AECOM Environment

Prepared for:
Superfund Standby Program
NYSDEC
Albany, NY

Prepared by:
AECOM
Chestnut Ridge, NY
60135736
September 2011

Periodic Review Report - 2011
ServAll Laundry Site
Site #1-52-077
Work Assignment No. D004445-14.3

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Engineering Certification

I, Scott A. Underhill, certify that I am currently a NYS registered professional engineer and that this Periodic Review Report for the ServAll Laundry Site (Site Number # 1-52-077) was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).

Respectfully submitted,

AECOM Technical Services Northeast, Inc.

STATE OF NEW YORK ★ SCOTT ANDREW UNDERHILL ★ 075332 LICENSED PROFESSIONAL ENGINEER

Scott Underhill
Registered Professional Engineer
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9/09/2011
Date

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Executive Summary

AECOM Technical Services Northeast, Inc. (AECOM) has prepared this Periodic Review Report (PRR) for the ServAll Laundry Site ("the Site") in Bay Shore, Suffolk County, New York (Figure 1). The ServAll Laundry Site operated as a commercial laundry from 1969 to 1972, and as dry cleaner/laundry from 1972 to 1984. During that time, unknown quantities of wash water overflow containing tetrachloroethene (PCE) and heavy metals were pumped to, and occasionally overflowed from, onsite cesspools.

In 1978 and 1983, Suffolk County Defspartment of Health Services (SCDHS) conducted sampling of cesspools and storm drains resulting in several volatile organic compounds (VOCs) and metal detections and identified a VOC plume. Subsequently, the United States Geological Survey (USGS) drilled and sampled a second series of wells in 1987 to better define the plume profile. A state-funded Remedial Investigation/Feasibility Study (RI/FS) was performed from 1990 through 1991.

A Record of Decision (ROD) was issued for the Site on March 31, 1992. The selected remedy consisted of:

- In-situ soil vapor extraction (SVE) which operated from 1996 to 1998;
- Extraction of groundwater (pump and treat at the source area) and air stripping (or equivalent process) which operated from 1998 to 2001: and,
- Site monitoring, which has been occurring since 1998.

The ROD stated that treatment of the entire plume emanating from the Site was found not to be practical. Determination of the ultimate fate of the untreated portion of the plume was determined by the ROD directed Discharge Study. The Discharge Study (ABB Environmental, December 1995) concluded that aquatic organisms would not likely experience adverse effects from exposure to any of the expected discharge concentrations of contaminants evaluated.

The ROD-specified soil vapor extraction system operated from the spring of 1996 to 1998 and removed approximately 2,800 pounds of PCE from vadose soil. The groundwater pump and treat remedial system with Ultraviolet Light/Oxidation (UV/Oxidation) treatment operated from March 26, 1998 through November 2001 and treated over 127,000,000 gallons of contaminated water during its operation, removing approximately 126 pounds of VOCs in the process. Since the completion of the selected remedy, the ongoing monitoring associated with the remedial program at the Site has included long-term groundwater monitoring and soil vapor monitoring.

The primary contaminants of concern at the Site are VOCs. The average VOC concentration in the groundwater pump and treat system influent was reduced by 96 percent from a high of 552.5 micrograms per liter (µg/L) in August 1998 to 24.6 µg/L in November 2001. Since the conclusion of groundwater extraction system operation, periodic groundwater monitoring has been performed at the

Site. Several currently monitored wells have one or more groundwater constituents (VOCs) with concentrations above their Class GA criteria. Wells with PCE concentrations that continue to exceed the Class GA criterion include MW-6B, MW-11, MW-16, MW-23S and MW-23D. As noted during the May 2011 groundwater sampling event, the highest concentration of PCE was observed at the furthest downgradient monitoring well, MW-23S.

In addition to the ongoing groundwater monitoring program at the Site, a soil vapor intrusion investigation has been ongoing since 2008. Based on the most recently completed soil vapor intrusion investigation (February 2010 sampling event), the presence of PCE and trichloroethene (TCE) in both soil vapor and groundwater samples at monitoring well MW-6B indicates there is a potential for soil vapor to accumulate within on-site structures.

The Site requires additional maintenance and investigation to return to compliance with the requirements as presented in the ROD. The recommendations are:

- Perform a well and piezometer survey; rehabilitate any damaged wells/piezometers or properly abandon any unneeded or badly damaged wells/piezometers.
- Perform additional soil vapor investigations near the ServAll Building to delineate the extent of soil vapor intrusion identified in the 2009 soil vapor sampling.
- Perform additional indoor air sampling of residences downgradient of the Site.
- Install the ROD called for well screened immediately below the Gardiner Clay and upgradient of the Thomas Avenue Suffolk County Water Authority (SCWA) Wellfield.

1.0 Introduction

1.1 Site Overview

AECOM has prepared this PRR for the ServAll Laundry Site (Site # 1-52-077) in Bay Shore, Suffolk County, New York (Figure 1). This work was performed for the New York State Department of Environmental Conservation (NYSDEC) under Work Assignment D00445-14.3 of the AECOM's Superfund Standby Contract. The ServAll Site was reclassified as a Class 4 in 1999 since the property has been properly closed but requires continued site management, including the continuation of groundwater monitoring and tracking of the groundwater plume. The purpose of the PRR is to evaluate the effectiveness of historical remedial actions at achieving the remedial goals specified for the Site in the ROD dated March 1992.

1.2 Remedial History

The Site is located at 8 Drayton Avenue in Bay Shore, New York (Figure 1) in a mixed use industrial/residential area. The ServAll Laundry facility was located on a 20,000 square foot property. The ServAll Uniform Rental, Inc. operated as a commercial laundry from 1969 to 1972, and as dry cleaner/laundry from 1972 to 1984. During this time, unknown quantities of wash water overflow containing PCE and heavy metals were pumped to, and occasionally overflowed from, onsite cesspools.

In 1978 and 1983, SCDHS conducted an on-site sampling of cesspools and storm drains. Results from some of the samples showed detections of PCE, TCE, vinyl chloride (VC), chloroform, methylbenzenes, and a number of target analyte list (TAL) metals. As indicated in the ROD (NYSDEC, 1992), ServAll Uniform cleaned the on-site storm drains and an unknown number of cesspools in 1981 removing sludge and contaminated water. In 1983, SCDHS performed an investigation in which a VOC plume was located southeast of the Site. The plume was found to extend 0.3 miles upgradient from the SCWA Thomas Avenue Wellfield (located 1 mile south of the site). Subsequently, in 1984 the area behind the building was backfilled and paved over. The USGS drilled and sampled a second series of wells in 1987 to better define the ServAll plume profile. The distal end of the plume was estimated at that time to be approximately 100 feet south of the Thomas Avenue Wellfield.

A State-funded RI/FS was completed at the site, in which field work was completed from November 1990 through December 1991. The results of the investigation were documented in the final report dated January 1992 (E.C. Jordan Co.). The RI/FS confirmed the presence of PCE, TCE, 1,2-dichloroethene (DCE),1,1- dichloroethane (DCA), and VC in groundwater; delineated the groundwater plume, and quantified on-site contamination. Target cleanup levels for groundwater were set equal to New York State's groundwater quality standards. Surface soil target cleanup levels were risk-based and developed to protect a site worker exposed by direct contact and incidental ingestion. Subsurface

soil target cleanup levels were developed for PCE. PCE was the only chemical that presents a risk greater than New York State Department of Health's (NYSDOH) target risk level of 10^{-6}.

The plume is located in the upper glacial aquifer, which consists of coarsely stratified, fine to medium sand with trace amounts of gravel, cobbles, coarse sand, and silt. The aquifer ranges in thickness from 120 feet at the site to 86 feet 1.5 miles downgradient of the Site. Groundwater flows to the southeast towards Penataquit Creek, at about 910 feet per year (fpy). The RI concluded that the plume appeared to be moving at approximately 443 to 484 fpy from 1974 to 1988, and 355 fpy since 1988 (E.C. Jordan, January 1992).

A ROD was issued by the NYSDEC for the site on March 31, 1992. The remedy presented in the ROD was in-situ source soil treatment/source area groundwater extraction. This remedy was to consist of the following components:

- Remedial Design Program;
- In-situ soil vapor/vacuum extraction;
- Groundwater extraction (plume source control: at the site and three blocks downgradient), followed by air stripping or ultraviolet/oxidation, and discharge of treated water;
- Monitoring program;
- Discharge Study conducted on the front end of the plume; and
- Institutional controls.

The following compounds were listed in the ROD as contaminants of concern (COCs):

- Surface soil – PCE and TCE
- Subsurface soil – PCE, TCE, 1,1-dichloroethene, toluene and bis(2-ethylhexyl)phthalate
- Groundwater – PCE, TCE, 1,2-dichloroethene (total), 1,1-dichloroethene, 1,1-dichloroethane and vinyl chloride

The ROD listed the cleanup criterion for PCE in soil as 40 mg/kg. The cleanup criteria for the six groundwater COCs were set to the NYS groundwater standards of 5 µg/L, except for vinyl chloride where the target cleanup level is 2 µg/L.

The ROD stated that treatment of the entire plume emanating from the Site was not found to be practical, and therefore the selected remedy would not satisfy the statutory preference for complete treatment as a principal element. Determination of the ultimate fate of the untreated portion of the plume was determined by the ROD-directed discharge study, which was conducted on the leading edge (hydraulically downgradient) of the plume.

A discharge study (ABB, 1995) was conducted to determine the fate of the portion of the groundwater plume that the remedial alternative specified in the ROD did not address. The Discharge Study was completed by ABB Environmental Services (December, 1995). The discharge study concluded that groundwater would migrate approximately 1.3 miles from the site toward Penataquit Creek (the

predicted discharge point was between piezometers PZ-94-19 and PZ-94-14 as shown on Figure 2). The Discharge Study predicted that the plume could potentially reach Penataquit Creek by the year 2000, with maximum concentrations estimated to reach Penataquit Creek in 15 to 20 years. Modeling was done using steady-state conditions (assumed to represent average conditions). Based on the data available at the time of the Discharge Study, discharge of the plume into saltwater estuaries and the Great South Bay was considered unlikely. Additionally, the study concluded that aquatic organisms would not likely experience adverse effects from exposure to any of the expected discharge concentrations of contaminants evaluated.

The ROD specified source removal work consisting of a SVE system. The SVE system was in operation from the spring of 1996 to spring of 1998 and removed approximately 2,800 pounds of PCE from soil on the property. No further information was found regarding the source removal work or the operation of the SVE system. Prior to the ROD being issued, additional source removal work was completed when ServAll Uniform cleaned the on-site storm drains and eight cesspools in 1984 by removing sludge and contaminated water.

The groundwater pump and treat remedial system operated from March 1998 through November 2001. Task management of plant operations was provided by NYSDEC subcontractors under various work assignments. The operation of the remedial system was terminated in November 2001 when NYSDEC determined further operations were not necessary as stated in a letter dated October 18, 2001 from NYSDEC to AECOM (formerly Earth Tech Northeast, Inc.).

The ROD also called for institutional controls (ICs), including property owner notification and a private well survey for properties over the present and projected plume path as well as prohibition of new production wells in the plume area. The ROD also stated that funding for a treatment system for the Thomas Avenue Wellfield is available from the Environmental Quality Bond Act (1986), assuming that monitoring shows the necessity for such installation. No further information was found regarding the necessity for implementation of this institutional control.

The site specific remedial goals as specified in the March 1992 ROD are as follows (NYSDEC, 1992):

- Soil:
    - Reduce the concentration of PCE and TCE so that the presence of these chemicals at the Site do not present an added risk of cancer of more than one in one million under the most conservative exposure scenario.
    - Reduce the concentrations of organic contaminants in soils so that, to the extent feasible, contaminants do not leach from soils and contaminate groundwater to levels above standards.
- Groundwater:
    - Reduce the concentrations of contaminants in groundwater to below NYS groundwater standards, to the extent technically feasible.

In accordance with NYSDEC guidance (DER-10 / Technical Guidance for Site Investigation and Remediation, NYSDEC, May 2010), site closure will be considered, when:

- Monitoring results demonstrate contaminant concentrations along the centerline of the plume have sufficiently decreased,
- The contaminant plume length has been demonstrated to be stable or shrinking; and,
- Contaminant levels in the sentinel wells have not exceeded groundwater cleanup levels at any time during the monitoring program.

1.3 Periodic Review Objectives

The periodic review process is used to determine if a remedy is protective of human health and the environment and whether all applicable operation, maintenance and monitoring (OM&M) activities were conducted in accordance with the Final Site Management Plan (SMP), including Long Term Monitoring (LTM) Plan, Institutional Control/Engineering Control (IC/EC) Plan, Operation and Maintenance (O&M) Plan, and Health and Safety (H&S) Plan. The Site only has a Sampling and Analysis Plan (SAP) and associated Safe Work Plan (Earth Tech, June 2007). The general objectives of the periodic review for sites in the State Superfund Program (SSF) include:

- Evaluation of current compliance with the decision document(s) including the ROD, and the O&M Plan;
- Evaluation of all treatment units and the recommendation for repairs or alterations, if necessary;
- Evaluation of the current overall condition of the remedy;
- Certification, if appropriate, that the intent of ICs continues to be met, that engineering controls (ECs) remain in place, and that the in-place ECs are effective; and
- Evaluation of historic O&M costs to date.

The requirements of the SAP for the Site include:

- Groundwater sample collection from eight monitoring wells (MW-5, MW-6, MW-12, MW-14, MW-18, MW-19, MW-20, and MW-21) on a five quarter basis;
- Inspection of the asphalt cap placed over the former underground storage tanks (USTs) to verify that the engineering control continues to be effective;
- Maintenance of the perimeter fencing and posted environmental warnings to restrict site access; and,
- Additional maintenance activities, as necessary, to maintain site conditions.

The Site currently does not have a Site Management Plan. A plan will be written to guide future activities and long term monitoring at the Site.

2.0 Evaluation of Remedy Performance, Effectiveness and Protectiveness

The groundwater treatment system at the ServAll Site was located at 8 Drayton Avenue and operated from March 1998 through November 2001 and consisted of the following elements:

- A groundwater extraction/recovery well;
- Groundwater treatment and injection system;
- A groundwater injection well; and
- Support systems including monitoring wells and piezometers.

The following paragraphs describe each component in greater detail.

Groundwater Extraction/Recovery Well

The system consisted of one recovery well located southeast of the treatment plant at the intersection of Stein Drive and Walbridge Avenue, which pumped contaminated groundwater to the treatment system. The recovery well constructed of 8-inch diameter stainless steel screen set from 27 feet to 112 feet below ground surface (ft bgs) and contained a submersible pump capable of pumping at a maximum flow rate of 150 gallons per minute (gpm). Detailed equipment information and manufacturer cut sheets are contained in the Operation & Maintenance Manual (O&MM), ServAll Laundry, Ground Water Extraction and Treatment System, Bay Shore, New York (Consumers Applied Technologies and Enviroclean, September 1998). High-density polyethylene pipe was located 5 ft bgs and connected the recovery well to the plant.

The 90 kW Rayox UV/Oxidation system consisted of three separate units connected in series. The system used ultraviolet light and hydrogen peroxide to oxidize organic compounds to end products that did not pose a health hazard. The influent groundwater was pumped into an equalization tank, where pH was lowered to 3 by adding sulfuric acid. Groundwater then passed through the UV/Oxidation system. Following treatment, sodium hydroxide was added in a pH adjustment tank to raise the pH and cause metals to precipitate. This water then went through four sand filters to remove the metals and other particles. The treated water then passed through cartridge filters to further remove solids.

The treated groundwater was then pumped to a 12-inch diameter stainless steel injection well located at the northeast corner of Drayton Avenue and Stein Drive. The injection well was screened from 25 ft to 75 ft bgs. Groundwater was approximately 19 ft bgs at the time of installation.

2.1 Operation Maintenance and Monitoring Plan

The following presents a summary of the Operation Maintenance and Monitoring (OM&M) program developed for the ServAll Laundry Groundwater Extraction and Treatment System. The groundwater treatment system operated from March 1998 through November 2001, at which time the system was shut down. The program was outlined in the Operation Maintenance and Monitoring Manual. The OM&M manual was developed to serve as the primary reference for treatment system monitoring, sampling, record keeping, and equipment maintenance and to serve as the primary health and safety reference. In addition, monthly and quarterly monitoring reports were to be submitted to the NYSDEC as per the OM&M manual directive.

The treatment system operated from March 1998 through November 2001. The system operated until the contaminant plume was determined to be outside the cone of influence of the extraction well and that operation of the facility was determined to be no longer cost effective or significantly beneficial. The system remained idled until 2008 when NYSDEC approved the decommissioning of the treatment system. Most of the equipment was sold at auction including tanks, vessels, carbon units, UV oxidation system, and other equipment. The remaining piping and equipment was dismantled in April 2009 and removed from the Site. The building was left intact.

During the operational period, regular OM&M was conducted on the treatment system and monitoring wells to optimize the performance of the recovery system and to monitor its influence on the aquifer.

Monitoring of the groundwater recovery and treatment system included:

- Measuring water levels in nine piezometers and four monitoring wells to evaluate the effectiveness of the recovery system on the plume.
- Monitoring wells MW-1, MW-3A, MW-3B, MW-6A, MW-6B, MW-7 and the deep ground water monitoring well adjacent to SCWA's Thomas Street Wellfield were sampled on a quarterly basis. Samples were analyzed for VOCs by USEPA Method 524.2 (or USEPA Method 624 if VOC concentrations were greater than 30 mg/L), iron, manganese, total suspended solids (TSS), total solids, and alkalinity.
- Analytical results and monitoring data from the SCWA from its routine monitoring of the Thomas Street Wellfield were summarized in the quarterly groundwater sampling reports.

AECOM obtained data from two groundwater sampling events (January 1999 and July 2000) during the operation of the groundwater extraction system. Quarterly sampling reports were not located and therefore not included in the PRR.

The site currently includes a network of 20 groundwater monitoring wells (note that some wells are damaged or missing, Figure 3). Selected monitoring wells are now used to monitor plume migration and provide one line of evidence necessary to demonstrate the effectiveness of the groundwater remediation (further discussed below).

In addition to the quarterly groundwater monitoring that was completed during the operation of the groundwater extraction system (March 1998 through November 2001), the system was monitored by collecting measurements from the control panel and various gauges, and sending various samples for analyses, including samples from the following system features:

- Raw Influent
- Equalization Tank
- UV/Oxidation System
- pH Adjustment Tank
- Final Effluent
- Sludge Holding Tank
- Sludge Filter Press

The O&M Manual presented frequency of sampling conducted on the system is presented on the table below:

Monitoring Sample Frequency (March 1998 through November 2001)				
Analytical Parameter	On-Site Analysis Prove-Out		Off-Site Analysis Prove-Out	
	Weeks 1 - 12	Weeks 13 - 52	Weeks 1 - 12	Weeks 13 - 52
Influent				
Flow rate - daily average	1 day	1 day		
pH	2 weeks	1 month		
Iron, Manganese			2 weeks	1 month
Alkalinity			2 weeks	1 month
TSS			2 weeks	1 month
VOCs			2 weeks	1 month
Full discharge criteria list				1 year
pH Adjust Tank				
Acid flow rate	1 week	1 week		
pH	1 week	1 week		
UV/Oxidation System				
Peroxide flow rate	2 weeks	1 month		
pH	2 weeks	1 month		
Turbidity	2 weeks	1 month		
pH Adjustment Tank				
Caustic flow rate	2 weeks	1 month		
pH Adjustment Tank	2 weeks	1 month		
Final Effluent				
Flow rate - average daily	1 day	1 day		
pH	2 weeks	1 month		
Iron, Manganese			2 weeks	1 month
Alkalinity			2 weeks	1 month
TSS			2 weeks	1 month
Full discharge criteria list			1 week	1 week

Note:

The monitoring plan for the now-terminated treatment system called for sampling on a monthly basis if discharge limits were not exceeded for six months (26 weeks). If discharge limits were exceeded, then the sampling frequency was to return to weekly until no exceedances were noted for eight consecutive weeks, at which time the sampling frequency returned to monthly.

Frequencies listed represent the duration between sampling events.

2.1.1 OM&M Plan Compliance Report

During the period of the treatment system operation (March 1998 – November 2001), effluent from the groundwater treatment system was typically in compliance with discharge requirements, except for the following constituents (based on the discharge criteria presented in the Compliance Sampling tables in available Monthly Reports and the data presented in the Groundwater Extraction and Treatment System Final Prove-Out Report [ERM, 1998]):

- Iron – 8/13/98 (this exceedance was attributed to problems to the sand filter air scour system); and May, June, July, August 2000.
- Manganese – all samples taken in 1998 except that taken on 7/17/98 (Final Prove-Out Report stated that it was demonstrated that manganese remains in solution and is not removed by the treatment process); February, July, September, October 1999; July 2000; and February, March, April, June, July, August, October, and November 2001.
- pH – August 2000.
- Styrene – June 2000 (styrene was not part of the site permit; however the concentration exceeded the Class GA groundwater standard). Styrene is used in the manufacture of plastics and resins (boat fiberglass) and is not typically found at a site impacted by dry cleaner operations. The presence of styrene may indicate that groundwater contained within the extraction system's radius of influence is impacted by a nearby plastics manufacturer or boat repair facility.
- Tetrahydrofuran (THF) – September 2000 (THF was not part of the site permit; however the concentration exceeded the Class GA groundwater standard).
- TCE – 7/16/98 (this exceedance was attributed to low peroxide dosage on this date).

No rationale for manganese, iron, or pH exceedances was identified, except where noted. On June 17, 1998; August 13, 1998; and May, June, and July 2000 the combined iron and manganese concentrations exceeded the 1,500 micrograms per liter (µg/L) limit. A summary of available compliance sampling data is presented in Table 1.

2.1.2 Confirm Compliance with Monitoring Plan

Activity	Required Frequency (X)	Compliance Dates
	Five Quarter Intervals	
Water Level Gauging	X	June 2006, August 2007, November 2008, February -2010, May 2011
Groundwater Sampling	X	June 2006, August 2007, November 2008, February 2010, May 2011

2.2 Compliance Reporting

As part of monitoring of the recovery systems effectiveness, reporting to the NYSDEC was conducted on a regular basis. An operating summary report for the system was to be submitted monthly detailing the effectiveness of the treatment system operation for each month.

This report included:

- An operating data summary;
- Management data summary;
- Unusual operation and maintenance activities;
- Copies of all analytical reports;
- Copies of all manifests for wastes shipped off-site;
- Major equipment failures; and
- Requirements for capital improvements or maintenance, including budget considerations.

For the quarterly sampling of the monitoring wells, written reports were prepared after each sampling event and submitted to the NYSDEC along with the monthly reports. These reports included a summary of the analytical results and any monitoring data obtained from the SCWA during its routine monitoring of the Thomas Street Wellfield. AECOM was unable to obtain quarterly sampling results (within monthly reports or other), and was therefore unable to evaluate this data as part of this PRR.

2.3 Evaluation of OM&M Activities

During the approximate three-and-a-half year operation period of March 1998 through November 2001, over 127,000,000 gallons of groundwater were processed through the treatment system, based on the available data. The system operated almost continuously during this period, with a few temporary shut-downs due to equipment malfunctions and fouling of the reinjection well. One significant shut down was from November 19, 1998 through January 23, 1999 due to the fouling of the re-injection well. Additionally, from September 29, 2000 through February 8, 2001, the treatment system did not operate due to change in project management. Treatment system flow rates, averaged over approximate one-month intervals, ranged from 7.5 gpm to 211.5 gpm, with an overall average of 92 gpm.

Average total VOC concentrations in the influent are summarized below by year. Overall, the average concentration dropped by approximately 93 percent from 245.7 µg/L in 1998 to 17 µg/L at the end of operations in 2001. Average total effluent concentrations are also presented below. The concentrations in the effluent varied significantly over the period of operation.

Year	Average Influent Total VOCs (µg/L)	Average Effluent Total VOCs (µg/L)
1998	245.7	1.2
1999	119	1.43
2000	144	18.17
2001	17	5

In summary, the recovery system at the Site removed and treated over 127,000,000 gallons of contaminated groundwater during its operation, removing approximately 126 pounds of VOCs in the process. Table 2 presents a summary of System Data. Figure 4 presents a graph of cumulative VOC removal over the operation of the treatment plant. Figure 5 presents a graph of VOCs removed and gallons of groundwater processed through time. Figure 6 presents total VOC influent and effluent concentration trends through time and includes significant plant shut downs.

The system was taken off line in November 2001 after it was determined that the contaminant plume at the site was outside the cone of influence of the extraction well, and that it was not cost effective to keep the system operational.

In 2009, AECOM was contracted to perform the demolition work on the groundwater recovery system. Much of the groundwater pump and treat equipment (holding tanks, treatment vessels, etc.) was sold at auction by NYSDEC. The remaining equipment and piping was dismantled on April 22 and 23, 2009. All remaining treatment system chemicals and other miscellaneous materials were removed in a final lab pack on January 14, 2010 and properly disposed off-site; the ServAll building, which housed the treatment system, was left intact. AECOM prepared a final report documenting the dismantlement activities (AECOM, January 2010).

2.4 Post Treatment Monitoring

Groundwater monitoring continued at the site after the groundwater treatment system was taken offline. No SMP has been developed for the ServAll Laundry site, but several SAPs have been developed as part of the ongoing groundwater monitoring. The most recent SAP was updated by AECOM in June 2007 and details the methodology for groundwater sampling events to be conducted on a five-quarter basis from 2007 through 2012.

In addition to groundwater monitoring, soil vapor monitoring is currently being performed at the Site. An addendum to the SAP (Earth Tech, 2007) was prepared by AECOM in March 2009. The plan calls for additional indoor air sampling at residences in the vicinity of the Site.

These two ongoing monitoring programs are further discussed in the following subsections.

2.4.1 Long Term Groundwater Monitoring Plan

The following subsections discuss the current monitoring program to evaluate continued effectiveness since the discontinuation of remedial program.

2.4.1.1 Water Level Survey

Water level measurements have historically been collected periodically throughout the life of the project, and are currently collected during each groundwater sampling event. Available historical water level elevations are presented on Table 3. A groundwater contour map prepared from the most recent (February 2010) round of groundwater elevation measurements is presented as Figure 7, showing groundwater flow to the south-southeast, similar to that found during previous investigations.

2.4.1.2 Groundwater Sampling

Several groundwater monitoring events have been completed at the site since the shut-down of the treatment system in November 2001. Fifteen monitoring wells have been identified for long term monitoring at the Site: MW-2, MW-3A, MW-3B, MW-4, MW-5, MW-6A, MW-6B, MW-9, MW-11, MW-12, MW-13, MW-14, MW-16, MW-23S, and MW-23D (currently, MW-9 cannot be located and MW-11 has an obstruction that prevents sampling). The current program requires groundwater samples to be analyzed for VOCs (SW-846 Method 8260B) and for TAL metals (Method 7470A and Method 6010B for mercury) unless otherwise noted.

Post system operation groundwater monitoring was completed in June 2006 (12 monitoring wells), April 2007 (confirmation sampling event, 4 monitoring wells), August 2007 (11 monitoring wells), November 2008 (14 monitoring wells), February 2010 (14 monitoring wells including MW-1) and May 2011 (13 monitoring wells). Note that during the April 2007 sampling event that field personnel attempted unsuccessfully to open the extraction well located adjacent to monitoring well MW-7. Data are presented for these sampling events, as well as all available historical data, in Appendix A. Appendix A also presents data graphically for each well (VOCs and TAL Metals). Table 4 presents a summary of detected constituents in groundwater (June 2006 through May 2011). A summary of groundwater exceedances (June 2006 through May 2011) is presented in Figure 8. The next round of groundwater sampling is scheduled for August 2012.

Summary of VOCs

The following is a summary of the five long-term monitoring events (and the April 2007 confirmation event) conducted at the Site since 2006. The five sampling rounds, plus the confirmation event, are summarized on Table 4 and the exceedances are shown on Figure 8.

Of the seven monitoring wells located near the former ServAll building (MW-2, MW-3A, MW-3B, MW-4, MW-5, MW-6A, and MW-6B), VOCs were not detected in monitoring wells MW-3A, MW-3B, and MW-4 during any of the five long-term monitoring sampling events conducted to date at the ServAll Site. One exceedance of benzene was noted in MW-2. PCE was detected during the February 2010 sampling event at MW-6A and during the May 2011 sampling event at MW-2, but at concentrations below the criterion. Toluene was detected above the criterion at MW-5 during the November 2008

and February 2010 sampling events. Shallow monitoring well MW-6B has exhibited consistently high concentrations of PCE, TCE and cis-1,2-dichloroethene.

Three wells (MW-12, MW-13 and MW-14) are located several blocks south of the Site along the Southern State Parkway. VOCs did not exceed criteria in MW-14. PCE exceeded the criteria once in MW-13. PCE exceeded the criterion in MW-12 during four of five sampling rounds with concentrations ranging from an estimated 1.6 µg/L to 60 µg/L.

The four most downgradient wells, MW-11, MW-16, MW-23S and MW-23D had had exceedances of PCE with the highest concentrations noted in MW-23S (500 µg/L to 5,200 µg/L). Exceedance of TCE and cis-1,2-dichloroethene were also noted in these wells.

The following is a summary of those VOCs that exceeded the Class GA criterion during the sampling events conducted since June 2006:

Acetone – Class GA criterion of 50 µg/L

June 2006 – detected in one of 12 wells; no exceedances

April 2007 – not detected in any of the four wells sampled

August 2007 – not detected in any of the 11 wells sampled

November 2008 – detected in one of 14 wells sampled; one exceedance, 170 µg/L in MW-5

February 2010 – not detected in any of the 14 wells sampled

May 2011 – not detected in any of the 13 wells sampled

Benzene – Class GA criterion of 1 µg/L

June 2006 – not detected in any of the 12 wells sampled

April 2007 – not detected in any of the four wells sampled

August 2007 – not detected in any of the 11 wells sampled

November 2008 - detected in one of 14 wells, one exceedance, 1.7 µg/L in MW-2

February 2010 - not detected in any of the 14 wells sampled

May 2011 – not detected in any of the 13 wells sampled

Cis-1,2-dichloroethene – Class GA criterion of 5 µg/L

June 2006 – detected in five of 12 wells sampled; three exceedances, maximum 360 µg/L in MW-23S

April 2007 – detected in two of four wells sampled, two exceedances, maximum of 180 µg/L in MW-23S

August 2007 – detected in four of 11 wells, two exceedances, maximum of 180 µg/L in MW-23S

November 2008 – detected in four of 14 wells sampled, three exceedances, maximum of 140 µg/L in MW-6B

February 2010 - detected in four of 14 wells sampled, three exceedances, maximum of 190 µg/L in MW-6B

May 2011 – detected in five of 13 wells sampled, three exceedances, maximum of 83 µg/L in MW-23S

1,1,1-Trichloroethane – Class GA criterion of 5 µg/L

June 2006 – detected in one of 12 wells, equaled the criterion in MW-16

April 2007 – not detected in any of the four wells sampled

August 2007 – not detected in any of the 11 wells sampled

November 2008 - detected in one of 14 wells, no exceedances

February 2010 – detected in three of 14 wells sampled, no exceedances

May 2011 – detected in one of 13 wells sampled, no exceedances

TCE - Class GA criterion of 5 µg/L

June 2006 - detected in 5 of 12 wells, three exceedances, maximum of 220 µg/L in MW-23S

April 2007 – detected in two of four wells sampled, two exceedances, maximum of 27 µg/L in MW-6B

August 2007 – detected in three of 11 wells sampled, two exceedances, maximum of 99 µg/L in MW-23S

November 2008 - detected in three of 14 wells sampled, two exceedances, maximum of 30 µg/L in MW-6B

February 2010 – detected in four of 14 wells sampled, four exceedances, maximum of 40 µg/L in MW-6B

May 2011 – detected in five of 13 wells sampled, three exceedances, maximum of 46 µg/L in MW-23S

PCE – Class GA criterion of 5 µg/L

June 2006 – detected ion seven of 12 wells sampled, six exceedances, maximum of 5,200 µg/L in MW-23S

April 2007 – detected in one of four wells sampled, one exceedance, maximum of 650 µg/L in MW-6B

August 2007 – detected in seven of 11 wells sampled, four exceedances, maximum of 1,700 µg/L in MW-23S

November 2008 – detected in seven of 14 wells sampled, six exceedances, maximum of 500 µg/L in MW-23S

February 2010 – detected in seven of 14 wells sampled, six exceedances, maximum of 2,000 µg/L in MW-6B

May 2011 – detected in five of 13 wells sampled, four exceedances, maximum of 1,500 µg/L in MW-23S

Toluene – Class GA criterion of 5 µg/L

June 2006 – not detected in any of the 12 wells sampled.

April 2007 – not detected in any of the four wells sampled

August 2007 – not detected in any of the 11 wells sampled

November 2008 – detected in three of 14 wells sampled, two exceedances, maximum of 1,200 µg/L in MW-5

February 2010 – detected in one of 14 wells sampled, one exceedance at 230 µg/L in MW-5

May 2011 – Not detected in any of the 13 wells sampled

1,2-Dichlorobenzene – Class GA criterion of 5 µg/L

June 2006 – detected in one of 12 wells sampled, one exceedance at 9 µg/L in MW-12

April 2007 – not detected in any of the four wells sampled

August 2007 – not detected in any of the 11 wells sampled

November 2008 – not detected in any of the 14 wells sampled

February 2010 – not detected in any of the 14 wells sampled

May 2011 – not detected in any of the 13 wells sampled

2.4.2 Soil Vapor and Indoor Residential Air Samples

In addition to the current groundwater monitoring program at the Site, two soil vapor investigations have been conducted since the shutdown of the groundwater pump and treat system. In January 2008, five soil vapor samples were collected from temporary soil vapor probes were installed adjacent to existing monitoring wells MW-6B, MW-11, MW-12, MW-16, and MW-23S Additionally, groundwater was sampled from each of the existing the five monitoring wells. Based on the levels of PCE and TCE measured in the soil vapor samples, NYSDEC directed the collection of indoor and outdoor air samples and subslab air samples at residences in the vicinity of the Site. Analytical results were compared to the guidance values listed in the NYSDOH Final Guidance for Evaluating Soil Vapor Intrusion (October 2006, and the June 2007 update). The NYSDOH guidance provides evaluation criteria for seven VOCs: carbon tetrachloride, 1,1-dichloroethene, cis-1,2-dichloroethene, 1,1,1-trichloroethane, PCE, TCE and vinyl chloride.

In March 2009, subslab, indoor and outdoor air samples were collected at seven residences who agreed to participate in the sampling (27 properties were contacted), as well as the Site building.

