Corporate Environmental Programs
General Electric Company
100 Woodlawn Avenue, Pittsfield, MA 01201

Transmitted Via Overnight Courier

January 28, 2005

Mr. James M. DiLorenzo
U.S. Environmental Protection Agency
EPA - New England
One Congress Street, Suite 1100
Boston, Massachusetts 02114-2023

Re: **GE-Pittsfield/Housatonic River Site**
Groundwater Management Area 1 (GECD310)
Groundwater Quality Interim Report for Fall 2004

Dear Mr. DiLorenzo:

In accordance with GE's approved *Baseline Monitoring Program Proposal for Plant Site 1 Groundwater Management Area* (September 2000) and *Plant Site 1 Groundwater Management Area Groundwater Quality Interim Report for Spring 2003* (July 2003), enclosed is the *Plant Site 1 Groundwater Management Area Groundwater Quality Monitoring Interim Report for Fall 2004*. This report summarizes activities performed as part of the Plant Site 1 Groundwater Management Area (GMA 1) interim groundwater quality monitoring program during fall 2004, including the results of the latest groundwater sampling and analysis round at GMA 1.

Please call Andrew Silfer or me if you have any questions regarding this report.

Sincerely,

John F. Novotny/WH fax

John F. Novotny, P.E.
Manager - Facilities and Brownfields Programs

Enclosure
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Plant Site 1 Groundwater Management Area Groundwater Quality Monitoring Interim Report for Fall 2004

General Electric Company
Pittsfield, Massachusetts

January 2005

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1. Introduction

1.1 General

On October 27, 2000, a Consent Decree (CD) executed in 1999 by the General Electric Company (GE), the United States Environmental Protection Agency (EPA), the Massachusetts Department of Environmental Protection (MDEP), and several other government agencies was entered by the United States District Court for the District of Massachusetts. The CD governs (among other things) the performance of response actions to address polychlorinated biphenyls (PCBs) and other hazardous constituents in soil, sediment, and groundwater in several Removal Action Areas (RAAs) located in or near Pittsfield, Massachusetts that collectively comprise the GE-Pittsfield/Housatonic River Site (the Site). For groundwater and non-aqueous-phase liquid (NAPL), the RAAs at and near the GE Pittsfield facility have been divided into five separate Groundwater Management Areas (GMAs), which are illustrated on Figure 1. These GMAs are described, together with the Performance Standards established for the response actions at and related to them, in Section 2.7 of the *Statement of Work for Removal Actions Outside the River* (SOW) (Appendix E to the CD), with further details presented in Attachment H to the SOW (Groundwater/NAPL Monitoring, Assessment, and Response Programs). This report relates to the Plant Site 1 Groundwater Management Area, also known as and referred to herein as GMA 1.

In September 2000, GE submitted a *Baseline Monitoring Program Proposal for Plant Site 1 Groundwater Management Area* (GMA 1 Baseline Monitoring Proposal). The GMA 1 Baseline Monitoring Proposal summarized the hydrogeologic information available at that time for GMA 1 and proposed groundwater and NAPL monitoring activities (incorporating as appropriate those activities that were in place at that time) for the baseline monitoring period at this GMA. EPA provided conditional approval of the GMA 1 Baseline Monitoring Proposal by letter of March 20, 2001. Thereafter, certain modifications were made to the GMA 1 baseline monitoring program as a result of EPA approval conditions and/or findings during field reconnaissance of the selected monitoring locations. Those modifications were documented in update letters from GE to EPA dated May 18, August 16, and August 22, 2001.

The baseline monitoring program, which was initiated in fall 2001, consisted of four semi-annual groundwater quality sampling events followed by preparation and submittal of reports summarizing the groundwater monitoring results and, as appropriate, proposal of modifications to the monitoring program. The fourth baseline monitoring report for GMA 1, entitled *Plant Site 1 Groundwater Management Area Baseline Groundwater Quality Interim Report for Spring 2003* (Spring 2003 GMA 1 Groundwater Quality Report), was

submitted to EPA on July 30, 2003. Section 6.1.3 of Attachment H to the SOW provides that if the two-year "baseline" period ends prior to the completion of soil-related response actions at all the RAAs in a GMA, GE may make a proposal to EPA to modify and/or extend the Baseline Monitoring Program based on the results of the initial assessment and the estimated timing of future response actions at the RAAs in the GMA. The approved GMA 1 Baseline Monitoring Proposal also allows GE to propose a modification and/or extension of the baseline monitoring program based on the results of the initial assessment and the estimated timing of future response actions. Therefore, the Spring 2003 GMA 1 Groundwater Quality Report contained a proposal to modify and extend baseline groundwater quality monitoring activities at GMA 1 (under a program referred to as an interim monitoring program) until such time as the soil-related Removal Actions at the GMA 1 RAAs are completed and the specific components of a long-term groundwater quality monitoring program are determined. EPA conditionally approved the Spring 2003 GMA 1 Groundwater Quality Report by letter dated September 23, 2003. Under the approved interim monitoring program, annual water quality sampling (alternating between the spring and fall seasons) at selected GMA 1 wells was scheduled to begin in spring 2004, following a limited sampling event in fall 2003 involving the collection of groundwater samples from six wells that did not yet have four complete rounds of sampling as part of the baseline monitoring program. Additionally, the fall 2003 event included the collection of samples for mercury analysis from 12 wells at which mercury had been detected in the fall 2002 sampling round.

As part of the interim groundwater quality monitoring program, GE is required to submit reports after each groundwater sampling event to summarize the groundwater monitoring results and related activities and, as appropriate, propose modifications to the monitoring program. The results of the initial full round of interim groundwater sampling activities performed at this GMA in April 2004 were provided in GE's July 2004 *Plant Site 1 Groundwater Management Area Groundwater Quality Interim Report for Spring 2004* (Spring 2004 GMA 1 Groundwater Quality Report), which was approved by EPA in a letter dated November 12, 2004. The results of a limited sampling event conducted in fall 2004 at locations that could not be sampled in spring 2004 are provided in this *Plant Site 1 Groundwater Management Area Groundwater Quality Monitoring Interim Report for Fall 2004* (Fall 2004 GMA 1 Groundwater Quality Report). It should be noted that this report is intended to provide groundwater quality information for GMA 1. The results of GE's groundwater flow monitoring, as well as assessments of the presence and extent of NAPL at GMA 1 (including summaries of GE's NAPL recovery efforts), are presented in separate semi-annual reports submitted under GE's NAPL monitoring program.

1.2 Background Information

As discussed above, the CD and SOW provide for the performance of groundwater-related Removal Actions at a number of GMAs. Some of these GMAs, including GMA 1, incorporate multiple RAAs to reflect the fact that groundwater may flow between RAAs. GMA 1 incorporates 11 RAAs and occupies an area of approximately 215 acres (Figures 1 and 2). The RAAs within GMA 1 include the following:

- RAA 1 - 40s Complex
- RAA 2 - 30s Complex
- RAA 3 - 20s Complex
- RAA 4 - East Street Area 2-South
- RAA 5 - East Street Area 2-North
- RAA 6 - East Street Area 1-North
- RAA 12 - Lyman Street Area
- RAA 13 - Newell Street Area II
- RAA 14 - Newell Street Area I
- RAA 17 - Silver Lake Area
- RAA 18 - East Street Area 1-South

The GMA contains a combination of GE-owned and non-GE-owned industrial areas, residential properties, and recreational areas. The Housatonic River flows through the southern portion of this GMA, while Silver Lake is located along the western boundary.

Certain portions of this GMA originally consisted of land associated with oxbows or low-lying areas of the Housatonic River. Re-channelization and straightening of the Housatonic River in the early 1940s by the City of Pittsfield and the United States Army Corps of Engineers (USACE) separated several of these oxbows and low-lying areas from the active course of the river. These oxbows and low-lying areas were subsequently filled with various materials from a variety of sources, resulting in the current surface elevations and topography.

As discussed in Section 1.1 above, the CD and the SOW provide for the performance of groundwater-related Removal Actions at the GMAs, including the implementation of groundwater monitoring, assessment, and recovery programs. In general, these programs consist of a baseline monitoring program conducted over a period of at least two years to establish existing groundwater conditions and a long-term monitoring program performed to assess groundwater conditions over time and to verify the attainment of the Performance Standards

for groundwater. The baseline monitoring program was initiated at GMA 1 in the fall of 2001 and the spring 2003 sampling event constituted the fourth baseline sampling event at most of the wells in GMA 1. EPA has approved the implementation of a modified monitoring program (referred to as the "interim monitoring program") until the completion of the soil-related Removal Actions at the GMA 1 RAAs, at which time a long-term monitoring program will commence.

As set forth in the GMA 1 Baseline Monitoring Proposal and Addendum, the baseline monitoring program at this GMA initially involved a total of 65 monitoring wells. Subsequent modifications to the program resulted in the addition of one well (LSSC-08I) and replacement of five wells with substitute monitoring wells (ESA2S-52 for ES2-17, MW-3R for MW-3, GMA1-13 for 95-9, ESA1S-33 for ES1-8, and ES1-23R for ES1-23). All of these wells were monitored for groundwater elevations on a quarterly basis and sampled on a semi-annual basis for analysis of PCBs and/or certain other constituents listed in Appendix IX of 40 CFR Part 264, plus three additional constituents -- benzidine, 2-chloroethylvinyl ether, and 1,2-diphenyhydrazine (Appendix IX+3). The specific groundwater quality parameters for each individual well were selected based on the monitoring objectives of the well.

In the Spring 2003 GMA 1 Groundwater Quality Report, GE described its proposed interim groundwater quality monitoring program. Certain specific monitoring tasks were to be performed in fall 2003, and GE submitted its Fall 2003 GMA 1 Groundwater Quality Report providing the results of those tasks. Beginning in spring 2004, as approved by EPA, the interim groundwater quality monitoring program was to consist of annual sampling (alternating between the spring and fall seasons) and analysis for select constituents at 22 GMA 1 wells. Locations selected for interim groundwater quality monitoring were wells downgradient of known NAPL areas/recovery systems where no additional hydraulic controls are in place, and/or those where analytical results from the baseline monitoring rounds did not conclusively indicate whether long-term monitoring would be necessary. In addition, well MW-4 was replaced with a new well (MW-4R) which was to be sampled during the spring and fall of 2004, after which GE was to evaluate whether the analytical results are consistent with prior data from well MW-4 and propose an appropriate sampling schedule for the remainder of the interim monitoring program. In addition, GE was to continue its efforts to complete baseline sampling and analyses at two GMA 1 baseline monitoring wells (GMA1-2 and GMA1-4) where four baseline sampling rounds had yet to be completed.

GE initiated the spring 2004 groundwater sampling event on April 6, 2004 and completed the required sampling at most of the GMA 1 locations. However, GE was unable to sample four of the required monitoring wells at this GMA, and discussed these situations with EPA during a technical meeting on May 21, 2004. GE submitted

a letter to EPA on June 15, 2004 containing a summary of the discussions concerning each of the wells that could not be sampled and the EPA-approved modifications to the interim groundwater monitoring program that will be implemented in the future (discussed in Section 5.2). As a result, in fall 2004, GE conducted a limited sampling event at replacement locations for the wells that could not be sampled in spring 2004, in addition to certain wells that were previously scheduled for semi-annual sampling. The GMA 1 interim monitoring program activities performed in fall 2004 are summarized in Table 1.

A separate non-GE-related disposal site, as designated under the MCP, is located on an adjacent property near the northern edge of the Lyman Street Area. This disposal site is the O'Connell Mobil Station site (MDEP Site No. 1-13347) (also referred to as the "East Street Mobil Site") at 730 East Street. GE understands this site is currently being addressed by O'Connell Oil Associates, Inc. to satisfy the requirements of Massachusetts General Laws Chapter 21E and the MCP. Available documentation indicates that soluble-phase contaminants related to gasoline releases from the O'Connell Mobil Station may have migrated onto GMA 1. GE is required to include available monitoring results from response actions performed at this adjacent site in the groundwater monitoring reports for GMA 1, to the extent that information is available to GE. To fulfill this requirement, GE has conducted a file search at MDEP to review any reports that have been submitted regarding this site since submittal of the Spring 2004 GMA 1 Groundwater Quality Report. The most recent report on file is a March 2004 report entitled *Phase IV Remedy Implementation Plan; 730 East Street; Pittsfield, MA; RTN# 1-13347* (Phase IV RIP), prepared by ECS Marin on behalf of O'Connell Oil Associates, Inc. GE has previously discussed that report in the Spring 2004 GMA 1 Groundwater Quality Report.

1.3 Format to Document

The remainder of this report is presented in five sections. Section 2 describes the groundwater quality-related activities performed at GMA 1 in fall 2004. Section 3 presents the analytical results obtained during the fall 2004 sampling event performed between October 5, 2004 and November 1, 2004. Section 4 provides a summary of the applicable groundwater quality Performance Standards identified in the CD and SOW, and provides an assessment of the results of the fall 2004 activities, including a comparison to those Performance Standards. Section 5 proposes certain modifications to the interim groundwater quality monitoring program, which will be continued until such time as the soil-related Removal Actions at the GMA 1 RAAs are completed and the needs for a long-term monitoring program may be fully delineated. Finally, Section 6 presents the schedule for future field and reporting activities related to groundwater quality at GMA 1.

2. Field and Analytical Procedures

2.1 General

The activities conducted as part of the interim groundwater monitoring program, and summarized herein, primarily involved the installation of monitoring wells and the collection and analysis of groundwater samples at select monitoring wells within GMA 1, as described in Table 1. The construction details of the wells are provided in Table 2 and the fall 2004 field sampling data are presented in Appendix C. This section discusses the field procedures used to install and develop monitoring wells, collect groundwater and groundwater/NAPL samples, and the methods used to analyze the samples. All activities were performed in general accordance with GE's approved *Field Sampling Plan/Quality Assurance Project Plan* (FSP/QAPP). A modified sampling method for the collection of groundwater/NAPL samples was discussed with EPA's oversight contractor prior to collection of those samples.

2.2 Well Installation and Development

Two new monitoring wells were installed at GMA 1 in fall 2004, based on the inability to sample certain wells in spring 2004. The additions of these wells to the interim program were previously approved by EPA, as documented in a June 15, 2004 letter from GE to EPA. Specifically, GE installed new well (GMA1-18) and one replacement well (139R) within the East Street Area 1-South portion of GMA 1. Well GMA1-18 was installed to the south of East Street as a replacement for well ES1-14, which is located on a non-GE-owned property where the property owner has denied access to GE to conduct further sampling activities. Well 139R was installed as a replacement for well 139, which was found to be filled with debris and was unable to be sampled in spring 2004. Monitoring well logs for the new wells are presented in Appendix A.

Following installation, the new wells were developed to remove fine materials (e.g., fine sand, silt, clay) that may have accumulated in the filter pack and to ensure that the well screen are transmitting groundwater representative of the surrounding formation. Development was performed by surging the saturated portion of the well screens with a surge block and removing groundwater with a positive displacement pump.

2.3 Groundwater and Combined Groundwater/NAPL Sampling and Analysis

Most of the fall 2004 groundwater sampling was performed between October 5 and 6, 2004. However, the sampling at well GMA1-18 was delayed until November 1, 2004 in order to allow the recently-installed well to reach equilibrium following development.

Groundwater samples were scheduled to be collected from six groundwater monitoring wells. However, only five of the monitoring wells were actually sampled. Well GMA1-2 was found to be dry at the time of sampling (as had been the case during all but one of the previous semi-annual monitoring events).

All of the groundwater samples were collected by the low-flow techniques as specified in the FSP/QAPP. Low-flow sampling techniques using either a bladder or peristaltic pump were utilized for the purging and collection of groundwater samples during this sampling event. The sampling methods utilized at each well are specified in Appendix C. Each monitoring well was purged utilizing low-flow techniques until field parameters (including temperature, pH, specific conductivity, oxidation-reduction potential, dissolved oxygen, and turbidity) stabilized prior to sample collection. Field parameters were measured in combination with the sampling activities at the monitoring wells. The stabilized field parameter measurements are presented in Table 3 and the field sampling data are provided in Appendix C. A general summary of the field measurement results during the fall 2004 monitoring event is provided below:

PARAMETER	UNITS	RANGE
Turbidity	Nephelometric turbidity units (NTU)	1.0 – 8.0
pH	pH units	6. 57 – 7.53
Specific Conductivity	Millisiemens per centimeter	0.714 – 1.111
Oxidation-Reduction Potential	Millivolts	-211.5 – 115.3
Dissolved Oxygen	Milligrams per liter	0.51 – 9.80
Temperature	Degrees Celsius	14.72 – 18.32

The collected groundwater samples were submitted to SGS Environmental Services, Inc. of Charleston, West Virginia for laboratory analysis. For the groundwater samples that were monitored for compliance with the GW-3 standards, the samples were submitted for analysis of some or all of the following constituents using the associated EPA methods:

CONSTITUENT	EPA METHOD
VOCs	8260B
Semi-Volatile Organic Compounds (SVOCs)	8270C
PCBs (Filtered Samples)	8082
Polychlorinated Dibenzo-p-dioxins and Polychlorinated Dibenzofurans (PCDDs/PCDFs)	8290
Metals (Filtered Samples)	6010B, 7000A, and 7470A
Cyanide (Filtered Samples)	9014
Sulfide	9034

For the groundwater samples collected from wells that were monitored solely for compliance with the GW-2 standards, the samples were submitted for analysis of the VOCs listed in GE's FSP/QAPP, as well as five compounds listed as SVOCs in the FSP/QAPP (1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,2,4-trichlorobenzene, and naphthalene). The VOCs and five SVOCs were analyzed using EPA Method 8260B in accordance with a letter from GE to EPA dated September 28, 2001.

Following receipt of the analytical data from the laboratory, the preliminary results were reviewed for completeness and compared to the Massachusetts Contingency Plan (MCP) Method 1 GW-2 (where applicable) and GW-3 standards, and to the MCP Upper Concentration Limits (UCLs) for groundwater. The preliminary analytical results were presented in the next monthly report on overall activities at the GE-Pittsfield/Housatonic River Site. Finally, the data were validated in accordance with the FSP/QAPP and the validated results were utilized in the preparation of this report. The data validation report is provided in Appendix E. As discussed in the data validation report, 100% of the fall 2004 groundwater quality data are considered to be useable.

In addition to the groundwater sampling activities discussed above, GE also collected a sample containing both groundwater and NAPL from well 34 on October 6, 2004. This sample was collected in accordance with an EPA requirement contained in a September 8, 2004 conditional approval letter pertaining to the Fall 2003 GMA 1 Groundwater Quality Report. As GE had previously proposed, NAPL was allowed to accumulate in well 72 and adjacent well 34 in order to obtain sufficient quantity of NAPL to collect a sample for VOC analysis. However, pursuant to EPA's conditional approval letter, since neither well contained sufficient NAPL to collect a sample consisting entirely of NAPL, GE collected a sample containing both groundwater and NAPL sample from well 34, as that well contained the greater NAPL thickness at the time of sampling.

The combined groundwater/NAPL sample was collected by a low-flow grab sampling technique using a peristaltic pump. Specifically, in order to maximize the amount of NAPL in the sample, no well purging was conducted prior to sample collection. The collected groundwater/NAPL sample was submitted to SGS Environmental Services, Inc. of Charleston, West Virginia for laboratory analysis of the parameters associated with the GW-2 standard list, i.e., the VOCs listed in GE's FSP/QAPP, as well as five compounds listed as SVOCs in the FSP/QAPP (1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,2,4-trichlorobenzene, and naphthalene). The field sampling record for this sample is provided in Appendix C.

3. Fall 2004 Analytical Results

3.1 General

A description of the fall 2004 groundwater analytical results and the results of the combined groundwater/NAPL sample from well 34, is presented in this section. The complete analytical data sets are summarized in Appendix B. Tables 4 and 5 provide a comparison of the concentrations of all detected constituents with the currently applicable groundwater quality Performance Standards established in the CD and SOW, while Table 6 presents a comparison of the concentrations of detected constituents with the UCLs for groundwater. An assessment of these results relative to those groundwater quality Performance Standards and the UCLs is provided in Section 4.

3.2 Groundwater Sample Results

The following paragraphs provide an overview of the fall 2004 analytical results from the GMA 1 groundwater quality monitoring wells for each constituent group that was analyzed.

3.2.1 VOC Results

Three groundwater samples were analyzed for VOCs during the fall 2004 sampling event. The VOC analytical results are summarized in Table B-1 of Appendix B. No VOCs were detected in one of the groundwater samples (well 72R), while trace amounts of three individual VOCs were observed in the remaining samples. Specifically, chloroform and toluene were detected in the groundwater sample from well GMA1-4, while benzene was detected in the sample from well MW-4R. Each VOC was detected at levels below the practical quantitation limit.

3.2.2 SVOC Results

A groundwater sample collected from GW-3 monitoring well LS-MW-4R was analyzed for SVOCs during the fall 2004 sampling event. In addition, samples from two wells (wells 72R and GMA1-4) were analyzed for five select SVOCs (1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,2,4-trichlorobenzene, and naphthalene) in conjunction with VOC analyses performed for these GW-2 wells, as discussed in Section 2.3.

The SVOC analytical results are summarized in Table B-1 of Appendix B. No SVOCs were detected in the GW-3 groundwater sample from well LS-MW-4R or in the two wells that were analyzed for five select SVOCs (wells 72R and GMA1-4).

3.2.3 PCB Results

Filtered groundwater samples from four monitoring wells were analyzed for PCBs as part of the fall 2004 sampling event. The PCB analytical results are summarized in Table B-1 of Appendix B. No PCB Aroclors were detected in two wells and, in the remaining two wells, only one PCB Aroclor (Aroclor1254) was detected, at levels below the practical quantitation limit. Total PCB concentrations ranged from non-detect (at two wells) to an estimated value of 0.000052 ppm (at well GMA1-18) in the filtered samples.

3.2.4 PCDD/PCDF Results

A groundwater sample from one monitoring well (well LS-MW-4R) was analyzed for PCDDs/PCDFs during the fall 2004 sampling event. The analytical results presented in Table B-1 of Appendix B summarize the individual PCDD/PCDF compounds that were detected in the groundwater sample. In addition, total Toxicity Equivalency Quotients (TEQs) were calculated for the PCDD/PCDF compounds using the Toxicity Equivalency Factors (TEFs) derived by the World Health Organization (WHO). In calculating those TEQs, the concentrations of individual PCDD/PCDF compounds that were not detected were represented as one-half of the analytical detection limit for those compounds. The total TEQ concentration of the sample was 7.5×10^{-9} ppm.

3.2.5 Inorganic Constituent Results

A filtered groundwater sample from monitoring wells LS-MW-4R was analyzed for inorganic constituents during the fall 2004 sampling event. Also, one additional filtered groundwater sample from well 72R was analyzed for cyanide only. The analytical results for these samples are summarized in Table B-1 of Appendix B. Four individual inorganic constituents (barium, chromium, selenium, and zinc) were observed in the LS-MW-4R sample, while a trace level of cyanide was detected in the filtered sample from well 72R.

3.3 Combined Groundwater/NAPL Sample Results From Well 34

A groundwater/NAPL sample collected from well 34 was analyzed for VOCs and five select SVOCs (1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,2,4-trichlorobenzene, and naphthalene) during the fall 2004 sampling event. None of these constituents was detected in the combined sample. The analytical results for this sample are summarized in Table B-2 of Appendix B.

4. Assessment of Results

4.1 General

This report constitutes the third interim monitoring report and is the seventh groundwater quality monitoring report submitted since commencement of the GMA 1 baseline groundwater monitoring program. The information presented herein is based on the laboratory results obtained during the fall 2004 groundwater sampling event, supplemented with historical groundwater analytical data when available.

4.2 Groundwater Quality Performance Standards

The Performance Standards applicable to response actions for groundwater at GMA 1 are set forth in Section 2.7 and Attachment H (Section 4.1) of the SOW. In general, the Performance Standards for groundwater quality are based on the groundwater classification categories designated in the MCP. The MCP identifies three potential groundwater categories that may be applicable to a given site. One of these, GW-1 groundwater, applies to groundwater that is a current or potential source of potable drinking water. None of the groundwater at any of the GMAs at the Site is classified as GW-1. However, the remaining MCP groundwater categories are applicable to GMA 1 and are described below:

- GW-2 groundwater is defined as groundwater that is a potential source of vapors to the indoor air of buildings. Groundwater is classified as GW-2 if it is located within 30 feet of an existing occupied building and has an average annual depth to groundwater of 15 feet or less. Under the MCP, volatile constituents present within GW-2 groundwater represent a potential source of organic vapors to the indoor air of the overlying occupied structures.

- GW-3 groundwater is defined as groundwater that discharges to surface water. By MCP definition, all groundwater at a site is classified as GW-3 since it is considered to be ultimately discharged to surface water. It should be noted that some groundwater within GMA 1 does not in fact discharge directly to surface water because of the operation of numerous groundwater pumping systems. Water extracted from these systems is transferred to an on-site treatment plant for processing prior to discharge. Nevertheless, in accordance with the CD and SOW, all groundwater at GMA 1 is considered as GW-3.

