U	2 UJ	2 UJ	-	-
Vinyl chloride	2	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1 U	1 U	2 U	2 U	2 U	2 U	1 U	1 U	0.54 J	1.3
Xylenes, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2 U	2 U	2 U	2 U	-	-
Field Measurements																				
Temperature (°C)	-	-	-	-	11.04	-	9.21	-	9.96	-	8.82	-	19.82	-	8.87	-	10.78	-	9.6	13.1
Conductance (mS/cm)	-	-	-	-	0.571	-	0.561	-	0.563	-	0.62	-	0.479	-	0.483	-	0.552	-	1.344	1.027
Dissolved Oxygen (mg/l)	-	-	-	-	0.47	-	0	-	0	-	0	-	0	-	8.12	-	0.07	-	0.08	0.15
pH (s.u.)	-	-	-	-	7.28	-	7.44	-	6.75	-	6.66	-	7.38	-	7.46	-	7.77	-	7.48	7.5
ORP (mV)	-	-	-	-	-165.5	-	-182	-	-91	-	-104	-	-122	-	-88	-	-119	-	-333	261
Turbidity (NTU)	-	-	-	-	15.4	-	6	-	34.3	-	21.3	-	77.3	-	43.2	-	6.8	-	24	28 (i)
Dissolved Gases																				
Carbon dioxide (mg/l)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.8 J		6.6	9.2
Ethane (ng/l)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25 U		130	150
Ethene (ng/l)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25 U		150	160
Hydrogen (nM)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.2		11,000	1.3
Methane (mg/l)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.51		0.2	0.19 R
General Chemistry (mg/l)																				
Chloride	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	87	83	290	200
Nitrate-N (mg/l)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02 U	-	0.05 U	0.05 U
Sulfate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	11	27	31 J
Sulfide	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10 U	10 U	1 U	1 U
TOC / DOC (g)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.55 J	0.56 J	0.86 J	2.9
Ferrous Iron	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.3	-	0.02	0.01
Total Iron	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.6	-	0.04	0.04
Alkalinity (as $CaCO_3$)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	120	120	172	204

Boxed values indicates concentration greater than criteria

Table 4

Summary of Groundwater Sampling Results - Historical
Tri-Cities Barrel Superfund Site
Fenton, New York (a)

Monitored Zone:		Shallow Unconsolidated																	
Well ID:		MW-20S (continued)																PMW-1	
Sample Date:	New York State AWQS (c)	04/28/04	07/14/04	10/13/04	01/11/05	12/12/06	06/26/07	12/12/07	06/10/08	12/02/08	06/23/09	12/15/09	06/15/10	12/21/10	06/21/11	12/22/11	06/20/12	12/05/08	01/05/09
Volatile Organic Compounds (µg/l)																			
Acetone	50	-	-	-	-	-		-	-	-	-	-	-	-	-	25 U	25 U	-	-
Benzene	1	-	-	-	-	-		-	-	-	-	-	-	-	-	1 U	1 U	-	-
Bromodichloromethane	-	-	-	-	-	-		-	-	-	-	-	-	-	-	1 U	1 U	-	-
Bromoform	-	-	-	-	-	-		-	-	-	-	-	-	-	-	1 U	1 U	-	-
Bromomethane (Methyl bromide)	5	-	-	-	-	-		-	-	-	-	-	-	-	-	1 UJ	1 UJ	-	-
2-Butanone (MEK)	50	10 U	10 U	10 U	10 U	10 U	10 U	0.67 UJ	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	***180***	18
Carbon disulfide	-	-	-	-	-	-		-	-	-	-	-	-	-	-	2 U	2 U	-	-
Carbon tetrachloride	5	-	-	-	-	-		-	-	-	-	-	-	-	-	1 UJ	1 UJ	-	-
Chlorobenzene	5	-	-	-	-	-		-	-	-	-	-	-	-	-	1 U	1 U	-	-
Chloroethane	5	-	-	-	-	-		-	-	-	-	-	-	-	-	1.4 J	1.2 J	1 U	-
Chloroform	7	-	-	-	-	-		-	-	-	-	-	-	-	-	1 U	1 U	-	-
Chloromethane	-	-	-	-	-	-		-	-	-	-	-	-	-	-	1 U	1 U	-	-
Dibromochloromethane	-	-	-	-	-	-		-	-	-	-	-	-	-	-	1 U	1 U	-	-
1,1-Dichloroethane	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	3.2	3.6
1,2-Dichloroethane	0.6	0.6 UJ	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	1 U	0.6 U	0.6 U	1 U	1 U	1 U	0.6 U	1 U	0.6 U	0.6 U
1,1-Dichloroethene	5	-	-	-	-	-		-	-	-	-	-	-	-	-	1 U	1 U	-	-
cis-1,2-Dichloroethene	5	1 U	0.7 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,2-Dichloroethene	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethene, Total	-	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichloropropane	1	-	-	-	-	-		-	-	-	-	-	-	-	-	1 U	1 U	-	-
1,1-Dichloropropene	5	-	-	-	-	-		-	-	-	-	-	-	-	-	1 U	1 U	-	-
cis-1,3-Dichloropropene	-	-	-	-	-	-		-	-	-	-	-	-	-	-	1 U	1 U	-	-
trans-1,3-Dichloropropene	-	-	-	-	-	-		-	-	-	-	-	-	-	-	1 U	1 U	-	-
Ethylbenzene	5	-	-	-	-	-		-	-	-	-	-	-	-	-	1 U	1 U	-	-
2-Hexanone	-	-	-	-	-	-		-	-	-	-	-	-	-	-	10 U	10 U	-	-
Methylene chloride	5	5 U	5 U	5 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	5 U	1 U	5 U	1 U	1 U
4-Methyl-2-pentanone (MIBK)	-	-	-	-	-	-		-	-	-	-	-	-	-	-	10 U	10 U	-	-
Styrene	5	-	-	-	-	-		-	-	-	-	-	-	-	-	1 U	1 U	-	-
1,1,2,2-Tetrachloroethane	5	-	-	-	-	-		-	-	-	-	-	-	-	-	1 U	1 U	-	-
Tetrachloroethene	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	***99***	1 U
Toluene	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.44 J	1 U
1,1,1-Trichloroethane	5	-	-	-	-	-	1 U	-	-	-	-	-	-	-	-	1 U	1 U	***66***	***71***
1,1,2-Trichloroethane	1	-	-	-	-	-		-	-	-	-	-	-	-	-	1 U	1 U	-	-
Trichloroethene	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	3.2	2
Vinyl acetate	-	-	-	-	-	-		-	-	-	-	-	-	-	-	2 U	2 UJ	-	-
Vinyl chloride	2	1.2	***4.5***	***2.2***	***2.4***	1.9 J	***2.2***	***2.6***	1.8 J	2	***2.1***	1.8 J	1.4	2	1.8	1.7 J	1.4	2 U	2 U
Xylenes, Total	-	-	-	-	-	-		-	-	-	-	-	-	-	-	2 U	2 U	-	-
Field Measurements																			
Temperature (°C)	-	9.46	12.67	11.86	8.35	11.37	15.71	7.91	17.52	10.64	14.32	9.75	13.75	7.02	13.51	8.26	15	-	-
Conductance (mS/cm)	-	0.76	0.721	0.755	0.691	0.769	0.666	0.707	0.625	0.446	0.69	0.769	0.941	0.939	0.789	0.803	0.712	-	-
Dissolved Oxygen (mg/l)	-	0.15	0.1	0.15	0.17	0.73	0.11	2.88	1.33	0.1	0.91	0	0	4.4	0	0	0.09	-	-
pH (s.u.)	-	7.27	7.82	7.44	6.94	7.03	7.18	7.49	7.58	7.52	7.36	7.49	7.7	7.47	7.45	7.6	6.18	-	-
ORP (mV)	-	137	-4	175	191	15.2	-29	-22.8	-18.1	-104.1	43	-53	6	22	26	126	62	-	-
Turbidity (NTU)	-	35	16	11	68	9.5	>999	240	408	34	34.5	8.9	24	9.3	8.4	3.9	113.5	-	-
Dissolved Gases																			
Carbon dioxide (mg/l)	-	4.7 J	6.6	5.6	5	-	-	-	-	-	-	-	-	-	-	-	160	-	-
Ethane (ng/l)	-	180 J	200	190	180	-	-	-	-	-	-	-	-	-	-	-	340	-	-
Ethene (ng/l)	-	140 J	160	130	120	-	-	-	-	-	-	-	-	-	-	-	120	-	-
Hydrogen (nM)	-	2.8 J	0.96	0.79	1.2	-	-	-	-	-	-	-	-	-	-	-	1.3	-	-
Methane (mg/l)	-	0.2 J	0.18	0.15	0.16	-	-	-	-	-	-	-	-	-	-	-	0.19	-	-
General Chemistry (mg/l)																			
Chloride	-	120	110	120	120	-	-	-	-	-	-	-	-	-	-	-	130	-	-
Nitrate-N (mg/l)	-	0.05 U	0.05 U	0.05 U	0.05 U	-	-	-	-	-	-	-	-	-	-	-	0.02 U	-	-
Sulfate	-	26	25	23	24	-	-	-	-	-	-	-	-	-	-	-	19	-	-
Sulfide	-	1 U	1 U	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-	10 U	-	-
TOC / DOC (g)	-	4.8	0.77 J	0.56 J	0.75 J	-	-	-	-	-	-	-	-	-	-	-	0.84 J	-	-
Ferrous Iron	-	0.01	0.03	0.43	0	-	-	-	-	-	-	-	-	-	-	-	0.2 U	-	-
Total Iron	-	0	0.01	0.02	0.18	-	-	-	-	-	-	-	-	-	-	-	0.2 U	-	-
Alkalinity (as $CaCO_3$)	-	151	164	160	161	-	-	-	-	-	-	-	-	-	-	-	150	-	-

Boxed values indicates concentration greater than criteria

Table 4

Summary of Groundwater Sampling Results - Historical
Tri-Cities Barrel Superfund Site
Fenton, New York (a)