Results from Properties 1, 2 and 5 suggested “no further action required” when compared to the NYSDOH decision matrices (NYSDOH, October 2006). Results from Properties 6 and 7 found concentrations of carbon tetrachloride that prompt “identify the source and reduce exposure”. Properties 3 and 4 warranted further monitoring due to the detected concentration of PCE in the subslab samples. High concentrations of PCE in the subslab sample collected beneath the ServAll Laundry building warrant “mitigation” when compared to the NYSDOH decision matrices.

In February 2010, additional soil vapor intrusion sampling was completed at the site. The residence at Property 4 declined to participate; therefore sampling was only performed at Property 3. Initially, a pre-sampling building survey of the structure located on Property 3 was performed. Based on the findings of this survey, the same subslab and indoor air locations previously sampled were selected. Sampling at this property was conducted on February 24 to February 25, 2010. Based on the analytical results, several VOCs were detected in the indoor air, outdoor air, and subslab vapor samples. Detected VOCs included petroleum-related compounds, ketones, Freons, chlorinated compounds, alcohols and miscellaneous compounds (e.g., ethyl acetate, propene). The VOCs detected in this sampling event were similar to those detected in the previous (March 2009) event. PCE was detected in the subslab sample at a concentration that, when compared to NYSDOH Decision Matrix 2, prompts “No Further Action” or “Identify the Potential Source(s) and Reduce Exposure”. None of the other COPCs were detected in either the indoor air or subslab samples. When compared to NYSDOH Decision Matrices, no further action is suggested for this property.

2.5 IC/EC Certification

The ROD specified ICs as an element of the selected remedial program at the Site. No ECs were specified in the ROD.

The institutional controls, as specified in the ROD, were to consist of the following:

- Property owner notification and private well survey for properties over the present and projected plume path has already begun and will continue. Any homes using private wells for drinking water that are contaminated (approaching or exceeding 10 NYCRR Part 5 Drinking Water Supplies Standards) by the ServAll Laundry Site will be connected to a municipal water supply system;
- New production wells in the plume area would be prohibited; and
- Funding for a treatment system for the Thomas Avenue Wellfield is available from the Environmental Quality Bond Act (1986), if monitoring shows the necessity for such installation.

Determination of compliance with the IC/EC at the site has not been made. No information was able regarding the ROD specified ICs. Certification that the site ICs are in compliance with the requirements stated above cannot be completed. A detailed description of the deficiencies identified at the site and the severity of the deficiencies is included in Section 5.0.

3.0 Evaluate Costs

3.1 SUMMARY OF COSTS

The approximate 2009 costs of OM&M of the ServAll Site are presented in the table below. The scope of activities includes dismantlement of the former groundwater pump and treat system, one round of indoor air sampling (completed 2009), and administration and reporting.

2009 OM&M Costs, ServAll Site

Description	Costs
A. Groundwater Pump and Treat System Dismantlement	
Subcontractor – Analytical Services	$825
Labor -	$13,800
Other Direct Costs	$2,600
Administration and Reporting	$14,000
Subtotal A:	$31,225
B. Indoor Air Sampling (including 7 properties and the ServAll Site)	
Subcontractor – Analytical Services	$4,700
Subcontractor -	$14,500
Other Direct Costs	$1,200
Administration and Reporting	$8,000
Subtotal B:	$28,400
Grand Total (Items A-B):	$59,625

Groundwater sampling is the only program that is currently being completed on an ongoing basis at the site. The cost of completing this program is $25,000.

4.0 Conclusions and Recommendations

The site specific remedial goals as specified in the March 1992 ROD (NYSDEC, 1992) are as follows:

Soil

- Reduce the concentration of PCE and TCE so that the presence of these chemicals at the Site does not present an added risk of cancer of more than one in one million under the most conservative exposure scenario.
- Reduce the concentrations of organic contaminants in soils so that, to the extent feasible, contaminants do not leach from soils and contaminate groundwater to levels above standards.

Groundwater

Reduce the concentrations of contaminants in groundwater to below NYS groundwater standards, to the extent technically feasible.

The selected remedies for the Site included:

- Installation and operation of a soil venting (vapor extraction) system: Several documents state system operated from spring 1996 to 1998. No documentation regarding this item was obtained, and therefore this system cannot be evaluated;
- Installation and operation of a groundwater collection and treatment system at the site. One recovery well was located near the intersection of Walbridge Avenue and Stein Drive and the reinjection well was located near the intersection of Drayton Avenue and Stein Drive. The system operated from March 1998 through November 2001. Operation continued until concentrations indicated that no further benefit was observed; and,
- Discharge Study to evaluate fate of off Site groundwater plume.

Institutional Controls as set forth in the ROD included:

- Property owner notification and private well survey: At the time the ROD was issued property owner notification and private well survey for properties over the present and projected plume path had begun and was in the process of being completed. An Environmental Site Remediation Database Search stated that the SCDHS did a private well survey in the area of the plume. This search stated that those residences with private wells were connected to public water. No further information was available;
- New production wells in the plume area would be prohibited: no documentation available; and,

- Funding for a treatment system for the Thomas Avenue Wellfield is available from the Environmental Quality Bond Act (1986), if monitoring shows the necessity for such installation: no documentation available.

Based on the review of available data associated with the current groundwater well network (including monitoring, extraction and injection wells; and piezometers) the following work items are suggested:

- Continue current groundwater monitoring program;
- During the next scheduled groundwater sampling event (August 2012) perform the required Site Inspection;
- Determine if the known 47 piezometers downgradient from MW-23S are in good condition; if not, repair as needed or install new monitoring wells to aid in the verification of the discharge study findings as further discussed below. A survey of these piezometers was completed during the June 2006 groundwater sampling event. The results of this survey are presented in Table 5.
- Install the ROD-specified well screened immediately below the Gardiner Clay and upgradient of the SCWA Thomas Avenue Wellfield;
- Repair any damaged piezometers and monitoring wells that are determined to be needed for future investigations; and,
- Decommission any un-needed or damaged/unusable piezometers, monitoring wells, and the extraction and injection wells.

Summary of suggested additional investigation work in predicted discharge area (groundwater, surface water, sediment, and potentially affected biota):

- The ecological risk assessment conducted as part of the Plume Discharge Study (ABB, 1995) concluded that adverse effects on aquatic organisms would not likely be observed from exposure to the discharge concentrations of the contaminants studied (exposure to the highest discharge concentrations was predicted to benthic invertebrates); and that there would be no probable significant adverse ecological impact. The predictions, including the potential plume discharge into Penataquit Creek in the year 2000, made in the Plume Discharge Study should be confirmed as accurate, based on current conditions in the suspected discharge area. As stated in the Plume Discharge Study Report, as the plume approaches the predicted area of discharge, additional monitoring wells should be installed to verify model predictions regarding path and estimated concentrations.
- Surface water/sediment samples and biota samples should be collected to prove no significant adverse ecological impact is occurring at the suspected discharge point.

4.1 Summary of Suggested Additional Groundwater Monitoring

Future recommendations for groundwater monitoring for the ServAll Laundry Site are continued monitoring of selected monitoring wells for VOCs and TAL metals. The significant increase in PCE concentration at monitoring wells MW-6B will be re-evaluated during the next sampling event

(anticipated August 2012). Chromium concentrations continue to exceed the criterion in most of the monitoring wells (all except MW-23S and MW-23D). Cadmium concentrations have exceeded the Class GA criterion more frequently in the last two sampling events (relative to the one exceedance in 2007 and no exceedances in 2006).

4.2 Summary of Suggested Additional Soil Vapor Intrusion Monitoring and Investigation Work

The conclusions from the 2009 soil vapor intrusion investigations were:

- No further action was necessary at three of the seven tested properties (at Properties 6 and 7 an effort should be made to identify the potential source(s) of carbon tetrachloride and reduce potential exposure);
- Continued monitoring of the remaining two of seven tested properties (Properties 3 and 4); and
- Mitigation is needed at the ServAll Laundry property.

Continued monitoring of the Property 3 occurred in February 2010. The VOCs detected in the February 2010 sampling event were similar to those detected in the previous (March 2009) event. PCE was detected in the subslab sample at a concentration that, when compared to NYSDOH Decision Matrix 2, prompts “No Further Action” or “Identify the Potential Source(s) and Reduce Exposure”. None of the other VOCs were detected in either the indoor air or subslab samples. When compared to NYSDOH Decision Matrices, no further action is suggested for this property.

NYSDEC should re-contact the owner of Property 4, who declined to participate in the February 2010 monitoring. Further monitoring of this property is warranted based on the 2009 investigation (Earth Tech, 2010b).

At Properties 6 and 7, an effort should be made to identify the potential source(s) of carbon tetrachloride and to reduce potential exposure.

The collection of additional SVI samples is recommended in order to delineate the extent of soil vapor intrusion in the properties surrounding the ServAll Laundry property. Additionally, mitigation and additional monitoring at the ServAll Laundry property is recommended.

5.0 References

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Tables

TABLE 1
SERVALL LAUNDRY SITE (SITE 1-52-077)
COMPLIANCE SAMPLING SUMMARY 1999 - 2001

Influent	Discharge	units	1998 DATA								
Constituents	**Criteria**		3/30/98	4/6/98	6/12/98	6/17/98	6/19/98	6/24/98	6/30/98	7/9/98	7/16/98
Chlorobenzene	5	µg/L	U	U	U	U	U	U	U	U	U
Vinyl Chloride	2	µg/L	U	U	U	U	U	U	U	U	U
1,1-Dichloroethene	5	µg/L	U	U	U	U	U	U	U	U	U
Trichloroethene	5	µg/L	1	1.5	0.6	1.4	1.5	1.4	1.3	1.7	1.4
Tetrachloroethene	5	µg/L	7	40	2.2	25	44	80	150	290	260
1,1-Dichloroethane	5	µg/L	U	U	U	U	U	U	U	U	U
Toluene	5	µg/L	U	U	U	U	U	U	U	U	U
cis-1,2-Dichloroethene	5	µg/L	U	1	U	U	0.6	U	U	U	U
trans-1,2-Dichloroethene	5	µg/L	U	U	U	U	U	U	U	U	U
Methylene Chloride	N/A	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	N/A	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	N/A	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	N/A	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	N/A	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrahydrofuran	N/A	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Tert-Butyl Ether	N/A	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	N/A	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	N/A	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total VOCs	**N/A**	**ug/L**	**8**	**42.5**	**2.8**	**26.4**	**46.1**	**81.4**	**151.3**	**291.7**	**261.4**
pH	5.5-8.5	S.U.	5.95	5.91	6.3	5.9	5.7	5.7	5.9	5.9	5.9
Iron (total)	1,000[4]	µg/L	190	980	670	1100	1100	1200	1700	1800	1500
Iron (filtered)		µg/L	*	*	320	1100	1000	790	1000	1000	1300
Manganese (total)	1,000[4]	µg/L	730	1000	970	1100	1100	1100	1100	1200	1000
Alkalinity	N/A	mg/L	24	26	20	20	24	22	24	20	22
Total Suspended Solids	N/A	mg/L	U	U	*	3	U	U	U	U	U
Total Solids	N/A	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Effluent	**Discharge**	**units**	**1998 DATA**								
Constituents	**Criteria**		3/30/98	4/6/98	6/12/98	6/17/98	6/19/98	6/24/09	6/30/98	7/9/98	7/16/98
Chlorobenzene	5	µg/L	U	U	U	U	U	U	U	U	U
Vinyl Chloride	2	µg/L	U	U	U	U	U	U	U	U	U
1,1-Dichloroethene	5	µg/L	U	U	U	U	U	U	U	U	U
Trichloroethene	5	µg/L	U	U	U	U	U	U	U	U	U
Tetrachloroethene	5	µg/L	U	U	U	U	0.5	1.9	2.9	0.9	23
1,1-Dichloroethane	5	µg/L	U	U	U	U	U	U	U	U	U
Styrene	5 (POC)	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	5	µg/L	U	U	U	U	U	U	U	U	U
cis-1,2-Dichloroethene	5	µg/L	U	U	U	U	0.6	U	U	U	U
trans-1,2-Dichloroethene	5	µg/L	U	U	U	U	U	U	U	U	U
Methylene Chloride	N/A	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	N/A	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	N/A	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrahydrofuran	50	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	N/A	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	N/A	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	N/A	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	N/A	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iodomethane	N/A	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	N/A	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Tert-Butyl Ether	N/A	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total VOCs	**N/A**	**ug/L**	**0**	**0**	**0**	**0**	**1.1**	**1.9**	**2.9**	**0.9**	**23**
pH	5.5-8.5		7.06	6.97	6.1	5.7	5.8	5.7	6.8	5.7	5.8
Iron (total)	1,000[4]	µg/L	100	450	80	60	U	40	60	140	140
Iron (filtered)		µg/L	*	*	U	U	U	U	U	U	U
Manganese (total)	1,000[4]	µg/L	**660**	**870**	**910**	**1700**	**1000**	**1100**	**1000**	**1200**	**1100**
Alkalinity	N/A	mg/L	24	26	20	20	24	16	14	12	10
Total Suspended Solids	N/A	mg/L	U	U	*	U	U	U	U	U	U
Total Solids	N/A	mg/L	*	*	*	*	*	*	*	*	*

NOTES:

1 Analytical data analyzed by STL Laboratories.
2 (U) Undetected.
3 (J) Estimate value. Result is below sample practical quantitation limit, but above the instrument detection limit.
4 The combined effluent concentration of Iron and Manganese will not exceed 1,500 ug/L.
5 N/A - No limit established for this site.
6 (E) Estimate value.
7 NA - Not Analyzed
8 "-" indicates not performed.
9 Bold values exceed discharge limits.
10 (P) pesticide/Aroclor target analyte. Greater than 25% difference between the two GC columns
11 Concentration between EPA contract detection limit and instrument detect limit.
12 POC = principal organic contaminant
13 LE - lab error or contamination likely
14 Values highlighted in green were left out when calculating the overall contaminant reduction efficiency. See Monthly Reports for specific explanations.
* no information available

TABLE 1
SERVALL LAUNDRY SITE (SITE 1-52-077)
COMPLIANCE SAMPLING SUMMARY 1999 - 2001

Influent	Discharge	units	1998 DATA								
Constituents	**Criteria**		7/17/98	8/4/98	8/13/98	9/3/98	9/11/98	9/16/98	9/23/98	9/30/98	10/8/98
Chlorobenzene	5	µg/L	NA	U	U	U	U	U	U	U	U
Vinyl Chloride	2	µg/L	U	U	U	U	U	U	U	U	U
1,1-Dichloroethene	5	µg/L	NA	U	U	U	U	U	U	U	U
Trichloroethene	5	µg/L	2	1.5	1.9	1.8	2	1.8	1.6	2	1.8
Tetrachloroethene	5	µg/L	250	270	550	380	500	470	210	450	380
1,1-Dichloroethane	5	µg/L	NA	U	U	U	U	U	U	U	U
Toluene	5	µg/L	NA	U	U	U	U	U	U	U	U
cis-1,2-Dichloroethene	5	µg/L	U	0.7	0.6	1	1.2	1.3	1.4	1.6	1.5
trans-1,2-Dichloroethene	5	µg/L	U	U	U	U	U	U	U	U	U
Methylene Chloride	N/A	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	N/A	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	N/A	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	N/A	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	N/A	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrahydrofuran	N/A	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Tert-Butyl Ether	N/A	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	N/A	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	N/A	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total VOCs	**N/A**	**ug/L**	**252**	**272.2**	**552.5**	**382.8**	**503.2**	**473.1**	**213**	**453.6**	**383.3**
pH	5.5-8.5	S.U.	*	5.8	5.5	6	5.8	5.8	6.1	5.7	5.9
Iron (total)	1,000[4]	µg/L	*	1500	1700	1400	1200	1400	1200	1100	900
Iron (filtered)		µg/L	*	1300	580	1000	850	900	1000	590	U
Manganese (total)	1,000[4]	µg/L	*	960	820	850	780	740	690	730	670
Alkalinity	N/A	mg/L	*	24	20	18	20	20	18	18	18
Total Suspended Solids	N/A	mg/L	*	U	U	U	U	U	U	U	U
Total Solids	N/A	mg/L	*	*	*	*	NA	NA	NA	NA	NA
Effluent	**Discharge**	**units**	**1998 DATA**								
Constituents	**Criteria**		7/17/98	8/4/98	8/13/98	9/3/98	9/11/98	9/16/98	9/23/98	9/30/98	10/8/98
Chlorobenzene	5	µg/L	NA	U	U	U	U	U	U	U	U
Vinyl Chloride	2	µg/L	U	U	U	U	U	U	U	U	U
1,1-Dichloroethene	5	µg/L	NA	U	U	U	U	U	U	U	U
Trichloroethene	5	µg/L	U	U	U	U	U	U	U	U	U
Tetrachloroethene	5	µg/L	1	U	1.3	U	1.1	1	0.6	1.2	0.6
1,1-Dichloroethane	5	µg/L	NA	U	U	U	U	U	U	U	U
Styrene	5 (POC)	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	5	µg/L	NA	U	U	U	U	U	U	U	U
cis-1,2-Dichloroethene	5	µg/L	U	U	U	U	U	U	U	U	U
trans-1,2-Dichloroethene	5	µg/L	U	U	U	U	U	U	U	U	U
Methylene Chloride	N/A	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	N/A	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	N/A	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrahydrofuran	50	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	N/A	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	N/A	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	N/A	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	N/A	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iodomethane	N/A	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	N/A	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Tert-Butyl Ether	N/A	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total VOCs	**N/A**	**ug/L**	**1**	**0**	**1.3**	**0**	**1.1**	**1**	**0.6**	**1.2**	**0.6**
pH	5.5-8.5		*	5.5	5.6	6	6	5.9	*	5.8	6
Iron (total)	1,000[4]	µg/L	*	170	**2400**	190	50	110	50	150	60
Iron (filtered)		µg/L	*	U	U	20	U	U	U	U	U
Manganese (total)	1,000[4]	µg/L	*	**970**	**790**	**840**	**790**	**740**	**720**	**720**	**660**
Alkalinity	N/A	mg/L	*	8	18	18	18	20	*	18	18
Total Suspended Solids	N/A	mg/L	*	U	7	U	U	U	*	U	U
Total Solids	N/A	mg/L	*	*	*	*	NA	NA	*	NA	NA

NOTES:

1 Analytical data analyzed by STL Laboratories.
2 (U) Undetected.
3 (J) Estimate value. Result is below sample practical quantitation limit, but above the instrument detection limit.
4 The combined effluent concentration of Iron and Manganese will not exceed 1,500 ug/L.
5 N/A - No limit established for this site.
6 (E) Estimate value.
7 NA - Not Analyzed
8 "-" indicates not performed.
9 Bold values exceed discharge limits.
10 (P) pesticide/Aroclor target analyte. Greater than 25% difference between the two GC columns
11 Concentration between EPA contract detection limit and instrument detect limit.
12 POC = principal organic contaminant
13 LE - lab error or contamination likely
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* no information available

TABLE 1
SERVALL LAUNDRY SITE (SITE 1-52-077)
COMPLIANCE SAMPLING SUMMARY 1999 - 2001

Influent Constituents	Discharge Criteria	units	1999 DATA											
			JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
Chlorobenzene	5	µg/L	No sample collected - plant shut down November 19, 1998 to January 23, 1999.	U	U	U	U	U	U	No sample collected	U	U	U	U
Vinyl Chloride	2	µg/L		U	U	U	U	U	U		U	U	U	U
1,1-Dichloroethene	5	µg/L		U	U	U	U	U	0.2 J		U	U	U	U
Trichloroethene	5	µg/L		1.2	1.9	5.6	3.0 JD	1.3 J	1.3 JD		0.9	1	1.2	1.2
Tetrachloroethene	5	µg/L		17	140 E	350	260 D	110 B	65 D		19	32 E	44 E	65 D
1,1-Dichloroethane	5	µg/L		U	U	U	U	U	0.2 J		U	U	U	U
Toluene	5	µg/L		U	U	U	4.6 JDB	1 J	U		U	U	U	U
cis-1,2-Dichloroethene	5	µg/L		0.6	1.7	U	U	0.6 J	0.3 J		U	0.3 J	0.4 J	0.6
trans-1,2-Dichloroethene	5	µg/L		U	U	U	U	U	U		U	U	U	U
Methylene Chloride	N/A	µg/L		U	U	12 B	4.5 JD	1.3 JB	1.2 JD		U	U	U	U
1,1,1-Trichloroethane	N/A	µg/L		0.7	0.5	U	U	0.6 J	0.7 JD		0.6	0.6	0.5	0.5
Chloroform	N/A	µg/L		U	U	2.3 J	U	U	0.9 JD		U	U	U	U
Bromodichloromethane	N/A	µg/L		U	U	3.8 J	U	U	U		U	U	U	U
Trichlorofluoromethane	N/A	µg/L		U	U	U	U	U	0.1 J		U	U	U	U
Tetrahydrofuran	N/A	µg/L		*	*	*	*	*	*		*	*	*	*
Methyl Tert-Butyl Ether	N/A	µg/L		*	*	5.7 J	3.2 JD	U	3.6 D		5	5.2	5.5	6.6
Acetone	N/A	µg/L		*	*	*	*	*	*		*	*	*	*
Naphthalene	N/A	µg/L		*	*	*	*	*	*		*	*	*	*
Total VOCs	**N/A**	**ug/L**		**19.5**	**144.1**	**379.4**	**275.3**	**114.8**	**73.5**		**25.5**	**39.1**	**51.6**	**73.9**
pH	5.5-8.5	S.U.		*	*	*	*	*	*		*	*	*	*
Iron (total)	1,000[4]	µg/L		574	420	564	385	236	321		172	979	716	248 P
Iron (filtered)		µg/L		*	*	*	*	*	*		*	*	*	*
Manganese (total)	1,000[4]	µg/L		629	565	496	517	492	719		630	622	521	548 P
Alkalinity	N/A	mg/L		20	15.5	14	18	22	19		22	7.4	12	42
Total Suspended Solids	N/A	mg/L		10	10	10 U	10 U	10 U	10 U		10 U	10 U	10 U	10 U
Total Solids	N/A	mg/L		64	144	86	183	142	142		154	164	129	155

Effluent Constituents	Discharge Criteria	units	1999 DATA											
			JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
Chlorobenzene	5	µg/L	No sample collected - plant shut down November 19, 1998 to January 23, 1999.	U	U	U	U	*	U	No sample collected	U	U	U	U
Vinyl Chloride	2	µg/L		U	U	U	U	*	U		U	U	U	U
1,1-Dichloroethene	5	µg/L		U	U	U	U	*	U		U	U	U	U
Trichloroethene	5	µg/L		U	U	0.4 J	U	*	U		U	U	U	U
Tetrachloroethene	5	µg/L		U	1	1.2	0.9	0.1 J	U		0.3 J	0.3 J	0.6	0.2 J
1,1-Dichloroethane	5	µg/L		U	U	U	U	0.1 J	0.1 J		U	U	U	U
Styrene	5 (POC)	µg/L		*	*	*	*	*	*		*	*	*	*
Toluene	5	µg/L		U	U	0.1 J	U	*	U		U	U	U	U
cis-1,2-Dichloroethene	5	µg/L		U	U	U	U	*	U		U	U	U	U
trans-1,2-Dichloroethene	5	µg/L		U	U	U	U	*	U		U	U	U	U
Methylene Chloride	N/A	µg/L		U	U	U	U	*	U		U	U	U	U
1,1,1-Trichloroethane	N/A	µg/L		0.4 J	0.4 J	U	0.3 J	0.4 J	0.5		0.2 J	0.3 J	0.3 J	0.3 J
Chloroform	N/A	µg/L		1.2	1.3	0.1 J	0.6 B	0.5 J	0.2 J		U	U	U	0.2 J
Tetrahydrofuran	50	µg/L		*	*	*	*	*	*		*	*	*	*
Acetone	N/A	µg/L		0.7	0.8	U	U	0.3 J	U		U	U	U	U
2-Butanone	N/A	µg/L		*	*	*	*	*	*		*	*	*	*
Chloromethane	N/A	µg/L		*	*	*	*	*	*		*	*	*	*
Bromomethane	N/A	µg/L		*	*	*	*	*	*		*	*	*	*
Iodomethane	N/A	µg/L		*	*	*	*	*	*		*	*	*	*
Bromodichloromethane	N/A	µg/L		*	*	*	*	*	*		*	*	*	*
Methyl Tert-Butyl Ether	N/A	µg/L		U	U	U	U	*	U		U	U	U	U
Total VOCs	**N/A**	**ug/L**		**2.3**	**3.5**	**1.8**	**1.8**	**1.4**	**0.8**		**0.5**	**0.6**	**0.9**	**0.7**
pH	5.5-8.5			*	*	*	*	*	*		*	*	*	*
Iron (total)	1,000[4]	µg/L		134	60.4	50	50 U	199 P	100		130	35	35	35 U
Iron (filtered)		µg/L												
Manganese (total)	1,000[4]	µg/L		**612**	569	490	542	507 P	**710**		**660**	**613**	519	524
Alkalinity	N/A	mg/L		21	17	17	16.5	21	18.5		24	30	2 U	6
Total Suspended Solids	N/A	mg/L		10	10	10 U	10 U	10 U	10 U		10 U	10 U	10 U	10 U
Total Solids	N/A	mg/L		48	156	90	186	154	160		126	157	138	205

NOTES:

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3 (J) Estimate value. Result is below sample practical quantitation limit, but above the instrument detection limit.
4 The combined effluent concentration of Iron and Manganese will not exceed 1,500 ug/L.
5 N/A - No limit established for this site.
6 (E) Estimate value.
7 NA - Not Analyzed
8 "-" indicates not performed.
9 Bold values exceed discharge limits.
10 (P) pesticide/Aroclor target analyte. Greater than 25% difference between the two GC columns
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* no information available

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SERVALL LAUNDRY SITE (SITE 1-52-077)
COMPLIANCE SAMPLING SUMMARY 1999 - 2001

Influent	Discharge	units	2000 DATA											
Constituents	**Criteria**		JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
Chlorobenzene	5	µg/L	U	*	U	U	U	*	U	U	U	**No sample collected - plant shut down due to change in project management from September 29, 2000 until February 8, 2001.**	**No sample collected - plant shut down due to change in project management from September 29, 2000 until February 8, 2001.**	**No sample collected - plant shut down due to change in project management from September 29, 2000 until February 8, 2001.**
Vinyl Chloride	2	µg/L	U	*	U	U	U	*	U	U	U			
1,1-Dichloroethene	5	µg/L	0.1 J	*	U	U	U	*	U	U	U			
Trichloroethene	5	µg/L	1	1	1	1.1	0.8	*	0.94	U	U			
Tetrachloroethene	5	µg/L	54 E	87	140 E	130 E	47 E	14	22	1.2	U			
1,1-Dichloroethane	5	µg/L	0.2 J	*	U	U	U	*	U	U	U			
Toluene	5	µg/L	U	0.5	U	U	U	0.34 JD	U	U	U			
cis-1,2-Dichloroethene	5	µg/L	0.3 J	0.6	0.8	0.6	0.3 J	7.5	1.7	U	21			
trans-1,2-Dichloroethene	5	µg/L	U	*	U	U	U	*	U	U	U			
Methylene Chloride	N/A	µg/L	U	1.6 JD	U	2.6 JDB	0.4 JB	13 DB	0.43	0.36 JB	1.2 JDB			
1,1,1-Trichloroethane	N/A	µg/L	0.5	*	U	0.4 J	0.4 J	*	0.32 JB	U	U			
Chloroform	N/A	µg/L	0.2 J	0.2	U	1.9 JDB	6.4	5.2	U	1.9	0.47 JD			
Bromodichloromethane	N/A	µg/L	U	*	U	U	0.38 J	*	U	U	0.42 JD			
Trichlorofluoromethane	N/A	µg/L	U	*	U	U	0.1 J	*	U	U	U			
Tetrahydrofuran	N/A	µg/L	*	*	*	*	73	310 E	16 J	100 J	180 D			
Methyl Tert-Butyl Ether	N/A	µg/L	7.6	9.4	8.8	8.8 J	3.1 J	0.89 J	1.5 JB	1 JB	1.1 JD			
Acetone	N/A	µg/L	*	*	*	*	*	*	*	*	*			
Naphthalene	N/A	µg/L	*	*	*	*	*	*	*	*	*			
Total VOCs	**N/A**	**ug/L**	**63.9**	**100.3**	**150.6**	**145.45**	**131.82**	**350.93**	**42.89**	**104.46**	**204.19**			
pH	5.5-8.5	S.U.	*	*	*	*	*	*	6.38	7.18	6.66			
Iron (total)	1,000[4]	µg/L	1270	308	689	426	1430	6320	444	583	25700			
Iron (filtered)		µg/L	*	*	*	*	*	*	*	*	*			
Manganese (total)	1,000[4]	µg/L	593	542	517	499	864	2900	992	514	682			
Alkalinity	N/A	mg/L	27	29	16	15	89	44.2	25	119	72			
Total Suspended Solids	N/A	mg/L	10 U	10 U	10 U	5 U	6	7	5 U	5 U	16			
Total Solids	N/A	mg/L	159	162	145	156	261	344	138	283	165			

Effluent	Discharge	units	2000 DATA											
Constituents	**Criteria**		JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
Chlorobenzene	5	µg/L	U	*	U	U	U	*	U	U	U	**No sample collected - plant shut down due to change in project management from September 29, 2000 until February 8, 2001.**	**No sample collected - plant shut down due to change in project management from September 29, 2000 until February 8, 2001.**	**No sample collected - plant shut down due to change in project management from September 29, 2000 until February 8, 2001.**
Vinyl Chloride	2	µg/L	U	*	U	U	U	*	U	U	0.28 J			
1,1-Dichloroethene	5	µg/L	U	*	U	U	U	*	U	U	U			
Trichloroethene	5	µg/L	U	*	U	U	U	*	U	U	0.69			
Tetrachloroethene	5	µg/L	0.7	1.4	4.2	2.4	2.2	0.98	1.7	0.38	1.8			
1,1-Dichloroethane	5	µg/L	U	*	U	U	U	*	U	U	U			
Styrene	5 (POC)	µg/L	*	*	*	*	*	5.5 DB	U	U	U			
Toluene	5	µg/L	U	0.2 JB	U	U	U	*	U	U	U			
cis-1,2-Dichloroethene	5	µg/L	U	*	U	U	U	*	U	U	2.4			
trans-1,2-Dichloroethene	5	µg/L	U	*	U	U	U	*	U	U	U			
Methylene Chloride	N/A	µg/L	U	*	U	0.2 JB	0.38 JB	7.6LE DB	U	0.87 JB	0.29			
1,1,1-Trichloroethane	N/A	µg/L	0.3 J	*	U	U	U	*	U	U	U			
Chloroform	N/A	µg/L	0.3 J	*	0.7 B	0.1 JB	0.84	0.45 J	0.15 J	1.9	0.53			
Tetrahydrofuran	50	µg/L	*	*	*	*	*	18 J	2.9 J	6.6 J	100			
Acetone	N/A	µg/L	*	*	*	*	*	100LE	NA	NA	U			
2-Butanone	N/A	µg/L	*	*	*	*	*	49LE DB	NA	NA	U			
Chloromethane	N/A	µg/L	*	*	*	*	*	*	*	*	*			
Bromomethane	N/A	µg/L	*	*	*	*	*	*	*	*	*			
Iodomethane	N/A	µg/L	*	*	*	*	*	*	*	*	*			
Bromodichloromethane	N/A	µg/L	0.2 J	*	0.4 J	U	U	*	U	U	U			
Methyl Tert-Butyl Ether	N/A	µg/L	U	0.4	0.8	0.5 J	0.55 J	0.23 J	0.82 JB	0.3 JB	U			
Total VOCs	**N/A**	**ug/L**	**1.5**	**2**	**6.1**	**3.22**	**3.97**	**25.16**	**5.57**	**10.05**	**105.99**			
pH	5.5-8.5		*	*	*	*	*	*	5.91	**11.65**	6.79			
Iron (total)	1,000[4]	µg/L	100	32	32 U	75.5 B	**3010**	**1780**	**732**	**1400**	84.5			
Iron (filtered)		µg/L												
Manganese (total)	1,000[4]	µg/L	583	533	492	506	417	16.6	**841**	399	439			
Alkalinity	N/A	mg/L	2 U	38	41	43	25.8	2100	22	668	25			
Total Suspended Solids	N/A	mg/L	10 U	10 U	10 U	5 U	5 U	43	5 U	20	5			
Total Solids	N/A	mg/L	170	171	163	183	168	2420	142	909	83			

NOTES:

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2 (U) Undetected.
3 (J) Estimate value. Result is below sample practical quantitation limit, but above the instrument detection limit.
4 The combined effluent concentration of Iron and Manganese will not exceed 1,500 ug/L.
5 N/A - No limit established for this site.
6 (E) Estimate value.
7 NA - Not Analyzed
8 "-" indicates not performed.
9 Bold values exceed discharge limits.
10 (P) pesticide/Aroclor target analyte. Greater than 25% difference between the two GC columns
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* no information available

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Influent Constituents	Discharge Criteria	units	2001 DATA											
			JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
Chlorobenzene	5	µg/L	No sample collected - plant shut down due to change in project management from September 29, 2000 until February 8, 2001.	U	U	U	No sample collected - system was shut down for the majority of the month.	U	U	U	U	U	U	No sample collected
Vinyl Chloride	2	µg/L		U	U	U		U	U	U	U	U	U	
1,1-Dichloroethene	5	µg/L		U	U	U		U	U	U	U	U	U	
Trichloroethene	5	µg/L		0.8	0.76	0.75		0.83	0.8	0.7	0.7	0.93	0.9	
Tetrachloroethene	5	µg/L		5.1	11	15		5.7	2.5	11	13	23	19	
1,1-Dichloroethane	5	µg/L		U	U	U		U	U	U	U	U	U	
Toluene	5	µg/L		U	U	U		U	U	U	U	U	U	
cis-1,2-Dichloroethene	5	µg/L		U	U	0.4 J		U	U	0.23 J	0.54	0.76	0.7	
trans-1,2-Dichloroethene	5	µg/L		U	U	U		U	U	U	U	U	U	
Methylene Chloride	N/A	µg/L		0.22 JB	0.43 JB	0.71 JB		0.26 JB	0.41 JB	U	0.11	U	U	
1,1,1-Trichloroethane	N/A	µg/L		0.38 J	U	0.26 J		U	0.41 J	0.37 J	0.31	0.25	U	
Chloroform	N/A	µg/L		U	U	U		0.16 J	0.14 J	0.22 J	0.13	U	U	
Bromodichloromethane	N/A	µg/L		U	U	U		U	U	U	U	U	U	
Trichlorofluoromethane	N/A	µg/L		U	U	U		U	U	U	U	U	U	
Tetrahydrofuran	N/A	µg/L		U	U	U		U	U	U	U	U	U	
Methyl Tert-Butyl Ether	N/A	µg/L		1.6 JB	2.6 J	5 J		4 J	2.9 J	4.2 J	4.9	4.7	4 J	
Acetone	N/A	µg/L		U	U	U		U	U	U	U	9	U	
Naphthalene	N/A	µg/L		*	*	0.31 J		U	U	U	U	U	U	
Total VOCs	**N/A**	**ug/L**		**8.10**	**14.79**	**22.43**		**10.95**	**7.16**	**16.72**	**19.69**	**38.64**	**24.60**	
pH	5.5-8.5	S.U.		6.2	5.8	5.85		6.54	6.2	6.18	5.95	6.15	6.1	
Iron (total)	1,000[4]	µg/L		U	210	240		U	189	308	317	332	U	
Iron (filtered)		µg/L		*	*	*		*	*	*	*	*	*	
Manganese (total)	1,000[4]	µg/L		756	874	815		862	780	609	595	669	674	
Alkalinity	N/A	mg/L		20	23.5	24		21	23	25	26	29	28	
Total Suspended Solids	N/A	mg/L		U	U	U		U	U	U	U	U	U	
Total Solids	N/A	mg/L		114	117	3360		141	134	173	181	178	160	