The CD and the SOW allow for the establishment of standards for GW-2 and GW-3 groundwater at the GMAs through use of one of three methods, as generally described in the MCP. The first, known as Method 1, consists of the application of pre-established numerical "Method 1" standards set forth in the MCP for both GW-2 and GW-3 groundwater (310 CMR 40.0974). These "default" standards have been developed to be conservative and will serve as the initial basis for evaluating groundwater at GMA 1. The current MCP Method 1 GW-2 and GW-3 standards for the constituents detected in the fall 2004 sampling event are listed in Tables 4 and 5, respectively. (In the event of any discrepancy between the standards listed in these tables and those published in the MCP, the latter will be controlling.) For constituents for which Method 1 standards do not exist, the MCP provides procedures, known as Method 2, for developing such standards (Method 2 standards) for both GW-2 (310 CMR 40.0983(2)) and GW-3 (310 CMR 40.0983(4)) groundwater. For such constituents that are detected in groundwater during the baseline monitoring program, Attachment H to the SOW states that in the Baseline Monitoring Program Final Report, GE must propose to develop Method 2 standards using the MCP procedures or alternate procedures approved by EPA, or provide a rationale for why such standards need not be developed. For constituents whose concentrations exceed the applicable Method 1 (or Method 2) standards, GE may develop and propose to EPA alternative GW-2 and/or GW-3 standards based on a site-specific risk assessment. This procedure is known as Method 3 in the MCP. Upon EPA approval, these alternative risk-based GW-2 and/or GW-3 standards may be used in lieu of the Method 1 (or Method 2) standards. Of course, whichever method is used to establish such groundwater standards, GW-2 standards will be applied to GW-2 groundwater and GW-3 standards will be applied to GW-3 groundwater.

Based on consideration of the above points, the specific groundwater quality Performance Standards for GMA 1 consist of the following:

1. At monitoring wells designated as compliance points to assess GW-2 groundwater (i.e., groundwater located at an average depth of 15 feet or less from the ground surface and within 30 feet of an existing occupied building), groundwater quality shall achieve any of the following:

   (a) the Method 1 GW-2 groundwater standards set forth in the MCP (or, for constituents for which no such standards exist, Method 2 GW-2 standards once developed, unless GE provides and EPA approves a rationale for not developing such Method 2 standards);

(b) alternative risk-based GW-2 standards developed by GE and approved by EPA as protective against unacceptable risks due to volatilization and transport of volatile chemicals from groundwater to the indoor air of nearby occupied buildings; or

(c) a condition, based on a demonstration approved by EPA, in which constituents in the groundwater do not pose an unacceptable risk to occupants of nearby occupied buildings via volatilization and transport to the indoor air of such buildings.

2. Groundwater quality shall ultimately achieve the following standards at the perimeter monitoring wells designated as compliance points for GW-3 standards:

(a) the Method 1 GW-3 groundwater standards set forth in the MCP (or, for constituents for which no such standards exist, Method 2 GW-3 standards once developed, unless GE provides and EPA approves a rationale for not developing such Method 2 standards); or

(b) alternative risk-based GW-3 standards proposed by GE and approved by EPA as protective against unacceptable risks in surface water due to potential migration of constituents in groundwater.

These Performance Standards are to be applied to the results of the individual monitoring wells included in the monitoring program. Several monitoring wells have been designated as the compliance points for attainment of the Performance Standards identified above. These wells were initially identified in the GMA 1 Baseline Monitoring Proposal (although certain modifications were made subsequent to submittal of that proposal as a result of EPA approval conditions, findings during field reconnaissance of the selected wells, or replacement of certain wells during the course of the baseline monitoring program). As described above in Section 2.3, only selected wells were sampled in fall 2004.

4.3 Groundwater Quality – Fall 2004

For the purpose of generally assessing current groundwater quality conditions, the analytical results from the fall 2004 groundwater sampling event were compared to the applicable groundwater Performance Standards for GMA 1. These Performance Standards are described in Section 4.2 above, and are currently based (on a well-specific basis) on the MCP Method 1 GW-2 and/or GW-3 standards. Tables 4 and 5 provide a comparison of the concentrations of detected constituents with the currently applicable GW-2 and GW-3 standards,

respectively, while Table 6 presents a comparison of the concentrations of detected constituents with the groundwater UCLs. As shown in those tables, none of the constituents detected in the groundwater samples collected in fall 2004 was found at levels above the applicable GW-2 or GW-3 standards or groundwater UCLs. In addition, none of the GW-2 wells exhibited total VOC concentrations above 5 ppm (the level specified in the SOW as a notification level for GW-2 wells located within 30 feet of a school or occupied residential structure and as a trigger level for the proposal of interim response actions).

4.4 Overall Assessment of Groundwater and Combined Groundwater/NAPL Analytical Results

Graphs illustrating historical total VOC concentrations and filtered/unfiltered PCB and cyanide concentrations for all wells sampled in fall 2004 that have been previously sampled and analyzed for those constituents are presented in Appendix D. In addition, Appendix D contains graphs of historical concentrations of individual constituents that exceeded the applicable MCP Method 1 GW-3 standards or UCLs at GW-3 monitoring wells during any of the prior baseline monitoring program sampling events that were analyzed for those constituents in fall 2004. No exceedances of the MCP Method 1 GW-2 standards have been documented at the GW-2 monitoring wells, and therefore no graphs have been prepared based on GW-2 sampling data.

As discussed in Section 3.3, a sample containing both groundwater and NAPL was collected from well 34 and analyzed for VOCs and five select SVOCs (1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,2,4-trichlorobenzene, and naphthalene) during the fall 2004 sampling event. The groundwater/NAPL sample was collected in response to an EPA requirement contained in its September 8, 2004 conditional approval letter that GE assess whether the VOC levels in the NAPL and/or groundwater present any potential indoor air concern for the residences in this area. The analytical results for this sample are summarized in Table B-2 of Appendix B, which also compares the data with the MCP Method 1 GW-2 standards to assist in the evaluation of whether components of the NAPL could impact indoor air quality in this area. No exceedances of the MCP Method 1 GW-2 standards have been documented at the GW-2 monitoring wells, since none of the analyzed constituents was detected in the sample. Therefore, the data do not indicate any potential impact to indoor air at the nearby homes in this area and GE does not propose any further evaluations.

5. Monitoring Program Modifications

5.1 General

In spring 2004, GE initiated the interim groundwater monitoring program to be conducted until completion of the soil-related Removal Actions at the RAAs that comprise GMA 1. Aside from completing baseline sampling events at certain locations that could not be sampled during every round of the initial two-year baseline monitoring program, the interim monitoring program is designed to obtain additional data from locations where it is not yet clear whether the initial baseline groundwater quality results indicate that the well may require future monitoring in a long-term monitoring program.

This section contains a description of proposed modifications to the interim groundwater monitoring program which were developed based on the results of the fall 2004 groundwater sampling event.

5.2 Modifications to Interim Groundwater Quality Monitoring Program

GE's proposal for continued groundwater quality monitoring and for modifications to the interim program for is described below. The rationale for the inclusion or exclusion of each well in the interim baseline groundwater quality monitoring program is provided. A breakdown of the interim sampling program, including the modifications based on the comments from EPA's September 23, 2003 conditional approval letter and GE's proposed modifications based on the fall 2004 sampling results, is provided in Table 7. Locations of the wells to be included in the program are shown on Figure 2.

GW-2 sentinel well GMA1-2 has been found to be dry or nearly dry during six of seven baseline sampling events such that it could not be sampled during those monitoring rounds. However, GE was able to collect a groundwater sample from this well in spring 2003 for analysis of VOCs and five select SVOCs (1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,2,4-trichlorobenzene, and naphthalene). None of the analyzed constituents was detected. The average depth to groundwater at this location is slightly greater than 16 feet and groundwater has never been recorded at a depth of less than 15 feet below grade, the level at which the GW-2 criteria apply. GE proposes to discontinue future baseline sampling attempts at this location as it is apparent that the MCP GW-2 standards are not applicable in this area, and moreover, the analytical data that have been collected do not indicate the need for continued monitoring.

GW-2 sentinel well GMA1-4 was found to be dry during the fall 2001 through fall 2002 baseline sampling events and was not sampled during those monitoring rounds. However, groundwater has been available in this well since spring 2003 and GE collected a fourth baseline sample set from this well in fall 2004 for analysis of VOCs and five select SVOCs (1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,2,4-trichlorobenzene, and naphthalene). Based on a review of those analytical results, GE proposes to discontinue groundwater quality monitoring at this location, as the only analyzed constituent that has routinely been detected at this well was chloroform, which was detected in three of the four sampling events at concentrations ranging from 0.0041 ppm to 0.0098 ppm, compared to a MCP Method 1 GW-2 standard of 0.4 ppm. Trace concentrations of toluene (0.0017 ppm, compared to a MCP Method 1 GW-2 standard of 6 ppm) and bromodichloromethane (0.00089 ppm, no listed MCP Method 1 GW-2 standard) were also detected at this location during individual sampling rounds. In view of these analytical results, combined with the fact that the average depth to groundwater at this well is slightly greater than 15 feet, additional GW-2 monitoring at this location does not appear to be warranted.

GW-3 perimeter well LS-MW-4 was utilized for baseline monitoring from fall 2001 through spring 2003, but was found to be damaged and potentially subject to surface infiltration. In accordance with a requirement contained in EPA's conditional approval letter dated September 23, 2003, GE decommissioned well LS-MW-4 and installed a replacement well designated as LS-MW-4R and sampled that well during the spring 2004 and fall 2004 sampling events. Upon comparison of the analytical results between the two wells, the data from the new well (LS-MW-4R) appears to be at similar or lower concentrations than the original well (LS-MW-4). The applicable MCP Method 1 GW-3 standards were not exceeded for any constituents at either well during the prior monitoring events. However, per EPA's September 23, 2003 letter, GE is required to propose a continued monitoring schedule at this well for the remainder of the interim monitoring program. Therefore, GE proposes to add this well to the interim groundwater quality monitoring program for analysis of VOCs and filtered PCB only. Although the data do not indicate the presence of these constituents at elevated levels, continued sampling for VOCs and PCBs is proposed at well LS-MW-4R as these are the primary constituents of interest in this area, and additional data may be useful to determine if long-term monitoring is warranted. GE proposes to sample this well on the same annual schedule for the other interim monitoring program locations (i.e., alternating between spring and fall seasons), beginning with the next interim sampling event scheduled for fall 2005.

Analytical results above the MCP Method 1 GW-3 standard for cyanide were detected in unfiltered samples collected from several GMA 1 wells during the initial rounds of the baseline monitoring program. In the *Plant Site 1 Groundwater Management Area Baseline Groundwater Quality Interim Report for Spring 2002* (Spring

2002 GMA 1 Groundwater Quality Report), GE's proposed response to those exceedances was to collect and analyze filtered samples for cyanide, in addition to performing analysis of unfiltered samples as part of the remaining baseline activities. The additional data have allowed GE to assess the presence of soluble cyanide in groundwater at GMA 1 and, currently, only filtered samples are collected for cyanide analysis as part of the interim monitoring program.

GE proposes to further evaluate the presence of cyanide in groundwater during the next interim monitoring event by incorporating modifications to the analytical method recently finalized by MDEP to determine the concentrations of physiologically available cyanide (PAC) in the samples. The PAC data may be useful to support future risk assessment-related activities related to cyanide in groundwater, if any such activities are found to be necessary. Specifically, during the next interim sampling round to be conducted in fall 2005, GE proposes to analyze each sample scheduled for cyanide analysis by the standard method that has been utilized in the program (i.e., EPA Method 9014) and also under the PAC protocols contained in the August 13, 2004 MDEP document entitled *Quality Assurance and Quality Control Requirements and Performance Standards for SWC-846 Method 9014, Total Cyanide and the MADEP Physiologically Available Cyanide (PAC) Protocol for the Massachusetts Contingency Plan (MCP).*

GE will provide the results of those analyses in the subsequent interim monitoring report, along with an assessment of whether samples should continue to be analyzed under the PAC protocol in future monitoring rounds.

6. Schedule of Future Activities

6.1 General

This section addresses the schedule for future groundwater quality monitoring activities and reporting for GMA 1. This schedule assumes that the modifications to the interim groundwater quality monitoring program discussed in Section 5 will be implemented. Specifically, this section provides a schedule for the upcoming fall 2005 interim monitoring event and associated reporting activities.

6.2 Field Activities Schedule

The next interim groundwater quality sampling round is scheduled for October 2005. Approximately two to three months prior to that sampling event, GE will conduct an inspection of all wells to be sampled to ascertain whether any of the wells were damaged since the prior sampling event. If any of the wells is found to be unusable, GE will repair the well, install a replacement well, or propose an alternate course of action to EPA, as appropriate.

Prior to performance of these activities, GE will provide EPA with 7 days advance notice to allow the assignment of field oversight personnel.

6.3 Reporting Schedule

GE will continue to provide the results of preliminary groundwater analytical data in its monthly reports on overall activities at the GE-Pittsfield/Housatonic River Site.

GE will submit the Fall 2005 Interim Groundwater Quality Report for GMA 1 by January 31, 2006, in accordance with the reporting schedule approved by EPA. That report will present the final, validated fall 2005 interim sampling results and a brief discussion of the results, including any proposals to further modify the interim monitoring program, if necessary. GE will also include an updated summary of available groundwater monitoring results and analytical data collected at the adjacent East Street Mobil Site, to the extent that such information is available to GE.

Subsequent annual Interim Groundwater Quality Reports for GMA 1 will be submitted by January 31 where sampling activities were performed in the prior fall, or by July 31 where sampling activities were performed in the prior spring.

Tables

BLASLAND, BOUCK & LEE, INC.
engineers, scientists, economists

TABLE 1
FALL 2004 GROUNDWATER QUALITY MONITORING PROGRAM

PLANT SITE 1 GROUNDWATER MANAGEMENT AREA
GROUNDWATER QUALITY MONITORING INTERIM REPORT FOR FALL 2004
GENERAL ELECTRIC COMPANY-PITTSFIELD, MASSACHUSETTS

Well Number	Monitoring Well Usage	Sampling Schedule	Fall 2004 Analyses [4]	Comments
RAA 2 - 30s COMPLEX				
GMA1-2	GW-2 Sentinel	Semi-Annual [2]	VOC (+5 SVOC)	Well was dry and unable to be sampled.
RAA 5 - EAST STREET AREA 2-NORTH				
GMA1-4	GW-2 Sentinel	Semi-Annual [2]	VOC(+5 SVOC)	Fourth baseline data set collected.
RAA 12 - LYMAN STREET AREA				
MW-4R	GW-3 Perimeter (Downgradient)	Semi-Annual [3]	APP. IX, excl. pest/herb	
RAA 18 - EAST STREET AREA 1 SOUTH				
72R	GW-2 Sentinel/ GW-3 General/Source Area Sentinel	Annual [1]	VOC(+5 SVOC)/ PCB/Cyanide	Replacement for well ESA1S-33 .
139R	GW-2 Sentinel/ GW-3 Perimeter (Downgradient)	Annual [1]	PCB	Replacement for well 139.
GMA1-18	GW-2 Sentinel/ GW-3 General/Source Area Sentinel	Annual [1]	PCB	Replacement for well ES1-14.

NOTES:

1. The sampling schedule for wells proposed for annual groundwater quality sampling will alternate between the spring and fall seasons each year, beginning with spring 2004, during the interim period between the completion of the baseline monitoring program and the initiation of a long-term monitoring program. However, wells 72R, 139R, and GMA1-18 were sampled in fall 2004, as the wells that they replace in the interim monitoring program were not able to be sampled in spring 2004, as scheduled.

2. Wells that are included due to less than four rounds of baseline data (i.e., GMA1-2 and GMA1-4) will be sampled on a semi-annual basis until four rounds are completed, and may be proposed to be removed from the interim groundwater quality monitoring program after the fourth data set is collected or if, despite additional attempts, the data cannot be obtained.

3. Samples were to be collected from well MW-4R on a semi-annual basis during 2004, after which GE will propose to retain or modify the sampling schedule and/or analyses to be performed.

4. All analyses for PCB, metals, and cyanide conducted under the annual interim monitoring program were performed on filtered samples only.

TABLE 2
MONITORING WELL CONSTRUCTION

PLANT SITE 1 GROUNDWATER MANAGEMENT AREA
GROUNDWATER QUALITY MONITORING INTERIM REPORT FOR FALL 2004
GENERAL ELECTRIC COMPANY-PITTSFIELD, MASSACHUSETTS

Well Number	Survey Coordinates		Well Diameter (inches)	Ground Surface Elevation (feet AMSL)	Measuring Point Elevation (feet AMSL)	Depth to Top of Screen (feet BGS)	Screen Length (feet)	Top of Screen Elevation (feet AMSL)	Base of Screen Elevation (feet AMSL)
	Northing	Easting							
RAA 2 - 30s Complex									
GMA1-2	533981.9	131570.5	2	1,007.0	1,006.75	6.2	10.0	1,000.8	990.8
RAA 5 - East Street Area 2-North									
GMA1-4	534702.1	132178.3	2	1,011.8	1,011.52	10.3	10.0	1,001.5	991.5
RAA 12 - Lyman Street Area									
MW-4R	532351.6	130525.4	2	981.2	980.82	5.5	10.0	975.7	965.7
RAA 18 - East Street Area 1-South									
34	534204.9	134261.8	2	999.9	999.90	3.0	20.0	996.9	976.9
72R	534196.1	134234.6	4	1,001.2	1,000.92	4.0	10.0	997.2	987.2
139R	N/A	N/A	2	N/A	N/A	6.0	10.0	N/A	N/A
GMA1-18	N/A	N/A	2	N/A	N/A	4.0	10.0	N/A	N/A

NOTES:

1. The listed wells were scheduled to be utilized during fall 2004 for baseline groundwater quality sampling.
2. feet AMSL: Feet above mean sea level
3. feet BGS: Feet below ground surface
4. N/A: Information not available.

TABLE 3
FIELD PARAMETER MEASUREMENTS - FALL 2004

PLANT SITE 1 GROUNDWATER MANAGEMENT AREA
GROUNDWATER QUALITY MONITORING INTERIM REPORT FOR FALL 2004
GENERAL ELECTRIC COMPANY-PITTSFIELD, MASSACHUSETTS

WELL NUMBER	TURBIDITY (NTU)	TEMPERATURE (DEGREES CELSIUS)	pH (STANDARD UNITS)	SPECIFIC CONDUCTIVITY (mS/cm)	OXIDATION-REDUCTION POTENTIAL (mV)	DISSOLVED OXYGEN (mg/L)
RAA 5 - EAST STREET AREA 2-NORTH						
GMA1-4	2.0	15.16	7.53	1.052	-211.5	9.80
RAA 12 - LYMAN STREET AREA						
MW-4R	8.0	16.39	6.57	0.744	-38.7	0.51
RAA 18 - EAST STREET AREA 1-SOUTH						
72R	2.0	18.32	6.70	1.111	111.4	4.28
139R	5.0	14.72	7.06	0.714	115.3	7.44
GMA1-18	7.0	13.43	7.12	0.617	-274.2	4.56

Notes:

1. Measurements collected during fall 2004 groundwater sampling event performed between October 5 and November 1, 2004.
2. Well parameters were generally monitored continuously during purging by low-flow techniques. Final parameter readings are presented.
3. NTU - Nephelometric Turbidity Units
4. mS/cm - Millisiemens per centimeter
5. mV - Millivolts
6. mg/L - Milligrams per liter (ppm)

TABLE 4
COMPARISON OF GROUNDWATER ANALYTICAL RESULTS TO MCP METHOD 1 GW-2 STANDARDS

PLANT SITE 1 GROUNDWATER MANAGEMENT AREA
GROUNDWATER QUALITY MONITORING INTERIM REPORT FOR FALL 2004
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS
(Results are presented in parts per million, ppm)

Parameter	Site ID: / Sample ID: / Date Collected:	Method 1 GW-2 Standards	East St. Area 1 - South 72R 10/06/04	East St. Area 2 - North GMA1-4 10/05/04
Volatile Organics				
Chloroform		0.4	ND(0.0050)	0.0041 J
Toluene		6	ND(0.0050)	0.0017 J
Total VOCs		5	ND(0.20)	0.0058 J
Semivolatile Organics				
None Detected		--	--	--

Notes:

1. Samples were collected by Blasland Bouck & Lee, Inc., and were submitted to SGS Environmental Services, Inc. for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated as per Field Sampling Plan/Quality Assurance Project Plan (FSP/QAPP), General Electric Company, Pittsfield, Massachusetts, Blasland Bouck & Lee, Inc. (approved May 25, 2004 and resubmitted June 15, 2004).
3. Only volatile and semivolatile analysis is presented for the MCP Method 1 GW-2 Standards Comparison.
4. ND - Analyte was not detected. The number in parentheses is the associated detection limit.
5. Only volatile and semivolatile constituents detected in at least one sample are summarized.
6. - Indicates that all constituents for the parameter group were not detected.

Organics (volatiles, semivolatiles)

J - Indicates that the associated numerical value is an estimated concentration.

TABLE 5
COMPARISON OF GROUNDWATER ANALYTICAL RESULTS TO MCP METHOD 1 GW-3 STANDARDS

PLANT SITE 1 GROUNDWATER MANAGEMENT AREA
GROUNDWATER QUALITY MONITORING INTERIM REPORT FOR FALL 2004
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS
(Results are presented in parts per million, ppm)

Site ID:		East St. Area 1 - South			Lyman Street Area
Sample ID:	Method 1 GW-3	72R	ESA1S-139R	GMA1-18	LS-MW-4R
Parameter Date Collected:	Standards	10/06/04	10/06/04	11/01/04	10/06/04
Volatile Organics					
Benzene	7	ND(0.0050)	NA	NA	0.0044 J
Total VOCs	Not Listed	ND(0.20)	NA	NA	0.0044 J
PCBs-Filtered					
Aroclor-1254	Not Listed	0.000037 J	ND(0.000065)	0.000052 J	ND(0.000065)
Total PCBs	0.0003	0.000037 J	ND(0.000065)	0.000052 J	ND(0.000065)
Semivolatile Organics					
None Detected	--	NA	NA	NA	--
Furans					
2,3,7,8-TCDF	Not Listed	NA	NA	NA	ND(0.0000000027)
TCDFs (total)	Not Listed	NA	NA	NA	ND(0.0000000027)
1,2,3,7,8-PeCDF	Not Listed	NA	NA	NA	ND(0.0000000043)
2,3,4,7,8-PeCDF	Not Listed	NA	NA	NA	ND(0.0000000042)
PeCDFs (total)	Not Listed	NA	NA	NA	ND(0.0000000043)
1,2,3,4,7,8-HxCDF	Not Listed	NA	NA	NA	ND(0.0000000042)
1,2,3,6,7,8-HxCDF	Not Listed	NA	NA	NA	ND(0.0000000040)
1,2,3,7,8,9-HxCDF	Not Listed	NA	NA	NA	ND(0.0000000050)
2,3,4,6,7,8-HxCDF	Not Listed	NA	NA	NA	ND(0.0000000044)
HxCDFs (total)	Not Listed	NA	NA	NA	ND(0.0000000050)
1,2,3,4,6,7,8-HpCDF	Not Listed	NA	NA	NA	ND(0.0000000031)
1,2,3,4,7,8,9-HpCDF	Not Listed	NA	NA	NA	ND(0.0000000038)
HpCDFs (total)	Not Listed	NA	NA	NA	ND(0.0000000038)
OCDF	Not Listed	NA	NA	NA	ND(0.0000000073)
Dioxins					
2,3,7,8-TCDD	Not Listed	NA	NA	NA	ND(0.0000000029)
TCDDs (total)	Not Listed	NA	NA	NA	ND(0.0000000029)
1,2,3,7,8-PeCDD	Not Listed	NA	NA	NA	ND(0.0000000063)
PeCDDs (total)	Not Listed	NA	NA	NA	ND(0.0000000063)
1,2,3,4,7,8-HxCDD	Not Listed	NA	NA	NA	ND(0.0000000050)
1,2,3,6,7,8-HxCDD	Not Listed	NA	NA	NA	ND(0.0000000045)
1,2,3,7,8,9-HxCDD	Not Listed	NA	NA	NA	ND(0.0000000046)
HxCDDs (total)	Not Listed	NA	NA	NA	ND(0.0000000050)
1,2,3,4,6,7,8-HpCDD	Not Listed	NA	NA	NA	ND(0.0000000047)
HpCDDs (total)	Not Listed	NA	NA	NA	ND(0.0000000047)
OCDD	Not Listed	NA	NA	NA	ND(0.0000000056)
Total TEQs (WHO TEFs)	0.0000001	NA	NA	NA	0.0000000075
Inorganics-Unfiltered					
None Detected	--	NA	NA	NA	--
Inorganics-Filtered					
Barium	30	NA	NA	NA	0.0770 B
Chromium	2	NA	NA	NA	0.00120 B
Cyanide	0.01	0.00280 B	NA	NA	ND(0.0100)
Selenium	0.08	NA	NA	NA	0.00620
Zinc	0.9	NA	NA	NA	0.0310

TABLE 5
COMPARISON OF GROUNDWATER ANALYTICAL RESULTS TO MCP METHOD 1 GW-3 STANDARDS

PLANT SITE 1 GROUNDWATER MANAGEMENT AREA
GROUNDWATER QUALITY MONITORING INTERIM REPORT FOR FALL 2004
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS
(Results are presented in parts per million, ppm)

Notes:

1. Samples were collected by Blasland Bouck & Lee, Inc., and submitted to SGS Environmental Services, Inc. for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated as per Field Sampling Plan/Quality Assurance Project Plan (FSP/QAPP), General Electric Company, Pittsfield, Massachusetts, Blasland Bouck & Lee, Inc. (approved May 25, 2004 and resubmitted June 15, 2004).
3. NA - Not Analyzed.
4. ND - Analyte was not detected. The number in parentheses is the associated detection limit.
5. Total 2,3,7,8-TCDD toxicity equivalents (TEQs) were calculated using Toxicity Equivalency Factors (TEFs) derived by the World Health Organization (WHO) and published by Van den Berg et al. In Environmental Health Perspectives 106(2), December 1998.
6. With the exception of dioxin/furans, only those constituents detected in one or more samples are summarized.
7. -- Indicates that all constituents for the parameter group were not detected.