Monitored Zone:		Shallow Unconsolidated					Deep Unconsolidated													
Well ID:		PMW-1 (continued)					MW-2													
Sample Date:	New York State AWQS (c)	02/09/09	03/25/09	06/24/09	12/22/11	06/21/12	07/31/93	10/06/94	12/01/95	11/24/97	12/19/97	12/19/01 (e)	12/19/01 (e)	06/27/02 (e)	06/27/03 (e)	05/05/03	04/28/04	07/15/04	10/13/04	01/13/05	12/13/06
Volatile Organic Compounds (µg/l)																					
Acetone	50	-	-	-	25 U	25 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzene	1	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromodichloromethane	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromoform	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromomethane (Methyl bromide)	5	-	-	-	1 UJ	1 UJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Butanone (MEK)	50	15	12	23	10 U	10 U	-	-	5 U	5 U	-	10 U	10 U	10 UJ	10 UJ	10 U	10 U	10 UJ	10 U	10 U	10 U
Carbon disulfide	-	-	-	-	2 U	2 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon tetrachloride	5	-	-	-	1 UJ	1 UJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorobenzene	5	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroethane	5	-	-	-	1 UJ	1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroform	7	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloromethane	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibromochloromethane	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethane	5	***14***	***18***	***24***	3.6	***7.2***	5	***7***	***11***	***17***	***13***	***8.1***	***8.9***	3	2.9	***6***	3.2	***9.5***	***5.8***	***5.4***	3.1
1,2-Dichloroethane	0.6	0.6 U	0.6 U	0.6 U	0.6 U	1 U	-	-	1 U	-	-	0.6 UJ	0.6 UJ	1 UJ	1 UJ	0.6 U	0.6 UJ	0.6 U	0.6 U	0.6 U	0.6 U
1,1-Dichloroethene	5	-	-	-	0.66 J	1.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,2-Dichloroethene	5	1 U	0.37 J	***25***	2.7	4.1	5	***9***	***18***	***27***	***19***	***11***	***11***	***5.6***	***5.5***	***10***	***5.3***	***24***	***12***	***11***	***5.6***
trans-1,2-Dichloroethene	5	1 U	1 U	1 U	1 U	1 U	-	1 U	1 U	1 U	0.9 J	-	-	-	-	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethene, Total	-	2 U	2 U	25	2.7	4.1	-	-	-	-	-	-	-	-	-	10	5.3	24	12	11	5.6
1,2-Dichloropropane	1	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloropropene	5	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,3-Dichloropropene	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
trans-1,3-Dichloropropene	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	5	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Hexanone	-	-	-	-	10 U	10 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methylene chloride	5	1 U	1 U	1 U	1 U	5 U	-	2 U	2 U	-	-	0.63 J	0.66 J	5 U	5 U	5 U	5 U	5 U	5 U	1 U	1 U
4-Methyl-2-pentanone (MIBK)	-	-	-	-	10 U	10 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Styrene	5	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2,2-Tetrachloroethane	5	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	5	***44***	***17***	2.4	***41***	***64***	-	-	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	5	1 U	1 U	1 U	1 U	1 U	-	-	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1	1 U	1 U	1 U
1,1,1-Trichloroethane	5	***42***	***21***	***31***	***55***	***50***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2-Trichloroethane	1	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethene	5	1.4	0.8 J	1 U	2	2.5	4	***7***	***24***	***53 D***	***32 D***	***31***	***32***	***15***	***13***	***36***	***28***	***75***	***52***	***50***	***25***
Vinyl acetate	-	-	-	-	2 U	2 UJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl chloride	2	2 U	2 U	2 U	2 U	1 U	***11***	***18***	***24***	***38 D***	***24 D***	***40***	***42***	***8.4***	***8.4***	***44***	***5***	***20***	***15***	***12***	***9.3***
Xylenes, Total	-	-	-	-	2 U	2 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Field Measurements																					
Temperature (°C)	-	-	-	-	8.85	13.89	-	-	-	-	-	8.74	-	15.26	-	9	15.09	14.36	11.27	7.83	9.73
Conductance (mS/cm)	-	-	-	-	0.533	0.573	-	-	-	-	-	0.776	-	1.006	-	0.902	0.756	1.032	0.926	0.863	0.742
Dissolved Oxygen (mg/l)	-	-	-	-	2.61	0.12	-	-	-	-	-	0	-	0.24	-	0.5	1.44	1.5	0.69	0.65	0.34
pH (s.u.)	-	-	-	-	8.71	7.81	-	-	-	-	-	9.21	-	5.39	-	8.29	5.62	6.55	7.06	6.05	4.87
ORP (mV)	-	-	-	-	-109	-144	-	-	-	-	-	63	-	221	-	246	251	-33	85	-266	339.8
Turbidity (NTU)	-	-	-	-	0	29.5	-	-	-	-	-	11.4	-	7.9	-	13	13.8	4.8	7.84	8	0.5
Dissolved Gases																					
Carbon dioxide (mg/l)	-	-	-	-	-	5.8	-	-	-	-	-	6.6	-	430	-	6.5	420 J	43	10	7.7	-
Ethane (ng/l)	-	-	-	-	-	19 J	-	-	-	-	-	980	-	600	-	840	200 J	660	840	690	-
Ethene (ng/l)	-	-	-	-	-	19 J	-	-	-	-	-	18,000	-	10,000	-	11,000	3,000 J	7,700	7,700	6,000	-
Hydrogen (nM)	-	-	-	-	-	1.3	-	-	-	-	-	2.1	-	2.1	-	4.8	1.3 J	92	12	10	-
Methane (mg/l)	-	-	-	-	-	0.28	-	-	-	-	-	0.44	-	0.25	-	0.43	0.083 J	0.26	0.38	0.35	-
General Chemistry (mg/l)																					
Chloride	-	-	-	-	-	86	-	-	-	-	-	140	-	140	140	150	100	150	160	170	-
Nitrate-N (mg/l)	-	-	-	-	-	0.02 U	-	-	-	-	-	0.01 U	-	0.05 U	0.05 U	0.05 U	0.61	0.05 U	0.05 U	0.099	-
Sulfate	-	-	-	-	-	11	-	-	-	-	-	27	-	34 J	33 J	24	33	24	23	24	-
Sulfide	-	-	-	-	-	10 U	-	-	-	-	-	0.4 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	-
TOC / DOC (g)	-	-	-	-	-	0.63 J	-	-	-	-	-	3.5	-	1.8	1.7	1	7.2	1.4	0.97 J	1.1	-
Ferrous Iron	-	-	-	-	-	1	-	-	-	-	-	0	-	0	-	0.01	0.02	0.01	0.12	0.11	-
Total Iron	-	-	-	-	-	1.2	-	-	-	-	-	0	-	0	-	0.01	0.01	0.15	0.02	0.1	-
Alkalinity (as $CaCO_3$)	-	-	-	-	-	130	-	-	-	-	-	171	-	362	-	158	262	168	185	189	-

Boxed values indicates concentration greater than criteria

Table 4

Summary of Groundwater Sampling Results - Historical
Tri-Cities Barrel Superfund Site
Fenton, New York (a)

Monitored Zone:		Deep Unconsolidated																		
Well ID:		MW-2 (continued)											MW-3							
Sample Date:	New York State AWQS (c)	06/27/07	12/12/07	06/10/08	12/02/08	06/24/09	12/15/09	06/15/10	12/21/10	06/20/11	12/20/11	06/19/12	07/01/93	09/02/93	10/06/94	12/01/95	11/24/97	12/18/97	12/18/01	06/27/02 (e)
Volatile Organic Compounds (µg/l)																				
Acetone	50		-	-	-	-		-	-	-	25 U	25 UJ	-	-	-	-	-	-	-	-
Benzene	1		-	-	-	-		-	-	-	1 U	1 U	-	-	-	-	-	-	-	-
Bromodichloromethane	-		-	-	-	-		-	-	-	1 U	1 U	-	-	-	-	-	-	-	-
Bromoform	-		-	-	-	-		-	-	-	1 U	1 U	-	-	-	-	-	-	-	-
Bromomethane (Methyl bromide)	5		-	-	-	-		-	-	-	1 UJ	1 UJ	-	-	-	-	-	-	-	-
2-Butanone (MEK)	50	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	ND	ND	ND	5 U	5 U	-	10 U	10 U
Carbon disulfide	-		-	-	-	-		-	-	-	2 U	2 U	-	-	-	-	-	-	-	-
Carbon tetrachloride	5		-	-	-	-		-	-	-	1 UJ	1 UJ	-	-	-	-	-	-	-	-
Chlorobenzene	5		-	-	-	-		-	-	-	1 U	1 U	-	-	-	-	-	-	-	-
Chloroethane	5		-	-	-	-		-	-	-	***5.5 J***	3	-	-	-	-	-	-	-	-
Chloroform	7		-	-	-	-		-	-	-	1 U	1 U	-	-	-	-	-	-	-	-
Chloromethane	-		-	-	-	-		-	-	-	1 U	1 U	-	-	-	-	-	-	-	-
Dibromochloromethane	-		-	-	-	-		-	-	-	1 U	1 U	-	-	-	-	-	-	-	-
1,1-Dichloroethane	5	4.4	4.7	3.8	3.6	3.7 J	1.5	1.7	4.1	4.9	***5.5***	***7.5***	1 U	1 U	1 U	1 U	1 U	1 U	0.86 J	1 U
1,2-Dichloroethane	0.6	0.6 U	0.6 U	0.6 U	1 U	0.6 U	0.6 U	1 U	1 U	1 U	0.6 U	1 U	ND	ND	1 U	1 U	-	- U	0.6 UJ	1 UJ
1,1-Dichloroethene	5		-	-	-	-		-	-	-	0.17 J	0.11 J	-	-	-	-	-	-	-	-
cis-1,2-Dichloroethene	5	***8.1***	***7***	***5.6***	***6.1***	3.3	0.23 J	0.21 J	***5.4***	***6.3***	***8.9***	***9.7***	1 U	1 U	1 U	1 U	1 U	1 U	0.7 J	1 U
trans-1,2-Dichloroethene	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	ND	ND	1 U	1 U	1 U	1 U	-	-
1,2-Dichloroethene, Total	-	8.1	7	5.6	6.1	3.3	2 U	2 U	5.4	6.3	8.9	10	-	-	-	-	-	-	-	-
1,2-Dichloropropane	1		-	-	-	-		-	-	-	1 U	1 U	-	-	-	-	-	-	-	-
1,1-Dichloropropene	5		-	-	-	-		-	-	-	1 U	1 U	-	-	-	-	-	-	-	-
cis-1,3-Dichloropropene	-		-	-	-	-		-	-	-	1 U	1 U	-	-	-	-	-	-	-	-
trans-1,3-Dichloropropene	-		-	-	-	-		-	-	-	1 U	1 U	-	-	-	-	-	-	-	-
Ethylbenzene	5		-	-	-	-		-	-	-	1 U	1 U	-	-	-	-	-	-	-	-
2-Hexanone	-		-	-	-	-		-	-	-	10 U	10 UJ	-	-	-	-	-	-	-	-
Methylene chloride	5	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	5 U	1 U	5 U	ND	ND	3	1 U	-	- U	5 U	5 U
4-Methyl-2-pentanone (MIBK)	-		-	-	-	-		-	-	-	10 U	10 UJ	-	-	-	-	-	-	-	-
Styrene	5		-	-	-	-		-	-	-	1 U	1 U	-	-	-	-	-	-	-	-
1,1,2,2-Tetrachloroethane	5		-	-	-	-		-	-	-	1 U	1 U	-	-	-	-	-	-	-	-
Tetrachloroethene	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	ND	ND	1 U	1 U	1 U	1 U	1 UJ	1 U
Toluene	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	ND	ND	1 U	1 U	-	1 U	1 U	1 U
1,1,1-Trichloroethane	5	1 U	-	-	-	-	1 U	-	-	-	1 U	1 UJ	-	-	-	-	-	-	-	-
1,1,2-Trichloroethane	1		-	-	-	-		-	-	-	1 U	1 U	-	-	-	-	-	-	-	-
Trichloroethene	5	***37***	***34***	***23***	***33***	***13***	1.2	0.72 J	***31***	***28***	***58***	***49***	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl acetate	-		-	-	-	-		-	-	-	2 U	2 UJ	-	-	-	-	-	-	-	-
Vinyl chloride	2	***9.6***	***14***	2 U	***5.8***	***5.9***	0.34 J	1 U	***6.4***	***6.9***	***7.7***	***5.8***	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Xylenes, Total	-		-	-	-	-		-	-	-	2 U	2 U	-	-	-	-	-	-	-	-
Field Measurements																				
Temperature (°C)	-	15.45	6.49	17.92	7.72	14.8	9.32	18.62	4.74	20.01	8.54	13.64	-	-	-	-	-	-	8.83	12.57
Conductance (mS/cm)	-	0.83	0.861	0.964	1.151	0.999	0.508	0.463	0.964	1.06	0.97	0.898	-	-	-	-	-	-	0.812	0.856
Dissolved Oxygen (mg/l)	-	0.29	1.3	0.27	1.97	0.75	7.04	5.39	2.31	0	2.24	0.35	-	-	-	-	-	-	0	0.51
pH (s.u.)	-	6.88	8.03	6.98	7.58	3.77	7.91	7.68	7.16	7.23	7.27	7.44	-	-	-	-	-	-	8.76	7.15
ORP (mV)	-	11	-291	36	143.8	-52	81	196	145	164	100	-50	-	-	-	-	-	-	-76	44
Turbidity (NTU)	-	14	3.5	0.9	0.66	1.25	3.64	27	3	1	0	7.1	-	-	-	-	-	-	47.4	31
Dissolved Gases																				
Carbon dioxide (mg/l)	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-	-	-	9.4	12
Ethane (ng/l)	-	-	-	-	-	-	-	-	-	-	-	1,700	-	-	-	-	-	-	5 U	7
Ethene (ng/l)	-	-	-	-	-	-	-	-	-	-	-	2,900	-	-	-	-	-	-	9	19
Hydrogen (nM)	-	-	-	-	-	-	-	-	-	-	-	1.2	-	-	-	-	-	-	2.3	1.3
Methane (mg/l)	-	-	-	-	-	-	-	-	-	-	-	0.61	-	-	-	-	-	-	0.0044	0.0038
General Chemistry (mg/l)																				
Chloride	-	-	-	-	-	-	-	-	-	-	-	220	-	-	-	-	-	-	120	140
Nitrate-N (mg/l)	-	-	-	-	-	-	-	-	-	-	-	0.02 U	-	-	-	-	-	-	0.026	0.05 U
Sulfate	-	-	-	-	-	-	-	-	-	-	-	23	-	-	-	-	-	-	33	33 J
Sulfide	-	-	-	-	-	-	-	-	-	-	-	10 U	-	-	-	-	-	-	0.4 U	1 U
TOC / DOC (g)	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	2.6	1 U
Ferrous Iron	-	-	-	-	-	-	-	-	-	-	-	0.2 U	-	-	-	-	-	-	0.06	0.01
Total Iron	-	-	-	-	-	-	-	-	-	-	-	0.9	-	-	-	-	-	-	0.12	0.03
Alkalinity (as $CaCO_3$)	-	-	-	-	-	-	-	-	-	-	-	190	-	-	-	-	-	-	105	189

Boxed values indicates concentration greater than criteria

Table 4

Summary of Groundwater Sampling Results - Historical
Tri-Cities Barrel Superfund Site
Fenton, New York (a)