Effluent Constituents	Discharge Criteria	units	2001 DATA											
			JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
Chlorobenzene	5	µg/L	No sample collected - plant shut down due to change in project management from September 29, 2000 until February 8, 2001.	U	U	U	No sample collected - system was shut down for the majority of the month.	U	U	U	U	U	U	No sample collected
Vinyl Chloride	2	µg/L		U	U	U		U	U	U	U	U	U	
1,1-Dichloroethene	5	µg/L		U	U	U		U	U	U	U	U	U	
Trichloroethene	5	µg/L		U	U	U		U	0.12 J	U	U	U	U	
Tetrachloroethene	5	µg/L		0.9	0.29 J	0.2 J		U	0.27 J	0.18 J	0.36	U	3	
1,1-Dichloroethane	5	µg/L		U	U	U		U	U	U	U	0.06	U	
Styrene	5 (POC)	µg/L		U	U	U		U	U	U	U	U	U	
Toluene	5	µg/L		U	U	U		U	U	U	U	U	U	
cis-1,2-Dichloroethene	5	µg/L		U	U	U		U	U	U	U	U	U	
trans-1,2-Dichloroethene	5	µg/L		U	U	U		U	U	U	U	U	U	
Methylene Chloride	N/A	µg/L		0.36 JB	0.42 JB	0.75 JB		0.35 JB	0.68 JB	U	U	0.06	U	
1,1,1-Trichloroethane	N/A	µg/L		U	U	U		U	U	U	U	0.15	U	
Chloroform	N/A	µg/L		0.16 J	0.3 J	1.7		U	1.8	2.7	1.5	0.33	0.8	
Tetrahydrofuran	50	µg/L		U	U	U		U	U	U	U	U	U	
Acetone	N/A	µg/L		U	5	9.4 B		3.6 B	U	4.1	5.9	3.2	U	
2-Butanone	N/A	µg/L		U	U	U		U	U	U	U	0.6	U	
Chloromethane	N/A	µg/L		U	U	U		U	U	U	U	0.46	U	
Bromomethane	N/A	µg/L		U	U	U		U	U	U	U	0.81	U	
Iodomethane	N/A	µg/L		U	U	U		U	U	U	U	0.42	U	
Bromodichloromethane	N/A	µg/L		U	U	0.3 J		U	0.62	1.1	0.97	U	0.7	
Methyl Tert-Butyl Ether	N/A	µg/L		0.68 JB	U	0.3 J		U	1.8 J	0.16 J	0.28	0.48	2 J	
Total VOCs	**N/A**	**ug/L**		**2.10**	**6.01**	**12.54**		**3.95**	**5.29**	**8.24**	**9.01**	**6.57**	**6.50**	
pH	5.5-8.5			**6.58**	**6.45**	**6.97**		**7.56**	**7.13**	**6.33**	**7.25**	**7.34**	**7.2**	
Iron (total)	1,000[4]	µg/L		U	U	U		U	U	U	U	U	U	
Iron (filtered)		µg/L												
Manganese (total)	1,000[4]	µg/L		**766**	**870**	**813**		**866**	**695**	**603**	590	**658**	**649**	
Alkalinity	N/A	mg/L		22	36	67		70	62	24	62	48	44	
Total Suspended Solids	N/A	mg/L		U	U	U		U	U	U	U	U	U	
Total Solids	N/A	mg/L		92	134	159		189	184	174	226	167	190	

NOTES:

1 Analytical data analyzed by STL Laboratories.
2 (U) Undetected.
3 (J) Estimate value. Result is below sample practical quantitation limit, but above the instrument detection limit.
4 The combined effluent concentration of Iron and Manganese will not exceed 1,500 ug/L.
5 N/A - No limit established for this site.
6 (E) Estimate value.
7 NA - Not Analyzed
8 "-" indicates not performed.
9 Bold values exceed discharge limits.
10 (P) pesticide/Aroclor target analyte. Greater than 25% difference between the two GC columns
11 Concentration between EPA contract detection limit and instrument detect limit.
12 POC = principal organic contaminant
13 LE - lab error or contamination likely
14 Values highlighted in green were left out when calculating the overall contaminant reduction efficiency. See Monthly Reports for specific explanations.
* no information available

TABLE 2
SERVALL LAUNDRY SITE (SITE 1-52-077)
GROUNDWATER EXTRACTION SYSTEM DATA 1998 - 2001

Plant Operating Data	unit	3/30/1998	4/6/1998	6/12/1998	6/17/1998	6/19/1998	6/24/1998	6/30/1998	7/9/1998	7/16/1998
Flow Rate	gpm									
Gallons Processed	gallons	1,218,220	1,385,910	2,521,000	956,950	202,550	1,053,670	849,670	1,498,640	1,166,770
Gallons Processed	gal/day	304,555	197,987	37,627	191,390	101,275	175,612	141,612	166,516	166,681
Percent of Time Operating	%									
Influent VOC Concentration	µg/L	8	42.5	2.8	26.4	46.1	81.4	151.3	291.7	261.4
Effluent VOC Concentration	µg/L	0	0	0	0	1.1	1.9	2.9	0.9	2.3
VOC Removal Efficiency	%	100.00%	100.00%	100.00%	100.00%	97.61%	97.67%	98.08%	99.69%	99.12%
Cumulative VOC Removal	lbs	0.08	0.57	0.63	0.84	0.92	1.61	2.66	6.29	8.81
Pounds of VOCs Treated	lb	0.08	0.49	0.06	0.21	0.08	0.70	1.05	3.63	2.52
Pounds of VOCs Treated	lbs/day	0.01	0.06	0.01	0.03	0.01	0.09	0.13	0.45	0.31
Influent Total Iron	µg/L	190	980	670	1100	1100	1200	1700	1800	1500
Influent Total Manganese	µg/L	730	1000	970	1100	1100	1100	1100	1200	1000
Effluent Total Iron	µg/L	100	450	80	60	0	40	60	140	140
Effluent Total Manganese	µg/L	660	870	910	1700	1000	1100	1000	1200	1100

Total Gallons Processed Since Treatment Began in 1998:
127,403,490

Total pounds of VOCs Removed Since Treatment Began in 1998:
126.49

Notes:
Blank cells indicate that no data was available.
Zero (0) entry indicates non-detect or no information is available.

TABLE 2
SERVALL LAUNDRY SITE (SITE 1-52-077)
GROUNDWATER EXTRACTION SYSTEM DATA 1998 - 2001

Plant Operating Data	unit	7/17/1998	8/4/1998	8/13/1998	9/3/1998	9/11/1998	9/16/1998	9/23/1998	9/30/1998	10/8/1998
Flow Rate	gpm									
Gallons Processed	gallons	1,106,750	856,236	1,920,614	2,020,200	1,389,560	415,130	1,407,820	1,423,560	1,562,890
Gallons Processed	gal/day	184,458	107,030	213,402	168,350	173,695	83,026	201,117	203,366	195,361
Percent of Time Operating	%									
Influent VOC Concentration	µg/L	252	272.2	552.5	382.8	503.2	473.1	213	453.6	383.3
Effluent VOC Concentration	µg/L	1	0	1.3	0	1.1	1	0.6	1.2	0.6
VOC Removal Efficiency	%	99.60%	100.00%	99.76%	100.00%	99.78%	99.79%	99.72%	99.74%	99.84%
Cumulative VOC Removal	lbs	11.12	13.07	21.88	28.32	34.13	35.76	38.26	43.62	48.60
Pounds of VOCs Treated	lb	2.31	1.94	8.82	6.44	5.81	1.63	2.49	5.36	4.98
Pounds of VOCs Treated	lbs/day	0.29	0.24	1.10	0.81	0.73	0.20	0.31	0.67	0.62
Influent Total Iron	µg/L		1500	1700	1400	1200	1400	1200	1100	900
Influent Total Manganese	µg/L		960	820	850	800	740	690	730	670
Effluent Total Iron	µg/L		170	240	190	50	110	50	150	60
Effluent Total Manganese	µg/L		970	790	840	790	740	720	720	660

TABLE 2
SERVALL LAUNDRY SITE (SITE 1-52-077)
GROUNDWATER EXTRACTION SYSTEM DATA 1998 - 2001

Plant Operating Data	unit	1/1/1999	2/1/1999	3/1/1999	4/1/1999	5/1/1999	6/1/1999	7/1/1999	8/1/1999	9/1/1999
Flow Rate	gpm	63	109	123.29	116.65	125	51.08	48.57	23.88	57.34
Gallons Processed	gallons	1,355,390	4,409,230	5,503,790	5,039,370	5,603,350	2,206,540	2,377,920	790,740	2,973,000
Gallons Processed	gal/day	45,180	146,974	183,460	167,979	186,778	73,551	79,264	26,358	99,100
Percent of Time Operating	%	0.2	0.73	0.82	0.78	0.84	0.34	0.36	0.12	0.46
Influent VOC Concentration	µg/L		19.5	144.1	397.4	275.3	114.8	73.5		25.5
Effluent VOC Concentration	µg/L		2.3	3.5	1.8	1.8	1.4	0.8		0.5
VOC Removal Efficiency	%		88.20%	97.60%	99.50%	99.30%	98.80%	98.90%		98.00%
Cumulative VOC Removal	lbs	48.60	49.23	55.68	71.31	84.09	86.18	87.62	87.62	88.24
Pounds of VOCs Treated	lb		0.63	6.45	15.63	12.78	2.09	1.44		0.62
Pounds of VOCs Treated	lbs/day		0.02	0.22	0.52	0.43	0.07	0.05		0.02
Influent Total Iron	µg/L		574	420	564	385	236	321		172
Influent Total Manganese	µg/L		629	565	496	517	492	719		630
Effluent Total Iron	µg/L		134	60.4	50	50	199	100		130
Effluent Total Manganese	µg/L		612	569	490	542	507	710		660

TABLE 2
SERVALL LAUNDRY SITE (SITE 1-52-077)
GROUNDWATER EXTRACTION SYSTEM DATA 1998 - 2001

Plant Operating Data	unit	10/1/1999	11/1/1999	12/1/1999	1/1/2000	2/1/2000	3/1/2000	4/1/2000	5/1/2000	6/1/2000
Flow Rate	gpm	81.02	135.39	158.79	160.44	160.39	160.2	158.57	152.09	144.05
Gallons Processed	gallons	3,383,320	4,057,020	4,735,780	4,154,420	5,390,400	3,744,760	3,862,440	3,408,300	1,839,960
Gallons Processed	gal/day	112,777	135,234	157,859	138,481	179,680	124,825	128,748	113,610	61,332
Percent of Time Operating	%	0.51	0.63	0.7	0.62	0.86	0.56	0.60	0.51	0.28
Influent VOC Concentration	µg/L	39.1	51.6	73.9	63.9	100.3	150.6	145.45	131.82	350.93
Effluent VOC Concentration	µg/L	0.6	0.9	0.7	1.5	2	6.1	3.22	3.97	25.16
VOC Removal Efficiency	%	98.50%	98.30%	99.10%	97.65%	98.01%	95.95%	97.79%	96.99%	92.83%
Cumulative VOC Removal	lbs	89.33	91.05	93.94	96.10	100.52	105.04	109.62	113.25	118.25
Pounds of VOCs Treated	lb	1.09	1.72	2.89	2.16	4.42	4.51	4.58	3.63	5.00
Pounds of VOCs Treated	lbs/day	0.04	0.06	0.10	0.07	0.15	0.15	0.15	0.12	0.17
Influent Total Iron	µg/L	979	716	248	1270	308	689	426	1430	6320
Influent Total Manganese	µg/L	622	521	548	593	542	517	499	864	2900
Effluent Total Iron	µg/L	35	35	35	100	32	32	75.5	3010	1780
Effluent Total Manganese	µg/L	613	519	524	583	533	492	506	417	16.6

TABLE 2
SERVALL LAUNDRY SITE (SITE 1-52-077)
GROUNDWATER EXTRACTION SYSTEM DATA 1998 - 2001

Plant Operating Data	unit	7/1/2000	8/1/2000	9/1/2000	2/1/2001	3/1/2001	4/1/2001	5/1/2001	6/1/2001	7/1/2001
Flow Rate	gpm	149.45	147.49	145.19	146.1	144.11	129.22	101.99	100.64	117.3
Gallons Processed	gallons	2,771,780	3,023,240	2,312,700	1,706,490	5,546,940	4,526,670	326,040	1,710,410	3,476,630
Gallons Processed	gal/day	92,393	100,775	77,090	56,883	184,898	150,889	10,868	57,014	115,888
Percent of Time Operating	%	0.43	0.45	0.35	7.90	0.92	0.68	0.05	0.26	0.54
Influent VOC Concentration	µg/L	42.89	104.46	204.19	8.1	14.79	22.43		10.53	6.75
Effluent VOC Concentration	µg/L	5.57	10.05	105.99	2.1	6.01	12.54		0	4.61
VOC Removal Efficiency	%	87.01%	90.38%	48.09%	74.07%	59.36%	44.09%	0.00%	100.00%	31.70%
Cumulative VOC Removal	lbs	119.11	121.49	123.39	123.47	123.88	124.25	124.25	124.40	124.46
Pounds of VOCs Treated	lb	0.86	2.38	1.89	0.09	0.41	0.37		0.15	0.06
Pounds of VOCs Treated	lbs/day	0.03	0.08	0.06	0.00	0.01	0.01		0.01	0.00
Influent Total Iron	µg/L	444	583	25700	0	210	240		0	189
Influent Total Manganese	µg/L	992	514	682	756	874	815		862	780
Effluent Total Iron	µg/L	732	1400	84.5	0	0	0		0	0
Effluent Total Manganese	µg/L	841	399	439	766	870	813		866	695

TABLE 2
SERVALL LAUNDRY SITE (SITE 1-52-077)
GROUNDWATER EXTRACTION SYSTEM DATA 1998 - 2001

Plant Operating Data	unit	8/1/2001	9/1/2001	10/1/2001	11/1/2001
Flow Rate	gpm	113.73	106.89	111.31	100.59
Gallons Processed	gallons	4,224,010	3,559,300	3,457,470	2,969,940
Gallons Processed	gal/day	140,800	118,643	115,249	98,998
Percent of Time Operating	%	0.63	0.53	0.53	0.44
Influent VOC Concentration	µg/L	16.72	19.58	29.64	24.6
Effluent VOC Concentration	µg/L	8.24	3.11	2.25	6.5
VOC Removal Efficiency	%	50.72%	84.12%	92.41%	73.58%
Cumulative VOC Removal	lbs	124.76	125.25	126.04	126.49
Pounds of VOCs Treated	lb	0.30	0.49	0.79	0.45
Pounds of VOCs Treated	lbs/day	0.01	0.02	0.03	0.01
Influent Total Iron	µg/L	308	317	332	0
Influent Total Manganese	µg/L	609	595	669	674
Effluent Total Iron	µg/L	0	0	0	0
Effluent Total Manganese	µg/L	603	590	658	649

TABLE 3
SERVALL LAUNDRY SITE (SITE 1-52-077)
HISTORICAL GROUNDWATER ELEVATIONS

Well #	Well Diameter (in)	Elevation of Riser (ft)	Ground Surface Elevation (ft, amsl)	Date	Total Depth of Well (ft)	Depth to Water (ft)	Water Table Elevation (ft, amsl)	Well Screen Depth (ft)	Comments
MW-1	4	64.79	65.47	2/5/91	86.71	19.81	44.98	76.5	February 1991 sampling event
				2/12/91		19.95	44.84	to	February 1991 sampling event
				3/5/91		20.00	44.79	86.5	March 1991 sampling event
				8/20/07		22.61	42.18		August 2007 sampling event
				2/1/10		22.87	41.92		February 2010 sampling event
MW-2	2	64.47	65.05	2/5/91	82.19	19.20	45.27	71.8	February 1991 sampling event
				2/12/91		19.27	45.20	to	February 1991 sampling event
				3/5/91		19.42	45.05	81.8	March 1991 sampling event
				1/11/99		24.13	40.92		January 1999 sampling event
				6/6/06		--			could not locate
				8/20/07		--			could not locate
				11/11/08		23.82	40.65		November 2008 sampling event
				2/1/10		22.27	42.20		February 2010 sampling event
				5/9/11		23.19	41.28		May 2011 sampling event
MW-3A	2	64.37	64.91	2/5/91	100+	21.13	43.24	110.0	February 1991 sampling event
				2/12/91		21.19	43.18	to	February 1991 sampling event
				3/5/91		21.15	43.22	120.0	March 1991 sampling event
				1/11/99		23.91	40.46		January 1999 sampling event
				6/6/06		20.68	43.69		June 2006 sampling event
				8/20/07		22.00	42.37		August 2007 sampling event
				11/11/08		23.61	40.76		November 2008 sampling event
				2/1/10		22.07	42.30		February 2010 sampling event
				5/9/11		23.02	41.35		May 2011 sampling event
MW-3B	2	64.54	65.02	2/5/91	88.30	19.20	45.34	78.0	February 1991 sampling event
				2/12/91		19.36	45.18	to	February 1991 sampling event
				3/5/91		19.38	45.16	88.0	March 1991 sampling event
				1/11/99		24.03	40.51		January 1999 sampling event
				6/6/06		--	--		could not locate
				8/20/07		--	--		could not locate
				11/11/08		23.81	40.73		November 2008 sampling event
				2/1/10		22.29	42.25		February 2010 sampling event
				5/9/11		23.20	41.34		May 2011 sampling event
MW-4	2	63.11	63.69	2/5/91	83.66	18.66	44.45	74.0	February 1991 sampling event
				2/12/91		18.77	44.34	to	February 1991 sampling event
				3/5/91		18.99	44.12	84.0	March 1991 sampling event
				1/11/99		23.40	39.71		January 1999 sampling event
				6/16/06		20.34	42.77		June 2006 sampling event
				8/20/07		21.55	41.56		August 2007 sampling event
				11/11/08		23.35	39.76		November 2008 sampling event
				2/1/10		21.77	41.34		February 2010 sampling event
				5/9/11		22.57	40.54		May 2011 sampling event

TABLE 3
SERVALL LAUNDRY SITE (SITE 1-52-077)
HISTORICAL GROUNDWATER ELEVATIONS

Well #	Well Diameter (in)	Elevation of Riser (ft)	Ground Surface Elevation (ft, amsl)	Date	Total Depth of Well (ft)	Depth to Water (ft)	Water Table Elevation (ft, amsl)	Well Screen Depth (ft)	Comments
MW-5	2	64.06	64.44	2/5/91	83.98	19.47	44.59	74.0	February 1991 sampling event
				2/12/91		19.46	44.60	to	February 1991 sampling event
				3/5/91		19.67	44.39	84.0	March 1991 sampling event
				1/11/99		24.38	39.68		January 1999 sampling event
				6/15/06		20.98	43.08		June 2006 sampling event
				8/20/07		22.20	41.86		August 2007 sampling event
				11/11/08		23.99	40.07		November 2008 sampling event
				2/1/10		22.42	41.64		February 2010 sampling event
				5/9/11		23.29	40.77		May 2011 sampling event
MW-6A	2	63.87	64.24	2/5/91	62.56	19.34	44.53	53.0	February 1991 sampling event
				2/12/91		19.56	44.31	to	February 1991 sampling event
				3/5/91		19.54	44.33	63.0	March 1991 sampling event
				1/11/99		24.35	39.52		January 1999 sampling event
				6/15/06		20.93	42.94		June 2006 sampling event
				8/20/07		22.21	41.66		August 2007 sampling event
				11/11/08		24.01	39.86		November 2008 sampling event
				2/1/10		22.49	41.38		February 2010 sampling event
				5/9/11		23.28	40.59		May 2011 sampling event
MW-6B	2	63.83	64.31	2/5/91	31.53	19.38	44.45	25.0	February 1991 sampling event
				2/12/91		19.49	44.34	to	February 1991 sampling event
				3/5/91		19.57	44.26	35.0	March 1991 sampling event
				1/11/99		21.30	42.53		January 1999 sampling event
				6/15/06		20.89	42.94		June 2006 sampling event
				8/20/07		22.16	41.67		August 2007 sampling event
				1/22/08		21.50	42.33		January 2008 sampling event
				11/11/08		23.95	39.88		November 2008 sampling event
				2/1/10		22.36	41.47		February 2010 sampling event
				5/9/11		23.62	40.21		May 2011 sampling event
MW-7		60.79	61.28	2/5/91	113.00	17.51	43.28	102.0	February 1991 sampling event
				2/12/91		17.50	43.29	to	February 1991 sampling event
				3/5/91		17.75	43.04	112.0	March 1991 sampling event
MW-8		54.60	54.94	2/5/91	113.00	15.26	39.34	94.0	February 1991 sampling event
				2/12/91		15.16	39.44	to	February 1991 sampling event
				3/5/91		15.23	39.37	104.0	March 1991 sampling event
MW-9		40.91	41.28	2/5/91	89.40	11.30	29.61	78.0	February 1991 sampling event
				2/12/91		11.45	29.46	to	February 1991 sampling event
				3/5/91		11.17	29.74	88.0	March 1991 sampling event
				1/11/99		13.20	27.71		January 1999 sampling event
MW-10		40.22	40.54	2/5/91		13.26	26.96	78.7	February 1991 sampling event
				2/12/91		13.35	26.87	to	February 1991 sampling event
				3/5/91		13.08	27.14	88.7	March 1991 sampling event

TABLE 3
SERVALL LAUNDRY SITE (SITE 1-52-077)
HISTORICAL GROUNDWATER ELEVATIONS

Well #	Well Diameter (in)	Elevation of Riser (ft)	Ground Surface Elevation (ft, amsl)	Date	Total Depth of Well (ft)	Depth to Water (ft)	Water Table Elevation (ft, amsl)	Well Screen Depth (ft)	Comments
MW-11	2	37.07	37.29	2/05/091	89.80	8.37	28.70	80.0	February 1991 sampling event
				2/12/91		8.63	28.44	to	February 1991 sampling event
				3/5/91		8.47	28.60	90.0	March 1991 sampling event
				1/11/99		10.30	26.77		January 1999 sampling event
				6/8/06		8.80	28.27		June 2006 sampling event
				8/20/07		6.57	30.50		August 2007 sampling event
				1/21/08		8.50	28.57		January 2008 sampling event
				11/11/08		10.13	26.94		November 2008 sampling event
				2/1/10		9.13	27.94		February 2010 sampling event
				5/9/11		NA	NA		vandalized, filled with debris
MW-12	2	50.61	50.90	2/5/91	89.19	13.08	37.53	78.8	February 1991 sampling event
				2/12/91		13.15	37.46	to	February 1991 sampling event
				3/5/91		13.27	37.34	88.8	March 1991 sampling event
				1/11/99		15.90	34.71		January 1999 sampling event
				6/15/06		14.15	36.46		June 2006 sampling event
				8/20/07		15.42	35.19		August 2007 sampling event
				1/22/08		17.10	33.51		January 2008 sampling event
				11/11/08		16.74	33.87		November 2008 sampling event
				2/1/10		15.14	35.47		February 2010 sampling event
				5/9/11		15.60	35.01		May 2011 sampling event
MW-13	2	50.33	50.77	2/5/91	96.52	13.55	36.78	88.0	February 1991 sampling event
				2/12/91		13.77	36.56	to	February 1991 sampling event
				3/5/91		13.97	36.36	98.0	March 1991 sampling event
				1/11/99		16.70	33.63		January 1999 sampling event
				6/15/06		18.51	31.82		June 2006 sampling event
				8/20/07		15.87	34.46		August 2007 sampling event
				11/11/08		17.10	33.23		November 2008 sampling event
				2/1/10		15.54	34.79		February 2010 sampling event
				5/9/11		15.97	34.36		May 2011 sampling event
MW-14	2	49.98	50.33	2/5/91	93.63	14.15	35.83	83.3	February 1991 sampling event
				2/12/91		14.35	35.63	to	February 1991 sampling event
				3/5/91		14.34	35.64	93.3	March 1991 sampling event
				1/11/99		16.70	33.28		January 1999 sampling event
				6/15/06		15.01	34.97		June 2006 sampling event
				8/20/07		16.26	33.72		August 2007 sampling event
				11/11/08		17.29	32.69		November 2008 sampling event
				2/1/10		15.84	34.14		February 2010 sampling event
				5/9/11		16.25	33.73		May 2011 sampling event
MW-15	2	48.79	49.00	2/5/91		14.56	34.23	87.0	February 1991 sampling event
				2/12/91		14.78	34.01	to	February 1991 sampling event
				3/5/91		14.81	33.98	97.0	March 1991 sampling event

TABLE 3
SERVALL LAUNDRY SITE (SITE 1-52-077)
HISTORICAL GROUNDWATER ELEVATIONS

Well #	Well Diameter (in)	Elevation of Riser (ft)	Ground Surface Elevation (ft, amsl)	Date	Total Depth of Well (ft)	Depth to Water (ft)	Water Table Elevation (ft, amsl)	Well Screen Depth (ft)	Comments
MW-16	2	36.50	36.80	2/5/91	93.90	11.53	24.97	84.0	February 1991 sampling event
				2/12/91		11.68	24.82	to	February 1991 sampling event
				3/5/91		11.45	25.05	94.0	March 1991 sampling event
				1/11/99		12.80	23.70		January 1999 sampling event
				6/15/06		10.52	25.98		June 2006 sampling event
				8/20/07		12.76	23.74		August 2007 sampling event
				1/21/08		10.50	26.00		January 2088 sampling event
				11/11/08		12.35	24.15		November 2008 sampling event
				2/1/10		11.52	24.98		February 2010 sampling event
				5/9/11		11.68	24.82		May 2011 sampling event
MW-23D	2	24.45	24.60	10/26/94	87.79	--	17.79	83.0	Plume Discharge Report
				1/11/99		6.10	18.35	to	January 1999 sampling event
				6/8/06		5.15	19.30	88.0	June 2006 sampling event
				8/20/07		6.14	18.31		August 2007 sampling event
				11/11/08		6.00	18.45		November 2008 sampling event
				2/1/10		5.62	18.83		February 2010 sampling event
				5/9/11		5.67	18.78		May 2011 sampling event
MW-23S	2	24.38	24.78	10/26/94	69.50	--	17.94	66.0	Plume Discharge Report
				1/11/99		6.20	18.18	to	January 1999 sampling event
				6/8/06		5.25	19.13	69.0	June 2006 sampling event
				8/20/07		6.22	18.16		August 2007 sampling event
				1/21/08		6.10	18.28		January 2008 sampling event
				11/11/08		6.09	18.29		November 2008 sampling event
				2/1/10		5.78	18.60		February 2010 sampling event
				5/9/11		5.62	18.76		May 2011 sampling event

TABLE 4
SERVALL LAUNDRY SITE (SITE 1-52-077)
PERIODIC SAMPLING - 2006 THROUGH 2011 SAMPLING EVENTS
SUMMARY OF VOCs IN GROUNDWATER

Sample Location	NYSDEC	MW-1	MW-2	MW-2	MW-2	MW-2	MW-2	MW-3A	MW-3A	MW-3A	MW-3A	MW-3A
Sample ID	Class GA	SL-MW-1	Can't	Can't	SL-MW-2	SL-MW-2	SL-MW-2	SMW-3A	SMW-3A	SL-MW-3A	SL-MW-3A	SL-MW-3A
Laboratory ID	Ground	J0196-01	Locate	Locate	G2115-14	J0196-06	K0834-09	E0773-18	F1174-02C	G2115-16	J0196-02	K0834-10
Sample Date	Water	2/3/10	6/6/06	8/21/07	11/14/08	2/4/10	5/11/11	6/6/06	8/21/07	11/14/08	2/3/10	5/11/11
	Criteria	conc. Q	conc. Q	conc. Q	conc. Q	conc. Q	conc. Q	conc. Q	conc. Q	conc. Q	conc. Q	conc. Q
Vinyl Chloride	2	ND	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	5	ND	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	50	ND	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	1	ND	NA	NA	***1.7*** J	ND	ND	ND	ND	ND	ND	ND
2-Butanone	50	ND	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	5	ND	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	10	ND	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	5	ND	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	5	2.3 J	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	7	ND	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	5	ND	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	5	1.8 J	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	5	***50***	NA	NA	ND	ND	2.1 J	ND	ND	ND	ND	ND
Xylenes (Total)	5	1.1 J	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	5	ND	NA	NA	1.4 J	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	5	ND	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	4.7	ND	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND
Number of TICs					1			0	0	1		
Total TIC concentration					38 J			ND	ND	19 J		

Notes:
All values are in micrograms per liter (µg/L)
ND - Not detected
D - Dilution
J - Estimated value, VOCs
NA - Not analyzed
BOLD/ITALICS - exceeds criterion

TABLE 4
SERVALL LAUNDRY SITE (SITE 1-52-077)
PERIODIC SAMPLING - 2006 THROUGH 2011 SAMPLING EVENTS
SUMMARY OF VOCs IN GROUNDWATER

Sample Location	NYSDEC	MW-3B	MW-3B	MW-3B	MW-3B	MW-3B	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4
Sample ID	Class GA	Can't	Can't	SL-MW-3B	SL-MW-3B	SL-MW-3B	SMW-4	SMW-4	SMW-4	SL-MW-4	SL-MW-4	SL-MW-4
Laboratory ID	Ground	Locate	Locate	G2115-17	J0196-07	K0834-11	E0832-10	F0495-02B	F1174-03C	G2115-09	J0196-08	K0834-12
Sample Date	Water	6/6/06	8/21/07	11/14/08	2/4/10	5/11/11	6/16/06	4/20/07	8/21/07	11/13/08	2/4/10	5/12/11
	Criteria	conc. Q	conc. Q	conc. Q	conc. Q	conc. Q	conc. Q	conc. Q	conc. Q	conc. Q	conc. Q	conc. Q
Vinyl Chloride	2	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	5	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	50	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	1	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	50	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	5	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	10	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	5	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	5	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	7	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	5	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	5	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	5	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	5	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	5	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	5	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	4.7	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Number of TICs				1			0	0	0	1		
Total TIC concentration				19 J			ND	ND	ND	28 J		

Notes:
All values are in micrograms per liter (µg/L)
ND - Not detected
D - Dilution
J - Estimated value, VOCs
NA - Not analyzed
BOLD/ITALICS - exceeds criterion

TABLE 4
SERVALL LAUNDRY SITE (SITE 1-52-077)
PERIODIC SAMPLING - 2006 THROUGH 2011 SAMPLING EVENTS
SUMMARY OF VOCs IN GROUNDWATER

Sample Location	NYSDEC	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-6A	MW-6A	MW-6A	MW-6A	MW-6A	MW-6A
Sample ID	Class GA	SMW-5	SMW-5	SMW-5	SL-MW-5	SL-MW-5	SL-MW-5	SMW-6A	SMW-6A	SMW-6A	SMW-6A	SMW-6A	SMW-6A
Laboratory ID	Ground	E0832-05	F0495-04B	F1174-13B	G2115-13	J0196-09	K0834-15	E0832-06	F0495-01B	F1174-04C	G2115-10	J0196-10	K0834-13
Sample Date	Water	6/15/06	4/20/07	8/27/07	11/13/08	2/4/10	5/12/11	6/15/06	4/20/07	8/21/07	11/13/08	2/4/10	5/12/11
	Criteria	conc. Q	conc. Q	conc. Q	conc. Q	conc. Q	conc. Q	conc. Q	conc. Q	conc. Q	conc. Q	conc. Q	conc. Q
Vinyl Chloride	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	50	ND	ND	ND	***170***	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	50	ND	ND	ND	38 J	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	5	3.0 J	2 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	5	ND	ND	ND	ND	ND	1.5 J	ND	ND	ND	ND	ND	ND
Tetrachloroethene	5	ND	ND	2 J	ND	ND	ND	ND	ND	ND	ND	1.2 J	ND
Xylenes (Total)	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	5	ND	ND	ND	***1,200***	***230 D***	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	4.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Number of TICs		0	0	0	1			0	0	0	1		
Total TIC concentration		ND	ND	ND	330 J			ND	ND	ND	28 J		

Notes:
All values are in micrograms per liter (µg/L)
ND - Not detected
D - Dilution
J - Estimated value, VOCs
NA - Not analyzed
BOLD/ITALICS - exceeds criterion

TABLE 4
SERVALL LAUNDRY SITE (SITE 1-52-077)
PERIODIC SAMPLING - 2006 THROUGH 2011 SAMPLING EVENTS
SUMMARY OF VOCs IN GROUNDWATER