Data Qualifiers:

Organics (volatiles, PCBs, semivolatiles, dioxin/furans)

J - Indicates that the associated numerical value is an estimated concentration.

Inorganics

B - Indicates an estimated value between the instrument detection limit (IDL) and practical quantitation limit (PQL).

TABLE 6
COMPARISON OF GROUNDWATER ANALYTICAL RESULTS TO MCP UCL FOR GROUNDWATER

PLANT SITE 1 GROUNDWATER MANAGEMENT AREA
GROUNDWATER QUALITY MONITORING INTERIM REPORT FOR FALL 2004
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS
(Results are presented in parts per million, ppm)

Site ID:		East St. Area 1 - South			East St. Area 2 - North	Lyman Street Area
Sample ID:	UCL-GW	72R	ESA1S-139R	GMA1-18	GMA1-4	LS-MW-4R
Parameter Date Collected:	Standards	10/06/04	10/06/04	11/01/04	10/05/04	10/06/04
Volatile Organics						
Benzene	70	ND(0.0050)	NA	NA	ND(0.0050)	0.0044 J
Chloroform	100	ND(0.0050)	NA	NA	0.0041 J	ND(0.0050)
Toluene	100	ND(0.0050)	NA	NA	0.0017 J	ND(0.0050)
Total VOCs	Not Listed	ND(0.20)	NA	NA	0.0058 J	0.0044 J
PCBs-Filtered						
Aroclor-1254	Not Listed	0.000037 J	ND(0.000065)	0.000052 J	NA	ND(0.000065)
Total PCBs	0.005	0.000037 J	ND(0.000065)	0.000052 J	NA	ND(0.000065)
Semivolatile Organics						
None Detected	--	NA	NA	NA	NA	--
Furans						
2,3,7,8-TCDF	Not Listed	NA	NA	NA	NA	ND(0.0000000027)
TCDFs (total)	Not Listed	NA	NA	NA	NA	ND(0.0000000027)
1,2,3,7,8-PeCDF	Not Listed	NA	NA	NA	NA	ND(0.0000000043)
2,3,4,7,8-PeCDF	Not Listed	NA	NA	NA	NA	ND(0.0000000042)
PeCDFs (total)	Not Listed	NA	NA	NA	NA	ND(0.0000000043)
1,2,3,4,7,8-HxCDF	Not Listed	NA	NA	NA	NA	ND(0.0000000042)
1,2,3,6,7,8-HxCDF	Not Listed	NA	NA	NA	NA	ND(0.0000000040)
1,2,3,7,8,9-HxCDF	Not Listed	NA	NA	NA	NA	ND(0.0000000050)
2,3,4,6,7,8-HxCDF	Not Listed	NA	NA	NA	NA	ND(0.0000000044)
HxCDFs (total)	Not Listed	NA	NA	NA	NA	ND(0.0000000050)
1,2,3,4,6,7,8-HpCDF	Not Listed	NA	NA	NA	NA	ND(0.0000000031)
1,2,3,4,7,8,9-HpCDF	Not Listed	NA	NA	NA	NA	ND(0.0000000038)
HpCDFs (total)	Not Listed	NA	NA	NA	NA	ND(0.0000000038)
OCDF	Not Listed	NA	NA	NA	NA	ND(0.0000000073)
None Detected	Not Listed	NA	NA	NA	NA	--
Dioxins						
2,3,7,8-TCDD	Not Listed	NA	NA	NA	NA	ND(0.0000000029)
TCDDs (total)	Not Listed	NA	NA	NA	NA	ND(0.0000000029)
1,2,3,7,8-PeCDD	Not Listed	NA	NA	NA	NA	ND(0.0000000063)
PeCDDs (total)	Not Listed	NA	NA	NA	NA	ND(0.0000000063)
1,2,3,4,7,8-HxCDD	Not Listed	NA	NA	NA	NA	ND(0.0000000050)
1,2,3,6,7,8-HxCDD	Not Listed	NA	NA	NA	NA	ND(0.0000000045)
1,2,3,7,8,9-HxCDD	Not Listed	NA	NA	NA	NA	ND(0.0000000046)
HxCDDs (total)	Not Listed	NA	NA	NA	NA	ND(0.0000000050)
1,2,3,4,6,7,8-HpCDD	Not Listed	NA	NA	NA	NA	ND(0.0000000047)
HpCDDs (total)	Not Listed	NA	NA	NA	NA	ND(0.0000000047)
OCDD	Not Listed	NA	NA	NA	NA	ND(0.0000000056)
Total TEQs (WHO TEFs)	0.000001	NA	NA	NA	NA	0.0000000075
Inorganics-Unfiltered						
None Detected	--	NA	NA	NA	NA	--
Inorganics-Filtered						
Barium	100	NA	NA	NA	NA	0.0770 B
Chromium	20	NA	NA	NA	NA	0.00120 B
Cyanide	2	0.00280 B	NA	NA	NA	ND(0.0100)
Selenium	0.8	NA	NA	NA	NA	0.00620
Zinc	20	NA	NA	NA	NA	0.0310

TABLE 6
COMPARISON OF GROUNDWATER ANALYTICAL RESULTS TO MCP UCL FOR GROUNDWATER

PLANT SITE 1 GROUNDWATER MANAGEMENT AREA
GROUNDWATER QUALITY MONITORING INTERIM REPORT FOR FALL 2004
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS
(Results are presented in parts per million, ppm)

Notes:

1. Samples were collected by Blasland Bouck & Lee, Inc., and submitted to SGS Environmental Services, Inc. for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated as per Field Sampling Plan/Quality Assurance Project Plan (FSP/QAPP), General Electric Company, Pittsfield, Massachusetts, Blasland Bouck & Lee, Inc. (approved May 25, 2004 and resubmitted June 15, 2004).
3. NA - Not Analyzed.
4. ND - Analyte was not detected. The number in parentheses is the associated detection limit.
5. Total 2,3,7,8-TCDD toxicity equivalents (TEQs) were calculated using Toxicity Equivalency Factors (TEFs) derived by the World Health Organization (WHO) and published by Van den Berg et al. In Environmental Health Perspectives 106(2), December 1998.
6. With the exception of dioxin/furans, only those constituents detected in one or more samples are summarized.
7. - Indicates that all constituents for the parameter group were not detected.

Data Qualifiers:

Organics (volatiles, PCBs, semivolatiles, dioxin/furans)

J - Indicates that the associated numerical value is an estimated concentration.

Inorganics

B - Indicates an estimated value between the instrument detection limit (IDL) and practical quantitation limit (PQL).

TABLE 7
FALL 2005 INTERIM GROUNDWATER QUALITY MONITORING ACTIVITIES

PLANT SITE 1 GROUNDWATER MANAGEMENT AREA
GROUNDWATER QUALITY MONITORING INTERIM REPORT FOR FALL 2004
GENERAL ELECTRIC COMPANY-PITTSFIELD, MASSACHUSETTS

Well Number	Monitoring Well Usage	Sampling Schedule	Fall 2005 Analyses [3]	Comments
RAA 1 - 40s COMPLEX				
No interim groundwater quality monitoring scheduled to be performed in this RAA.				
RAA 2 - 30s COMPLEX				
GMA1-2	GW-2 Sentinel	None [2]	None	Well has been consistently dry below the 15 foot depth applicable for GW-2 monitoring. Therefore, this location is proposed to be removed from the monitoring program.
RF-02	GW-3 Perimeter (Downgradient)	Annual [1]	PCB	
RF-16	GW-3 Perimeter (Downgradient)	Annual [1]	Cyanide	
RAA 3 - 20s COMPLEX				
No interim groundwater quality monitoring scheduled to be performed in this RAA.				
RAA 4 - EAST STREET AREA 2-SOUTH				
GMA1-13	GW-3 General/Source Area Sentinel	Annual [1]	PCB	
E2SC-23	GW-3 Perimeter (Downgradient)	Annual [1]	PCB	
E2SC-24	GW-3 Perimeter (Downgradient)	Annual [1]	PCB	
ES2-02A	GW-3 Perimeter (Downgradient)	Annual [1]	Cyanide	
ESA2S-52	GW-3 General/Source Area Sentinel	Annual [1]	Cyanide	
HR-G1-MW-3	GW-3 Perimeter (Downgradient)	Annual [1]	Cyanide	
HR-G3-MW-1	GW-3 Perimeter (Downgradient)	Annual [1]	PCB	
RAA 5 - EAST STREET AREA 2-NORTH				
ES1-05	GW-3 Perimeter (Downgradient)	Annual	PCB	
ES1-27R	GW-3 General/ Source Area Sentinel	Annual [1]	PCB	
GMA1-4	GW-2 Sentinel	None [2]	None	The fourth baseline sample set was collected in fall 2004. No further sampling is proposed at this location.
RAA 6 - EAST STREET AREA 1-NORTH				
ESA1N-52	GW-2 Sentinel/ GW-3 General/Source Area Sentinel	Annual [1]	PCB	

TABLE 7
FALL 2005 INTERIM GROUNDWATER QUALITY MONITORING ACTIVITIES

PLANT SITE 1 GROUNDWATER MANAGEMENT AREA
GROUNDWATER QUALITY MONITORING INTERIM REPORT FOR FALL 2004
GENERAL ELECTRIC COMPANY-PITTSFIELD, MASSACHUSETTS

Well Number	Monitoring Well Usage	Sampling Schedule	Fall 2005 Analyses [3]	Comments
RAA 12 - LYMAN STREET AREA				
LS-29	GW-3 General/Source Area Sentinel	Annual [1]	PCB	
LSSC-08S	GW-3 Perimeter (Downgradient)	Annual [1]	PCB	
LSSC-16S	GW-2 Sentinel	Annual [1]	VOC (+5 SVOC)	
LSSC-18	GW-3 Perimeter (Downgradient)	Annual [1]	PCB	
MW-4R	GW-3 Perimeter (Downgradient)	Annual [1]	VOC/PCB	Sampling schedule is proposed to be modified from semi-annual to annual and a modified analyte list is proposed.
RAA 13 - NEWELL STREET AREA II				
N2SC-07S	GW-3 Perimeter (Downgradient)	Annual [1]	VOC/PCB	
NS-17	GW-3 Perimeter (Downgradient)	Annual [1]	VOC	
RAA 14 - NEWELL STREET AREA I				
No interim groundwater quality monitoring scheduled to be performed in this RAA.				
RAA 18 - EAST STREET AREA 1 SOUTH				
139R	GW-2 Sentinel/ GW-3 Perimeter (Downgradient)	Annual [1]	PCB	
72R	GW-2 Sentinel/ GW-3 General/Source Area Sentinel	Annual [1]	VOC(+5 SVOC)/ PCB/Cyanide	
GMA1-6	GW-2 Sentinel/ GW-3 General/Source Area Sentinel	Annual [1]	VOC(+5 SVOC)/ PCB	
GMA1-18	GW-2 Sentinel/ GW-3 General/Source Area Sentinel	Annual [1]	PCB	

NOTES:

1. The wells scheduled for annual groundwater quality sampling will be sampled for the listed parameters during the interim period between the completion of the baseline monitoring program and the initiatio of a long-term monitoring program. The sampling schedule will alternate between the spring and fall seasons each year, beginning with spring 2004.
2. Well previously included due to less than four rounds of baseline data (i.e., GMA1-2 and GMA1-4) to be sampled on a semi-annual basis are proposed to be removed from the interim groundwater quality monitoring program.
3. All analyses for PCB, metals, and cyanide conducted under the annual interim monitoring program will be performed on filtered samples only. Cyanide samples collected in fall 2005 will be analyzed for total cyanide (EPA Method 9014) and Physiologically Available Cyanide (MDEP PAC Protocol, dated August 13, 2004).

Figures

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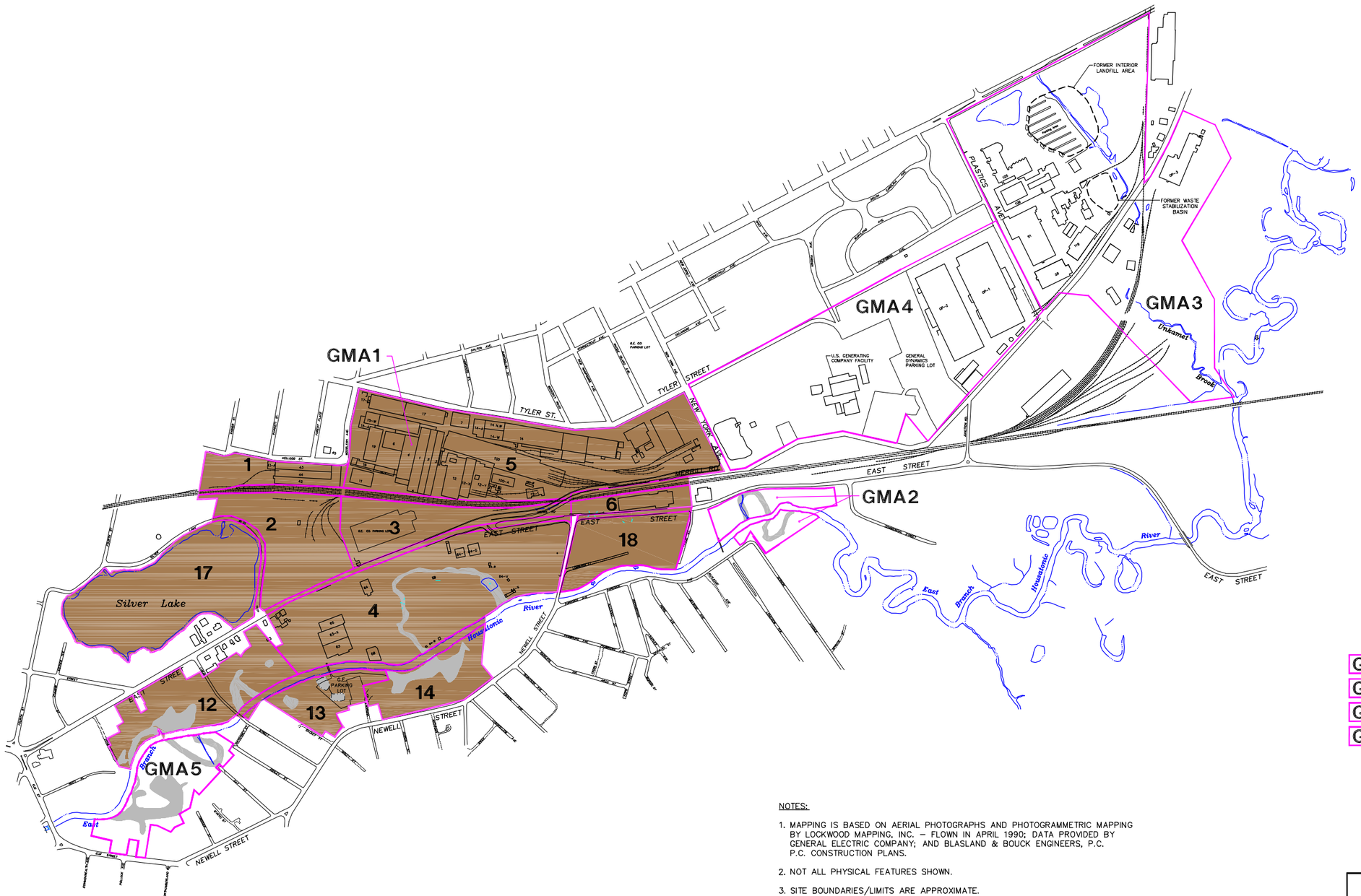


LEGEND

GMA 1 (PLANT SITE 1)

COMPRISED OF:

- RAA 1–40s COMPLEX
- RAA 2–30s COMPLEX
- RAA 3–20s COMPLEX
- RAA 4–EAST STREET AREA 2 SOUTH
- RAA 5–EAST STREET AREA 2 NORTH
- RAA 6–EAST STREET AREA 1 NORTH
- RAA 12–LYMAN STREET AREA (INCLUDING FORMER OXBOWS B, D AND E)
- RAA 13–NEWELL STREET AREA II
- RAA 14–NEWELL STREET AREA I
- RAA 17–SILVER LAKE AREA
- RAA 18–EAST STREET AREA 1 SOUTH (NAPL/GROUNDWATER ONLY)

GMA2 GMA 2–FORMER OXBOWS J&K

GMA3 GMA 3–PLANT SITE 2

GMA4 GMA 4–PLANT SITE 3

GMA5 GMA 5–FORMER OXBOWS A&C

NOTES:

1. MAPPING IS BASED ON AERIAL PHOTOGRAPHS AND PHOTOGRAMMETRIC MAPPING BY LOCKWOOD MAPPING, INC. – FLOWN IN APRIL 1990; DATA PROVIDED BY GENERAL ELECTRIC COMPANY; AND BLASLAND & BOUCK ENGINEERS, P.C. P.C. CONSTRUCTION PLANS.
2. NOT ALL PHYSICAL FEATURES SHOWN.
3. SITE BOUNDARIES/LIMITS ARE APPROXIMATE.

0 500' 1000'
APPROXIMATE SCALE

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

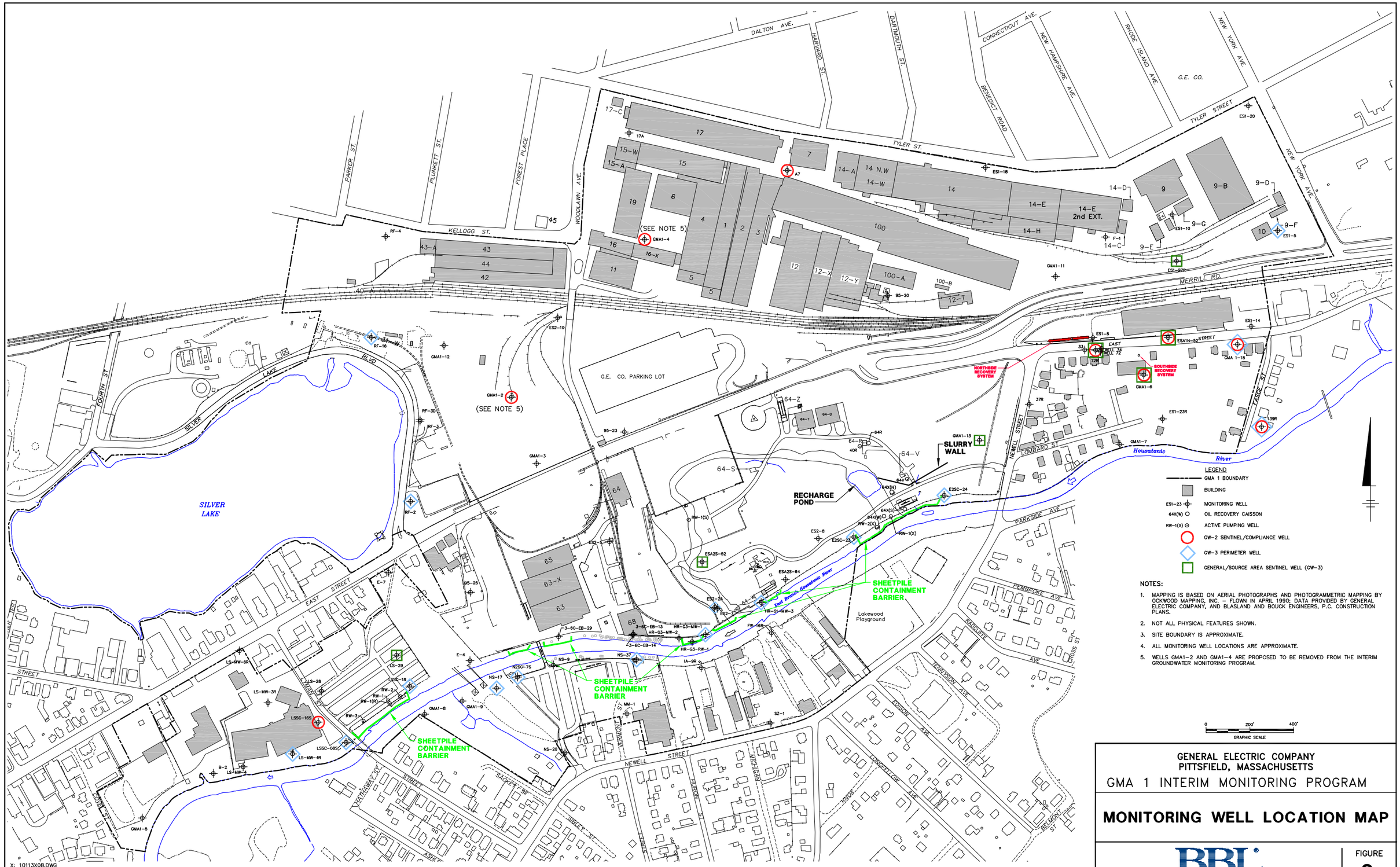
GMA 1 INTERIM MONITORING PROGRAM

GROUNDWATER MANAGEMENT AREAS

BBL BLASLAND, BOUCK & LEE, INC. engineers, scientists, economists

FIGURE 1

X: NONE
L: ON=*, OFF=REF*
P: PAGSET/PLT-DL2B
1/28/05 SYR-85-GMS KMD RCB
N/10113001/10113B73.DWG



NOTES:

1. MAPPING IS BASED ON AERIAL PHOTOGRAPHS AND PHOTOGRAMMETRIC MAPPING BY OCKWOOD MAPPING, INC. – FLOWN IN APRIL 1990; DATA PROVIDED BY GENERAL ELECTRIC COMPANY, AND BLASLAND AND BOUCK ENGINEERS, P.C. CONSTRUCTION PLANS.
2. NOT ALL PHYSICAL FEATURES SHOWN.
3. SITE BOUNDARY IS APPROXIMATE.
4. ALL MONITORING WELL LOCATIONS ARE APPROXIMATE.
5. WELLS GMA1-2 AND GMA1-4 ARE PROPOSED TO BE REMOVED FROM THE INTERIM GROUNDWATER MONITORING PROGRAM.

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

GMA 1 INTERIM MONITORING PROGRAM

MONITORING WELL LOCATION MAP

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FIGURE
2

X: 10113X08.DWG
L: ON=*, OFF=REF*
P: PAGESET/PLT-DL2B
1/28/05 SYR-GMS KMD RCB
N/10113001/1011.3B74.DWG

Appendices

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Appendix A

Monitoring Well Logs

BBL®
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Date Start/Finish: 8/19/04
Drilling Company: BBL
Driller's Name: J. Bishop
Drilling Method: Direct Push/Hollow Stem Auger
Bit Size: NA
Auger Size: 4 1/4"
Rig Type: ATS Power Probe
Sampling Method: Direct Push

Northing: NA
Easting: NA
Casing Elevation: NA

Borehole Depth: 19' bgs
Surface Elevation: NA

Geologist: S. Lewitt

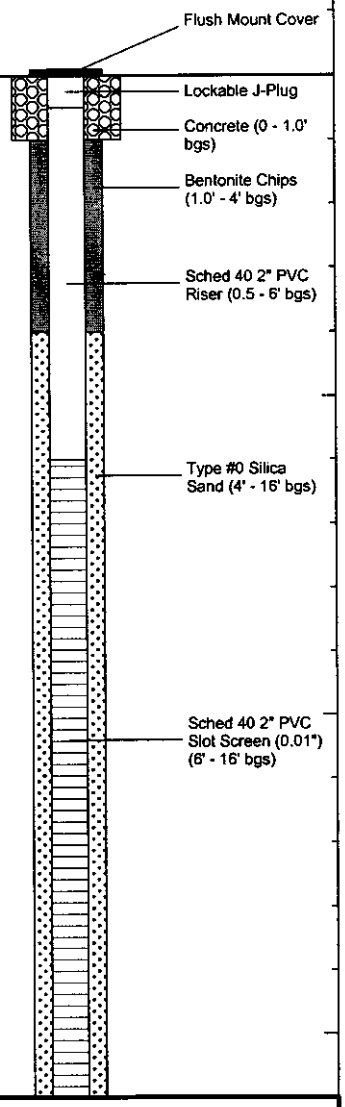
Well/Boring ID: 139R

Client: General Electric Company

Location: GMA 1 - East Street
Area 1 South

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Blows / 6 inches	N - Value	Geologic Column	Stratigraphic Description
0 - 0	1	0-2	1.8	0.0	NA	NA		Dark brown fine SAND and SILT, trace Roots, moist.
								Dark brown fine SAND, some Silt, little medium to coarse Sand, moist.
								Brown fine SAND, little medium to coarse Sand, moist.
	2	2-4		0.0	NA	NA		
5 - -5	3	4-6	2.3	0.0	NA	NA		Gray-brown fine SAND, trace Gravel, dry.
								Orange-brown fine SAND and SILT, trace coarse Sand, dry.
								White weathered Cobble.
	4	6-8		0.0	NA	NA		Brown fine SAND, some medium to coarse Sand and Silt, little Gravel, moist.
								Wet at 9' bgs.
	5	8-10	2.4	0.0	NA	NA		
10 - -10	6	10-12		0.0	NA	NA		
	7	12-14	2.6	0.0	NA	NA		Brown fine SAND, some medium to coarse Sand and Gravel, wet.
15 - -15	8	14-16		0.0	NA	NA		

Well/Boring Construction



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Remarks: NA = not available;
bgs = below ground surface.