Monitored Zone:		Deep Unconsolidated																		
Well ID:		MW-3 (continued)								MW-7										
Sample Date:	New York State AWQS (c)	06/27/02 (e)	05/05/03	04/27/04	07/13/04	10/12/04	01/12/05	12/21/11	06/20/12	12/20/01	06/29/02	05/06/03	04/29/04	04/29/04	07/15/04	10/12/04	10/13/04	01/13/05	12/21/11	06/19/12
Volatile Organic Compounds (µg/l)																				
Acetone	50	-	-	-	-	-	-	25 U	25 U	-	-	-	-	-	-	-	-	-	25 U	25 UJ
Benzene	1	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	1 U	1 U
Bromodichloromethane	-	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	1 U	1 U
Bromoform	-	-	-	-	-	-	-	1 UJ	1 U	-	-	-	-	-	-	-	-	-	1 UJ	1 U
Bromomethane (Methyl bromide)	5	-	-	-	-	-	-	1 UJ	1 UJ	-	-	-	-	-	-	-	-	-	1 UJ	1 UJ
2-Butanone (MEK)	50	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U	10 UJ
Carbon disulfide	-	-	-	-	-	-	-	2 U	2 U	-	-	-	-	-	-	-	-	-	2 U	2 U
Carbon tetrachloride	5	-	-	-	-	-	-	1 U	1 UJ	-	-	-	-	-	-	-	-	-	1 U	1 UJ
Chlorobenzene	5	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	1 U	1 U
Chloroethane	5	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	1 U	1 U
Chloroform	7	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	1 U	1 U
Chloromethane	-	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	1 U	1 U
Dibromochloromethane	-	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	1 U	1 U
1,1-Dichloroethane	5	3.5	0.57 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.6 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	0.6	***3.8***	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	1 U	0.6 UJ	1 UJ	0.6 U	0.6 UJ	0.6 UJ	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	1 U
1,1-Dichloroethene	5	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	1 U	1 U
cis-1,2-Dichloroethene	5	3.7	1.7 U	1 U	0.84 J	1 U	1 U	1 U	1 U	1 U	0.57 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,2-Dichloroethene	5	-	0.36 J	1 U	1 U	1 U	1 U	1 U	1 U	-		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethene, Total	-	-	2	2 U	2 U	2 U	2 U	2 U	2 U	-		2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichloropropane	1	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	1 U	1 U
1,1-Dichloropropene	5	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	1 U	1 U
cis-1,3-Dichloropropene	-	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	1 U	1 U
trans-1,3-Dichloropropene	-	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	1 U	1 U
Ethylbenzene	5	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	1 U	1 U
2-Hexanone	-	-	-	-	-	-	-	10 U	10 U	-	-	-	-	-	-	-	-	-	10 U	10 U
Methylene chloride	5	5 U	5 U	5 U	5 U	5 U	1 U	1 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	1 U	1 U	5 U
4-Methyl-2-pentanone (MIBK)	-	-	-	-	-	-	-	10 U	10 U	-	-	-	-	-	-	-	-	-	10 U	10 U
Styrene	5	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	1 U	1 U
1,1,2,2-Tetrachloroethane	5	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	1 U	1 U
Tetrachloroethene	5	3.7	0.58 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	5	4.6	1.4	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	5	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	1 U	1 U
1,1,2-Trichloroethane	1	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	1 U	1 U
Trichloroethene	5	4	3.2	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.55 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl acetate	-	-	-	-	-	-	-	2 U	2 UJ	-	-	-	-	-	-	-	-	-	2 U	2 UJ
Vinyl chloride	2	***2.6***	0.38 J	1 U	1 U	1 U	2 U	2 U	1 U	1 U	0.82 J	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U
Xylenes, Total	-	-	-	-	-	-	-	2 U	2 U	-	-	-	-	-	-	-	-	-	2 U	2 U
Field Measurements																				
Temperature (°C)	-	-	10.1	10.2	13.32	12.21	8.27	7.91	13.83	6.01	16.05	9.41	11.16	-	11.19	9.67	-	8.78	8.06	11.78
Conductance (mS/cm)	-	-	1.1	1.006	0.991	1.03	0.931	0.993	0.917	0.781	0.746	0.763	0.778	-	0.751	0.757	-	0.718	0.653	0.45
Dissolved Oxygen (mg/l)	-	-	0.24	0.2	0.15	0.19	0.54	7.1	0.09	-	1.2	0.42	0.28	-	0.16	0.19	-	0.41	0	0.19
pH (s.u.)	-	-	7.34	7.1	7.49	7.17	6.13	7.43	7.48	8.21	8.51	7.18	6.85	-	6.27	6.95	-	7.12	7.2	7.53
ORP (mV)	-	-	149	119	56	98	-212	54	-80	-61	-21	122	94	-	114	150	-	-12	-33	-20
Turbidity (NTU)	-	-	22	9	17.1	15.5	9.9	2.1	2.7	6	190	24.4	45.6	-	18.1	4.2	-	5.8	23.5	17.3
Dissolved Gases																				
Carbon dioxide (mg/l)	-	-	19	11 J	12	11	7	-	16	-	-	7.9	8.1 J	-	370	8.3	-	7.7	-	9.3
Ethane (ng/l)	-	-	5 U	39 J	32	29	8.8	-	8 J	-	-	5 U	3.8 J	-	6.7	3.4 J	-	2.8 J	-	25 U
Ethene (ng/l)	-	-	8	21 J	15	17	6.4	-	19 J	-	-	9	5.3 J	-	5.1	6.5	-	3.4 J	-	25 U
Hydrogen (nM)	-	-	2.2	2.3 J	3.8	57	1.3	-	1.3	-	-	1.7	1.8 J	-	11	0.87	-	1.6	-	2
Methane (mg/l)	-	-	0.0051	0.0042 J	0.0048	0.004	0.0031	-	0.0033	-	-	0.0062	0.0027 J	-	0.0026	0.0046	-	0.0018	-	0.0058
General Chemistry (mg/l)																				
Chloride	-	140	150	170	170	180	180	-	220	-	160 J	170	110	110	130	130	150	160	-	100
Nitrate-N (mg/l)	-	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	-	0.02 U	-	-	0.049 J	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	-	0.02 U
Sulfate	-	32 J	28	30	28	27	27	-	23	-	15	12 J	13	13	12	11	11	14	-	11
Sulfide	-	1 U	1 U	1 U	1 U	1 U	1 U	-	10 U	-	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	-	10 U
TOC / DOC (g)	-	1.3	1.2	1 U	0.75 J	1 U	1 U	-	0.72 J	-	0.6 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	-	1 U
Ferrous Iron	-	-	0.03	0.03	0.01	0.09	0	-	0.2 U	-	-	0.11	0.07	-	0	0.04	-	0.12	-	0.2 U
Total Iron	-	-	0	0.01	0.03	0.07	0	-	1.6	-	-	0.1	0	-	0.11	0.05	-	0.07	-	0.2 U
Alkalinity (as $CaCO_3$)	-	-	164	194	188	209	208	-	210	-	-	116	119	-	120	134	-	135	-	120

Boxed values indicates concentration greater than criteria

Table 4

Summary of Groundwater Sampling Results - Historical
Tri-Cities Barrel Superfund Site
Fenton, New York (a)

Monitored Zone:		Deep Unconsolidated																			
Well ID:		MW-16									MW-18										
Sample Date:	New York State AWQS (c)	12/26/01	06/25/02	04/30/03	04/27/04	07/13/04	10/12/04	01/12/05	12/20/11	06/20/12	12/21/01	06/25/02	04/30/03	04/30/03	04/27/04	07/13/04	07/13/04	10/12/04	01/12/05	01/12/05
Volatile Organic Compounds (µg/l)																					
Acetone	50	-	-	-	-	-	-	-	25 U	25 U	-	-	-	-	-	-	-	-	-	-	-
Benzene	1	-	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-
Bromodichloromethane	-	-	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-
Bromoform	-	-	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-
Bromomethane (Methyl bromide)	5	-	-	-	-	-	-	-	1 UJ	1 UJ	-	-	-	-	-	-	-	-	-	-	-
2-Butanone (MEK)	50	5.5 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon disulfide	-	-	-	-	-	-	-	-	2 UJ	2 U	-	-	-	-	-	-	-	-	-	-	-
Carbon tetrachloride	5	-	-	-	-	-	-	-	1 U	1 UJ	-	-	-	-	-	-	-	-	-	-	-
Chlorobenzene	5	-	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-
Chloroethane	5	-	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-
Chloroform	7	-	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-
Chloromethane	-	-	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-
Dibromochloromethane	-	-	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethane	5	0.38 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	0.6	0.46 UJ	1 UJ	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	1 U	0.6 UJ	1 UJ	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
1,1-Dichloroethene	5	-	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-
cis-1,2-Dichloroethene	5	0.51 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,2-Dichloroethene	5		-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	-		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethene, Total	-		-	2 U	2 U	2 U	2 U	2 U	2 U	2 U	-		2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichloropropane	1	-	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloropropene	5	-	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-
cis-1,3-Dichloropropene	-	-	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-
trans-1,3-Dichloropropene	-	-	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	5	-	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-
2-Hexanone	-	-	-	-	-	-	-	-	10 U	10 U	-	-	-	-	-	-	-	-	-	-	-
Methylene chloride	5	0.25 U	5 U	5 U	5 U	5 U	5 U	1 U	1 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	1 U	1 U
4-Methyl-2-pentanone (MIBK)	-	-	-	-	-	-	-	-	10 U	10 U	-	-	-	-	-	-	-	-	-	-	-
Styrene	5	-	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-
1,1,2,2-Tetrachloroethane	5	-	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	5	0.38 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.4 J	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	5	1.4	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	5	-	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-
1,1,2-Trichloroethane	1	-	-	-	-	-	-	-	1 U	1 U	-	-	-	-	-	-	-	-	-	-	-
Trichloroethene	5	0.17 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl acetate	-	-	-	-	-	-	-	-	2 U	2 UJ	-	-	-	-	-	-	-	-	-	-	-
Vinyl chloride	2	0.28 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U
Xylenes, Total	-	-	-	-	-	-	-	-	2 U	2 U	-	-	-	-	-	-	-	-	-	-	-
Field Measurements																					
Temperature (°C)	-	9.28	13.7	11.96	10.57	14.76	12.45	8.16	5.78	17.45	9.95	12.63	11.29	-	10.03	14.35	-	11.42	8.4	-	
Conductance (mS/cm)	-	0.725	1.1	1.114	1.105	1.169	11.37	1.175	1.25	1.05	0.751	1.106	1.105	-	1.016	0.994	-	1.096	1.022	-	
Dissolved Oxygen (mg/l)	-	0	0.57	0.37	0.43	0.13	0.2	0.21	0	1.32	0	0.69	0.37	-	0.22	0.54	-	0.94	0.4	-	
pH (s.u.)	-	7.33	6	7.37	7.06	7.36	7.33	7.91	7.53	7.55	8.41	7.06	7.96	-	7.53	7.84	-	7.39	7.5	-	
ORP (mV)	-	61	131	176	124	-69	197	115	90	-100	-360	154	256	-	179	81	-	-150	-2	-	
Turbidity (NTU)	-	246	23	127	65	15.6	23	65	11.7	9.7	22	2	23	-	17	44.3	-	9.5	80	-	
Dissolved Gases																					
Carbon dioxide (mg/l)	-	8.9	850 J	8.6	7.1 J	8.6	7.7	5.7	-	10	16	10	-	-	11 J	15	-	14	8.3	-	
Ethane (ng/l)	-	51	24	11	20 J	12	12	5.2	-	25 U	180	4 U	-	-	6.3 J	6.1	-	6.5	16	-	
Ethene (ng/l)	-	41	21	19	32 J	17	18	12	-	14 J	180	13	-	-	13 J	6.9	-	9.7	10	-	
Hydrogen (nM)	-	510	1.1	1.6	1.3 J	1.9	0.77	15	-	1.1	17,000	1.4	-	-	1.6 J	1.4	-	15	1.6	-	
Methane (mg/l)	-	0.00048	0.00023	0.00098	0.0012 J	0.0013	0.0012	0.00084	-	0.0009	0.011	0.00029	-	-	0.0013 J	0.0012	-	0.00066	0.00085	-	
General Chemistry (mg/l)																					
Chloride	-	200	230	230	220	220	230	230	-	280	88	180	-	-	140	150	150	170	200	200	
Nitrate-N (mg/l)	-	0.21	0.18	0.29	0.13	0.073	0.12	0.081	-	0.02 U	0.01 U	0.13	-	-	0.055	0.061	0.06	0.11	0.093	0.13	
Sulfate	-	39	34	26 J	33	31	30	31	-	29	30	31	-	-	28	28	29	27	28	28	
Sulfide	-	0.4 U	1 U	1 U	1 U	1 U	1 U	1 U	-	10 U	0.4 U	1 U	-	-	1 U	1 U	1 U	1 U	1 U	1	
TOC / DOC (g)	-	1.4	1.8	1 U	1 U	1 U	1.1	1 U	-	1 U	1.9	1.3	-	-	1 U	1.1	1.1	0.53 J	0.73 J	0.75	
Ferrous Iron	-	0.11	0	0	0.01	0.02	0.07	0	-	0.2 U	0	0	-	-	0	0.03	-	0.16	0.13	-	
Total Iron	-	0.09	0.02	0.01	0	0.01	0.05	0	-	0.6	0	0	-	-	0	0.02	-	0.05	0.16	-	
Alkalinity (as $CaCO_3$)	-	117	212	174	192	170	179	177	-	160	280	226	-	-	255	244	-	266	241	-	

Boxed values indicates concentration greater than criteria

Table 4

Summary of Groundwater Sampling Results - Historical
Tri-Cities Barrel Superfund Site
Fenton, New York (a)