Sample Location	NYSDEC	MW-6B	MW-6B	MW-6B	MW-6B	MW-6B	MW-6B	MW-9	MW-11	MW-11	MW-11	MW-11	MW-11
Sample ID	Class GA	SMW-6B	SMW-6B	SMW-6B	SMW-6B	SMW-6B	SMW-6B		SMW-11	SMW-11	SL-MW-11	SL-MW-11	SL-MW-11
Laboratory ID	Ground	E0832-07	F0495-03B	F1174-05C	G2115-12	J0196-11	K0834-14	Destroyed	E0773-19		G2115-01		
Sample Date	Water	6/15/06	4/20/07	8/21/07	11/13/08	2/4/10	5/12/11	6/09/06	6/8/06	8/20/07	11/11/08	2/1/10	5/10/11
	Criteria	conc. Q	conc. Q	conc. Q	conc. Q	conc. Q	conc. Q	conc. Q	conc. Q	conc. Q	conc. Q	conc. Q	conc. Q
Vinyl Chloride	2	ND	ND	ND	ND	ND	ND		ND	NA	ND	NA	NA
1,1-Dichloroethene	5	ND	ND	ND	ND	ND	ND		ND	NA	ND	NA	NA
Acetone	50	ND	ND	ND	ND	ND	ND		ND	NA	ND	NA	NA
Benzene	1	ND	ND	ND	ND	ND	ND		ND	NA	ND	NA	NA
2-Butanone	50	ND	ND	ND	ND	ND	ND		ND	NA	ND	NA	NA
trans-1,2-Dichloroethene	5	ND	ND	ND	ND	ND	ND		ND	NA	ND	NA	NA
Methyl tert-butyl ether	10	ND	ND	ND	ND	ND	ND		ND	NA	1.8 J	NA	NA
1,1-Dichloroethane	5	ND	ND	ND	ND	ND	ND		ND	ND	ND	NA	NA
cis-1,2-Dichloroethene	5	***210 D***	***120***	***130***	***140***	***190***	***44***		3.0 J	NA	13	NA	NA
Chloroform	7	ND	ND	ND	2 J	ND	ND		ND	NA	ND	NA	NA
1,1,1-Trichloroethane	5	ND	ND	ND	ND	ND	ND		ND	NA	ND	NA	NA
Trichloroethene	5	***85***	***27***	***26***	***30***	***40***	***7.3***		4 J	NA	ND	NA	NA
Tetrachloroethene	5	***1,100 D***	***650***	***480 D***	***470 D***	***2,000 D***	***150***		***56***	NA	***60***	NA	NA
Xylenes (Total)	5	ND	ND	ND	ND	ND	ND		ND	NA	ND	NA	NA
Toluene	5	ND	ND	ND	ND	ND	ND		ND	NA	***63***	NA	NA
Chlorobenzene	5	ND	ND	ND	ND	ND	ND		ND	NA	4.8 J	NA	NA
1,2-Dichlorobenzene	4.7	ND	ND	ND	ND	ND	ND		ND	NA	ND	NA	NA
Number of TICs		0	0	0	1				1		1		
Total TIC concentration		ND	ND	ND	28 J				6 J	NA	22 J		

Notes:
All values are in micrograms per liter (µg/L)
ND - Not detected
D - Dilution
J - Estimated value, VOCs
NA - Not analyzed
BOLD/ITALICS - exceeds criterion

TABLE 4
SERVALL LAUNDRY SITE (SITE 1-52-077)
PERIODIC SAMPLING - 2006 THROUGH 2011 SAMPLING EVENTS
SUMMARY OF VOCs IN GROUNDWATER

Sample Location	NYSDEC	MW-12	MW-12	MW-12	MW-12	MW-12	MW-13	MW-13	MW-13	MW-13	MW-13
Sample ID	Class GA	SMW-12	SMW-12	SL-MW-12	SL-MW-12	SL-MW-12	SMW-13	SMW-13	SL-MW-13	SL-MW-13	SL-MW-13
Laboratory ID	Ground	E0832-01	F1174-08C	G2115-06	J0189-01	K0834-01	E0832-02	F1174-07C	G2115-07	J0189-02	K0834-02
Sample Date	Water	6/15/06	8/22/07	11/12/08	2/2/10	5/10/11	6/15/06	8/22/07	11/12/08	2/2/10	5/10/11
	Criteria	conc. Q	conc. Q	conc. Q	conc. Q	conc. Q	conc. Q	conc. Q	conc. Q	conc. Q	conc. Q
Vinyl Chloride	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	50	ND	ND	ND	ND	ND	4 J	ND	ND	ND	ND
Benzene	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	10	ND	ND	ND	ND	1.7 J	ND	ND	ND	ND	ND
1,1-Dichloroethane	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	5	ND	2 J	3.1 J	ND	1.8 J	ND	ND	ND	ND	ND
Chloroform	7	ND	ND	ND	ND	ND	ND	6	2.7 J	ND	ND
1,1,1-Trichloroethane	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	5	ND	1 J	ND	ND	ND	3 J	ND	ND	ND	ND
Tetrachloroethene	5	***17***	***17***	***60***	***10***	1.6 J	***5***	ND	1 J	ND	ND
Xylenes (Total)	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	5	4 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	4.7	***9***	ND	ND	ND	ND	ND	ND	ND	ND	ND
Number of TICs		0	0	1			0	0	1		
Total TIC concentration		ND	ND	26			ND	ND	26 J		

Notes:
All values are in micrograms per liter (µg/L)
ND - Not detected
D - Dilution
J - Estimated value, VOCs
NA - Not analyzed
BOLD/ITALICS - exceeds criterion

TABLE 4
SERVALL LAUNDRY SITE (SITE 1-52-077)
PERIODIC SAMPLING - 2006 THROUGH 2011 SAMPLING EVENTS
SUMMARY OF VOCs IN GROUNDWATER

Sample Location	NYSDEC	MW-14	MW-14	MW-14	MW-14	MW-14	MW-16	MW-16	MW-16	MW-16	MW-16
Sample ID	Class GA	SMW-14	SMW-14	SL-MW-14	SL-MW-14	SL-MW-14	SMW-16	SMW-16	SL-MW-16	SL-MW-16	SL-MW-16
Laboratory ID	Ground	E0832-03	F1174-06C	G2115-18	J0189-04	K0834-05	E0832-04	F1174-12B	G2115-05	J0189-05	K0834-08
Sample Date	Water	6/15/06	8/22/07	11/14/08	2/2/10	5/10/11	6/15/06	8/27/07	11/12/08	2/2/10	5/11/11
	Criteria	conc. Q	conc. Q	conc. Q	conc. Q	conc. Q	conc. Q	conc. Q	conc. Q	conc. Q	conc. Q
Vinyl Chloride	2	ND	ND	ND	ND	ND	ND	ND	ND	1.2 J	ND
1,1-Dichloroethene	5	ND	ND	ND	ND	ND	4 J	ND	ND	2.4 J	ND
Acetone	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	10	ND	ND	ND	1.1 J	8.0	2 J	ND	ND	ND	ND
1,1-Dichloroethane	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	5	ND	ND	ND	ND	ND	***15***	ND	2.1 J	***16***	***8.0***
Chloroform	7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	5	ND	ND	ND	ND	ND	***5***	ND	ND	2.8 J	ND
Trichloroethene	5	ND	ND	ND	ND	ND	***16***	ND	1.1 J	***11***	***7.5***
Tetrachloroethene	5	ND	2 J	ND	ND	ND	***25***	2 J	***6.9***	***48***	***95***
Xylenes (Total)	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	4.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Number of TICs		0	0	1			0	0	1		
Total TIC concentration		ND	ND	20 J			ND	ND	23 J		

Notes:
All values are in micrograms per liter (µg/L)
ND - Not detected
D - Dilution
J - Estimated value, VOCs
NA - Not analyzed
BOLD/ITALICS - exceeds criterion

TABLE 4
SERVALL LAUNDRY SITE (SITE 1-52-077)
PERIODIC SAMPLING - 2006 THROUGH 2011 SAMPLING EVENTS
SUMMARY OF VOCs IN GROUNDWATER

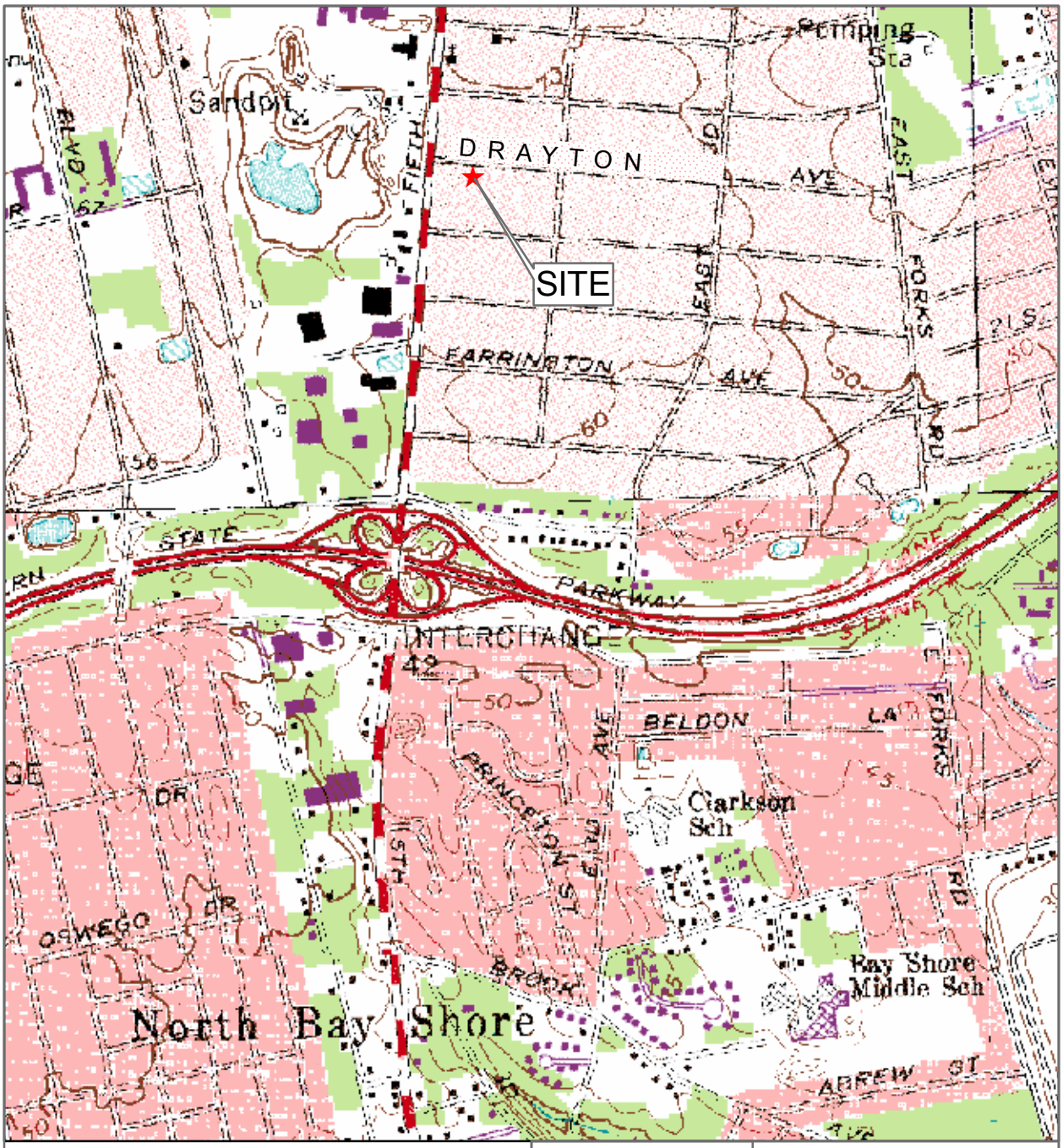
Sample Location	NYSDEC	MW-23S	MW-23S	MW-23S	MW-23S	MW-23S	MW-23D	MW-23D	MW-23D	MW-23D	MW-23D
Sample ID	Class GA	SMW-23S	SMW-23S	SL-MW-23S	SL-MW-23S	SL-MW-23S	SMW-23D	SMW-23D	SL-MW-23D	SL-MW-23D	SL-MW-23D
Laboratory ID	Ground	E0773-20	F1174-11B	G2115-03	J0196-03	K0834-06	E0773-21	F1174-09B	G2115-04	J0196-04	K0834-07
Sample Date	Water	6/8/06	8/27/07	11/12/08	2/3/10	5/11/11	6/8/06	8/27/07	11/12/08	2/3/10	5/11/11
	Criteria	conc. Q	conc. Q	conc. Q	conc. Q	conc. Q	conc. Q	conc. Q	conc. Q	conc. Q	conc. Q
Vinyl Chloride	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	5	ND	ND	ND	ND	2.5 J	ND	ND	ND	ND	ND
Acetone	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	5	ND	1 J	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	10	ND	1 J	ND	5.4	3.9 J	ND	ND	ND	ND	ND
1,1-Dichloroethane	5	ND	ND	ND	ND	1.6 J	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	5	***360 D***	***180 D***	***45***	***38***	***83***	ND	ND	ND	ND	3.0 J
Chloroform	7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	5	ND	ND	1.6 J	1.3 J	3.8 J	ND	ND	ND	ND	ND
Trichloroethene	5	***220 D***	***99***	***18***	***15***	***46***	ND	ND	ND	ND	1.2 J
Tetrachloroethene	5	***5,200 D***	***1,700 D***	***500 D***	***590 D***	***1,500 D***	4 J	***6***	***7.7***	***8.3***	***25***
Xylenes (Total)	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	4.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Number of TICs		2	0	1			1	0	1		
Total TIC concentration		1,250 JD	ND	21 J			6 J	ND	25 J		

Notes:
All values are in micrograms per liter (µg/L)
ND - Not detected
D - Dilution
J - Estimated value, VOCs
NA - Not analyzed
BOLD/ITALICS - exceeds criterion

TABLE 5
SERVALL LAUNDRY SITE (SITE 1-52-077)
PIEZOMETER SURVEY (COMPLETED DURING THE JUNE 2006 GROUNDWATER SAMPLING EVENT)

Piezometer	Latitude	Longitude	Found	Comment
PZ-94-1S	N40° 43.326	W73° 13.262		In the road at the west end of 39 Maple Street
PZ-94-2S			No	Overgrown vegetation, might be visible in winter
PZ-94-3D	N40° 42.962	W73° 14.078		Only one lid found in front of 145 Awixa Ave Could be either
PZ-94-3S	N40° 42.962	W73° 14.078	No	piezometer
PZ-4	N40° 45.297	W73° 15.648		In front of 15 Frederick Ave (10 feet west of MW-4)
PZ-94-4D	N40° 42.798	W73° 14.545		Across from marina by vacant lot
PZ-94-4S	N40° 42.798	W73° 14.545		Across from marina by vacant lot
PZ-5	N40° 45.301	W73° 15.695		In front of 9 Frederick Ave
PZ-94-5S			No	Pavement looks new
PZ-94-6S	N40° 43.606	W73° 13.348		West Side of Athasca Rd in front of Arnotts Winter Brothers
PZ-94-7D	N40° 43.499	W73° 13.683		North of entrance to Montfort Spiritual Center driveway
PZ-94-7S	N40° 43.499	W73° 13.683		North of entrance to Montfort Spiritual Center driveway
PZ-94-8D			No	
PZ-94-8S			No	
PZ-94-9D	N40° 43.063	W73° 14.509		In front of 11 Shore Lane
PZ-94-9S	N40° 43.063	W73° 14.508		In front of 11 Shore Lane
PZ-94-11S	N40° 42.942	W73° 15.145		On corner of Garner and Manatuck
PZ-94-12S			No	
PZ-94-13S			No	
PZ-94-14D	N40° 43.586	W73° 14.598		On Aletta Place at the exit of the Southside Hospital
PZ-94-14S	N40° 43.586	W73° 14.598		Employee parking lot
PZ-94-15S			No	
PZ-94-16S	N40° 43.188	W73° 15.352		Across from 26 Community Ave in a four well cluster
PZ-94-17D			No	Side of road is loose gravel and sand
PZ-94-17S			No	Side of road is loose gravel and sand
PZ-94-18S			No	Possibly under sand and puddles
PZ-94-19D			No	
PZ-94-19S			No	Gravel, sand, and overgrown vegetation
PZ-94-20S			No	
PZ-94-21D			No	
PZ-94-21S			No	
PZ-94-22S	N40° 44.287	W73° 14.514		Across from 1 Barry Street between sidewalk and street
PZ-94-23S	N40° 44.096	W73° 14.923		
PZ-94-24S	N40° 43.926	W73° 15.338		In front of high school near 3rd ave and Perkel Street intersection
PZ-94-25S			No	New Pavement
PZ-94-26S			No	New Pavement and nuisance dumping
PZ-94-27D	N40° 42.855	W73° 13.304		In road on north side of road across from 3 Ocean Street
PZ-94-28D			No	
PZ-94-28S			No	
PZ-102R	N40° 45.257	W73° 15.575		25 Feet north of fire hydrant on Stein Drive
PZ-103R			No	
PZ-104R	N50° 45.230	W73° 15.581		6 feet southwest of storm drain inlet on Stein Drive
PZ-105	N40° 45.213	W73° 15.585		4 feet east of stop sign
PZ-106R			No	
PZ-107R			No	
PZ-108	N40° 45.222	W73° 15.638		In front of 17 Walbridge Ave
PZ-109	N40° 45.214	W73° 15.597		Three feet west of driveway

Figures



N

0 162.5 325 650 Feet

AECOM

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

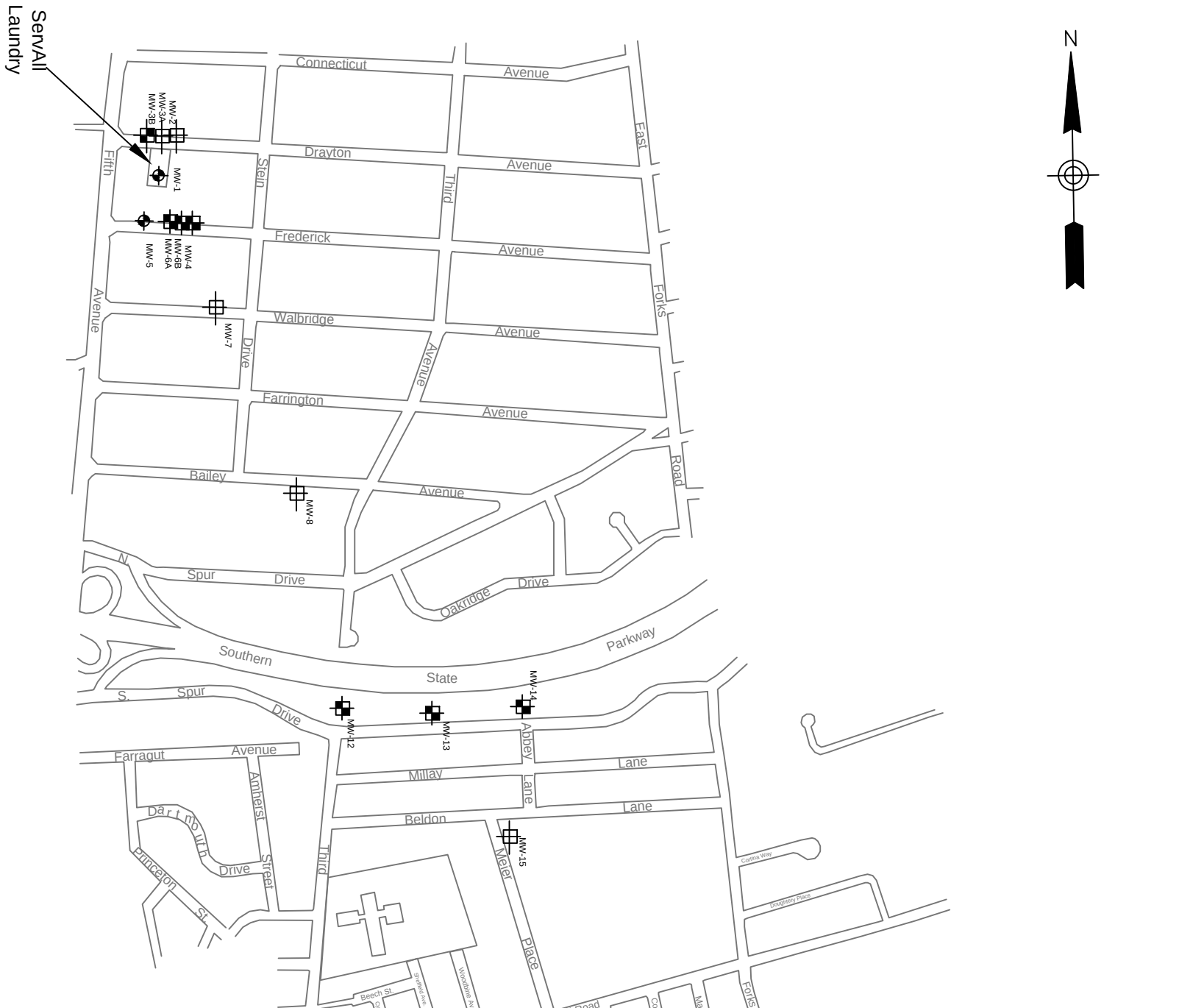
SERVALL LAUNDRY SITE
BAY SHORE, NEW YORK

SITE LOCATION MAP

SYMBOL	DESCRIPTIONS	DATE	APPROVED
	REVISIONS		

Prepared by : AECOM	For : NYSDEC
DESIGNED BY : AH	SERVALL LAUNDARY SITE BAY SHORE, NEW YORK
DRAWN BY : VM	INTERPRETED PLUME DISCHARGE AREA
CHECKED BY : AH	
SUBMITTED BY : AH	DATE : OCTOBER 2009 / SCALE : 1" = 1000' / FIGURE NO. : 2

Note: Figure obtained from Plume Discharge Study, Subtask 9.1 Phase I Assessment Report, December 1995.



LEGEND:

- MW-14 — EXISTING MONITORING WELLS
- MISSING MONITORING WELLS
- DAMAGED MONITORING WELLS

Scale In Feet
0 500 1000

Prepared by : AECOM			
SUBMITTED BY : PK	SERVALL LAUNDARY SITE BAY SHORE, NEW YORK		
DRAWN BY : VM	**SITE MAP**		
APPROVED BY : PK	DATE : SEPTEMBER 2011	SCALE : AS SHOWN	DRAWING NO. :

Figure 4
ServAll Laundry Site
Site 1-52-077

Cumulative VOC Removal 1998-2001

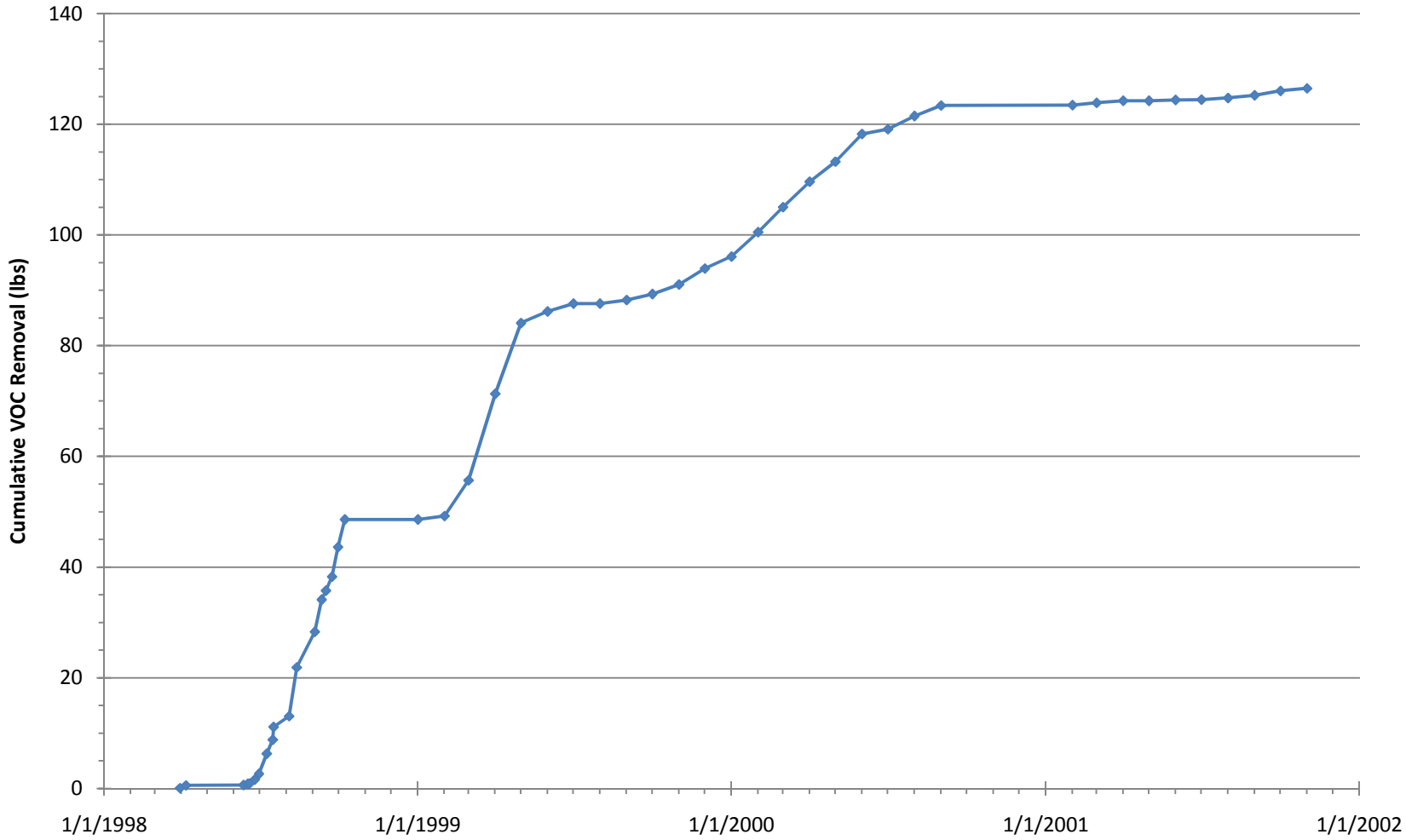


Figure 5
ServAll Laundry Site
Site 1-52-077

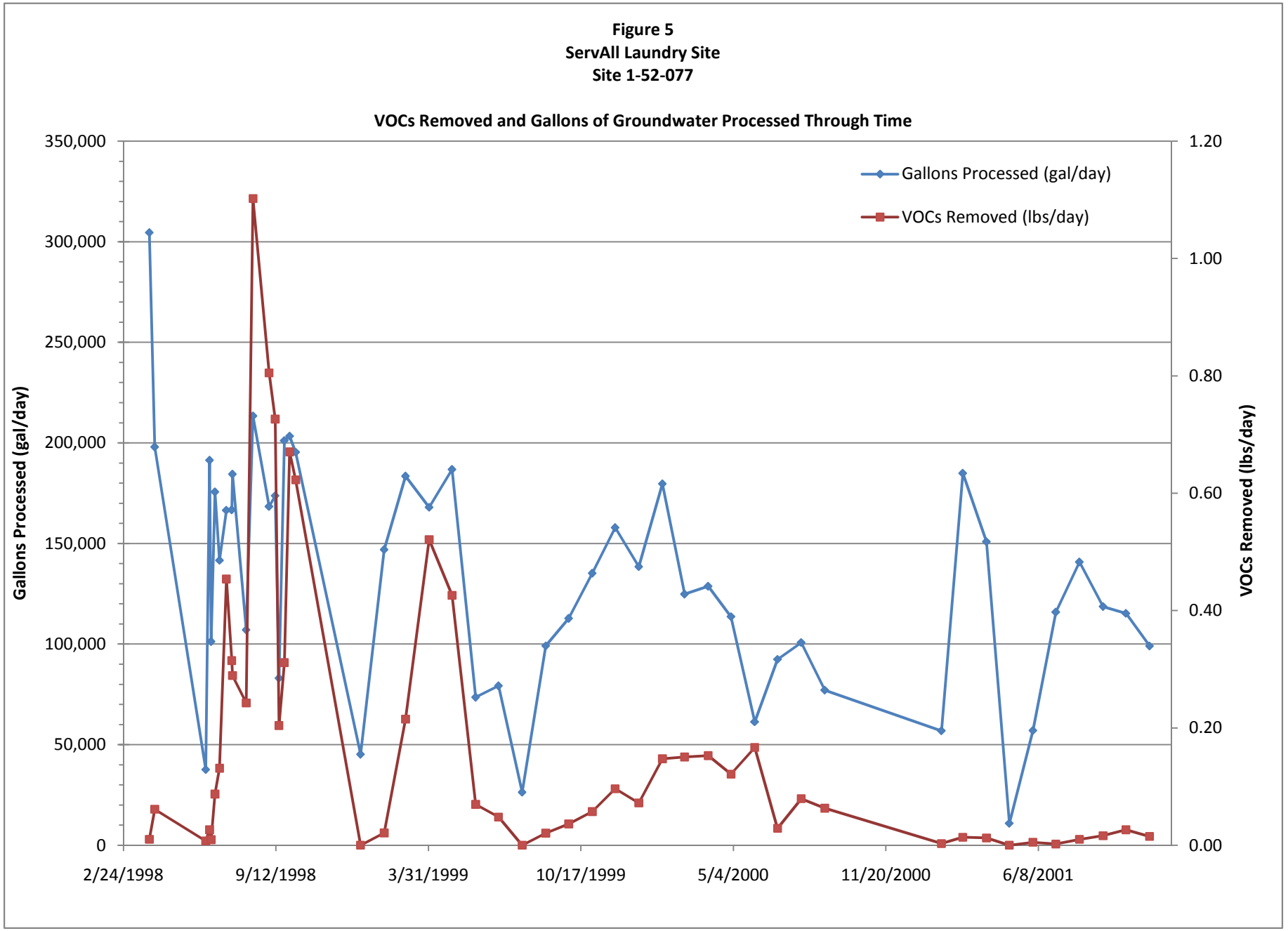
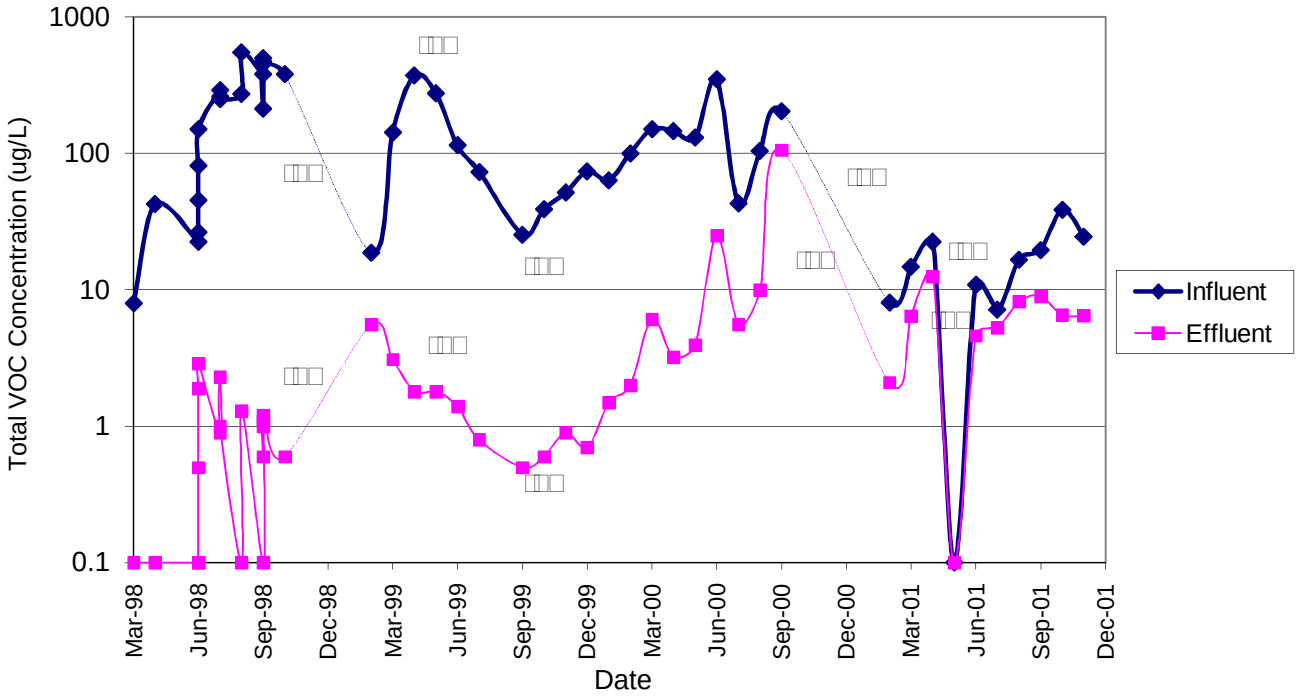


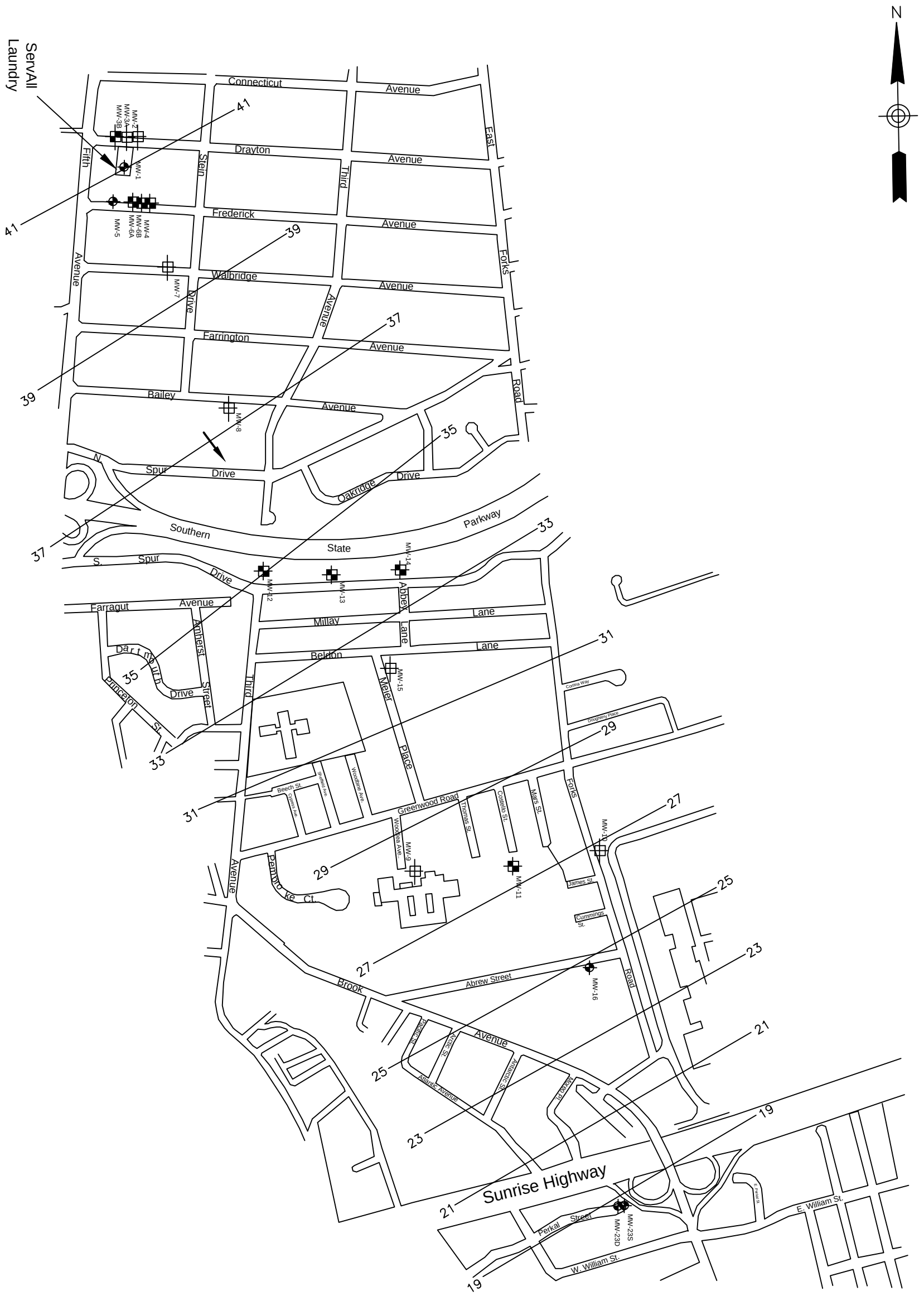
Figure 6
ServAll Laundry Site
Site No. 1-52-077

Groundwater Extraction System

Total Volatile Organic Compound (VOC) Influent and Effluent Trends



NOTES
1. Plant down due to reinjection well fouling (November 19, 1998 to January 23, 1999).
2. Brief Shut down in May: May 8 - May 10,1999.
3. Low influent flow due to reinjection well fouling.
4. Plant Shut down due to change in project management.
5. Plant shutdown for maintenance.