Client:
General Electric Company

Site Location:
GMA 1 - East Street
Area 1 South

Well/Boring ID: 139R

Borehole Depth: 19' bgs

DEPTH ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Blows / 6 Inches	N - Value	Geologic Column	Stratigraphic Description	Well/Boring Construction
	9	16-18	3.0	0.0	NA	NA		Brown fine SAND, little medium to coarse SAND, wet.	
	10	18-19		0.0	NA	NA		Brown fine to coarse SAND, wet.	
20-20									
25-25									
30-30									
35-35									

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Remarks: NA = not available;
bgs = below ground surface.

Date Start/Finish: 9/24/04
Drilling Company: BBL
Driller's Name: J. Bishop
Drilling Method: Direct Push/Hollow Stem Auger
Bit Size: NA
Auger Size: 4 1/4"
Rig Type: Tractor Mounted ATS PowerProbe
Sampling Method: Direct Push

Northing: NA
Easting: NA
Casing Elevation: NA

Borehole Depth: 16' bgs
Surface Elevation: NA

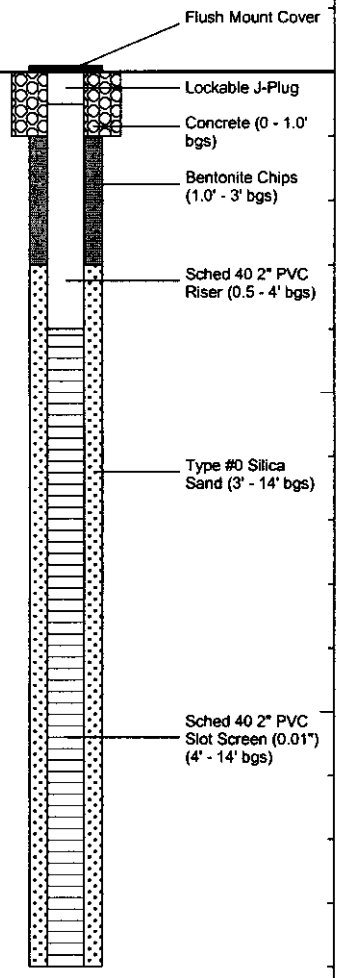
Geologist: J. Boland

Well/Boring ID: GMA1-18

Client: General Electric Company

Location: GMA 1 - East Street
Area 1 South

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Blows / 6 Inches	N - Value	Geologic Column	Stratigraphic Description
0 - 0	1	0-2	2.0	0.0	NA	NA		Brown SILT and fine SAND, little fine to medium Sand, trace medium to coarse Gravel.
	2	2-4		0.0	NA	NA		Gray-brown fine SAND, trace fine Gravel.
-5	3	4-6	2.0	0.0	NA	NA		Gray/brown fine SAND and SILT, some fine Gravel, moist.
	4	6-8		0.0	NA	NA		
	5	8-10	3.1	0.0	NA	NA		Weathered COBBLE.
-10	6	10-12		0.0	NA	NA		Gray/brown fine SAND and SILT, dense, some fine to medium Gravel, wet.
	7	12-14	4.0	0.0	NA	NA		
-15	8	14-16		0.0	NA	NA		



Well/Boring Construction

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Remarks: NA = not available;
bgs = below ground surface.

Appendix B

Groundwater Analytical Results

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TABLE B-1
FALL 2004 GROUNDWATER ANALYTICAL RESULTS

PLANT SITE 1 GROUNDWATER MANAGEMENT AREA
GROUNDWATER QUALITY MONITORING INTERIM REPORT FOR FALL 2004
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS
(Results are presented in parts per million, ppm)

Site ID:	East St. Area 1 - South			East St. Area 2 - North	Lyman Street Area
Sample ID:	72R	ESA1S-139R	GMA1-18	GMA1-4	LS-MW-4R
Parameter / Date Collected:	10/06/04	10/06/04	11/01/04	10/05/04	10/06/04
Volatile Organics					
1,1,1,2-Tetrachloroethane	ND(0.0050)	NA	NA	ND(0.0050)	ND(0.0050)
1,1,1-Trichloroethane	ND(0.0050)	NA	NA	ND(0.0050)	ND(0.0050)
1,1,2,2-Tetrachloroethane	ND(0.0050)	NA	NA	ND(0.0050)	ND(0.0050)
1,1,2-Trichloroethane	ND(0.0050)	NA	NA	ND(0.0050)	ND(0.0050)
1,1-Dichloroethane	ND(0.0050)	NA	NA	ND(0.0050)	ND(0.0050)
1,1-Dichloroethene	ND(0.0010)	NA	NA	ND(0.0010)	ND(0.0010)
1,2,3-Trichloropropane	ND(0.0050)	NA	NA	ND(0.0050)	ND(0.0050)
1,2-Dibromo-3-chloropropane	ND(0.0050)	NA	NA	ND(0.0050)	ND(0.0050)
1,2-Dibromoethane	ND(0.0010)	NA	NA	ND(0.0010)	ND(0.0010)
1,2-Dichloroethane	ND(0.0050)	NA	NA	ND(0.0050)	ND(0.0050)
1,2-Dichloropropane	ND(0.0050)	NA	NA	ND(0.0050)	ND(0.0050)
1,4-Dioxane	ND(0.20) J	NA	NA	ND(0.20) J	ND(0.20) J
2-Butanone	ND(0.010) J	NA	NA	ND(0.010) J	ND(0.010) J
2-Chloro-1,3-butadiene	ND(0.0050)	NA	NA	ND(0.0050)	ND(0.0050)
2-Chloroethylvinylether	ND(0.0050)	NA	NA	ND(0.0050)	ND(0.0050)
2-Hexanone	ND(0.010)	NA	NA	ND(0.010)	ND(0.010)
3-Chloropropene	ND(0.0050)	NA	NA	ND(0.0050)	ND(0.0050)
4-Methyl-2-pentanone	ND(0.010)	NA	NA	ND(0.010)	ND(0.010)
Acetone	ND(0.010) J	NA	NA	ND(0.010) J	ND(0.010) J
Acetonitrile	ND(0.10) J	NA	NA	ND(0.10) J	ND(0.10) J
Acrolein	ND(0.10)	NA	NA	ND(0.10)	ND(0.10)
Acrylonitrile	ND(0.0050)	NA	NA	ND(0.0050)	ND(0.0050)
Benzene	ND(0.0050)	NA	NA	ND(0.0050)	0.0044 J
Bromodichloromethane	ND(0.0050)	NA	NA	ND(0.0050)	ND(0.0050)
Bromoform	ND(0.0050)	NA	NA	ND(0.0050)	ND(0.0050)
Bromomethane	ND(0.0020)	NA	NA	ND(0.0020)	ND(0.0020)
Carbon Disulfide	ND(0.0050)	NA	NA	ND(0.0050)	ND(0.0050)
Carbon Tetrachloride	ND(0.0050)	NA	NA	ND(0.0050)	ND(0.0050)
Chlorobenzene	ND(0.0050)	NA	NA	ND(0.0050)	ND(0.0050)
Chloroethane	ND(0.0050)	NA	NA	ND(0.0050)	ND(0.0050)
Chloroform	ND(0.0050)	NA	NA	0.0041 J	ND(0.0050)
Chloromethane	ND(0.0050)	NA	NA	ND(0.0050)	ND(0.0050)
cis-1,3-Dichloropropene	ND(0.0050)	NA	NA	ND(0.0050)	ND(0.0050)
Dibromochloromethane	ND(0.0050)	NA	NA	ND(0.0050)	ND(0.0050)
Dibromomethane	ND(0.0050)	NA	NA	ND(0.0050)	ND(0.0050)
Dichlorodifluoromethane	ND(0.0050)	NA	NA	ND(0.0050)	ND(0.0050)
Ethyl Methacrylate	ND(0.0050)	NA	NA	ND(0.0050)	ND(0.0050)
Ethylbenzene	ND(0.0050)	NA	NA	ND(0.0050)	ND(0.0050)
Iodomethane	ND(0.0050)	NA	NA	ND(0.0050)	ND(0.0050)
Isobutanol	ND(0.10) J	NA	NA	ND(0.10) J	ND(0.10) J
Methacrylonitrile	ND(0.0050)	NA	NA	ND(0.0050)	ND(0.0050)
Methyl Methacrylate	ND(0.0050)	NA	NA	ND(0.0050)	ND(0.0050)
Methylene Chloride	ND(0.0050)	NA	NA	ND(0.0050)	ND(0.0050)
Propionitrile	ND(0.010) J	NA	NA	ND(0.010) J	ND(0.010) J
Styrene	ND(0.0050)	NA	NA	ND(0.0050)	ND(0.0050)
Tetrachloroethene	ND(0.0020)	NA	NA	ND(0.0020)	ND(0.0020)
Toluene	ND(0.0050)	NA	NA	0.0017 J	ND(0.0050)
trans-1,2-Dichloroethene	ND(0.0050)	NA	NA	ND(0.0050)	ND(0.0050)
trans-1,3-Dichloropropene	ND(0.0050)	NA	NA	ND(0.0050)	ND(0.0050)
trans-1,4-Dichloro-2-butene	ND(0.0050)	NA	NA	ND(0.0050)	ND(0.0050)
Trichloroethene	ND(0.0050)	NA	NA	ND(0.0050)	ND(0.0050)
Trichlorofluoromethane	ND(0.0050)	NA	NA	ND(0.0050)	ND(0.0050)
Vinyl Acetate	ND(0.0050)	NA	NA	ND(0.0050)	ND(0.0050)
Vinyl Chloride	ND(0.0020)	NA	NA	ND(0.0020)	ND(0.0020)
Xylenes (total)	ND(0.010)	NA	NA	ND(0.010)	ND(0.010)
Total VOCs	ND(0.20)	NA	NA	0.0058 J	0.0044 J

TABLE B-1
FALL 2004 GROUNDWATER ANALYTICAL RESULTS

PLANT SITE 1 GROUNDWATER MANAGEMENT AREA
GROUNDWATER QUALITY MONITORING INTERIM REPORT FOR FALL 2004
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS
(Results are presented in parts per million, ppm)

Site ID:	East St. Area 1 - South			East St. Area 2 - North	Lyman Street Area
Sample ID:	72R	ESA1S-139R	GMA1-18	GMA1-4	LS-MW-4R
Parameter / Date Collected:	10/06/04	10/06/04	11/01/04	10/05/04	10/06/04
PCBs-Filtered					
Aroclor-1016	ND(0.000065)	ND(0.000065)	ND(0.000065)	NA	ND(0.000065)
Aroclor-1221	ND(0.000065)	ND(0.000065)	ND(0.000065)	NA	ND(0.000065)
Aroclor-1232	ND(0.000065)	ND(0.000065)	ND(0.000065)	NA	ND(0.000065)
Aroclor-1242	ND(0.000065)	ND(0.000065)	ND(0.000065)	NA	ND(0.000065)
Aroclor-1248	ND(0.000065)	ND(0.000065)	ND(0.000065)	NA	ND(0.000065)
Aroclor-1254	0.000037 J	ND(0.000065)	0.000052 J	NA	ND(0.000065)
Aroclor-1260	ND(0.000065)	ND(0.000065)	ND(0.000065)	NA	ND(0.000065)
Total PCBs	0.000037 J	ND(0.000065)	0.000052 J	NA	ND(0.000065)
Semivolatile Organics					
1,2,4,5-Tetrachlorobenzene	NA	NA	NA	NA	ND(0.010)
1,2,4-Trichlorobenzene	ND(0.0050)	NA	NA	ND(0.0050)	ND(0.010)
1,2-Dichlorobenzene	ND(0.0050)	NA	NA	ND(0.0050)	ND(0.010)
1,2-Diphenylhydrazine	NA	NA	NA	NA	ND(0.010)
1,3,5-Trinitrobenzene	NA	NA	NA	NA	ND(0.010) J
1,3-Dichlorobenzene	ND(0.0050)	NA	NA	ND(0.0050)	ND(0.010)
1,3-Dinitrobenzene	NA	NA	NA	NA	ND(0.010)
1,4-Dichlorobenzene	ND(0.0050)	NA	NA	ND(0.0050)	ND(0.010)
1,4-Naphthoquinone	NA	NA	NA	NA	ND(0.010)
1-Naphthylamine	NA	NA	NA	NA	ND(0.010)
2,3,4,6-Tetrachlorophenol	NA	NA	NA	NA	ND(0.010)
2,4,5-Trichlorophenol	NA	NA	NA	NA	ND(0.010)
2,4,6-Trichlorophenol	NA	NA	NA	NA	ND(0.010)
2,4-Dichlorophenol	NA	NA	NA	NA	ND(0.010)
2,4-Dimethylphenol	NA	NA	NA	NA	ND(0.010)
2,4-Dinitrophenol	NA	NA	NA	NA	ND(0.050)
2,4-Dinitrotoluene	NA	NA	NA	NA	ND(0.010)
2,6-Dichlorophenol	NA	NA	NA	NA	ND(0.010)
2,6-Dinitrotoluene	NA	NA	NA	NA	ND(0.010)
2-Acetylaminofluorene	NA	NA	NA	NA	ND(0.010)
2-Chloronaphthalene	NA	NA	NA	NA	ND(0.010)
2-Chlorophenol	NA	NA	NA	NA	ND(0.010)
2-Methylnaphthalene	NA	NA	NA	NA	ND(0.010)
2-Methylphenol	NA	NA	NA	NA	ND(0.010)
2-Naphthylamine	NA	NA	NA	NA	ND(0.010)
2-Nitroaniline	NA	NA	NA	NA	ND(0.050)
2-Nitrophenol	NA	NA	NA	NA	ND(0.010)
2-Picoline	NA	NA	NA	NA	ND(0.010)
3&4-Methylphenol	NA	NA	NA	NA	ND(0.010)
3,3'-Dichlorobenzidine	NA	NA	NA	NA	ND(0.020) J
3,3'-Dimethylbenzidine	NA	NA	NA	NA	ND(0.010)
3-Methylcholanthrene	NA	NA	NA	NA	ND(0.010)
3-Nitroaniline	NA	NA	NA	NA	ND(0.050)
4,6-Dinitro-2-methylphenol	NA	NA	NA	NA	ND(0.050)
4-Aminobiphenyl	NA	NA	NA	NA	ND(0.010)
4-Bromophenyl-phenylether	NA	NA	NA	NA	ND(0.010)
4-Chloro-3-Methylphenol	NA	NA	NA	NA	ND(0.010)
4-Chloroaniline	NA	NA	NA	NA	ND(0.010)
4-Chlorobenzilate	NA	NA	NA	NA	ND(0.010)
4-Chlorophenyl-phenylether	NA	NA	NA	NA	ND(0.010)
4-Nitroaniline	NA	NA	NA	NA	ND(0.050)
4-Nitrophenol	NA	NA	NA	NA	ND(0.050) J
4-Nitroquinoline-1-oxide	NA	NA	NA	NA	ND(0.010) J
4-Phenylenediamine	NA	NA	NA	NA	ND(0.010)
5-Nitro-o-toluidine	NA	NA	NA	NA	ND(0.010)
7,12-Dimethylbenz(a)anthracene	NA	NA	NA	NA	ND(0.010)
a,a'-Dimethylphenethylamine	NA	NA	NA	NA	ND(0.010) J
Acenaphthene	NA	NA	NA	NA	ND(0.010)
Acenaphthylene	NA	NA	NA	NA	ND(0.010)
Acetophenone	NA	NA	NA	NA	ND(0.010)
Aniline	NA	NA	NA	NA	ND(0.010)
Anthracene	NA	NA	NA	NA	ND(0.010)
Aramite	NA	NA	NA	NA	ND(0.010)

TABLE B-1
FALL 2004 GROUNDWATER ANALYTICAL RESULTS

PLANT SITE 1 GROUNDWATER MANAGEMENT AREA
GROUNDWATER QUALITY MONITORING INTERIM REPORT FOR FALL 2004
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS
(Results are presented in parts per million, ppm)

Site ID:	East St. Area 1 - South			East St. Area 2 - North	Lyman Street Area
Sample ID:	72R	ESA1S-139R	GMA1-18	GMA1-4	LS-MW-4R
Parameter / Date Collected:	10/06/04	10/06/04	11/01/04	10/05/04	10/06/04
Semivolatile Organics (continued)					
Benzidine	NA	NA	NA	NA	ND(0.020) J
Benzo(a)anthracene	NA	NA	NA	NA	ND(0.010)
Benzo(a)pyrene	NA	NA	NA	NA	ND(0.010)
Benzo(b)fluoranthene	NA	NA	NA	NA	ND(0.010)
Benzo(g,h,i)perylene	NA	NA	NA	NA	ND(0.010)
Benzo(k)fluoranthene	NA	NA	NA	NA	ND(0.010)
Benzyl Alcohol	NA	NA	NA	NA	ND(0.020)
bis(2-Chloroethoxy)methane	NA	NA	NA	NA	ND(0.010)
bis(2-Chloroethyl)ether	NA	NA	NA	NA	ND(0.010)
bis(2-Chloroisopropyl)ether	NA	NA	NA	NA	ND(0.010) J
bis(2-Ethylhexyl)phthalate	NA	NA	NA	NA	ND(0.0060)
Butylbenzylphthalate	NA	NA	NA	NA	ND(0.010)
Chrysene	NA	NA	NA	NA	ND(0.010)
Diallate	NA	NA	NA	NA	ND(0.010)
Dibenzo(a,h)anthracene	NA	NA	NA	NA	ND(0.010)
Dibenzofuran	NA	NA	NA	NA	ND(0.010)
Diethylphthalate	NA	NA	NA	NA	ND(0.010)
Dimethylphthalate	NA	NA	NA	NA	ND(0.010)
Di-n-Butylphthalate	NA	NA	NA	NA	ND(0.010)
Di-n-Octylphthalate	NA	NA	NA	NA	ND(0.010)
Diphenylamine	NA	NA	NA	NA	ND(0.010)
Ethyl Methanesulfonate	NA	NA	NA	NA	ND(0.010)
Fluoranthene	NA	NA	NA	NA	ND(0.010)
Fluorene	NA	NA	NA	NA	ND(0.010)
Hexachlorobenzene	NA	NA	NA	NA	ND(0.010)
Hexachlorobutadiene	NA	NA	NA	NA	ND(0.0010)
Hexachlorocyclopentadiene	NA	NA	NA	NA	ND(0.010)
Hexachloroethane	NA	NA	NA	NA	ND(0.010)
Hexachlorophene	NA	NA	NA	NA	ND(0.020)
Hexachloropropene	NA	NA	NA	NA	ND(0.010)
Indeno(1,2,3-cd)pyrene	NA	NA	NA	NA	ND(0.010)
Isodrin	NA	NA	NA	NA	ND(0.010)
Isophorone	NA	NA	NA	NA	ND(0.010)
Isosafrole	NA	NA	NA	NA	ND(0.010)
Methapyrilene	NA	NA	NA	NA	ND(0.010)
Methyl Methanesulfonate	NA	NA	NA	NA	ND(0.010) J
Naphthalene	ND(0.0050)	NA	NA	ND(0.0050)	ND(0.010)
Nitrobenzene	NA	NA	NA	NA	ND(0.010)
N-Nitrosodiethylamine	NA	NA	NA	NA	ND(0.010)
N-Nitrosodimethylamine	NA	NA	NA	NA	ND(0.010)
N-Nitroso-di-n-butylamine	NA	NA	NA	NA	ND(0.010)
N-Nitroso-di-n-propylamine	NA	NA	NA	NA	ND(0.010)
N-Nitrosodiphenylamine	NA	NA	NA	NA	ND(0.010)
N-Nitrosomethylethylamine	NA	NA	NA	NA	ND(0.010)
N-Nitrosomorpholine	NA	NA	NA	NA	ND(0.010)
N-Nitrosopiperidine	NA	NA	NA	NA	ND(0.010)
N-Nitrosopyrrolidine	NA	NA	NA	NA	ND(0.010)
o,o,o-Triethylphosphorothioate	NA	NA	NA	NA	ND(0.010)
o-Toluidine	NA	NA	NA	NA	ND(0.010)
p-Dimethylaminoazobenzene	NA	NA	NA	NA	ND(0.010)
Pentachlorobenzene	NA	NA	NA	NA	ND(0.010)
Pentachloroethane	NA	NA	NA	NA	ND(0.010)
Pentachloronitrobenzene	NA	NA	NA	NA	ND(0.010)
Pentachlorophenol	NA	NA	NA	NA	ND(0.050)
Phenacetin	NA	NA	NA	NA	ND(0.010)
Phenanthrene	NA	NA	NA	NA	ND(0.010)
Phenol	NA	NA	NA	NA	ND(0.010)
Pronamide	NA	NA	NA	NA	ND(0.010) J
Pyrene	NA	NA	NA	NA	ND(0.010)
Pyridine	NA	NA	NA	NA	ND(0.010)
Safrole	NA	NA	NA	NA	ND(0.010)
Thionazin	NA	NA	NA	NA	ND(0.010)

TABLE B-1
FALL 2004 GROUNDWATER ANALYTICAL RESULTS

PLANT SITE 1 GROUNDWATER MANAGEMENT AREA
GROUNDWATER QUALITY MONITORING INTERIM REPORT FOR FALL 2004
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS
(Results are presented in parts per million, ppm)

Site ID:	East St. Area 1 - South			East St. Area 2 - North	Lyman Street Area
Sample ID:	72R	ESA1S-139R	GMA1-18	GMA1-4	LS-MW-4R
Parameter / Date Collected:	10/06/04	10/06/04	11/01/04	10/05/04	10/06/04
Furans					
2,3,7,8-TCDF	NA	NA	NA	NA	ND(0.0000000027)
TCDFs (total)	NA	NA	NA	NA	ND(0.0000000027)
1,2,3,7,8-PeCDF	NA	NA	NA	NA	ND(0.0000000043)
2,3,4,7,8-PeCDF	NA	NA	NA	NA	ND(0.0000000042)
PeCDFs (total)	NA	NA	NA	NA	ND(0.0000000043)
1,2,3,4,7,8-HxCDF	NA	NA	NA	NA	ND(0.0000000042)
1,2,3,6,7,8-HxCDF	NA	NA	NA	NA	ND(0.0000000040)
1,2,3,7,8,9-HxCDF	NA	NA	NA	NA	ND(0.0000000050)
2,3,4,6,7,8-HxCDF	NA	NA	NA	NA	ND(0.0000000044)
HxCDFs (total)	NA	NA	NA	NA	ND(0.0000000050)
1,2,3,4,6,7,8-HpCDF	NA	NA	NA	NA	ND(0.0000000031)
1,2,3,4,7,8,9-HpCDF	NA	NA	NA	NA	ND(0.0000000038)
HpCDFs (total)	NA	NA	NA	NA	ND(0.0000000038)
OCDF	NA	NA	NA	NA	ND(0.0000000073)
Dioxins					
2,3,7,8-TCDD	NA	NA	NA	NA	ND(0.0000000029)
TCDDs (total)	NA	NA	NA	NA	ND(0.0000000029)
1,2,3,7,8-PeCDD	NA	NA	NA	NA	ND(0.0000000063)
PeCDDs (total)	NA	NA	NA	NA	ND(0.0000000063)
1,2,3,4,7,8-HxCDD	NA	NA	NA	NA	ND(0.0000000050)
1,2,3,6,7,8-HxCDD	NA	NA	NA	NA	ND(0.0000000045)
1,2,3,7,8,9-HxCDD	NA	NA	NA	NA	ND(0.0000000046)
HxCDDs (total)	NA	NA	NA	NA	ND(0.0000000050)
1,2,3,4,6,7,8-HpCDD	NA	NA	NA	NA	ND(0.0000000047)
HpCDDs (total)	NA	NA	NA	NA	ND(0.0000000047)
OCDD	NA	NA	NA	NA	ND(0.0000000056)
Total TEQs (WHO TEFs)	NA	NA	NA	NA	0.0000000075
Inorganics-Unfiltered					
Sulfide	NA	NA	NA	NA	ND(5.00)
Inorganics-Filtered					
Antimony	NA	NA	NA	NA	ND(0.0600)
Arsenic	NA	NA	NA	NA	ND(0.0100)
Barium	NA	NA	NA	NA	0.0770 B
Beryllium	NA	NA	NA	NA	ND(0.00100)
Cadmium	NA	NA	NA	NA	ND(0.00500)
Chromium	NA	NA	NA	NA	0.00120 B
Cobalt	NA	NA	NA	NA	ND(0.0500)
Copper	NA	NA	NA	NA	ND(0.0250)
Cyanide	0.00280 B	NA	NA	NA	ND(0.0100)
Lead	NA	NA	NA	NA	ND(0.00300)
Mercury	NA	NA	NA	NA	ND(0.000200)
Nickel	NA	NA	NA	NA	ND(0.0400)
Selenium	NA	NA	NA	NA	0.00620
Silver	NA	NA	NA	NA	ND(0.00500)
Thallium	NA	NA	NA	NA	ND(0.0100)
Tin	NA	NA	NA	NA	ND(0.0300)
Vanadium	NA	NA	NA	NA	ND(0.0500)
Zinc	NA	NA	NA	NA	0.0310

TABLE B-1
FALL 2004 GROUNDWATER ANALYTICAL RESULTS

PLANT SITE 1 GROUNDWATER MANAGEMENT AREA
GROUNDWATER QUALITY MONITORING INTERIM REPORT FOR FALL 2004
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS
(Results are presented in parts per million, ppm)

Notes:

1. Samples were collected by Blasland Bouck & Lee, Inc., and submitted to SGS Environmental Services, Inc. for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated as per Field Sampling Plan/Quality Assurance Project Plan (FSP/QAPP), General Electric Company, Pittsfield Massachusetts, Blasland Bouck & Lee, Inc. (approved May 25, 2004 and resubmitted June 15, 2004).
3. NA - Not Analyzed.
4. ND - Analyte was not detected. The number in parentheses is the associated detection limit.
5. Total 2,3,7,8-TCDD toxicity equivalents (TEQs) were calculated using Toxicity Equivalency Factors (TEFs) derived by the World Health Organization (WHO) and published by Van den Berg et al. In Environmental Health Perspectives 106(2), December 1998.