Monitored Zone:		Deep Unconsolidated															
Well ID:		MW-18 (continued)		MW-20													
Sample Date:	New York State AWQS (c)	12/20/11	06/21/12	05/08/03	08/05/03 (e)	08/05/03 (e)	04/29/04	07/15/04	10/14/04	01/13/05	06/26/07	06/11/08	06/23/09	06/15/10	06/20/11	12/22/11	06/20/12
Volatile Organic Compounds (µg/l)																	
Acetone	50	25 UJ	25 U	-	-	-	-	-	-	-		-	-	-	-	25 U	25 U
Benzene	1	1 U	1 U	-	-	-	-	-	-	-		-	-	-	-	1 U	1 U
Bromodichloromethane	-	1 U	1 U	-	-	-	-	-	-	-		-	-	-	-	1 U	1 U
Bromoform	-	1 U	1 U	-	-	-	-	-	-	-		-	-	-	-	1 U	1 U
Bromomethane (Methyl bromide)	5	1 UJ	1 UJ	-	-	-	-	-	-	-		-	-	-	-	1 UJ	1 UJ
2-Butanone (MEK)	50	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon disulfide	-	2 U	2 U	-	-	-	-	-	-	-		-	-	-	-	2 U	2 U
Carbon tetrachloride	5	1 U	1 UJ	-	-	-	-	-	-	-		-	-	-	-	1 UJ	1 UJ
Chlorobenzene	5	1 U	1 U	-	-	-	-	-	-	-		-	-	-	-	1 U	1 U
Chloroethane	5	1 U	1 U	-	-	-	-	-	-	-		-	-	-	-	1.4 J	1 UJ
Chloroform	7	1 U	1 U	-	-	-	-	-	-	-		-	-	-	-	1 U	1 U
Chloromethane	-	1 U	1 U	-	-	-	-	-	-	-		-	-	-	-	1 U	1 U
Dibromochloromethane	-	1 U	1 U	-	-	-	-	-	-	-		-	-	-	-	1 U	1 U
1,1-Dichloroethane	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U
1,2-Dichloroethane	0.6	0.6 U	1 U	0.6 U	0.6 UJ	0.6 UJ	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	1 U	1 U	0.6 U	1 U
1,1-Dichloroethene	5	1 U	1 U	-	-	-	-	-	-	-		-	-	-	-	1 U	1 U
cis-1,2-Dichloroethene	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,2-Dichloroethene	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethene, Total	-	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichloropropane	1	1 U	1 U	-	-	-	-	-	-	-		-	-	-	-	1 U	1 U
1,1-Dichloropropene	5	1 U	1 U	-	-	-	-	-	-	-		-	-	-	-	1 U	1 U
cis-1,3-Dichloropropene	-	1 U	1 U	-	-	-	-	-	-	-		-	-	-	-	1 U	1 U
trans-1,3-Dichloropropene	-	1 U	1 U	-	-	-	-	-	-	-		-	-	-	-	1 U	1 U
Ethylbenzene	5	1 U	1 U	-	-	-	-	-	-	-		-	-	-	-	1 U	1 U
2-Hexanone	-	10 U	10 U	-	-	-	-	-	-	-		-	-	-	-	10 U	10 U
Methylene chloride	5	1 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	1 U	1 U	1 U	1 U	5 U	5 U	1 U	5 U
4-Methyl-2-pentanone (MIBK)	-	10 U	10 U	-	-	-	-	-	-	-		-	-	-	-	10 U	10 U
Styrene	5	1 U	1 U	-	-	-	-	-	-	-		-	-	-	-	1 U	1 U
1,1,2,2-Tetrachloroethane	5	1 U	1 U	-	-	-	-	-	-	-		-	-	-	-	1 U	1 U
Tetrachloroethene	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	5	1 U	1 U	-	-	-	-	-	-	-	1 U	-	-	-	-	1 U	1 U
1,1,2-Trichloroethane	1	1 U	1 U	-	-	-	-	-	-	-		-	-	-	-	1 U	1 U
Trichloroethene	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl acetate	-	2 U	2 UJ	-	-	-	-	-	-	-		-	-	-	-	2 U	2 UJ
Vinyl chloride	2	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	2 U	2 U	1 U	1 U	1.7 J	1 U
Xylenes, Total	-	2 U	2 U	-	-	-	-	-	-	-		-	-	-	-	2 U	2 U
Field Measurements																	
Temperature (°C)	-	5.86	14.73	13.15	18.2	-	24.18	19.09	13.87	7.5	16.68	19.46	22.07	22.04	26.78	8.56	16.56
Conductance (mS/cm)	-	0.953	0.959	0.826	0.909	-	1.19	1.158	1.063	0.929	0.767	0.282	0.763	0.777	0.742	0.357	0.824
Dissolved Oxygen (mg/l)	-	0	0.29	7.2	0.33	-	0.47	0.25	1.29	0.62	0.25	0.69	1	0	0.34	0	0.19
pH (s.u.)	-	7.3	7.47	10.33	9.05	-	7.43	7.49	7.48	7.75	7.18	6.78	6.07	7.89	7.55	7.49	7.75
ORP (mV)	-	-26	-20	-274	-397	-	-130	-110	-63	-49	47.8	-24	85	34	-25	-42	-18
Turbidity (NTU)	-	15.2	7.3	13	980 (j)	-	30	24	50	40	18	105	96.2	14	7.6	93.6	8.6
Dissolved Gases																	
Carbon dioxide (mg/l)	-	-	21	0.6 U	0.7	-	2.6 J	5	4.4	2.9	-	-	-	-	-	-	6.1
Ethane (ng/l)	-	-	25 U	730	1,800	-	280 J	200	160	68	-	-	-	-	-	-	150
Ethene (ng/l)	-	-	25 U	660	2,600	-	350 J	340	520	160	-	-	-	-	-	-	120
Hydrogen (nM)	-	-	1.1	36,000	74,000	-	5.5 J	1.7	1.4	2.1	-	-	-	-	-	-	63
Methane (mg/l)	-	-	0.011	0.045	0.06	-	0.11 J	0.11	0.091	0.043	-	-	-	-	-	-	0.16
General Chemistry (mg/l)																	
Chloride	-	-	220	140	240	-	260	250	230	210	-	-	-	-	-	-	150
Nitrate-N (mg/l)	-	-	0.02 U	0.32	0.05 U	-	0.05 U	0.05 U	0.05 U	0.05 U	-	-	-	-	-	-	0.02 U
Sulfate	-	-	21	82	46 J	-	43	41	34	37	-	-	-	-	-	-	20
Sulfide	-	-	10 U	1 U	1 U	-	1 U	1 U	1 U	1 U	-	-	-	-	-	-	10 U
TOC / DOC (g)	-	-	1.2	1.1	3.8	-	1.6	2	0.95 J	300	-	-	-	-	-	-	3
Ferrous Iron	-	-	0.2 U	0.02	0	-	0.24	0.01	0.19	0.05	-	-	-	-	-	-	0.2 U
Total Iron	-	-	0.2 U	0.03	0.1	-	0.02	0.41	0.37	0.18	-	-	-	-	-	-	0.2 U
Alkalinity (as $CaCO_3$)	-	-	240	70	120	-	100	105	128	128	-	-	-	-	-	-	140

Boxed values indicates concentration greater than criteria

Table 4

Summary of Groundwater Sampling Results - Historical
Tri-Cities Barrel Superfund Site
Fenton, New York (a)

a/ ID = identification; µg/l = micrograms per liter; "-" = indicates criterion not developed or analysis not performed; ND = not detected; ^{o}C = degrees Celsius; mS/cm = milliSiemens per centimeter; mg/l = milligrams per liter; s.u. = standard units; mV = millivolts; NTU = nephelometric turbidity unit; mg/l as $CaCO_3$ = milligrams per liter as calcium carbonate; ng/l = nanograms per liter; nM = nanoMolar; TOC = total organic carbon; DOC = dissolved organic carbon; "-" indicates analysis not performed.
b/ Pursuant to a request from the EPA, field measurements were recorded both before purging and subsequent to purging and recovery, for the very low yield wells (MW-2S, MW-3S, and MW-16S).
c/ New York State Ambient Water Quality Standards and Guidance Values, Division of Water Technical and Operational Guidance Series (1.1.1), June 1998.
d/ Data Qualifiers:
U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.
J = Analyte present. Reported value may not be accurate or precise.
UJ = Not detected. Quantitation limit may be inaccurate or imprecise.
R = Unsusable result. Analyte may or may not be present in the sample.
D = the reported concentration is from a diluted aliquot
e/ Sample and duplicate.
f/ During purging, excessive drawdown occurred. To eliminate potential cascading and to retain sufficient water for sample collection, hydrogen aliquots were not collected.
g/ Samples collected in December 2001 were analyzed for TOC; samples collected subsequent to December 2001 were analyzed for DOC with the exception of MW-2S, MW-2, MW-3S, MW-3, MW-16S, MW-16, MW-18S, MW-18, and PMW-1 during the June 2012 event.
h/ Turbidity meters were not sent with equipment. Observations of turbidity were recorded in place of readings.
i/ Turbidity at the time of aliquot collection for metals analyses was 12.5 NTUs.
j/ The turbidity at the time of aliquot collection for metals analyses was 266 NTUs.

Boxed values indicates concentration greater than criteria

Appendix A – Restrictive Covenant

ATTACHMENT A

GRANT OF EASEMENT AND DECLARATION OF RESTRICTIVE COVENANTS

This GRANT OF EASEMENT (the "Grant") and DECLARATION OF RESTRICTIVE COVENANTS, (the "Declaration") dated 22 November 1996, is made by TRI-CITIES BARREL COMPANY, INC. (the "Grantor"), a New York corporation, to the TRI-CITIES BARREL SUPERFUND SITE PRP Group (the "Group"), an unincorporated association of companies interested in the remediation of property described below.

W I T N E S S E T H

WHEREAS, the Grantor is the owner of certain real property located at 319 Old Route 7, Town of Fenton, Broome County, New York (the "Property"), as more particularly described in the legal description of the Property contained in the attached Exhibit I; and

WHEREAS, the Property is the location of the Tri-Cities Barrel Superfund Site, which was listed on the United States Environmental Protection Agency's National Priorities List ("NPL") of Inactive Hazardous Waste Disposal Sites, in 1989 (See, 54 Fed. Reg. 41,000, Oct. 4, 1989); and

WHEREAS, the Group consists of certain potentially responsible parties which have joined together to respond to certain claims which have been asserted by the United States Environmental Protection Agency (the "EPA") in connection with the Site; and

WHEREAS, the Group has entered into Administrative Orders on Consent with the EPA under which the Group has agreed to perform a remedial investigation/ feasibility study ("RI/FS") (Index # II-CERCLA-10220) and a removal action (Index # II-CERCLA-96-0207) (collectively, the "Remediation Efforts") at the Site; and

WHEREAS, Grantor desires to facilitate the Group's Remediation Efforts on the Site and to eliminate or minimize any potential risks that could occur as the result of the inappropriate use of the Property or of the groundwater beneath the Property.

NOW, THEREFORE, Grantor, hereby provides for the following:

1. NOTICE

EPA has determined that hazardous substances are present at the Property. Certain uses or development of the Property may present a risk to the health and safety of individuals exposed to or involved in such development or use. Pursuant to Federal law, EPA has placed the Property on the National Priorities List, and is seeking to minimize the potential risks to health and safety that may be posed by the Property. The development and use restrictions established herein are so established in an effort to prevent potential adverse environmental and human health consequences which could result from exposure to hazardous substances which may continue to exist at or beneath the Property. Use of the Property in a manner contrary to the use and development restrictions set forth herein could result in adverse effects to human health and the environment. All rights in and to the Property are subject to the terms and conditions of this Declaration, as well as other unrecorded declarations. Use and development of the Property also is subject to applicable Federal, State and Local governmental laws relating to inactive hazardous waste disposal sites. All persons acquiring rights in or to the Property are advised to make appropriate inquiries of appropriate environmental and health government agencies.

2. GRANTS AND RESTRICTIVE COVENANTS

Grantor acknowledges that for good and valuable consideration of $25,000.00 paid by the Group, the receipt and sufficiency of which are hereby acknowledged, the Grantor hereby grants to the Group, its agents, contractors, subcontractors, employees, and designees, the easements, rights, obligations, covenants and restrictions set forth below in, over, under, across, upon and through the Property, the terms and conditions of which easements, rights, obligations, covenants and restrictions are also set forth below. This Grant is being accepted by the Group pursuant to CERCLA Section 104 (j), 42 U.S.C. Section 9604(j).

(a) Remediation Easement. The easement granted hereunder (the "Remediation Easement") is the right and easement to perform in, over, under, across, upon and through the Property any and all necessary Remediation Efforts. Such activities shall include, but are not limited to, the construction, reconstruction, installation, use, alteration, maintenance, repair or replacement of material to form a permanent, impermeable cap (the "Permanent Cap Area") covering that portion of the Property necessary to carry out the Remediation Efforts, and of all structures necessary to protect the integrity of the permanent cap, including, without limitation, a permanent fence around the permanent cap.

The Remediation Easement shall also include the right of access to the Property and over the Property as needed in the exercise of the rights of the Group under this Grant and for purposes of inspecting the Property to insure compliance with and

fulfillment of the terms of this Grant. The right of access shall include, without limitation, the right to use existing ways, drives and curb cuts within the Property, as they may be relocated by the Grantor for reasons unrelated to the exercise of rights under this Grant from time to time.