LEGEND:

- MW-16 — EXISTING MONITORING WELLS
- DAMAGED OR MISSING MONITORING WELLS
- (18.76) — GROUNDWATER ELEVATIONS IN FEET ABOVE MEAN SEA LEVEL
- - -19 - - — GROUNDWATER ISOPLETH, CONTOUR INTERVAL IS 2.0 ft
- DIRECTION OF GROUNDWATER FLOW

GRAPHIC SCALE

1600 800 0 800 1600

Prepared by : AECOM

SUBMITTED BY : PK	MULTI SITE G - SERVALL LAUNDRY SITE SITE NO. 1-52-026
DRAWN BY : SC	**GROUNDWATER CONTOUR MAP MAY 9, 2011**
APPROVED BY : PK	DATE : SEPTEMBER 2011 / SCALE : AS SHOWN / DRAWING NO. : 7

Compound	MW-2				
	Jun-06	Aug-07	Nov-08	Feb-10	May-11
Benzene	NA	NA	***1.7*** J	ND	ND

Compound	MW-1				
	Jun-06	Aug-07	Nov-08	Feb-10	May-11
Tetrachloroethene	NA	NA	NA	**50**	NA

Compound	MW-5					
	Jun-06	Apr-07	Aug-07	Nov-08	Feb-10	May-11
Acetone	ND	ND	ND	***170***	ND	ND
Toluene	ND	ND	ND	***1,200***	***230 D***	ND

Compound	MW-6B					
	Jun-06	Apr-07	Aug-07	Nov-08	Feb-10	May-11
cis-1,2-Dichloroethene	***210 D***	***120***	***130***	***140***	***190***	***44***
Trichloroethene	***85***	***27***	***26***	***30***	***40***	***7.3***
Tetrachloroethene	***1,100 D***	***650***	***480 D***	***470 D***	***2,000 D***	***150***

Compound	MW-11				
	Jun-06	Aug-07	Nov-08	Feb-10	May-11
Tetrachloroethene	***56***	NA	***60***	NA	NA
Toluene	ND	NA	***63***	NA	NA

Compound	MW-12				
	Jun-06	Aug-07	Nov-08	Feb-10	May-11
Tetrachloroethene	***17***	***17***	***60***	***10***	1.6 J
1,2-Dichlorobenzene	***9***	ND	ND	ND	ND

Compound	MW-13				
	Jun-06	Aug-07	Nov-08	Feb-10	May-11
Tetrachloroethene	***5***	ND	1 J	ND	ND

Compound	MW-16				
	Jun-06	Aug-07	Nov-08	Feb-10	May-11
cis-1,2-Dichloroethene	***15***	ND	2.1 J	***16***	***8.0***
1,1,1-Trichloroethane	***5***	ND	ND	2.8 J	ND
Trichloroethene	***16***	ND	1.1 J	***11***	***7.5***
Tetrachloroethene	***25***	2 J	***6.9***	***48***	***95***

Compound	MW-23S				
	Jun-06	Aug-07	Nov-08	Feb-10	May-11
cis-1,2-Dichloroethene	***360 D***	***180 D***	***45***	***38***	***83***
Trichloroethene	***220 D***	***99***	***18***	***15***	***46***
Tetrachloroethene	***5,200 D***	***1,700 D***	***500 D***	***590 D***	***1,500 D***

Compound	MW-23D				
	Jun-06	Aug-07	Nov-08	Feb-10	May-11
Tetrachloroethene	4 J	***6***	***7.7***	***8.3***	***25***

LEGEND:

EXISTING MONITORING WELLS (MW-14)

DAMAGED OR MISSING MONITORING WELL

Compound	NYSDEC Criteria
Acetone	50
Benzene	1
cis-1,2-Dichloroethene	5
1,1,1-Trichloroethane	5
Trichloroethene	5
Tetrachloroethene	5
Toluene	5
1,2-Dichlorobenzene	4.7

Note:

All results are shown in micrograms per liter (ug/L)
BOLD: Results Exceeds Criterion
J: Estimated value
D: Dilution
NA: Not Analyzed
ND: Not Detected

GRAPHIC SCALE

1600 800 0 800 1600

Prepared by : AECOM

SUBMITTED BY : PK

DRAWN BY : SC

APPROVED BY : PK

MULTI SITE G - SERVALL LAUNDRY SITE
SITE NO. 1-52-077

SUMMARY OF VOCs IN GROUNDWATER

DATE : SEPTEMBER 2011

SCALE : AS SHOWN

DRAWING NO. : 8

LEGEND:

- MW-14 — EXISTING MONITORING WELLS
- MISSING MONITORING WELLS
- DAMAGED MONITORING WELLS
- PCE PLUME MARCH 1990
- PCE PLUME JUNE 2006

Note:
- All results are in micrograms per liter (ug/L)
- J: Estimated value, VOCs
- D: Dilution
- NA: Not analyzed
- ND: Non detect

Note: Monitoring wells MW-6B and MW-6A are screened at a higher elevation within the glacial drift sand (not directly on top of the glacial marine clay).

Scale In Feet
0 500 1000

Prepared by : AECOM

SUBMITTED BY : PK	SERVALL LAUNDARY SITE BAY SHORE, NEW YORK
DRAWN BY : VM	**PCE PLUME (MARCH 1990 AND JUNE 2006)**
APPROVED BY : PK	DATE : SEPTEMBER 2011 / SCALE : AS SHOWN / DRAWING NO. : 9

Appendix A

Groundwater Data

Appendix Table A1
ServAll Laundry Site, Site 1-52-077
Summary of Historical Groundwater Sampling Results

Well ID	Class GA	MW-1							MW-2					MW-3A									
Date	GWQS	Feb-90	Mar-90	Jun-94	Jan-98	Jan-99	Jul-00	Feb-10	Feb-90	Mar-90	Jan-99	Nov-08	Feb-10	Feb-90	Mar-90	Jun-94	Jan-98	Jan-99	Jul-00	Jun-06	Aug-07	Nov-08	Feb-10
Volatile Organics																							
Benzene	1	ND	ND	ND	*	*	ND	ND	ND	ND	*	1.7 J	ND	ND	ND	ND	*	*	ND	ND	ND	ND	ND
Acetone	50 (GV)	*	*	ND	*	ND	ND	ND	*	*	8	ND	ND	*	*	ND	*	ND	ND	ND	ND	ND	ND
2-Butanone	50	*	*	*	*	*	ND	ND	*	*	*	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND
Bromodichloromethane	5	*	*	*	*	*	ND	ND	*	*	*	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND
Chloroethane	5	*	*	ND	*	*	ND	ND	*	*	*	ND	ND	*	*	ND	*	*	ND	ND	ND	ND	ND
Chloroform	7	ND	ND	ND	*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	*	ND	ND	ND	ND	ND	ND
Chlorobenzene	5	ND	ND	ND	*	*	ND	ND	ND	ND	*	ND	ND	ND	ND	ND	*	*	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	4.7	*	*	*	*	*	NA	ND	*	*	*	ND	ND	*	*	*	*	*	NA	ND	ND	ND	ND
1,1-Dichloroethane	5	ND	ND	2 J	*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5	*	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbezene	5	ND	ND	*	*	*	NA	ND	ND	ND	*	ND	ND	ND	ND	*	*	*	NA	ND	ND	ND	ND
1,1-Dichloroethene	5	5	3.3 J	22	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethene (total)	5	4	3.1 J	10	ND	ND	1 J	2.3 J	ND	ND	ND	ND	ND	ND	ND	2	ND	ND	1 J	ND	ND	ND	ND
Tetrachloroethene	5	ND	1.2 J	ND	28	1 J	ND	50	6	1 J	ND	ND	ND	ND	ND	0.3 J	ND	ND	ND	ND	ND	ND	ND
Toluene	5	ND	ND	ND	*	*	ND	ND	ND	ND	*	1.4 J	ND	ND	ND	ND	*	*	ND	ND	ND	ND	ND
Total Xylenes	5	ND	ND	ND	*	*	ND	1.1 J	15 J	ND	*	ND	ND	ND	ND	ND	*	*	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	5	42	53 J	200 E	ND	ND	ND	ND	ND	ND	1	ND	ND	ND	8	11	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	1	*	*	ND	*	*	ND	ND	*	*	*	ND	ND	*	*	ND	*	*	ND	ND	ND	ND	ND
Trichloroethene	5	12	9.9 J	3 J	ND	ND	2.0 J	1.8 J	5	1.1 J	ND	ND	ND	ND	14	7	ND	0.7 J	2 J	ND	ND	ND	ND
Vinyl Chloride	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	5	ND	ND	*	*	*	NA	ND	ND	ND	*	ND	ND	ND	ND	*	*	*	NA	ND	ND	ND	ND
1,2,3-Trichlorobenzene	5	ND	ND	*	*	*	NA	ND	ND	ND	*	ND	ND	ND	ND	*	*	*	NA	ND	ND	ND	ND
Napthalene	10 (GV)	ND	ND	*	*	*	NA	ND	ND	ND	*	ND	ND	ND	ND	*	*	*	NA	ND	ND	ND	ND
Methyl tert-butyl ether	10 (GV)	*	*	*	*	*	NA	ND	*	*	*	ND	ND	*	*	*	*	*	NA	ND	ND	ND	ND
Methylene Chloride	5	*	*	11 B	*	ND	ND	ND	*	*	ND	ND	ND	*	*	ND	*	ND	ND	ND	ND	ND	ND
Chloromethane	5	*	*	*	*	*	ND	NA	*	*	*	NA	NA	*	*	*	*	*	ND	ND	ND	ND	ND
Bromomethane	5	*	*	*	*	*	ND	NA	*	*	*	NA	NA	*	*	*	*	*	ND	ND	ND	ND	ND
Carbon disulfide	60 (GV)	*	*	*	*	*	ND	NA	*	*	*	NA	NA	*	*	*	*	*	ND	ND	ND	ND	ND
1,2-Dichloropropane	1	*	*	*	*	*	ND	NA	*	*	*	NA	NA	*	*	*	*	*	ND	ND	ND	ND	ND
1,2-Dichloroethane	5	*	*	*	*	*	ND	NA	*	*	*	NA	NA	*	*	*	*	*	ND	ND	ND	ND	ND
Ethylbenzene	5	*	*	*	*	*	ND	NA	*	*	*	NA	NA	*	*	*	*	*	ND	ND	ND	ND	ND
Styrene	5	*	*	*	*	*	ND	NA	*	*	*	NA	NA	*	*	*	*	*	ND	ND	ND	ND	ND
Carbon Tetrachloride	5	*	*	*	*	*	ND	NA	*	*	*	NA	NA	*	*	*	*	*	ND	ND	ND	ND	ND
1,3-Dichloropropene (total)	0.4	*	*	*	*	*	ND	NA	*	*	*	NA	NA	*	*	*	*	*	ND	ND	ND	ND	ND
Dibromochloromethane	5	*	*	*	*	*	ND	ND	*	*	*	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND
Bromoform	50	*	*	*	*	*	ND	ND	*	*	*	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND
2-Hexanone	5	*	*	*	*	*	ND	ND	*	*	*	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	5	*	*	*	*	*	ND	ND	*	*	*	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone	5	*	*	*	*	*	ND	ND	*	*	*	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND
Dichlorodifluormethane	5	*	*	*	*	*	NA	ND	*	*	*	ND	ND	*	*	*	*	*	NA	ND	ND	ND	ND
Trichlorofluoromethane	5	*	*	*	*	*	NA	ND	*	*	*	ND	ND	*	*	*	*	*	NA	ND	ND	ND	ND
Diethyl ether	5	*	*	*	*	*	NA	NA	*	*	*	NA	NA	*	*	*	*	*	NA	NA	NA	NA	NA
Iodomethane	5	*	*	*	*	*	NA	ND	*	*	*	ND	ND	*	*	*	*	*	NA	ND	ND	ND	ND
Allyl chloride	5	*	*	*	*	*	NA	NA	*	*	*	NA	NA	*	*	*	*	*	NA	NA	NA	NA	NA
Acrylonitrile	5	*	*	*	*	*	NA	NA	*	*	*	NA	NA	*	*	*	*	*	NA	NA	NA	NA	NA
2,2-Dichloropropane	5	*	*	*	*	*	NA	ND	*	*	*	ND	ND	*	*	*	*	*	NA	ND	ND	ND	ND
Methyl acrylate	5	*	*	*	*	*	NA	NA	*	*	*	NA	NA	*	*	*	*	*	NA	NA	NA	NA	NA
Propionitrile	5	*	*	*	*	*	NA	NA	*	*	*	NA	NA	*	*	*	*	*	NA	NA	NA	NA	NA
Bromochloromethane	5	*	*	*	*	*	NA	ND	*	*	*	ND	ND	*	*	*	*	*	NA	ND	ND	ND	ND
Tetrahydrofuran	5	*	*	*	*	*	NA	NA	*	*	*	NA	NA	*	*	*	*	*	NA	NA	NA	NA	NA
Methacrylonitrile	5	*	*	*	*	*	NA	NA	*	*	*	NA	NA	*	*	*	*	*	NA	NA	NA	NA	NA
1-Chlorobutane	5	*	*	*	*	*	NA	NA	*	*	*	NA	NA	*	*	*	*	*	NA	NA	NA	NA	NA
1,1-Dichloropropene	5	*	*	*	*	*	NA	ND	*	*	*	ND	ND	*	*	*	*	*	NA	ND	ND	ND	ND
Methyl methacrylate	50	*	*	*	*	*	NA	NA	*	*	*	NA	NA	*	*	*	*	*	NA	NA	NA	NA	NA
Dibromomethane	5	*	*	*	*	*	NA	ND	*	*	*	ND	ND	*	*	*	*	*	NA	ND	ND	ND	ND
2-Nitropropane	5	*	*	*	*	*	NA	NA	*	*	*	NA	NA	*	*	*	*	*	NA	NA	NA	NA	NA
Chloroacetonitrile	5	*	*	*	*	*	NA	NA	*	*	*	NA	NA	*	*	*	*	*	NA	NA	NA	NA	NA
1,1-dichloropropanone	5	*	*	*	*	*	NA	NA	*	*	*	NA	NA	*	*	*	*	*	NA	NA	NA	NA	NA
Ethyl methacrylate	5	*	*	*	*	*	NA	NA	*	*	*	NA	NA	*	*	*	*	*	NA	NA	NA	NA	NA
1,3-Dichloropropane	5	*	*	*	*	*	NA	ND	*	*	*	ND	ND	*	*	*	*	*	NA	ND	ND	ND	ND
1,1,1,2-Tetrachlorethane	5	*	*	*	*	*	NA	ND	*	*	*	ND	ND	*	*	*	*	*	NA	ND	ND	ND	ND
Isopropylbenzene	5	*	*	*	*	*	NA	ND	*	*	*	ND	ND	*	*	*	*	*	NA	ND	ND	ND	ND
Bromobenzene	5	*	*	*	*	*	NA	ND	*	*	*	ND	ND	*	*	*	*	*	NA	ND	ND	ND	ND
n-Propylbenzene	5	*	*	*	*	*	NA	ND	*	*	*	ND	ND	*	*	*	*	*	NA	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	5	*	*	*	*	*	NA	NA	*	*	*	NA	NA	*	*	*	*	*	NA	NA	NA	NA	NA

Appendix Table A1
ServAll Laundry Site, Site 1-52-077
Summary of Historical Groundwater Sampling Results

Well ID	Class GA	MW-1							MW-2					MW-3A									
Date	GWQS	Feb-90	Mar-90	Jun-94	Jan-98	Jan-99	Jul-00	Feb-10	Feb-90	Mar-90	Jan-99	Nov-08	Feb-10	Feb-90	Mar-90	Jun-94	Jan-98	Jan-99	Jul-00	Jun-06	Aug-07	Nov-08	Feb-10
1,2,3-Trichloropropane	0.04	*	*	*	*	*	NA	ND	*	*	*	ND	ND	*	*	*	*	*	NA	ND	ND	ND	ND
2-Chlorotoluene	5	*	*	*	*	*	NA	ND	*	*	*	ND	ND	*	*	*	*	*	NA	ND	ND	ND	ND
1,3,5-Trimethylbenzene	5	*	*	*	*	*	NA	ND	*	*	*	ND	ND	*	*	*	*	*	NA	ND	ND	ND	ND
4-Chlorotoluene	5	*	*	*	*	*	NA	ND	*	*	*	ND	ND	*	*	*	*	*	NA	ND	ND	ND	ND
tert-Butylbenzene	5	*	*	*	*	*	NA	ND	*	*	*	ND	ND	*	*	*	*	*	NA	ND	ND	ND	ND
Pentachloroethane	5	*	*	*	*	*	NA	NA	*	*	*	NA	NA	*	*	*	*	*	NA	NA	NA	NA	NA
sec-Butylbenzene	5	*	*	*	*	*	NA	ND	*	*	*	ND	ND	*	*	*	*	*	NA	ND	ND	ND	ND
p-Isopropyltoluene	5	*	*	*	*	*	NA	ND	*	*	*	ND	ND	*	*	*	*	*	NA	ND	ND	ND	ND
1,3-Dichlorobenzene	3	*	*	*	*	*	NA	ND	*	*	*	ND	ND	*	*	*	*	*	NA	ND	ND	ND	ND
1,4-Dichlorobenzene	3	*	*	*	*	*	NA	ND	*	*	*	ND	ND	*	*	*	*	*	NA	ND	ND	ND	ND
n-Butylbenzene	5	*	*	*	*	*	NA	ND	*	*	*	ND	ND	*	*	*	*	*	NA	ND	ND	ND	ND
Hexachloroethane	3	*	*	*	*	*	NA	NA	*	*	*	NA	NA	*	*	*	*	*	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	0.04	*	*	*	*	*	NA	ND	*	*	*	ND	ND	*	*	*	*	*	NA	ND	ND	ND	ND
Vinyl Acetate	5	*	*	*	*	*	NA	ND	*	*	*	ND	ND	*	*	*	*	*	NA	ND	ND	ND	ND
1,2-Dibromoethane	5	*	*	*	*	*	NA	ND	*	*	*	ND	ND	*	*	*	*	*	NA	ND	ND	ND	ND
Hexachlorobutadiene	0.5	*	*	*	*	*	NA	ND	*	*	*	ND	ND	*	*	*	*	*	NA	ND	ND	ND	ND
Total VOCs		**63**	**70.5**	**248**	**28**	**1**	**3**	**55**	**26**	**2.1**	**9**	**3.1**	**0**	**0**	**22**	**27.3**	0	**0.7**	**3**	**0**	**0**	**0**	**0**
Semivolatile Organics																							
2-methylphenol	5	ND	ND	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Di-N-Butylphthalate	5	ND	ND	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	**240**	ND	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	5	ND	ND	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	**17**	ND	NA	NA	NA	NA	NA	NA	NA	NA
Metals																							
Aluminum	2,000	ND	ND	*	*	*	*	167 B	ND	ND	*	266	466	**12,900**	**2,470**	*	*	*	*	749	817	1,630	7,870
Antimony	3	ND	ND	*	*	*	*	ND	*	*	*	ND	ND	*	*	*	*	*	*	ND	ND	**5.1** B	ND
Arsenic	25	ND	ND	*	*	*	*	ND	ND	ND	*	ND	ND	ND	ND	*	*	*	*	ND	ND	ND	7.8 B
Barium	1,000	ND	ND	*	*	*	*	69.4 B	ND	ND	*	17.5 B	31.7 B	ND	ND	*	*	*	*	67.3 B	ND	83.9 B	134 B
Beryllium	3	*	*	*	*	*	*	ND	*	*	*	ND	ND	*	*	*	*	*	*	ND	ND	ND	0.34 B
Cadmium	5	*	*	*	*	*	*	1.3 B	*	*	*	**8.8** #E	***43.7***	*	*	*	*	*	*	ND	1.4 B	**5.9** #E	***6.8***
Calcuim	NL	10,800	11,100	*	*	*	*	40,600	11,900	12,700	*	15,300	18,500	ND	ND	*	*	*	*	10,800	5,740	15,000	14,100
Chromium	50	ND	ND	*	*	*	*	2.1 B	ND	ND	*	**113** *	***326***	42.8 J	ND	*	*	*	*	**55.8**	**92.9**	36.3 #	***169***
Cobalt	NL	*	*	*	*	*	*	ND	*	*	*	20.4 B	2.4 B	*	*	*	*	*	*	2.4 B	1.8 B	7.3 B	15.8 B
Copper	200	*	*	*	*	*	*	9.2 B	*	*	*	18.4 B	28.7 B	*	*	*	*	*	*	13 B	20 B	66.2	118
Iron	600	ND	ND	*	*	*	*	***673***	ND	ND	*	**3,120**	***2,030***	**14,500**	**3,120**	*	*	*	*	**1,070**	**911**	**3,040**	***13,900***
Lead	25	ND	ND	*	*	*	*	ND	ND	ND	*	3.3 B	6.8 B	10	ND	*	*	*	*	ND	3.6 B	**33.1**	***79.8***
Magnesium	35,000	ND	ND	*	*	*	*	1,470	7,300	7,560	*	1,250	2,610	ND	ND	*	*	*	*	4,290	686	2,130	3,240
Manganese	300	161	134	*	*	*	*	264	323	365	*	**396**	***325***	161	75.4	*	*	*	*	143	264	**1,840**	***2,580***
Mercury	0.7	ND	ND	*	*	*	*	ND	ND	ND	*	ND	ND	ND	ND	*	*	*	*	ND	ND	ND	0.11 B
Nickel	100	*	*	*	*	*	*	3.6 B	*	*	*	**1,390**	72	*	*	*	*	*	*	23.6 B	20.7 B	22.1 B	77.2
Potassium	NL	ND	ND	*	*	*	*	2,040	ND	5,310	*	1,980	2,290	ND	ND	*	*	*	*	2,170	1,010	2,550	2,150
Selenium	10	*	*	*	*	*	*	ND	*	*	*	ND	ND	*	*	*	*	*	*	ND	ND	ND	ND
Silver	50	*	*	*	*	*	*	ND	*	*	*	ND	ND	*	*	*	*	*	*	ND	1.2 B	ND	ND
Sodium	20,000	14,300	16,500	*	*	*	*	***47,400***	17,400	17,000	*	14,600	***30,200***	**47,300**	**42,900**	*	*	*	*	**129,000**	1,610	9,900	***64,700***
Thallium	1	*	*	*	*	*	*	ND	*	*	*	ND	ND	*	*	*	*	*	*	ND	ND	***16.7*** B	
Vanadium	NL	*	*	*	*	*	*	0.70 B	*	*	*	2.8 B	3.9 B	*	*	*	*	*	*	1.4 B	1.1 B	8 B	23.2 B
Zinc	2,000	*	*	*	*	*	*	42.6 B	*	*	*	44.4 B	155	*	*	*	*	*	*	53.7	46.6 B	594	1,040
Water Quality Parameters																							
Alkalinity (mg/L)		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Dissolved Solids (mg/L)		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Suspended Solids (mg/L)		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon (mg/L)		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
All concenrtations in ug/L unless otherwise noted.
- Estimated value, duplicate out of range.
GV - guidance value.
D - Results from a subsequent dilution
B - Analyte detected in associated method blank
E - Results exceed the instrument calibration limit
NC - No criterion

ND - Analyte concentration less than the instrument detection limit (IDL).
J - Estimated concentration exceeding the IDL, but less than the reporting limit
BOLD font indicates results within the IDL, **BOLD** font in shaded cell indicates exceedances of AWQS+GV.
cis 1,2 dichloroethene and trans 1,2 Dichloroethene have been combined to 1,2 dichloroethene (total)
cis 1,3 dichloropropene and trans 1,3 Dichloropropene have been combined to 1,3 dichloropropene (total)
*No information available. Laboratory data sheets were not available during the preparation of this table; therefore it is unknown if this analyte was analyzed for.
NA indicates sample was not analyzed for specified compound

Appendix Table A1
ServAll Laundry Site, Site 1-52-077
Summary of Historical Groundwater Sampling Results

Well ID	Class GA	MW-3B								MW-4									
Date	GWQS	Feb-90	Mar-90	Jun-94	Jan-98	Jan-99	Jul-00	Nov-08	Feb-10	Feb-90	Mar-90	Jun-94	Jan-98	Jan-99	Jun-06	Apr-07	Aug-07	Nov-08	Feb-10
Volatile Organics																			
Benzene	1	ND	ND	ND	*	*	ND	ND	ND	ND	ND	ND	*	*	ND	ND	ND	ND	ND
Acetone	50 (GV)	*	*	ND	*	ND	ND	ND	ND	*	*	ND	*	ND	ND	ND	ND	ND	ND
2-Butanone	50	*	*	*	*	*	ND	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND
Bromodichloromethane	5	*	*	*	*	*	ND	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND
Chloroethane	5	*	*	ND	*	*	ND	ND	ND	*	*	ND	*	*	ND	ND	ND	ND	ND
Chloroform	7	ND	ND	ND	*	ND	ND	ND	ND	ND	ND	ND	*	ND	ND	ND	ND	ND	ND
Chlorobenzene	5	ND	ND	ND	*	*	ND	ND	ND	ND	ND	ND	*	*	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	4.7	*	*	*	*	*	NA	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND
1,1-Dichloroethane	5	ND	**1.2 J**	ND	*	ND	ND	ND	ND	ND	ND	ND	*	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbezene	5	ND	ND	*	*	*	NA	ND	ND	ND	ND	NA	*	*	ND	ND	ND	ND	ND
1,1-Dichloroethene	5	ND	**4.6 J**	**1**	ND	ND	ND	ND	ND	ND	ND	**0.8 J**	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethene (total)	5	ND	**1.2 J**	**2**	ND	**2**	ND	ND	ND	ND	ND	**2**	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.0	ND	ND	ND	ND	ND	ND
Toluene	5	ND	ND	ND	*	*	ND	ND	ND	ND	ND	ND	*	*	ND	ND	ND	ND	ND
Total Xylenes	5	ND	ND	ND	*	*	ND	ND	ND	ND	ND	ND	*	*	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	5	**34**	**66 J**	**12**	ND	ND	**2 J**	ND	ND	ND	**20**	**8**	ND	**2**	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	1	*	*	ND	*	*	ND	ND	ND	*	*	ND	*	*	ND	ND	ND	ND	ND
Trichloroethene	5	**6**	**8.1 J**	**4**	ND	ND	ND	ND	ND	ND	**18**	**3**	ND	**0.5 J**	ND	ND	ND	ND	ND
Vinyl Chloride	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	5	ND	ND	*	*	*	NA	ND	ND	ND	ND	*	*	*	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	5	ND	ND	*	*	*	NA	ND	ND	ND	ND	*	*	*	ND	ND	ND	ND	ND
Napthalene	10 (GV)	ND	ND	*	*	*	NA	ND	ND	ND	ND	*	*	*	ND	ND	ND	ND	ND
Methyl tert-butyl ether	10 (GV)	*	*	*	*	*	NA	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND
Methylene Chloride	5	*	*	**0.4 J**	*	ND	ND	ND	ND	*	*	ND	*	ND	ND	ND	ND	ND	ND
Chloromethane	5	*	*	*	*	*	ND	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND
Bromomethane	5	*	*	*	*	*	ND	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND
Carbon disulfide	60 (GV)	*	*	*	*	*	ND	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND
1,2-Dichloropropane	1	*	*	*	*	*	ND	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND
1,2-Dichloroethane	5	*	*	*	*	*	ND	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND
Ethylbenzene	5	*	*	*	*	*	ND	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND
Styrene	5	*	*	*	*	*	ND	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND
Carbon Tetrachloride	5	*	*	*	*	*	ND	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND
1,3-Dichloropropene (total)	0.4	*	*	*	*	*	ND	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND
Dibromochloromethane	5	*	*	*	*	*	ND	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND
Bromoform	50	*	*	*	*	*	ND	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND
2-Hexanone	5	*	*	*	*	*	ND	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	5	*	*	*	*	*	ND	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone	5	*	*	*	*	*	ND	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND
Dichlorodifluormethane	5	*	*	*	*	*	NA	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND
Trichlorofluoromethane	5	*	*	*	*	*	NA	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND
Diethyl ether	5	*	*	*	*	*	NA	NA	NA	*	*	*	*	*	NA	NA	NA	NA	NA
Iodomethane	5	*	*	*	*	*	NA	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND
Allyl chloride	5	*	*	*	*	*	NA	NA	NA	*	*	*	*	*	NA	NA	NA	NA	NA
Acrylonitrile	5	*	*	*	*	*	NA	NA	NA	*	*	*	*	*	NA	NA	NA	NA	NA
2,2-Dichloropropane	5	*	*	*	*	*	NA	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND
Methyl acrylate	5	*	*	*	*	*	NA	NA	NA	*	*	*	*	*	NA	NA	NA	NA	NA
Propionitrile	5	*	*	*	*	*	NA	NA	NA	*	*	*	*	*	NA	NA	NA	NA	NA
Bromochloromethane	5	*	*	*	*	*	NA	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND
Tetrahydrofuran	5	*	*	*	*	*	NA	NA	NA	*	*	*	*	*	NA	NA	NA	NA	NA
Methacrylonitrile	5	*	*	*	*	*	NA	NA	NA	*	*	*	*	*	NA	NA	NA	NA	NA
1-Chlorobutane	5	*	*	*	*	*	NA	NA	NA	*	*	*	*	*	NA	NA	NA	NA	NA
1,1-Dichloropropene	5	*	*	*	*	*	NA	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND
Methyl methacrylate	50	*	*	*	*	*	NA	NA	NA	*	*	*	*	*	NA	NA	NA	NA	NA
Dibromomethane	5	*	*	*	*	*	NA	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND
2-Nitropropane	5	*	*	*	*	*	NA	NA	NA	*	*	*	*	*	NA	NA	NA	NA	NA
Chloroacetonitrile	5	*	*	*	*	*	NA	NA	NA	*	*	*	*	*	NA	NA	NA	NA	NA
1,1-dichloropropanone	5	*	*	*	*	*	NA	NA	NA	*	*	*	*	*	NA	NA	NA	NA	NA
Ethyl methacrylate	5	*	*	*	*	*	NA	NA	NA	*	*	*	*	*	NA	NA	NA	NA	NA
1,3-Dichloropropane	5	*	*	*	*	*	NA	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND
1,1,1,2-Tetrachlorethane	5	*	*	*	*	*	NA	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND
Isopropylbenzene	5	*	*	*	*	*	NA	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND
Bromobenzene	5	*	*	*	*	*	NA	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND
n-Propylbenzene	5	*	*	*	*	*	NA	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	5	*	*	*	*	*	NA	NA	NA	*	*	*	*	*	NA	NA	NA	NA	NA

Appendix Table A1
ServAll Laundry Site, Site 1-52-077
Summary of Historical Groundwater Sampling Results

Well ID	Class GA	MW-3B								MW-4									
Date	GWQS	Feb-90	Mar-90	Jun-94	Jan-98	Jan-99	Jul-00	Nov-08	Feb-10	Feb-90	Mar-90	Jun-94	Jan-98	Jan-99	Jun-06	Apr-07	Aug-07	Nov-08	Feb-10
1,2,3-Trichloropropane	0.04	*	*	*	*	*	NA	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND
2-Chlorotoluene	5	*	*	*	*	*	NA	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	5	*	*	*	*	*	NA	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND
4-Chlorotoluene	5	*	*	*	*	*	NA	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND
tert-Butylbenzene	5	*	*	*	*	*	NA	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND
Pentachloroethane	5	*	*	*	*	*	NA	NA	NA	*	*	*	*	*	NA	NA	NA	NA	NA
sec-Butylbenzene	5	*	*	*	*	*	NA	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND
p-Isopropyltoluene	5	*	*	*	*	*	NA	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	3	*	*	*	*	*	NA	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	3	*	*	*	*	*	NA	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND
n-Butylbenzene	5	*	*	*	*	*	NA	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND
Hexachloroethane	3	*	*	*	*	*	NA	NA	NA	*	*	*	*	*	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	0.04	*	*	*	*	*	NA	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND
Vinyl Acetate	5	*	*	*	*	*	NA	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND
1,2-Dibromoethane	5	*	*	*	*	*	NA	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND
Hexachlorobutadiene	0.5	*	*	*	*	*	NA	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND
Total VOCs		**40**	**81.1**	**19.4**	0	**2**	**2**	**0**	**0**	**0**	**38**	**13.8**	**4**	**2.5**	**0**	**0**	**0**	**0**	**0**
Semivolatile Organics																			
2-methylphenol	5	ND	ND	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Di-N-Butylphthalate	5	ND	ND	NA	NA	NA	NA	NA	NA	140	ND	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	5	ND	ND	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Metals																			
Aluminum	2,000	ND	ND	*	*	*	*	**2,030**	2,430	ND	ND	*	*	*	82.5 B	271	721	1,450	13,500
Antimony	3	*	*	*	*	*	*	ND	ND	*	*	*	*	*	ND	**9.4 B**	ND	ND	ND
Arsenic	25	ND	ND	*	*	*	*	ND	ND	ND	ND	*	*	*	2.2 B	ND	6.2 B	ND	ND
Barium	1,000	ND	ND	*	*	*	*	31.5 B	35.2	ND	ND	*	*	*	16.7 B	46.4 B	50.3 B	46.7 B	36.5 B
Beryllium	3	*	*	*	*	*	*	ND	0.085 B	*	*	*	*	*	ND	ND	0.06 B	ND	0.11 B
Cadmium	5	*	*	*	*	*	*	2.2 B#E	1.1 B	*	*	*	*	*	0.73 B	1.4 B	2.6 B	**6.1** #E	2.6 B
Calcuim	NL	8,360	8,040	*	*	*	*	9,700	6,930	11,400	12,600	*	*	*	13,600	18,700	19,600	52,000	15,400
Chromium	50	ND	ND	*	*	*	*	**624** #	***901***	14.5 J	ND	*	*	*	**534**	**337**	**382**	**321** #	***343***
Cobalt	NL	*	*	*	*	*	*	14.9 B	5.1 B	*	*	*	*	*	1.6 B	6.5 B	8.9 B	21.4 B	6.6 B
Copper	200	*	*	*	*	*	*	74.7	49.1	*	*	*	*	*	33.6	16 B	21.5 B	28.6 B	159
Iron	600	ND	ND	*	*	*	*	**4,610**	***4,800***	ND	ND	*	*	*	**1,710**	**1,970**	**2,970**	**3,280**	***3,150***
Lead	25	ND	ND	*	*	*	*	14.4	***29.3***	5	ND	*	*	*	1.6 B	0.99 B	2.4 B	5.2 B	7.5 B
Magnesium	35,000	ND	ND	*	*	*	*	1,490	1,280	ND	ND	*	*	*	3,310	4,910	5,130	3,820	3,470
Manganese	300	85.2	78	*	*	*	*	**447**	128	82	73.2	*	*	*	181	**1,280**	**1,240**	**1,390**	***599***
Mercury	0.7	ND	ND	*	*	*	*	0.05 B	0.064 B	ND	ND	*	*	*	ND	0.06 B	ND	ND	0.072 B
Nickel	100	*	*	*	*	*	*	**540**	***121***	*	*	*	*	*	**240**	**565**	**702**	**1,860**	***103***
Potassium	NL	ND	ND	*	*	*	*	3,040	1,170	ND	ND	*	*	*	2,710	4,690	4,930	4,170	2,540
Selenium	10	*	*	*	*	*	*	ND	ND	*	*	*	*	*	ND	5.3 B	ND	ND	ND
Silver	50	*	*	*	*	*	*	ND	ND	*	*	*	*	*	ND	0.95 B	1.9 B	ND	ND
Sodium	20,000	10,400	9,430	*	*	*	*	6,730	***22,300***	29,000	29,900	*	*	*	13,400	**33,800**	**39,300**	**39,000**	***85,500***
Thallium	1	*	*	*	*	*	*	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND
Vanadium	NL	*	*	*	*	*	*	5.9 B	10.3 B	*	*	*	*	*	1.4 B	1.4 B	1.8 B	1.9 B	4.3 B
Zinc	2,000	*	*	*	*	*	*	191	189	*	*	*	*	*	17.7 B	31 B	44 B	63.4	155
Water Quality Parameters																			
Alkalinity (mg/L)		6	4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Dissolved Solids (mg/L)		99	111	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Suspended Solids (mg/L)		1	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon (mg/L)		21	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