Data Qualifiers:

Organics (volatiles, PCBs, semivolatiles, dioxin/furans)

J - Indicates that the associated numerical value is an estimated concentration.

Inorganics

B - Indicates an estimated value between the instrument detection limit (IDL) and practical quantitation limit (PQL).

TABLE B-2
FALL 2004 GROUNDWATER NAPL ANALYTICAL RESULTS

PLANT SITE 1 GROUNDWATER MANAGEMENT AREA
GROUNDWATER QUALITY MONITORING INTERIM REPORT FOR FALL 2004
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS
(Results are presented in parts per million, ppm)

Site ID: / Sample ID: / Parameter / Date Collected:	Method 1 GW-2 Standards	Method 1 GW-3 Standards	UCL-GW Standards	East St. Area 1 - South 34 10/06/04
Volatile Organics				
1,1,1,2-Tetrachloroethane	0.006	50	100	ND(0.050)
1,1,1-Trichloroethane	4	50	100	ND(0.050)
1,1,2,2-Tetrachloroethane	0.02	20	100	ND(0.050)
1,1,2-Trichloroethane	20	50	100	ND(0.050)
1,1-Dichloroethane	9	50	100	ND(0.050)
1,1-Dichloroethene	0.001	50	100	ND(0.050)
1,2,3-Trichloropropane	Not Listed	Not Listed	Not Listed	ND(0.050)
1,2-Dibromo-3-chloropropane	Not Listed	Not Listed	Not Listed	ND(0.050)
1,2-Dibromoethane	0.003	50	100	ND(0.050)
1,2-Dichloroethane	0.02	50	100	ND(0.050)
1,2-Dichloropropane	0.009	30	100	ND(0.050)
1,4-Dioxane	Not Listed	Not Listed	Not Listed	ND(1.0) J
2-Butanone	50	50	100	ND(0.050) J
2-Chloro-1,3-butadiene	Not Listed	Not Listed	Not Listed	ND(0.050)
2-Chloroethylvinylether	Not Listed	Not Listed	Not Listed	ND(0.050)
2-Hexanone	Not Listed	Not Listed	Not Listed	ND(0.050) J
3-Chloropropene	Not Listed	Not Listed	Not Listed	ND(0.050)
4-Methyl-2-pentanone	50	50	100	ND(0.050)
Acetone	50	50	100	ND(0.050) J
Acetonitrile	Not Listed	Not Listed	Not Listed	ND(0.50) J
Acrolein	Not Listed	Not Listed	Not Listed	ND(0.50)
Acrylonitrile	Not Listed	Not Listed	Not Listed	ND(0.050)
Benzene	2	7	70	ND(0.050)
Bromodichloromethane	Not Listed	50	100	ND(0.050)
Bromoform	0.8	50	100	ND(0.050)
Bromomethane	0.002	50	100	ND(0.050)
Carbon Disulfide	Not Listed	Not Listed	Not Listed	ND(0.050)
Carbon Tetrachloride	0.02	50	100	ND(0.050)
Chlorobenzene	1	0.5	10	ND(0.050)
Chloroethane	Not Listed	Not Listed	Not Listed	ND(0.050)
Chloroform	0.4	10	100	ND(0.050)
Chloromethane	Not Listed	Not Listed	Not Listed	ND(0.050)
cis-1,3-Dichloropropene	Not Listed	Not Listed	Not Listed	ND(0.050)
Dibromochloromethane	Not Listed	50	100	ND(0.050)
Dibromomethane	Not Listed	Not Listed	Not Listed	ND(0.050)
Dichlorodifluoromethane	Not Listed	Not Listed	Not Listed	ND(0.050)
Ethyl Methacrylate	Not Listed	Not Listed	Not Listed	ND(0.050)
Ethylbenzene	30	4	100	ND(0.050)
Iodomethane	Not Listed	Not Listed	Not Listed	ND(0.050)
Isobutanol	Not Listed	Not Listed	Not Listed	ND(1.0)
Methacrylonitrile	Not Listed	Not Listed	Not Listed	ND(0.050)
Methyl Methacrylate	Not Listed	Not Listed	Not Listed	ND(0.050)
Methylene Chloride	50	50	100	ND(0.050)
Propionitrile	Not Listed	Not Listed	Not Listed	ND(0.10) J
Styrene	0.9	50	100	ND(0.050)
Tetrachloroethene	3	5	50	ND(0.050) J
Toluene	6	50	100	ND(0.050)
trans-1,2-Dichloroethene	20	50	100	ND(0.050)
trans-1,3-Dichloropropene	Not Listed	Not Listed	Not Listed	ND(0.050)
trans-1,4-Dichloro-2-butene	Not Listed	Not Listed	Not Listed	ND(0.050)
Trichloroethene	0.3	20	100	ND(0.050)
Trichlorofluoromethane	Not Listed	Not Listed	Not Listed	ND(0.050)
Vinyl Acetate	Not Listed	Not Listed	Not Listed	ND(0.050)
Vinyl Chloride	0.002	40	100	ND(0.050)
Xylenes (total)	6	50	100	ND(0.050)
Total VOCs	5	Not Listed	Not Listed	ND(1.0)
Semivolatile Organics				
1,2,4-Trichlorobenzene	10	0.5	100	ND(0.050)
1,2-Dichlorobenzene	10	8	100	ND(0.050)
1,3-Dichlorobenzene	10	8	100	ND(0.050)
1,4-Dichlorobenzene	30	8	100	ND(0.050)
Naphthalene	6	6	60	ND(0.050) J

TABLE B-2
FALL 2004 GROUNDWATER NAPL ANALYTICAL RESULTS

PLANT SITE 1 GROUNDWATER MANAGEMENT AREA
GROUNDWATER QUALITY MONITORING INTERIM REPORT FOR FALL 2004
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS
(Results are presented in parts per million, ppm)

Notes:

1. Samples were collected by Blasland Bouck & Lee, Inc., and submitted to SGS Environmental Services, Inc. for analysis of volatiles and select semivolatiles.
2. Samples have been validated as per Field Sampling Plan/Quality Assurance Project Plan (FSP/QAPP), General Electric Company, Pittsfield, Massachusetts, Blasland Bouck & Lee, Inc. (approved May 25, 2004 and resubmitted June 15, 2004).
3. ND - Analyte was not detected. The number in parentheses is the associated detection limit.

Data Qualifiers:

Organics (volatiles, semivolatiles)

J - Indicates that the associated numerical value is an estimated concentration.

Appendix C

Field Sampling Data

BBL®
BLASLAND, BOUCK & LEE, INC.
engineers, scientists, economists

TABLE C-1
SUMMARY OF GROUNDWATER SAMPLING METHODS

PLANT SITE 1 GROUNDWATER MANAGEMENT AREA
GROUNDWATER QUALITY MONITORING INTERIM REPORT FOR FALL 2004
GENERAL ELECTRIC COMPANY-PITTSFIELD, MASSACHUSETTS

Well ID	Sampling Method							Comments
	Fall 2001	Spring 2002	Fall 2002	Spring 2003	Fall 2003	Spring 2004	Fall 2004	
RAA 2 - 30s COMPLEX								
GMA1-2	NS	NS	NS	PP	NS	NS	NS	Fall 2004: Well dry - no sample collected. Spring 2004: Well dry - no sample collected. Fall 2003: Well dry - no sample collected. Spring 2003: Well purged dry. Sample collected after recharge. Insufficient water to collect field parameter data (except for turbidity). Fall 2002: Well dry - no sample collected. Spring 2002: Well dry - no sample collected. Fall 2001: Well dry - no sample collected.
RAA 5 - EAST STREET AREA 2-NORTH								
GMA1-4	NS	NS	NS	PP	PP	PP	PP	Spring 2003: Well cover missing. Fall 2002: Well dry - no sample collected. Spring 2002: Well dry - no sample collected. Fall 2001: Well dry - no sample collected.
RAA 6 - EAST STREET AREA 1-NORTH								
ES1-08	PP	PP	PP	NS	NS	NS	NS	Spring 2003: Well removed from baseline program (replaced by well ESA1S-33). Fall 2002: LNAPL present (removed prior to sampling). Well dried several times during sampling. Spring 2002: LNAPL present (removed prior to sampling). Fall 2001: LNAPL present (removed prior to sampling). Well dried several times during sampling.
ES1-14	PP	PP	PP	PP	NS	NS	NS	Spring 2004: No sample collected - well to be replaced by well GMA1-18 for future interim monitoring events. Fall 2003: No sample collected - additional sampling under interim monitoring program scheduled to resume in spring 2004. Fall 2002: Dissolved oxygen meter malfunction. Well dried several times during sampling, unable to measure water levels during purging.. Spring 2002: Slightly turbid (<50 NTU), unable to measure water levels during purging. Fall 2001: Well purged dry. Sample collected after recharge.
RAA 12 - LYMAN STREET AREA								
MW-4/MW-4R	PP	PP	PP	PP	NS	PP	PP	Fall 2003: No sample collected - additional sampling under interim monitoring program to resume at replacement well MW-4R in spring 2004. Spring 2003: Well cap missing - replaced. Fall 2002: Turbidity meter malfunction. Samples visually clear.

TABLE C-1
SUMMARY OF GROUNDWATER SAMPLING METHODS

PLANT SITE 1 GROUNDWATER MANAGEMENT AREA
GROUNDWATER QUALITY MONITORING INTERIM REPORT FOR FALL 2004
GENERAL ELECTRIC COMPANY-PITTSFIELD, MASSACHUSETTS

Well ID	Sampling Method							Comments
	Fall 2001	Spring 2002	Fall 2002	Spring 2003	Fall 2003	Spring 2004	Fall 2004	
RAA 18 - EAST STREET AREA 1 SOUTH								
ESA1S-33	NS	NS	NS	PP	NS	NS	NS	Spring 2004: No sample collected - well to be replaced by well 72R for future interim monitoring events. Fall 2003: No sample collected - additional sampling under interim monitoring program scheduled to resume in spring 2004. Spring 2003: Well added to monitoring program in place of well ES1-8. Turbidity >50 NTU, not reducing at minimum pumping rate. Will use bladder pump for future sampling events.
72R	NS	NS	NS	NS	NS	NS	PP	Fall 2004: Well added to interim monitoring program in place of well ESA1S-33.
ESA1S-139/139R	PP	PP	BP/BA	PP	NS	NS	PP	Fall 2004: Well ESA1S-139R added to interim monitoring program in place of well ESA1S-139. Spring 2004: No sample collected - well to be replace by well 139R for future interim monitoring events. Fall 2003: No sample collected - additional sampling under interim monitoring program scheduled to resume in spring 2004. Fall 2002: Well dried during purging with bladder pump. Several visits required to collect sample volume with bailer. Fall 2001: Well purged dry. Sample collected after recharge.
GMA1-18	NS	NS	NS	NS	NS	NS	BP	Fall 2004: Well GMA1-18 added to interim monitoring program in place of well ES1-14.

NOTES:
BP - Bladder Pump
PP - Peristaltic Pump
BA - Bailer
PP/BA - Peristaltic Pump with Bailer used for VOC sample collection
NS - Not Sampled

GROUNDWATER SAMPLING LOG

Well No. 72R
Key No. –
PID Background (ppm) –
Well Headspace (ppm) –

Site/GMA Name GMA1
Sampling Personnel KLB, JCM
Date 10/6/04
Weather SUNNY, 55°F

WELL INFORMATION

Reference Point Marked? (Y) N
Height of Reference Point -0.3' Meas From BGS
Well Diameter 4"
Screen Interval Depth 4-14' Meas From BGS
Water Table Depth 6.04' Meas From TIC
Well Depth 13.35' Meas From TIC
Length of Water Column 7.3'
Volume of Water in Well 4.8
Intake Depth of Pump/Tubing 9.7' Meas From TIC

Reference Point Identification
TIC Top of Inner (PVC) Casing
TOC Top of Outer (Protective) Casing
Grade/BGS Ground Surface

Redevelop? Y (N)

Sample Time 14:18
Sample ID 72R
Duplicate ID –
MS/MSD –
Split Sample ID –

Required	Analytical Parameters	Collected
( )	VOCs (Std. list)	( )
X	VOCs (Exp. list)	X
( )	SVOCs	( )
( )	PCBs (Total)	( )
X	PCBs (Dissolved)	X
( )	Metals/Inorganics (Total)	( )
( )	Metals/Inorganics (Dissolved)	( )
( )	PCDDs/PCDFs	( )
( )	Pesticides/Herbicides	( )
( )	Natural Attenuation	( )
X	Other (Specify) CYANIDE (FILTERED)	X

EVACUATION INFORMATION

Pump Start Time 13:35
Pump Stop Time 14:35
Minutes of Pumping 60 min
Volume of Water Removed 2.3 gal
Did Well Go Dry? Y (N)

Evacuation Method Bailer ( ) Bladder Pump ( )
Peristaltic Pump (X) Submersible Pump ( ) Other/Specify ( )
Pump Type GEOPUMP2
Samples collected by same method as evacuation? (Y) N (specify)

Water Quality Meter Type(s) / Serial Numbers HACH TURBIDIMETER 02020025376
YSI 556 03C0392AE

Time	Pump Rate (L/min.)	Total Gallons Removed	Water Level (ft TIC)	Temp. (Celsius) [3%]*	pH [0.1 units]*	Sp. Cond. (mS/cm) [3%]*	Turbidity (NTU) [10% or 1 NTU]*	DO (mg/l) [10% or 0.1 mg/l]*	ORP (mV) [10 mV]*
13:37	0.200	–	6.08	–	–	–	6	–	–
13:42	0.150	0.265	6.13	18.12	6.81	1.106	2	5.10	132.0
13:47	0.150	0.463	6.17	17.90	6.70	1.121	2	4.39	126.6
13:52	0.150	0.662	6.21	17.91	6.54	1.124	1	4.30	124.8
13:57	0.150	0.860	6.23	18.17	6.70	1.114	2	4.23	119.8
14:02	0.150	1.059	6.25	18.17	6.72	1.111	2	4.24	115.6
14:07	0.150	1.257	6.26	18.29	6.68	1.107	3	4.19	114.7
14:11	0.150	1.455	6.29	18.39	6.71	1.108	3	4.12	112.7
14:14	0.150	1.614	6.29	18.32	6.70	1.111	2	4.28	111.4
				ICB					

* The stabilization criteria for each field parameter (three consecutive readings collected at 3- to 5-minute intervals) is listed in each column heading.

OBSERVATIONS/SAMPLING METHOD DEVIATIONS INITIAL PURGE - CLEAR, COLORLESS, ODORLESS

* PUMP RATE WILL NOT GO LOWER THAN 0.150 L/min.
FINAL PURGE - CLEAR, COLORLESS. ODORLESS

SAMPLE DESTINATION

Laboratory: SGS
Delivered Via: UPS
Airbill #: –

Field Sampling Coordinator:

GROUNDWATER SAMPLING LOG

Well No. ESAIS-139R
Key No. –
PID Background (ppm) –
Well Headspace (ppm) –

Site/GMA Name GMA 1
Sampling Personnel KLB, JCM
Date 10/4/04
Weather SUNNY, 40° F

WELL INFORMATION

Reference Point Marked? (Y) N
Height of Reference Point -0.37 Meas. From BGS
Well Diameter 2"
Screen Interval Depth 6-16' Meas. From BGS
Water Table Depth 9.02' Meas. From TIC
Well Depth 14.41' Meas. From TIC
Length of Water Column 5.47'
Volume of Water in Well 0.892 gal
Intake Depth of Pump Tubing 11.75 Meas. From TIC

Reference Point Identification:
TIC = Top of Inner (PVC) Casing
TOC = Top of Outer (Protective) Casing
GradeBGS = Ground Surface

Redevelop? Y (N)

Sample Time 11:50
Sample ID ESAIS-139R
Duplicate ID –
MS/MSD –
[illegible] ID –

Analytical Parameters	Collected
VOCs (Std. list)	
VOCs (Exp. list)	
SVOCs	
[illegible]	
PCBs (Aroclors)	X
Metals/Inorganics (Total)	X
Metals/Inorganics (Dissolved)	
PCDDs/PCDFs	
Pesticides/Herbicides	
Natural Attenuation	
Other (Specify)	

EVACUATION INFORMATION

Pump Start Time 10:37
Pump Stop Time 11:56
Minutes of Pumping 81 min
Volume of Water Removed 3.0 gal
Did Well Go Dry? Y (N)

Evacuation Method: Bailer ( ) Bladder Pump ( )
Peristaltic Pump (X) Submersible Pump ( ) Other/Specify ( )
Pump Type GEOPUMP2
Samples collected by same method as evacuation? (Y) N (specify)

Water Quality Meter (Type/S/N) / Serial Numbers: HACH TURBIDIMETER 020200025376
YSI 556 03C0392AE

Time	Pump Rate (L/min.)	Total Gallons Removed	Water Level (ft TIC)	Temp. (Celsius) [3%]*	pH [0.1 unit]*	Sp. Cond. (mS/cm) [3%]*	Turbidity (NTU) [10% or 1 NTU]*	DO (mg/l) [10% or 0.1 mg/l]*	ORP (mV) [10 mV]*
10:38	0.150	–	9.03	–	–	–	31	–	–
10:41	0.125	0.099	9.11	–	–	–	26	–	–
10:46	0.150	0.298	9.22	15.80	6.31	0.701	30	7.54	188.3
10:51	0.150	0.496	9.29	15.71	6.49	0.706	29	7.54	183.2
10:56	0.150	0.694	9.31	15.46	6.69	0.709	19	7.75	171.5
11:01	0.150	0.893	9.33	15.56	6.78	0.709	17	7.80	161.3
11:06	0.150	1.091	9.38	15.57	6.87	0.710	13	7.85	149.6
11:11	0.150	1.290	9.40	15.73	6.92	0.709	12	7.73	143.0
11:16	0.150	1.489	9.41	16.01	6.99	0.711	9	7.56	133.0
11:21	0.150	1.687	9.43	16.03	7.01	0.713	10	7.43	125.3
11:26	0.150	1.885	9.45	15.80	7.03	0.712	10	7.47	122.4
11:31	0.150	2.083	9.47	15.46	7.05	0.712	NOT 5	7.53	118.9

* The stabilization criteria for each field parameter (three consecutive readings collected at 3- to 5-minute intervals) is listed in each column heading.

OBSERVATIONS/SAMPLING METHOD DEVIATIONS: INITIAL PURGE - CLEAR, COLORLESS, ODORLESS.
* PUMP WOULD NOT PUMP LESS THAN 0.150 mL/min.

SAMPLE DESTINATION

Laboratory: SGS
Delivered Via: UPS
Aircill #: –

Field Sampling Coordinator:

GROUNDWATER SAMPLING LOG

Well No. ESAIS-139R
Key No. -
PID Background (ppm) -
Well Headspace (ppm) -

Site/GMA Name GMA-1
Sampling Personnel KLB, JCM
Date 10/6/04
Weather SUNNY, 40°F

WELL INFORMATION

Reference Point Marked? (Y) N
Height of Reference Point -0.37 Meas. From BGS
Well Diameter 2"
Screen Interval Depth 6-16' Meas. From BGS
Water Table Depth 9.02' Meas. From TIC
Well Depth 14.49' Meas. From TIC
Length of Water Column 5.47'
Volume of Water in Well 0.892 gal
Intake Depth of Pump/Tubing 11.75' Meas. From TIC

Reference Point Identification
TIC - Top of Inner (PVC) Casing
TOC - Top of Outer (Protective) Casing
Grade/BGS - Ground Surface

Redevelop? Y (N)

Sample Time 11:50
Sample ID ESAIS-139R
Duplicate ID -
MS/MSD -
Split Sample ID -

Analytical Parameters	Collected
VOCs (8260 Full)	
VOCs (8260 List)	
SVOCs	
Oil/Grease	
PCBs (Dissolved)	X
Metals/Inorganics (Total)	
Metals/Inorganics (Dissolved)	
PCDDs/PCDFs	
Pesticides/Herbicides	
Natural Attenuation	
Other (Specify)	

EVACUATION INFORMATION

Pump Start Time 10:37
Pump Stop Time 11:58
Minutes of Pumping 81 min
Volume of Water Removed 3.0 gal
Did Well Go Dry? Y (N)

Evacuation Method: Bailer ( ) Bladder Pump ( )
Peristaltic Pump (X) Submersible Pump ( ) Other:Specify ( )
Pump Type GEOPump 2
Samples collected by same method as evacuation? (Y) N (Specify) KLB

Water Quality Meter Type(s) / Serial Number: HACH TURBIDIMETER 020200025376
YSI 556 03C0392AE

Time	Pump Rate (L/min.)	Total Gallons Removed	Water Level (ft TIC)	Temp. (Celsius) (3%)*	pH (0.1 unit)*	Sp. Cond. (mS/cm) (3%)*	Turbidity (NTU) (10% or 1 NTU)*	DO (mg/l) (10% or 0.1 mg/l)*	ORP (mV) (10 mV)*
11:35	0.150	2.242	9.48	15.20	7.04	0.713	6	7.44	118.6
11:39	0.150	2.400	9.49	14.94	7.04	0.714	6	7.58	117.7
11:43	0.150	2.559	9.50	14.86	7.03	0.714	5	7.43	116.4
11:47	0.150	2.718	9.50	14.72	7.06	0.714	5	7.44	115.3
				KLB					

* The stabilization criteria for each field parameter (three consecutive readings collected at 3- to 5-minute intervals) is listed in each column heading.

OBSERVATIONS/SAMPLING METHOD DEVIATIONS FINAL PURGE- CLEAR, COLORLESS, ODORLESS

SAMPLE DESTINATION

Laboratory: SGS
Delivered Via: UPS
Airbill #: -

Field Sampling Coordinator:

GROUNDWATER SAMPLING LOG

Well No. GMA1-2
Key No. —
PID Background (ppm) —
Well Headspace (ppm) —

Site/GMA Name GMA1
Sampling Personnel KLB, JCM
Date 10/6/04
Weather SUNNY, 40°F

Sample Time 9:45
Sample ID GMA1-2
Duplicate ID —
MS/MSD —
Split Sample ID —

WELL INFORMATION

Reference Point Marked? (Y) N
Height of Reference Point -0.30 Meas. From GROUND
Well Diameter 2"
Screen Interval Depth 6.2-16.2' Meas. From GROUND
Water Table Depth 16.19' Meas. From TIC
Well Depth 16.22' Meas. From TIC
Length of Water Column 0.03'
Volume of Water in Well ~~16.21'~~ 0.005gal
Intake Depth of Pump/Tubing 16.21' Meas. From TIC

Reference Point Identification
TIC Top of Inner (PVC) Casing
TOC Top of Outer (Protective) Casing
Grade/BGS Ground Surface

Redevelop? Y (N)

Required	Analytical Parameters:	Collected
( )	VOCs (Std. list)	( )
(X)	VOCs (Exp. list)	( )
( )	SVOCs	( )
( )	PCBs (Total)	( )
( )	PCBs (Dissolved)	( )
( )	Metals/Inorganics (Total)	( )
( )	Metals/Inorganics (Dissolved)	( )
( )	PCDDs/PCDFs	( )
( )	Pesticides/Herbicides	( )
( )	Natural Attenuation	( )
( )	Other (Specify)	( )

EVACUATION INFORMATION

Pump Start Time 9:45
Pump Stop Time ~~9:47~~ 9:57 *
Minutes of Pumping <12 min.
Volume of Water Removed ~~ARROX.~~ 40 ml
Did Well Go Dry? (Y) N

Evacuation Method Bailer ( ) Bladder Pump ( )
Peristaltic Pump (X) Submersible Pump ( ) Other/Specify ( )
Pump Type GEOPUMP 2
Samples collected by same method as evacuation? (Y) N (specify)

Water Quality Meter Type(s) / Serial Numbers

Time	Pump Rate (L/min.)	Total Gallons Removed	Water Level (ft TIC)	Temp. (Celsius) [3%]*	pH [0.1 units]*	Sp. Cond. (mS/cm) [3%]*	Turbidity (NTU) [10% or 1 NTU]*	DO (mg/l) [10% or 0.1 mg/l]*	ORP (mV) [10 mV]*

* The stabilization criteria for each field parameter (three consecutive readings collected at 3- to 5-minute intervals) is listed in each column heading.