(b) Retained Rights of Grantor. The Grantor shall retain all rights in the Property that are not inconsistent with the exercise of the Group's rights under the Remediation Easement or the restrictions provided for by Sections 2(d) and 2(e) below (the "Restrictions"). Where remediation areas overlap, the retained rights shall be limited to those not inconsistent with all of the remediation activities taking place within the overlapping area.

(c) Permanent Cap Area. With respect to the Permanent Cap Area, the Grantor shall retain any rights not inconsistent with (1) the construction, reconstruction, installation, use, maintenance, alteration, repair or replacement of material to form a permanent impermeable cap covering the Permanent Cap Area and of all structures constructed to protect the integrity of the permanent cap, including, without limitation, a permanent fence around the Permanent Cap Area, or (2) the Restrictions. Without limiting the generality of the foregoing, the Grantor shall not have access to the surface or subsurface of the Permanent Cap Area.

(d) Permanent Cap Area Restrictions/Institutional Controls. The Grantor shall not perform, suffer, allow or cause any person to perform any of the following activities in, over, under, across, upon or through the Permanent Cap Area:

(i) The Permanent Cap Area shall not be developed for residential use;

(ii) The Permanent Cap Area shall not be developed for non-residential use without prior approval as required by this Section 2. All plans for development of the Permanent Cap Area for non-residential use shall be submitted to the Group for approval;

(iii) Groundwater underlying the Permanent Cap Area shall not be withdrawn for any purpose unless otherwise provided for by the Remediation Efforts. Groundwater supply wells shall not be installed on any part of the Permanent Cap Area;

(iv) Contaminated soil shall not be disturbed, except pursuant to a plan approved by the Group;

(v) The cap to be constructed over the Permanent Cap Area and other ground covering features of the Remediation Efforts shall not be disturbed or modified in any manner, and no action shall be taken

which shall disturb in any manner the integrity or effectiveness of the permanent cap; and

(vi) No use or activity shall be permitted in, over, under, across, upon or through the Permanent Cap Area which will disturb any portion of the Remediation Efforts or which will prevent, disrupt or otherwise interfere with the construction, operation, alteration, reconstruction, use, maintenance, repair, replacement, monitoring or inspection of any portion of the Remediation Efforts implemented in, over, under, across, upon or through the Property, including, without limitation: the collection, containment, treatment and discharge of groundwater; the excavation, dewatering, storage, treatment and disposal of soils and sediment; the long-term monitoring of groundwater, surface water, soils and sediments; and the long-term monitoring of groundwater, surface water, soils and sediments; and the long-term operation, maintenance, monitoring and inspection of any portion of the Remediation Efforts.

The restrictions provided for by this Section 2(d) are collectively referred to herein as the "Permanent Cap Area Restrictions."

(e) Restrictions/Institutional Controls Outside Permanent Cap Area. The Grantor shall not perform, suffer, allow or cause any person to perform any of the following activities in, over, under, across, upon or through the Property:

(i) Groundwater underlying the Property shall not be withdrawn for drinking water purposes, and drinking water wells shall not be installed on any part of the Property; and

(ii) Prior to any construction activity or other activity that would withdraw groundwater underlying the Property, the Grantor shall notify the Group and request the opportunity to consult with the Group with respect to conditions at the Site addressed by the Remediation Efforts.

The restrictions provided for by this Section 2(e) are collectively referred to herein as the "Remediation Area Restrictions."

(f) Certain Obligations of Grantee

(i) All activities implementing the Remediation Efforts shall be managed and supervised by government personnel and shall be performed in accordance with all applicable or relevant and appropriate standards, requirements, criteria or limitations under federal or state law ("ARARS").

(ii) The Grantee shall install a permanent fence around the perimeter of the permanent cap prior to or concurrently with the construction and installation of the permanent cap within the Permanent Cap Area. The Grantee will maintain the permanent cap and the fence.

(g) Assignment of Grant to the Department The Grantor expressly acknowledges and agrees that the Group shall be entitled at any time or from time to time to assign all or any portion of the easements, rights, covenants, obligations and restrictions granted hereunder to EPA.

(h) Exercise of Rights. The Grantor acknowledges that any of the Group's rights hereunder may be exercised by the Group or by any one or more of the Group's agents, contractors, employees or other designees, which may include, without limitation, EPA and/or the United States Army Corps of Engineers. The Group also acknowledges that, in the event of assignment of this Grant to EPA, any of the Group's rights hereunder may be exercised by EPA as assignee of the Group or by any one or more of EPA's agents, contractors, employees or other designees, which may include, without limitation, the United States Army Corps of Engineers and any of their agents, contractors or employees.

3. SEVERABILITY

If any court or other tribunal determines that any provision of this instrument is invalid or unenforceable, such provision shall be deemed to have been modified automatically to conform to the requirements for validity and enforceability as determined by such court or tribunal. In the event the provision invalidated is of such a nature that it cannot be so modified, the provision shall be deemed deleted from this instrument as though it had never been included herein. In either case, the remaining provisions of this instrument shall remain in full force and effect.

If a question arises under State or local law relating to the enforceability of the restrictive covenants contained herein, the Group may require Grantor, its successors and assigns, to enter into and record a Declaration of Restrictions which amends the language so that it is enforceable under State and local law.

4. RIGHTS AND REMEDIES

Each party shall have any and all remedies available at law or in equity for any violation or breach of the terms and conditions of this Grant and/or Declaration by any other party. All of such remedies shall be deemed cumulative and not exclusive. Nothing in this Grant and/or Declaration shall waive or limit any rights or powers of the Group under any constitution, statute, ordinance, regulation, order or other source of governmental authority existing from time to time.

5. PROVISIONS TO RUN WITH THE LAND: SUCCESSORS AND ASSIGNS

This Grant and Declaration set forth easements, rights, obligations, agreements, liabilities and restrictions upon and subject to which the Property shall be improved, held, used, occupied, leased, sold, hypothecated, encumbered or conveyed. The easements, rights, obligations, agreements, liabilities and restrictions herein set forth shall run with the Property, as applicable thereto, and any portion thereof and shall inure to the benefit of and be binding upon the Grantor and the Group and all parties claiming by, through or under the Grantor or the Grantee, respectively. It is acknowledged and intended that these rights shall be rights in gross and not appurtenant to any land of the Group, and shall be binding upon the Grantor and all parties claiming by, through or under the Grantor. The rights hereby granted to the Group, its successors and assigns, constitute the perpetual (subject to release as provided in Section 2 above) right to the Group, its successors and assigns to enforce this Grant and Declaration, and the Grantor hereby covenants for the Grantor and the Grantor's executors, administrators, heirs, successors and assigns to stand seized and hold title to the Property, or any portion thereof, subject to this Grant and Declaration, provided, however, that a violation of this Grant and/or Declaration shall not result in a forfeiture or reversion of the Grantor's title to the Property or any portion thereof. Without limiting the generality of the foregoing, the Group may assign the Group's rights hereunder in whole or in part from time to time.

Grantor shall ensure that assignees, successors in interest, lessees, and sublessees of the Property shall provide the same access and cooperation during the term of this Grant and Declaration. Grantor shall cause any lease, grant or other transfer of an interest in the Property to include a provision requiring the lessee, grantee, or transferee to comply with this requirement.

Grantor shall ensure that a copy of this Grant and Declaration is provided to any current lessee or sublessee on the Property as of the effective date of this Grant and Declaration and shall ensure that any subsequent leases, subleases, assignments or transfers of the Property or an interest in the Property are consistent with this Grant and Declaration. In the event of any subsequent leases, subleases, assignments or transfers of the Property or an interest in the Property, notice shall be sent to the Group ninety (90) days prior to the event.

6. CONCURRENCE PRESUMED

It being agreed that the Grantor and all parties claiming by, through or under the Grantor shall be deemed to be in accord with the provisions herein set forth and to agree for and among themselves and any party claiming by, through or under them, and their respective agents, contractors, subcontractors and employees, that the terms and conditions of this Grant and Declaration herein established shall be adhered to and not violated and that their respective interests in the Property shall be subject to the provisions herein set forth.

7. JOINT AND SEVERAL OBLIGATIONS; MISCELLANEOUS

If the Grantor consists of more than one person or entity, the obligations of those person(s) and entity(ies) as the Grantor hereunder shall be joint and several, and if the Group consists of more than one person or entity, the rights of those person(s) and entity(ies) as the Group hereunder shall also be joint and several. This instrument may be executed in any number of counterparts, which together shall constitute one and the same instrument, and in the event this instrument is so signed in counterparts, it shall be deemed executed by all parties when each party hereto has executed at lease one of such counterparts.

8. AMENDMENT

This Grant may be amended by written agreement of the parties, and any such amendment shall be recorded and/or registered with the Broome County Clerk's Office within 30 days of the date of having received from the Group said amendment as approved by the Group and mailed to the Grantor by certified mail, return receipt requested.

9. TERM

The easements, rights, obligations, covenants and restrictions established by this Grant and Declaration shall run in perpetuity, except as otherwise expressly provided herein, and unless and until released by the Group.

IN WITNESS WHEREOF, Grantor hereto has executed this Grant and Declaration on the day and date first above written.

TRI-CITIES BARREL CO., INC.

By: _____ Date: 11/22/96
Gary Warner
President

ACKNOWLEDGEMENTS

On this the 22nd day of November, 1996, the above-named Gary Warner appeared before me and acknowledged that he is the President of Tri-Cities Barrel Co., Inc., that he has been duly authorized by the Board of Directors to act on the Corporation's behalf in this matter and that he executed the foregoing GRANT OF EASEMENT and DECLARATION OF RESTRICTIVE COVENANTS for the purposes therein contained.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal.

Nicholas A. Smedira
Notary Public

My commission expires: NICHOLAS A. SMEDIRA
~~Notary Public State of New York~~
Residing In Broome County
My Commission Expires July 31, 1998

EXHIBIT I

PARCEL 1:

The real property designated on the Broome County tax map as Section 10, Block 4, Lot 20-S1, located in the Hamlet of Port Crane, Town of Fenton, Broome County, New York, and further described, in a deed dated July 1, 1984, and recorded on April 18, 1985, Book of Deeds No. 1442 at page 320 in the Broome County Clerk's office, as follows:

ALL THAT TRACT OR PARCEL OF LAND, situate in the Town of Fenton, Broome County, New York being premises conveyed to Fred L. Smith and Bertha M. Smith, husband and wife, by Ella Bunzey by deed recorded in the Broome County Clerk's Office March 1, 1920, in Book of Deeds No. 295 at page 58, excepting therefrom premises conveyed to Fred L. Smith and Bertha M. Smith to Fred L. Mann and wife by deed recorded July 24, 1950, in Broome County Book of Deeds No. 746 at page 212 and also premises conveyed by Bertha M. Smith to Francis Warner and Jess Menhennett by deed dated October 1, 1954, and recorded in the Broome County Clerk's Office.

There is intended to be conveyed to the grantees all of the premises which lie between the Old State Highway and the New York State Highway Route No. 7 as reserved in the deed from Bertha M. Smith to the said Francis Warner and Jess Menhennett consisting of an acre of land more or less.

Being the same premises conveyed to the grantor herein by warranty deed dated June 7, 1967, and recorded on June 9, 1967, in the Broome County Clerk's Office in Book 1121 of Deeds at page 499.

PARCEL 2:

The real property designated on the Broome County tax map as Section 10, Block 4, Lot 20, located in the Hamlet of Port Crane, Town of Fenton, Broome County, New York, and further described, in a deed dated July 1, 1984 and recorded on April 18, 1985, Book of Deeds No. 1442 at page 320 in the office of the Broome County Clerk's Office, as follows:

ALL THAT TRACT OR PARCEL OF LAND, situate in the Town of Fenton, County of Broome and State of New York, bounded and described as follows: Beginning at a point where the west line of the premises of the first part [Francis Warner] intersects the line fence of the D. & H. R. R. CO.; running thence eastwardly along said fence a distance of four hundred (400) feet, more or less, to the west side of a small creek; running thence northwardly along the west bank of said creek a distance of four (4) rods to the property line of the new State Highway known as Route No. 7; running thence westwardly along the property line of said State Highway a distance of four hundred (400) feet, more or less, to a concrete marker; running thence southwardly along the east line of Harvey Shear a distance of one hundred forty-five (145) feet, more or less, to the point or place of beginning.

Being the same premises conveyed to the grantor herein by warranty deed dated October 14, 1963, and recorded in the Broome County Clerk's Office on January 21, 1964 in Book 1074 at page 1038.