All concenrtations in ug/L unless otherwise noted.
- Estimated value, duplicate out of range.
GV - guidance value.
D - Results from a subsequent dilution
B - Analyte detected in associated method blank
E - Results exceed the instrument calibration limit
NC - No criterion

ND - Analyte concentration less than the instrument detection limit (IDL).
J - Estimated concentration exceeding the IDL, but less than the reporting limit
BOLD font indicates results within the IDL, **BOLD** font in shaded cell indicates exceedances of AWQS+GV.
cis 1,2 dichloroethene and trans 1,2 Dichloroethene have been combined to 1,2 dichloroethene (total)
cis 1,3 dichloropropene and trans 1,3 Dichloropropene have been combined to 1,3 dichloropropene (total)
*No information available. Laboratory data sheets were not available during the preparation of this table; therefore it is unknown if this analyte was analyzed for.
NA indicates sample was not analyzed for specified compound

Appendix Table A1
ServAll Laundry Site, Site 1-52-077
Summary of Historical Groundwater Sampling Results

Well ID	Class GA	MW-5										MW-6A									
Date	GWQS	Feb-90	Mar-90	Jan-98	Jan-99	Jul-00	Jun-06	Apr-07	Aug-07	Nov-08	Feb-10	Feb-90	Mar-90	Jun-94	Jan-98	Jan-99	Jul-00	Jun-06	Apr-07	Aug-07	Nov-08	Feb-10
Volatile Organics																						
Benzene	1	ND	ND	*	*	ND	ND	ND	ND	ND	ND	ND	ND	ND	*	*	ND	ND	ND	ND	ND	ND
Acetone	50 (GV)	*	*	*	ND	ND	ND	ND	ND	**170**	ND	*	*	ND	*	ND	ND	ND	ND	ND	ND	ND
2-Butanone	50	*	*	*	*	ND	ND	ND	ND	**38 J**	ND	*	*	ND	*	*	ND	ND	ND	ND	ND	ND
Bromodichloromethane	5	*	*	*	*	ND	ND	ND	ND	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND	ND
Chloroethane	5	*	*	*	*	ND	ND	ND	ND	ND	ND	*	*	ND	*	*	ND	ND	ND	ND	ND	ND
Chloroform	7	ND	ND	*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	*	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	5	ND	ND	*	*	ND	ND	ND	ND	ND	ND	ND	ND	ND	*	*	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	4.7	*	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	*	*	NA	ND	ND	ND	ND	ND
1,1-Dichloroethane	5	ND	ND	*	4	ND	ND	ND	ND	ND	ND	ND	ND	**0.4 J**	*	1 **J**	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbezene	5	ND	ND	*	*	NA	ND	ND	ND	ND	ND	ND	ND	*	*	*	NA	ND	ND	ND	ND	ND
1,1-Dichloroethene	5	ND	ND	ND	**0.8 J**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethene (total)	5	ND	ND	ND	ND	ND	**3 J**	**2 J**	ND	ND	ND	ND	ND	**0.6 J**	12.0	**1 J**	ND	ND	ND	ND	ND	ND
Tetrachloroethene	5	ND	ND	ND	**3 J**	ND	ND	ND	**2 J**	ND	ND	**48**	**100**	ND	ND	**1 J**	ND	ND	ND	ND	ND	**1.2 J**
Toluene	5	ND	ND	*	*	ND	ND	ND	ND	**1,200**	**230 D**	ND	ND	ND	*	*	ND	ND	ND	ND	ND	ND
Total Xylenes	5	ND	ND	*	*	ND	ND	ND	ND	ND	ND	ND	ND	ND	*	*	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	5	ND	ND	ND	**16**	ND	ND	ND	ND	ND	ND	ND	ND	**2**	ND	**0.6 J**	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	1	*	*	*	*	ND	ND	ND	ND	ND	ND	*	*	ND	*	*	ND	ND	ND	ND	ND	ND
Trichloroethene	5	ND	**2.8 J**	ND	**0.6 J**	ND	ND	ND	ND	ND	ND	ND	ND	**0.7 J**	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	5	ND	ND	*	*	NA	ND	ND	ND	ND	ND	ND	ND	*	*	*	NA	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	5	ND	ND	*	*	NA	ND	ND	ND	ND	ND	ND	ND	*	*	*	NA	ND	ND	ND	ND	ND
Napthalene	10 (GV)	ND	ND	*	*	NA	ND	ND	ND	ND	ND	ND	ND	*	*	*	NA	ND	ND	ND	ND	ND
Methyl tert-butyl ether	10 (GV)	*	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	*	*	NA	ND	ND	ND	ND	ND
Methylene Chloride	5	*	*	*	ND	ND	ND	ND	ND	ND	ND	*	*	ND	*	ND	ND	ND	ND	ND	ND	ND
Chloromethane	5	*	*	*	*	ND	ND	ND	ND	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND	ND
Bromomethane	5	*	*	*	*	ND	ND	ND	ND	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND	ND
Carbon disulfide	60 (GV)	*	*	*	*	ND	ND	ND	ND	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	1	*	*	*	*	ND	ND	ND	ND	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	5	*	*	*	*	ND	ND	ND	ND	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND	ND
Ethylbenzene	5	*	*	*	*	ND	ND	ND	ND	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND	ND
Styrene	5	*	*	*	*	ND	ND	ND	ND	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	5	*	*	*	*	ND	ND	ND	ND	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND	ND
1,3-Dichloropropene (total)	0.4	*	*	*	*	ND	ND	ND	ND	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND	ND
Dibromochloromethane	5	*	*	*	*	ND	ND	ND	ND	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND	ND
Bromoform	50	*	*	*	*	ND	ND	ND	ND	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND	ND
2-Hexanone	5	*	*	*	*	ND	ND	ND	ND	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	5	*	*	*	*	ND	ND	ND	ND	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone	5	*	*	*	*	ND	ND	ND	ND	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND	ND
Dichlorodifluormethane	5	*	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	*	*	NA	ND	ND	ND	ND	ND
Trichlorofluoromethane	5	*	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	*	*	NA	ND	ND	ND	ND	ND
Diethyl ether	5	*	*	*	*	NA	NA	NA	NA	NA	NA	*	*	*	*	*	NA	NA	NA	NA	NA	NA
Iodomethane	5	*	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	*	*	NA	ND	ND	ND	ND	ND
Allyl chloride	5	*	*	*	*	NA	NA	NA	NA	NA	NA	*	*	*	*	*	NA	NA	NA	NA	NA	NA
Acrylonitrile	5	*	*	*	*	NA	NA	NA	NA	NA	NA	*	*	*	*	*	NA	NA	NA	NA	NA	NA
2,2-Dichloropropane	5	*	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	*	*	NA	ND	ND	ND	ND	ND
Methyl acrylate	5	*	*	*	*	NA	NA	NA	NA	NA	NA	*	*	*	*	*	NA	NA	NA	NA	NA	NA
Propionitrile	5	*	*	*	*	NA	NA	NA	NA	NA	NA	*	*	*	*	*	NA	NA	NA	NA	NA	NA
Bromochloromethane	5	*	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	*	*	NA	ND	ND	ND	ND	ND
Tetrahydrofuran	5	*	*	*	*	NA	NA	NA	NA	NA	NA	*	*	*	*	*	NA	NA	NA	NA	NA	NA
Methacrylonitrile	5	*	*	*	*	NA	NA	NA	NA	NA	NA	*	*	*	*	*	NA	NA	NA	NA	NA	NA
1-Chlorobutane	5	*	*	*	*	NA	NA	NA	NA	NA	NA	*	*	*	*	*	NA	NA	NA	NA	NA	NA
1,1-Dichloropropene	5	*	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	*	*	NA	ND	ND	ND	ND	ND
Methyl methacrylate	50	*	*	*	*	NA	NA	NA	NA	NA	NA	*	*	*	*	*	NA	NA	NA	NA	NA	NA
Dibromomethane	5	*	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	*	*	NA	ND	ND	ND	ND	ND
2-Nitropropane	5	*	*	*	*	NA	NA	NA	NA	NA	NA	*	*	*	*	*	NA	NA	NA	NA	NA	NA
Chloroacetonitrile	5	*	*	*	*	NA	NA	NA	NA	NA	NA	*	*	*	*	*	NA	NA	NA	NA	NA	NA
1,1-dichloropropanone	5	*	*	*	*	NA	NA	NA	NA	NA	NA	*	*	*	*	*	NA	NA	NA	NA	NA	NA
Ethyl methacrylate	5	*	*	*	*	NA	NA	NA	NA	NA	NA	*	*	*	*	*	NA	NA	NA	NA	NA	NA
1,3-Dichloropropane	5	*	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	*	*	NA	ND	ND	ND	ND	ND
1,1,1,2-Tetrachlorethane	5	*	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	*	*	NA	ND	ND	ND	ND	ND
Isopropylbenzene	5	*	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	*	*	NA	ND	ND	ND	ND	ND
Bromobenzene	5	*	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	*	*	NA	ND	ND	ND	ND	ND
n-Propylbenzene	5	*	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	*	*	NA	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	5	*	*	*	*	NA	NA	NA	NA	NA	NA	*	*	*	*	*	NA	NA	NA	NA	NA	NA

Appendix Table A1
ServAll Laundry Site, Site 1-52-077
Summary of Historical Groundwater Sampling Results

Well ID	Class GA	MW-5										MW-6A									
Date	GWQS	Feb-90	Mar-90	Jan-98	Jan-99	Jul-00	Jun-06	Apr-07	Aug-07	Nov-08	Feb-10	Feb-90	Mar-90	Jun-94	Jan-98	Jan-99	Jul-00	Jun-06	Apr-07	Aug-07	Nov-08	Feb-10
1,2,3-Trichloropropane	0.04	*	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	*	*	NA	ND	ND	ND	ND	ND
2-Chlorotoluene	5	*	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	*	*	NA	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	5	*	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	*	*	NA	ND	ND	ND	ND	ND
4-Chlorotoluene	5	*	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	*	*	NA	ND	ND	ND	ND	ND
tert-Butylbenzene	5	*	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	*	*	NA	ND	ND	ND	ND	ND
Pentachloroethane	5	*	*	*	*	NA	NA	NA	NA	NA	NA	*	*	*	*	*	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	5	*	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	*	*	NA	ND	ND	ND	ND	ND
p-Isopropyltoluene	5	*	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	*	*	NA	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	3	*	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	*	*	NA	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	3	*	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	*	*	NA	ND	ND	ND	ND	ND
n-Butylbenzene	5	*	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	*	*	NA	ND	ND	ND	ND	ND
Hexachloroethane	3	*	*	*	*	NA	NA	NA	NA	NA	NA	*	*	*	*	*	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	0.04	*	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	*	*	NA	ND	ND	ND	ND	ND
Vinyl Acetate	5	*	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	*	*	NA	ND	ND	ND	ND	ND
1,2-Dibromoethane	5	*	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	*	*	NA	ND	ND	ND	ND	ND
Hexachlorobutadiene	0.5	*	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	*	*	NA	ND	ND	ND	ND	ND
Total VOCs		**0**	**2.8**	**0**	**24.4**	**0**	**3**	**2**	**2**	**1,408**	**230**	**48**	**100**	**3.7**	**12**	**3.6**	**0**	**0**	**0**	**0**	**0**	**1**
Semivolatile Organics																						
2-methylphenol	5	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-N-Butylphthalate	5	**190**	ND	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	5	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																						
Aluminum	2,000	ND	ND	*	*	*	391	264	**2,740**	383	4,640	236	287	*	*	*	*	527	**3,300**	855	**2,390**	2,840
Antimony	3	*	*	*	*	*	ND	ND	ND	ND	ND	*	*	*	*	*	*	ND	**37.1**	ND	ND	ND
Arsenic	25	ND	ND	*	*	*	1.7 B	ND	20.9	8 B	10.7 B	ND	ND	*	*	*	*	3.5 B	ND	8.2 B	ND	ND
Barium	1,000	ND	ND	*	*	*	17.9 B	10.9 B	65.2 B	233	95.8 B	ND	ND	*	*	*	*	72.2 B	52.9 B	33.4 B	57.7 B	27.7 B
Beryllium	3	*	*	*	*	*	ND	ND	0.26 B	ND	0.26 B	*	*	*	*	*	*	ND	ND	ND	ND	0.13 B
Cadmium	5	*	*	*	*	*	2.4 B	2.1 B	1.3 B	0.41 B#E	1.7 B	*	*	*	*	*	*	1.5 B	4.3 B	2.2 B	1.9 B#E	1.1 B
Calcuim	NL	ND	ND	*	*	*	20,700	20,400	18,700	31,400	17,900	15,200	14,900	*	*	*	*	33,800	17,400	15,800	15,600	8,730
Chromium	50	ND	ND	*	*	*	**80.5**	**79.8**	**1,370**	**116** #	***201***	28.9 J	ND	*	*	*	*	**607**	**1,280**	**639**	**88.8** #	***340***
Cobalt	NL	*	*	*	*	*	1.3 B	0.93 B	14.1 B	24.6 B	26.8 B	*	*	*	*	*	*	11.3 B	16.8 B	13.6 B	28.2 B	4.7 B
Copper	200	*	*	*	*	*	6.8 B	6.4 B	34.9	10.3 B	74.2	*	*	*	*	*	*	16 B	53.3	37.6	65.3	45.5
Iron	600	ND	ND	*	*	*	**934**	**483**	**7,140**	**49,400**	***26,900***	ND	ND	*	*	*	*	**3,780**	**6,330**	**4,410**	**4,200**	***4,380***
Lead	25	3.6	ND	*	*	*	3.6 B	1.4 B	2.3 B	ND	7.5 B	ND	ND	*	*	*	*	4.1 B	16.7	4.3 B	**25.9**	***27.8***
Magnesium	35,000	ND	ND	*	*	*	3,420	3,230	3,380	5,590	2,900	ND	ND	*	*	*	*	5,070	2,870	2,660	2,870	1,990
Manganese	300	24.2	20.8	*	*	*	209	219	**3,550**	**1,830**	***2,410***	**946**	**833**	*	*	*	*	**7,140**	**3,890**	**6,410**	**3,250**	***346***
Mercury	0.7	ND	ND	*	*	*	ND	0.05 B	ND	ND	0.12 B	ND	ND	*	*	*	*	ND	0.10 B	ND	ND	0.38
Nickel	100	*	*	*	*	*	39.1 B	**127**	**135**	49 B	37.5 B	*	*	*	*	*	*	**160**	**273**	**1,130**	**196**	83.1
Potassium	NL	ND	ND	*	*	*	2,490	1,960	5,000	13,900	10,300	ND	ND	*	*	*	*	2,390	2,110	2,490	9,900	2,580
Selenium	10	*	*	*	*	*	ND	1.2 B	ND	ND	ND	*	*	*	*	*	*	1.7 B	9.8 B	ND	ND	ND
Silver	50	*	*	*	*	*	ND	1.3 B	1.3 B	ND	ND	*	*	*	*	*	*	ND	ND	3.3 B	ND	ND
Sodium	20,000	9,500	10,400	*	*	*	13,400	14,700	**43,300**	**59,200**	***32,900***	**43,100**	**39,800**	*	*	*	*	**59,600**	**39,600**	**31,600**	**8,730**	***92,200***
Thallium	1	*	*	*	*	*	**1.4 B**	ND	ND	ND	***14*** B	*	*	*	*	*	*	**32.3**	ND	ND	ND	ND
Vanadium	NL	*	*	*	*	*	0.89 B	0.79 B	13.1 B	3.5 B	5.3 B	*	*	*	*	*	*	2.6 B	7.2 B	2.8 B	5.3 B	6.8 B
Zinc	2,000	*	*	*	*	*	29.2 B	30.1 B	51.4	35.2 B	91.5	*	*	*	*	*	*	45.6 B	115	53.6	125	111
Water Quality Parameters																						
Alkalinity (mg/L)		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10	8	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Dissolved Solids (mg/L)		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	223	226	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Suspended Solids (mg/L)		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7	5	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon (mg/L)		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	28	35	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
All concenrtations in ug/L unless otherwise noted.
- Estimated value, duplicate out of range.
GV - guidance value.
D - Results from a subsequent dilution
B - Analyte detected in associated method blank
E - Results exceed the instrument calibration limit
NC - No criterion

ND - Analyte concentration less than the instrument detection limit (IDL).
J - Estimated concentration exceeding the IDL, but less than the reporting limit
BOLD font indicates results within the IDL, **BOLD** font in shaded cell indicates exceedances of AWQS+GV.
cis 1,2 dichloroethene and trans 1,2 Dichloroethene have been combined to 1,2 dichloroethene (total)
cis 1,3 dichloropropene and trans 1,3 Dichloropropene have been combined to 1,3 dichloropropene (total)
*No information available. Laboratory data sheets were not available during the preparation of this table; therefore it is unknown if this analyte was analyzed for.
NA indicates sample was not analyzed for specified compound

Appendix Table A1
ServAll Laundry Site, Site 1-52-077
Summary of Historical Groundwater Sampling Results

Well ID	Class GA	MW-6B													MW-7			MW-8			MW-9					MW-10	
Date	GWQS	Feb-90	Mar-90	Jun-94	Jan-98	Jan-99	Mar-99	Jul-00	Jun-06	Apr-07	Aug-07	Jan-08	Nov-08	Feb-10	Feb-90	Mar-90	Jun-94	Feb-90	Mar-90	Jun-94	Feb-90	Mar-90	Jan-98	Jan-99	Jul-00	Feb-90	Mar-90
Volatile Organics																											
Benzene	1	ND	ND	ND	*	*	*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	*	*	ND	ND	ND
Acetone	50 (GV)	*	*	ND	*	ND	ND	ND	ND	ND	ND	ND	ND	ND	*	*	ND	ND	ND	ND	*	*	*	ND	ND	*	*
2-Butanone	50	*	*	ND	*	*	*	ND	ND	ND	ND	ND	ND	ND	*	*	ND	ND	ND	ND	*	*	*	*	ND	*	*
Bromodichloromethane	5	*	*	*	*	*	*	ND	ND	ND	ND	ND	ND	ND	*	*	*	ND	ND	*	*	*	*	*	ND	*	*
Chloroethane	5	*	*	ND	*	*	*	ND	ND	ND	ND	ND	ND	ND	*	*	ND	*	*	ND	*	*	*	*	ND	*	*
Chloroform	7	ND	ND	ND	*	ND	ND	ND	ND	ND	ND	6	2 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	*	ND	ND	ND	ND
Chlorobenzene	5	ND	2.4 J	ND	*	*	*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	*	*	ND	ND	ND
1,2-Dichlorobenzene	4.7	*	*	*	*	*	*	NA	ND	ND	ND	ND	ND	ND	*	*	*	*	*	*	*	*	*	*	NA	*	*
1,1-Dichloroethane	5	ND	ND	ND	*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5 J	4 J	*	2	6 J	ND	ND
1,2,4-Trimethylbezene	5	ND	ND	*	*	*	*	NA	ND	ND	ND	ND	ND	ND	ND	ND	*	ND	ND	*	ND	ND	*	*	ND	ND	ND
1,1-Dichloroethene	5	ND	4.3 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2	1.5 J	ND	2	10 J	ND	ND
1,2-Dichloroethene (total)	5	2,400	2,200 J	160	ND	0.8 J	ND	34	210 D	120	130	110	140	190	ND	ND	ND	ND	ND	10	1	ND	ND	3	18	ND	ND
Tetrachloroethene	5	14,000	13,000 DJ	8,400 E	11,000	22 J	6 J	160	1,100 D	650	480 D	510	470	2,000 D	4,300	7,200	1,400 E	28	410	240 D	7	7.6 J	ND	14 J	22	ND	ND
Toluene	5	ND	ND	ND	*	*	*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	*	*	ND	ND	ND
Total Xylenes	5	ND	ND	ND	*	*	*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	*	*	ND	ND	ND
1,1,1-Trichloroethane	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	12 J	ND	ND	ND	11	7.1 J	ND	8	24	1	ND
1,1,2-Trichloroethane	1	*	*	ND	*	*	*	ND	ND	ND	ND	ND	ND	ND	*	*	ND	*	*	ND	*	*	*	*	ND	*	*
Trichloroethene	5	ND	1,100 DJ	300	ND	0.6 J	ND	15	85	27	26	21	30	40	ND	54	32	10	ND	10	ND	ND	ND	3	23	ND	ND
Vinyl Chloride	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	5	ND	ND	*	*	*	*	NA	ND	ND	ND	ND	ND	ND	ND	ND	*	ND	ND	*	ND	ND	*	*	NA	ND	ND
1,2,3-Trichlorobenzene	5	ND	ND	*	*	*	*	NA	ND	ND	ND	ND	ND	ND	ND	ND	*	ND	ND	*	ND	ND	*	*	NA	ND	ND
Napthalene	10 (GV)	ND	ND	*	*	*	*	NA	ND	ND	ND	ND	ND	ND	ND	ND	*	ND	ND	*	ND	ND	*	*	NA	ND	ND
Methyl tert-butyl ether	10 (GV)	*	*	*	*	*	*	NA	ND	ND	ND	ND	ND	ND	*	*	*	*	*	*	*	*	*	*	NA	*	*
Methylene Chloride	5	*	*	40.0 J	*	ND	ND	ND	ND	ND	ND	ND	ND	ND	*	*	44 JE	*	*	2.0 J	*	*	*	ND	ND	*	*
Chloromethane	5	*	*	*	*	*	*	ND	ND	ND	ND	ND	ND	ND	*	*	*	*	*	*	*	*	*	*	ND	*	*
Bromomethane	5	*	*	*	*	*	*	ND	ND	ND	ND	ND	ND	ND	*	*	*	*	*	*	*	*	*	*	ND	*	*
Carbon disulfide	60 (GV)	*	*	*	*	*	*	ND	ND	ND	ND	ND	ND	ND	*	*	*	*	*	*	*	*	*	*	ND	*	*
1,2-Dichloropropane	1	*	*	*	*	*	*	ND	ND	ND	ND	ND	ND	ND	*	*	*	*	*	*	*	*	*	*	ND	*	*
1,2-Dichloroethane	5	*	*	*	*	*	*	ND	ND	ND	ND	ND	ND	ND	*	*	*	*	*	*	*	*	*	*	ND	*	*
Ethylbenzene	5	*	*	*	*	*	*	ND	ND	ND	ND	ND	ND	ND	*	*	*	*	*	*	*	*	*	*	ND	*	*
Styrene	5	*	*	*	*	*	*	ND	ND	ND	ND	ND	ND	ND	*	*	*	*	*	*	*	*	*	*	ND	*	*
Carbon Tetrachloride	5	*	*	*	*	*	*	ND	ND	ND	ND	ND	ND	ND	*	*	*	*	*	*	*	*	*	*	ND	*	*
1,3-Dichloropropene (total)	0.4	*	*	*	*	*	*	ND	ND	ND	ND	ND	ND	ND	*	*	*	*	*	*	*	*	*	*	ND	*	*
Dibromochloromethane	5	*	*	*	*	*	*	ND	ND	ND	ND	ND	ND	ND	*	*	*	*	*	*	*	*	*	*	ND	*	*
Bromoform	50	*	*	*	*	*	*	ND	ND	ND	ND	ND	ND	ND	*	*	*	*	*	*	*	*	*	*	ND	*	*
2-Hexanone	5	*	*	*	*	*	*	ND	ND	ND	ND	ND	ND	ND	*	*	*	*	*	*	*	*	*	*	ND	*	*
1,1,2,2-Tetrachloroethane	5	*	*	*	*	*	*	ND	ND	ND	ND	ND	ND	ND	*	*	*	*	*	*	*	*	*	*	ND	*	*
4-Methyl-2-Pentanone	5	*	*	*	*	*	*	ND	ND	ND	ND	ND	ND	ND	*	*	*	*	*	*	*	*	*	*	ND	*	*
Dichlorodifluormethane	5	*	*	*	*	*	*	NA	ND	ND	ND	ND	ND	ND	*	*	*	*	*	*	*	*	*	*	NA	*	*
Trichlorofluoromethane	5	*	*	*	*	*	*	NA	ND	ND	ND	ND	ND	ND	*	*	*	*	*	*	*	*	*	*	NA	*	*
Diethyl ether	5	*	*	*	*	*	*	NA	NA	NA	NA	NA	NA	NA	*	*	*	*	*	*	*	*	*	*	NA	*	*
Iodomethane	5	*	*	*	*	*	*	NA	ND	ND	ND	ND	ND	ND	*	*	*	*	*	*	*	*	*	*	NA	*	*
Allyl chloride	5	*	*	*	*	*	*	NA	NA	NA	NA	NA	NA	NA	*	*	*	*	*	*	*	*	*	*	NA	*	*
Acrylonitrile	5	*	*	*	*	*	*	NA	NA	NA	NA	NA	NA	NA	*	*	*	*	*	*	*	*	*	*	NA	*	*
2,2-Dichloropropane	5	*	*	*	*	*	*	NA	ND	ND	ND	ND	ND	ND	*	*	*	*	*	*	*	*	*	*	NA	*	*
Methyl acrylate	5	*	*	*	*	*	*	NA	NA	NA	NA	NA	NA	NA	*	*	*	*	*	*	*	*	*	*	NA	*	*
Propionitrile	5	*	*	*	*	*	*	NA	NA	NA	NA	NA	NA	NA	*	*	*	*	*	*	*	*	*	*	NA	*	*
Bromochloromethane	5	*	*	*	*	*	*	NA	ND	ND	ND	ND	ND	ND	*	*	*	*	*	*	*	*	*	*	NA	*	*
Tetrahydrofuran	5	*	*	*	*	*	*	NA	NA	NA	NA	NA	NA	NA	*	*	*	*	*	*	*	*	*	*	NA	*	*
Methacrylonitrile	5	*	*	*	*	*	*	NA	NA	NA	NA	NA	NA	NA	*	*	*	*	*	*	*	*	*	*	NA	*	*
1-Chlorobutane	5	*	*	*	*	*	*	NA	NA	NA	NA	NA	NA	NA	*	*	*	*	*	*	*	*	*	*	NA	*	*
1,1-Dichloropropene	5	*	*	*	*	*	*	NA	ND	ND	ND	ND	ND	ND	*	*	*	*	*	*	*	*	*	*	NA	*	*
Methyl methacrylate	50	*	*	*	*	*	*	NA	NA	NA	NA	NA	NA	NA	*	*	*	*	*	*	*	*	*	*	NA	*	*
Dibromomethane	5	*	*	*	*	*	*	NA	ND	ND	ND	ND	ND	ND	*	*	*	*	*	*	*	*	*	*	NA	*	*
2-Nitropropane	5	*	*	*	*	*	*	NA	NA	NA	NA	NA	NA	NA	*	*	*	*	*	*	*	*	*	*	NA	*	*
Chloroacetonitrile	5	*	*	*	*	*	*	NA	NA	NA	NA	NA	NA	NA	*	*	*	*	*	*	*	*	*	*	NA	*	*
1,1-dichloropropanone	5	*	*	*	*	*	*	NA	NA	NA	NA	NA	NA	NA	*	*	*	*	*	*	*	*	*	*	NA	*	*
Ethyl methacrylate	5	*	*	*	*	*	*	NA	NA	NA	NA	NA	NA	NA	*	*	*	*	*	*	*	*	*	*	NA	*	*
1,3-Dichloropropane	5	*	*	*	*	*	*	NA	ND	ND	ND	ND	ND	ND	*	*	*	*	*	*	*	*	*	*	NA	*	*
1,1,1,2-Tetrachlorethane	5	*	*	*	*	*	*	NA	ND	ND	ND	ND	ND	ND	*	*	*	*	*	*	*	*	*	*	NA	*	*
Isopropylbenzene	5	*	*	*	*	*	*	NA	ND	ND	ND	ND	ND	ND	*	*	*	*	*	*	*	*	*	*	NA	*	*
Bromobenzene	5	*	*	*	*	*	*	NA	ND	ND	ND	ND	ND	ND	*	*	*	*	*	*	*	*	*	*	NA	*	*
n-Propylbenzene	5	*	*	*	*	*	*	NA	ND	ND	ND	ND	ND	ND	*	*	*	*	*	*	*	*	*	*	NA	*	*
trans-1,4-Dichloro-2-butene	5	*	*	*	*	*	*	NA	NA	NA	NA	NA	NA	NA	*	*	*	*	*	*	*	*	*	*	NA	*	*

Appendix Table A1
ServAll Laundry Site, Site 1-52-077
Summary of Historical Groundwater Sampling Results