OBSERVATIONS/SAMPLING METHOD DEVIATIONS INITIAL PURGE - BROWN, TURBID

* PUMP WAS STOPPED TO LET WELL RECHARGE, SAMPLE WAS COLLECTED BUT VOLUME WAS NOT ENOUGH TO FILL ONE VIAL FOR VOCS

SAMPLE DESTINATION

Laboratory:
Delivered Via:
Airbill #:

Field Sampling Coordinator:

GROUNDWATER SAMPLING LOG

Well No. GMA 1-4
Key No. —
PID Background (ppm) —
Well Headspace (ppm) —

Site/GMA Name GMA 1
Sampling Personnel SEK / AMG
Date 10.5.04
Weather

WELL INFORMATION

Reference Point Marked? (Y) N
Height of Reference Point -0.3 Meas. From BGS
Well Diameter 2"
Screen Interval Depth 10.3-20.3 Meas. From BGS
Water Table Depth 15.69 Meas. From TIC
Well Depth 19.64 Meas. From TIC
Length of Water Column 3.95
Volume of Water in Well 0.64
Intake Depth of Pump/Tubing 17.7' Meas. From TIC

Reference Point Identification:
TIC Top of Inner (PVC) Casing
TOC Top of Outer (Protective) Casing
Grade/BGS Ground Surface

Redevelop? Y (N)

Sample Time 1640
Sample ID GMA 1-4
Duplicate ID —
MS/MSD —
Split Sample ID —

Required	Analytical Parameters	Collected
( )	VOCs (Std. list)	( )
(X)	VOCs (Exp. list)	(X)
( )	SVOCs	( )
( )	PCBs (Total)	( )
( )	PCBs (Dissolved)	( )
( )	Metals/Inorganics (Total)	( )
( )	Metals/Inorganics (Dissolved)	( )
( )	PCDDs/PCDFs	( )
( )	Pesticides/Herbicides	( )
( )	Natural Attenuation	( )
( )	Other (Specify)	( )

EVACUATION INFORMATION

Pump Start Time 15:54
Pump Stop Time 16:39
Minutes of Pumping 46
Volume of Water Removed 1.09 gallons
Did Well Go Dry? Y (N)

Evacuation Method: Bailer ( ) Bladder Pump ( )
Peristaltic Pump (X) Submersible Pump ( ) Other/Specify ( )
Pump Type: QED Mini
Samples collected by same method as evacuation? Y N (specify)

Water Quality Meter Type(s) / Serial Numbers: HACH 2100P TURBIDIMETER 92100002832 3
YSI 556 MPS : 05C1461 171

Time	Pump Rate (L/min.)	Total Gallons Removed	Water Level (ft TIC)	Temp. (Celsius) [3%]*	pH [0.1 units]*	Sp. Cond. (mS/cm) [3%]*	Turbidity (NTU) [10% or 1 NTU]*	DO (mg/l) [10% or 0.1 mg/l]*	ORP (mV) [10 mV]*
15:55	0.100	—	15.81	—	—	—	84	—	—
16:00	0.100	0.13	15.81	—	—	—	24	—	—
16:05	0.150	0.33	15.82	15.47	7.15	1.056	14	9.90	-239.2
16:10	0.150	0.53	15.82	15.42	7.28	1.066	8	9.62	-228.0
16:15	0.150	0.73	15.82	15.32	7.36	1.067	5	10.30	-222.6
16:20	0.150	0.93	15.82	15.23	7.44	1.064	4	9.94	-219.5
16:25	0.150	1.13	15.82	15.08	7.46	1.058	3	9.88	-217.4
16:30	0.150	1.33	15.82	15.18	7.48	1.055	2	9.75	-214.9
16:35	0.150	1.53	15.82	15.16	7.53	1.052	2	9.80	-211.5

* The stabilization criteria for each field parameter (three consecutive readings collected at 3- to 5-minute intervals) is listed in each column heading.

OBSERVATIONS/SAMPLING METHOD DEVIATIONS Initial purge: Slightly turbid, clear, no odor.

SAMPLE DESTINATION

Laboratory: SGS
Delivered Via: UPS
Airbill #: —

Field Sampling Coordinator:

GROUNDWATER SAMPLING LOG

Well No. GMA1-18
Key No. NA
PID Background (ppm) 0
Well Headspace (ppm) 0

Site/GMA Name GE Pittsfield - GMA-1
Sampling Personnel GAR
Date 11/1/04
Weather Mostly sunny, windy, 45°F

WELL INFORMATION

Reference Point Marked? (Y) N
Height of Reference Point -0.30' Meas. From Ground
Well Diameter 2"
Screen Interval Depth 5'-15' Meas. From Ground
Water Table Depth 6.91' Meas. From TIC
Well Depth 13.80' Meas. From TIC
Length of Water Column 6.89'
Volume of Water in Well 1.12 gallons
Intake Depth of Pump/Tubing 10.5' Meas. From TIC

Reference Point Identification:
TIC: Top of Inner (PVC) Casing
TOC: Top of Outer (Protective) Casing
Grade/BGS: Ground Surface

Redevelop? Y (N)

Sample Time 16:40
Sample ID GMA1-18
Duplicate ID —
MS/MSD —
Split Sample ID —

Required	Analytical Parameters:	Collected
( )	VOCs (Std. list)	( )
( )	VOCs (Exp. list)	( )
( )	SVOCs	( )
( )	PCBs (Total)	( )
(X)	PCBs (Dissolved)	(X)
( )	Metals/Inorganics (Total)	( )
( )	Metals/Inorganics (Dissolved)	( )
( )	PCDDs/PCDFs	( )
( )	Pesticides/Herbicides	( )
( )	Natural Attenuation	( )
( )	Other (Specify)	( )

EVACUATION INFORMATION

Pump Start Time 15:03
Pump Stop Time 16:50
Minutes of Pumping 107
Volume of Water Removed 2.75 gallons
Did Well Go Dry? Y (N)

Evacuation Method: Bailer ( ) Bladder Pump (X)
Peristaltic Pump ( ) Submersible Pump ( ) Other/Specify ( )
Pump Type: Masoneilan - System One
Samples collected by same method as evacuation? (Y) N (specify)

Water Quality Meter Type(s) / Serial Numbers: YSI-556 MPS : 03C1461 A1
Hach 2100P - Turbidimeter 1020100028323

Time	Pump Rate (L/min.)	Total Gallons Removed	Water Level (ft TIC)	Temp. (Celsius) [3%]*	pH [0.1 units]*	Sp. Cond. (mS/cm) [3%]*	Turbidity (NTU) [10% or 1 NTU]*	DO (mg/l) [10% or 0.1 mg/l]*	ORP (mV) [10 mV]*
15:08	100ml	0.13	7.42	—	—	—	45	—	—
15:13	100ml	0.26	7.58	—	—	—	62	—	—
15:23	100ml	0.53	7.76	—	—	—	64	—	—
15:30	100ml	0.71	7.71	—	—	—	39	—	—
15:40	100ml	0.98	7.42	12.98	7.19	0.596	29	16.60	-328.0
15:45	100ml	1.11	7.70	12.51	7.15	0.603	25	7.60	-315.2
15:50	100ml	1.24	7.82	13.68	7.21	0.608	21	6.36	-305.0
15:55	100ml	1.38	7.82	13.61	7.20	0.609	18	5.77	-311.5
16:00	100ml	1.51	7.87	13.63	7.18	0.608	15	5.39	-292.6
16:05	100ml	1.64	7.88	13.63	7.15	0.609	12	5.13	-314.0
16:10	100ml	1.77	7.89	12.54	7.14	0.609	10	4.96	-305.9
16:15	100ml	1.90	7.92	13.46	7.13	0.610	9	4.82	-300.1

* The stabilization criteria for each field parameter (three consecutive readings collected at 3- to 5-minute intervals) is listed in each column heading.

OBSERVATIONS/SAMPLING METHOD DEVIATIONS
Initial Purge: Clear, odorless
Final Purge: Clear, odorless

SAMPLE DESTINATION

Laboratory: SGS
Delivered Via: UPS
Airbill #: —

Field Sampling Coordinator:

GROUNDWATER SAMPLING LOG

Well No. GMA1-1P
Key No. NA
PID Background (ppm) 0
Well Headspace (ppm) 0

Site/GMA Name GE Pittsfield GMA-1
Sampling Personnel GAR
Date 11/1/04
Weather Mostly sunny, windy, 45°F

WELL INFORMATION

Reference Point Marked? (Y) N
Height of Reference Point -0.30' Meas. From Ground
Well Diameter 2"
Screen Interval Depth 5'-15' Meas. From Ground
Water Table Depth 6.91' Meas. From TIC
Well Depth 12.80' Meas. From TIC
Length of Water Column 6.89'
Volume of Water in Well 1.12 gallons
Intake Depth of Pump/Tubing 10.5' Meas. From TIC

Reference Point Identification:
TIC: Top of Inner (PVC) Casing
TOC: Top of Outer (Protective) Casing
Grade/BGS: Ground Surface

Redevelop? Y (N)

Sample Time 16:40
Sample ID GMA1-1P
Duplicate ID —
MS/MSD —
Split Sample ID —

Required	Analytical Parameters:	Collected
( )	VOCs (Std. list)	( )
( )	VOCs (Exp. list)	( )
( )	SVOCs	( )
( )	PCBs (Total)	( )
(X)	PCBs (Dissolved)	(X)
( )	Metals/Inorganics (Total)	( )
( )	Metals/Inorganics (Dissolved)	( )
( )	PCDDs/PCDFs	( )
( )	Pesticides/Herbicides	( )
( )	Natural Attenuation	( )
( )	Other (Specify)	( )

EVACUATION INFORMATION

Pump Start Time 15:03
Pump Stop Time 16:50
Minutes of Pumping 1127
Volume of Water Removed 2.75 gallons
Did Well Go Dry? Y (N)

Evacuation Method: Bailer ( ) Bladder Pump (X)
Peristaltic Pump ( ) Submersible Pump ( ) Other/Specify ( )
Pump Type: Marschalk - System One
Samples collected by same method as evacuation? (Y) N (specify)

Water Quality Meter Type(s) / Serial Numbers: YSI-556 MPS
Hach 2100P Turbidimeter

Time	Pump Rate (L/min.)	Total Gallons Removed	Water Level (ft TIC)	Temp. (Celsius) [3%]*	pH [0.1 units]*	Sp. Cond. (mS/cm) [3%]*	Turbidity (NTU) [10% or 1 NTU]*	DO (mg/l) [10% or 0.1 mg/l]*	ORP (mV) [10 mV]*
16:20	100ml	2.04	7.93	13.44	7.13	0.612	7	4.75	-300.5
16:25	100ml	2.17	7.94	13.43	7.13	0.613	7	4.72	-282.0
16:30	100ml	2.30	7.97	13.42	7.11	0.615	7	4.65	-280.0
16:35	100ml	2.43	8.00	13.43	7.12	0.617	7	4.56	-274.2

* The stabilization criteria for each field parameter (three consecutive readings collected at 3- to 5-minute intervals) is listed in each column heading.

OBSERVATIONS/SAMPLING METHOD DEVIATIONS

SAMPLE DESTINATION

Laboratory: SGS
Delivered Via: UPS
Airbill #: —

Field Sampling Coordinator:

GROUNDWATER SAMPLING LOG

Well No. LS-MW-4R
Key No. —
PID Background (ppm) —
Well Headspace (ppm) —

Site/GMA Name GMA-1
Sampling Personnel J.P. MAH
Date 10/16/04
Weather Sunny, 40's

WELL INFORMATION

Reference Point Marked? (Y) N
Height of Reference Point ~0.2' Meas. From TIC
Well Diameter 2"
Screen Interval Depth 9-14' Meas. From BGS
Water Table Depth 6.43' Meas. From TIC
Well Depth 14.14' Meas. From TIC
Length of Water Column 7.26'
Volume of Water in Well 1.18 gallon
Intake Depth of Pump/Tubing 11.5' Meas. From TIC

Reference Point Identification:
TIC: Top of Inner (PVC) Casing
TOC: Top of Outer (Protective) Casing
Grade/BGS: Ground Surface

Redevelop? Y (N)

EVACUATION INFORMATION

Pump Start Time 944
Pump Stop Time 1114
Minutes of Pumping 90
Volume of Water Removed ~3.50 gal
Did Well Go Dry? Y (N)

Sample Time JP 1030
Sample ID LS-MW-4R
Duplicate ID —
MS/MSD —
Split Sample ID —

Required	Analytical Parameters:	Collected
(X)	VOCs (Std. list)	(X)
( )	VOCs (Exp. list)	( )
(X)	SVOCs	(X)
( )	PCBs (Total)	( )
(X)	PCBs (Dissolved)	(X)
( )	Metals/Inorganics (Total)	( )
(X)	Metals/Inorganics (Dissolved)	(X)
(X)	PCDDs/PCDFs	(X)
( )	Pesticides/Herbicides	( )
( )	Natural Attenuation	( )
( )	Other (Specify):	(X)
(X)	Cyanide	
(X)	~~Dissolved Manganese~~ Sulfide	X

Evacuation Method: Bailer ( ) Bladder Pump ( )
Peristaltic Pump (X) Submersible Pump ( ) Other/Specify ( )
Pump Type: Geopump 2
Samples collected by same method as evacuation? (Y) N (specify)

Water Quality Meter Type(s) / Serial Numbers: YSI 556 MPS 03C0392
HACH Turbidmeter 021000025329

Time	Pump Rate (L/min.)	Total Gallons Removed	Water Level (ft TIC)	Temp. (Celsius) [3%]*	pH [0.1 units]*	Sp. Cond. (mS/cm) [3%]*	Turbidity (NTU) [10% or 1 NTU]*	DO (mg/l) [10% or 0.1 mg/l]*	ORP (mV) [10 mV]*
945	150	—	6.96	—	—	—	3.3	—	—
956	150	0.4365	6.96	16.32	6.55	0.726	10	5.21	11.3
1001	150	0.6349	6.97	16.29	6.52	0.736	9	0.97	-15.3
1006	150	0.8333	6.97	16.19	6.50	0.750	9	0.74	-23.7
1011	150	1.0317	6.98	16.40	6.55	0.756	9	0.61	-30.5
1016	150	1.2301	6.98	16.30	6.59	0.757	8	0.57	-36.5
1021	150	1.4285	10.97	16.40	6.59	0.747	9	0.52	-38.4
1026	150	1.62269	6.97	16.39	6.57	0.744	8	0.51	-38.7

* The stabilization criteria for each field parameter (three consecutive readings collected at 3- to 5-minute intervals) is listed in each column heading.

OBSERVATIONS/SAMPLING METHOD DEVIATIONS

Initial purge: Slightly orange in color, turbid (rusty orange particles), slight odor ~~odor~~
Final purge: Clear, slightly yellow in color, slight odor

SAMPLE DESTINATION

Laboratory: TGS
Delivered Via: UPS
Airbill #: —

Field Sampling Coordinator:

GROUNDWATER SAMPLING LOG

Well No. 34
Key No. —
PID Background (ppm) 0
Well Headspace (ppm) 0

Site/GMA Name GE Pittsfield - GMA-1
Sampling Personnel GAR
Date 10/6/04
Weather Mostly sunny, 60°F

WELL INFORMATION

Reference Point Marked? Y N
Height of Reference Point ____ Meas. From ____
Well Diameter 2"
Screen Interval Depth ____ Meas. From ____
Water Table Depth 5.41' Meas. From TIC
Well Depth 21.02' Meas. From TIC
Length of Water Column ____
Volume of Water in Well ____
Intake Depth of Pump/Tubing ____ Meas. From ____

Reference Point Identification
TIC Top of Inner (PVC) Casing
TOC Top of Outer (Protective) Casing
Grade/BGS Ground Surface

Redevelop? Y (N)

Sample Time 15:30
Sample ID 34
Duplicate ID —
MS/MSD —
Split Sample ID —

Required	Analytical Parameters:	Collected
( )	VOCs (Std. list)	( )
(X)	VOCs (Exp. list)	(X)
( )	SVOCs	( )
( )	PCBs (Total)	( )
( )	PCBs (Dissolved)	( )
( )	Metals/Inorganics (Total)	( )
( )	Metals/Inorganics (Dissolved)	( )
( )	PCDDs/PCDFs	( )
( )	Pesticides/Herbicides	( )
( )	Natural Attenuation	( )
( )	Other (Specify)	( )

EVACUATION INFORMATION

Pump Start Time ____
Pump Stop Time ____
Minutes of Pumping ____
Volume of Water Removed ____
Did Well Go Dry? Y N

Evacuation Method Bailer ( ) Bladder Pump ( )
Peristaltic Pump (X) Submersible Pump ( ) Other/Specify ( )
Pump Type ISCO
Samples collected by same method as evacuation? (Y) N (specify)

Water Quality Meter Type(s) / Serial Numbers ____

Time	Pump Rate (L/min.)	Total Gallons Removed	Water Level (ft TIC)	Temp. (Celsius) (3%)*	pH (0.1 units)*	Sp. Cond. (mS/cm) (3%)*	Turbidity (NTU) (10% or 1 NTU)*	DO (mg/l) (10% or 0.1 mg/l)*	ORP (mV) (10 mV)*
	NO								
		Parameters							
					Collected				

* The stabilization criteria for each field parameter (three consecutive readings collected at 3- to 5-minute intervals) is listed in each column heading.

OBSERVATIONS/SAMPLING METHOD DEVIATIONS

Well 34: Depth to LNAPL: 5.39', Depth to water: 5.41', Bottom: 21.02'
Well 72: Depth to LNAPL: 6.19', Depth to Water 6.20', Bottom: 21.98'
A sample of the LNAPL/Groundwater was collected from Well 34 and submitted for Expanded 8260 B-VOCs

SAMPLE DESTINATION

Laboratory: SGS
Delivered Via: UPS
Airbill #: —

Field Sampling Coordinator: [signature]

Appendix D

Historical Groundwater Data

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engineers, scientists, economists

Historical Groundwater Data

Total VOC Concentrations – Wells Sampled in Fall 2004

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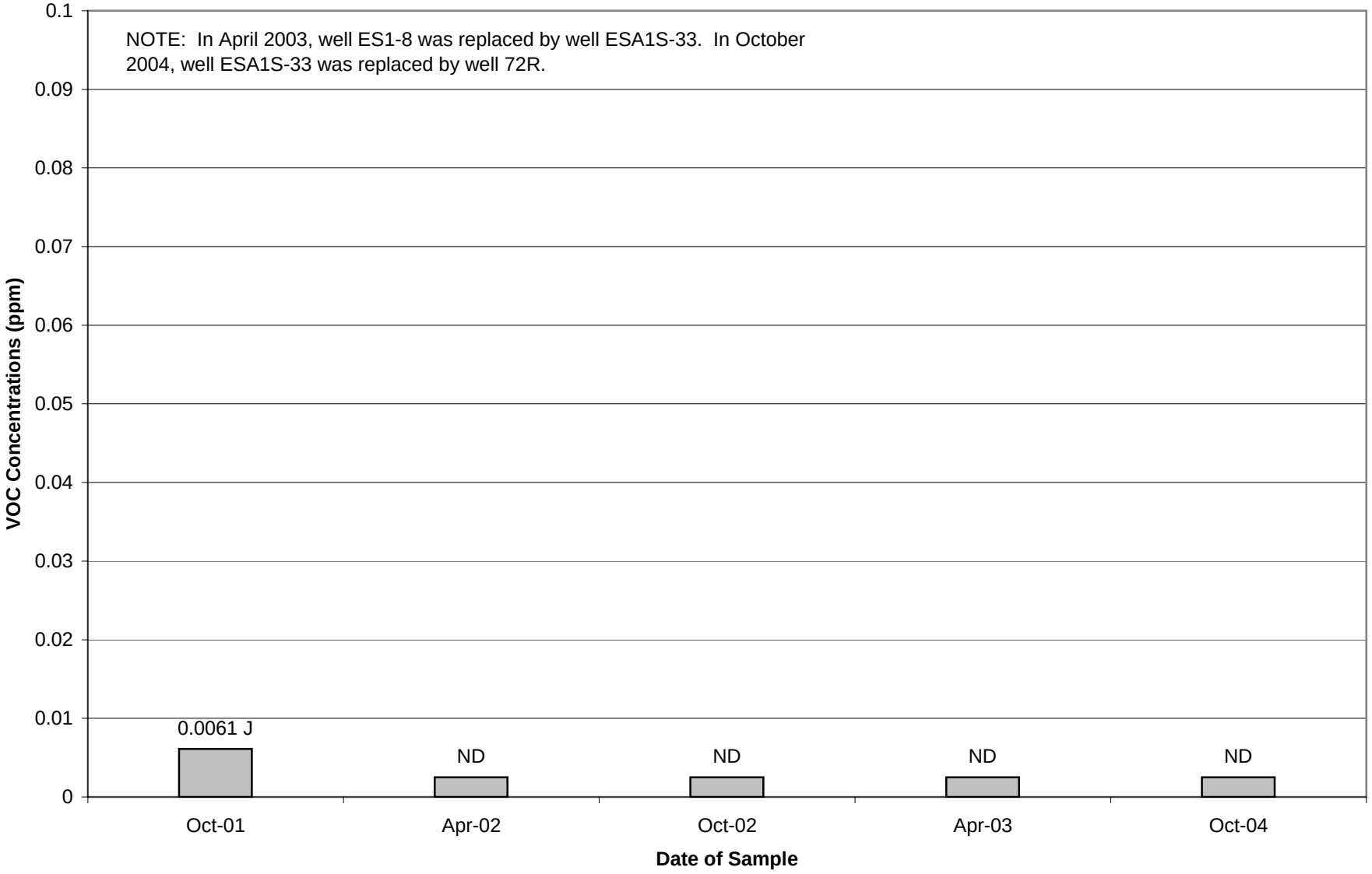
Appendix D

Groundwater Management Area 1
General Electric Company
Pittsfield, Massachusetts

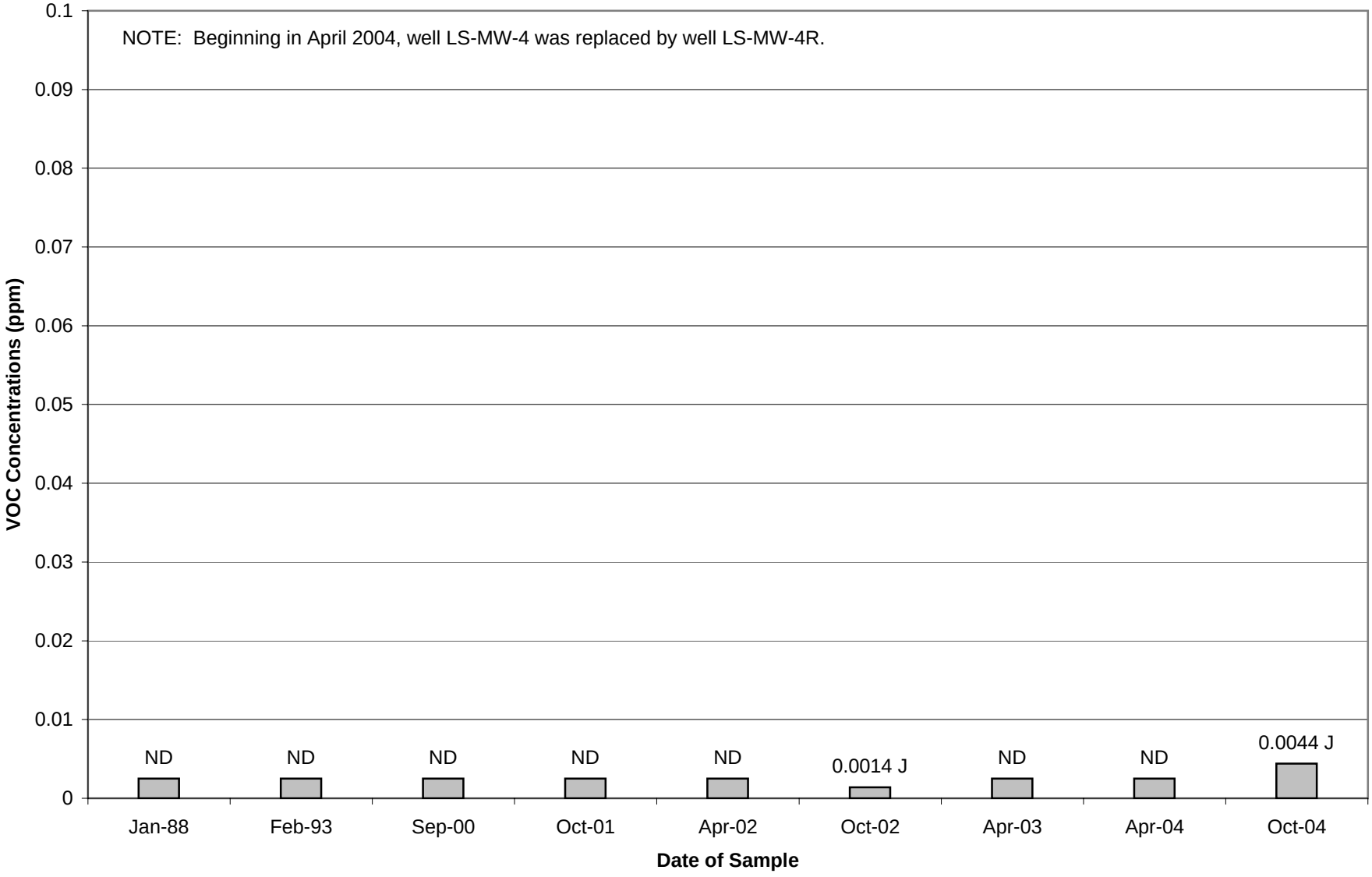
Wells ES1-08, ESA1S-33, & 72R Historical VOC Concentrations