PARCEL 3:

The real property designated on the Broome County tax map as Section 10, Lot 20-S2, located in the Hamlet of Port Crane, Town of Fenton, Broome County, New York, and further described, in a deed dated July 1, 1984 and recorded on April 18, 1985, in the Book of Deeds No. 1442 at page 321 in the office of the Broome County Clerk's Office, as follows:

ALL THAT TRACT OR PARCEL OF LAND, situate in the Town of Fenton, County of Broome and State of New York, bounded and described as follows, viz: Commencing in the center of the highway leading from Port Crane to Osborn Hollow at a point 37 1/2 links north from a locust tree; thence south 24 degrees 19 minutes west 2.38 chains to the north line of said D. & H. R.R.Co.; thence south 49 degrees 30 minutes east 8.29 chains on the north line of said R.R. lands to a fence post, the west line of lands of Fred Burnes; thence north 24 degrees 15 minutes east 5.10 chains to the center of the above mentioned highway; thence south 73 degrees east 2.23 chains in center of said road to a stake and stones; thence north 5 degrees 45 minutes east 16 chains along the west line of lands of Ellen E. Bingham to her northwest corner near the north bank of the creek; thence south 87 degrees 25 minutes east 27.65 chains along said Bingham's north line and the north line of the land of Edmond Youngs to said Young's north-east corner and the west line of lands of Mrs. Blanchard and the east line of lot No. 50 Clinton & Melcher's Patent; thence north 7 degrees 30 minutes east 17.42 chains on West line of Mrs. Blanchard's land and the east line of lot No. 50 to the north-east corner of said lot; thence north 87 degrees 25 minutes west 43.62 chains to a fence post on the creek flat; thence north 25 degrees 10 minutes east 44 links to a fence post; thence north 61 degrees 30 minutes west, 7.14 chains to the west line of lot No. 50; thence south 8 degrees west, 5.21 chains to a stake at foot of bank; thence south 9 degrees 15 minutes west, 12.57 chains to a point 15 rods north from the north side of the highway at a stake; thence south 48 degrees 40 minutes east 13.88 chains to a stake; thence south 9 degrees 15 minutes west 7.40 chains to the center of the road; thence south 41 degrees 30 minutes east, 2.54 chains in the center of the road to the place of the beginning, containing 108 61/100 acres, be the same more or less, as surveyed March 24, 1896, by S. M. Baird, Civil Engineer. Excepting and reserving all the rights given to Oil Company in relation to laying pipes for the same.

There is excepted from the above-described premises conveyed as follows:

1. Parcel of land conveyed by Fred L. Smith and Bertha M. Smith to Fred Mann and Olga Mann, husband and wife, by deed dated July 19, 1950, and recorded July 24, 1950, in Broome County Clerk's Office in Book 746 of Deeds at Page 212.

2. Parcel of land conveyed to David Stuart Martin and Louise C. Martin, husband and wife, by deed dated February 15, 1955, and recorded February 26, 1955, in Broome County Clerk's Office in Book 888 of Deeds at Page 185.

3. Parcel of land conveyed to Leroy R. Crandall by deed dated August 1957, and recorded September 13, 1957, in Broome County Clerk's Office in Book 959 of Deeds at Page 504.

4. Parcel of land conveyed to G. Leon Smith and Dorothy Smith, husband and wife, by deed dated January 24, 1961, and recorded January 25, 1961, in the Broome County Clerk's Office in Book 1031 of Deeds at Page 1053.

5. Parcel of land conveyed to M. Carl Gibbons by deed dated September 26, 1963, and recorded October 15, 1963, in the Broome County Clerk's Office in Book 1071 of Deeds at Page 1011.

There is also excepted and reserved from the above-described premises all that portion thereof that lies between the old state highway and the new state highway No. 7 being a triangular piece of land with dwellings and buildings thereon.

This conveyance is also made subject to an easement to New York State Electric & Gas Corp. dated April 15, 1955, and recorded October 7, 1955, in the Broome County Clerk's Office in Book 909 of Deeds at page 263.

Being the same premises conveyed to Francis Warner by warranty deed dated October 14, 1963, and recorded in the Broome County Clerk's Office on January 21, 1964, in Book 1074 of Deeds at page 1035.

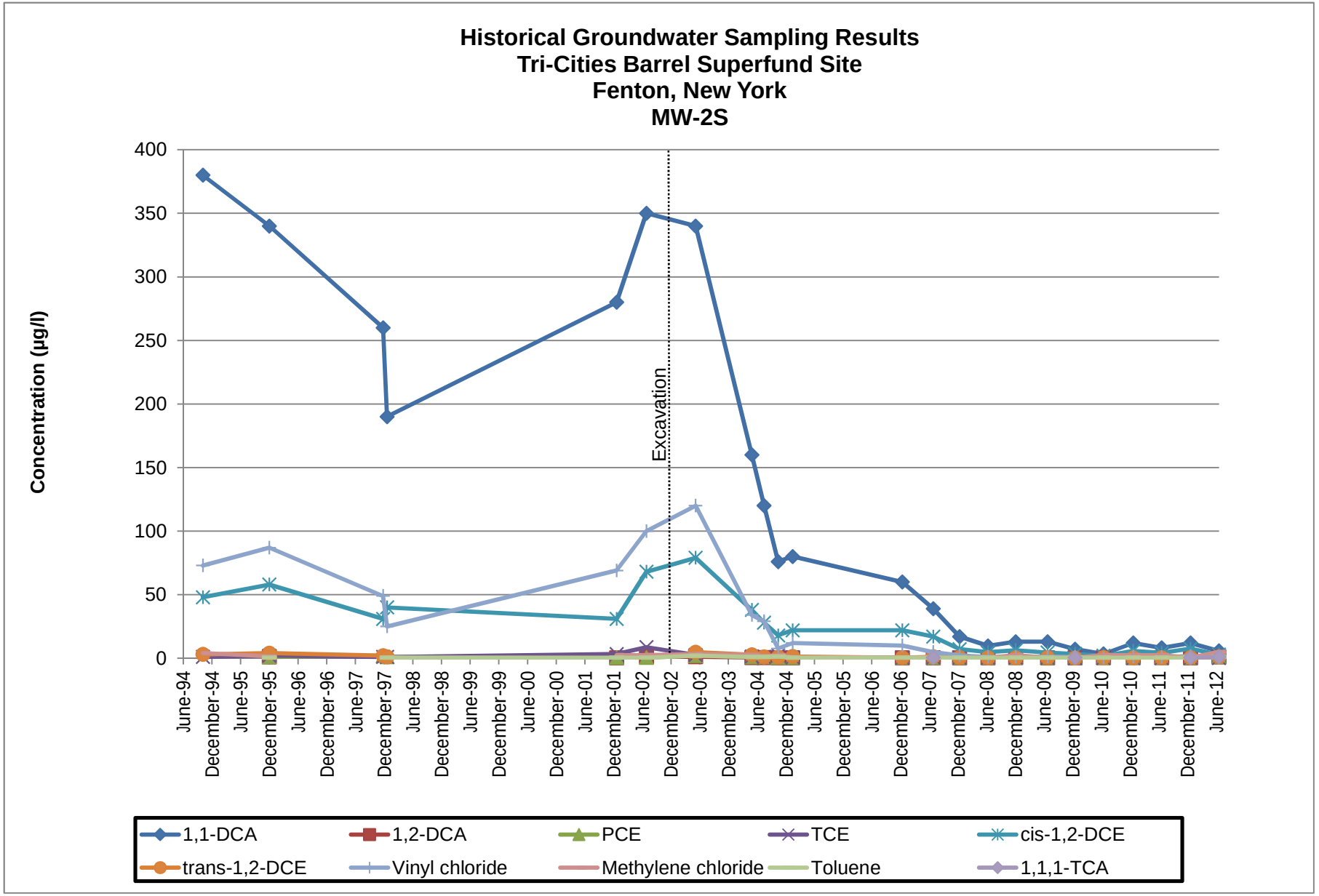
There is also excepted from the above described premises 3.765 acres, more or less, appropriated by the State of New York by appropriation dated September 20, 1966, recorded on the same day in-Broome County Clerk's Office in Book 1110, page 341.

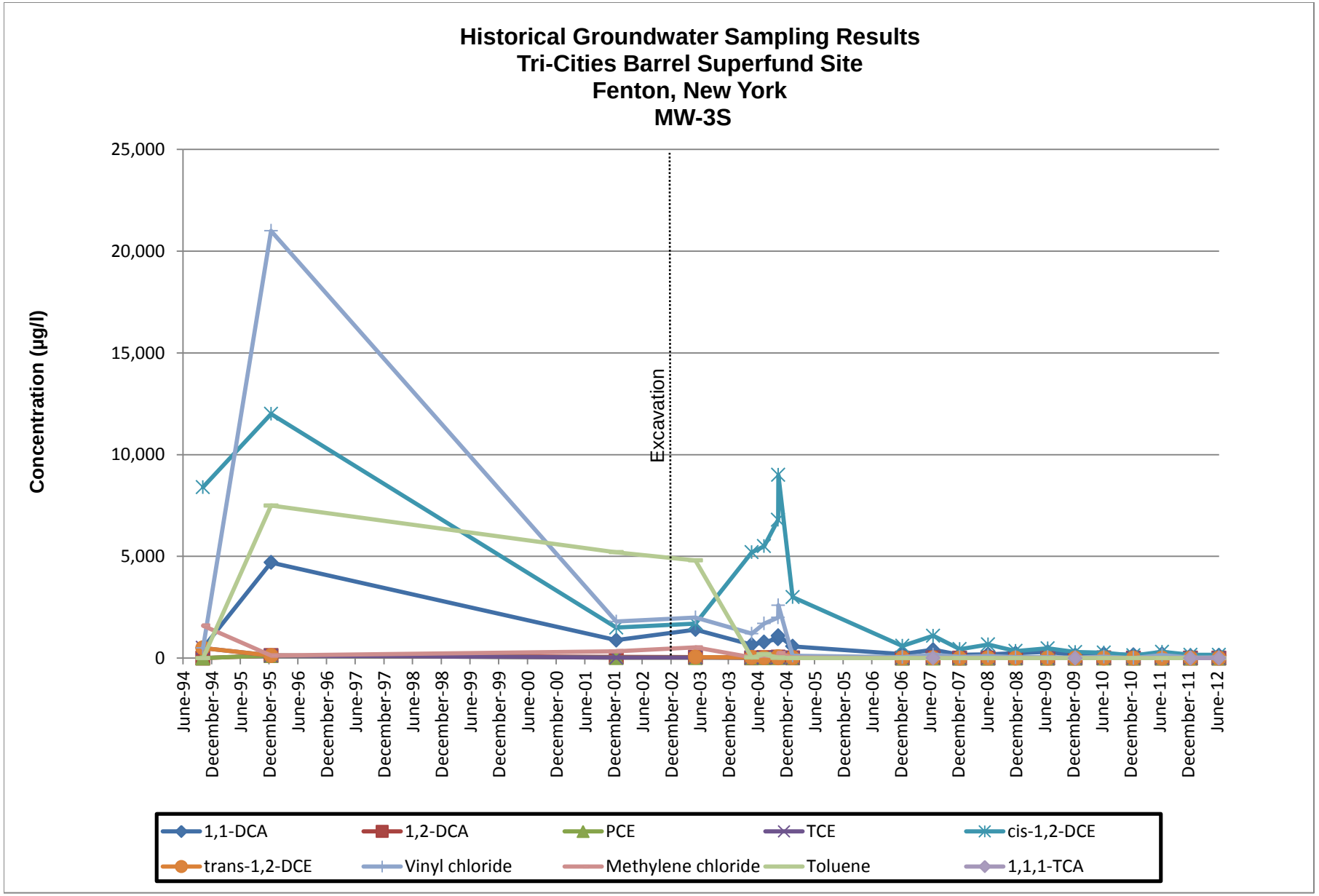
Further excepted from the above-described land and described in deeds recorded after the above-referenced deed are the following:

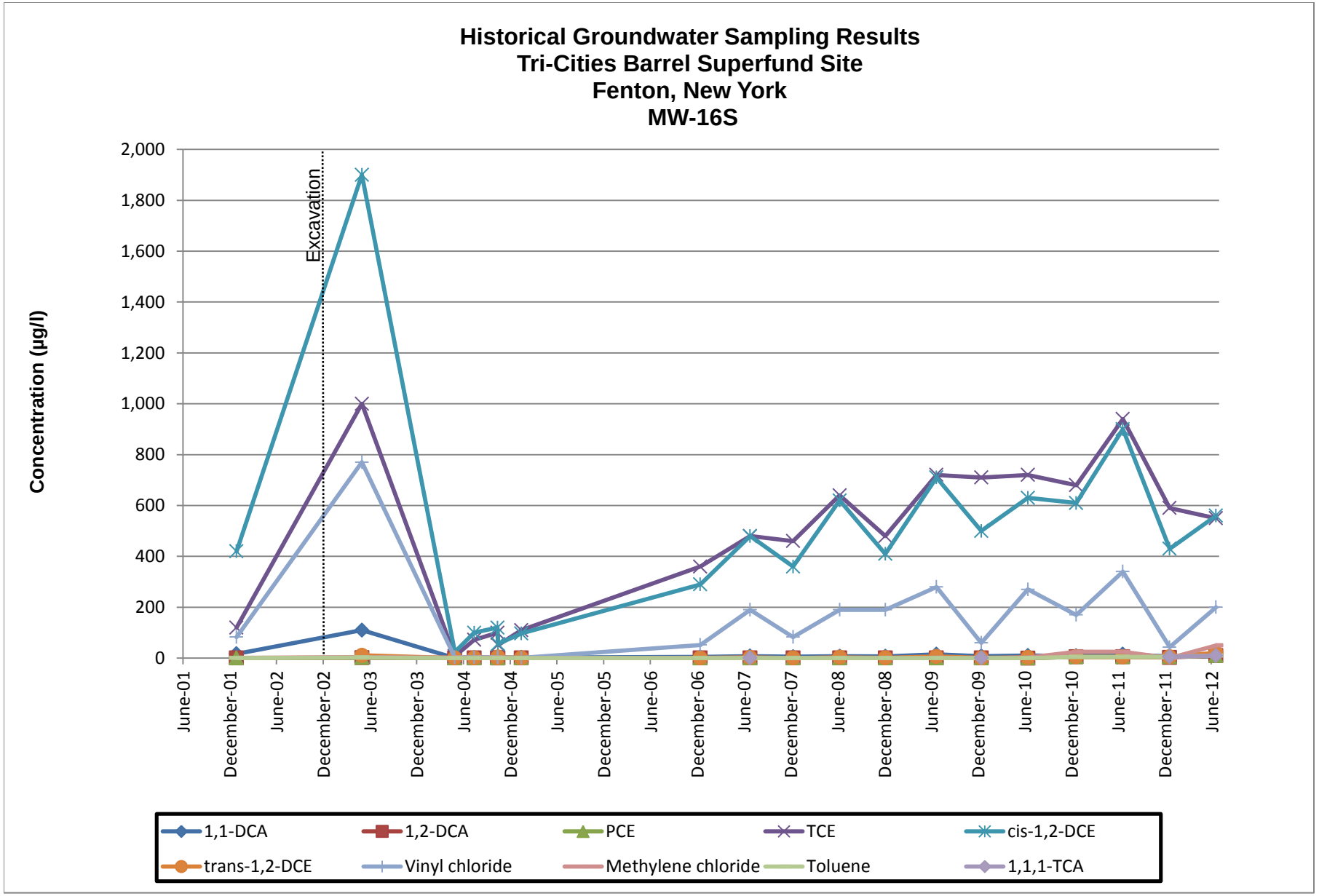
1. Parcel of land conveyed by Tri-Cities Barrel Co., Inc. to James H. Guernsey and Barbara R. Guernsey, husband and wife, by deed dated May 5, 1986, and recorded May 9, 1986, in the Broome County Clerk's office in Book 1529 of Deeds at Page 115.

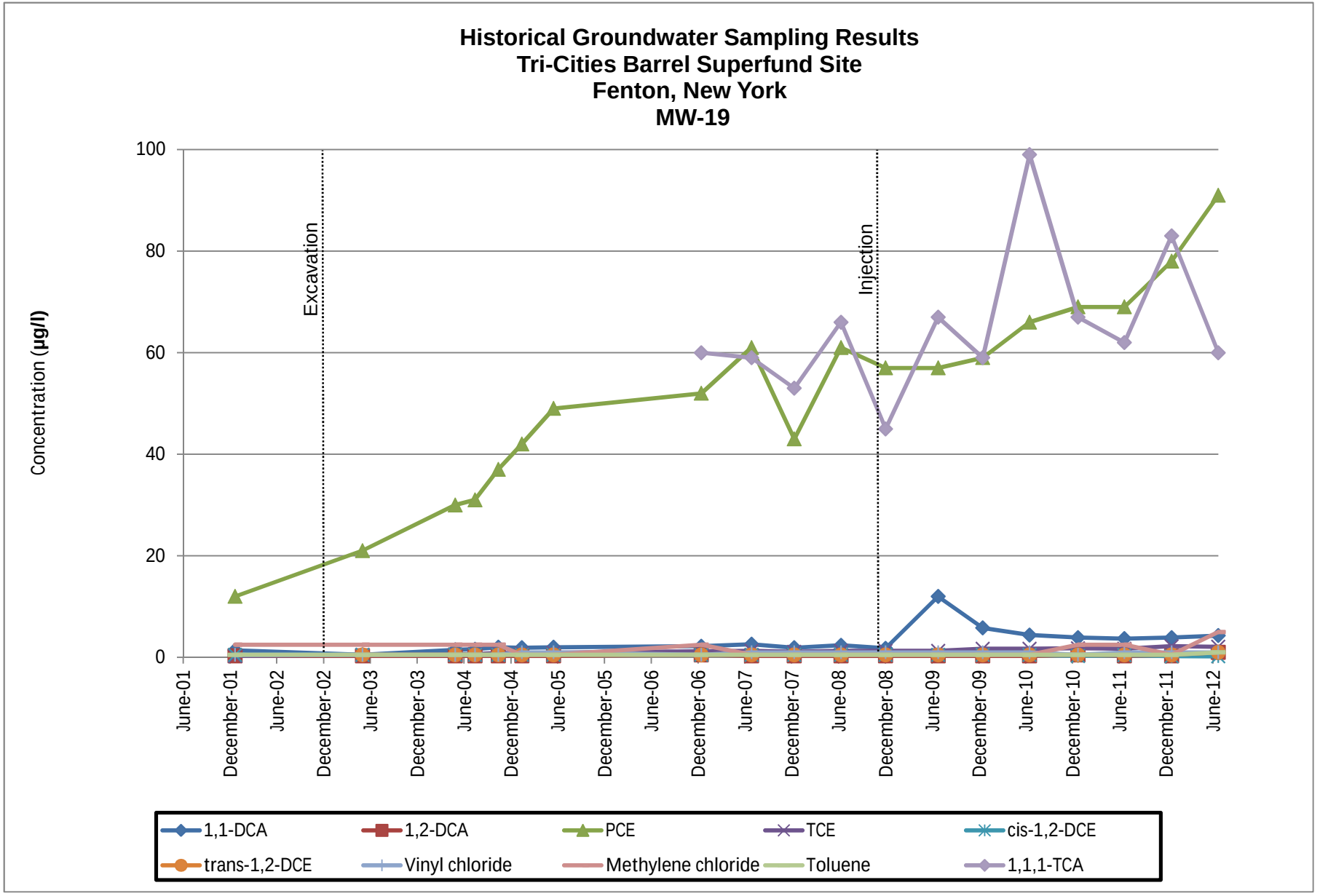
2. Parcel of land conveyed by Tri-Cities Barrel Co., Inc. to John F. Prikazsky and Mary E. Prikazsky, husband and wife, by deed dated May 5, 1986, and recorded May 9, 1986, in the Broome County Clerk's Office in Book 1529 of Deeds at Page 118.

Appendix B – Groundwater Sampling Results Time Series Plots

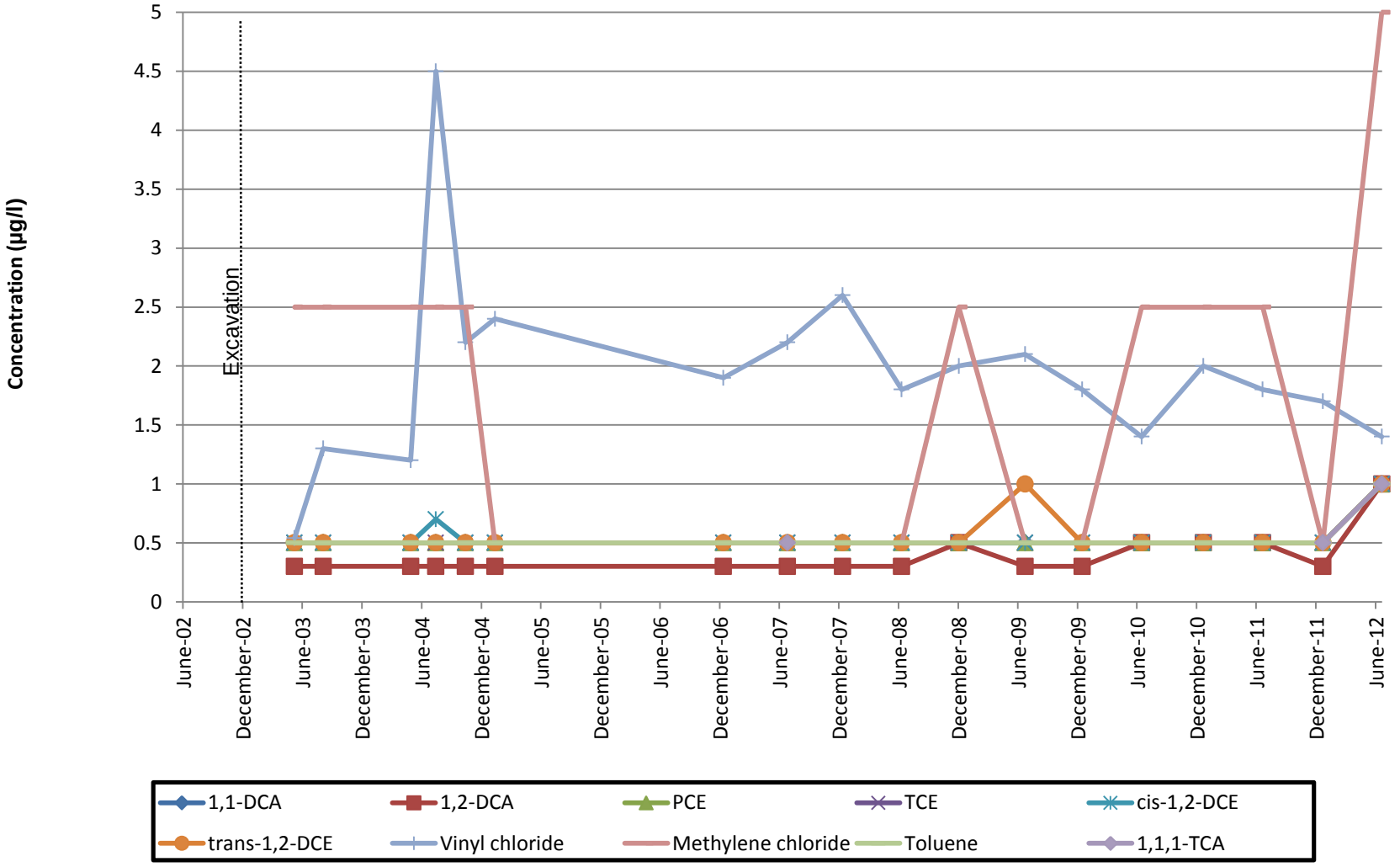

Historical Groundwater Sampling Results
Tri-Cities Barrel Superfund Site
Fenton, New York
MW-2S
Concentration (µg/l)
400
350
300
250
200
150
100
50
0
Excavation
June-94
December-94
June-95
December-95
June-96
December-96
June-97
December-97
June-98
December-98
June-99
December-99
June-00
December-00
June-01
December-01
June-02
December-02
June-03
December-03
June-04
December-04
June-05
December-05
June-06
December-06
June-07
December-07
June-08
December-08
June-09
December-09
June-10
December-10
June-11
December-11
June-12
1,1-DCA
1,2-DCA
PCE
TCE
cis-1,2-DCE
trans-1,2-DCE
Vinyl chloride
Methylene chloride
Toluene
1,1,1-TCA