Well ID	Class GA	MW-6B													MW-7			MW-8			MW-9					MW-10	
Date	GWQS	Feb-90	Mar-90	Jun-94	Jan-98	Jan-99	Mar-99	Jul-00	Jun-06	Apr-07	Aug-07	Jan-08	Nov-08	Feb-10	Feb-90	Mar-90	Jun-94	Feb-90	Mar-90	Jun-94	Feb-90	Mar-90	Jan-98	Jan-99	Jul-00	Feb-90	Mar-90
1,2,3-Trichloropropane	0.04	*	*	*	*	*	*	NA	ND	ND	ND	ND	ND	ND	*	*	*	*	*	*	*	*	*	*	NA	*	*
2-Chlorotoluene	5	*	*	*	*	*	*	NA	ND	ND	ND	ND	ND	ND	*	*	*	*	*	*	*	*	*	*	NA	*	*
1,3,5-Trimethylbenzene	5	*	*	*	*	*	*	NA	ND	ND	ND	ND	ND	ND	*	*	*	*	*	*	*	*	*	*	NA	*	*
4-Chlorotoluene	5	*	*	*	*	*	*	NA	ND	ND	ND	ND	ND	ND	*	*	*	*	*	*	*	*	*	*	NA	*	*
tert-Butylbenzene	5	*	*	*	*	*	*	NA	ND	ND	ND	ND	ND	ND	*	*	*	*	*	*	*	*	*	*	NA	*	*
Pentachloroethane	5	*	*	*	*	*	*	NA	NA	NA	NA	NA	NA	NA	*	*	*	*	*	*	*	*	*	*	NA	*	*
sec-Butylbenzene	5	*	*	*	*	*	*	NA	ND	ND	ND	ND	ND	ND	*	*	*	*	*	*	*	*	*	*	NA	*	*
p-Isopropyltoluene	5	*	*	*	*	*	*	NA	ND	ND	ND	ND	ND	ND	*	*	*	*	*	*	*	*	*	*	NA	*	*
1,3-Dichlorobenzene	3	*	*	*	*	*	*	NA	ND	ND	ND	ND	ND	ND	*	*	*	*	*	*	*	*	*	*	NA	*	*
1,4-Dichlorobenzene	3	*	*	*	*	*	*	NA	ND	ND	ND	ND	ND	ND	*	*	*	*	*	*	*	*	*	*	NA	*	*
n-Butylbenzene	5	*	*	*	*	*	*	NA	ND	ND	ND	ND	ND	ND	*	*	*	*	*	*	*	*	*	*	NA	*	*
Hexachloroethane	3	*	*	*	*	*	*	NA	NA	NA	NA	NA	NA	NA	*	*	*	*	*	*	*	*	*	*	NA	*	*
1,2-Dibromo-3-chloropropane	0.04	*	*	*	*	*	*	NA	ND	ND	ND	ND	ND	ND	*	*	*	*	*	*	*	*	*	*	NA	*	*
Vinyl Acetate	5	*	*	*	*	*	*	NA	ND	ND	ND	ND	ND	ND	*	*	*	*	*	*	*	*	*	*	NA	*	*
1,2-Dibromoethane	5	*	*	*	*	*	*	NA	ND	ND	ND	ND	ND	ND	*	*	*	*	*	*	*	*	*	*	NA	*	*
Hexachlorobutadiene	0.5	*	*	*	*	*	*	NA	ND	ND	ND	ND	ND	ND	*	*	*	*	*	*	*	*	*	*	NA	*	*
Total VOCs		**16,400**	**16,306.7**	**8,900**	**11,000**	**23.4**	**6**	**209**	**1,395**	**797**	**636**	**647**	**642**	**2,230**	**4,300**	**7,254**	**1,488**	**38**	**410**	**262**	**26**	**20.2**	**0**	**32**	**103**	**1**	**0**
Semivolatile Organics																											
2-methylphenol	5	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	ND	ND	NA	ND	ND	NA	NA	NA	ND	ND
Di-N-Butylphthalate	5	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**290**	ND	NA	**210**	ND	NA	**170**	ND	NA	NA	NA	**170**	ND
Butylbenzylphthalate	5	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**27**	ND	NA	**50**	ND	NA	ND	ND	NA	NA	NA	ND	ND
Metals																											
Aluminum	2,000	**2,200**	**2,870**	*	*	*	*	*	2,000	3,780	14,500	*	7,500	18,000	3,890	2,780	*	733	1,270	*	ND	ND	*	*	*	ND	ND
Antimony	3	*	*	*	*	*	*	*	2.7 B	**7.9 B**	ND	*	ND	ND	*	*	*	*	*	*	*	*	*	*	*	*	*
Arsenic	25	ND	ND	*	*	*	*	*	ND	ND	4.6 B	*	ND	6.8 B	1,750	ND	*	ND	ND	*	ND	ND	*	*	*	ND	ND
Barium	1,000	ND	ND	*	*	*	*	**	19.3 B	27.7 B	33.1 B	*	24.6 B	90.7 B	ND	ND	*	ND	ND	*	ND	ND	*	*	*	ND	ND
Beryllium	3	*	*	*	*	*	*	*	ND	0.24 B	0.35 B	*	0.37 B	1.5 B	*	*	*	*	*	*	*	*	*	*	*	*	*
Cadmium	5	*	*	*	*	*	*	*	0.75 B	0.91 B	2.6 B	*	0.88 B#E	1.7 B	*	*	*	*	*	*	*	*	*	*	*	*	*
Calcuim	NL	16,000	20,100	*	*	*	*	*	19,600	25,100	24,400	*	22,500	26,900	30,400	23,700	*	12,600	11,800	*	11,100	12,200	*	*	*	8,930	9,650
Chromium	50	23.6 J	ND	*	*	*	*	*	**62.2**	**133**	**143**	*	46.6 #	***225***	35.2 J	ND	*	15.3 J	ND	*	13 J	ND	*	*	*	ND	ND
Cobalt	NL	*	*	*	*	*	*	*	2.2 B	11.6 B	9.6 B	*	8.6 B	12.3 B	*	*	*	*	*	*	*	*	*	*	*	*	*
Copper	200	*	*	*	*	*	*	*	17.5 B	37.2	150	*	96.6	143	*	*	*	*	*	*	*	*	*	*	*	*	*
Iron	600	ND	**978**	*	*	*	*	*	**1,950**	**5,500**	**9,130**	*	**5,950**	***28,500***	**3,830**	**2,820**	*	**822**	**1,450**	*	ND	ND	*	*	*	ND	ND
Lead	25	ND	ND	*	*	*	*	*	2.8 B	9.1 B	18.5	*	9 B	***83.9***	ND	ND	*	9	ND	*	ND	ND	*	*	*	3.30	ND
Magnesium	35,000	ND	ND	*	*	*	*	*	3,430	4,520	5,030	*	3,600	5,840	16,700	12,200	*	6,540	6,630	*	10,600	12,200	*	*	*	ND	ND
Manganese	300	**523**	**675**	*	*	*	*	*	81.6	**344**	**429**	*	**540**	269	139	166	*	169	127	*	80.5	78.7	*	*	*	ND	ND
Mercury	0.7	ND	ND	*	*	*	*	*	ND	0.07 B	ND	*	ND	0.39	ND	ND	*	ND	ND	*	ND	ND	*	*	*	ND	ND
Nickel	100	*	*	*	*	*	*	*	46.1 B	51.3	47 B	*	12.5 B	70.4	*	*	*	*	*	*	*	*	*	*	*	*	*
Potassium	NL	ND	ND	*	*	*	*	*	2,210	2,510	2,460	*	1,740	3,220	ND	ND	*	ND	ND	*	ND	ND	*	*	*	ND	ND
Selenium	10	*	*	*	*	*	*	*	ND	ND	ND	*	ND	ND	*	*	*	*	*	*	*	*	*	*	*	*	*
Silver	50	*	*	*	*	*	*	*	ND	1.3 B	ND	*	ND	ND	*	*	*	*	*	*	*	*	*	*	*	*	*
Sodium	20,000	**20,900**	19,400	*	*	*	*	*	17,800	**28,200**	**25,900**	*	**15,100**	17,400	**86,300**	**73,500**	*	**48,800**	**43,800**	*	19,500	**22,900**	*	*	*	11,800	13,200
Thallium	1	*	*	*	*	*	*	*	ND	ND	ND	*	ND	ND	*	*	*	*	*	*	*	*	*	*	*	*	*
Vanadium	NL	*	*	*	*	*	*	*	1.1 B	3.7 B	7.9 B	*	3 B	29.7 B	*	*	*	*	*	*	*	*	*	*	*	*	*
Zinc	2,000	*	*	*	*	*	*	*	53.6	80.4	240	*	100	325	*	*	*	*	*	*	*	*	*	*	*	*	*
Water Quality Parameters																											
Alkalinity (mg/L)		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	53	51	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Dissolved Solids (mg/L)		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	449	376	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Suspended Solids (mg/L)		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	56	54	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon (mg/L)		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7	18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

All concenrtations in ug/L unless otherwise noted.
- Estimated value, duplicate out of range.
GV - guidance value.
D - Results from a subsequent dilution
B - Analyte detected in associated method blank
E - Results exceed the instrument calibration limit
NC - No criterion

ND - Analyte concentration less than the instrument detection limit (IDL).
J - Estimated concentration exceeding the IDL, but less than the reporting limit
BOLD font indicates results within the IDL, **BOLD** font in shaded cell indicates exceedances of AWQS+GV.
cis 1,2 dichloroethene and trans 1,2 Dichloroethene have been combined to 1,2 dichloroethene (total)
cis 1,3 dichloropropene and trans 1,3 Dichloropropene have been combined to 1,3 dichloropropene (total)
*No information available. Laboratory data sheets were not available during the preparation of this table; therefore it is unknown if this analyte was analyzed for.
NA indicates sample was not analyzed for specified compound

Appendix Table A1
ServAll Laundry Site, Site 1-52-077
Summary of Historical Groundwater Sampling Results

Well ID	Class GA	MW-11									MW-12										
Date	GWQS	Feb-90	Mar-90	Jun-94	Jan-98	Jan-99	Jul-00	Jun-06	Jan-08	Nov-08	Feb-90	Mar-90	Jan-98	Jan-99	Jul-00	May-04	Jun-06	Aug-07	Jan-08	Nov-08	Feb-10
Volatile Organics																					
Benzene	1	ND	ND	ND	*	*	ND	ND	ND	ND	ND	ND	*	*	ND	ND	ND	ND	ND	ND	ND
Acetone	50 (GV)	*	*	ND	*	ND	ND	ND	ND	ND	*	*	*	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	50	*	*	ND	*	*	ND	ND	ND	ND	*	*	*	*	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	5	*	*	*	*	*	ND	ND	ND	ND	*	*	*	*	ND	ND	ND	ND	ND	ND	ND
Chloroethane	5	*	*	ND	*	*	ND	ND	ND	ND	*	*	*	*	ND	ND	ND	ND	ND	ND	ND
Chloroform	7	ND	ND	ND	*	ND	ND	ND	ND	ND	ND	ND	*	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	5	ND	ND	ND	*	*	ND	ND	ND	**4.9**	ND	ND	*	*	ND	ND	**4 J**	ND	ND	ND	ND
1,2-Dichlorobenzene	4.7	*	*	*	*	*	NA	ND	ND	ND	*	*	*	*	NA	ND	**9**	ND	ND	ND	ND
1,1-Dichloroethane	5	ND	ND	ND	*	ND	ND	ND	ND	ND	ND	ND	*	ND	**7 J**	**0.4 J**	ND	ND	ND	ND	ND
1,2,4-Trimethylbezene	5	**310 J**	ND	*	*	*	NA	ND	ND	ND	ND	ND	*	*	NA	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	5	ND	ND	ND	ND	ND	**3.0 J**	ND	**1**	ND	**1**	ND	ND	ND	ND	ND	ND	ND	**2**	ND	ND
1,2-Dichloroethene (total)	5	**4,500**	**1,700**	**830**	3	**29 J**	**20**	**3 J**	**10**	**13**	ND	ND	ND	ND	**21**	**0.8 J**	ND	**2**	**14**	**3.1 J**	ND
Tetrachloroethene	5	**8,900**	**5,900**	**800**	20	**290 J**	**96**	**56**	**150**	**60**	ND	ND	2	**6 J**	**820 D**	**7**	**17**	**17**	**25**	**60**	**10**
Toluene	5	ND	ND	ND	*	*	ND	ND	ND	**63**	ND	ND	*	*	ND	ND	ND	ND	ND	ND	ND
Total Xylenes	5	ND	ND	ND	*	*	ND	ND	ND	ND	ND	ND	*	*	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	5	ND	ND	ND	ND	**1 J**	**5 J**	ND	**3**	ND	**5**	**4.6 J**	**7**	**1**	ND	**1**	ND	ND	**3**	ND	ND
1,1,2-Trichloroethane	1	*	*	ND	*	*	ND	ND	ND	ND	*	*	*	*	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	5	ND	**430**	**74 J**	**25**	**21**	**17**	**4 J**	**13**	ND	ND	ND	ND	ND	**8 J**	**0.5**	ND	**1**	**7**	ND	ND
Vinyl Chloride	2	ND	ND	**470**	ND	**4 J**	**3 J**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**2**	ND	ND
1,2,4-Trichlorobenzene	5	**320**	ND	*	*	*	NA	ND	ND	ND	ND	ND	*	*	NA	ND	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	5	**550 J**	ND	*	*	*	NA	ND	ND	ND	ND	ND	*	*	NA	ND	ND	ND	ND	ND	ND
Napthalene	10 (GV)	**480**	ND	*	*	*	NA	ND	ND	ND	ND	ND	*	*	NA	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	10 (GV)	*	*	*	*	*	NA	ND	ND	**1.8**	*	*	*	*	NA	ND	ND	ND	ND	ND	ND
Methylene Chloride	5	*	*	ND	*	ND	ND	ND	ND	ND	*	*	*	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	5	*	*	*	*	*	ND	ND	ND	ND	*	*	*	*	ND	ND	ND	ND	ND	ND	ND
Bromomethane	5	*	*	*	*	*	ND	ND	ND	ND	*	*	*	*	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	60 (GV)	*	*	*	*	*	ND	ND	ND	ND	*	*	*	*	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	1	*	*	*	*	*	ND	ND	ND	ND	*	*	*	*	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	5	*	*	*	*	*	ND	ND	ND	ND	*	*	*	*	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	5	*	*	*	*	*	ND	ND	ND	ND	*	*	*	*	ND	ND	ND	ND	ND	ND	ND
Styrene	5	*	*	*	*	*	ND	ND	ND	ND	*	*	*	*	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	5	*	*	*	*	*	ND	ND	ND	ND	*	*	*	*	ND	ND	ND	ND	ND	ND	ND
1,3-Dichloropropene (total)	0.4	*	*	*	*	*	ND	ND	ND	ND	*	*	*	*	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	5	*	*	*	*	*	ND	ND	ND	ND	*	*	*	*	ND	ND	ND	ND	ND	ND	ND
Bromoform	50	*	*	*	*	*	ND	ND	ND	ND	*	*	*	*	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	5	*	*	*	*	*	ND	ND	ND	ND	*	*	*	*	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	5	*	*	*	*	*	ND	ND	ND	ND	*	*	*	*	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone	5	*	*	*	*	*	ND	ND	ND	ND	*	*	*	*	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluormethane	5	*	*	*	*	*	NA	ND	ND	ND	*	*	*	*	NA	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	5	*	*	*	*	*	NA	ND	ND	ND	*	*	*	*	NA	ND	ND	ND	ND	ND	ND
Diethyl ether	5	*	*	*	*	*	NA	NA	NA	NA	*	*	*	*	NA	ND	NA	NA	NA	NA	NA
Iodomethane	5	*	*	*	*	*	NA	ND	ND	ND	*	*	*	*	NA	ND	ND	ND	ND	ND	ND
Allyl chloride	5	*	*	*	*	*	NA	NA	NA	NA	*	*	*	*	NA	ND	NA	NA	NA	NA	NA
Acrylonitrile	5	*	*	*	*	*	NA	NA	NA	NA	*	*	*	*	NA	ND	NA	NA	NA	NA	NA
2,2-Dichloropropane	5	*	*	*	*	*	NA	ND	ND	ND	*	*	*	*	NA	ND	ND	ND	ND	ND	ND
Methyl acrylate	5	*	*	*	*	*	NA	NA	NA	NA	*	*	*	*	NA	ND	NA	NA	NA	NA	NA
Propionitrile	5	*	*	*	*	*	NA	NA	NA	NA	*	*	*	*	NA	ND	NA	NA	NA	NA	NA
Bromochloromethane	5	*	*	*	*	*	NA	ND	ND	ND	*	*	*	*	NA	ND	ND	ND	ND	ND	ND
Tetrahydrofuran	5	*	*	*	*	*	NA	NA	NA	NA	*	*	*	*	NA	ND	NA	NA	NA	NA	NA
Methacrylonitrile	5	*	*	*	*	*	NA	NA	NA	NA	*	*	*	*	NA	ND	NA	NA	NA	NA	NA
1-Chlorobutane	5	*	*	*	*	*	NA	NA	NA	NA	*	*	*	*	NA	ND	NA	NA	NA	NA	NA
1,1-Dichloropropene	5	*	*	*	*	*	NA	ND	ND	ND	*	*	*	*	NA	ND	ND	ND	ND	ND	ND
Methyl methacrylate	50	*	*	*	*	*	NA	NA	NA	NA	*	*	*	*	NA	ND	NA	NA	NA	NA	NA
Dibromomethane	5	*	*	*	*	*	NA	ND	ND	ND	*	*	*	*	NA	ND	ND	ND	ND	ND	ND
2-Nitropropane	5	*	*	*	*	*	NA	NA	NA	NA	*	*	*	*	NA	ND	NA	NA	NA	NA	NA
Chloroacetonitrile	5	*	*	*	*	*	NA	NA	NA	NA	*	*	*	*	NA	ND	NA	NA	NA	NA	NA
1,1-dichloropropanone	5	*	*	*	*	*	NA	NA	NA	NA	*	*	*	*	NA	ND	NA	NA	NA	NA	NA
Ethyl methacrylate	5	*	*	*	*	*	NA	NA	NA	NA	*	*	*	*	NA	ND	NA	NA	NA	NA	NA
1,3-Dichloropropane	5	*	*	*	*	*	NA	ND	ND	ND	*	*	*	*	NA	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachlorethane	5	*	*	*	*	*	NA	ND	ND	ND	*	*	*	*	NA	ND	ND	ND	ND	ND	ND
Isopropylbenzene	5	*	*	*	*	*	NA	ND	ND	ND	*	*	*	*	NA	ND	ND	ND	ND	ND	ND
Bromobenzene	5	*	*	*	*	*	NA	ND	ND	ND	*	*	*	*	NA	ND	ND	ND	ND	ND	ND
n-Propylbenzene	5	*	*	*	*	*	NA	ND	ND	ND	*	*	*	*	NA	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	5	*	*	*	*	*	NA	NA	NA	NA	*	*	*	*	NA	ND	NA	NA	NA	NA	NA

Appendix Table A1
ServAll Laundry Site, Site 1-52-077
Summary of Historical Groundwater Sampling Results

Well ID	Class GA	MW-11									MW-12										
Date	GWQS	Feb-90	Mar-90	Jun-94	Jan-98	Jan-99	Jul-00	Jun-06	Jan-08	Nov-08	Feb-90	Mar-90	Jan-98	Jan-99	Jul-00	May-04	Jun-06	Aug-07	Jan-08	Nov-08	Feb-10
1,2,3-Trichloropropane	0.04	*	*	*	*	*	NA	ND	ND	ND	*	*	*	*	NA	ND	ND	ND	ND	ND	ND
2-Chlorotoluene	5	*	*	*	*	*	NA	ND	ND	ND	*	*	*	*	NA	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	5	*	*	*	*	*	NA	ND	ND	ND	*	*	*	*	NA	ND	ND	ND	ND	ND	ND
4-Chlorotoluene	5	*	*	*	*	*	NA	ND	ND	ND	*	*	*	*	NA	ND	ND	ND	ND	ND	ND
tert-Butylbenzene	5	*	*	*	*	*	NA	ND	ND	ND	*	*	*	*	NA	ND	ND	ND	ND	ND	ND
Pentachloroethane	5	*	*	*	*	*	NA	NA	NA	NA	*	*	*	*	NA	ND	NA	NA	NA	NA	NA
sec-Butylbenzene	5	*	*	*	*	*	NA	ND	ND	ND	*	*	*	*	NA	ND	ND	ND	ND	ND	ND
p-Isopropyltoluene	5	*	*	*	*	*	NA	ND	ND	ND	*	*	*	*	NA	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	3	*	*	*	*	*	NA	ND	ND	ND	*	*	*	*	NA	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	3	*	*	*	*	*	NA	ND	ND	ND	*	*	*	*	NA	ND	ND	ND	ND	ND	ND
n-Butylbenzene	5	*	*	*	*	*	NA	ND	ND	ND	*	*	*	*	NA	ND	ND	ND	ND	ND	ND
Hexachloroethane	3	*	*	*	*	*	NA	NA	NA	NA	*	*	*	*	NA	ND	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	0.04	*	*	*	*	*	NA	ND	ND	ND	*	*	*	*	NA	ND	ND	ND	ND	ND	ND
Vinyl Acetate	5	*	*	*	*	*	NA	ND	ND	ND	*	*	*	*	NA	NA	ND	ND	ND	ND	ND
1,2-Dibromoethane	5	*	*	*	*	*	NA	ND	ND	ND	*	*	*	*	NA	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	0.5	*	*	*	*	*	NA	ND	ND	ND	*	*	*	*	NA	ND	ND	ND	ND	ND	ND
Total VOCs		**15,060**	**8,030**	**2,174**	**48**	**345**	**144**	**63**	**177**	**142.7**	**6**	**4.6**	**9**	**7**	**856**	**9.7**	**30**	**20**	**53**	**63.1**	**10**
Semivolatile Organics																					
2-methylphenol	5	10	ND	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-N-Butylphthalate	5	ND	ND	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	5	ND	ND	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																					
Aluminum	2,000	ND	ND	*	*	*	*	1,440	*	494	ND	ND	*	*	*	*	369	257	*	377	294
Antimony	3	*	*	*	*	*	*	ND	*	ND	*	*	*	*	*	*	1.8 B	ND	*	**6.2** B	ND
Arsenic	25	ND	ND	*	*	*	*	1.7 B	*	ND	ND	ND	*	*	*	*	8.2 B	20.2	*	ND	ND
Barium	1,000	ND	ND	*	*	*	*	46.1 B	*	29.3 B	302	300	*	*	*	*	67.6 B	81.8 B	*	163 B	94.9
Beryllium	3	*	*	*	*	*	*	ND	*	ND	*	*	*	*	*	*	ND	ND	*	ND	0.049 B
Cadmium	5	*	*	*	*	*	*	4.4 B	*	0.71 B#E	*	*	*	*	*	*	2.8 B	0.92 B	*	0.83 B#E	ND
Calcuim	NL	19,300	24,600	*	*	*	*	11,100	*	10,100	15,400	16,400	*	*	*	*	17,000	17,600	*	19,500	17,500
Chromium	50	ND	ND	*	*	*	*	**50.1**	*	8.9 B*	ND	ND	*	*	*	*	**1,130**	**1,730**	*	**1,170** #	***723***
Cobalt	NL	*	*	*	*	*	*	2.7 B	*	ND	*	*	*	*	*	*	24.3 B	3.9 B	*	6.2 B	0.89 B
Copper	200	*	*	*	*	*	*	18.5 B	*	ND	*	*	*	*	*	*	67.9	59.1	*	33.9	15.7 B
Iron	600	ND	ND	*	*	*	*	**1,510**	*	**1,440**	ND	ND	*	*	*	*	**2,810**	**7,040**	*	**4,720**	***3,730***
Lead	25	ND	ND	*	*	*	*	ND	*	6.5 B	ND	ND	*	*	*	*	4.9 B	ND	*	4.4 B	ND
Magnesium	35,000	9,580	11,800	*	*	*	*	3,560	*	2,920	ND	ND	*	*	*	*	3,050	2,270	*	2,930	2,820
Manganese	300	ND	ND	*	*	*	*	30.7 B	*	201	709	740	*	*	*	*	**746**	**512**	*	**600**	***498***
Mercury	0.7	ND	ND	*	*	*	*	ND	*	ND	ND	ND	*	*	*	*	ND	ND	*	ND	ND
Nickel	100	*	*	*	*	*	*	22.4 B	*	7.7 B	*	*	*	*	*	*	**1,290**	**130**	*	**519**	53.2
Potassium	NL	ND	ND	*	*	*	*	1,940	*	2,560	10,100	12,000	*	*	*	*	2,980	5,700	*	5,020	3,820
Selenium	10	*	*	*	*	*	*	ND	*	ND	*	*	*	*	*	*	3.1 B	7.3 B	*	ND	ND
Silver	50	*	*	*	*	*	*	ND	*	ND	*	*	*	*	*	*	ND	ND	*	ND	ND
Sodium	20,000	**24,000**	**27,100**	*	*	*	*	**23,700**	*	15,500	**45,500**	**46,900**	*	*	*	*	**62,500**	**42,000**	*	**40,100**	***62,700***
Thallium	1	*	*	*	*	*	*	ND	*	ND	*	*	*	*	*	*	**5 B**	ND	*	ND	ND
Vanadium	NL	*	*	*	*	*	*	2.7 B	*	2.2 B	*	*	*	*	*	*	2.1 B	4.2 B	*	4.6 B	2.0 B
Zinc	2,000	*	*	*	*	*	*	80.9	*	46.9 B	*	*	*	*	*	*	35.2 B	22.9 B	*	38 B	25.7 B
Water Quality Parameters																					
Alkalinity (mg/L)		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Dissolved Solids (mg/L)		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Suspended Solids (mg/L)		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon (mg/L)		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
All concenrtations in ug/L unless otherwise noted.
- Estimated value, duplicate out of range.
GV - guidance value.
D - Results from a subsequent dilution
B - Analyte detected in associated method blank
E - Results exceed the instrument calibration limit
NC - No criterion

ND - Analyte concentration less than the instrument detection limit (IDL).
J - Estimated concentration exceeding the IDL, but less than the reporting limit
BOLD font indicates results within the IDL, **BOLD** font in shaded cell indicates exceedances of AWQS+GV.
cis 1,2 dichloroethene and trans 1,2 Dichloroethene have been combined to 1,2 dichloroethene (total)
cis 1,3 dichloropropene and trans 1,3 Dichloropropene have been combined to 1,3 dichloropropene (total)
*No information available. Laboratory data sheets were not available during the preparation of this table; therefore it is unknown if this analyte was analyzed for.
NA indicates sample was not analyzed for specified compound

Appendix Table A1
ServAll Laundry Site, Site 1-52-077
Summary of Historical Groundwater Sampling Results

Well ID	Class GA	MW-13											MW-14									
Date	GWQS	Feb-90	Mar-90	Jun-94	Jan-98	Jan-99	Jul-00	May-04	Jun-06	Aug-07	Nov-08	Feb-10	Feb-90	Mar-90	Jan-98	Jan-99	Jul-00	May-04	Jun-06	Aug-07	Nov-08	Feb-10
Volatile Organics																						
Benzene	1	ND	ND	ND	*	*	ND	ND	ND	ND	ND	ND	ND	ND	*	*	ND	ND	ND	ND	ND	ND
Acetone	50 (GV)	*	*	ND	*	ND	ND	ND	4	ND	ND	ND	*	*	*	ND	ND	1.0	ND	ND	ND	ND
2-Butanone	50	*	*	ND	*	*	ND	ND	ND	ND	ND	ND	*	*	*	*	ND	ND	ND	ND	ND	ND
Bromodichloromethane	5	*	*	*	*	*	ND	ND	ND	ND	ND	ND	*	*	*	*	ND	ND	ND	ND	ND	ND
Chloroethane	5	*	*	ND	*	*	ND	ND	ND	ND	ND	ND	*	*	*	*	ND	ND	ND	ND	ND	ND
Chloroform	7	ND	ND	ND	*	0.5 J	ND	2	ND	6	2.7 J	ND	1	ND	*	ND	ND	0.9 J	ND	ND	ND	ND
Chlorobenzene	5	ND	ND	ND	*	*	ND	ND	ND	ND	ND	ND	ND	ND	*	*	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	4.7	*	*	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	*	NA	ND	ND	ND	ND	ND
1,1-Dichloroethane	5	ND	ND	ND	*	1.0	ND	ND	ND	ND	ND	ND	ND	1.2 J	*	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbezene	5	ND	ND	*	*	*	NA	ND	ND	ND	ND	ND	ND	ND	*	*	NA	ND	ND	ND	ND	ND
1,1-Dichloroethene	5	ND	ND	ND	8	12	5 J	ND	ND	ND	ND	ND	1	ND	3	1	5 J	ND	ND	ND	ND	ND
1,2-Dichloroethene (total)	5	530 EJ	200	24 J	ND	1 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	5	5,800 D	4,600 JD	230	ND	4 J	6 J	ND	5	ND	1 J	ND	ND	ND	ND	ND	ND	ND	ND	2.0	ND	ND
Toluene	5	ND	ND	ND	*	*	2 J	ND	ND	ND	ND	ND	ND	ND	*	*	ND	ND	ND	ND	ND	ND
Total Xylenes	5	ND	ND	ND	*	*	ND	ND	ND	ND	ND	ND	ND	ND	*	*	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	5	ND	ND	ND	19	34	8 J	ND	ND	ND	ND	ND	4	3.9 J	8	3	9 J	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	1	*	*	ND	*	*	ND	ND	ND	ND	ND	ND	*	*	*	*	ND	ND	ND	ND	ND	ND
Trichloroethene	5	320 EJ	160	94	13	23	20	0.7 J	3	ND	ND	ND	6	4.6 J	17	8	23	8	ND	ND	ND	ND
Vinyl Chloride	2	240 EJ	120	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	5	ND	ND	*	*	*	NA	ND	ND	ND	ND	ND	ND	ND	*	*	NA	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	5	ND	ND	*	*	*	NA	ND	ND	ND	ND	ND	ND	ND	*	*	NA	ND	ND	ND	ND	ND
Napthalene	10 (GV)	ND	ND	*	*	*	NA	ND	ND	ND	ND	ND	ND	ND	*	*	NA	ND	ND	ND	ND	ND
Methyl tert-butyl ether	10 (GV)	*	*	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	*	NA	ND	ND	ND	ND	1.1 J
Methylene Chloride	5	*	*	8	*	ND	ND	ND	ND	ND	ND	ND	*	*	*	ND	ND	ND	ND	ND	ND	ND
Chloromethane	5	*	*	*	*	*	ND	ND	ND	ND	ND	ND	*	*	*	*	ND	ND	ND	ND	ND	ND
Bromomethane	5	*	*	*	*	*	ND	ND	ND	ND	ND	ND	*	*	*	*	ND	ND	ND	ND	ND	ND
Carbon disulfide	60 (GV)	*	*	*	*	*	ND	ND	ND	ND	ND	ND	*	*	*	*	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	1	*	*	*	*	*	ND	ND	ND	ND	ND	ND	*	*	*	*	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	5	*	*	*	*	*	ND	ND	ND	ND	ND	ND	*	*	*	*	ND	ND	ND	ND	ND	ND
Ethylbenzene	5	*	*	*	*	*	ND	ND	ND	ND	ND	ND	*	*	*	*	ND	ND	ND	ND	ND	ND
Styrene	5	*	*	*	*	*	ND	ND	ND	ND	ND	ND	*	*	*	*	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	5	*	*	*	*	*	ND	ND	ND	ND	ND	ND	*	*	*	*	ND	ND	ND	ND	ND	ND
1,3-Dichloropropene (total)	0.4	*	*	*	*	*	ND	ND	ND	ND	ND	ND	*	*	*	*	ND	ND	ND	ND	ND	ND
Dibromochloromethane	5	*	*	*	*	*	ND	ND	ND	ND	ND	ND	*	*	*	*	ND	ND	ND	ND	ND	ND
Bromoform	50	*	*	*	*	*	ND	ND	ND	ND	ND	ND	*	*	*	*	ND	ND	ND	ND	ND	ND
2-Hexanone	5	*	*	*	*	*	ND	ND	ND	ND	ND	ND	*	*	*	*	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	5	*	*	*	*	*	ND	ND	ND	ND	ND	ND	*	*	*	*	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone	5	*	*	*	*	*	ND	ND	ND	ND	ND	ND	*	*	*	*	ND	ND	ND	ND	ND	ND
Dichlorodifluormethane	5	*	*	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	*	NA	ND	ND	ND	ND	ND
Trichlorofluoromethane	5	*	*	*	*	*	NA	ND	ND	ND	NA	ND	*	*	*	*	NA	ND	ND	ND	ND	ND
Diethyl ether	5	*	*	*	*	*	NA	ND	NA	NA	NA	NA	*	*	*	*	NA	ND	NA	NA	NA	NA
Iodomethane	5	*	*	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	*	NA	ND	ND	ND	ND	ND
Allyl chloride	5	*	*	*	*	*	NA	ND	NA	NA	NA	NA	*	*	*	*	NA	ND	NA	NA	NA	NA
Acrylonitrile	5	*	*	*	*	*	NA	ND	NA	NA	NA	NA	*	*	*	*	NA	ND	NA	NA	NA	NA
2,2-Dichloropropane	5	*	*	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	*	NA	ND	ND	ND	ND	ND
Methyl acrylate	5	*	*	*	*	*	NA	ND	NA	NA	NA	NA	*	*	*	*	NA	ND	NA	NA	NA	NA
Propionitrile	5	*	*	*	*	*	NA	ND	NA	NA	NA	NA	*	*	*	*	NA	ND	NA	NA	NA	NA
Bromochloromethane	5	*	*	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	*	NA	ND	ND	ND	ND	ND
Tetrahydrofuran	5	*	*	*	*	*	NA	ND	NA	NA	NA	NA	*	*	*	*	NA	ND	NA	NA	NA	NA
Methacrylonitrile	5	*	*	*	*	*	NA	ND	NA	NA	NA	NA	*	*	*	*	NA	ND	NA	NA	NA	NA
1-Chlorobutane	5	*	*	*	*	*	NA	ND	NA	NA	NA	NA	*	*	*	*	NA	ND	NA	NA	NA	NA
1,1-Dichloropropene	5	*	*	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	*	NA	ND	ND	ND	ND	ND
Methyl methacrylate	50	*	*	*	*	*	NA	ND	NA	NA	NA	NA	*	*	*	*	NA	ND	NA	NA	NA	NA
Dibromomethane	5	*	*	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	*	NA	ND	ND	ND	ND	ND
2-Nitropropane	5	*	*	*	*	*	NA	ND	NA	NA	NA	NA	*	*	*	*	NA	ND	NA	NA	NA	NA
Chloroacetonitrile	5	*	*	*	*	*	NA	ND	NA	NA	NA	NA	*	*	*	*	NA	ND	NA	NA	NA	NA
1,1-dichloropropanone	5	*	*	*	*	*	NA	ND	NA	NA	NA	NA	*	*	*	*	NA	ND	NA	NA	NA	NA
Ethyl methacrylate	5	*	*	*	*	*	NA	ND	NA	NA	NA	NA	*	*	*	*	NA	ND	NA	NA	NA	NA
1,3-Dichloropropane	5	*	*	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	*	NA	ND	ND	ND	ND	ND
1,1,1,2-Tetrachlorethane	5	*	*	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	*	NA	ND	ND	ND	ND	ND
Isopropylbenzene	5	*	*	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	*	NA	ND	ND	ND	ND	ND
Bromobenzene	5	*	*	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	*	NA	ND	ND	ND	ND	ND
n-Propylbenzene	5	*	*	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	*	NA	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	5	*	*	*	*	*	NA	ND	NA	NA	NA	NA	*	*	*	*	NA	ND	NA	NA	NA	NA

Appendix Table A1
ServAll Laundry Site, Site 1-52-077
Summary of Historical Groundwater Sampling Results