Appendix D

Groundwater Management Area 1
General Electric Company
Pittsfield, Massachusetts

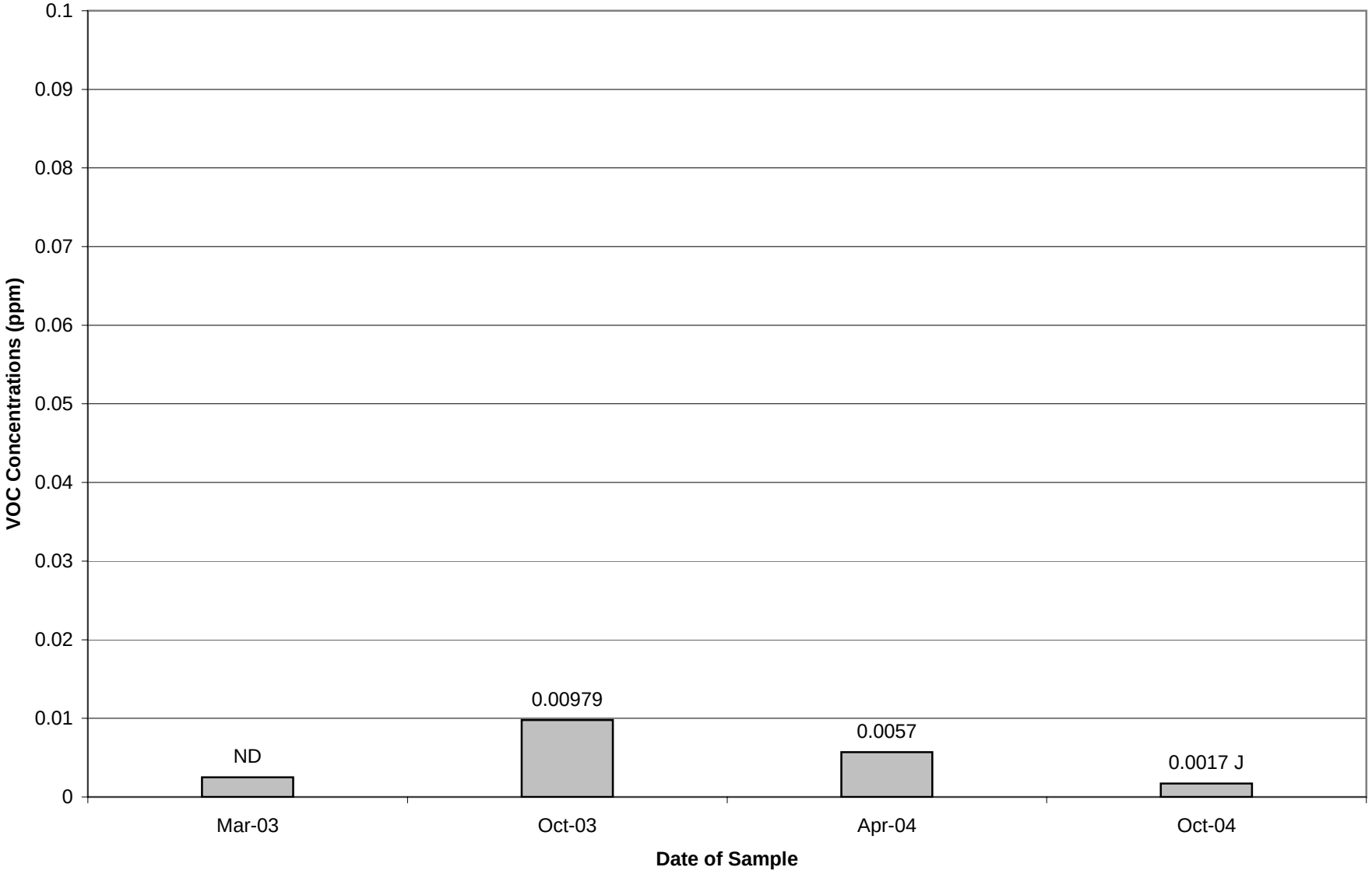
Wells LS-MW-4 & LS-MW-4R Historical VOC Concentrations



Appendix D

Groundwater Management Area 1
General Electric Company
Pittsfield, Massachusetts

Well GMA1-4 Historical VOC Concentrations



Historical Groundwater Data

Total PCB Concentrations – Wells Sampled in Fall 2004

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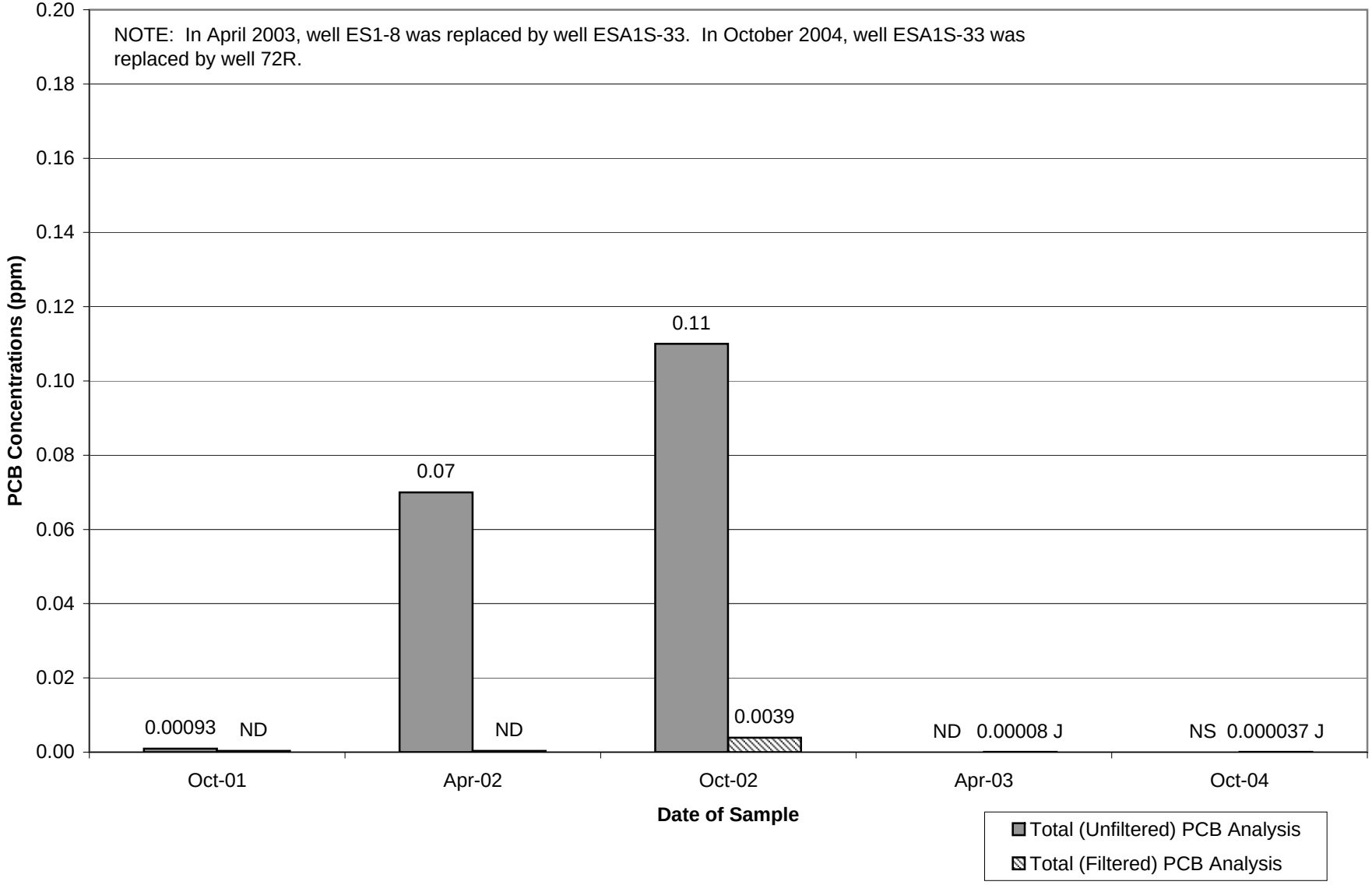
Appendix D

Groundwater Management Area 1
General Electric Company
Pittsfield, Massachusetts

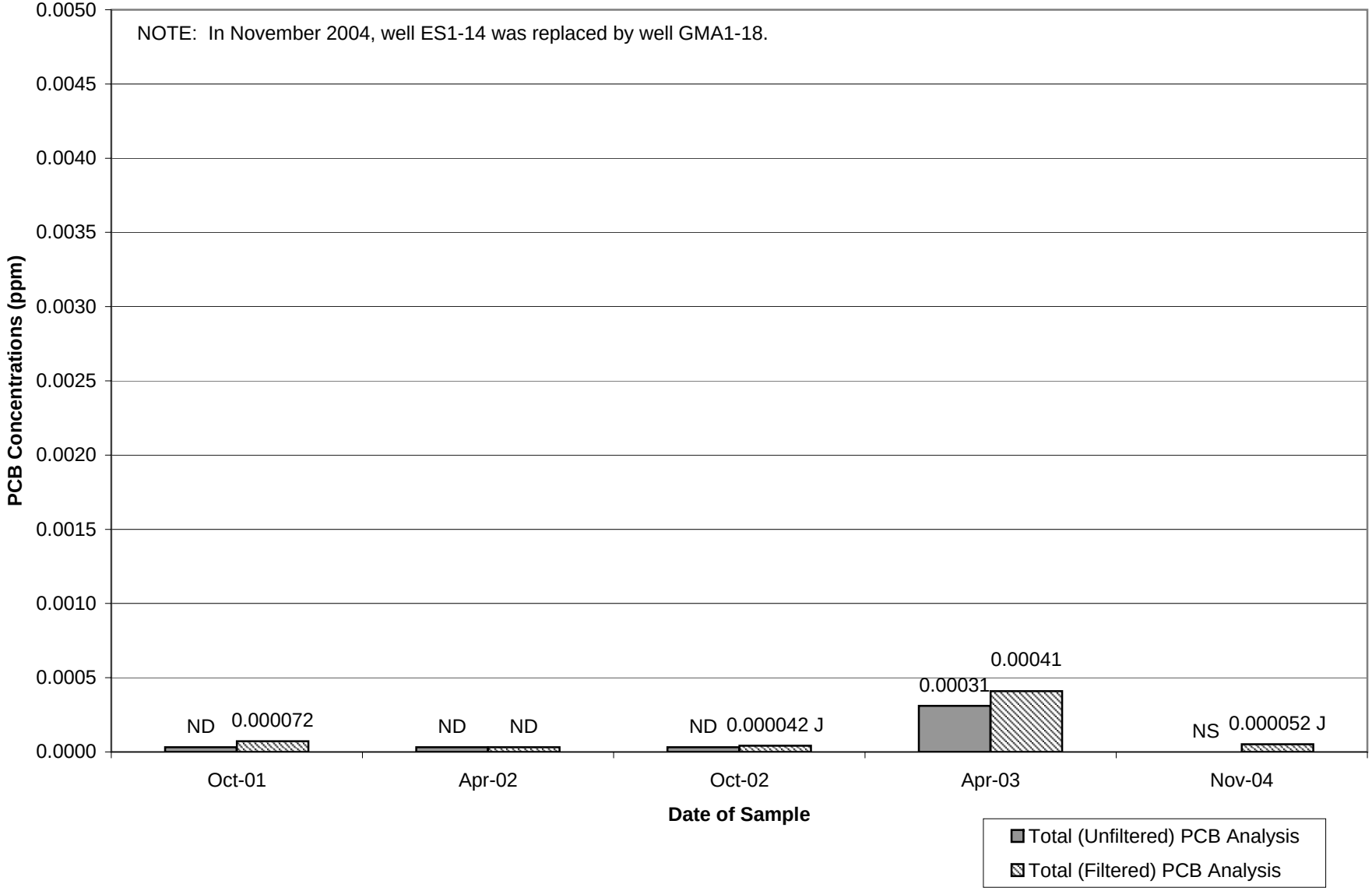
Well ES1-08, ESA1S-33, & 72R Historical PCB Concentrations



Appendix D

Groundwater Management Area 1
General Electric Company
Pittsfield, Massachusetts

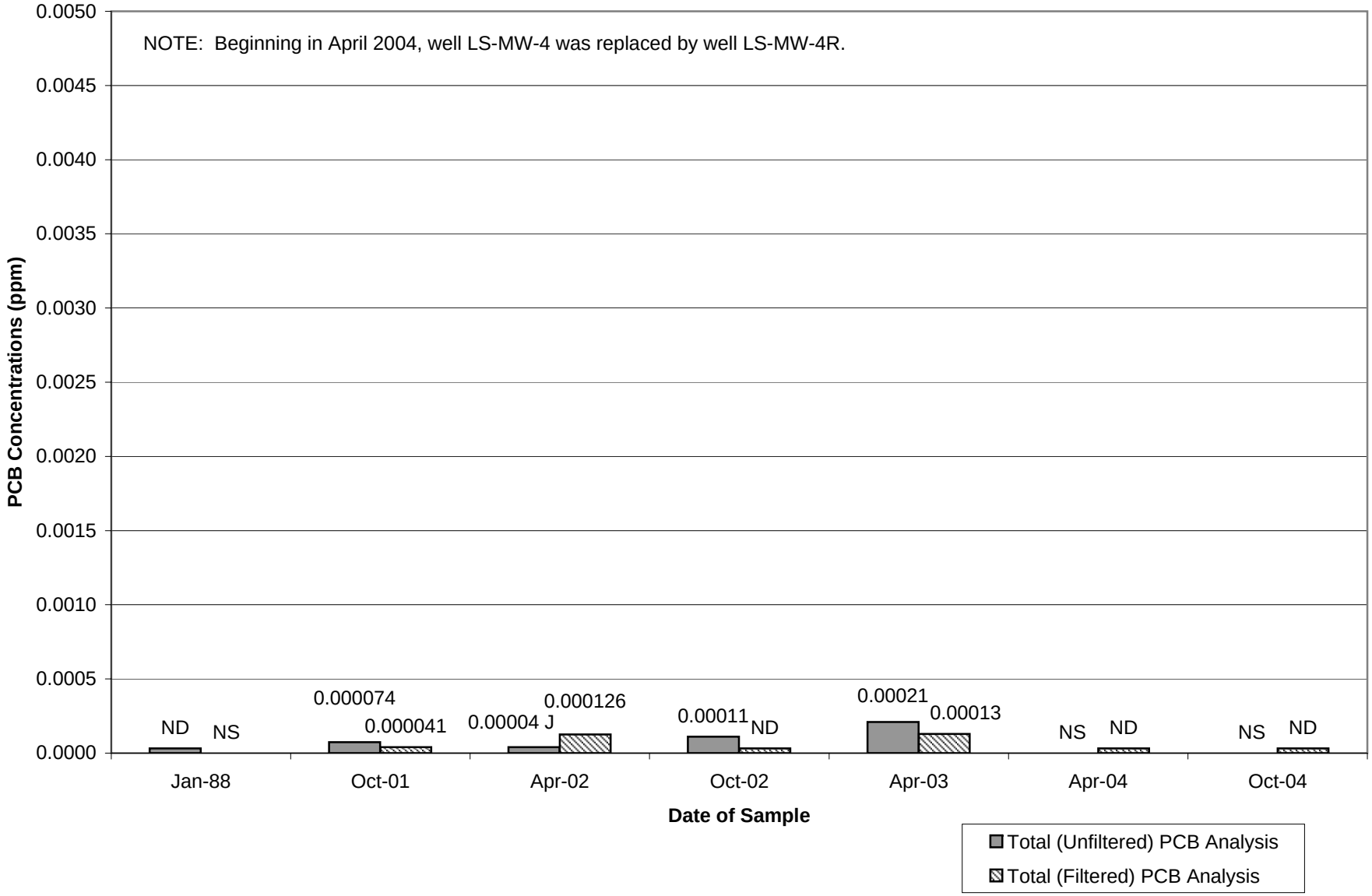
Well ES1-14 & GMA1-18 Historical PCB Concentrations



Appendix D

Groundwater Management Area 1
General Electric Company
Pittsfield, Massachusetts

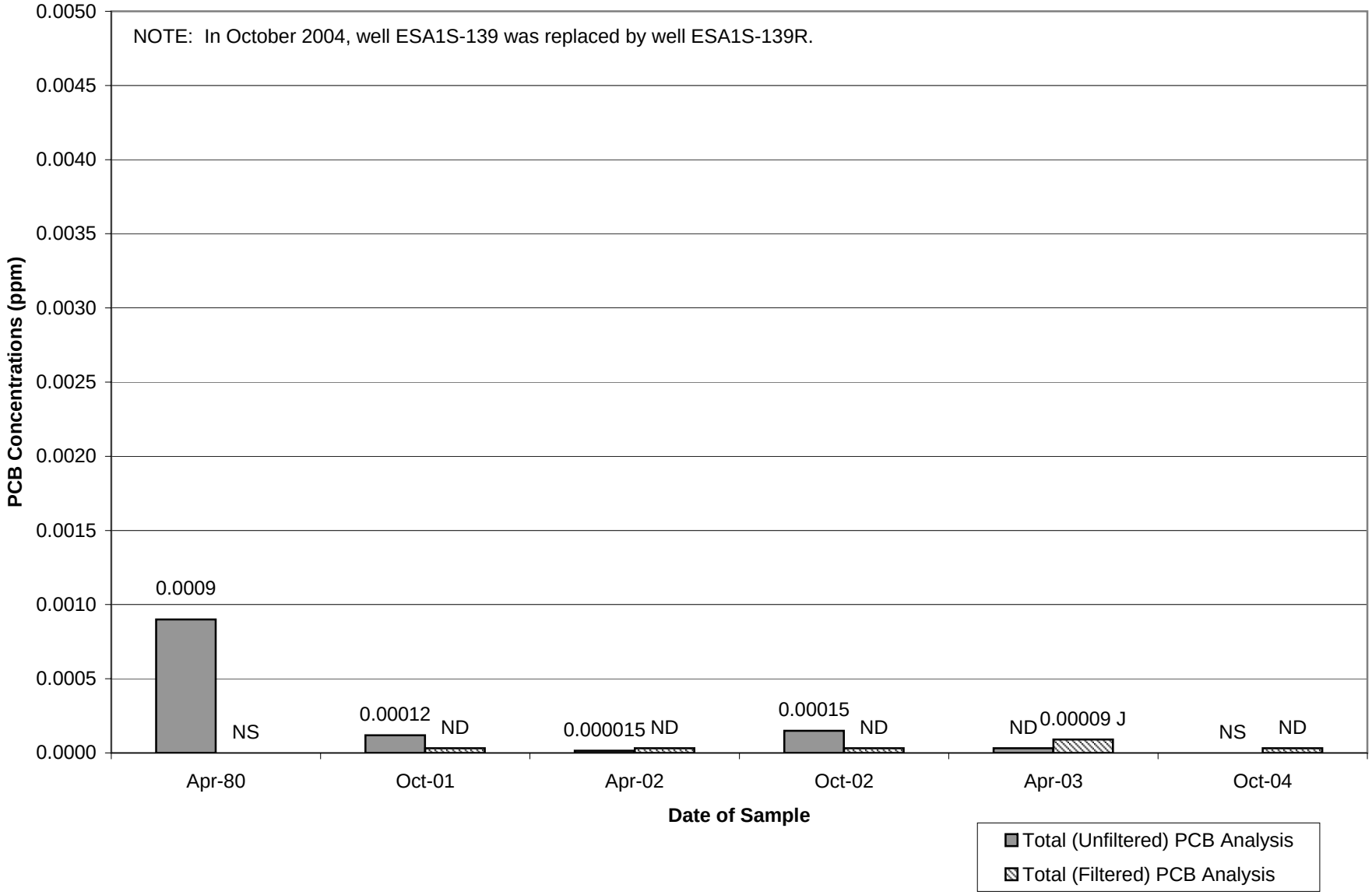
Well LS-MW-4 & LS-MW-4R Historical PCB Concentrations



Appendix D

Groundwater Management Area 1
General Electric Company
Pittsfield, Massachusetts

Well ESA1S-139 & ESA1S-139R Historical PCB Concentrations



Historical Groundwater Data

Cyanide Concentrations – Wells Sampled in Fall 2004

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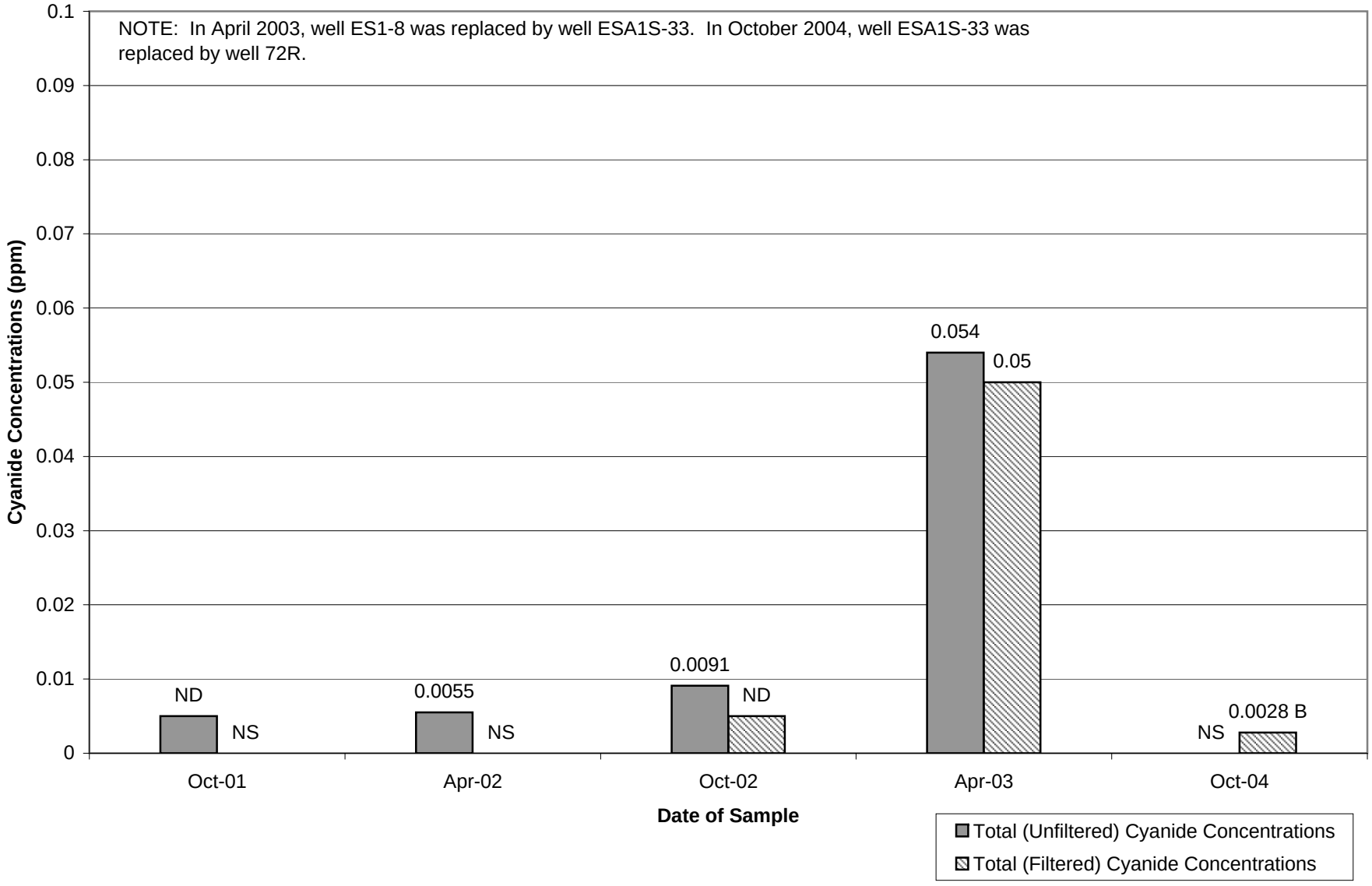
Appendix D