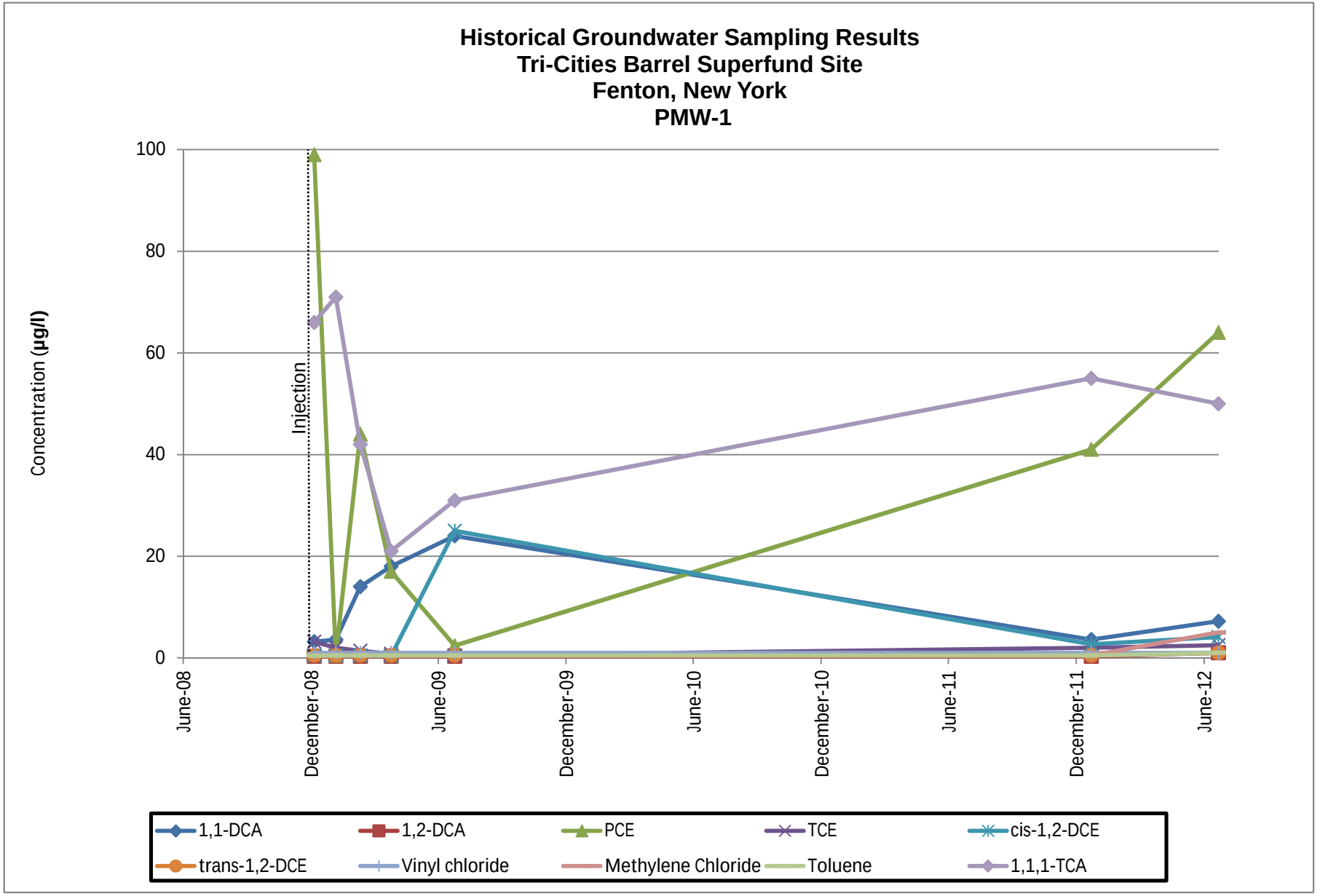

Historical Groundwater Sampling Results
Tri-Cities Barrel Superfund Site
Fenton, New York
MW-3S
Concentration (µg/l)
25,000
20,000
15,000
10,000
5,000
0
Excavation
June-94
December-94
June-95
December-95
June-96
December-96
June-97
December-97
June-98
December-98
June-99
December-99
June-00
December-00
June-01
December-01
June-02
December-02
June-03
December-03
June-04
December-04
June-05
December-05
June-06
December-06
June-07
December-07
June-08
December-08
June-09
December-09
June-10
December-10
June-11
December-11
June-12
1,1-DCA
1,2-DCA
PCE
TCE
cis-1,2-DCE
trans-1,2-DCE
Vinyl chloride
Methylene chloride
Toluene
1,1,1-TCA

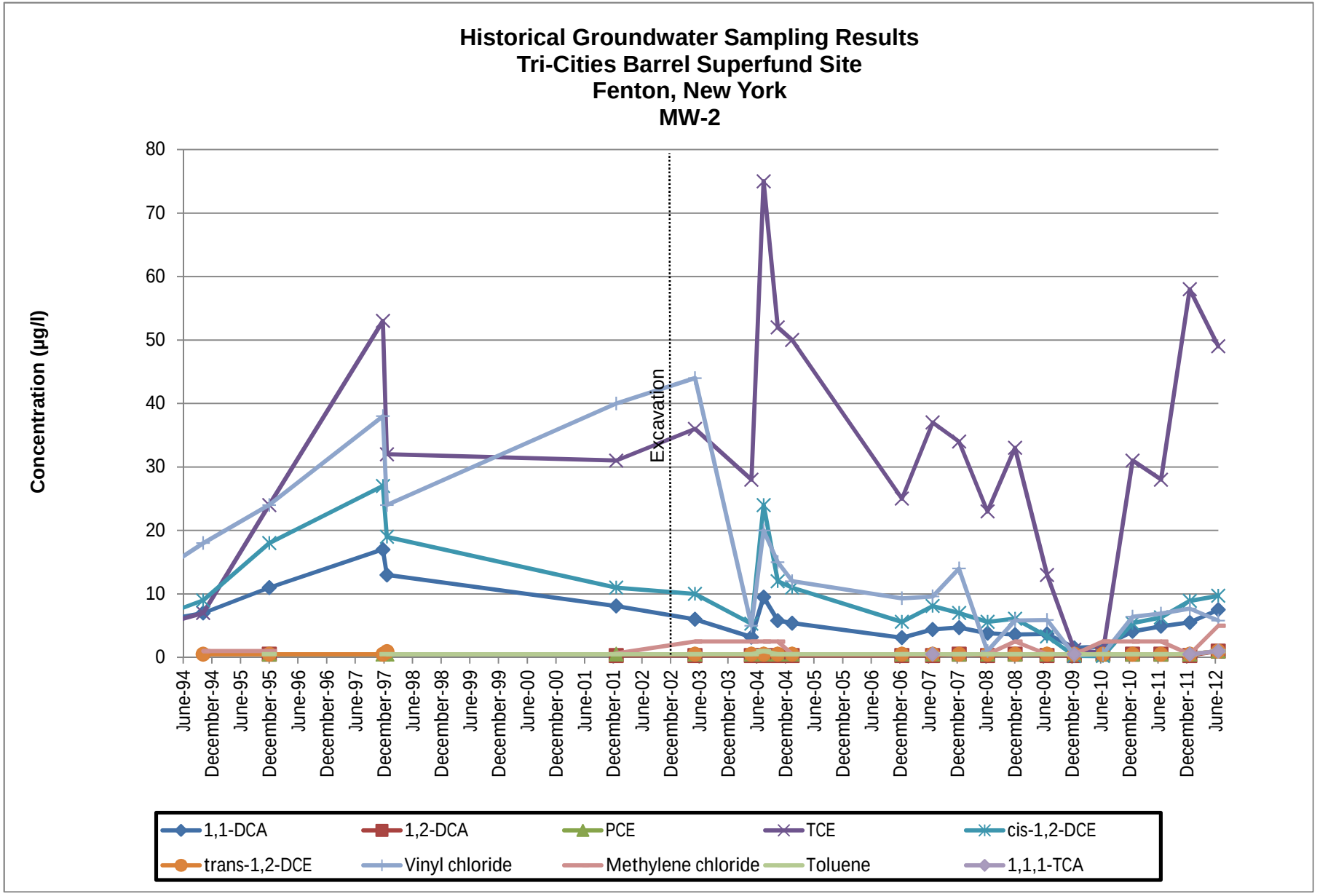

Historical Groundwater Sampling Results
Tri-Cities Barrel Superfund Site
Fenton, New York
MW-16S
Concentration (µg/l)
2,000
1,800
1,600
1,400
1,200
1,000
800
600
400
200
0
Excavation
June-01
December-01
June-02
December-02
June-03
December-03
June-04
December-04
June-05
December-05
June-06
December-06
June-07
December-07
June-08
December-08
June-09
December-09
June-10
December-10
June-11
December-11
June-12
1,1-DCA
1,2-DCA
PCE
TCE
cis-1,2-DCE
trans-1,2-DCE
Vinyl chloride
Methylene chloride
Toluene
1,1,1-TCA

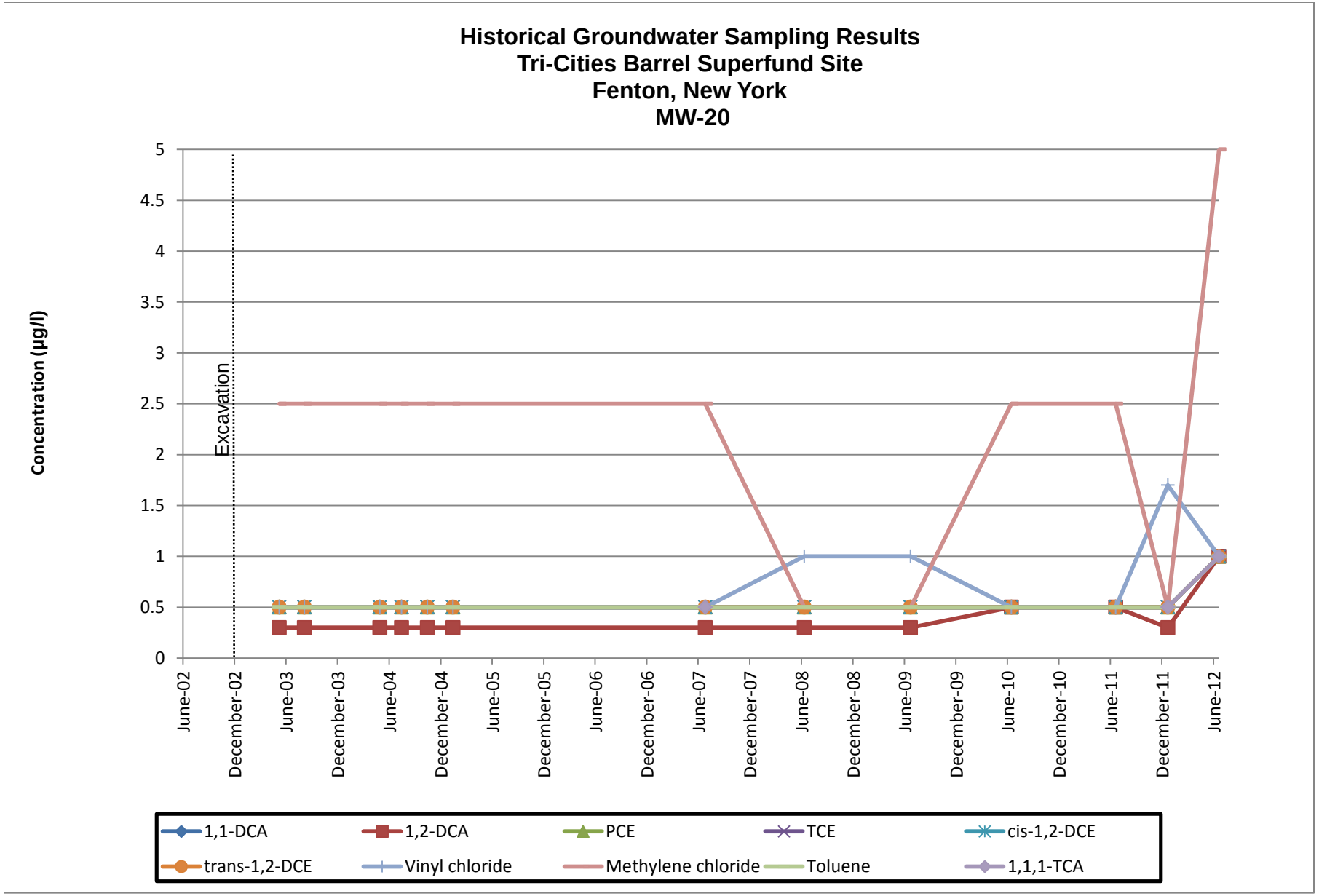

Historical Groundwater Sampling Results
Tri-Cities Barrel Superfund Site
Fenton, New York
MW-19
Concentration (µg/l)
100
80
60
40
20
0
Excavation
Injection
June-01
December-01
June-02
December-02
June-03
December-03
June-04
December-04
June-05
December-05
June-06
December-06
June-07
December-07
June-08
December-08
June-09
December-09
June-10
December-10
June-11
December-11
June-12
1,1-DCA
1,2-DCA
PCE
TCE
cis-1,2-DCE
trans-1,2-DCE
Vinyl chloride
Methylene chloride
Toluene
1,1,1-TCA

Historical Groundwater Sampling Results
Tri-Cities Barrel Superfund Site
Fenton, New York
MW-20S




Historical Groundwater Sampling Results
Tri-Cities Barrel Superfund Site
Fenton, New York
PMW-1
Concentration (µg/l)
100
80
60
40
20
0
Injection
June-08
December-08
June-09
December-09
June-10
December-10
June-11
December-11
June-12
1,1-DCA
1,2-DCA
PCE
TCE
cis-1,2-DCE
trans-1,2-DCE
Vinyl chloride
Methylene Chloride
Toluene
1,1,1-TCA


Historical Groundwater Sampling Results
Tri-Cities Barrel Superfund Site
Fenton, New York
MW-2
Concentration (µg/l)
80
70
60
50
40
30
20
10
0
Excavation
June-94
December-94
June-95
December-95
June-96
December-96
June-97
December-97
June-98
December-98
June-99
December-99
June-00
December-00
June-01
December-01
June-02
December-02
June-03
December-03
June-04
December-04
June-05
December-05
June-06
December-06
June-07
December-07
June-08
December-08
June-09
December-09
June-10
December-10
June-11
December-11
June-12
1,1-DCA
1,2-DCA
PCE
TCE
cis-1,2-DCE
trans-1,2-DCE
Vinyl chloride
Methylene chloride
Toluene
1,1,1-TCA


Historical Groundwater Sampling Results
Tri-Cities Barrel Superfund Site
Fenton, New York
MW-20
Concentration (µg/l)
Excavation
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
June-02
December-02
June-03
December-03
June-04
December-04
June-05
December-05
June-06
December-06
June-07
December-07
June-08
December-08
June-09
December-09
June-10
December-10
June-11
December-11
June-12
1,1-DCA
1,2-DCA
PCE
TCE
cis-1,2-DCE
trans-1,2-DCE
Vinyl chloride
Methylene chloride
Toluene
1,1,1-TCA

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