Well ID	Class GA	MW-13											MW-14									
Date	GWQS	Feb-90	Mar-90	Jun-94	Jan-98	Jan-99	Jul-00	May-04	Jun-06	Aug-07	Nov-08	Feb-10	Feb-90	Mar-90	Jan-98	Jan-99	Jul-00	May-04	Jun-06	Aug-07	Nov-08	Feb-10
1,2,3-Trichloropropane	0.04	*	*	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	*	NA	ND	ND	ND	ND	ND
2-Chlorotoluene	5	*	*	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	*	NA	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	5	*	*	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	*	NA	ND	ND	ND	ND	ND
4-Chlorotoluene	5	*	*	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	*	NA	ND	ND	ND	ND	ND
tert-Butylbenzene	5	*	*	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	*	NA	ND	ND	ND	ND	ND
Pentachloroethane	5	*	*	*	*	*	NA	ND	NA	NA	NA	NA	*	*	*	*	NA	ND	NA	NA	NA	NA
sec-Butylbenzene	5	*	*	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	*	NA	ND	ND	ND	ND	ND
p-Isopropyltoluene	5	*	*	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	*	NA	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	3	*	*	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	*	NA	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	3	*	*	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	*	NA	ND	ND	ND	ND	ND
n-Butylbenzene	5	*	*	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	*	NA	ND	ND	ND	ND	ND
Hexachloroethane	3	*	*	*	*	*	NA	ND	NA	NA	NA	NA	*	*	*	*	NA	ND	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	0.04	*	*	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	*	NA	ND	ND	ND	ND	ND
Vinyl Acetate	5	*	*	*	*	*	NA	NA	ND	ND	ND	ND	*	*	*	*	NA	NA	ND	ND	ND	ND
1,2-Dibromoethane	5	*	*	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	*	NA	ND	ND	ND	ND	ND
Hexachlorobutadiene	0.5	*	*	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	*	NA	ND	ND	ND	ND	ND
Total VOCs		**6,890**	**5,080**	**356**	**40**	**75.5**	**41**	**2.7**	**12**	**6**	**3.7**	**0**	**12**	**9.7**	**28**	**12**	**37**	**9.9**	**0**	**2**	**0**	**1**
Semivolatile Organics																						
2-methylphenol	5	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Di-N-Butylphthalate	5	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	5	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Metals																						
Aluminum	2,000	ND	ND	*	*	*	*	*	38.5 B	328	417	565	ND	ND	*	*	*	*	139 B	360	209	259
Antimony	3	*	*	*	*	*	*	*	**6.3** B	ND	ND	ND	*	*	*	*	*	*	2.7 B	ND	ND	ND
Arsenic	25	ND	ND	*	*	*	*	*	1.7 B	5.2 B	ND	ND	ND	ND	*	*	*	*	ND	3.2 B	ND	ND
Barium	1,000	ND	ND	*	*	*	*	*	55.5 B	43.6 B	47.3 B	33.6 B	ND	ND	*	*	*	*	48.6 B	55.3 B	58 B	35.9 B
Beryllium	3	*	*	*	*	*	*	*	ND	0.13 B	0.3 B	0.33 B	*	*	*	*	*	*	ND	ND	ND	ND
Cadmium	5	*	*	*	*	*	*	*	3.8 B	**48.1**	**53.6** #E	***42.4***	*	*	*	*	*	*	1.3 B	1.8 B	2.8 B#E	ND
Calcuim	NL	15,500	19,900	*	*	*	*	*	18,200	10,900	10,500	6,050	5,060	6,200	*	*	*	*	7,550	19,300	16,700	5,990
Chromium	50	ND	ND	*	*	*	*	*	12.2 B	**263**	**90** #	***330***	ND	ND	*	*	*	*	49.9	**100**	**59.6** #	***196***
Cobalt	NL	*	*	*	*	*	*	*	1.3 B	5.7 B	5.7 B	9.1 B	*	*	*	*	*	*	1.3 B	2.1 B	ND	2.2 B
Copper	200	*	*	*	*	*	*	*	8.3 B	48.9	25.7 B	31.8	*	*	*	*	*	*	ND	29.9 B	8.5 B	9.1 B
Iron	600	ND	110.00	*	*	*	*	*	153 B	**1,470**	**1,140**	***2,150***	ND	ND	*	*	*	*	**449**	**1,170**	**821**	***1,200***
Lead	25	ND	ND	*	*	*	*	*	2.1 B	3.4 B	5.8 B	5.9 B	ND	ND	*	*	*	*	1.7 B	ND	ND	ND
Magnesium	35,000	6,860	8,860	*	*	*	*	*	8,570	3,470	2,840	2,070	ND	ND	*	*	*	*	3,540	2,780	2,630	2,000
Manganese	300	ND	16.50	*	*	*	*	*	108	272	**343**	***446***	ND	ND	*	*	*	*	25.6 B	33.4 B	35 B	134
Mercury	0.7	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND	ND	*	*	*	*	ND	ND	ND	ND
Nickel	100	*	*	*	*	*	*	*	12 B	80	95.4	***452***	*	*	*	*	*	*	24.3 B	68.8	79.9	27.7 B
Potassium	NL	ND	ND	*	*	*	*	*	1,310	2,480	3,060	2,680	ND	ND	*	*	*	*	1,550	1,240	2,150	2,020
Selenium	10	*	*	*	*	*	*	*	ND	ND	ND	ND	*	*	*	*	*	*	1.4 B	ND	ND	ND
Silver	50	*	*	*	*	*	*	*	ND	ND	ND	ND	*	*	*	*	*	*	ND	1.4 B	ND	ND
Sodium	20,000	**129,000**	**125,000**	*	*	*	*	*	**35,700**	**41,000**	**34,300**	***36,800***	7,970	8,800	*	*	*	*	**60,500**	**31,700**	**70,400**	***76,300***
Thallium	1	*	*	*	*	*	*	*	**1.7 B**	ND	ND	ND	*	*	*	*	*	*	**1.3 B**	**2.8**	ND	ND
Vanadium	NL	*	*	*	*	*	*	*	0.6 B	1.4 B	1.4 B	1.5 B	*	*	*	*	*	*	ND	1.2 B	ND	4.1 B
Zinc	2,000	*	*	*	*	*	*	*	28.9 B	115	106	109	*	*	*	*	*	*	22.2 B	16.1 B	24.7 B	26.6 B
Water Quality Parameters																						
Alkalinity (mg/L)		92	86	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Dissolved Solids (mg/L)		465	374	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Suspended Solids (mg/L)		2	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon (mg/L)		42	52	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
All concenrtations in ug/L unless otherwise noted.
- Estimated value, duplicate out of range.
GV - guidance value.
D - Results from a subsequent dilution
B - Analyte detected in associated method blank
E - Results exceed the instrument calibration limit
NC - No criterion

ND - Analyte concentration less than the instrument detection limit (IDL).
J - Estimated concentration exceeding the IDL, but less than the reporting limit
BOLD font indicates results within the IDL, **BOLD** font in shaded cell indicates exceedances of AWQS+GV.
cis 1,2 dichloroethene and trans 1,2 Dichloroethene have been combined to 1,2 dichloroethene (total)
cis 1,3 dichloropropene and trans 1,3 Dichloropropene have been combined to 1,3 dichloropropene (total)
*No information available. Laboratory data sheets were not available during the preparation of this table; therefore it is unknown if this analyte was analyzed for.
NA indicates sample was not analyzed for specified compound

Appendix Table A1
ServAll Laundry Site, Site 1-52-077
Summary of Historical Groundwater Sampling Results

Well ID	Class GA	MW-15							MW-16												
Date	GWQS	Feb-90	Mar-90	Jun-94	Jan-98	Jan-99	Jul-00	May-04	Feb-90	Mar-90	Jun-94	Jan-98	Mar-99	Jul-00	May-04	Jun-06	Aug-07	Jan-08	Nov-08	Feb-10
Volatile Organics																					
Benzene	1	ND	**10**	ND	*	*	ND	ND	ND	ND	ND	*	*	ND	ND	ND	ND	ND	ND	ND
Acetone	50 (GV)	*	*	**4**	*	ND	ND	ND	*	*	ND	*	ND	ND	**1.0**	ND	ND	ND	ND	ND
2-Butanone	50	*	*	ND	*	*	ND	ND	*	*	ND	*	*	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	5	*	*	*	*	*	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND	ND	ND
Chloroethane	5	*	*	**4 J**	*	*	ND	ND	*	*	ND	*	*	ND	ND	ND	ND	ND	ND	ND
Chloroform	7	ND	ND	**0.8 J**	*	0.6 **J**	ND	ND	ND	ND	**0.8 J**	*	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	5	ND	ND	ND	*	*	ND	ND	ND	ND	**0.6 J**	*	*	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	4.7	*	*	*	*	*	NA	ND	*	*	NA	*	*	NA	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	5	ND	ND	ND	*	1	**2 J**	ND	ND	ND	**1**	*	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbezene	5	ND	ND	*	*	*	NA	ND	ND	ND	*	*	*	NA	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	5	ND	ND	**0.3 J**	ND	**8**	**13**	ND	ND	ND	**3**	ND	ND	**1**	**3**	**4 J**	ND	ND	ND	**2.4 J**
1,2-Dichloroethene (total)	5	**3,100 D**	**410 D**	**323 E**	**16**	**17**	**10**	ND	ND	**120 J**	**696 E**	**360**	**464 D**	**610 D**	**22 D**	**15**	ND	**2**	**2.1**	**16**
Tetrachloroethene	5	**13,000 D**	**6,300 D**	**1,400 E**	**170**	**250 J**	**240 D**	**0.5 J**	**260**	**960 JD**	**1,700 E**	**450**	**700 D**	**1,600 D**	**28 D**	**25**	**2**	**40**	**6.9**	**48**
Toluene	5	ND	**56**	**0.5 J**	*	*	ND	ND	ND	ND	**0.47 J**	*	*	ND	ND	ND	ND	ND	ND	ND
Total Xylenes	5	ND	ND	ND	*	*	ND	ND	ND	ND	**2**	*	*	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	5	ND	ND	**0.6 J**	ND	**17**	**29**	ND	ND	ND	**2**	ND	ND	**2 J**	**3**	**5**	ND	ND	ND	2.8 J
1,1,2-Trichloroethane	1	*	*	ND	*	*	ND	ND	*	*	**1**	*	*	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	5	**1,000 EJ**	**130**	**110 E**	**17**	**30 J**	**39**	**3**	ND	**54 J**	**600 E**	**61**	**120**	**170**	**15**	**16**	ND	ND	**1.1 J**	**11**
Vinyl Chloride	2	**1,200 EJ**	**100**	**46 E**	ND	ND	ND	ND	ND	ND	**280 E**	**30**	**120**	**160**	**4**	ND	ND	ND	ND	**1.2 J**
1,2,4-Trichlorobenzene	5	ND	ND	*	*	*	NA	ND	ND	ND	*	*	*	NA	ND	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	5	ND	ND	*	*	*	NA	ND	ND	ND	*	*	*	NA	ND	ND	ND	ND	ND	ND
Napthalene	10 (GV)	ND	ND	*	*	*	NA	ND	ND	ND	*	*	*	NA	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	10 (GV)	*	*	*	*	*	NA	ND	*	*	*	*	*	NA	ND	**2 J**	ND	ND	ND	ND
Methylene Chloride	5	*	*	**2.0**	*	ND	ND	ND	*	*	**3**	*	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	5	*	*	*	*	*	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND	ND	ND
Bromomethane	5	*	*	*	*	*	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	60 (GV)	*	*	*	*	*	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	1	*	*	*	*	*	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	5	*	*	*	*	*	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	5	*	*	*	*	*	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND	ND	ND
Styrene	5	*	*	*	*	*	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	5	*	*	*	*	*	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND	ND	ND
1,3-Dichloropropene (total)	0.4	*	*	*	*	*	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	5	*	*	*	*	*	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND	ND	ND
Bromoform	50	*	*	*	*	*	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	5	*	*	*	*	*	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	5	*	*	*	*	*	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone	5	*	*	*	*	*	ND	ND	*	*	*	*	*	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluormethane	5	*	*	*	*	*	NA	ND	*	*	*	*	*	NA	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	5	*	*	*	*	*	NA	ND	*	*	*	*	*	NA	ND	ND	ND	ND	ND	ND
Diethyl ether	5	*	*	*	*	*	NA	ND	*	*	*	*	*	NA	ND	NA	NA	NA	NA	NA
Iodomethane	5	*	*	*	*	*	NA	ND	*	*	*	*	*	NA	ND	ND	ND	ND	ND	ND
Allyl chloride	5	*	*	*	*	*	NA	ND	*	*	*	*	*	NA	ND	NA	NA	NA	NA	NA
Acrylonitrile	5	*	*	*	*	*	NA	ND	*	*	*	*	*	NA	ND	NA	NA	NA	NA	NA
2,2-Dichloropropane	5	*	*	*	*	*	NA	ND	*	*	*	*	*	NA	ND	ND	ND	ND	ND	ND
Methyl acrylate	5	*	*	*	*	*	NA	ND	*	*	*	*	*	NA	ND	NA	NA	NA	NA	NA
Propionitrile	5	*	*	*	*	*	NA	ND	*	*	*	*	*	NA	ND	NA	NA	NA	NA	NA
Bromochloromethane	5	*	*	*	*	*	NA	ND	*	*	*	*	*	NA	ND	ND	ND	ND	ND	ND
Tetrahydrofuran	5	*	*	*	*	*	NA	ND	*	*	*	*	*	NA	ND	NA	NA	NA	NA	NA
Methacrylonitrile	5	*	*	*	*	*	NA	ND	*	*	*	*	*	NA	ND	NA	NA	NA	NA	NA
1-Chlorobutane	5	*	*	*	*	*	NA	ND	*	*	*	*	*	NA	ND	NA	NA	NA	NA	NA
1,1-Dichloropropene	5	*	*	*	*	*	NA	ND	*	*	*	*	*	NA	ND	ND	ND	ND	ND	ND
Methyl methacrylate	50	*	*	*	*	*	NA	ND	*	*	*	*	*	NA	ND	NA	NA	NA	NA	NA
Dibromomethane	5	*	*	*	*	*	NA	ND	*	*	*	*	*	NA	ND	ND	ND	ND	ND	ND
2-Nitropropane	5	*	*	*	*	*	NA	ND	*	*	*	*	*	NA	ND	NA	NA	NA	NA	NA
Chloroacetonitrile	5	*	*	*	*	*	NA	ND	*	*	*	*	*	NA	ND	NA	NA	NA	NA	NA
1,1-dichloropropanone	5	*	*	*	*	*	NA	ND	*	*	*	*	*	NA	ND	NA	NA	NA	NA	NA
Ethyl methacrylate	5	*	*	*	*	*	NA	ND	*	*	*	*	*	NA	ND	NA	NA	NA	NA	NA
1,3-Dichloropropane	5	*	*	*	*	*	NA	ND	*	*	*	*	*	NA	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachlorethane	5	*	*	*	*	*	NA	ND	*	*	*	*	*	NA	ND	ND	ND	ND	ND	ND
Isopropylbenzene	5	*	*	*	*	*	NA	ND	*	*	*	*	*	NA	ND	ND	ND	ND	ND	ND
Bromobenzene	5	*	*	*	*	*	NA	ND	*	*	*	*	*	NA	ND	ND	ND	ND	ND	ND
n-Propylbenzene	5	*	*	*	*	*	NA	ND	*	*	*	*	*	NA	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	5	*	*	*	*	*	NA	ND	*	*	*	*	*	NA	ND	NA	NA	NA	NA	NA

Appendix Table A1
ServAll Laundry Site, Site 1-52-077
Summary of Historical Groundwater Sampling Results

Well ID	Class GA	MW-15							MW-16												
Date	GWQS	Feb-90	Mar-90	Jun-94	Jan-98	Jan-99	Jul-00	May-04	Feb-90	Mar-90	Jun-94	Jan-98	Mar-99	Jul-00	May-04	Jun-06	Aug-07	Jan-08	Nov-08	Feb-10
1,2,3-Trichloropropane	0.04	*	*	*	*	*	NA	ND	*	*	*	*	*	NA	ND	ND	ND	ND	ND	ND
2-Chlorotoluene	5	*	*	*	*	*	NA	ND	*	*	*	*	*	NA	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	5	*	*	*	*	*	NA	ND	*	*	*	*	*	NA	ND	ND	ND	ND	ND	ND
4-Chlorotoluene	5	*	*	*	*	*	NA	ND	*	*	*	*	*	NA	ND	ND	ND	ND	ND	ND
tert-Butylbenzene	5	*	*	*	*	*	NA	ND	*	*	*	*	*	NA	ND	ND	ND	ND	ND	ND
Pentachloroethane	5	*	*	*	*	*	NA	ND	*	*	*	*	*	NA	ND	NA	NA	NA	NA	NA
sec-Butylbenzene	5	*	*	*	*	*	NA	ND	*	*	*	*	*	NA	ND	ND	ND	ND	ND	ND
p-Isopropyltoluene	5	*	*	*	*	*	NA	ND	*	*	*	*	*	NA	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	3	*	*	*	*	*	NA	ND	*	*	*	*	*	NA	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	3	*	*	*	*	*	NA	ND	*	*	*	*	*	NA	ND	ND	ND	ND	ND	ND
n-Butylbenzene	5	*	*	*	*	*	NA	ND	*	*	*	*	*	NA	ND	ND	ND	ND	ND	ND
Hexachloroethane	3	*	*	*	*	*	NA	ND	*	*	*	*	*	NA	ND	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	0.04	*	*	*	*	*	NA	ND	*	*	*	*	*	NA	ND	ND	ND	ND	ND	ND
Vinyl Acetate	5	*	*	*	*	*	NA	NA	*	*	*	*	*	NA	NA	ND	ND	ND	ND	ND
1,2-Dibromoethane	5	*	*	*	*	*	NA	ND	*	*	*	*	*	NA	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	0.5	*	*	*	*	*	NA	ND	*	*	*	*	*	NA	ND	ND	ND	ND	ND	ND
Total VOCs		**18,300**	**7,006**	**1,891.2**	**203**	**323.6**	**333**	**3.5**	**260**	**1,134**	**3,289.4**	**901**	**1,404**	**2,543**	**76**	**67**	**2**	**42**	**10.1**	**81**
Semivolatile Organics																				
2-methylphenol	5	ND	ND	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-N-Butylphthalate	5	ND	ND	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	5	ND	ND	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																				
Aluminum	2,000	ND	ND	*	*	*	*	*	ND	ND	*	*	*	*	*	534	453	*	672	1,090
Antimony	3	*	*	*	*	*	*	*	*	*	*	*	*	*	*	ND	ND	*	ND	ND
Arsenic	25	ND	ND	*	*	*	*	*	ND	ND	*	*	*	*	*	7 B	9 B	*	ND	ND
Barium	1,000	ND	ND	*	*	*	*	*	ND	ND	*	*	*	*	*	13.6 B	ND	*	17.90 B	12.6 B
Beryllium	3	*	*	*	*	*	*	*	*	*	*	*	*	*	*	ND	0.06 B	*	ND	ND
Cadmium	5	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0.71 B	1 B	*	0.54 B#E	ND
Calcuim	NL	21,800	40,700	*	*	*	*	*	14,800	16,800	*	*	*	*	*	9,750	2,220	*	10,000	12,700
Chromium	50	11.5 J	ND	*	*	*	*	*	ND	ND	*	*	*	*	*	**1,660**	**666**	*	**184** #	***326***
Cobalt	NL	*	*	*	*	*	*	*	*	*	*	*	*	*	*	4 B	2.7 B	*	1.8 B	1.8 B
Copper	200	*	*	*	*	*	*	*	*	*	*	*	*	*	*	8.6 B	24 B	*	9 B	46.5
Iron	600	ND	ND	*	*	*	*	*	ND	ND	*	*	*	*	*	**7,270**	**5,520**	*	**2,440**	***1,460***
Lead	25	ND	ND	*	*	*	*	*	ND	ND	*	*	*	*	*	2.8 B	1.2 B	*	4.3 B	3.6 B
Magnesium	35,000	11,000	22,400	*	*	*	*	*	7,010	7,970	*	*	*	*	*	4,790	628	*	3,530	5,950
Manganese	300	72.9	ND	*	*	*	*	*	64.8	40.2	*	*	*	*	*	51.8	39.7 B	*	46.3 B	80.8
Mercury	0.7	ND	ND	*	*	*	*	*	ND	ND	*	*	*	*	*	ND	ND	*	0.02 B	ND
Nickel	100	*	*	*	*	*	*	*	*	*	*	*	*	*	*	**125**	**110**	*	90.1	62.8
Potassium	NL	ND	ND	*	*	*	*	*	ND	ND	*	*	*	*	*	1,040	1,330	*	2,530	1,510
Selenium	10	*	*	*	*	*	*	*	*	*	*	*	*	**	*	2.2 B	ND	*	ND	ND
Silver	50	*	*	*	*	*	*	*	*	*	*	*	*	*	*	ND	ND	*	ND	ND
Sodium	20,000	106,000	36,200	*	*	*	*	*	15,300	15,900	*	*	*	*	*	**24,500**	3,080	*	**33,600**	***34,300***
Thallium	1	*	*	*	*	*	*	*	*	*	*	*	*	*	*	ND	ND	*	ND	ND
Vanadium	NL	*	*	*	*	*	*	*	*	*		*	*	*	*	6.4 B	5.2 B	*	6 B	3.9 B
Zinc	2,000	*	*	*	*	*	*	*	*	*	*	*	*	*	*	25.9 B	37.2 B	*	68.8	51.0
Water Quality Parameters																				
Alkalinity (mg/L)		83	50	NA	NA	NA	NA	NA	17	14	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Dissolved Solids (mg/L)		369	372	NA	NA	NA	NA	NA	212	158	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Suspended Solids (mg/L)		6	3	NA	NA	NA	NA	NA	2	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon (mg/L)		45	24	NA	NA	NA	NA	NA	14	15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
All concenrtations in ug/L unless otherwise noted.
- Estimated value, duplicate out of range.
GV - guidance value.
D - Results from a subsequent dilution
B - Analyte detected in associated method blank
E - Results exceed the instrument calibration limit
NC - No criterion

ND - Analyte concentration less than the instrument detection limit (IDL).
J - Estimated concentration exceeding the IDL, but less than the reporting limit
BOLD font indicates results within the IDL, **BOLD** font in shaded cell indicates exceedances of AWQS+GV.
cis 1,2 dichloroethene and trans 1,2 Dichloroethene have been combined to 1,2 dichloroethene (total)
cis 1,3 dichloropropene and trans 1,3 Dichloropropene have been combined to 1,3 dichloropropene (total)
*No information available. Laboratory data sheets were not available during the preparation of this table; therefore it is unknown if this analyte was analyzed for.
NA indicates sample was not analyzed for specified compound

Appendix Table A1
ServAll Laundry Site, Site 1-52-077
Summary of Historical Groundwater Sampling Results

Well ID	Class GA	MW-23D									MW-23S									
Date	GWQS	Oct-94	Jan-98	Jan-99	Jul-00	May-04	Jun-06	Aug-07	Nov-08	Feb-10	Oct-94	Jan-98	Jan-99	Jul-00	May-04	Jun-06	Aug-07	Jan-08	Nov-08	Feb-10
Volatile Organics																				
Benzene	1	ND	*	*	ND	ND	ND	ND	ND	ND	ND	*	*	ND	ND	ND	ND	ND	ND	ND
Acetone	50 (GV)	ND	*	ND	ND	ND	ND	ND	ND	ND	ND	*	ND	ND	**2.0**	ND	ND	ND	ND	ND
2-Butanone	50	*	*	*	ND	ND	ND	ND	ND	ND	*	*	*	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	5	*	*	*	ND	**0.4**	ND	ND	ND	ND	*	*	*	ND	ND	ND	ND	ND	ND	ND
Chloroethane	5	ND	*	*	ND	ND	ND	ND	ND	ND	ND	*	*	ND	ND	ND	ND	ND	ND	ND
Chloroform	7	ND	*	ND	ND	**1**	ND	ND	ND	ND	ND	*	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	5	ND	*	*	ND	ND	ND	ND	ND	ND	ND	*	*	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	4.7	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	NA	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	5	ND	*	ND	ND	ND	ND	ND	ND	ND	ND	*	ND	ND	**0.6**	ND	ND	ND	ND	ND
1,2,4-Trimethylbezene	5	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	NA	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**4**	ND	**1.0**	ND	ND	ND	ND	ND
1,2-Dichloroethene (total)	5	ND	ND	**2**	**1 J**	ND	ND	ND	ND	ND	ND	3	**9**	**7 J**	**6**	**360**	**180**	**160**	**45**	**38**
Tetrachloroethene	5	ND	ND	**3 J**	**8 J**	**0.6 J**	**4**	**6**	**7.7**	**8.3**	7.8	**7**	**29 J**	**27**	**4**	**5,200**	**1,700**	**950**	**500**	**590**
Toluene	5	ND	*	*	ND	ND	ND	ND	ND	ND	ND	*	*	ND	ND	ND	ND	ND	ND	ND
Total Xylenes	5	ND	*	*	ND	ND	ND	ND	ND	ND	ND	*	*	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.7	ND	**6**	**1**	**1**	ND	ND	ND	**1.6**	**1.3**
1,1,2-Trichloroethane	1	ND	*	*	ND	ND	ND	ND	ND	ND	ND	*	*	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**3**	**2**	**2**	**220**	**99**	**46**	**18**	**15**
Vinyl Chloride	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	5	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	NA	ND	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	5	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	NA	ND	ND	ND	ND	ND	ND
Napthalene	10 (GV)	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	NAN	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	10 (GV)	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	NA	ND	ND	ND	ND	ND	**5.4**
Methylene Chloride	5	ND	*	ND	ND	ND	ND	ND	ND	ND	ND	*	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	5	*	*	*	ND	ND	ND	ND	ND	ND	*	*	*	ND	ND	ND	ND	ND	ND	ND
Bromomethane	5	*	*	*	ND	ND	ND	ND	ND	ND	*	*	*	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	60 (GV)	*	*	*	ND	ND	ND	ND	ND	ND	*	*	*	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	1	*	*	*	ND	ND	ND	ND	ND	ND	*	*	*	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	5	*	*	*	ND	ND	ND	ND	ND	ND	*	*	*	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	5	*	*	*	ND	ND	ND	ND	ND	ND	*	*	*	ND	ND	ND	ND	ND	ND	ND
Styrene	5	*	*	*	ND	ND	ND	ND	ND	ND	*	*	*	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	5	*	*	*	ND	ND	ND	ND	ND	ND	*	*	*	ND	ND	ND	ND	ND	ND	ND
1,3-Dichloropropene (total)	0.4	*	*	*	ND	ND	ND	ND	ND	ND	*	*	*	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	5	*	*	*	ND	ND	ND	ND	ND	ND	*	*	*	ND	ND	ND	ND	ND	ND	ND
Bromoform	50	*	*	*	ND	ND	ND	ND	ND	ND	*	*	*	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	5	*	*	*	ND	ND	ND	ND	ND	ND	*	*	*	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	5	*	*	*	ND	ND	ND	ND	ND	ND	*	*	*	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone	5	*	*	*	ND	ND	ND	ND	ND	ND	*	*	*	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluormethane	5	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	NA	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	5	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	NA	ND	ND	ND	ND	ND	ND
Diethyl ether	5	*	*	*	NA	ND	NA	NA	NA	NA	*	*	*	NA	ND	NA	NA	NA	NA	NA
Iodomethane	5	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	NA	ND	ND	ND	ND	ND	ND
Allyl chloride	5	*	*	*	NA	ND	NA	NA	NA	NA	*	*	*	NA	ND	NA	NA	NA	NA	NA
Acrylonitrile	5	*	*	*	NA	ND	NA	NA	NA	NA	*	*	*	NA	ND	NA	NA	NA	NA	NA
2,2-Dichloropropane	5	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	NA	ND	ND	ND	ND	ND	ND
Methyl acrylate	5	*	*	*	NA	ND	NA	NA	NA	NA	*	*	*	NA	ND	NA	NA	NA	NA	NA
Propionitrile	5	*	*	*	NA	ND	NA	NA	NA	NA	*	*	*	NA	ND	NA	NA	NA	NA	NA
Bromochloromethane	5	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	NA	ND	ND	ND	ND	ND	ND
Tetrahydrofuran	5	*	*	*	NA	ND	NA	NA	NA	NA	*	*	*	NA	ND	NA	NA	NA	NA	NA
Methacrylonitrile	5	*	*	*	NA	ND	NA	NA	NA	NA	*	*	*	NA	ND	NA	NA	NA	NA	NA
1-Chlorobutane	5	*	*	*	NA	ND	NA	NA	NA	NA	*	*	*	NA	ND	NA	NA	NA	NA	NA
1,1-Dichloropropene	5	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	NA	ND	ND	ND	ND	ND	ND
Methyl methacrylate	50	*	*	*	NA	ND	NA	NA	NA	NA	*	*	*	NA	ND	NA	NA	NA	NA	NA
Dibromomethane	5	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	NA	ND	ND	ND	ND	ND	ND
2-Nitropropane	5	*	*	*	NA	ND	NA	NA	NA	NA	*	*	*	NA	ND	NA	NA	NA	NA	NA
Chloroacetonitrile	5	*	*	*	NA	ND	NA	NA	NA	NA	*	*	*	NA	ND	NA	NA	NA	NA	NA
1,1-dichloropropanone	5	*	*	*	NA	ND	NA	NA	NA	NA	*	*	*	NA	ND	NA	NA	NA	NA	NA
Ethyl methacrylate	5	*	*	*	NA	ND	NA	NA	NA	NA	*	*	*	NA	ND	NA	NA	NA	NA	NA
1,3-Dichloropropane	5	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	NA	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachlorethane	5	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	NA	ND	ND	ND	ND	ND	ND
Isopropylbenzene	5	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	NA	ND	ND	ND	ND	ND	ND
Bromobenzene	5	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	NA	ND	ND	ND	ND	ND	ND
n-Propylbenzene	5	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	NA	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	5	*	*	*	NA	ND	NA	NA	NA	NA	*	*	*	NA	ND	NA	NA	NA	NA	NA

Appendix Table A1
ServAll Laundry Site, Site 1-52-077
Summary of Historical Groundwater Sampling Results

Well ID	Class GA	MW-23D									MW-23S									
Date	GWQS	Oct-94	Jan-98	Jan-99	Jul-00	May-04	Jun-06	Aug-07	Nov-08	Feb-10	Oct-94	Jan-98	Jan-99	Jul-00	May-04	Jun-06	Aug-07	Jan-08	Nov-08	Feb-10
1,2,3-Trichloropropane	0.04	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	NA	ND	ND	ND	ND	ND	ND
2-Chlorotoluene	5	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	NA	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	5	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	NA	ND	ND	ND	ND	ND	ND
4-Chlorotoluene	5	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	NA	ND	ND	ND	ND	ND	ND
tert-Butylbenzene	5	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	NA	ND	ND	ND	ND	ND	ND
Pentachloroethane	5	*	*	*	NA	ND	NA	NA	NA	NA	*	*	*	NA	ND	NA	NA	NA	NA	NA
sec-Butylbenzene	5	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	NA	ND	ND	ND	ND	ND	ND
p-Isopropyltoluene	5	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	NA	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	3	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	NA	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	3	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	NA	ND	ND	ND	ND	ND	ND
n-Butylbenzene	5	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	NA	ND	ND	ND	ND	ND	ND
Hexachloroethane	3	*	*	*	NA	ND	NA	NA	NA	NA	*	*	*	NA	ND	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	0.04	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	NA	ND	ND	ND	ND	ND	ND
Vinyl Acetate	5	*	*	*	NA	NA	ND	ND	ND	ND	*	*	*	NA	NA	ND	ND	ND	ND	ND
1,2-Dibromoethane	5	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	NA	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	0.5	*	*	*	NA	ND	ND	ND	ND	ND	*	*	*	NA	ND	ND	ND	ND	ND	ND
Total VOCs		**0**	**0**	**5**	**9**	**2**	**4**	**6**	**7.7**	**8.3**	**9.5**	**10**	**51**	**37**	**16.6**	**5,780**	**1,979**	**1,981**	**564.6**	**649.7**
Semivolatile Organics																				
2-methylphenol	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-N-Butylphthalate	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																				
Aluminum	2,000	*	*	*	*	*	253	83.7 B	109 B	182 B	*	*	*	*	*	7,130	306	306	ND	126 B
Antimony	3	*	*	*	*	*	ND	***7.50 B***	ND	ND	*	*	*	*	*	1.4 B	*	**4.7** *B*	ND	ND
Arsenic	25	*	*	*	*	*	ND	ND	ND	ND	*	*	*	*	*	2.5 B	*	ND	ND	ND
Barium	1,000	*	*	*	*	*	25.6 B	15 B	15.2 B	31.7 B	*	*	*	*	*	77.8 B	26	26 *B*	23.9 B	12.5 B
Beryllium	3	*	*	*	*	*	ND	ND	ND	ND	*	*	*	*	*	0.6 B	*	0.1 *B*	ND	ND
Cadmium	5	*	*	*	*	*	ND	3.3 B	**9.4** #E	0.54 B	*	*	*	*	*	ND	*	0.3 *B*	0.2 B#E	1.9 B
Calcuim	NL	*	*	*	*	*	17,800	18,300	12,400	16,500	*	*	*	*	*	14,800	14,100	14,100	17,600	13,600
Chromium	50	*	*	*	*	*	0.66 B	3.6 B	ND	1.5 B	*	*	*	*	*	12.2 B	3.4	3.4 *B*	ND	1.3 B
Cobalt	NL	*	*	*	*	*	2 B	2.2 B	ND	1.4 B	*	*	*	*	*	5.0 B	*	2.4 *B*	ND	ND
Copper	200	*	*	*	*	*	8.5 B	20.1 B	ND	7.8 B	*	*	*	*	*	27.2 B	*	22.3 *B*	ND	6.7 B
Iron	600	*	*	*	*	*	133 B	247	**544**	***576***	*	*	*	*	*	**3,800**	563	**563**	82.5 B	272
Lead	25	*	*	*	*	*	ND	ND	2.3 B	2.8 B	*	*	*	*	*	ND	1.7	1.7 *B*	ND	ND
Magnesium	35,000	*	*	*	*	*	6,830	6,950	4,920	3,260	*	*	*	*	*	2,440	2,570	2,570	3,350	5,420
Manganese	300	*	*	*	*	*	**1,570**	**1,370**	**1,230**	33.1 B	*	*	*	*	*	109	77.9	77.9	15.7 B	***1,420***
Mercury	0.7	*	*	*	*	*	ND	ND	ND	ND	*	*	*	*	*	ND	*	ND	ND	ND
Nickel	100	*	*	*	*	*	15 B	18.3 B	14.7 B	2.5 B	*	*	*	*	*	7.6 B	*	3.3 *B*	ND	13.7 B
Potassium	NL	*	*	*	*	*	1,340	1,500	1,240	3,870	*	*	*	*	*	3,270	2,930	2,930	3,110	1,100
Selenium	10	*	*	*	*	*	ND	ND	ND	ND	*	*	*	*	*	ND	*	ND	ND	ND
Silver	50	*	*	*	*	*	ND	2.40 B	ND	ND	*	*	*	*	*	ND	*	1.9 *B*	ND	ND
Sodium	20,000	*	*	*	*	*	**28,700**	**35,200**	**25,500**	***29,200***	*	*	*	*	*	16,200	16,500	16,500	16,600	***23,500***
Thallium	1	*	*	*	*	*	**7.8 B**	ND	ND	ND	*	*	*	*	*	**1.3 *B***	*	ND	ND	***8.6 B***
Vanadium	NL	*	*	*	*	*	ND	0.44 B	1 B	0.89 B	*	*	*	*	*	14.5 B	*	1.3 *B*	ND	0.71 B
Zinc	2,000	*	*	*	*	*	15.2 B	105	71.9	35.9 B	*	*	*	*	*	53.8	*	30.6 *B*	17.8 B	45.5 B
Water Quality Parameters																				
Alkalinity (mg/L)		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Dissolved Solids (mg/L)		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Suspended Solids (mg/L)		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon (mg/L)		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
All concenrtations in ug/L unless otherwise noted.
- Estimated value, duplicate out of range.
GV - guidance value.
D - Results from a subsequent dilution
B - Analyte detected in associated method blank
E - Results exceed the instrument calibration limit
NC - No criterion

ND - Analyte concentration less than the instrument detection limit (IDL).
J - Estimated concentration exceeding the IDL, but less than the reporting limit
BOLD font indicates results within the IDL, **BOLD** font in shaded cell indicates exceedances of AWQS+GV.
cis 1,2 dichloroethene and trans 1,2 Dichloroethene have been combined to 1,2 dichloroethene (total)
cis 1,3 dichloropropene and trans 1,3 Dichloropropene have been combined to 1,3 dichloropropene (total)
*No information available. Laboratory data sheets were not available during the preparation of this table; therefore it is unknown if this analyte was analyzed for.
NA indicates sample was not analyzed for specified compound

Appendix B

IC/EC Certification