Groundwater Management Area 1
General Electric Company
Pittsfield, Massachusetts

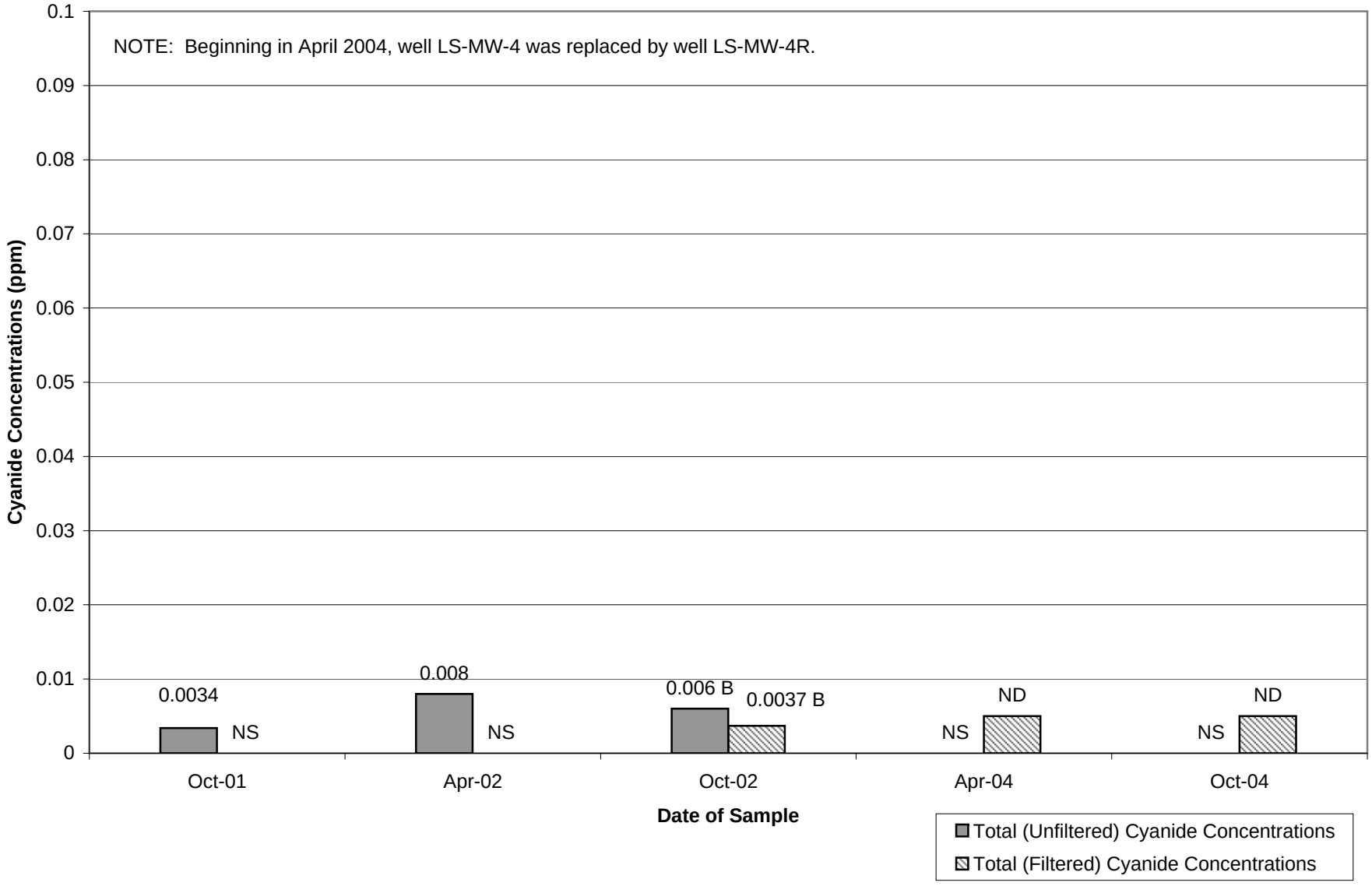
Wells ES1-08, ESA1S-33, & 72R Unfiltered and Filtered Cyanide Concentrations



Appendix D

Groundwater Management Area 1
General Electric Company
Pittsfield, Massachusetts

Wells LS-MW-4 & LS-MW-4R Unfiltered and Filtered Cyanide Concentrations



Appendix E

Data Validation Report

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APPENDIX E
GROUNDWATER SAMPLING DATA VALIDATION REPORT
PLANT SITE 1 GROUNDWATER MANAGEMENT AREA

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

1.0 General

This Appendix summarizes the Tier I and Tier II data reviews performed for groundwater samples collected as part of the interim groundwater monitoring program at Groundwater Management Area 1 (GMA 1) located in Pittsfield, Massachusetts. The samples were analyzed for various constituents listed in Appendix IX of 40 CFR Part 264, plus three additional constituents -- benzidine, 2-chloroethyl vinyl ether, and 1,2-diphenylhydrazine (hereafter referred to as Appendix IX+3), excluding pesticides and herbicides, by SGS Environmental Services, Inc. (formerly CT&E) of Charleston, West Virginia. Data validation was performed for four polychlorinated biphenyl (PCB) samples, five volatile organic compound (VOC) samples, one semi-volatile organic compound (SVOC) sample, one polychlorinated dibenzo-p-dioxin (PCDD)/polychlorinated dibenzofuran (PCDF) sample, one metals sample, and two cyanide/sulfide samples that were collected from selected monitoring wells within GMA 1.

2.0 Data Evaluation Procedures

This Appendix outlines the applicable quality control criteria utilized during the data review process and any deviations from those criteria. The data review was conducted in accordance with the following documents:

- *Field Sampling Plan/Quality Assurance Project Plan, General Electric Company, Pittsfield, Massachusetts*, Blasland, Bouck & Lee, Inc. (BBL; FSP/QAPP, approved May 25, 2004 and resubmitted June 15, 2004);

- *Region I Tiered Organic and Inorganic Data Validation Guidelines*, USEPA Region I (July 1, 1993);

- *Region I Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses*, USEPA Region I (June 13, 1988) (Modified February 1989);

- *Region I Laboratory Data Validation Functional Guidelines for Evaluating Organics Analyses*, USEPA Region I (February 1, 1988) (Modified November 1, 1988);

- *Region I Laboratory Data Validation Functional Guidelines for Evaluating Organics Analyses*, USEPA Region I (Draft, December 1996); and

- *National Functional Guidelines for Dioxin/Furan Data Validation*, USEPA (Draft, January 1996).

A tabulated summary of the Tier I and Tier II data evaluations is presented in Table E-1. Each sample subjected to evaluation is listed in Table E-1 to document that data review was performed, as well as present the highest level of data validation (Tier I or Tier II) that was applied. Samples that required data qualification are listed separately for each parameter (compound or analyte) that required qualification.

The following data qualifiers were used in this data evaluation.

J The compound was positively identified, but the associated numerical value is an estimated concentration. This qualifier is used when the data evaluation procedure identifies a deficiency in the data generation process. This qualifier is also used when a compound is detected at an estimated concentration less than the corresponding practical quantitation limit (PQL).

U The compound was analyzed for, but was not detected. The sample quantitation limit is presented and adjusted for dilution and (for solid samples only) percent moisture. Non-detect sample results are presented as ND(PQL) within this report and in Table E-1 for consistency with documents previously prepared for this investigation.

UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is estimated and may or may not represent the actual level of quantitation. Non-detect sample results that required qualification are presented as ND(PQL) J within this report and in Table E-1 for consistency with documents previously prepared for this investigation.

R Indicates that the previously reported detection limit or sample result has been rejected due to a major deficiency in the data generation procedure. The data should not be used for any qualitative or quantitative purpose.

3.0 Data Validation Procedures

The FSP/QAPP provides (in Section 7.5) that all analytical data will be validated to a Tier I level following the procedures presented in the *Region I Tiered Organic and Inorganic Data Validation Guidelines* (USEPA guidelines). Accordingly, 100% of the analytical data for these investigations were subjected to Tier I review. The Tier I review consisted of a completeness evidence audit, as outlined in the *USEPA Region I CSF Completeness Evidence Audit Program* (USEPA Region I, 7/31/91), to ensure that all laboratory data and documentation were present. In the event that data packages were determined to be incomplete, the missing information was requested from the laboratory. Upon completion of the Tier I review, the data packages complied with the USEPA Region I Tier I data completeness requirements. In the event data packages were determined to be incomplete, the missing information was requested from the laboratory. Upon completion of the Tier I review, the data packages complied with USEPA Region I Tier I data completeness requirements.

As specified in the FSP/QAPP, approximately 25% of the laboratory sample delivery group packages were randomly chosen to be subjected to Tier II review. A Tier II review was also performed to resolve data usability limitations identified from laboratory qualification of the data during the Tier I data review. The Tier II data review consisted of a review of all data package summary forms for identification of Quality Assurance/Quality Control (QA/QC) deviations and qualification of the data according to the Region I Data Validation Functional Guidelines. Due to the variable sizes of the data packages and the number of data qualification issues identified during the Tier I review, approximately 71% of the data were subjected to a Tier II review. The Tier II review resulted in the qualification of data for several samples due to minor QA/QC deficiencies. Additionally, all field duplicates were examined for relative percent difference (RPD) compliance with the criteria specified in the FSP/QAPP. A tabulated summary of the samples subjected to Tier I and Tier II data evaluations is presented in the following table.

Summary of Samples Subjected to Tier I and Tier II Data Validation

Parameter	Tier I Only			Tier I &Tier II			Total
	Samples	Duplicates	Blanks	Samples	Duplicates	Blanks	
PCBs	4	0	0	0	0	0	4
VOCs	0	0	0	4	0	1	5
SVOCs	0	0	0	1	0	0	1
PCDDs/PCDFs	0	0	0	1	0	0	1
Metals	0	0	0	1	0	0	1
Cyanide/Sulfide	0	0	0	2	0	0	2
Total	**4**	**0**	**0**	**9**	**0**	**1**	**14**

When qualification of the sample data was required, the sample results associated with a QA/QC parameter deviation were qualified in accordance with the procedures outlined in USEPA Region I data validation guidance documents. When the data validation process identified several quality control deficiencies, the cumulative effect of the various deficiencies was employed in assigning the final data qualifier. A summary of the QA/QC parameter deviations that resulted in data qualification is presented below for each analytical method.

4.0 Data Review

Initial calibration criterion for SVOCs requires that the percent relative standard deviation (%RSD) must be less than or equal to 30%. Sample data for detect and non-detect compounds with %RSD values greater than 30% were qualified as estimated (J). The compound that exceeded the initial calibration criterion and the number of samples qualified due those deviations are presented in the following table.

Compound Qualified Due to Initial Calibration %RSD Deviations

Analysis	Compound	Number of Affected Samples	Qualification
SVOCs	4-Nitrophenol	1	J

The initial calibration criterion for organic analyses requires that the average relative response factor (RRF) has a value greater than 0.05. Sample results were qualified as estimated (J) when this criterion was not met. The compounds that did not meet the initial calibration criterion and the number of samples qualified are presented in the following table:

Compounds Qualified Due to Initial Calibration Deviations (RRF)

Analysis	Compounds	Number of Affected Samples	Qualification
VOCs	1,4-Dioxane	5	J
	2-Butanone	5	J
	Acetone	5	J
	Acetonitrile	5	J
	Isobutanol	4	J
	Propionitrile	1	J
SVOCs	4-Nitroquinoline-1-oxide	1	J

The continuing calibration criterion for organic analyses requires that the continuing calibration RRF have a value greater than 0.05. Sample data for detect and non-detect compounds with RRF values less than 0.05 were qualified as estimated (J). The compounds that did not meet the continuing calibration criterion and the number of samples qualified are presented in the following table:

Compounds Qualified Due to Continuing Calibration Deviations (RRF)

Analysis	Compounds	Number of Affected Samples	Qualification
VOCs	Propionitrile	4	J
SVOCs	1,3,5-Trinitrobenzene	1	J

Several of the organic compounds (including the compounds presented in the above tables detailing RRF deviations) exhibit instrument response factors (RFs) below the USEPA Region I minimum value of 0.05, but meet the analytical method criterion which does not specify minimum RFs for these compounds. These compounds were analyzed by the laboratory at a higher concentration than the compounds that normally exhibit RFs greater than the USEPA Region I minimum value of 0.05 in an effort to demonstrate acceptable response. USEPA Region I guidelines state that non-detect compound results associated with a RF less than the minimum value of 0.05 are to be rejected (R). However, in the case of these select organic compounds, the RF is an inherent problem with the current analytical methodology; therefore, the non-detect sample results were qualified as estimated (J).

The continuing calibration criterion requires that the percent difference (%D) between the initial calibration RRF and the continuing calibration RRF for VOCs and SVOCs be less than 25%. Sample data for detect and non-detect compounds with %D values that exceeded the continuing calibration criteria were qualified as estimated (J). A summary of the compounds that exceeded the continuing calibration criterion and the number of samples qualified due to those deviations are presented in the following table:

Compounds Qualified Due to Continuing Calibration of %D Values

Analysis	Compounds	Number of Affected Samples	Qualification
VOCs	2-Butanone	1	J
	2-Hexanone	1	J
	Naphthalene	1	J
	Tetrachloroethene	1	J
SVOCs	3,3'-Dichlorobenzidine	1	J
	a,a'-Dimethylphenethylamine	1	J
	Benzidine	1	J
	bis(2-Chloroisopropyl)ether	1	J
	Methyl Methanesulfonate	1	J
	Pronamide	1	J

Contract required detection limit (CRDL) standards were analyzed to evaluate instrument performance at low-level concentrations that are near the analytical method PQL. These standards are required to have recoveries between 80% and 120% to verify that the analytical instrumentation was properly calibrated. When CRDL standard recoveries were not in this range, the affected samples with detected results at or near the PQL concentration (less than three times the PQL) were qualified as estimated (J). The analyte that did not meet CRDL criteria and the number of samples qualified due to those deviations are presented in the following table:

Analyte Qualified Due to CRDL Standard Recovery Deviations

Analysis	Analyte	Number of Affected Samples	Qualification
Inorganics	Selenium	1	J

Blank action levels for inorganic analytes detected in the blanks were calculated at five times the blank concentrations. Detected sample result that was below the blank action level and above the instrument detection limit (IDL) was qualified with a "U." The analyte detected in method blank which resulted in qualification of sample data, along with the number of affected samples, are presented in the following table:

Analyte Qualified Due to Blank Deviations

Analysis	Analyte	Number of Affected Samples	Qualification
Inorganics	Zinc	1	U

5.0 Overall Data Usability

This section summarizes the analytical data in terms of its completeness and usability for site characterization purposes. Data completeness is defined as the percentage of sample results that have been determined to be usable during the data validation process. The percent usability calculation included analyses evaluated under both the Tier I and Tier II data validation reviews. Data completeness with respect to usability was calculated separately for inorganic and each of the organic analysis. The percent usability calculation also includes quality control samples collected to aid in the evaluation of data usability. Therefore, field/equipment blank, trip blank, and field duplicate data determined to be unusable as a result of the validation process are also represented in the percent usability value tabulated in the following table:

Data Usability

Parameter	Percent Usability	Rejected Data
Inorganics	100	None
Cyanide and Sulfide	100	None
VOCs	100	None
SVOCs	100	None
PCBs	100	None
PCDDs/PCDFs	100	None

The data package completeness, as determined from the Tier I data review, was used in combination with the data quality deviations identified during the Tier II data review to determine overall data quality. As specified in the FSP/QAPP, the overall precision, accuracy, representativeness, comparability, and completeness (PARCC) parameters determined from the Tier I and Tier II data reviews were used as indicators of overall data quality. These parameters were assessed through an evaluation of the results of the field and laboratory QA/QC sample analyses to provide a measure of compliance of the analytical data with the Data Quality Objectives (DQOs) specified in the FSP/QAPP. Therefore, the following sections present summaries of the PARCC parameters assessment with regard to the DQOs specified in the FSP/QAPP.

5.1 Precision

Precision measures the reproducibility of measurements under a given set of conditions. Specifically, it is a quantitative measure of the variability of a group of measurements compared to their average value. For this investigation, precision was defined as the RPD between duplicate sample results. The duplicate samples used to evaluate precision included laboratory duplicates, field duplicates, MS/MSD samples, and ICP serial dilution samples. For this analytical program, none of the data required qualification due to laboratory duplicate RPD deviations, field duplicate RPD deviations, MS/MSD RPD deviations or ICP serial dilution sample deviations.

5.2 Accuracy

Accuracy measures the bias in an analytical system or the degree of agreement of a measurement with a known reference value. For this investigation, accuracy was defined as the percent recovery of QA/QC samples that were spiked with a known concentration of an analyte or compound of interest. The QA/QC samples used to evaluate analytical accuracy included instrument calibration, internal standards, laboratory control standards (LCSs), MS/MSD samples, CRDL samples, and surrogate compound recoveries. For this analytical program, 9.0% of the data required qualification due to calibration deviations, and 0.21% of the data required qualification due to CRDL standard recovery deviations. None of the data required qualification due to internal standards recovery deviations, LCS recovery deviations, MS/MSD recovery deviations or surrogate compound standard recovery deviations.

5.3 Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents a characteristic of a population, parameter variations at a sampling point, or an environmental condition. Representativeness is a qualitative parameter, which is most concerned with the proper design of the sampling program. The representativeness criterion is best satisfied by making certain that sampling locations are selected properly and a sufficient number of samples are collected. This parameter has been addressed by collecting samples at locations specified in USEPA -approved work plans, and by following the procedures for sample collection/analyses that were described in the FSP/QAPP. Additionally, the analytical program used procedures consistent with USEPA-approved analytical methodology. A QA/QC parameter that is an indicator of the representativeness of a sample is holding time. Holding time criteria are established to maintain the samples in a state that is representative of the in-situ field conditions before analysis. For this analytical program, none of the data required qualification for exceeding holding time requirements.

5.4 Comparability

Comparability is a qualitative parameter expressing the confidence with which one data set can be compared with another. This goal was achieved through the use of the standardized techniques for sample collection and analysis presented in the FSP/QAPP. The USEPA SW-846[1] analytical methods presented in the FSP/QAPP are updated on occasion by the USEPA to benefit from recent technological advancements in analytical chemistry and instrumentation. In most cases, the method upgrades include the incorporation of new technology that improves the sensitivity and stability of the instrumentation or allows the laboratory to increase throughput without hindering accuracy and precision.

[1] Test Methods for evaluating Solid Waste, SW-846, USEPA, Final Update III, December 1996.

Overall, the analytical methods for this investigation have remained consistent in their general approach through continued use of the basic analytical techniques (e.g., sample extraction/preparation, instrument calibration, QA/QC procedures). Through this use of consistent base analytical procedures and by requiring that updated procedures meet the QA/QC criteria specified in the FSP/QAPP, the analytical data from past, present, and future sampling events will be comparable to allow for qualitative and quantitative assessment of site conditions. Through this use of consistent base analytical procedures and by requiring that updated procedures meet the QA/QC criteria specified in the FSP/QAPP, the analytical data from past, present, and future sampling events will be comparable to allow for qualitative and quantitative assessment of site conditions.

5.5 Completeness

Completeness is defined as the percentage of measurements that are judged to be valid or usable to meet the prescribed DQOs. The completeness criterion is essentially the same for all data uses -- the generation of a sufficient amount of valid data. This analytical data set had an overall usability of 100%.

TABLE E-1
ANALYTICAL DATA VALIDATION SUMMARY

PLANT SITE 1 GROUNDWATER MANAGEMENT AREA
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS
(Results are presented in parts per million, ppm)

Sample Delivery Group No.	Sample ID	Date Collected	Matrix	Validation Level	Qualification	Compound	QA/QC Parameter	Value	Control Limits	Qualified Result
PCBs										
4J0P144	72R	10/6/2004	Water	Tier I	No					
4J0P144	ESA1S-139R	10/6/2004	Water	Tier I	No					
4J0P144	LS-MW-4R	10/6/2004	Water	Tier I	No					
4K0P041	GMA1-18	11/1/2004	Water	Tier I	No					
Metals										
4J0P144	LS-MW-4R	10/6/2004	Water	Tier II	Yes	Selenium	CRDL Standard %R	129.0%	80% to 120%	0.00620 J
						Zinc	Method Blank	-	-	ND(0.031)
VOCs										
4J0P142	34	10/6/2004	Water	Tier II	Yes	1,4-Dioxane	ICAL RRF	0.009	>0.05	ND(1.0) J
						2-Butanone	ICAL RRF	0.028	>0.05	ND(0.050) J
						2-Butanone	CCAL %D	29.6%	<25%	ND(0.050) J
						2-Hexanone	CCAL %D	20.4%	<25%	ND(0.050) J
						Acetone	ICAL RRF	0.047	>0.05	ND(0.050) J
						Acetonitrile	ICAL RRF	0.044	>0.05	ND(0.50) J
						Naphthalene	CCAL %D	26.4%	<25%	ND(0.050) J
						Propionitrile	ICAL RRF	0.011	>0.05	ND(0.10) J
						Tetrachloroethene	CCAL %D	42.4%	<25%	ND(0.050) J
4J0P144	72R	10/6/2004	Water	Tier II	Yes	1,4-Dioxane	ICAL RRF	0.011	>0.05	ND(0.20) J
						2-Butanone	ICAL RRF	0.025	>0.05	ND(0.010) J
						Acetone	ICAL RRF	0.048	>0.05	ND(0.010) J
						Acetonitrile	ICAL RRF	0.030	>0.05	ND(0.10) J
						Isobutanol	ICAL RRF	0.010	>0.05	ND(0.10) J
						Propionitrile	CCAL RRF	0.012	>0.05	ND(0.010) J
4J0P144	GMA1-4	10/5/2004	Water	Tier II	Yes	1,4-Dioxane	ICAL RRF	0.011	>0.05	ND(0.20) J
						2-Butanone	ICAL RRF	0.025	>0.05	ND(0.010) J
						Acetone	ICAL RRF	0.048	>0.05	ND(0.010) J
						Acetonitrile	ICAL RRF	0.030	>0.05	ND(0.10) J
						Isobutanol	ICAL RRF	0.010	>0.05	ND(0.10) J
						Propionitrile	CCAL RRF	0.012	>0.05	ND(0.010) J
4J0P144	LS-MW-4R	10/6/2004	Water	Tier II	Yes	1,4-Dioxane	ICAL RRF	0.011	>0.05	ND(0.20) J
						2-Butanone	ICAL RRF	0.025	>0.05	ND(0.010) J
						Acetone	ICAL RRF	0.048	>0.05	ND(0.010) J
						Acetonitrile	ICAL RRF	0.030	>0.05	ND(0.10) J
						Isobutanol	ICAL RRF	0.010	>0.05	ND(0.10) J
						Propionitrile	CCAL RRF	0.012	>0.05	ND(0.010) J
4J0P144	TRIP BLANK	10/6/2004	Water	Tier II	Yes	1,4-Dioxane	ICAL RRF	0.011	>0.05	ND(0.20) J
						2-Butanone	ICAL RRF	0.025	>0.05	ND(0.20) J
						Acetone	ICAL RRF	0.048	>0.05	ND(0.010) J
						Acetonitrile	ICAL RRF	0.030	>0.05	ND(0.10) J
						Isobutanol	ICAL RRF	0.010	>0.05	ND(0.10) J
						Propionitrile	CCAL RRF	0.012	>0.05	ND(0.010) J
SVOCs										
4J0P144	LS-MW-4R	10/6/2004	Water	Tier II	Yes	1,3,5-Trinitrobenzene	CCAL RRF	0.037	>0.05	ND(0.010) J
						3,3'-Dichlorobenzidine	CCAL %D	29.6%	<25%	ND(0.020) J
						4-Nitrophenol	ICAL %RSD	37.0%	<30%	ND(0.050) J
						4-Nitroquinoline-1-oxide	ICAL RRF	0.034	>0.05	ND(0.010) J
						a,a'-Dimethylphenethylamine	CCAL %D	32.4%	<25%	ND(0.010) J
						Benzidine	CCAL %D	28.0%	<25%	ND(0.020) J
						bis(2-Chloroisopropyl)ether	CCAL %D	30.8%	<25%	ND(0.010) J
						Methyl Methanesulfonate	CCAL %D	34.8%	<25%	ND(0.010) J
						Pronamide	CCAL %D	30.4%	<25%	ND(0.010) J
PCDDs/PCDFs										
4J0P144	LS-MW-4R	10/6/2004	Water	Tier II	No					
Cyanides/Sulfides										
4J0P144	72R	10/6/2004	Water	Tier II	No					
4J0P144	LS-MW-4R	10/6/2004	Water	Tier II	No					